

North Dakota Teachers' Fund for Retirement

**Governmental Accounting Standards Board (GASB)
Statement Nos. 67 and 68
Actuarial Valuation as of July 1, 2017**



This report has been prepared at the request of the Board of Trustees to assist the sponsors of the Fund in preparing their financial report for liabilities associated with the Fund. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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November 2, 2017

Board of Trustees

North Dakota Teachers' Fund for Retirement

3442 East Century Avenue

Bismarck, ND 58507-7100

Dear Trustees:

We are pleased to submit the following report intended to be used for satisfying certain reporting requirements by Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 as of June 30, 2017.

This report was prepared in accordance with generally accepted actuarial principles and practices. The census and financial information on which our calculations were based was supplied by the staff of the Retirement and Investment Office. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Matthew Strom, FSA, MAAA, Enrolled Actuary.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the Fund.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

A handwritten signature in black ink that reads "Kim Nicholl".

Kim Nicholl, FSA, EA, MAAA

Senior Vice President and Actuary

A handwritten signature in black ink that reads "Matthew A. Strom".

Matthew A. Strom, FSA, EA, MAAA

Vice President and Actuary

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SECTION 1: Valuation Summary for the North Dakota Teachers' Fund for Retirement

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 as of June 30, 2017. This valuation is based on:

- The benefit provisions set forth in the North Dakota Century Code, as administered by the TFFR Board of Trustees;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of July 1, 2017, provided by the North Dakota Retirement and Investment Office;
- The assets of the Fund as of June 30, 2017, provided by the North Dakota Retirement and Investment Office;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Valuation Comments

The following are key observations regarding this actuarial valuation:

- Governmental Accounting Standards Board (GASB) Statements 67 and 68 contain rules for the reporting of pension liabilities for accounting purposes. Statement 67 was effective with the fiscal year ending June 30, 2014, for Plan reporting. Statement 68 was effective with the fiscal year ending June 30, 2015, for employer reporting. The information contained in this valuation is intended to be used (along with other information) in order to comply with both Statements 67 and 68.
- It is important to note that the GASB rules only redefine pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for actual pension funding purposes. Plans can still develop and adopt funding policies under current practices.
- When measuring pension liability for GASB purposes, the same actuarial cost method (Entry Age method) is used to determine the funded status of the Plan, the actuarially determined contribution rate, and the effective amortization period. In addition, the GASB blended discount rate calculation results in the same discount rate (expected return on assets) as used for funding purposes. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as the Actuarial Accrued Liability (AAL) measure for funding.

SECTION 1: Valuation Summary for the North Dakota Teachers' Fund for Retirement

- The net pension liability (NPL) is equal to the difference between the TPL and the Plan Fiduciary Net Position. The Plan Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis. The NPL decreased from \$1.47 billion as of June 30, 2016, to \$1.37 billion as of June 30, 2017, primarily as a result of favorable investment results for fiscal year ending in June 30, 2017. Changes in these values during the prior fiscal year ending June 30, 2017, can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL was 7.75% as of both June 30, 2017 and June 30, 2016. The detailed calculations used in this derivation were provided under separate cover. Various information that is required to be disclosed can be found throughout Section 2 and Section 3.

SECTION 1: Valuation Summary for the North Dakota Teachers' Fund for Retirement

Summary of Key Valuation Results

	2017	2016
Disclosure elements for fiscal year ending June 30:		
Service cost	\$75,476,063	\$68,239,440
Total pension liability	3,734,016,828	3,589,393,851
Plan fiduciary net position	2,360,491,075	2,124,335,288
Net pension liability	1,373,525,753	1,465,058,563
Plan fiduciary net position as a percentage of total pension liability	63.2%	59.2%
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	\$89,231,211	\$84,724,122
Actual contributions	86,058,868	82,839,932
Contribution deficiency (excess)	3,172,343	1,884,190
Demographic data as of July 1:		
Number of retirees and beneficiaries	8,501	8,249
Number of inactive vested members	1,600	1,601
Number of inactive non-vested members	878	779
Number of active members	10,874	10,813
Key assumptions:		
Single equivalent discount rate	7.75%	7.75%
Municipal bond index	3.58%	2.85%
Inflation rate	2.75%	2.75%
Projected salary increases	4.25% to 14.50%, varying by service	4.25% to 14.50%, varying by service

SECTION 1: Valuation Summary for the North Dakota Teachers' Fund for Retirement

Important Information about Actuarial Valuations

In order to prepare an actuarial valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our funding valuation report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by TFFR. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by TFFR.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal’s actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of the TFFR to assist the sponsors of the Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan’s assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

SECTION 1: Valuation Summary for the North Dakota Teachers' Fund for Retirement

- If TFFR is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. TFFR should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

EXHIBIT 1

Membership Data

	July 1, 2017	July 1, 2016
Retired members and beneficiaries	8,501	8,249
Vested inactive members	1,600	1,601
Non-vested inactive members	878	779
Active members:		
Vested	7,543	7,433
Non-vested	<u>3,331</u>	<u>3,380</u>
Total active members	10,874	10,813
Total membership	21,853	21,442

Active Membership By Plan Eligibility

	July 1, 2017	July 1, 2016
Tier 1 Grandfathered	2,221	2,559
Tier 1 Non-grandfathered	3,237	3,272
Tier 2	<u>5,416</u>	<u>4,982</u>
Total active membership	10,874	10,813

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

EXHIBIT 2

Net Pension Liability

	June 30, 2017	June 30, 2016
The components of the net pension liability are as follows:		
Total pension liability	\$3,734,016,828	\$3,589,393,851
Plan fiduciary net position	<u>(2,360,491,075)</u>	<u>(2,124,335,288)</u>
Net pension liability	\$1,373,525,753	\$1,465,058,563
Plan fiduciary net position as a percentage of the total pension liability	63.2%	59.2%

Plan provisions. The plan provisions used in the measurement of the net pension liability are the same as those used in the actuarial valuation as of July 1, 2017.

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of July 1, 2017, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75%
Salary increases	4.25% to 14.50%, varying by service, including inflation and productivity
Investment rate of return	7.75%, net of investment expenses
Cost-of-living adjustments	None

For active and inactive members, mortality rates were based on the RP-2014 Employee Mortality Table, projected generationally using Scale MP-2014. For healthy retirees, mortality rates were based on the RP-2014 Healthy Annuitant Mortality Table set back one year, multiplied by 50% for ages under 75 and grading up to 100% by age 80, projected generationally using Scale MP-2014. For disabled retirees, mortality rates were based on the RP-2014 Disabled Mortality Table set forward four years.

The actuarial assumptions used were based on the results of an experience study dated April 30, 2015. They are the same as the assumptions used in the July 1, 2017, funding actuarial valuation for TFFR.

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

EXHIBIT 3

Target Asset Allocation

The long-term expected investment rate of return assumption was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These returns 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. Projected arithmetic real rates of return for each major asset class included in the Fund's target asset allocation are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equities	58%	6.70%
Global Fixed Income	23%	0.80%
Global Real Assets	18%	5.20%
Cash Equivalents	<u>1%</u>	0.00%
Total	100%	

Discount rate: The long-term expected rate of return on pension plan investments is 7.75%. The high quality tax-exempt general obligation municipal bond rate (Bond Buyer 20-Bond GO Index) as of the closest date prior to the valuation date of June 30, 2017, is 3.58%.

The discount rate used to measure the total pension liability was 7.75% as of June 30, 2017. The projection of cash flows used to determine the discount rate assumes that member and employer contributions will be made at rates equal to those based on the July 1, 2017, Actuarial Valuation Report. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments for current plan members as of June 30, 2017. 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 as of June 30, 2017.

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

EXHIBIT 4

Discount Rate Sensitivity

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability as of June 30, 2017 and June 30, 2016, calculated using the discount rate of 7.75%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate.

	1% Decrease	Current Discount Rate	1% Increase
Net pension liability as of June 30, 2016	\$1,900,291,033	\$1,465,058,563	\$1,102,551,032
Net pension liability as of June 30, 2017	\$1,826,126,843	\$1,373,525,753	\$996,748,988

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

EXHIBIT 5

Schedule of Changes in Net Pension Liability

	2017	2016
Total pension liability		
Service cost	\$75,476,063	\$68,239,440
Interest	276,412,402	265,439,909
Change of benefit terms	0	0
Differences between expected and actual experience	(10,748,944)	(8,092,800)
Changes of assumptions	0	0
Benefit payments, including refunds of employee contributions	(196,516,544)	(185,968,680)
Net change in total pension liability	\$144,622,977	\$139,617,869
Total pension liability – beginning	<u>3,589,393,851</u>	<u>3,449,775,982</u>
Total pension liability – ending (a)	<u>\$3,734,016,828</u>	<u>\$3,589,393,851</u>
Plan fiduciary net position		
Contributions – employer	\$86,058,868	\$82,839,932
Contributions – member	79,309,153	76,342,685
Contributions – purchased service credit	2,553,200	2,768,245
Contributions – other	235,890	44,966
Net investment income	266,688,651	8,238,996
Benefit payments, including refunds of employee contributions	(196,516,544)	(185,968,680)
Administrative expense	(2,173,431)	(1,851,656)
Net change in plan fiduciary net position	\$236,155,787	(\$17,585,512)
Plan fiduciary net position – beginning	<u>2,124,335,288</u>	<u>2,141,920,800</u>
Plan fiduciary net position – ending (b)	<u>\$2,360,491,075</u>	<u>\$2,124,335,288</u>
Net pension liability – ending (a) – (b)	<u>\$1,373,525,753</u>	<u>\$1,465,058,563</u>
Plan fiduciary net position as a percentage of the total pension liability	63.2%	59.2%
Actual covered employee payroll	\$674,971,342	\$649,724,868
Plan net pension liability as percentage of covered employee payroll	203.5%	225.5%

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

EXHIBIT 6

Schedule of Employer Contributions

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Actual Covered Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2013	\$52,396,153	\$59,300,720	\$(6,904,567)	\$551,655,590	10.75%
2014	59,513,485	62,355,146	(2,841,661)	580,053,235	10.75%
2015	71,167,632	78,422,098	(7,254,466)	615,104,860	12.75%
2016	84,724,122	82,839,932	1,884,190	649,724,868	12.75%
2017	89,231,211	86,058,868	3,172,343	674,971,342	12.75%

SECTION 2: GASB 67 and 68 Information for North Dakota Teachers' Fund for Retirement

Notes to Exhibit 6

Methods and assumptions used to establish actuarially determined contribution rates:

Valuation date	Actuarially determined contribution rates are calculated as of June 30, with appropriate interest to the middle of the fiscal year.
Actuarial cost method	Entry Age Actuarial cost method
Amortization method	Level percentage of pay, closed
Remaining amortization period	26 years as of July 1, 2017 The amortization of unfunded actuarial accrued liability (UAAL) within the actuarially determined contribution rate calculation is based on the level percentage of pay required to amortize the UAAL over the 30-year closed period that began July 1, 2013. For this calculation, payroll is assumed to increase 3.25% per year.
Asset valuation method	The market value of assets with a five-year phase-in of actual return in excess of (or less than) expected investment income. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year).

Actuarial assumptions:

Investment rate of return	7.75%, net of investment expenses
Inflation rate	2.75%
Projected salary increases	4.25% to 14.50%, varying by service, includes inflation and productivity
Mortality*	Post-retirement Non-Disabled: RP-2014 Healthy Annuitant Mortality Table set back one year, multiplied by 50% for ages under 75 and grading up to 100% by age 80, projected generationally using Scale MP-2014. Pre-retirement Non-Disabled: RP-2014 Employee Mortality Table, projected generationally using Scale MP-2014. Disabled: RP-2014 Disabled Mortality table set forward 4 years.

Other assumptions:

Same as those used in the July 1, 2017, and July 1, 2016, actuarial funding valuations.

** The mortality rates were based on historical and current demographic data, as used in the experience study dated April 30, 2015. The underlying tables reasonably reflect the mortality experience of the Fund as of the measurement date.*

SECTION 3: Additional Information for GASB 68 for North Dakota Teachers' Fund for Retirement

Changes in the collective net pension liability from the beginning of the year to the end of the year arise from the net difference between changes in the total pension liability and plan fiduciary net position that occurred during the year. Changes in net pension liability will be recognized immediately as pension expense, or reported as deferred outflows of resources related to pensions or deferred inflows of resources related to pensions, depending on the nature of the change.

Differences between actual and expected investment-related experience are recognized over a closed five-year period. Differences between actual and expected non-investment-related experience and changes of assumptions are recognized over the average of the expected remaining service lives of all members who are provided with pensions through the pension plan (active employees and inactive employees). The amounts below that are not included in pension expense for the current year are included in deferred outflows of resources or deferred inflows of resources related to pensions.

EXHIBIT A

Reconciliation of Collective Net Pension Liability

	Increase/(Decrease) For Fiscal Year Ending June 30, 2017		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at beginning of year	\$3,589,393,851	\$2,124,335,288	\$1,465,058,563
Changes for the year			
Service cost	75,476,063		75,476,063
Interest	276,412,402		276,412,402
Differences between expected and actual experience	(10,748,944)		(10,748,944)
Contributions – employer		86,058,868	(86,058,868)
Contributions – member		79,309,153	(79,309,153)
Contributions – purchased service credit		2,553,200	(2,553,200)
Contributions – other		235,890	(235,890)
Net investment income		266,688,651	(266,688,651)
Benefit payments, including refunds of employee contributions	(196,516,544)	(196,516,544)	0
Administrative expense		(2,173,431)	2,173,431
Changes of assumptions	--		--
Change of benefit terms	--		--
Net changes	<u>144,622,977</u>	<u>236,155,787</u>	<u>(91,532,810)</u>
Balances at end of year	<u>\$3,734,016,828</u>	<u>\$2,360,491,075</u>	<u>\$1,373,525,753</u>

SECTION 3: Additional Information for GASB 68 for North Dakota Teachers' Fund for Retirement

As shown in Exhibit A, during the plan year that ended June 30, 2017, the changes in net pension liability due to differences between expected and actual demographic experience is a decrease of \$10,748,944. The average expected remaining service lives of all members is 7 years, determined as of July 1, 2016 (the beginning of the measurement period ending June 30, 2017). Therefore, of the \$10,748,944 demographic gain, \$1,535,563 is recognized in pension expense in the current year and \$9,213,381 is reflected as a deferred inflow of resources related to pensions.

