

Bay County Employees' Retirement System

Review of System Experience

January 1, 2011 through December 31, 2015



August 1, 2017

Board of Trustees
Bay County Employees'
Retirement System
Bay City, Michigan

Dear Board Members:

Presented in this report are the results of a review of Retirement System experience. The investigation was conducted for the purpose of updating the actuarial assumptions used in valuing the Bay County Employees' Retirement System actuarial liabilities, assets and actuarially determined employer contribution rates.

The investigation was based upon the data furnished for the annual actuarial valuations during the period **January 1, 2011 through December 31, 2015.**

We have shown the expected impact of the proposed changes on County contribution rates as of December 31, 2015. This information is shown in Section D of this report.

James D. Anderson and Shana M. Neeson are Members of the American Academy of Actuaries (MAAA) and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,


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Introduction

Each year, as of December 31st, the actuarial liabilities of the Bay County Employees' Retirement System are valued. In order to perform the valuation, assumptions must be made regarding the future experience of the System with regard to the following risk areas:

- Rates of **termination** of active members
- Rates of **disability** among active members
- Rates of **retirement** among active members
- Rates of **mortality** among active members, retirants and beneficiaries
- Long-term rates of **investment return** to be generated by the assets of the System
- Patterns of **salary increases** to active members

Assumptions should be carefully chosen and continually monitored. Continued use of outdated assumptions can lead to:

- Understated costs resulting in either an inability to pay benefits when due, or sharp increases in required contributions at some point in the future;
- Overstated costs resulting in either benefit levels that are kept below the level that could be supported by the computed rate or an unnecessarily large burden on the current generation of members, employers and taxpayers.

A single set of assumptions will not be suitable indefinitely. Things change, and our understanding of things also changes. In recognition of this, assumptions used to value the liabilities of the Retirement System should be reviewed and adjusted periodically to recognize changes in experience trends, a changing economic environment (or changing perceptions of the economic environment) and to maintain consistency within the universe of public employee retirement systems.

A common practice among public employee retirement systems is that the actuary recommends a set of demographic assumptions and suggests a range of reasonable alternate economic assumptions. Following discussion involving the actuary, the plan governing body, and other professionals, the plan governing body makes a final choice from the various alternatives.

SECTION A

DEMOGRAPHIC ASSUMPTIONS

Retirement

Discussion: Rates of retirement are used to measure the probabilities of an eligible member retiring from County employment during the next year. During the study period, actual rates of retirement for the Bay County Employees’ Retirement System have been higher than expected for every group except for the General, Medical Care Facility (MCF), and Sheriff’s Department groups.

Summary of Experience: The experience during the study period is summarized below:

Number of Retirements Among Eligible System Members		
Department	Actual	Expected
General	69	77.0
DWS	9	7.3
Library	10	9.2
Medical Care Facility	40	42.7
Sheriff's Department	8	11.3
Road Commission	8	2.4
Total	144	149.9

Number of Retirements Among Eligible System Members		
Department	Actual	Expected
BABH	18	16.4

Proposal: We recommend an increase in the rates for the Road Commission group and a decrease in the rates for the General and Sheriff’s Department groups. The current and proposed retirement rates are shown on the following page. This change will put upward pressure on liabilities for the Road Commission group and downward pressure on liabilities for the General and Sheriff’s Department groups.

Current Rates of Retirement

Retirement Ages	Percent of Active Members Retiring Within Next Year						BABH
	General	DWS	Library	MCF	Sheriff's	Road Commission	
50				20 %		15 %	
51				20		15	
52				20		25	
53				20		25	
54				20		25	
55	20 %	25 %	15 %	30		25	15 %
56	15	20	10	40		15	10
57	15	20	10	50		15	10
58	15	20	10	50		15	10
59	15	20	10	50		15	10
60	30	35	25	30	15 %	15	25
61	25	30	20	30	15	15	20
62	15	20	10	50	30	35	10
63	15	20	10	25	15	35	10
64	15	20	10	25	15	35	10
65	30	35	25	100	100	100	25
66	15	20	10				10
67	15	20	10				10
68	15	20	10				10
69	15	20	10				10
70	100	100	100				100

The following table shows the rates used for the Road Patrol and Road Patrol Supervisory Unit 25 & Out provision and the Correctional Facility Officers 55 & 25 provision.

25 & Out		55 & 25	
Years of Service	Sheriff's Road Patrol and Road Patrol Supervisory Unit	Age	Correctional Facility Officers
25	40%	55	40%
26	40	56	40
27	40	57	40
28	25	58	25
29	25	59	25
30	25	60	25
31	25	61	25
32	25	62	25
33	25	63	25
34	100	64	100

Proposed Rates of Retirement

Retirement Ages	Percent of Active Members Retiring Within Next Year						BABH
	General	DWS	Library	MCF	Sheriff's	Road Commission	
50				20 %		20 %	
51				20		20	
52				20		30	
53				20		30	
54				20		30	
55	20 %	25 %	15 %	30		30	15 %
56	13	20	10	40		20	10
57	13	20	10	50		20	10
58	13	20	10	50		20	10
59	13	20	10	50		20	10
60	30	35	25	30	15 %	20	25
61	25	30	20	30	15	20	20
62	13	20	10	50	30	40	10
63	13	20	10	25	15	40	10
64	13	20	10	25	15	40	10
65	30	35	25	100	100	100	25
66	13	20	10				10
67	13	20	10				10
68	13	20	10				10
69	13	20	10				10
70	100	100	100				100

The following table shows the rates used for the Road Patrol and Road Patrol Supervisory Unit 25 & Out provision and the Correctional Facility Officers 55 & 25 provision.

