

BAY COUNTY EMPLOYEES' RETIREMENT SYSTEM
ANNUAL ACTUARIAL VALUATION REPORT
FOR BAY-ARENAC BEHAVIORAL HEALTH AUTHORITY
DECEMBER 31, 2015

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September 23, 2016

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

Re: Bay-Arenac Behavioral Health Authority Actuarial Valuation as of December 31, 2015

Dear Board Members:

The results of the December 31, 2015 Annual Actuarial Valuation of the Bay County Employees' Retirement System – Bay-Arenac Behavioral Health Authority (BABH) are presented in this report.

This report was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The computed contribution rate shown on page A-1 may be considered as a minimum contribution rate that complies with Board's funding policy. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the System in excess of those presented in this report be considered.

The purposes of the valuation are to measure the System's funding progress, and to determine the employer contribution rate for the calendar year ending December 31, 2017. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The findings in this report are based on data and other information through December 31, 2015. 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, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Board of Trustees September 23, 2016 Page 2

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The valuation was based upon information furnished by the County, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the County.

In addition, this report was prepared using certain assumptions approved by the Board, as described in the section of this report entitled Actuarial Cost Methods and Actuarial Assumptions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Bay County Employees' Retirement System - BABH as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

James D. Anderson and Shana M. Neeson are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,

James D. Anderson, FSA, EA, MAAA

Shana M. Neeson, ASA, MAAA

Shana M Nelson

JDA/SMN:di

SECTION A

EXECUTIVE SUMMARY

1. Required Employer Contributions - Calendar Year Beginning January 1, 2017

The computed employer contributions **exclusive of employer paid "member" contributions** are as follows:

		Contribution Rate		
Division	Valuation Year	12/31/2014	12/31/2015	
	Calendar Year	1/1/2016	1/1/2017	
BABH		11.36 %	8.95 %	

2. Funded Ratio Comparison

The funding percentage for BABH is shown below.

	Funded Ratio			
Division	12/31/2014	12/31/2015		
BABH	91 %	96 %		

This year valuation assets represent 96.4% of accrued liabilities; last year the ratio was 91.1%. If the valuation results were based on market value of assets instead of smoothed funding value, the funded percent of the plan would be 98.0%.

3. Reasons for Change

There are three general reasons why contribution rates change from one valuation to the next. The first is a change in the benefits or eligibility conditions of the plan. The second is a change in the valuation assumptions used to predict future occurrences. The third is the difference during the year between the plan's actual experience and what the assumptions predicted.

There were no changes to valuation assumptions or methods for the 2015 valuation. There were no changes in benefit provision reported.

4. 2015 Plan Experience

The aggregate experience during 2015 was favorable, with an overall gain/(loss) of \$439,542. The detailed gain/(loss) information is shown on page B-7.

Investment return on the market value of assets for calendar year 2015 was less than the assumed rate of return for the valuation. However, the asset smoothing method only recognizes 20% of a given year's investment gain or loss. Partial recognition of gains from prior years were enough to completely offset this year's loss along with the continued phase-in of investment losses from prior years, resulting in the investment gain on the smoothed value of assets as shown below. The experience gain on investments and all other experience is quantified below (for BABH). The non-investment experience gain was due to greater member termination than expected. This gain was partially offset by a loss on pay (due to actual pay increases being greater than assumed). In addition, an advanced ERIP payment was made during 2015 which reduced the amortization payment related to the ERIP.

Experience for BABH

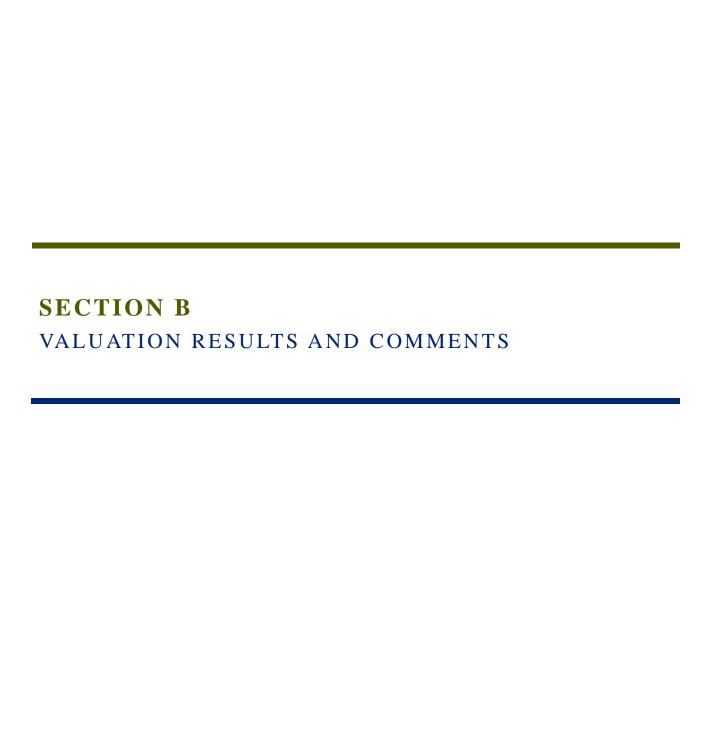
Investment Gain/(Loss)	\$404,034
Non-investment Gain/(Loss)	35,508
Gain/(Loss) from all causes	\$439,542