Based on the assumed investment return of 7.75%, the expected net investment income for the year was \$163,452,836. As shown in Exhibit A, the actual net investment income for the year was \$266,688,651. The difference between actual and expected investment experience is a decrease in net pension liability of \$103,235,815, which is recognized over a 5-year period. Of this amount, \$20,647,163 is reflected in the current year and \$82,588,652 is reflected as a deferred inflow of resources related to pensions.

EXHIBIT B

Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	Year Established	Original Balance	Original Amortization Period	Amortization Amount During 2017	Outstanding Balance at June 30, 2017
Outflows					
Demographics	2014	\$9,347,346	7 years	\$1,335,335	\$4,006,006
Demographics	2015	2,209,258	7 years	315,608	1,262,434
Assumptions	2015	171,324,647	7 years	24,474,950	97,899,797
Investments	2015	93,160,436	5 years	18,632,087	37,264,175
Investments	2016	156,759,166	5 years	31,351,833	94,055,500
Total outflows				\$76,109,813	\$234,487,912
Inflows					
Investments	2014	\$148,793,866	5 years	\$29,758,773	\$29,758,774
Demographics	2016	8,092,800	7 years	1,156,114	5,780,572
Demographics	2017	10,748,944	7 years	1,535,563	9,213,381
Investments	2017	103,235,815	5 years	20,647,163	82,588,652
Total inflows				\$53,097,613	\$127,341,379

SECTION 3: Additional Information for GASB 68 for North Dakota Teachers' Fund for Retirement

EXHIBIT B (continued)

Collective Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

	June 30, 2017	June 30, 2016
Deferred Outflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	\$5,268,440	\$6,919,383
Changes of assumptions	97,899,797	122,374,747
Net difference between projected and actual earnings on pension plan investments	<u>18,972,249</u>	<u>121,786,048</u>
Total Deferred Outflows of Resources	\$122,140,486	\$251,080,178
Deferred Inflows of Resources		
Difference between expected and actual experience in the Total Pension Liability	\$14,993,953	\$6,936,686
Changes of assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	<u>0</u>	<u>0</u>
Total Deferred Inflows of Resources	\$14,993,953	\$6,936,686
Deferred outflows of resources and deferred inflows of resources related to pension will be recognized as follows:		
Year Ended June 30:		
2017		\$45,194,926
2018	\$23,012,199	45,194,925
2019	52,770,974	74,953,700
2020	34,138,888	56,321,614
2021	1,451,717	23,634,443
2022	(2,691,679)	
Thereafter	(1,535,566)	(1,156,116)

SECTION 3: Additional Information for GASB 68 for North Dakota Teachers' Fund for Retirement

Exhibit C below shows the individual components of collective pension expense, which totaled \$131,523,017 for the fiscal year that ended June 30, 2017.

Annual pension expense for the year can also be viewed as the change in net pension liability, plus employer contributions for the year, less the change in outstanding balances of deferred outflows and deferred inflows of resources from the end of the prior fiscal year to end of the current fiscal year. From Exhibit A, the change in net pension liability during the year was (\$91,532,810) and employer contributions were \$86,058,868. The net value of deferred outflows and deferred inflows of resources as of the end of the current fiscal year is \$107,146,533 compared to the net value as of the end of the prior fiscal of \$244,143,492 for a change of (\$136,996,959). Therefore, the pension expense for the fiscal year that ended June 30, 2017, is (\$91,532,810) + \$86,058,868 – (\$136,996,959), or \$131,523,017.

EXHIBIT C

Collective Pension Expense

	Fiscal Year Ending June 30, 2017	Fiscal Year Ending June 30, 2016
Components of pension expense		
Service cost	\$75,476,063	\$68,239,440
Interest on the total pension liability	276,412,402	265,439,909
Projected earnings on plan investments	(163,452,836)	(164,998,162)
Contributions – member	(79,309,153)	(76,342,685)
Contributions – purchased service credit	(2,553,200)	(2,768,245)
Contributions – other	(235,890)	(44,966)
Administrative expense	2,173,431	1,851,656
Current year recognition of:		
Changes of assumptions	24,474,950	24,474,950
Difference between expected and actual experience	(1,040,734)	494,829
Difference between projected and actual earnings on pension plan investments	(422,016)	20,225,147
Change of benefit terms	<u>0</u>	<u>0</u>
Total pension expense	<u>\$131,523,017</u>	<u>\$136,571,873</u>

SECTION 3: Additional Information for GASB 68 for North Dakota Teachers' Fund for Retirement

TFFR is classified as a cost-sharing multiple-employer defined benefit pension plan for GASB accounting purposes. As specified in GASB 68, employers that participate in TFFR are required to recognize their proportionate share of the collective pension amounts for all benefits provided through the Fund. Pension amounts to be recognized by employers include the net pension liability, deferred outflows of resources related to pensions, deferred inflows of resources related to pensions, and pension expense. In addition, the effects of (1) a change in the employer's proportion of the collective net pension liability and (2) differences during the measurement period between the employer's contributions and its proportionate share of the total of contributions from employers included in the collective net pension liability are required to be determined and recognized.

The basis of an employer's allocation of the collective pension amounts should be consistent with the manner in which contributions to the plan are determined. Since contributions to TFFR are collected as a percentage of payroll, covered employee payroll for the fiscal year ending June 30, 2017, is used as the proportionate share allocation basis. Retirement and Investment Office staff supplied covered employee payroll for each employer.

The net effect of the change on an employer's proportionate share of the collective net pension liability and collective deferred outflows of resources and deferred inflows of resources is recognized over the average of the expected remaining service lives of all members who are provided with pensions through TFFR.

In addition, the difference between the actual employer contributions and the proportionate share of the employer contributions during the measurement period ended June 30, 2017, is recognized over the same period. However, since TFFR contributions are collected on the same basis as the proportionate share allocation, there is no difference between the actual employer contributions and the proportionate share of the employer contributions. If employers no longer report to TFFR, they will continue to remain on the schedule until their deferral balances are depleted.

Exhibits D and E that follow show the proportionate share information for employers of TFFR for the fiscal year ending June 30, 2017.

5700959v1/13475.002

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Alexander School	\$ 1,201,881	0.17806399%
Anamoose School	764,136	0.11321014%
Apple Creek Elem School	347,729	0.05151764%
Ashley School	949,234	0.14063328%
Bakker Elem School	38,000	0.00562987%
Barnes County North	1,620,792	0.24012753%
Beach School	2,091,332	0.30984007%
Belcourt School	8,420,198	1.24748965%
Beffield Public School	1,491,442	0.22096375%
Beulah School	3,433,116	0.50863139%
Billings Co. School Dist.	832,495	0.12333776%
Bismarck Public Schools	72,834,836	10.79080425%
Bismarck State College	-	0.00000000%
Blessed John Paul II Catholic Sch Network	-	0.00000000%
Botineau School	3,637,965	0.53898062%
Bowbells School	627,466	0.09296183%
Bowman School	2,839,611	0.42070099%
Burke Central School	936,527	0.13875068%
Burleigh County Spec. Ed.	95,698	0.01417803%
Carrington School	2,885,459	0.42749362%
Cavalier School	2,253,966	0.33393501%
Center Stanton School	1,500,244	0.22226779%
Central Cass School	3,636,727	0.53879722%
Central Elementary School	61,534	0.00911657%
Central Valley School	1,271,348	0.18835583%
Dakota Prairie School	1,888,476	0.27978617%
Devils Lake School	10,420,476	1.54383974%
Dickinson School	19,316,437	2.86181591%
Divide School	2,486,864	0.36843994%
Drake School	451,320	0.06686508%
Drayton School	1,378,850	0.20428277%
Dunseith School	3,200,702	0.47419828%
E Central Ctr Exc Childn	799,793	0.11849291%
Earl Elem. School	31,900	0.00472613%
Edgeley School	1,312,346	0.19442995%
Edmore School	702,511	0.10408017%
Eight Mile School	1,535,542	0.22749741%
Elgin-New Leipzig School	1,192,662	0.17669820%
Ellendale School	1,711,875	0.25362188%
Emerado Elementary School	603,448	0.08940345%
Enderlin Area School District	2,114,503	0.31327299%
Fairmount School	1,006,771	0.14915754%
Fargo Public Schools	70,271,012	10.41096235%
Fessenden-Bowdon School	1,079,503	0.15993316%
Finley-Sharon School	1,002,340	0.14850105%
Flasher School	1,169,877	0.17332245%
Fordville Lankin School	590,953	0.08755230%
Fort Ransom Elem School	164,612	0.02438796%
Fort Totten School	1,555,507	0.23045523%
Fort Yates School	1,323,672	0.19610793%
Gackle-Streeter Pub Sch	794,101	0.11764958%
Garrison School	2,339,316	0.34658000%
Glen Ullin School	1,186,560	0.17579406%
Glenburn School	1,871,652	0.27729355%
Goodrich School	288,839	0.04279276%
Grafton School	4,498,285	0.66644086%
Grand Forks School	47,652,846	7.05998058%
Great North West Cooperative	138,068	0.02045539%
Grenora School	1,166,826	0.17287041%
Griggs County Central Sch	1,656,188	0.24537163%
Gst Educational Services	1,694,248	0.25101030%
Halliday School	393,566	0.05830853%
Hankinson School	1,473,729	0.21833944%
Harvey School	2,342,625	0.34707023%
Hatton Eielson Psd	1,156,380	0.17132285%
Hazelton - Moffit School	861,082	0.12757313%
Hazen School	2,921,799	0.43287744%
Hebron School	1,212,372	0.17961834%

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employer Payroll	Employer's Proportionate Share Allocation
Hettinger School	1,410,753	0.20900929%
Hillsboro School	2,583,852	0.38280913%
Hope School	627,976	0.09303746%
Horse Creek Elem. School	66,200	0.00980783%
James River Multidistrict Spec Ed Unit	1,437,415	0.21295939%
Jamestown School	13,476,470	1.99659878%
Kenmare School	1,819,242	0.26952871%
Kensal School	290,286	0.04300719%
Kidder County School District	2,078,879	0.30799522%
Kildeer School	2,730,627	0.40455446%
Kindred School	3,280,787	0.48606317%
Kulm School	1,004,899	0.14888031%
Lake Region Spec Ed	1,722,540	0.25520199%
Lakota School	1,186,104	0.17572653%
Lamoure School	1,569,670	0.23255360%
Langdon Area School	2,281,561	0.33802342%
Larimore School	2,156,303	0.31946590%
Leeds School	1,079,156	0.15988182%
Lewis And Clark School	2,768,029	0.41009581%
Lidgerwood School	1,202,124	0.17810005%
Linton School	1,631,180	0.24166663%
Lisbon School	3,518,035	0.52121244%
Litchville-Marion School	887,132	0.13143247%
Little Heart Elem. School	122,000	0.01807484%
Logan County	4,079	0.00060436%
Lone Tree Elem. School	228,328	0.03382781%
Lonetree Spec Ed Unit	160,160	0.02372844%
Maddock School	963,659	0.14277037%
Mandan Public Schools	20,136,230	2.98327186%
Mandaree School	1,473,602	0.21832065%
Manning Elem. School	97,941	0.01451045%
Marvel Elem. School	842,992	0.12489308%
Maple Valley School	1,671,230	0.24760010%
Mapleton Elem. School	767,307	0.11367987%
Marmarth Elem. School	149,300	0.02211940%
Max School	1,215,541	0.18008787%
May-Port C-G School	2,808,491	0.41609039%
Mcclusky School	657,329	0.09738620%
Mckenzie County	43,618	0.00646214%
Mckenzie County School	7,056,286	1.04542009%
Medina School	1,097,831	0.16264852%
Menoken Elem School	185,750	0.02751969%
Midkota	1,018,578	0.15090690%
Midway School	1,450,343	0.21487472%
Minor School	1,367,470	0.20259668%
Minnewaukan School	1,585,917	0.23496071%
Minot School	44,924,000	6.65569004%
Minto School	1,303,951	0.19318614%
Mohall Lansford Sherwood	2,161,019	0.32016457%
Montpelier School	778,861	0.11539178%
Morton County	31,237	0.00462788%
Mott-Regent School	1,484,346	0.21991248%
Mt Pleasant School	1,656,986	0.24548985%
Munich School	966,811	0.14323741%
N Central Area Career And Tech Center	144,895	0.02146687%
Napoleon School	1,504,427	0.22288748%
Naughton Rural School	86,834	0.01286487%
Nd Center For Distance Education	1,330,154	0.19706822%
Nd Dept Of Public Instruction	265,274	0.03930153%
Nd School For Blind	688,156	0.10195337%
Nd School For Deaf	950,056	0.14075498%
Nd United	317,751	0.04707627%
Nd Youth Correctional Cnt	1,173,553	0.17386713%
Nedrose School	2,580,732	0.38234696%
Nelson County	12,758	0.00189017%
Nesson School	1,624,756	0.24071483%
New England School	1,428,877	0.21169447%
New Public School	2,070,817	0.30680074%