25 & Out		55 & 25	
Years of Service	Sheriff's Road Patrol and Road Patrol Supervisory Unit	Age	Correctional Facility Officers
25	35%	55	35%
26	35	56	35
27	35	57	35
28	25	58	25
29	25	59	25
30	25	60	25
31	25	61	25
32	25	62	25
33	25	63	25
34	100	64	100

Current Rates of Early Retirement

55 & 8 and/or 55 & 10 Early Retirement					
Retirement				Retirement	
Ages	General	DWS	Library	Ages	BABH
55	10 %	15 %	5 %	55	5 %
56	10	15	5	56	5
57	10	15	5	57	5
58	10	15	5	58	5
59	10	15	5	59	5
				60	5
				61	5

Proposed Rates of Early Retirement

55 & 8 and/or 55 & 10 Early Retirement					
Retirement				Retirement	
Ages	General	DWS	Library	Ages	BABH
55	8 %	15 %	5 %	55	5 %
56	8	15	5	56	5
57	8	15	5	57	5
58	8	15	5	58	5
59	8	15	5	59	5
				60	5
				61	5

Turnover

Discussion: During the study period, actual rates of termination for the Mental Health (BABH) and Medical Care Facility (MCF) groups have been higher than expected and rates of termination for the DWS and Library groups have been less than expected. This experience suggests a need to increase the assumed rates of termination for the BABH and MCF groups, and decrease the assumed rates of termination for the DWS and Library groups. The tables on the current and following pages summarize recent experience and the current and proposed rates of termination.

Summary of Experience: The experience during the study period is summarized below:

Number of Employee Terminations from County Employment		
Department	Actual	Expected
General	70	70.8
DWS	3	8.5
Library	2	6.2
Medical Care Facility	183	165.8
Sheriff's Department	9	7.7
Road Commission	3	3.0
Total	270	262.0

Number of Employee Terminations from County Employment		
Department	Actual	Expected
BABH	99	69.4

Proposal: Change the current turnover rates to the proposed rates summarized on the following page. In general, increasing the assumed rates of termination will put downward pressure on liabilities and vice-versa.

Current Turnover Rates

% of Active Members Separating within Next Year

Sample Ages	Years of Service	% of Active Members Separating within Next Year				Road		BABH
		General	DWS	Library	MCF	Sheriff's*	Commission*	
ALL	0	15.00%	15.00%	15.00%	25.00%	N/A	N/A	15.00%
	1	9.00	9.00	9.00	25.00	N/A	N/A	9.00
	2	9.00	9.00	9.00	15.00	N/A	N/A	9.00
	3	8.00	8.00	8.00	12.50	N/A	N/A	8.00
	4	8.00	8.00	8.00	8.75	N/A	N/A	8.00
20	5 & Over	7.50	7.50	7.50	7.50	4.50	4.50	7.50
25		7.50	7.50	7.50	7.50	4.50	4.50	7.50
30		7.00	7.00	7.00	5.00	3.75	3.90	7.00
35		7.00	7.00	7.00	5.00	2.25	2.30	7.00
40		4.00	4.00	4.00	3.75	1.50	0.90	4.00
45		3.00	3.00	3.00	2.50	1.50	0.50	3.00
50		2.00	2.00	2.00	2.00	1.25	0.50	2.00
55	2.00	2.00	2.00	2.00	0.75	0.50	2.00	
60	2.00	2.00	2.00	2.00	0.75	0.50	2.00	

* These groups do not have service based rates of separation. All rates of separation are based on age.

Proposed Rates of Turnover

Sample Ages	Years of Service	% of Active Members Separating within Next Year						
		General	DWS	Library	MCF	Sheriff's*	Road Commission*	BABH
ALL	0	15.00%	9.00%	8.25%	26.25%	N/A	N/A	16.50%
	1	9.00	5.40	4.95	26.25	N/A	N/A	9.90
	2	9.00	5.40	4.95	15.75	N/A	N/A	9.90
	3	8.00	4.80	4.40	13.13	N/A	N/A	8.80
	4	8.00	4.80	4.40	9.19	N/A	N/A	8.80
20	5 & Over	7.50	4.50	4.13	7.88	4.50	4.50	8.25
25		7.50	4.50	4.13	7.88	4.50	4.50	8.25
30		7.00	4.20	3.85	5.25	3.75	3.90	7.70
35		7.00	4.20	3.85	5.25	2.25	2.30	7.70
40		4.00	2.40	2.20	3.94	1.50	0.90	4.40
45		3.00	1.80	1.65	2.63	1.50	0.50	3.30
50		2.00	1.20	1.10	2.10	1.25	0.50	2.20
55	2.00	1.20	1.10	2.10	0.75	0.50	2.20	
60	2.00	1.20	1.10	2.10	0.75	0.50	2.20	

* These groups do not have service based rates of separation. All rates of separation are based on age.

Disability

Discussion: The actual number of disability retirements is higher than expected for all groups except the Library group during the study period.

Number of Active Members Separating During Next Year		
Department	Actual	Expected
General	5	2.4
DWS	1	0.2
Library	0	0.2
Medical Care Facility	8	1.8
Sheriff's Department	3	1.3
Road Commission	5	0.7
Total	22	6.6

Number of Active Members Separating During Next Year		
Department	Actual	Expected
BABH	3	1.1

Proposal: Given the limited Plan experience and in light of the disability administration policy recently adopted by the Board, we recommend a slight increase in the present probabilities of disability retirement for all of the groups. Increasing the disability rate will put slight upward pressure on liabilities. The current and proposed rates of disability are shown on the following page.

Current Rates of Disability

Sample Ages	Percent Becoming Disabled within Next Year	
	Sheriff	All Other Groups*
20	0.12 %	0.06 %
25	0.12	0.06
30	0.12	0.06
35	0.12	0.06
40	0.30	0.15
45	0.40	0.20
50	0.74	0.37
55	1.34	0.67
60	2.12	1.06

* Includes BABH.

Proposed Rates of Disability

Sample Ages	Percent Becoming Disabled within Next Year	
	Sheriff	All Other Groups*
20	0.15 %	0.07 %
25	0.15	0.07
30	0.15	0.07
35	0.15	0.07
40	0.38	0.19
45	0.50	0.25
50	0.92	0.46
55	1.67	0.84
60	2.65	1.33

* Includes BABH.

Mortality

Discussion: The mortality assumption is used to measure the probabilities of members dying before retirement and the probability of each benefit payment being made after retirement. The mortality table currently used for healthy lives in the annual valuation of the System is the RP-2000 Mortality Combined Healthy Tables, projected 20 years with U.S. Projection Scale BB (multiplied by 75% for pre-retirement mortality and multiplied by 110% for post-retirement mortality for both males and females). Rates for disabled members were the RP-2000 Mortality Combined Healthy Tables, projected 20 years with U.S. Population Scale BB with ages set forward 10 years. While there were slightly fewer deaths than expected among retirees over the experience period, the membership in this group is not sufficiently large to determine if there is margin for mortality experience. National trends indicate longevity improvements. Based on our experience with a broad cross section of public sector plans similar in nature to this plan, it is our opinion that the current mortality assumption be updated.