5. Retiree Reserve Balance

The retiree accrued liabilities are larger than the reported retiree reserve balances. For detail see Comment A on page B-5.

6. Looking Ahead

Investment income greater than or less than expected based on the investment return assumption, is recognized over a 5-year period under the current asset valuation method. Due to favorable investment performance during three of the previous five years, unrecognized investment gains exist that are scheduled to be recognized over the next four years. As a result, the funding value of assets was 98% of market value as of December 31, 2015. Furthermore, absent future actuarial losses, this is expected to put downward pressure on the required contribution amounts in the near term.



Financial Objective

The financial objective of the Retirement System is to establish and receive contributions, expressed as a percentage of active member payroll, which will remain approximately level from year-to-year and will not have to be increased for future generations of citizens.

Your annual actuarial valuations determine how well the objective is being met.

The Board of Trustees of the Bay County Employees' Retirement System confirms that the System provides for payment of the required employer contribution as described in Section 20m of Michigan Public Act No. 728 of 2002.

Contribution Rates

The Retirement System is supported by contributions from the employers, by member contributions and by the investment income earned on System assets. For some divisions, the required member contributions are paid by the Employer either through contributions to the System or by transferring funds from the employer reserves to the employee reserves. In addition, the Employer provides an actuarially determined contribution.

Member and Employer contributions cover both (i) normal cost, and (ii) the financing of the unfunded accrued liability over a period of future years. The normal cost is the portion of System costs allocated to the current year by the valuation method described on page D-1. The unfunded accrued liability is the portion of System costs not covered by present System assets and future normal costs.

The contribution requirements for the calendar year beginning January 1, 2017 are presented on page B-2.

Contributions to Provide Benefits Member Portion and Employer Portion Calendar Year Beginning January 1, 2017

	% of Active Payroll
Contributions for	BABH
Normal cost of benefits:	
Age & service	10.00 %
Disability	0.29
Death-in-service	0.29_
Total	10.58
Member contributions [#] :	
Total	4.00
Future refunds	0.49
Available for pensions	3.51
Administrative expenses	0.40
Employer normal cost	7.47
Unfunded accrued liability ERIP^	1.28
Unfunded accrued liability	0.20
Computed Employer Rate	8.95 %

[#] The member contributions are paid by the employer, either by directly contributing to the Retirement System or by transferring funds from employer reserves to employee reserves.

Unfunded actuarial accrued liabilities were amortized as a level percent of member payroll over a closed period of 27. The increase in unfunded actuarial accrued liability associated with the ERIP was amortized over a period of 10 years starting with the contribution for the calendar year beginning January 1, 2015.

The procedure for determining dollar contribution amounts is shown on page B-3.

Page B-4 displays the unfunded accrued liabilities (asset surpluses) that are amortized by the contribution rates shown above.

[^] Unfunded accrued liability associated with the Early Retirement Incentive Program (ERIP).

Determining Dollar Contributions

For any period of time, the percent-of-payroll contribution rates need to be converted to dollar

amounts. We recommend one of the following procedures:

(1) Contribute dollar amounts for a period which are equal to the employer's percent-

of-payroll contribution requirement multiplied by the covered active member

payroll for the period. Adjustments should be made as necessary to exclude items

of pay that are not covered compensation for Retirement System benefits and to

include non-payroll payments that are covered compensation; or

(2) Contribute the dollars based on the table shown below.

Group: BABH

Contribution: \$ 990.514

This amount is based on the payroll information provided for the valuation.