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
New Rockford Sheyenne School	1,651,393	0.24466113%
New Salem-Almont	1,917,867	0.28414058%
New Town School	4,668,667	0.69168375%
Newburg United District	692,764	0.10263609%
North Border School	2,827,925	0.41896968%
North Sargent School	1,525,095	0.22594954%
North Star	1,656,069	0.24535402%
North Valley Area Career	584,649	0.08661828%
Northern Cass School Dist	3,183,231	0.47160979%
Northern Plains Spec Ed	312,745	0.04633453%
Northwood School	1,640,472	0.24304322%
Oakes School	2,022,326	0.29961664%
Oberon Elem School	358,397	0.05309815%
Oliver - Mercer Spec Ed	944,212	0.13988925%
Page School	759,037	0.11245473%
Park River Area School District	2,149,932	0.31852194%
Parshall School	1,615,290	0.23931234%
Peace Garden Spec Ed	565,551	0.08378891%
Pembina Spec Ed Coop	110,240	0.01633255%
Pingree - Buchanan School	851,842	0.12620413%
Pleasant Valley Elem	-	0.00000000%
Powers Lake School	1,118,064	0.16564610%
Richardton-Taylor	1,782,325	0.26405936%
Richland School	1,572,912	0.23303384%
Robinson School	-	0.00000000%
Rolette County	-	0.00000000%
Rolette School	1,311,428	0.19429381%
Roosevelt School	356,717	0.05284922%
Roughrider Area Career And Tech Center	138,350	0.02049717%
Roughrider Service Program	305,382	0.04524370%
Rugby School	3,325,507	0.49268855%
Rural Cass Spec Ed	978,935	0.14503356%
Sargent Central School	1,527,882	0.22636255%
Sawyer School	728,354	0.10790880%
Scranton School	1,125,630	0.16676702%
Se Region Career And Tech	1,501,414	0.22244110%
Selfridge School	911,512	0.13504457%
Sheyenne Valley Area Voc	726,972	0.10770411%
Sheyenne Valley Spec Ed	1,459,724	0.21626459%
Slope County	25,266	0.00374328%
Solen - Cannonball School	1,677,607	0.24854496%
Souris Valley Spec Ed	1,018,717	0.15092752%
South Cent. Prairie Sp Ed	103,305	0.01530509%
South East Education Cooperative	695,641	0.10306229%
South Heart School	1,649,046	0.24431350%
South Prairie Elem School	2,346,109	0.34758639%
South Valley Spec Ed	391,778	0.05804359%
Southwest Special Education Unit	66,836	0.00990205%
St. John'S School	2,616,553	0.38765400%
St. Thomas School	645,932	0.09569773%
Stanley School	3,648,889	0.54059907%
Starkweather School	523,468	0.07755416%
Sterling School	263,715	0.03907055%
Strasburg School District	883,357	0.13087322%
Surrey School	2,424,969	0.35926997%
Sweet Briar Elem School	101,975	0.01510807%
Tgu School District	2,674,610	0.39625538%
Thompson School	2,268,089	0.33602738%
Tioga School	3,098,207	0.45901317%
Turtle Lake-Mercer School	1,252,411	0.18550222%
Twin Buttes Elem. School	429,535	0.06363749%
Underwood School	1,534,803	0.22738788%
United School	3,362,454	0.49816247%
Upper Valley Spec Ed	2,579,370	0.38214516%
Valley - Edinburg School	1,703,521	0.25238414%
Valley City School	6,180,721	0.91570123%
Velva School	2,630,057	0.38965467%
Wahpeton School	6,723,363	0.99609612%

EXHIBIT D
Schedule of Employer Allocations as of June 30, 2017

Employer Name	Covered Employee Payroll	Employer's Proportionate Share Allocation
Ward County	28,762	0.00426119%
Warwick School	1,564,808	0.23183324%
Washburn School	1,649,938	0.24444569%
West Fargo School	58,724,231	8.70025548%
West River Student Services	713,428	0.10569747%
Westhope School	1,108,427	0.16421836%
White Shield School	1,394,346	0.20657853%
Williston School	19,030,364	2.81943282%
Wilmac Special Education	3,886,148	0.57575015%
Wilton School	1,373,628	0.20350914%
Wing School	726,757	0.10767223%
Wishek School	1,295,558	0.19194273%
Wolford School	538,733	0.07981571%
Wyndmere School	1,440,173	0.21336807%
Yellowstone Elem. School	536,378	0.07946680%
Zeeland School	398,922	0.05910207%
Grand Totals:	674,971,342	100%

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Discount Rate Sensitivity					Schedule of Contributions					Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions Share of Contributions	Total Employer Pension Expense
	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Contributions Share		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
Alexander School	0.17806399%	\$ 2,445,755	\$ 1,201,881	\$ 3,251,674	\$ 2,445,755	\$ 1,774,851	\$ 153,240	\$ (153,240)	-	12.75%	\$ 234,195	\$ 57,728	\$ 291,923	
Anamoose School	0.11321014%	1,554,970	764,136	2,067,361	1,554,970	1,128,421	97,427	(97,427)	-	12.75%	148,897	10,972	159,869	
Apple Creek Elem School	0.05151764%	707,608	347,729	940,777	707,608	513,502	44,325	(44,325)	-	12.75%	67,758	(11,443)	56,315	
Ashley School	0.14063328%	1,931,634	949,234	2,568,142	1,931,634	1,401,761	121,027	(121,027)	-	12.75%	184,965	(18,108)	166,857	
Bakker Elem School	0.00562987%	77,328	38,000	102,808	77,328	56,116	4,845	(4,845)	-	12.75%	7,405	(216)	7,189	
Barnes County North	0.24012753%	3,298,213	1,620,792	4,385,033	3,298,213	2,393,469	206,651	(206,651)	-	12.75%	315,823	(82,990)	232,833	
Beach School	0.30984007%	4,255,733	2,091,332	5,658,073	4,255,733	3,088,328	266,645	(266,645)	-	12.75%	407,511	(75,839)	331,672	
Belcourt School	1.24748965%	17,134,592	8,420,198	22,780,743	17,134,592	12,434,340	1,073,575	(1,073,575)	-	12.75%	1,640,736	(159,388)	1,481,348	
Belfield Public School	0.22096375%	3,034,994	1,491,442	4,035,078	3,034,994	2,202,454	190,159	(190,159)	-	12.75%	290,618	2,535	293,153	
Beulah School	0.50863139%	6,986,183	3,433,116	9,288,254	6,986,183	5,069,778	437,722	(437,722)	-	12.75%	668,967	(82,655)	586,312	
Billings Co. School Dist.	0.12333776%	1,694,076	832,495	2,252,304	1,694,076	1,229,368	106,143	(106,143)	-	12.75%	162,218	(3,546)	158,672	
Bismarck Public Schools	10.79080425%	148,214,475	72,834,836	197,053,773	148,214,475	107,557,232	9,286,444	(9,286,444)	-	12.75%	14,192,391	256,915	14,449,306	
Bismarck State College	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(8,930)	(8,930)	
Blessed John Paul II Catholic Sch Network	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(8,788)	(8,788)	
Bottineau School	0.53898062%	7,403,038	3,637,965	9,842,470	7,403,038	5,372,284	463,841	(463,841)	-	12.75%	708,884	(115,372)	593,512	
Bowbells School	0.09296183%	1,276,855	627,466	1,697,601	1,276,855	926,596	80,002	(80,002)	-	12.75%	122,266	10,016	132,282	
Bowman School	0.42070099%	5,778,436	2,839,611	7,682,534	5,778,436	4,193,333	362,051	(362,051)	-	12.75%	553,319	(42,775)	510,544	
Burke Central School	0.13875068%	1,905,776	936,527	2,533,763	1,905,776	1,382,996	119,407	(119,407)	-	12.75%	182,489	(8,996)	173,493	
Burlleigh County Spec. Ed.	0.01417803%	194,739	95,698	258,909	194,739	141,319	12,201	(12,201)	-	12.75%	18,647	4,301	22,948	
Carrington School	0.42749362%	5,871,735	2,885,459	7,906,576	5,871,735	4,261,038	367,896	(367,896)	-	12.75%	562,253	(51,909)	510,344	
Cavalier School	0.33393501%	4,253,966	2,053,966	6,098,077	4,253,966	3,328,494	287,381	(287,381)	-	12.75%	429,201	(11,868)	427,333	
Center Stanton School	0.22226779%	3,052,905	1,500,244	4,058,892	3,052,905	2,215,452	191,281	(191,281)	-	12.75%	292,333	(8,657)	283,676	
Central Cass School	0.53879722%	7,400,519	3,636,727	9,839,121	7,400,519	5,370,456	463,683	(463,683)	-	12.75%	708,642	(54,934)	653,708	
Central Elementary School	0.00911657%	125,218	61,534	166,480	125,218	90,869	7,846	(7,846)	-	12.75%	11,990	(2,283)	9,707	
Central Valley School	0.1883583%	2,587,116	1,271,348	3,439,616	2,587,116	1,877,435	162,097	(162,097)	-	12.75%	247,731	(34,761)	212,970	
Dakota Prairie School	0.27978617%	3,842,935	1,888,476	5,109,250	3,842,935	2,788,766	240,781	(240,781)	-	12.75%	367,983	(6,110)	361,873	
Devils Lake School	1.54383974%	21,205,036	10,420,476	28,192,472	21,205,036	15,388,207	1,328,611	(1,328,611)	-	12.75%	2,030,505	(280,227)	1,750,278	
Dickinson School	2.86181591%	39,307,779	19,316,437	52,260,389	39,307,779	28,525,121	2,462,846	(2,462,846)	-	12.75%	3,763,947	443,922	4,207,869	
Divide School	0.36843994%	5,060,617	2,486,864	6,728,181	5,060,617	3,717,075	317,075	(317,075)	-	12.75%	484,583	(3,879)	480,704	
Drake School	0.06686508%	918,409	451,320	1,221,041	918,409	666,477	57,543	(57,543)	-	12.75%	87,943	(42,009)	45,934	
Drayton School	0.20428277%	2,805,876	1,378,850	3,730,462	2,805,876	2,036,186	175,803	(175,803)	-	12.75%	268,679	32,955	301,634	
Dunsmith School	0.47419828%	6,513,235	3,200,702	8,659,462	6,513,235	4,726,567	408,090	(408,090)	-	12.75%	623,680	97,574	721,254	
E Central Cir Exc Childn	0.11849291%	1,627,531	799,793	2,163,831	1,627,531	1,181,077	101,974	(101,974)	-	12.75%	155,845	(18,992)	136,853	
Earl Elem. School	0.00472613%	64,915	31,900	86,305	64,915	47,108	4,067	(4,067)	-	12.75%	6,216	(894)	5,322	
Edgeley School	0.19442995%	2,670,545	1,312,346	3,550,538	2,670,545	1,937,979	167,324	(167,324)	-	12.75%	255,720	(9,309)	246,411	
Edmore School	0.10408017%	1,429,568	702,511	1,900,636	1,429,568	1,037,418	89,570	(89,570)	-	12.75%	136,889	(9,933)	126,956	
Eight Mile School	0.22749741%	3,124,736	1,535,542	4,154,391	3,124,736	2,267,578	195,782	(195,782)	-	12.75%	299,211	34,872	334,083	
Elgin-New Leipzig School	0.17669620%	2,426,995	1,192,662	3,226,733	2,426,995	1,761,238	152,064	(152,064)	-	12.75%	232,399	19,855	252,254	
Ellendale School	0.25362188%	3,483,562	1,711,875	4,631,457	3,483,562	2,527,974	218,264	(218,264)	-	12.75%	333,571	(68,006)	265,565	
Emerald Elementary School	0.09940345%	1,227,979	603,448	1,632,620	1,227,979	891,128	70,940	(70,940)	-	12.75%	117,586	(3,892)	113,694	
Emerlin Area School District	0.31327299%	4,302,885	2,114,503	5,720,762	4,302,885	3,122,545	269,599	(269,599)	-	12.75%	412,026	5,599	417,625	
Fairmount School	0.14916754%	2,048,717	1,006,771	2,723,806	2,048,717	1,486,726	128,363	(128,363)	-	12.75%	196,176	(21,047)	175,129	
Fargo Public Schools	10.41096235%	142,997,249	70,271,012	190,117,378	142,997,249	103,771,162	8,959,556	(8,959,556)	-	12.75%	13,692,812	(819,446)	12,873,366	
Fessenden-Bowdon School	0.15893318%	2,196,723	1,079,503	2,920,582	2,196,723	1,594,132	137,637	(137,637)	-	12.75%	210,349	10,774	221,123	
Finley-Sharon School	0.14850105%	2,039,700	1,002,340	2,711,818	2,039,700	1,480,183	127,798	(127,798)	-	12.75%	195,313	(65,769)	129,544	
Flasher School	0.17332245%	2,380,628	1,169,877	3,165,088	2,380,628	1,727,690	149,159	(149,159)	-	12.75%	227,959	(12,420)	215,539	
Fordville Lanxin School	0.08755230%	1,202,553	590,953	1,598,816	1,202,553	872,677	75,347	(75,347)	-	12.75%	115,151	(10,294)	104,857	
Fort Ransom Elem. School	0.02438798%	334,975	164,612	445,355	334,975	243,087	20,988	(20,988)	-	12.75%	32,076	(3,029)	29,047	
Fort Totten School	0.23045523%	3,165,362	1,555,507	4,208,405	3,165,362	2,297,060	198,327	(198,327)	-	12.75%	303,102	(65,189)	247,913	
Fort Yates School	0.19610793%	2,693,593	1,323,672	3,581,180	2,693,593	1,954,704	168,768	(168,768)	-	12.75%	257,927	36,170	294,097	
Gackle-Streeter Pub Sch	0.11764958%	1,615,947	794,101	2,148,431	1,615,947	1,172,671	101,248	(101,248)	-	12.75%	154,736	(9,308)	145,428	
Garrison School	0.34658000%	4,760,366	2,339,316	6,328,990	4,760,366	3,454,533	298,263	(298,263)	-	12.75%	455,832	(8,499)	447,333	
Glen Ulin School	0.17579406%	2,414,577	1,186,580	3,210,223	2,414,577	1,752,226	151,286	(151,286)	-	12.75%	231,210	8,669	239,879	
Glenburn School	0.27729355%	3,808,698	1,871,652	5,063,732	3,808,698	2,763,921	238,636	(238,636)	-	12.75%	364,705	33,106	397,811	
Goodrich School	0.04279276%	587,770	288,839	781,450	587,770	426,536	36,827	(36,827)	-	12.75%	56,282	(8,315)	47,967	
Grafton School	0.66644086%	9,153,737	4,498,285	12,170,055	9,153,737	6,642,743	573,531	(573,531)	-	12.75%	876,523	(38,563)	837,960	
Grand Forks School	7.05989056%	96,970,651	47,652,846	128,924,200	96,970,651	70,370,285	6,075,739	(6,075,739)	-	12.75%	9,285,499	(223,631)	9,061,868	
Great North West Cooperative	0.02045539%	280,960	138,068	373,541	280,960	203,889	17,604	(17,604)	-	12.75%	26,904	(3,255)	23,649	
Grinora School	0.17287041%	2,374,420	1,166,826	3,156,833	2,374,420	1,723,084	148,770	(148,770)	-	12.75%	227,364	9,158	236,522	
Griggs County Central Sch	0.24537163%	3,370,243	1,656,188	4,480,797	3,370,243	2,445,739	211,164	(211,164)	-	12.75%	322,720	(75,820)	246,900	
Gst Educational Services	0.25101030%	3,447,691	1,694,248	4,583,766	3,447,691	2,501,943	216,017	(216,017)	-	12.75%	330,136	3,915	334,051	
Halliday School	0.05830853%	800,883	393,566	1,064,788	800,883	581,190	50,180	(50,180)	-	12.75%	76,689	(22,742)	53,947	
Hankinson School	0.21833944%	2,998,948	1,473,729	3,987,155	2,998,948	2,176,296	187,900	(187,900)	-	12.75%	287,167	(82,519)	204,648	
Harvey School	0.34707023%	4,767,099	2,342,625	6,337,943	4,767,099	3,459,419	298,685	(298,685)	-	12.75%	456,477	(22,206)	434,271	
Hatton Eielson Psd	0.17132285%	2,363,163	1,156,380											