Number of Deaths Among Retired Members		
Department	Actual	Expected
General	42	46.8
DWS	1	3.1
Library	1	5.0
Medical Care Facility	15	23.4
Sheriff's Department	2	7.0
Road Commission	13	18.5
Total	74	103.8

Number of Deaths Among Retired Members		
Department	Actual	Expected
BABH	4	6.1

Proposal: We recommend updating the mortality assumption to use the following; this change will increase measured liabilities:

- **Pre-Retirement:** The RP-2014 Employee Generational Mortality Tables, with blue-collar adjustments and extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale, resulting in a base year of 2006 with future mortality improvements assumed each year using scale MP-2016.
- **Healthy Post-Retirement:** The RP-2014 Healthy Annuitant Generational Mortality Tables, with blue-collar adjustments and extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale, resulting in a base year of 2006 with future mortality improvements assumed each year using scale MP-2016.
- **Disability Retirement:** The RP-2014 Disabled Mortality Table, extended via cubic spline. This table is adjusted backwards to 2006 with the MP-2014 scale, resulting in a base year of 2006 with future mortality improvements assumed each year using scale MP-2016.

Summary of Life Expectancies under the Current Table

Sample Ages	Future Life Expectancy (Years) [^]	
	Men	Women
55	27.56	30.04
60	23.16	25.50
65	19.01	21.19
70	15.16	17.19
75	11.66	13.58
80	8.62	10.36

[^] These life expectancies are based on post-retirement healthy mortality

Summary of Life Expectancies under the Proposed Table

Sample Attained Ages	Healthy Post-Retirement	
	Future Life Expectancy (Years) [*]	
	Men	Women
55	28.40	31.30
60	23.89	26.62
65	19.65	22.12
70	15.70	17.84
75	12.09	13.89
80	8.95	10.40

^{*} Based on retirements in 2015. Retirements in future years will reflect improvements in life expectancy.

Merit and Longevity Portion of Pay Increases

Discussion: Pay increases granted to individual active members consist in principle of two parts. The first part is an across-the-board economic type of increase related to inflation or cost-of-living changes. The second part, merit and/or longevity increases, relates to the performance of individual active members during a given year. Merit and longevity may include promotions and pay increases related to years of experience. Overall, merit and longevity pay increases were lower than expected during the experience period.

Proposal: Lower the rates of merit and longevity for all groups. The current and proposed rates are shown below:

Current Rates

Years of Service	Annual Rate of Pay Increase for Merit & Longevity						BABH
	General	DWS	Library	MCF	Sheriff's	Road Commission	
1	3.75%	3.75%	3.75%	0.75%	6.00%	6.00%	3.75%
2	3.00%	3.00%	3.00%	0.75%	5.25%	3.75%	3.00%
3	2.25%	2.25%	2.25%	0.75%	5.25%	3.75%	2.25%
4	2.25%	2.25%	2.25%	0.75%	4.50%	3.75%	2.25%
5	0.75%	0.75%	0.75%	0.75%	3.75%	0.75%	0.75%
6+	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%

Proposed Rates

Years of Service	Annual Rate of Pay Increase for Merit & Longevity						BABH
	General	DWS	Library	MCF	Sheriff's	Road Commission	
1	3.00%	3.00%	3.00%	0.50%	5.25%	5.25%	3.00%
2	2.25%	2.25%	2.25%	0.50%	4.50%	3.00%	2.25%
3	1.50%	1.50%	1.50%	0.50%	4.50%	3.00%	1.50%
4	1.50%	1.50%	1.50%	0.50%	3.75%	3.00%	1.50%
5	0.75%	0.75%	0.75%	0.50%	3.00%	0.75%	0.75%
6+	0.75%	0.75%	0.75%	0.50%	0.75%	0.75%	0.75%

SECTION B

ECONOMIC ASSUMPTIONS

Economic Assumptions

Investment Return and Wage Inflation

Considerations in establishing economic assumptions include:

- Historical patterns
- Economic forecasts
- Investment policy
- Funding level
- Generally accepted practice
- Acceptable level of risk of having to increase future contributions
- Appropriate balance between generations of participants and taxpayers

Only hindsight will tell whether a particular combination of economic assumptions is optimal. If the economic environment remains favorable, a change to more optimistic assumptions provides a reasonable means of freeing up contribution dollars today. The trade-off is that additional risk is incurred. If a change proves to be overly optimistic, future contributions will increase.

Current economic assumptions for the Bay County Employees' Retirement System are as follows:

Net Investment Return	7.50%
Wage Inflation	3.50%
Price Inflation	2.75%

Price Inflation. In past years, no specific price inflation assumption was necessary in order to perform the actuarial valuation. However, price inflation is a key component of the underlying wage inflation and interest rate assumptions and must now be disclosed in actuarial reports. The chart on the following page shows historical averages of both price and wage inflation. While long term historical averages of price inflation approach 4.0%, short term averages are generally between 1.0% and 2.0%. Most investment firms expect inflation to be between 2.0% and 2.75% (see chart on page 17), and the 2017 annual report of the Social Security Trustees uses 2.6% as the intermediate assumption. **We recommend decreasing the price inflation assumption to 2.5%.**

Summary of Findings - Economic Assumptions (Continued)

Year	Annual Increase in		
	Prices (CPI-U)	Wages (NAE)	Difference
3-Year Avg	1.0%	2.6%	1.6%
5-Year Avg	1.5%	2.8%	1.3%
10-Year Avg	1.9%	2.6%	0.7%
20-Year Avg	2.2%	3.4%	1.2%
30-Year Avg	2.6%	3.5%	0.9%
50-Year Avg	4.1%	4.8%	0.7%

Wage Inflation. The long-term rate of increase in National Average Earnings over the last 50 years is somewhat higher than the current Bay County Employees' Retirement System assumption, although shorter term averages are below it. It is expected that, in the long run, salary increases in all parts of the country will be close to the national averages. However, few economists are forecasting a repeat of the high inflation rates experienced in the 1970s. In addition, average salaries in the Bay County Employees' Retirement System have risen at approximately 2.1% a year since 1996 and approximately 1.3% over the last 10 years. **We believe a reasonable range within which to set this long term assumption is anywhere from 3.0% to 3.75%.**

We have illustrated the approximate impact on contribution requirements if the wage inflation assumption were changed from 3.50% to 3.25% along with recommended demographic changes on pages 22 and 23.