Timing of Contribution Payments

The contribution requirements in this report anticipate regular payments throughout the year.

Examples would be at each payroll date or in 12 monthly installments. If the employer contribution

pattern is significantly different, an adjustment to the costs may be appropriate. For example, a lump

sum contribution at the beginning of the year is available for investment throughout the year and,

therefore, ought to be somewhat smaller than 12 monthly payments. Similarly, a lump sum

contribution at the end of the year will not generate any investment income that year.

Bay-Arenac Behavioral Health Authority

B-3

Determination of Unfunded Accrued Liability

	BABH
A. Accrued liability	
1. For retirees and beneficiaries	\$ 29,345,292
2. For vested terminated members	2,943,291
3. For present active membersa. Value of expected futurebenefit payments	26,826,441
b. Value of future normal costsc. Active member liability: (a) - (b)	10,490,985 16,335,456
4. Total actuarial accrued liability	48,624,039
B. Valuation assets	46,894,673
C. Unfunded accrued liability (Excess assets)*:	1.700.266
(A.4) - (B)	1,729,366
D. Funding ratio: (B) / (A.4)	96.4%

^{*} The outstanding unfunded accrued liability balance associated with the ERIP is \$1,349,516 as of December 31, 2015.

Comments

COMMENT A: We developed the value of anticipated future benefit payments to retired members and their beneficiaries. We then compared this accrued liability to the reported value of the retirement reserve account. The figures below compare the retired liabilities and reserves.

	Retiree	Reported	Unfunded
	Accrued	Retiree	Retiree
Division	Liability	Reserve	Liability
BABH	\$29,345,292	\$28,487,352	\$857,940

As of the valuation date, there is a shortfall in the retiree reserve. This valuation anticipates that the difference between the accrued liability and the reported reserve will be transferred from the Retirement System employer reserve to the retiree reserve effective January 1, 2016 to fully fund the retiree accrued liability.

COMMENT B: Contribution rates changed during the year due to favorable investment performance and a gain from greater member termination than expected. Partially offsetting the gain was an overall pay loss, from higher than expected payroll increases. Lastly, an advanced ERIP payment was made during 2015 which reduced the amortization payment related to the ERIP.

COMMENT C: The chart on page B-7 shows the experience gain/(loss) for 2015. Non-investment experience during 2015 was favorable. The development of the investment gain/(loss) is shown on page B-8.

COMMENT D: The introduction of GASB Statements No. 67 and No. 68 served to completely disconnect pension accounting from pension funding. This means that the Annual Required Contribution is no longer applicable. As part of good governance, we would be happy to supply the Board with a draft funding policy for consideration. In particular, this document would codify methods, assumptions and other key items related to pension funding, including perhaps a minimum contribution equal to a percentage of the normal cost for plans that are currently overfunded.

COMMENT E: This valuation completely separates Bay-Arenac Behavioral Health Authority (BABH) results from those for the other County groups for the first time -- reflecting the County-provided legal opinion in 2015 that the Retirement System is an Agent Multiple Employer plan with separate assets for two agent employers: 1) BABH and 2) all other County groups.

Disclosures

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.5% on the actuarial value of assets), then the following outcomes are expected:

- 1. The employer normal cost as a percentage of pay is expected to remain level as a percentage of payroll.
- 2. The unfunded liability is expected to be paid off in approximately 27 years, which is the number of years remaining in the closed amortization schedule of the unfunded liability. The unfunded liability associated with the ERIP is expected to be paid off in approximately 9 years, which is the number of years remaining in the closed ERIP amortization schedule of the unfunded liability.
- 3. The funded status of the plan is expected to reach a 100% funded ratio in approximately 27 years, which is the number of years remaining in the closed amortization schedule of the unfunded liability.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- 1. The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- 2. The measurement is inappropriate for assessing the need for or the amount of future employer contributions.
- 3. The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Determination of Experience Gain/(Loss) Year Ended December 31, 2015

Actual experience will never (except by coincidence) exactly match assumed experience. It is hoped that gains and losses will cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the determination of the experience gain/(loss) is shown below:

	BABH
(1) UAAL at start of year	\$ 4,168,912
(2) Normal cost for the year 2015	1,200,503
(3) Actual employer & employee contributions	(3,430,556)
(4) Net interest accrual on (1), (2) and (3)	230,049
(5) Expected UAAL before changes: $(1) + (2) + (3) + (4)$	2,168,908
(6) Change from benefit changes	-
(7) Change from revised actuarial assumptions or methods	-
(8) Expected UAAL after changes: (5) + (6) + (7)	2,168,908
(9) Actual UAAL at end of year	1,729,366
(10) Gain/(Loss): (8) - (9)	439,542
(11) Actuarial accrued liabilities at start of year	46,920,346
(12) Gain/(Loss) as a percent of actuarial accrued liabilities at start of year: (10)/(11)	0.9%
(13) Investment Gain/(Loss)	\$ 404,034
(14) Gain/(Loss) from all other causes	35,508

Development of Valuation Investment Gain/(Loss) Year Ended December 31, 2015

We anticipate an average return on valuation assets of 7.5% for future years. The chart below details the development of the investment gain/(loss) for the entire Bay County Employees' Retirement System, including BABH.

(1) Total 2015 valuation investment income: \$ 23,411,545

(2) Average valuation assets: 277,406,544

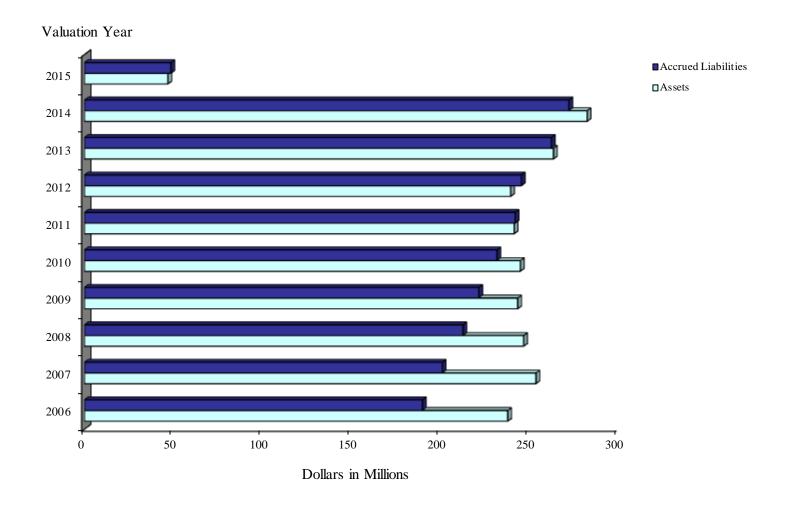
(3) Expected investment income: (.075) x (2) 20,805,491

(4) Gain/(Loss): (1) - (3) 2,606,054

(5) Valuation rate of return for 2015: (1) / (2) 8.44 %

Please note that this analysis uses asset values and investment income as defined for the actuarial valuation. It is not, therefore, appropriate as a measure of manager performance.

Assets & Accrued Liabilities



For Valuation Years prior to 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the Valuation Year 2015, the results displayed are for BABH.

2006 assets equaled 125.2% of accrued liabilities.

2015 assets equaled 96.4 of accrued liabilities.