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Discount Rate Sensitivity						Schedule of Contributions				Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions Share of Contributions	Total Employer Pension Expense
	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Contributions and Differences Between Employer		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Hettinger School	0.20900929%	2,870,796	1,410,753	3,816,775	2,870,796	2,083,298	179,871	(179,871)	-	12.75%	274,895	(93,312)	181,583	
Hillsboro School	0.38280133%	5,257,982	2,583,852	6,990,580	5,257,982	3,815,646	329,441	(329,441)	-	12.75%	503,482	29,025	532,507	
Hope School	0.09303746%	1,277,893	627,976	1,698,982	1,277,893	927,350	80,067	(80,067)	-	12.75%	122,366	(14,983)	107,383	
Horse Creek Elem. School	0.00980783%	134,713	66,200	179,103	134,713	97,759	8,441	(8,441)	-	12.75%	12,900	6,883	19,783	
James River Multidistrict Spec Ed Unit	0.21295939%	2,925,052	1,437,415	3,888,909	2,925,052	2,122,671	183,270	(183,270)	-	12.75%	280,091	29,872	309,963	
Jamesstown School	1.99659878%	27,423,798	13,476,470	36,460,426	27,423,798	19,901,078	1,718,250	(1,718,250)	-	12.75%	2,625,987	(289,585)	2,336,402	
Kenmare School	0.26952871%	3,702,046	1,819,242	4,921,936	3,702,046	2,686,525	231,953	(231,953)	-	12.75%	354,492	(39,947)	314,545	
Kensal School	0.04300719%	590,715	290,286	785,366	590,715	428,674	37,012	(37,012)	-	12.75%	56,564	(38,028)	18,536	
Kidder County School District	0.30799522%	4,230,394	2,078,879	5,624,383	4,230,394	3,069,939	265,057	(265,057)	-	12.75%	405,085	(100,230)	304,855	
Killdeer School	0.40455446%	5,566,660	2,730,627	7,387,678	5,566,660	4,032,392	348,155	(348,155)	-	12.75%	532,082	6,691	538,773	
Kindred School	0.48606317%	6,676,203	3,280,787	8,876,130	6,676,203	4,844,830	418,300	(418,300)	-	12.75%	639,285	(30,426)	608,859	
Kulm School	0.14888031%	2,044,909	1,004,899	2,718,743	2,044,909	1,483,963	128,125	(128,125)	-	12.75%	195,812	(47,704)	148,108	
Lake Region Spec Ed	0.25520199%	3,505,265	1,722,540	4,660,312	3,505,265	2,543,723	219,624	(219,624)	-	12.75%	365,649	(66,411)	279,238	
Lakota School	0.17572653%	2,413,649	1,186,104	3,208,989	2,413,649	1,751,552	151,228	(151,228)	-	12.75%	231,121	(33,726)	197,395	
Lamouree School	0.23255360%	3,194,184	1,569,870	4,246,724	3,194,184	2,317,976	200,133	(200,133)	-	12.75%	305,862	(14,924)	290,938	
Langdon Area School	0.33802342%	4,642,839	2,281,561	6,172,736	4,642,839	3,369,245	290,899	(290,899)	-	12.75%	444,579	7,073	451,652	
Lanimore School	0.31946590%	3,387,946	1,556,303	5,833,853	3,387,946	3,184,273	274,929	(274,929)	-	12.75%	420,171	(61,668)	358,503	
Leeds School	0.15988182%	2,196,018	1,079,156	2,919,645	2,196,018	1,593,620	137,592	(137,592)	-	12.75%	210,281	(21,314)	188,967	
Lewis And Clark School	0.41009581%	5,632,772	2,768,029	7,488,870	5,632,772	4,087,626	352,924	(352,924)	-	12.75%	539,370	7,300	546,670	
Lidgerwood School	0.17810005%	2,446,250	1,202,124	3,252,333	2,446,250	1,775,210	153,271	(153,271)	-	12.75%	234,243	(14,835)	219,408	
Linton School	0.24166663%	3,319,353	1,631,180	4,413,139	3,319,353	2,408,810	207,976	(207,976)	-	12.75%	317,847	(52,011)	265,836	
Lisbon School	0.52121244%	7,158,987	3,518,035	9,518,000	7,158,987	5,195,180	448,550	(448,550)	-	12.75%	685,514	(66,405)	629,109	
Litchville-Marion School	0.13143247%	1,805,259	887,132	2,400,124	1,805,259	1,310,052	113,109	(113,109)	-	12.75%	172,864	(12,709)	160,155	
Little Heart Elem. School	0.01807484%	248,263	122,000	390,070	248,263	180,161	15,555	(15,555)	-	12.75%	23,773	3,337	27,110	
Logan County	0.00060436%	8,301	4,079	11,036	8,301	6,024	520	(520)	-	12.75%	795	(142)	653	
Lone Tree Elem. School	0.03382781%	464,634	228,328	617,739	464,634	337,178	29,112	(29,112)	-	12.75%	44,491	115	44,606	
Lonetree Spec Ed Unit	0.02372844%	325,916	160,160	433,311	325,916	236,513	20,420	(20,420)	-	12.75%	31,208	(174)	31,034	
Maddock School	0.14277037%	1,960,988	963,659	2,607,168	1,960,988	1,423,062	122,867	(122,867)	-	12.75%	187,776	(26,145)	161,631	
Mandan Public Schools	2.98327186%	40,976,007	20,136,230	54,478,328	40,976,007	29,735,732	2,567,370	(2,567,370)	-	12.75%	3,923,689	270,408	4,194,097	
Mandaree School	0.21832065%	2,998,690	1,473,602	3,986,812	2,998,690	2,176,109	187,884	(187,884)	-	12.75%	287,142	(99,400)	187,742	
Manning Elem. School	0.01451045%	199,305	97,941	264,979	199,305	144,633	12,488	(12,488)	-	12.75%	19,085	4,806	23,891	
Manvel Elem. School	0.12489308%	1,715,439	842,992	2,280,706	1,715,439	1,244,871	107,482	(107,482)	-	12.75%	164,263	(2,608)	161,655	
Maple Valley School	0.24760010%	3,400,851	1,671,230	4,521,492	3,400,851	2,467,951	213,082	(213,082)	-	12.75%	325,651	(28,006)	297,645	
Mapleton Elem. School	0.11367987%	1,561,422	767,307	2,075,939	1,561,422	1,133,103	97,832	(97,832)	-	12.75%	149,515	10,670	160,185	
Marmarth Elem. School	0.02211940%	303,816	149,300	403,928	303,816	220,475	19,036	(19,036)	-	12.75%	29,092	(7,268)	21,824	
Max School	0.18008787%	2,473,553	1,215,541	3,288,633	2,473,553	1,795,024	154,982	(154,982)	-	12.75%	236,951	(6,829)	230,122	
May-Port C-G School	0.41609039%	5,715,109	2,808,491	7,598,338	5,715,109	4,147,377	358,083	(358,083)	-	12.75%	547,255	(2,262)	544,993	
Moclusky School	0.09738620%	1,337,625	657,329	1,778,396	1,337,625	970,696	83,809	(83,809)	-	12.75%	128,085	(48,557)	79,528	
Mckenzie County	0.00646214%	88,759	43,618	118,007	88,759	64,411	5,561	(5,561)	-	12.75%	8,499	(4,141)	4,358	
Mckenzie County School	1.04542009%	14,359,114	7,056,286	19,090,697	14,359,114	10,420,214	899,677	(899,677)	-	12.75%	1,374,969	464,647	1,839,615	
Medina School	0.16264852%	2,234,019	1,097,531	2,970,168	2,234,019	1,621,197	139,973	(139,973)	-	12.75%	213,920	8,501	222,421	
Menoken Elem. School	0.02751989%	377,990	185,750	502,544	377,990	274,302	23,683	(23,683)	-	12.75%	36,195	12,825	49,020	
Midkota	0.15090890%	2,072,745	1,018,578	2,755,751	2,072,745	1,504,163	129,869	(129,869)	-	12.75%	198,477	(35,801)	162,676	
Midway School	0.21487472%	2,951,360	1,450,343	3,923,895	2,951,360	2,141,762	184,919	(184,919)	-	12.75%	282,610	(25,705)	256,905	
Minor School	0.20259668%	2,782,718	1,367,470	3,698,672	2,782,718	2,019,380	174,352	(174,352)	-	12.75%	266,461	(63,484)	202,977	
Minnewaukan School	0.23496071%	3,227,246	1,585,917	4,290,681	3,227,246	2,341,968	202,205	(202,205)	-	12.75%	309,027	(74,079)	234,948	
Minot School	6.65569004%	91,417,617	44,924,000	121,541,342	91,417,617	66,340,523	5,727,812	(5,727,812)	-	12.75%	8,753,764	(429,649)	8,324,115	
Minto School	0.19318614%	2,653,461	1,303,951	3,527,824	2,653,461	1,925,581	166,254	(166,254)	-	12.75%	254,084	(17,009)	237,075	
Mohall Lansford Sherwood	0.32016457%	4,397,543	2,161,019	5,846,611	4,397,543	3,191,237	276,530	(276,530)	-	12.75%	421,090	(103,743)	317,347	
Montpelier School	0.11539178%	1,584,936	778,861	2,107,200	1,584,936	1,150,166	99,305	(99,305)	-	12.75%	151,767	2,937	154,704	
Morton County	0.00462788%	63,565	31,237	84,511	63,565	46,128	3,983	(3,983)	-	12.75%	6,087	270	6,357	
Mott-Regent School	0.21991248%	3,020,555	1,484,346	4,015,881	3,020,555	2,191,975	189,254	(189,254)	-	12.75%	289,236	(48,199)	241,037	
Mt Pleasant School	0.24548985%	3,371,866	1,656,986	4,482,956	3,371,866	2,446,918	211,266	(211,266)	-	12.75%	322,876	(5,006)	317,870	
Munich School	0.14323741%	1,967,403	966,811	2,615,697	1,967,403	1,427,717	123,268	(123,268)	-	12.75%	188,390	22,950	211,340	
N Central Area Career And Tech Center	0.02146687%	294,853	144,895	392,012	294,853	213,971	18,474	(18,474)	-	12.75%	28,234	(3,888)	24,346	
Napoleon School	0.22288748%	3,061,417	1,504,427	4,070,208	3,061,417	2,221,629	191,814	(191,814)	-	12.75%	293,148	(28,442)	264,706	
Naughton Rural School	0.01286487%	176,702	86,834	234,928	176,702	128,230	11,071	(11,071)	-	12.75%	16,820	2,733	19,553	
Nd Center For Distance Education	0.19706822%	2,706,783	1,330,154	3,598,716	2,706,783	1,964,275	169,595	(169,595)	-	12.75%	259,190	74,014	333,204	
Nd Dept Of Public Instruction	0.03930153%	539,817	265,274	717,696	539,817	391,738	33,822	(33,822)	-	12.75%	51,691	34,684	86,375	
Nd School For Blind	0.10195337%	1,400,356	688,156	1,861,798	1,400,356	1,016,219	87,740	(87,740)	-	12.75%	134,092	(15,046)	119,046	
Nd School For Deaf	0.14075498%	1,933,306	950,056	2,570,364	1,933,306	1,402,974	121,132	(121,132)	-	12.75%	185,125	1,695	186,820	
Nd United	0.04707627%	646,605	317,751	859,672	646,605	469,232	40,513	(40,513)	-	12.75%	61,916	(5,927)	55,989	
Nd Youth Correctional Cnt	0.17386713%	2,388,110	1,173,553	3,175,034	2,388,110	1,733,019	149,628	(149,628)	-	12.75%	228,675	(36,384)	192,291	
Nedrose School	0.38234696%	5,251,634	2,580,732	6,982,140	5,251,634	3,811,039	329,043	(329,043)	-	12.75%	502,874	263,648	766,522	
Nelson County	0.00189017%	25,962	12,758	34,517	25,9									