Summary of Findings - Economic Assumptions (Continued)

Investment Return and Spread. The investment return assumption is the actuarial assumption that has the largest impact on actuarial valuation results. As more of the actuarial accrued liabilities are related to non-active members, the nominal (as opposed to real) investment return assumption becomes a more prominent factor. Since one of the Retirement System's fundamental financial objectives is the receipt of level contributions over time, the discount rate assumption is set equal to the investment return assumption (with perhaps adjustment for conservatism). The Bay County Employees' Retirement System's target asset allocation is shown below:

Asset Class	Target
Domestic Equity	48%
International Equity	20%
Broad Market Fixed Income	21%
Real Estate	7%
Alternatives	4%
Cash	0%

Based upon the target asset allocation, future expectations of various investment consultants were analyzed. The next few exhibits show the results of this analysis. Final expected nominal investment return results are based upon a 2.50% price inflation assumption. We used the actuarial assumption for price inflation rather than the consultant assumption, in order to be consistent with the calculation of liabilities. Investment results presented are net of expenses.

The current version of ASOP No. 27 (applicable to valuation dates on or after September 30, 2014) suggests that either the expected geometric return (i.e., 50th percentile) or the expected arithmetic return is suitable for use as a reasonable investment return assumption. Based on the average of each of the investment consultant's expectations, this would result in a range of 6.55% to 7.30%. **We recommend lowering the investment return assumption from 7.50% to 7.25%.**

GRS also recommends seeking advice from Bay County Employees' Retirement System's investment consultants prior to making a significant change in the investment return assumption.

We have illustrated the approximate impact on contribution requirements if the investment return assumption were changed to 7.25% and 7.00% on pages 22 and 23.

Summary of Findings - Economic Assumptions (Concluded)

Investment Return Expectations of Various Investment Consultants

Investment Consultant	Investment Consultant Expected Nominal Return	Investment Consultant Inflation Assumption	Expected Real Return (2)-(3)	Actuary Inflation Assumption	Expected Nominal Return (4)+(5)	Standard Deviation of Expected Return (1-Year)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	6.58%	2.50%	4.08%	2.50%	6.58%	12.99%
2	6.28%	2.00%	4.28%	2.50%	6.78%	11.77%
3	6.61%	2.26%	4.35%	2.50%	6.85%	11.07%
4	7.04%	2.25%	4.79%	2.50%	7.29%	13.83%
5	7.06%	2.00%	5.06%	2.50%	7.56%	12.41%
6	7.39%	2.20%	5.19%	2.50%	7.69%	13.54%
7	8.00%	2.75%	5.25%	2.50%	7.75%	12.96%
8	7.64%	2.25%	5.39%	2.50%	7.89%	12.77%
Average	7.07%	2.28%	4.80%	2.50%	7.30%	12.67%

Investment Consultant	Distribution of 20-Year Average Geometric Net Nominal Return			Probability of exceeding 7.50%
	40th	50th	60th	
(1)	(2)	(3)	(4)	(5)
1	5.07%	5.80%	6.53%	27.79%
2	5.48%	6.14%	6.80%	30.16%
3	5.66%	6.28%	6.91%	31.10%
4	5.64%	6.41%	7.19%	36.14%
5	6.15%	6.85%	7.54%	40.62%
6	6.10%	6.85%	7.61%	41.43%
7	6.25%	6.98%	7.71%	42.78%
8	6.42%	7.14%	7.86%	44.91%
Average	5.85%	6.55%	7.27%	36.87%

SECTION C

MISCELLANEOUS ASSUMPTIONS AND METHODS

Amortization Policy

The current actuarial valuation report computes contribution amounts using a 27-year closed amortization period for groups that are underfunded and a 10-year open amortization period for overfunded groups. We recommend changing the amortization method for overfunded groups to use a 20-year open amortization period. We recommend no change to the amortization method for groups that are underfunded.

Asset Valuation Method

The Bay County Employees' Retirement System currently uses a 5-year asset smoothing method with no corridor. The Funding Value of Assets recognizes assumed investment income fully each year. Differences between actual and assumed investment income are phased-in over a closed 5-year period. This is a very common method among public retirement systems. Most systems use an averaging period between 3 and 10 years with 5 being the most common. We do not recommend any changes at this time. If, however, the Board has concerns over the volatility of contributions, a smoothing period of 6 or 7 years could be considered. If the smoothing period was lengthened, we would recommend establishing a 'corridor', so that the Funding Value will not diverge too far from the actual Market Value. Systems which use a corridor will vary on the amount of the corridor, but it is typically between 10% and 30%.

Load in FAC for Unused Sick and Vacation Time

Unused vacation and sick leave can be rolled into final average compensation at time of retirement. As a result our valuation includes a percent load to account for this provision. We analyzed the final average compensation with and without the unused vacation and sick leave for all members who retired during the period 2011 to 2015. Based on the results of this analysis we recommend the following change:

<u>Division</u>	<u>Actual</u>	<u>Current Assumption</u>	<u>Proposed Assumption</u>
General	2.53%	4.5%	3.5%
DWS	5.59	7.0	7.0
Library	4.52	4.5	4.5
MCF	2.63	7.5	5.0
Sheriff's Department	1.33	6.0	5.0
Road Commission	8.06	9.0	8.5

<u>Division</u>	<u>Actual</u>	<u>Current Assumption</u>	<u>Proposed Assumption</u>
BABH	3.89%	5.0%	4.5%

Administrative Expenses

Non-investment administration expenses are assumed to average 0.4% of payroll annually. We analyzed the administrative expenses as a percentage of payroll during the period 2011 to 2015. Based on the results of this analysis below, we recommend a change in administrative expense from 0.4% to 0.5%.

Valuation Year	Administrative Expenses	Total Valuation Payroll	Expense as Percent of Payroll
2011	\$ 167,920	\$ 48,583,176	0.35%
2012	162,113	48,571,798	0.33%
2013	248,131	44,535,708	0.56%
2014	235,464	46,494,417	0.51%
2015	280,388	46,989,813	0.60%
Total	\$ 1,094,016	\$ 235,174,912	0.47%

Option Factors

Option factors are calculated using the current interest assumption and the assumed rates of mortality. If a retiring member elects an optional form of benefit, the assumed benefit is multiplied by the appropriate option factor to produce the benefit actually payable. As a matter of common practice, option factors are usually revised to correspond to the new interest and mortality assumptions adopted with an experience study.