Computed Contributions - Comparative Statement

Employer Requirements
as Percents of Valuation Payroll@

				Annual	as Percents of Valuation Payroll@						
Valuation	Valu	uation Payro	oll	Dollar	General				Medical Care	Sheriff's	Road
Date	Total	Average	% Incr.	Requirement	County	DWS+	Library+	BABH+	Facility	Department	Commission
12/31/1996 #	\$30,646,324	\$27,835	3.4 %	\$ 430,513	0.00 %				1.69 %	0.00 %	12.76 %
12/31/1997 #	32,216,234	28,739	3.2	248,762	0.00				0.00	0.00	9.15
12/31/1998 #	34,308,505	29,885	4.0	45,010	0.00				0.00	0.00	1.67
12/31/1999 #	35,763,978	31,072	4.0	0	0.00				0.00	0.00	0.00
12/31/2000 #	38,314,967	32,090	3.3	0	0.00				0.00	0.00	0.00
12/31/2001 #*	39,761,644	33,218	3.5	0	0.00	0.00 %	0.00 %	0.00 %	0.00	0.00	0.00
12/31/2002	41,331,916	33,658	1.3	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/31/2003 *	43,053,950	35,175	4.5	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/31/2004 #	43,550,999	36,202	2.9	405,110	0.00	0.00	0.68	1.11	0.00	0.00	8.19
12/31/2005	43,104,046	36,010	(0.5)	588,948	0.00	0.00	1.60	2.53	0.00	0.00	9.34
12/31/2006 #	42,024,045	37,455	4.0	644,945	0.00	0.00	0.00	3.24	0.00	0.00	10.82
12/31/2007 #	44,687,752	39,269	4.8	688,871	0.00	0.00	0.00	3.70	0.00	0.00	9.17
12/31/2008	46,482,897	39,695	1.1	1,578,548	0.00	4.44	0.00	6.95	2.32	0.00	14.13
12/31/2009 ^	47,244,573	40,208	1.3	2,443,118	0.00	7.40	2.74	8.83	5.05	0.00	17.64
12/31/2010	47,090,560	40,771	1.4	3,074,891	1.19	11.71	6.91	9.08	7.36	0.00	18.05
12/31/2011 #	48,583,176	41,702	2.3	4,289,438	4.08	13.77	9.89	10.17	9.57	0.00	20.78
12/31/2012 *	48,571,798	41,444	(0.6)	4,038,100	3.87	15.75	9.26	10.01	7.22	0.55	21.32
12/31/2013 #\$	44,535,708	39,447	(4.8)	4,477,504	0.03	15.72	\$ 89,491	27.04	4.20	0.00	19.14
12/31/2014	46,494,417	40,081	1.6	2,535,295	0.00	14.16	34,265	11.36	2.87	0.00	18.09
12/31/2015	10,331,351	46,961	N/A	990,514				8.95			

For Valuation Dates prior to 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the 2015 Valuation Date, the results displayed are for BABH.

⁺ Prior to 12/31/2001 included with General County.

[#] Retirement System amended.

^{*} Revised actuarial assumptions or methods.

[^] Implementation of a one year lag between valuation date and first day of the calendar year to which the contributions apply.

[@] Beginning with the 2013 valuation, the Library contribution is calculated as a level dollar amount, since the Library is closed to future hires.

^{\$} Contribution reflects an advanced payment of the BABH unfunded ERIP liability.

SECTION C

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

Brief Summary of Plan Provisions as of December 31, 2015

Division		Retirement Eligibility			
No.	Name	Normal	Early	Deferred	
23	Behavioral Health AFSCME	Age 55 with 30 yrs of svc	Age 55 with 8/10° yrs of svc	8/10° yrs of svc	
		or age 60 with 8/62 with 10° yrs of svc			
24	Behavioral Health General	Age 55 with 30 yrs of svc	Age 55 with 8/10 ^{&} yrs of svc	8/10 ^{&} yrs of svc	
		or age 60 with 8/62 with 10 ^{&} yrs of svc			

^{~ 10} yrs of svc (age 62 with 10 yrs of svc) for members hired on or after 10/1/2014.

[&]amp; 10 yrs of svc (age 62 with 10 yrs of svc) for members hired after 1/1/2015.

Eligibility	Amount
-------------	--------

NORMAL RETIREMENT

See chart above.

Total service times FAC times:

2.00% for division 23 hired before 10/1/2014

2.25% for division 24 hired on or before 1/1/2015

1.60% for division 23 hired on or after 10/1/2014

1.60% for division 24 hired after 1/1/2015

Maximum County-financed is 75% of FAC.

Type of FAC - Highest 5 years. Some lump sums included.

EARLY RETIREMENT

See chart above.

Normal retirement reduced to the actuarial equivalent of a pension at normal retirement age.

DEFERRED RETIREMENT

at age 55.

Service condition as indicated in the chart Computed as a normal retirement but based on service and final above. Benefit begins at age 60 or reduced average compensation at time of termination.

NON-DUTY DEATH IN SERVICE

age.

10 or more years of credited service at any Computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election.

DUTY DEATH-IN-SERVICE

No age or service requirements. Benefits begin upon termination Worker's Compensation.

To the spouse, a refund of accumulated contributions plus a benefit equal to the Worker's Compensation amount. Unmarried children under 18 and parents receive a benefit equal to the Worker's Compensation amount.

Brief Summary of Plan Provisions as of December 31, 2015 (Concluded)

Eligibility Amount

NON-DUTY DISABILITY

10 or more years of credited service.

Computed as a normal retirement. Worker's Compensation payments may be offset.

DUTY DISABILITY

No age or service requirements.

Computed as a normal retirement with additional service credit granted to age 55. Worker's Compensation payments may be offset.

POST-RETIREMENT COST-OF-LIVING ADJUSTMENTS

One-time increases have been granted.