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Discount Rate Sensitivity				Schedule of Contributions					Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Total Employer Pension Expense	
	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense		Contributions and Proportionate Share of Contributions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
New Rockford Sheyenne School	0.24466113%	3,360,484	1,651,393	4,467,823	3,360,484	2,438,657	210,553	(210,553)	-	12.75%	321,786	(61,400)	260,386
New Salem-Almont	0.28414058%	3,902,744	1,917,867	5,188,767	3,902,744	2,832,168	244,528	(244,528)	-	12.75%	373,710	30,644	404,354
New Town School	0.69168375%	9,500,454	4,668,667	12,631,023	9,500,454	6,894,351	595,255	(595,255)	-	12.75%	909,723	69,061	978,784
Newburg United District	0.10263609%	1,409,733	692,764	1,874,265	1,409,733	1,023,024	88,327	(88,327)	-	12.75%	134,990	4,224	139,214
North Border School	0.41896969%	5,754,656	2,827,925	7,650,918	5,754,656	4,176,076	360,510	(360,510)	-	12.75%	551,042	(64,449)	486,593
North Sargent School	0.22594954%	3,103,475	1,525,095	4,126,125	3,103,475	2,252,150	194,450	(194,450)	-	12.75%	297,176	34,457	331,633
North Star	0.24535402%	3,370,001	1,656,069	4,480,476	3,370,001	2,445,564	211,149	(211,149)	-	12.75%	322,697	(21,149)	320,045
North Valley Area Career	0.08661828%	1,189,724	584,649	1,581,760	1,189,724	863,367	74,543	(74,543)	-	12.75%	113,923	(23,711)	90,212
Northern Cass School Dist	0.47160979%	6,477,682	3,183,231	8,612,193	6,477,682	4,700,766	405,862	(405,862)	-	12.75%	620,275	106,252	726,527
Northern Plains Spec Ed	0.04633453%	636,417	317,745	846,127	636,417	461,839	39,875	(39,875)	-	12.75%	60,941	23,514	84,455
Northwood School	0.24304322%	3,338,261	1,640,472	4,438,277	3,338,261	2,422,531	209,160	(209,160)	-	12.75%	319,658	33,902	353,560
Oakes School	0.29961664%	4,115,312	2,022,326	5,471,380	4,115,312	2,986,426	257,847	(257,847)	-	12.75%	394,065	(47,406)	346,659
Oberon Elem School	0.05309815%	729,317	358,397	969,640	729,317	529,255	45,696	(45,696)	-	12.75%	69,836	(6,415)	33,421
Oliver - Mercer Spec Ed	0.13988925%	1,921,415	944,212	2,554,555	1,921,415	1,394,345	120,387	(120,387)	-	12.75%	183,987	(13,232)	170,755
Page School	0.11245473%	1,544,595	759,037	2,053,566	1,544,595	1,120,891	96,777	(96,777)	-	12.75%	147,904	(13,531)	144,373
Park River Area School District	0.31852194%	4,374,981	2,149,932	5,816,615	4,374,981	3,174,864	274,116	(274,116)	-	12.75%	418,930	(41,841)	377,089
Parshall School	0.23931234%	3,287,017	1,615,290	4,370,147	3,287,017	2,385,343	205,949	(205,949)	-	12.75%	314,751	(76,494)	238,257
Peace Garden Spec Ed	0.08378891%	1,150,862	565,551	1,530,092	1,150,862	835,165	72,108	(72,108)	-	12.75%	110,202	13,874	124,076
Pembina Spec Ed Coop	0.01633255%	224,332	110,240	298,253	224,332	162,795	14,056	(14,056)	-	12.75%	21,481	(20,888)	593
Pingree - Buchanan School	0.12620413%	1,733,446	851,842	2,304,647	1,733,446	1,257,938	108,610	(108,610)	-	12.75%	165,987	(7,843)	158,144
Pleasant Valley Elem	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(4,753)	(4,753)
Powers Lake School	0.16564610%	2,275,192	1,118,064	3,024,908	2,275,192	1,651,076	142,553	(142,553)	-	12.75%	217,863	5,750	223,613
Richardton-Taylor	0.26405936%	3,626,923	1,782,325	4,822,059	3,626,923	2,632,009	227,246	(227,246)	-	12.75%	347,299	(3,447)	343,852
Richland School	0.23303384%	3,200,780	1,572,912	4,255,494	3,200,780	2,322,762	200,546	(200,546)	-	12.75%	306,493	(43,233)	263,260
Robinson School	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(20,228)	(20,228)
Rolette County	0.00000000%	-	-	-	-	-	-	-	-	12.75%	-	(1,137)	(1,137)
Rolette School	0.19429381%	2,668,676	1,311,428	3,548,051	2,668,676	1,936,622	167,207	(167,207)	-	12.75%	255,541	29,044	284,585
Roosevelt School	0.05284922%	725,898	356,717	965,094	725,898	526,774	45,481	(45,481)	-	12.75%	69,509	(22,780)	46,729
Roughrider Area Career And Tech Center	0.02049717%	281,534	138,350	374,304	281,534	204,305	17,640	(17,640)	-	12.75%	26,958	(11,279)	15,679
Roughrider Service Program	0.04524370%	621,434	305,382	826,207	621,434	450,966	38,936	(38,936)	-	12.75%	59,506	50,097	109,603
Rugby School	0.49268855%	6,767,204	3,325,507	8,997,118	6,767,204	4,910,868	424,002	(424,002)	-	12.75%	647,999	(13,564)	634,435
Rural Cass Spec Ed	0.14503356%	1,992,073	978,935	2,648,497	1,992,073	1,445,621	124,814	(124,814)	-	12.75%	190,753	(47,194)	143,559
Sargent Central School	0.22636255%	3,109,148	1,527,882	4,133,667	3,109,148	2,256,266	194,805	(194,805)	-	12.75%	297,719	(2,587)	295,132
Sawyer School	0.10790880%	1,482,155	728,354	1,970,552	1,482,155	1,075,580	92,865	(92,865)	-	12.75%	141,925	(50,936)	90,989
Scranton School	0.16676702%	2,290,588	1,125,830	3,045,377	2,290,588	1,662,249	143,518	(143,518)	-	12.75%	219,337	(9,771)	209,566
Se Region Career And Tech	0.22244110%	3,055,296	1,501,414	4,062,057	3,055,296	2,217,179	191,430	(191,430)	-	12.75%	292,961	9,983	302,944
Selfridge School	0.13504457%	911,512	456,872	1,264,085	911,512	663,055	116,218	(116,218)	-	12.75%	177,615	(6,211)	171,404
Sheyenne Valley Area Voc	0.10770411%	1,479,344	726,972	1,966,814	1,479,344	1,073,540	92,689	(92,689)	-	12.75%	141,656	(14,631)	127,025
Sheyenne Valley Spec Ed	0.21626459%	2,970,450	1,459,724	3,949,266	2,970,450	2,155,615	186,115	(186,115)	-	12.75%	284,438	(66,016)	218,422
Slope County	0.00374329%	51,415	25,266	68,357	51,415	37,311	3,221	(3,221)	-	12.75%	4,923	(313)	4,610
Solen - Cannonball School	0.24854496%	3,413,829	1,677,507	4,538,746	3,413,829	2,477,369	213,895	(213,895)	-	12.75%	326,894	(66,615)	270,279
Souirs Valley Spec Ed	0.15092752%	2,073,028	1,018,717	2,756,128	2,073,028	1,504,369	129,887	(129,887)	-	12.75%	198,504	(175,275)	23,229
South Cent. Prairie Sp Ed	0.01530509%	210,219	103,305	279,490	210,219	152,553	13,171	(13,171)	-	12.75%	20,130	(1,105)	19,025
South East Education Cooperative	0.10306229%	1,415,587	695,641	1,892,048	1,415,587	1,027,272	88,694	(88,694)	-	12.75%	135,551	179,759	315,309
South Heart School	0.23441350%	3,355,709	1,649,046	4,461,474	3,355,709	2,435,192	210,253	(210,253)	-	12.75%	321,328	(53,387)	374,715
South Prairie Elem School	0.34758639%	4,774,189	2,346,109	6,347,368	4,774,189	3,464,564	299,129	(299,129)	-	12.75%	457,156	239,795	696,951
South Valley Spec Ed	0.05804359%	797,244	391,778	1,059,950	797,244	578,549	49,952	(49,952)	-	12.75%	76,341	(8,619)	67,722
Southwest Special Education Unit	0.00990205%	136,007	66,836	180,824	136,007	98,699	8,522	(8,522)	-	12.75%	13,023	(811)	12,212
St. John's School	0.38785400%	5,324,528	2,615,553	7,079,054	5,324,528	3,863,937	333,611	(333,611)	-	12.75%	509,854	(5,942)	503,912
St. Thomas School	0.09569773%	1,314,433	645,932	1,747,562	1,314,433	953,866	82,356	(82,356)	-	12.75%	125,865	(23,192)	102,673
Stark School	0.54059907%	7,425,267	3,648,889	9,872,025	7,425,267	5,388,416	465,233	(465,233)	-	12.75%	711,012	96,521	807,533
Starkweather School	0.07755416%	1,065,226	523,468	1,416,237	1,065,226	773,020	66,742	(66,742)	-	12.75%	102,002	(31,011)	70,991
Sterling School	0.03907056%	536,644	263,715	713,478	536,644	389,433	33,624	(33,624)	-	12.75%	51,387	6,211	57,598
Strasburg School District	0.13087322%	1,797,577	883,357	2,389,911	1,797,577	1,304,477	112,628	(112,628)	-	12.75%	172,828	(14,600)	157,528
Surrey School	0.35926997%	4,934,666	2,424,969	6,560,725	4,934,666	3,581,020	309,184	(309,184)	-	12.75%	472,523	(14,996)	457,527
Sweet Briar Elem School	0.01510807%	207,513	101,975	275,893	207,513	150,590	13,002	(13,002)	-	12.75%	19,871	4,663	24,534
Tgu School District	0.33625538%	5,442,670	2,674,610	7,236,126	5,442,670	3,949,671	341,013	(341,013)	-	12.75%	521,167	(68,333)	462,834
Thompson School	0.3602738%	2,268,089	1,134,423	3,136,286	2,268,089	1,636,286	289,181	(289,181)	-	12.75%	441,953	26,008	467,961
Tioga School	0.45901317%	6,304,664	3,098,207	8,382,163	6,304,664	4,575,209	395,022	(395,022)	-	12.75%	603,708	90,182	693,890
Turtle Lake-Mercer School	0.18555022%	2,548,580	1,252,411	3,398,382	2,548,580	1,849,470	159,682	(159,682)	-	12.75%	244,041	(39,288)	207,753
Twin Buttes Elem. School	0.06363749%	874,077	429,535	1,162,101	874,077	634,306	54,766	(54,766)	-	12.75%	83,698	(20,390)	63,308
Underwood School	0.22738788%	3,123,231	1,534,803	4,152,391	3,123,231	2,266,486	195,687	(195,687)	-	12.75%	299,076	(30,958)	268,109
United School	0.49816247%	6,842,390	3,362,454	9,097,079	6,842,390	4,965,429	428,713	(428,713)	-	12.75%	655,198	38,041	693,239
Upper Valley Spec Ed	0.38214516%	5,248,862	2,579,370	6,978,455	5,248,862	3,809,028	328,870	(328,870)	-	12.75%	502,609	31,010	533,619
Valley - Edinburg School	0.25238414%	3,466,561	1,703,521	4,608,855	3,466,561	2,515,636	217,199	(217,199)	-	12.75%	331,943	17,183	349,126
Valley City School	0.91570123%	12,577,392	6,180,721	16,721,866	12,577,392	9,127,243	788,042	(788,042)	-	12.75%	1,204,538	(147,400)	1,056,958
Velva School	0.38965467%	5,352,007	2,630,507	7,115,589	5,352,007	3,883,879	335,332	(335,332)	-	12.75%	512,486	(15,289)	497,197
Wahpeton School	0.99609612%	13,681,637	6,723,363	18,189,979	13,681,637	9,928,578	857,229	(857,229)	-	12.75%	1,310,096	(133,754)	1,176,342