Currently, option factors for survivor benefits are calculated using a 7.50% interest rate assumption and current assumed rates of post-retirement mortality with a 50% male/50% female unisex mix. We recommend all option factors be updated for new mortality, interest rate assumptions, and unisex mix. Examples of option factors calculated using the present assumptions and our proposed assumptions (including 7.25% interest and a change to a unisex mix of 45% male/55% female) are shown below. The proposed factors include a static mortality improvement projection to 2020, which should coincide with the next experience study. If the new assumptions are adopted, we recommend the new option factors be adopted for retirements on or after January 1, 2019 to allow time for administrative changes. We would also recommend that any such change be reviewed by legal counsel.

Age		Option B-100 100% Joint & Survivor with Pop-up		Option C-50 50% Joint & Survivor with Pop-up	
		Present	Proposed 7.25%	Present	Proposed 7.25%
Ret.	Ben.				
50	45	0.92401	0.91115	0.96051	0.95351
55	50	0.89948	0.88815	0.94708	0.94076
60	55	0.86853	0.86063	0.92964	0.92510
65	60	0.83103	0.82741	0.90772	0.90555

Early Retirement Reduction Factors

If a retiring member elects to commence benefits before meeting normal retirement eligibility, the assumed benefit is multiplied by the appropriate early retirement reduction factor to produce the benefit actually payable. As a matter of common practice, early retirement reduction factors are usually revised to correspond to the new interest and mortality assumptions adopted with an experience study.

Currently, early retirement reduction factors are calculated using a 7.50% interest rate assumption and current assumed rates of post-retirement mortality with a 30% male/70% female unisex mix. We recommend all early retirement reduction factors be updated for new mortality, interest rate assumptions, and unisex mix. We propose the new factors be based on 7.25% interest, the new post-retirement mortality assumptions and a unisex mix of 35% male/65% female. The proposed factors would include a static mortality improvement projection to 2020, which should coincide with the next experience study. If the new assumptions are adopted, we recommend the new early retirement reduction factors be adopted for retirements on or after January 1, 2019 to allow time for administrative changes. We would also recommend that any such change be reviewed by legal counsel.

Summary of Current and Proposed Assumptions

Assumption Set	Economic Assumptions			Non-Economic Assumptions
	Net Rate of Investment Return	Rate of Inflation		Demographic
		Wage	Spread	
A. Base	7.50%	3.50%	4.00%	Current
B. Proposed Demographic	7.50	3.25	4.25	Proposed
C. Alternate I Economic	7.25	3.25	4.00	Proposed
D. Alternate II Economic	7.00	3.25	3.75	Proposed

SECTION D

CONTRIBUTION RATES BASED ON PROPOSED CHANGES

Contribution Rates Based on Proposed Changes

Pages 22 and 23 show the impact of making assumption changes on measured plan costs, based on a December 31, 2015 valuation date. New assumptions will be first used in the December 31, 2016 actuarial valuations, at which time experience gains or losses incurred during 2016 will also be recognized. The assumption changes would first impact contribution rates in 2018. Consequently, no rate changes are recommended for the 2016 or 2017 fiscal years based upon this study. Given that some groups are greater than 100% funded, we have also included each group's normal cost to provide a better comparison of the cost impact due to changed assumptions

Effects of Recommended Changes for All Others Hypothetical Results as of December 31, 2015

	Funded Percent (BCERS - Excluding BABH)			
	A	B	C	D
	Baseline	New Decrements with 3.25% Wage Inflation	New Decrements with 7.25% Interest and 3.25% Wage Inflation	New Decrements with 7.00% Interest and 3.25% Wage Inflation
General	116 %	115 %	112 %	109 %
DWS	82 %	81 %	79 %	77 %
Library	105 %	103 %	101 %	98 %
MCF	112 %	112 %	109 %	106 %
Sheriff	123 %	123 %	120 %	116 %
Road Commission	86 %	84 %	82 %	80 %
Total	109 %	108 %	105 %	103 %

	Employer Normal Cost Percent (BCERS - Excluding BABH)			
	A	B	C	D
	Baseline	New Decrements with 3.25% Wage Inflation	New Decrements with 7.25% Interest and 3.25% Wage Inflation	New Decrements with 7.00% Interest and 3.25% Wage Inflation
General	6.33 %	6.16 %	6.76 %	7.38 %
DWS	7.53 %	8.84 %	9.48 %	10.19 %
Library	\$117,940	\$135,287	\$145,212	\$156,026
MCF	6.63 %	5.92 %	6.51 %	7.17 %
Sheriff	10.05 %	9.61 %	10.52 %	11.49 %
Road Commission	10.17 %	10.22 %	11.07 %	11.97 %
Total	\$2,852,172	\$2,776,105	\$3,032,130	\$3,306,107

	Employer Contribution Rate (BCERS - Excluding BABH)			
	A	B	C	D
	Baseline	New Decrements with 3.25% Wage Inflation	New Decrements with 7.25% Interest and 3.25% Wage Inflation	New Decrements with 7.00% Interest and 3.25% Wage Inflation
General	0.00 %	0.00 %	1.75 %	3.77 %
DWS	12.83 %	14.66 %	16.01 %	17.42 %
Library	\$57,008	\$108,827	\$146,889	\$182,398
MCF	0.27 %	1.96 %	3.67 %	5.44 %
Sheriff	0.00 %	0.00 %	0.92 %	3.66 %
Road Commission	19.19 %	20.46 %	22.76 %	25.09 %
Total	\$1,088,320	\$1,411,895	\$2,068,841	\$2,855,883

Effects of Recommended Changes for BABH Hypothetical Results as of December 31, 2015

	BABH			
	A	B	C	D
	Baseline	New Decrements with 3.25% Wage Inflation	New Decrements with 7.25% Interest and 3.25% Wage Inflation	New Decrements with 7.00% Interest and 3.25% Wage Inflation
Funded Percent	96 %	95 %	93 %	90 %
Employer Normal Cost Percent	7.47 %	7.28 %	7.88 %	8.55 %
Unfunded Accrued Liability ERIP*	1.28 %	1.30 %	1.28 %	1.27 %
Employer Contribution Rate	8.95 %	9.09 %	10.55 %	12.07 %

* Unfunded accrued liability associated with the Early Retirement Incentive Program (ERIP).

SECTION E

COMPLETE LISTING OF RECOMMENDED ASSUMPTIONS

Proposed Turnover Rates

		Proposed Rates						
		Percent Separating Within Next Year						
Sample							Road	
Ages		General	DWS	Library	MCF	Sheriff's*	Commission*	BABH
ALL	0	15.00%	9.00%	8.25%	26.25%	N/A	N/A	16.50%
	1	9.00	5.40	4.95	26.25	N/A	N/A	9.90
	2	9.00	5.40	4.95	15.75	N/A	N/A	9.90
	3	8.00	4.80	4.40	13.13	N/A	N/A	8.80
	4	8.00	4.80	4.40	9.19	N/A	N/A	8.80
20 & under		7.50	4.50	4.13	7.88	4.50%	4.50%	8.25
21		7.50	4.50	4.13	7.88	4.50	4.50	8.25
22		7.50	4.50	4.13	7.88	4.50	4.50	8.25
23		7.50	4.50	4.13	7.88	4.50	4.50	8.25
24		7.50	4.50	4.13	7.88	4.50	4.50	8.25
25		7.50	4.50	4.13	7.88	4.50	4.50	8.25
26		7.50	4.50	4.13	7.35	4.25	4.50	8.25
27		7.50	4.50	4.13	6.83	4.25	4.50	8.25
28		7.50	4.50	4.13	6.30	4.00	4.40	8.25
29		7.50	4.50	4.13	5.78	4.00	4.20	8.25
30		7.00	4.20	3.85	5.25	3.75	3.90	7.70
31		7.00	4.20	3.85	5.25	3.50	3.60	7.70
32		7.00	4.20	3.85	5.25	3.25	3.30	7.70
33		7.00	4.20	3.85	5.25	2.75	3.00	7.70
34		7.00	4.20	3.85	5.25	2.50	2.70	7.70
35		7.00	4.20	3.85	5.25	2.25	2.30	7.70
36		7.00	4.20	3.85	4.99	2.00	1.90	7.70
37		7.00	4.20	3.85	4.73	2.00	1.50	7.70
38		7.00	4.20	3.85	4.46	1.75	1.20	7.70
39		7.00	4.20	3.85	4.20	1.75	1.00	7.70
40		4.00	2.40	2.20	3.94	1.50	0.90	4.40
41		3.80	2.28	2.09	3.68	1.50	0.80	4.18
42		3.60	2.16	1.98	3.41	1.50	0.70	3.96
43		3.40	2.04	1.87	3.15	1.50	0.60	3.74
44		3.20	1.92	1.76	2.89	1.50	0.55	3.52
45		3.00	1.80	1.65	2.63	1.50	0.50	3.30
46		2.80	1.68	1.54	2.63	1.50	0.50	3.08
47		2.60	1.56	1.43	2.36	1.25	0.50	2.86
48		2.40	1.44	1.32	2.36	1.25	0.50	2.64
49		2.20	1.32	1.21	2.10	1.25	0.50	2.42
50		2.00	1.20	1.10	2.10	1.25	0.50	2.20
51		2.00	1.20	1.10	2.10	1.00	0.50	2.20
52		2.00	1.20	1.10	2.10	1.00	0.50	2.20
53		2.00	1.20	1.10	2.10	1.00	0.50	2.20
54		2.00	1.20	1.10	2.10	0.75	0.50	2.20
55		2.00	1.20	1.10	2.10	0.75	0.50	2.20
56		2.00	1.20	1.10	2.10	0.75	0.50	2.20
57		2.00	1.20	1.10	2.10	0.75	0.50	2.20
58		2.00	1.20	1.10	2.10	0.75	0.50	2.20
59		2.00	1.20	1.10	2.10	0.75	0.50	2.20
60		2.00	1.20	1.10	2.10	0.75	0.50	2.20
61		1.80	1.08	0.99	2.10	0.75	0.50	1.98
62		1.60	0.96	0.88	2.10	0.75	0.50	1.76
63		1.40	0.84	0.77	2.10	0.75	0.50	1.54
64		1.20	0.72	0.66	2.10	0.75	0.50	1.32
65		1.00	0.60	0.55	2.10	0.75	0.50	1.10
66		1.00	0.60	0.55	2.10	0.75	0.50	1.10
67		1.00	0.60	0.55	2.10	0.75	0.50	1.10
68		1.00	0.60	0.55	2.10	0.75	0.50	1.10
69		1.00	0.60	0.55	2.10	0.75	0.50	1.10
70 & over		1.00	0.60	0.55	2.10	0.75	0.50	1.10

* These groups do not have service based rates of separation. All rates of separation are based on age.

Proposed Retirement Rates

Retirement Ages	Percent of Active Members Retiring Within Next Year						
	General	DWS	Library	MCF	Sheriff's	Road Commission	BABH
50				20 %		20 %	
51				20		20	
52				20		30	
53				20		30	
54				20		30	
55	20 %	25 %	15 %	30		30	15 %
56	13	20	10	40		20	10
57	13	20	10	50		20	10
58	13	20	10	50		20	10
59	13	20	10	50		20	10
60	30	35	25	30	15 %	20	25
61	25	30	20	30	15	20	20
62	13	20	10	50	30	40	10
63	13	20	10	25	15	40	10
64	13	20	10	25	15	40	10
65	30	35	25	100	100	100	25
66	13	20	10				10
67	13	20	10				10
68	13	20	10				10
69	13	20	10				10
70	100	100	100				100

The following table shows the rates used for the Road Patrol and Road Patrol Supervisory Unit 25 & Out provision and the Correctional Facility Officers 55 & 25 provision.