EXHIBIT E
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Discount Rate Sensitivity			Schedule of Contributions					Pension Expense				
	Employer's Proportionate Share Allocation	Net Pension Liability	Covered Employee Payroll	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)	Statutory Required Contribution	Contributions In Relation to the Statutory Required Contribution	Contribution Deficiency/ (Excess)	Contributions as a Percentage of Covered Employee Payroll	Proportionate Share of Plan Pension Expense	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Ward County	0.00426119%	58,529	28,762	77,815	58,529	42,473	3,667	(3,667)	-	12.75%	5,604	(385)	5,219
Warwick School	0.23183324%	3,184,289	1,564,808	4,233,569	3,184,289	2,310,795	199,513	(199,513)	-	12.75%	304,914	(53,908)	251,006
Washburn School	0.24444569%	3,357,525	1,649,938	4,463,888	3,357,525	2,436,510	210,367	(210,367)	-	12.75%	321,502	(3,943)	317,559
West Fargo School	8.70025548%	119,500,250	58,724,231	158,877,701	119,500,250	86,719,708	7,487,341	(7,487,341)	-	12.75%	11,442,838	2,039,453	13,482,291
West River Student Services	0.10569747%	1,451,782	713,428	1,930,170	1,451,782	1,053,538	90,962	(90,962)	-	12.75%	139,017	10,136	149,153
Westhope School	0.16421836%	2,255,581	1,108,427	2,998,836	2,255,581	1,636,845	141,324	(141,324)	-	12.75%	215,985	4,707	220,692
White Shield School	0.20657853%	2,837,409	1,394,346	3,772,386	2,837,409	2,059,069	177,779	(177,779)	-	12.75%	271,698	(50,224)	221,474
Williston School	2.81943282%	38,725,636	19,030,364	51,486,420	38,725,636	28,102,668	2,426,372	(2,426,372)	-	12.75%	3,708,203	705,923	4,414,126
Wilmac Special Education	0.57575015%	7,908,077	3,886,148	10,513,928	7,908,077	5,738,784	495,484	(495,484)	-	12.75%	757,244	255,473	1,012,717
Wilton School	0.20350914%	2,795,250	1,373,628	3,716,335	2,795,250	2,028,475	175,138	(175,138)	-	12.75%	267,661	13,837	281,498
Wing School	0.10767223%	1,478,906	726,757	1,966,231	1,478,906	1,073,222	92,662	(92,662)	-	12.75%	141,614	(802)	140,812
Wishek School	0.19194273%	2,636,383	1,295,558	3,505,118	2,636,383	1,913,187	165,184	(165,184)	-	12.75%	252,449	6,969	259,418
Wolford School	0.07981571%	1,096,289	538,733	1,457,536	1,096,289	795,562	68,688	(68,688)	-	12.75%	104,976	1,337	106,313
Wyndmere School	0.21336807%	2,930,665	1,440,173	3,896,372	2,930,665	2,126,744	183,622	(183,622)	-	12.75%	280,628	(36,698)	243,930
Yellowstone Elem. School	0.07946680%	1,091,497	536,378	1,451,165	1,091,497	792,085	68,388	(68,388)	-	12.75%	104,517	156	104,673
Zeeland School	0.05910207%	811,782	398,922	1,079,279	811,782	589,099	50,863	(50,863)	-	12.75%	77,733	(29,688)	48,045
Grand Totals:	100%	1,373,525,753	674,971,342	1,826,126,843	1,373,525,753	996,748,988	86,058,868	(86,058,868)	-	12.75%	131,523,017	-	131,523,017

Note: Columns may not foot due to rounding.

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources					Deferred (Inflows)/Outflows Recognized in Future Pension Expense (Year Ended June 30):				
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	2018	2019	2020	2021	2022	Thereafter
Alexander School	\$ 9,381	\$ 33,783	\$ 174,324	\$ 296,261	\$ 513,749	\$ 26,699	\$ -	\$ 28,869	\$ 55,568	\$ 98,704	\$ 151,694	\$ 118,517	\$ 60,310	\$ 36,499	\$ (7,543)
Anamoose School	5,964	21,479	110,832	69,654	207,929	16,975	-	23,042	40,017	37,024	70,714	49,621	12,612	3,987	1,929
Apple Creek Elem School	2,714	9,774	50,436	7,656	70,580	7,725	-	57,530	65,255	412	15,743	6,145	(10,696)	(2,671)	(3,608)
Ashley School	7,409	26,681	137,680	11,217	182,987	21,086	-	114,553	135,639	14,255	56,105	29,902	(16,065)	(24,698)	(12,148)
Bakker Elem School	297	1,068	5,512	3,348	10,225	844	-	3,592	4,436	1,080	2,755	1,706	(133)	(91)	472
Barnes County North	12,651	45,558	235,084	-	293,293	36,005	-	387,015	423,020	(27,731)	43,728	(1,013)	(79,501)	(54,305)	(10,903)
Beach School	16,324	58,784	303,333	-	378,441	46,457	-	382,798	429,255	(4,538)	87,667	29,937	(71,342)	(54,177)	(38,362)
Belcourt School	65,723	236,677	1,221,290	-	1,523,690	187,048	-	794,365	981,413	127,687	498,924	266,491	(141,277)	(135,204)	(74,344)
Belfield Public School	11,641	41,922	216,323	70,799	340,685	33,131	-	105,797	53,384	119,140	77,970	7,490	5,745	(5,846)	(15,504)
Beulah School	26,797	96,499	497,949	-	621,245	76,264	-	433,667	509,931	34,392	185,755	90,986	(75,270)	(85,104)	(39,445)
Billings Co. School Dist.	6,498	120,747	336,542	185,897	18,493	28,400	-	153,603	172,906	24,837	61,541	38,560	(1,754)	31,532	9,731
Bismarck Public Schools	568,507	2,047,258	10,564,175	2,369,002	15,548,942	1,617,968	-	1,080,312	2,698,280	2,740,116	5,951,328	3,940,776	413,568	(267,972)	72,847
Bismarck State College	-	0	-	-	-	-	-	35,718	(8,930)	(8,930)	(8,930)	(8,930)	(8,928)	-	-
Blessed John Paul II Catholic Sch Network	-	0	-	-	-	-	-	43,516	43,516	(8,788)	(8,788)	(8,788)	(8,785)	(8,367)	-
Bottineau School	28,396	102,257	527,661	-	658,314	80,815	-	633,884	714,699	8,659	169,053	68,630	(107,548)	(117,729)	(77,451)
Bowbells School	4,898	17,637	91,009	84,043	197,587	13,939	-	16,342	30,281	31,409	59,073	41,752	11,368	11,598	12,108
Bowman School	22,164	79,816	411,865	-	513,845	63,080	-	15,919	278,999	54,038	179,233	100,848	(36,670)	(49,494)	(13,107)
Burke Central School	7,310	26,324	135,837	213,967	383,438	20,804	-	235,796	256,600	22,934	64,224	38,372	(6,983)	24,738	(16,448)
Burleigh County Spec. Ed.	747	2,690	13,880	27,109	44,426	2,126	-	8,237	10,363	7,564	11,782	9,140	4,508	(368)	1,439
Carrington School	22,522	81,105	418,515	42,268	564,410	64,098	-	362,346	426,444	46,466	173,683	94,032	(45,704)	(73,982)	(56,527)
Cavaller School	17,593	63,355	326,922	57,193	465,063	50,770	-	147,836	197,906	64,977	164,351	102,132	(7,020)	(35,158)	(22,122)
Center Stanton School	11,710	42,169	217,600	19,501	290,980	33,327	-	70,233	103,560	42,491	108,635	67,222	(5,434)	(19,514)	(5,979)
Central Cass School	28,386	102,222	527,481	68,433	726,522	80,787	-	307,084	387,871	69,056	129,006	(47,110)	(44,826)	(34,826)	3,129
Central Elementary School	480	1,730	8,925	-	11,135	1,367	-	12,293	13,660	(185)	2,528	829	(2,150)	(2,419)	(1,128)
Central Valley School	9,923	35,735	184,400	-	230,058	28,242	-	161,890	190,132	8,584	64,636	29,542	(32,024)	(25,946)	(4,865)
Dakota Prairie School	14,740	53,082	273,910	30,099	371,831	41,951	-	78,081	120,032	58,275	141,535	89,405	(2,047)	(18,059)	(17,307)
Devils Lake School	81,336	292,901	1,511,416	-	1,885,653	231,483	-	1,384,833	1,616,316	75,043	534,471	246,822	(257,817)	(229,146)	(100,036)
Dickinson School	150,773	542,951	2,801,712	1,891,694	5,387,130	429,099	-	429,099	1,102,489	1,954,130	1,420,914	485,468	(3,959)	(1,012)	
Divide School	19,411	69,901	360,702	55,244	553,864	55,244	-	85,464	140,708	80,907	190,550	121,902	1,471	6,774	11,652
Drake School	3,523	12,686	65,461	-	81,670	10,226	-	217,026	227,052	(26,623)	(6,725)	(19,183)	(41,037)	(32,108)	(19,707)
Drayton School	10,763	38,757	199,992	249,205	498,717	30,630	-	87,017	117,647	79,965	140,757	102,695	35,923	983	20,747
Dunseith School	24,983	89,966	464,239	524,265	1,103,453	71,101	-	71,101	206,697	347,813	259,480	104,457	77,968	35,956	
E Central Cir Exc Childn	6,243	116,004	5,437	-	150,165	17,767	-	102,583	120,350	8,276	43,538	21,460	(17,271)	(23,537)	(6,651)
Earl Elem. School	249	897	4,627	-	5,773	709	-	4,292	5,001	194	1,601	720	(826)	(634)	(285)
Edgeley School	10,243	36,888	190,347	-	237,478	29,153	-	49,084	78,237	35,434	93,294	57,067	(6,487)	(12,289)	(7,777)
Edmore School	5,493	19,746	101,894	23,395	150,518	15,606	-	92,430	108,036	13,958	44,931	25,539	(8,483)	(18,643)	(14,819)
Eight Mile School	11,986	43,161	222,720	233,781	511,648	34,111	-	106,706	140,817	87,224	154,925	112,537	38,172	(748)	(2,279)
Elgin-New Leipzig School	9,309	33,524	172,987	146,808	362,628	26,494	-	34,295	60,789	60,517	113,100	80,178	22,421	23,674	1,949
Ellendale School	13,362	48,118	248,295	-	309,775	38,028	-	339,802	377,830	(9,642)	65,833	18,578	(64,322)	(52,118)	(26,384)
Emerado Elementary School	4,710	16,962	87,526	20,470	129,668	13,405	-	34,615	48,020	16,882	43,287	26,629	(2,593)	(4,394)	2,037
Emmerlin Area School District	16,505	59,435	306,684	52,255	434,889	46,972	-	25,357	72,329	77,690	170,916	112,547	10,144	(6,714)	(24)
Fairmount School	7,858	28,299	146,025	-	182,182	22,365	-	102,446	124,811	13,277	57,665	29,874	(18,880)	(21,747)	(2,818)
Fargo Public Schools	548,495	1,975,194	10,192,311	-	12,716,000	1,561,015	-	4,050,788	5,611,903	1,576,345	4,674,520	2,734,741	(688,309)	(677,001)	(56,099)
Fessenden-Bowdon School	8,426	30,343	156,574	60,259	255,602	23,980	-	4,595	28,575	47,578	95,172	65,373	13,097	7,615	(1,809)
Finley-Sharon School	7,824	28,174	145,382	-	181,380	22,266	-	325,863	348,129	(31,596)	12,596	(16,072)	(63,610)	(60,872)	(8,095)
Flasher School	9,131	32,883	169,682	92,537	304,233	25,988	-	112,462	138,450	27,465	79,044	46,750	(9,906)	11,027	11,404
Fortville Larkin School	4,613	16,611	85,714	-	106,938	13,128	-	54,085	67,213	9,854	35,908	19,595	(9,021)	(10,974)	(5,638)
Fort Ransom Elem School	1,285	4,627	23,876	5,906	35,694	3,657	-	23,215	26,872	2,583	9,841	5,297	(2,677)	(5,159)	(1,062)
Fort Totten School	12,141	43,723	225,615	-	281,479	34,554	-	264,287	298,841	(2,156)	66,424	23,486	(61,844)	(40,778)	(12,466)
Fort Yates School	10,332	37,206	191,989	234,960	474,487	29,404	-	33,411	81,299	139,658	103,119	39,014	19,816	28,766	
Gackle-Streeter Pub Sch	6,198	22,321	115,179	16,023	159,721	17,640	-	57,250	74,890	17,766	52,778	30,857	(7,601)	(3,565)	(5,407)
Garrison School	18,259	65,754	339,301	86,157	509,471	51,966	-	163,040	215,006	71,257	174,395	109,820	(3,471)	(39,365)	(18,170)
Glen Ulin School	9,262	33,352	172,102	63,412	278,128	26,358	-	42,882	69,250	49,122	101,436	68,682	11,220	(11,917)	(9,666)
Glenburn School	14,609	52,609	271,470	309,417	648,105	41,577	-	150,945	192,522	96,916	179,436	127,770	37,133	36,500	(22,172)
Goodrich School	2,255	8,119	41,894	-	52,268	6,416	-	41,295	47,711	1,533	31,268	6,295	(7,695)	(6,189)	(3,658)
Grafton School	35,111	126,439	652,444	65,909	879,903	99,926	-	314,865	414,791	114,800	143,124	188,952	(28,887)	(72,978)	(49,899)
Grand Forks School	371,951	1,339,437	6,911,707	640,852	9,263,947	1,068,570	-	1,417,239	2,476,809	1,401,025	3,501,989	2,186,567	(121,143)	(66,876)	(113,424)
Great North West Cooperative	1,078	3,881	20,026	37,930	62,915	3,067	-	72,991	76,058	1,452	3,728	2,960	(1,424)	(2,960)	(12,480)
Grenora School	9,108	32,797	169,240	78,357	289,502	25,920	-	56,205	82,125	48,939	100,383	68,174	11,665	(15,086)	(6,699)
Griggs County Central Sch	12,927	46,553	240,218	12,721	312,419	36,791	-	372,949	409,740	(19,355)	53,665	7,947	(72,260)	(65,672)	(1,647)
Gst Educational Services	13,224	47,622	245,739	176,932	483,517	37,636	-	118,241	155,877	61,678	136,377	89,608	7,558	26,720	5,698
Halliday School	3,072	11,062	57,084	4,748	75,966	8,743	-	137,719	146,462	(9,325)	8,027	(2,837)	(21,897)	(21,962)	(18,962)
Hankinson School	11,503	41,424	213,754	-	266,681	32,738									

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources					Deferred (Inflows)/Outflows Recognized in Future Pension Expense (Year Ended June 30):					
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources							
										2018	2019	2020	2021	2022	Thereafter	
(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)		
Hettinger School	11,012	39,654	204,620	-	255,286	31,339	-	444,378	475,717	(45,214)	16,984	(21,959)	(90,277)	(56,634)	(23,332)	
Hillsboro School	20,168	72,628	374,769	141,571	609,136	57,398	-	11,557	68,955	117,119	231,308	159,713	34,585	(4,503)	2,229	
Hope School	4,902	17,651	91,083	53,765	167,401	13,950	-	138,953	152,903	6,427	34,115	16,780	(13,633)	(9,757)	(19,435)	
Horse Creek Elem. School	517	1,861	9,602	60,358	72,338	1,471	-	15,324	16,795	9,140	12,059	10,231	7,024	7,181	9,907	
James River Multidistrict Spec Ed Unit	11,220	40,403	208,487	148,377	408,487	31,931	-	31,931	78,879	142,253	102,574	32,963	10,381	9,507	-	
Jamestown School	105,190	378,800	1,954,666	-	2,438,656	299,369	-	1,341,673	1,641,042	169,876	764,400	392,032	(260,601)	(208,560)	(59,173)	
Kenmare School	14,200	51,136	263,868	33,705	362,909	40,413	-	187,525	227,938	22,078	102,287	52,068	(36,033)	(6,906)	1,476	
Kensal School	2,266	8,159	42,104	33,139	85,668	6,448	-	274,154	280,602	(28,131)	(15,334)	(23,347)	(37,403)	(44,364)	(46,354)	
Kidder County School District	16,227	58,434	301,527	376,188	507,228	46,181	-	507,280	553,461	(29,354)	62,302	4,916	(95,759)	(69,555)	(48,824)	
Kildeer School	21,314	76,753	396,058	96,681	590,806	60,659	-	89,452	150,111	99,788	220,178	144,801	12,565	(28,366)	(8,271)	
Kindred School	25,608	92,217	475,855	65,084	658,764	72,880	-	192,864	265,744	81,428	226,074	135,511	(23,369)	(30,009)	3,385	
Kulm School	7,844	28,246	145,754	-	181,844	22,323	-	254,918	277,241	(13,443)	30,863	3,123	(45,544)	(41,492)	(28,906)	
Lake Region Spec Ed	13,445	48,418	249,842	-	311,705	38,265	-	267,259	305,524	30,712	78,262	30,712	(62,706)	(43,866)	(8,737)	
Lakota School	9,258	33,339	172,036	15,388	230,021	26,348	-	152,545	178,893	6,713	59,007	26,265	(31,175)	(4,320)	(5,361)	
Lamoure School	12,252	44,121	227,670	46,036	330,079	33,079	-	144,527	179,396	38,592	107,797	64,467	(11,548)	(32,691)	(15,935)	
Langdon Area School	17,809	64,131	330,924	708,813	1,121,677	50,683	-	547,628	598,311	84,861	185,453	122,472	11,980	5,654	112,942	
Larimore School	16,831	60,610	312,756	66,110	466,307	47,901	-	316,897	364,798	11,848	106,917	47,394	(67,028)	(4,047)	(13,575)	
Leeds School	8,423	30,333	156,524	21,774	217,054	23,973	-	140,900	164,873	15,477	63,056	33,267	(18,992)	(31,059)	(9,568)	
Lewis And Clark School	21,606	77,804	401,483	91,064	591,957	61,490	-	56,827	118,317	101,402	223,442	147,032	12,984	(13,663)	2,444	
Lidgerwood School	3,383	33,790	174,360	40,727	258,260	26,704	-	97,838	124,542	26,150	79,150	45,966	(12,248)	393	(5,694)	
Linton School	12,732	45,850	236,591	295,173	362,235	36,235	-	259,685	295,920	3,602	75,519	30,491	(48,502)	(36,322)	(25,536)	
Lisbon School	27,460	98,886	510,266	89,657	726,669	78,150	-	348,111	426,261	63,537	218,644	121,531	(48,835)	(21,482)	(33,388)	
Litchville-Marion School	6,924	24,936	128,672	8,159	168,691	19,707	-	57,450	17,537	57,450	56,649	32,161	(10,800)	(1,951)	(2,061)	
Little Heart Elem. School	952	3,429	17,695	28,688	50,764	2,710	-	8,479	11,189	7,496	12,875	9,508	3,598	2,096	4,001	
Logan County	32	115	592	-	739	91	-	702	91	(3)	178	65	(134)	(113)	(49)	
Lone Tree Elem. School	1,782	6,418	33,117	45,740	87,057	5,072	-	59,449	64,521	7,900	17,965	11,662	607	(5,168)	(10,428)	
Lonetree Spec Ed Unit	1,250	4,502	23,230	7,099	36,081	3,558	-	8,464	12,022	5,286	12,348	7,927	168	(2,263)	(1,407)	
Maddock School	7,522	27,087	139,772	174,381	214,007	21,407	-	145,447	166,854	6,710	49,197	22,596	(24,073)	(29,751)	(17,154)	
Mandan Public Schools	157,172	565,984	2,920,617	1,170,231	4,814,014	447,310	-	447,310	1,844,710	956,924	1,844,710	1,288,864	313,719	(13,287)	(24,226)	
Mandaree School	11,502	41,420	213,735	44,012	310,669	32,735	-	565,905	598,640	(49,160)	15,810	(24,868)	(96,232)	(63,622)	(68,898)	
Manning Elem. School	764	2,753	14,206	28,604	46,327	2,176	-	5,379	7,555	8,145	12,463	9,760	5,014	1,073	2,317	
Marvel Elem. School	6,580	23,695	122,270	40,928	193,473	18,726	-	41,421	60,147	26,133	63,299	40,029	(796)	4,386	274	
Maple Valley School	13,045	46,975	242,400	37,437	339,857	37,125	-	154,871	191,996	28,972	102,655	56,522	(24,414)	(18,310)	2,435	
Mapleton Elem. School	5,989	21,568	111,292	117,712	256,561	17,045	-	50,474	67,519	36,830	70,660	49,479	12,321	4,171	15,580	
Marmarth Elem. School	1,165	4,197	21,655	49,531	76,548	3,317	-	87,871	91,188	(2,178)	4,405	283	(6,948)	(275)	(9,927)	
Max School	3,498	34,167	176,306	16,148	236,109	27,002	-	43,854	70,856	35,614	89,206	55,662	(3,211)	(5,432)	(6,577)	
May-Port C-G School	21,921	78,942	407,352	54,334	562,549	62,388	-	91,110	153,498	93,490	217,313	139,787	3,780	(27,042)	(18,277)	
McClusky School	5,131	18,476	95,341	55,328	174,276	14,602	-	297,248	311,850	(26,147)	2,834	(15,311)	(47,143)	(20,935)	(30,870)	
Mckenzie County	340	1,226	6,326	2,839	10,731	969	-	21,354	22,323	(2,654)	(731)	(1,935)	(4,045)	(2,601)	375	
Mckenzie County School	55,077	198,340	1,023,464	2,151,687	3,428,568	156,750	-	156,750	705,221	1,016,324	821,541	479,825	201,761	19,033	47,149	
Medina School	8,569	30,858	159,233	122,679	321,339	24,387	-	59,644	84,031	45,930	94,332	64,027	10,862	19,333	3,122	
Menoken Elem. School	1,450	5,221	26,942	69,007	102,620	4,126	-	4,126	19,158	1,826	27,347	22,220	13,225	11,005	5,538	
Midkota	7,950	28,630	147,738	7,647	191,965	22,627	-	168,221	190,848	(1,074)	43,834	15,717	(33,611)	(22,703)	(1,045)	
Midway School	11,321	40,767	210,362	63,850	326,300	32,218	-	192,094	224,312	23,742	87,696	47,651	(22,585)	(12,113)	(22,396)	
Minor School	10,674	38,437	198,342	-	247,453	30,377	-	326,095	356,472	(18,872)	43,418	5,670	(60,550)	(61,876)	(18,810)	
Minnewaukan School	12,379	44,577	230,026	1,448	288,430	35,230	-	395,472	430,702	(20,009)	49,912	6,134	(70,669)	(55,033)	(52,606)	
Minot School	350,651	1,262,734	6,515,907	-	8,129,292	997,951	-	2,037,541	3,035,492	1,101,972	3,082,624	1,842,531	(333,028)	(411,434)	(188,867)	
Minto School	10,178	36,652	189,129	157,585	393,544	28,966	-	48,622	77,588	61,465	118,954	82,960	19,815	10,401	22,362	
Mohall Lansford Sherwood	16,868	60,742	313,440	-	391,050	48,005	-	518,632	566,837	(30,066)	65,211	5,558	(99,094)	(90,171)	(27,078)	
Montpelier School	6,079	21,892	112,968	31,638	172,577	17,302	-	21,105	38,407	29,491	63,829	42,329	4,613	(803)	(5,287)	
Morton County	244	878	4,531	1,697	7,350	694	-	776	1,470	1,335	2,711	1,849	338	(150)	(202)	
Mott-Regent School	11,586	41,722	215,294	-	268,602	32,974	-	261,507	294,481	2,408	67,851	26,877	(45,005)	(43,915)	(34,093)	
Mt Pleasant School	12,933	46,575	240,334	38,971	338,813	36,809	-	86,601	123,410	51,487	124,541	78,802	(1,443)	(19,782)	(18,201)	
Munich School	7,546	27,175	140,229	113,560	288,510	21,477	-	9,088	30,565	55,912	98,538	17,850	25,028	10,331	(3,713)	
N Central Area Career And Tech Center	1,131	4,073	21,016	-	26,220	3,219	-	20,327	23,546	1,052	7,440	3,441	(3,578)	(3,774)	(1,907)	
Napoleon School	11,743	42,287	218,206	-	272,236	33,420	-	147,863	181,283	22,849	89,178	47,649	(25,207)	(30,355)	(13,211)	
Naughton Rural School	678	2,441	12,595	17,902	33,616	1,929	-	1,357	3,286	5,693	9,523	7,126	2,919	2,727	2,338	
Nd Center For Distance Education	10,382	37,388	192,929	476,366	717,065	29,548	-	235,574	265,302	119,364	178,009	141,291	76,877	(50,381)	(13,395)	
Nd Dept Of Public Instruction	2,071	7,456	38,476	196,581	244,584	5,893	-	3,610	9,503	43,728	55,424	48,101	35,253	34,526	18,049	
Nd School For Blind	5,371	19,343	99,812	29,785	154,311	15,287	-	111,274	126,561	8,416	38,756	19,760	(13,565)	(10,418)	(15,198)	
Nd School For Deaf	7,416	26,704	137,799	72,806	244,725	21,105	-	61,149	82,254	34,086	75,973	49,747	3,739	(7,465)	5,391	
Nd United	2,480	8,931	46,088	57,499	107,599	7,059	-	29,954	37,013	4,905	18,915	10,143	(5,245)	(8,813)	(2,419)	
Nd Youth Correctional Cnt	9,160	32,987	170,216	19,632	231,995	26,070	-	214,381	240,451	3,627	55,367	22,972	(33,857)	(27,326)	(29,240)	
Nedrose School	20,144	72,540	374,317	1,319,099	1,786,100	57,329	-	57,329	351,635	465,417	394,178	269,202	246,344	1,994	1,994	
Nelson County	100	359	1,850	447	2,756	283	-	283	537	1,099	747	130	(25)	(17)	-	
Nesson School	12,682	45,669	235,659	147,342	441,352	36,093	-	103,139	139,232	69,685	141,319	96,468	17,782	(2,248)	(20,885)	
New England School	11,153	40,163	207,248	182,613	441,177	31,741	-	-	31,741	88,944	151,941	112,498	43,303	15,458	(2,708)	
New Public School	16,164	58,207	300,357	-	374,728	46,002	-	295,544	341,546	8,378	99,678	42,514	(57,767)	(44,323)	(15,297)	