25 & Out		55 & 25	
Years of Service	Sheriff's Road Patrol and Road Patrol Supervisory Unit	Age	Correctional Facility Officers
25	35%	55	35%
26	35	56	35
27	35	57	35
28	25	58	25
29	25	59	25
30	25	60	25
31	25	61	25
32	25	62	25
33	25	63	25
34	100	64	100

Proposed Early Retirement Rates

55 & 8 and/or 55 & 10 Early Retirement

Retirement				Retirement	
Ages	General	DWS	Library	Ages	BABH
55	8 %	15 %	5 %	55	5 %
56	8	15	5	56	5
57	8	15	5	57	5
58	8	15	5	58	5
59	8	15	5	59	5
				60	5
				61	5

Proposed Disability Rates

Percent Becoming Disabled within Next Year

Sample			Sample		
Ages	Sheriff	All Other Groups*	Ages	Sheriff	All Other Groups*
20 & Under	0.15 %	0.07 %	40	0.38 %	0.19 %
21	0.15	0.07	41	0.39	0.19
22	0.15	0.07	42	0.40	0.20
23	0.15	0.07	43	0.42	0.21
24	0.15	0.07	44	0.46	0.23
25	0.15	0.07	45	0.50	0.25
26	0.15	0.07	46	0.55	0.28
27	0.15	0.07	47	0.62	0.31
28	0.15	0.07	48	0.71	0.35
29	0.15	0.07	49	0.81	0.41
30	0.15	0.07	50	0.92	0.46
31	0.15	0.07	51	1.05	0.53
32	0.15	0.07	52	1.19	0.60
33	0.15	0.07	53	1.34	0.67
34	0.15	0.07	54	1.50	0.75
35	0.15	0.07	55	1.67	0.84
36	0.24	0.12	56	1.85	0.93
37	0.30	0.15	57	2.04	1.02
38	0.34	0.17	58	2.24	1.12
39	0.36	0.18	59	2.44	1.22
			60	2.65	1.33

* Includes BABH.

Proposed Merit and Longevity Rates

Years of Service	Annual Rate of Pay Increase for Merit & Longevity						BABH
	General	DWS	Library	MCF	Sheriff's	Road Commission	
1	3.00%	3.00%	3.00%	0.50%	5.25%	5.25%	3.00%
2	2.25%	2.25%	2.25%	0.50%	4.50%	3.00%	2.25%
3	1.50%	1.50%	1.50%	0.50%	4.50%	3.00%	1.50%
4	1.50%	1.50%	1.50%	0.50%	3.75%	3.00%	1.50%
5	0.75%	0.75%	0.75%	0.50%	3.00%	0.75%	0.75%
6+	0.75%	0.75%	0.75%	0.50%	0.75%	0.75%	0.75%

Proposed Pre-Retirement Mortality Rates

Age	% Dying Next Year*		Age	% Dying Next Year*	
	Male	Female		Male	Female
20	0.0492%	0.0183%	45	0.1282%	0.0753%
21	0.0550%	0.0183%	46	0.1433%	0.0832%
22	0.0605%	0.0183%	47	0.1600%	0.0921%
23	0.0638%	0.0183%	48	0.1791%	0.1016%
24	0.0638%	0.0183%	49	0.2001%	0.1120%
25	0.0622%	0.0183%	50	0.2233%	0.1234%
26	0.0601%	0.0183%	51	0.2486%	0.1358%
27	0.0590%	0.0216%	52	0.2765%	0.1491%
28	0.0589%	0.0223%	53	0.3050%	0.1638%
29	0.0589%	0.0233%	54	0.3360%	0.1795%
30	0.0611%	0.0247%	55	0.3700%	0.1964%
31	0.0631%	0.0263%	56	0.4083%	0.2143%
32	0.0655%	0.0281%	57	0.4522%	0.2332%
33	0.0678%	0.0300%	58	0.5030%	0.2529%
34	0.0697%	0.0321%	59	0.5614%	0.2735%
35	0.0715%	0.0343%	60	0.6289%	0.2952%
36	0.0730%	0.0363%	61	0.7057%	0.3188%
37	0.0748%	0.0389%	62	0.7927%	0.3442%
38	0.0772%	0.0417%	63	0.8908%	0.3721%
39	0.0804%	0.0448%	64	1.0008%	0.4032%
40	0.0846%	0.0484%	65	1.1229%	0.4376%
41	0.0898%	0.0524%	66	1.2352%	0.4837%
42	0.0965%	0.0569%	67	1.3570%	0.5352%
43	0.1051%	0.0622%	68	1.4911%	0.5924%
44	0.1158%	0.0683%	69	1.6398%	0.6563%

* Based on decrement in 2015. Decrements in future years will reflect improvements in life expectancy.

Proposed Healthy Post-Retirement Mortality Rates

Age	% Dying Next Year*	
	Male	Female
50	0.4159%	0.2818%
51	0.4501%	0.3055%
52	0.4881%	0.3312%
53	0.5305%	0.3590%
54	0.5725%	0.3892%
55	0.6152%	0.4214%
56	0.6595%	0.4556%
57	0.7065%	0.4922%
58	0.7575%	0.5311%
59	0.8135%	0.5732%
60	0.8764%	0.6182%
61	0.9471%	0.6678%
62	1.0263%	0.7218%
63	1.1150%	0.7810%
64	1.2141%	0.8472%
65	1.3226%	0.9212%
66	1.4426%	1.0042%
67	1.5731%	1.0982%
68	1.7172%	1.2038%
69	1.8775%	1.3229%
70	2.0552%	1.4565%
71	2.2524%	1.6076%
72	2.4745%	1.7759%
73	2.7230%	1.9648%
74	3.0011%	2.1755%
75	3.3130%	2.4103%
76	3.6623%	2.6728%
77	4.0515%	2.9662%
78	4.4885%	3.2963%
79	4.9729%	3.6677%
80	5.5156%	4.0850%
81	6.1189%	4.5589%
82	6.7913%	5.0884%
83	7.5392%	5.6887%
84	8.3761%	6.3607%
85	9.3024%	7.1130%

Age	% Dying Next Year*	
	Male	Female
86	10.3308%	7.9495%
87	11.4726%	8.8791%
88	12.7335%	9.9008%
89	14.1219%	11.0228%
90	15.6474%	12.2617%
91	17.2358%	13.5895%
92	18.8343%	14.9836%
93	20.4107%	16.4239%
94	21.9629%	17.9016%
95	23.4646%	19.4150%
96	25.1545%	21.0470%
97	26.8613%	22.7284%
98	28.6006%	24.5508%
99	30.3583%	26.4883%
100	32.2127%	28.4766%
101	34.2471%	30.4952%
102	36.2529%	32.5235%
103	38.2275%	34.5468%
104	40.1401%	36.5291%
105	41.9879%	38.4860%
106	43.7680%	40.3756%
107	45.4357%	42.1823%
108	47.0136%	43.9150%
109	48.4979%	45.5515%
110	49.8612%	47.0794%
111	50.3422%	48.4934%
112	50.2562%	49.8004%
113	50.1756%	50.3367%
114	50.0902%	50.1553%
115	50.0000%	50.0000%
116	50.0000%	50.0000%
117	50.0000%	50.0000%
118	50.0000%	50.0000%
119	50.0000%	50.0000%
120	100.0000%	100.0000%

* Based on decrement in 2015. Decrements in future years will reflect improvements in life expectancy.

Proposed Disabled Post-Retirement Mortality Rates

Age	% Dying Next Year*	
	Male	Female
50	2.0871%	1.1891%
51	2.1579%	1.2490%
52	2.2299%	1.3124%
53	2.2874%	1.3788%
54	2.3416%	1.4472%
55	2.3966%	1.5159%
56	2.4548%	1.5837%
57	2.5190%	1.6495%
58	2.5909%	1.7126%
59	2.6696%	1.7737%
60	2.7574%	1.8324%
61	2.8529%	1.8937%
62	2.9563%	1.9579%
63	3.0683%	2.0279%
64	3.1906%	2.1092%
65	3.3219%	2.2024%
66	3.4670%	2.3107%
67	3.6238%	2.4374%
68	3.7984%	2.5830%
69	3.9944%	2.7507%
70	4.2120%	2.9413%
71	4.4520%	3.1585%
72	4.7213%	3.4006%
73	5.0187%	3.6721%
74	5.3464%	3.9737%
75	5.7084%	4.3068%
76	6.1075%	4.6748%
77	6.5450%	5.0785%
78	7.0304%	5.5224%
79	7.5602%	6.0072%
80	8.1486%	6.5331%
81	8.7959%	7.1098%
82	9.5115%	7.7264%
83	10.3005%	8.3986%
84	11.1775%	9.1191%
85	12.1385%	9.8931%

Age	% Dying Next Year*	
	Male	Female
86	13.1949%	10.7185%
87	14.3561%	11.5996%
88	15.6231%	12.5268%
89	16.9992%	13.5032%
90	18.4897%	14.5402%
91	19.9691%	15.6771%
92	21.4226%	16.8990%
93	22.8419%	18.1891%
94	24.2374%	19.5386%
95	25.5824%	20.9436%
96	27.1331%	22.4889%
97	28.6957%	24.0960%
98	30.2854%	25.7627%
99	31.8918%	27.4828%
100	33.5185%	29.2473%
101	35.1700%	31.0461%
102	36.8366%	32.8759%
103	38.5336%	34.7335%
104	40.2465%	36.5948%
105	41.9879%	38.4860%
106	43.7680%	40.3756%
107	45.4357%	42.1823%
108	47.0136%	43.9150%
109	48.4979%	45.5515%
110	49.8612%	47.0794%
111	50.3422%	48.4934%
112	50.2562%	49.8004%
113	50.1756%	50.3367%
114	50.0902%	50.1553%
115	50.0000%	50.0000%
116	50.0000%	50.0000%
117	50.0000%	50.0000%
118	50.0000%	50.0000%
119	50.0000%	50.0000%
120	100.0000%	100.0000%

* Based on decrement in 2015. Decrements in future years will reflect improvements in life expectancy.

APPENDIX

2011 – 2015 Experience Analysis

Historical Patterns of Investment Return, Pay Increases & Inflation

* Sample Balanced Fund	
Equities	65%
Bonds -	20%
- Corporate	14%
Cash Equivalents	1%
	100%

# Historical Spread	
# Observed spread is very sensitive to the observation period, even over long periods, illustrated below:	
Observation Period	Spread
65 years	5.1%
55 years	4.8%
45 years	5.5%
35 years	7.1%

Calendar Year Period	Gross Market Returns			Stocks (S&P 500)	Price Inflation (CPI)	National Average Earnings	Sample Balanced Fund*	
	Bonds (Long)		Cash Equiv. (T Bills)				Total Return (I)	Spread: I - NAE
	U.S. Treasury	Corp. (S&P AA)						
1950-1959	(0.1)%	1.0 %	1.9 %	19.4 %	2.2 %	4.5 %	13.1 %	8.6 %
1960-1969	1.4 %	1.7 %	3.9 %	7.8 %	2.5 %	4.3 %	5.9 %	1.6 %
1970-1979	5.5 %	6.2 %	6.3 %	5.9 %	7.4 %	6.9 %	6.2 %	(0.7)%
1980-1989	12.6 %	13.0 %	8.9 %	17.5 %	5.1 %	5.8 %	16.1 %	10.3 %
1990-1999	8.8 %	8.4 %	4.9 %	18.2 %	2.9 %	4.2 %	15.0 %	10.8 %
2000-2009	7.7 %	7.6 %	2.8 %	(0.9)%	2.5 %	2.9 %	3.0 %	0.1 %
2010	10.1 %	12.4 %	0.1 %	15.1 %	1.5 %	2.4 %	13.6 %	11.2 %
2011	28.2 %	18.0 %	0.0 %	2.1 %	3.0 %	3.1 %	9.5 %	6.4 %
2012	3.3 %	10.7 %	0.1 %	16.0 %	1.7 %	3.1 %	12.6 %	9.5 %
2013	(11.4)%	(7.1)%	0.0 %	32.4 %	1.5 %	1.3 %	17.8 %	16.5 %
2014	23.9 %	17.3 %	0.0 %	13.7 %	0.8 %	3.6 %	16.1 %	12.5 %
2015	(1.3)%	(4.8)%	0.5 %	1.4 %	0.7 %	2.9 %	0.0 %	(2.9)%
Last 65 Years	6.2 %	6.4 %	4.4 %	10.9 %	3.5 %	4.6 %	9.7 %	5.1 % #

Note: Market index returns do not reflect investment expense (commissions and management fees). Those expenses generally range from 0.25% to 1.0% of assets. The net real rate of return for a plan that pays its own investment expenses would be correspondingly lower.

August 1, 2017

Ms. Katie Meeth, Retirement Administrator/Accountant
Bay County Employees' Retirement System
515 Center Avenue
Bay City, Michigan 48708

Dear Ms. Meeth:

Enclosed are 20 copies of our report of Retirement System experience. We look forward to meeting with the Board to discuss the results of our review. If you have any questions, please feel free to call me at (248) 799-9000.

Sincerely,



James D. Anderson

JDA:bd
Enclosures