EXHIBIT E (continued)
Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources					Deferred (Inflows)/Outflows Recognized in Future Pension Expense (Year Ended June 30):					
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources							
										2018	2019	2020	2021	2022	Thereafter	
(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)		
New Rockford Shyenenne School	12,890	46,418	239,523	3,734	302,565	36,684	-	342,996	379,680	(5,098)	67,710	22,125	(57,850)	(68,919)	(35,083)	
New Salem-Almont	14,970	53,908	278,173	348,530	695,581	42,604	-	183,386	225,990	96,031	180,587	127,645	34,770	(4,702)	35,262	
New Town School	36,441	131,228	677,157	525,723	1,370,549	103,711	-	184,231	287,942	228,234	434,070	305,195	79,101	(4,417)	40,424	
Newburg United District	5,407	19,472	100,481	32,264	157,624	15,389	-	6,985	22,374	27,843	58,387	39,264	5,713	3,208	833	
North Border School	22,073	79,488	410,170	257,467	769,198	62,820	-	553,429	616,249	31,965	156,645	78,583	(58,367)	(4,614)	(51,263)	
North Sargent School	11,904	42,868	221,204	232,289	508,265	33,879	-	75,135	109,014	86,452	153,962	111,593	37,734	25,770	(15,990)	
North Star	12,926	46,549	240,201	93,302	392,978	36,788	-	136,493	173,281	53,809	126,823	81,108	911	(16,436)	(26,516)	
North Valley Area Career	4,563	16,433	84,799	80,138	185,933	12,988	-	158,049	171,037	(3,778)	21,998	5,860	(22,455)	1,245	12,028	
Northern Cass School Dist	24,846	89,475	461,705	599,834	1,175,860	70,713	-	70,713	214,780	355,124	267,253	113,099	87,144	67,749	-	
Northern Plains Spec Ed	2,441	8,791	45,361	123,319	179,912	6,947	-	12,812	19,759	34,177	47,965	39,332	24,188	5,697	8,795	
Northwood School	12,805	46,111	237,939	180,347	477,202	36,442	-	-	36,442	89,832	162,157	116,873	37,431	26,325	8,143	
Oakes School	15,785	56,844	293,324	365,953	44,924	-	-	240,460	285,384	21,542	110,705	54,880	(43,056)	(40,203)	(23,299)	
Oberon Elem School	2,797	10,074	51,983	106,245	171,099	7,962	-	260,159	268,121	(24,195)	(8,393)	(18,286)	(35,644)	(27,395)	16,890	
Oliver - Mercer Spec Ed	7,370	26,540	136,951	41,994	212,855	20,975	-	142,188	163,163	18,960	60,589	34,525	(11,204)	(27,330)	(25,846)	
Page School	5,925	21,335	110,093	84,094	221,447	16,861	-	84,333	101,194	22,347	55,813	34,861	(1,899)	(3,159)	12,287	
Park River Area School District	16,781	60,431	311,832	53,027	442,071	47,759	-	224,267	272,026	31,458	126,246	66,899	(37,214)	(21,290)	3,946	
Parshall School	12,608	45,403	234,286	292,297	35,882	-	-	390,963	426,845	(21,424)	49,792	5,204	(73,020)	(53,875)	(41,226)	
Peace Garden Spec Ed	4,414	15,897	82,029	61,300	163,640	12,563	-	-	12,563	33,156	58,089	42,478	15,091	960	1,305	
Pembina Spec Ed Coop	860	3,099	15,990	188	20,137	2,449	-	84,009	86,458	(17,130)	(12,269)	(15,312)	(20,649)	(7,44)	(218)	
Pingree - Buchanan School	6,649	23,944	123,554	13,019	167,166	18,923	-	44,217	63,140	21,199	58,756	35,242	(6,013)	(2,007)	(3,152)	
Pleasant Valley Elem	-	0	-	-	-	-	-	-	19,011	(4,753)	(4,753)	(4,753)	(4,752)	-	-	
Powers Lake School	8,727	31,427	162,167	92,093	294,414	24,837	-	83,850	108,687	43,869	93,163	62,300	8,152	(5,238)	(16,519)	
Richardton-Taylor	13,912	50,098	258,514	63,746	386,270	39,593	-	96,577	136,170	57,319	135,900	86,700	385	(26,286)	(3,919)	
Richland School	12,277	44,212	228,140	105,556	390,185	34,941	-	296,756	331,697	10,393	79,741	36,322	(39,847)	(42,135)	14,013	
Robinson School	-	0	-	-	-	-	-	91,004	91,004	(20,228)	(20,228)	(20,228)	(10,092)	-	-	
Rolette County	-	0	-	-	-	-	-	4,550	4,550	(1,137)	(1,137)	(1,137)	(1,139)	-	-	
Rolette School	10,236	36,862	190,213	161,991	399,302	29,132	-	18,633	47,765	73,755	131,575	95,374	31,866	6,498	12,469	
Roosevelt School	2,784	10,027	51,739	30,498	95,048	7,924	-	159,604	167,528	(10,618)	5,109	(4,738)	(22,014)	(17,368)	(22,852)	
Roughrider Area Career And Tech Center	1,080	3,889	20,067	60,803	85,839	3,073	-	104,573	107,646	(6,562)	(4,281)	(4,62)	(10,982)	(9,338)	9,818	
Roughrider Service Program	2,384	8,584	44,293	235,834	291,095	6,784	-	14,372	21,156	60,509	73,973	65,543	50,752	22,255	(3,092)	
Rugby School	25,957	93,474	482,341	601,772	73,873	-	-	70,764	144,637	99,814	246,434	154,635	(6,413)	(25,693)	(11,646)	
Rural Cass Spec Ed	7,641	27,516	141,988	-	177,145	21,746	-	264,550	286,296	(13,819)	29,342	2,319	(45,090)	(41,874)	(40,030)	
Sargent Central School	11,926	42,946	221,608	62,026	338,506	33,941	-	51,829	85,770	49,504	116,867	74,691	701	4,114	6,860	
Sawyer School	5,685	20,473	105,642	38,877	170,677	16,180	-	350,346	366,526	(26,104)	6,008	(14,098)	(49,368)	(63,558)	(48,726)	
Scranton School	8,786	31,639	163,265	17,774	221,464	25,005	-	71,205	96,210	28,606	78,234	47,161	(7,348)	(18,702)	(2,697)	
Se Region Career And Tech	11,719	42,202	217,769	50,650	322,340	33,353	-	-	33,353	60,772	126,967	85,522	12,810	1,923	994	
Selldridge School	7,115	25,621	132,208	21,247	186,191	20,249	-	18,401	38,650	30,556	70,743	45,582	1,442	446	(1,228)	
Shyenenne Valley Area Voc	5,674	20,434	105,442	13,462	145,012	16,149	-	93,036	109,185	10,154	42,207	22,139	(13,068)	(12,081)	(13,525)	
Shyenenne Valley Spec Ed	11,394	41,030	211,723	40,579	304,726	32,427	-	404,114	436,541	(16,250)	48,108	7,813	(62,878)	(81,982)	(26,626)	
Slope County	197	710	3,665	-	4,572	561	-	1,528	2,089	548	1,662	965	(260)	(290)	(143)	
Solen - Cannonball School	13,084	47,155	245,325	115,719	419,293	37,267	-	309,328	346,595	-	74,545	28,235	(53,009)	6,878	15,467	
Souris Valley Spec Ed	7,952	28,634	147,758	-	184,344	22,630	-	1,010,688	1,033,318	(140,543)	(95,629)	(123,750)	(173,084)	(176,170)	(139,798)	
South Cent. Prairie Sp Ed	806	2,904	14,984	-	18,694	2,295	-	5,150	7,445	2,417	6,972	4,120	(680)	(917)	(463)	
South East Education Cooperative	5,430	19,553	100,898	1,078,545	1,204,426	15,453	-	-	15,453	203,475	234,145	181,254	176,984	178,172	-	
South Heart School	12,872	46,352	239,182	265,388	553,794	36,632	-	-	36,632	108,609	182,314	136,793	56,936	22,599	8,911	
South Prairie Elem School	18,312	65,945	340,286	1,242,720	1,667,263	52,117	-	-	52,117	319,782	423,220	368,457	244,843	204,787	64,058	
South Valley Spec Ed	3,558	11,012	56,825	35,978	106,873	8,703	-	483,339	492,042	(71,262)	(53,989)	(68,404)	(83,774)	(95,175)	(16,165)	
Southwest Special Education Unit	522	1,879	9,694	1,610	13,705	1,485	-	4,408	5,893	1,468	4,414	2,569	(1,665)	(93)	118	
St. John'S School	20,423	73,547	379,512	66,385	539,867	58,125	-	94,793	152,918	83,266	198,627	126,399	(315)	(22,233)	1,207	
St. Thomas School	5,042	18,156	93,688	477	117,363	14,349	-	122,997	137,346	(1,170)	27,309	9,478	(21,802)	(25,885)	(7,914)	
Stanley School	28,481	102,564	529,245	571,126	1,231,416	81,057	-	49,865	130,922	220,926	381,801	281,077	104,371	48,050	64,270	
Starkweather School	4,086	14,714	75,925	-	94,725	11,628	-	168,766	180,394	(13,164)	9,915	(4,535)	(29,884)	(28,292)	(19,710)	
Sterling School	2,058	7,413	36,250	27,766	75,487	5,858	-	-	5,858	15,202	26,828	19,549	6,780	707	561	
Strasburg School District	6,895	24,830	128,125	80,220	240,070	19,623	-	114,018	133,641	15,517	54,463	30,079	(12,702)	10,382	6,889	
Surrey School	18,928	68,162	351,725	15,998	454,813	53,869	-	106,678	160,547	67,680	174,594	107,655	(9,782)	(28,663)	(17,218)	
Sweet Briar Elem School	796	2,866	14,791	27,005	45,458	2,265	-	-	2,265	8,140	12,636	9,821	4,881	4,082	3,633	
Tgu School District	20,876	75,179	387,933	-	483,988	59,414	-	313,004	372,418	32,853	150,774	76,943	(52,578)	(55,831)	(40,791)	
Thompson School	17,703	63,752	328,970	241,750	50,384	-	-	68,372	118,756	103,335	203,333	140,724	30,886	34,053	21,088	
Tioga School	24,183	87,085	449,373	427,388	988,029	68,824	-	63,499	132,323	195,811	332,408	246,884	96,845	1,391	(17,632)	
Turtle Lake-Mercer School	9,776	35,203	181,653	90,876	317,508	27,821	-	224,616	252,437	6,411	61,629	27,057	(33,592)	(8,730)	12,297	
Twin Buttes Elem. School	3,353	12,073	62,301	19,462	97,189	9,542	-	112,999	122,541	(5,746)	13,192	1,335	(19,467)	(16,931)	2,265	
Underwood School	11,980	43,141	222,612	-	277,733	34,094	-	163,859	197,953	21,369	89,037	46,670	(27,655)	(31,447)	(18,195)	
United School	26,245	94,513	487,700	496,816	1,105,274	74,694	-	179,164	253,858	152,679	300,926	208,108	45,273	69,422	75,007	
Upper Valley Spec Ed	20,133	72,502	374,119	664,075	57,299	-	-	46,007	118,950	232,671	161,469	36,559	(1,247)	12,370	-	
Valley - Edinburg School	13,297	47,883	247,084	226,982	535,246	37,842	-	147,231	185,073	75,262	150,369	103,344	20,850	21,413	(21,066)	
Valley City School	48,243	173,729	896,470	118,558	1,237,000	137,300	-	730,835	868,135	63,323	335,824	165,210	(134,105)	(24,133)	(37,255)	
Velva School	20,529	73,926	381,471	83,150	559,076	58,425	-	121,031	179,456	74,379	190,336	117,735	(9,629)	(1,076)	7,877	
Wahpeton School	52,479	188,982	975,176	-	1,216,637	149,354	-	713,728	863,082	95,470	391,896	206,302	(119,295)	(143,694)	(77,125)	

EXHIBIT E (continued)

Schedule of Pension Amounts by Employer as of June 30, 2017

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				Deferred (Inflows)/Outflows Recognized in Future Pension Expense (Year Ended June 30):					
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and	Total Deferred Inflows of Resources	2018	2019	2020	2021	2022	Thereafter
				Proportionate Share of Contributions				Proportionate Share of Contributions							
(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	
Ward County	224	808	4,172	-	5,204	639	-	2,041	2,680	596	1,864	1,070	(324)	(460)	(220)
Warwick School	12,214	43,984	226,964	179,198	462,360	34,761	-	551,467	586,228	(558)	68,433	25,237	(50,540)	(104,947)	(61,492)
Washburn School	12,878	46,377	239,312	87,162	385,729	36,652	-	122,072	158,724	52,308	125,052	79,507	(396)	(7,433)	(22,034)
West Fargo School	458,368	1,650,634	8,517,532	10,450,487	21,077,021	1,304,512	-	-	1,304,512	4,041,573	6,630,663	5,009,623	2,165,758	1,260,219	664,673
West River Student Services	5,569	20,053	103,478	68,133	197,233	15,848	-	35,717	51,565	34,459	65,913	46,219	11,671	(9,741)	(2,852)
Westhope School	8,652	31,156	160,769	71,770	272,347	24,623	-	66,410	91,033	42,497	91,367	60,769	7,093	(17,652)	(2,760)
White Shield School	10,883	39,193	202,240	-	252,316	30,974	-	252,550	283,524	(2,687)	58,789	20,299	(47,227)	(40,641)	(19,740)
Williston School	148,540	534,910	2,760,219	3,159,407	6,603,076	422,744	-	112,401	535,145	1,354,735	2,193,764	1,668,445	746,853	166,158	(62,025)
Wilmac Special Education	30,333	109,233	563,658	1,312,946	2,016,170	86,328	-	-	86,328	387,966	559,302	452,028	263,828	164,573	102,146
Wilton School	10,722	38,610	199,235	77,469	326,036	30,514	-	-	30,514	60,669	121,230	83,312	16,792	7,031	6,490
Wing School	5,673	20,428	105,411	65,269	196,781	16,144	-	54,238	70,382	23,976	56,018	35,956	764	459	9,226
Wishek School	10,112	36,416	187,912	76,599	311,039	28,780	-	34,704	63,484	51,139	108,259	72,496	9,756	(1,626)	7,531
Wolford School	4,205	15,143	78,139	27,837	125,324	11,968	-	27,622	39,590	19,704	43,457	28,585	2,494	(7,475)	(1,030)
Wyndmere School	11,241	40,481	208,887	-	260,609	31,992	-	170,719	202,711	12,403	75,899	36,144	(33,601)	(24,624)	(8,325)
Yellowstone Elem. School	4,187	15,077	77,798	52,163	149,225	11,915	-	56,627	68,542	18,443	42,091	27,285	1,311	(10,345)	1,897
Zealand School	3,114	11,213	57,861	14,315	86,503	8,862	-	153,263	162,125	(16,087)	1,502	(9,510)	(28,831)	(24,175)	1,477
Grand Totals:	5,268,440	18,972,249	97,899,797	42,488,385	164,628,871	14,993,953	-	42,488,385	57,482,338	23,012,199	52,770,974	34,138,888	1,451,717	(2,691,679)	(1,535,566)

Note: Columns may not foot due to rounding.