MEMBER CONTRIBUTIONS

4% of annual compensation.

The employer pays the member contribution either by directly contributing to the Retirement System or by transferring funds from the employer to the employee reserves.

EMPLOYER CONTRIBUTIONS

Actuarially determined amounts which, together with member contributions, are sufficient to cover both (i) normal costs of the plan, and (ii) financing of unfunded accrued liabilities over a selected period of future years.

Reported Financial Information Year Ended December 31, 2015 Bay County Employees' Retirement System (in Total) (Market Value)

Revenues and Disbursements during 2015

Revenues:

a. Employee contributions	\$ 2,011,545	
b. Employer contributions	5,175,435	
c. Investment income	4,145,569	
d. Miscellaneous income	200,782	
e. Total		\$11,533,331

Disbursements:

a. Benefits paid	\$ 16,234,642	
b. Refunds of member contributions	191,002	
c. Administrative expenses	280,388	
d. Investment expenses	2,019,963	
e. Total		\$18,725,995

Reserve Increase:

Total revenues minus total disbursements \$ (7,192,664)

Assets and Reserves as of December 31, 2015

Assets: Reserve Accounts:

a. Cash & equivalents [#]	\$ (1,446,265)	a. Employee contributions	\$ 28,067,302
b. Short term investments	9,294,022	b. Reserve for benefits	
		now being paid	157,024,010
c. Stocks	202,479,541	c. Reserve for future benefits	115,856,917
d. Bonds	71,868,081		
e. Real Estate	18,369,420		
f. Other^	383,430		
Total	\$300,948,229	Total	\$300,948,229

[#] Adjusted for accruals net of payables and deferred inflows of resources.

[^] Adjusted for deferred outflow of resources.

Development of Valuation Assets Bay County Employees' Retirement System (in Total) December 31, 2015

	2014	2015	2016	2017	2018	2019
1. Beginning of Year Assets						
a) Market Value	\$295,388,098	\$308,140,893				
b) Valuation Assets	263,364,669	282,166,070				
2. End of Year Market Value Assets	308,140,893	300,948,229				
3. Net Additions to Market Value						
a) Net Contributions	5,732,872	7,186,980				
b) Net Investment Income = (3d) - (3a) - (3c)	23,163,865	2,326,388				
c) Benefit Payments, Refunds, and Admin. Expenses	(16,143,942)	(16,706,032)				
d) Total Additions to Market Value = (2) - $(1a)$	12,752,795	(7,192,664)				
4. Average Valuation Assets =						
(1b) + .5 x [(3a) + (3c)]	258,159,134	277,406,544				
5. Expected Income at Valuation Rate = $7.5\% \times (4)$	19,361,935	20,805,491				
6. $Gain/(Loss) = (3b) - (5)$	3,801,930	(18,479,103)				
7. Phased-In Recognition of Investment Return						
a) Current Year: 0.2 x (6)	760,386	(3,695,821)				
b) First Prior Year	7,666,474	760,386	\$ (3,695,821)			
c) Second Prior Year	2,058,840	7,666,474	760,386 \$	(3,695,821)		
d) Third Prior Year	(4,183,827)	2,058,840	7,666,474	760,386 \$	(3,695,821)	
e) Fourth Prior Year	3,548,663	(4,183,825)	2,058,841	7,666,475	760,386 \$	(3,695,819)
f) Total Recognized Investment Gain	9,850,536	2,606,054	6,789,880	4,731,040	(2,935,435)	(3,695,819)
8. Change in Valuation Assets						
(3a) + (3c) + (5) + (7f)	18,801,401	13,892,493				
9. End of Year Assets						
a) Market Value = (2)	308,140,893	300,948,229				
b) Valuation Assets = $(1b) + (8)$	282,166,070	296,058,563				
c) Difference Between Market & Valuation Assets	25,974,823	4,889,666	(1,900,214)	(6,631,254)	(3,695,819)	0
10. Recognized Rate of Return = $[(5) + (7f)] / (4)$	11.32 %	8.44 %				
11. Market Rate of Return = $2 \times (3b) / [(1a) + (2) - (3b)]$	7.98 %	0.77 %				
12. Market Value of Assets for BABH		47,669,180				
13. Funding Value of Assets for BABH		46,894,673				

Retirees and Beneficiaries Comparative Schedule

_	Added to Rolls*		Added to Rolls* Removed from Rolls Ro		Rolls	End of Year	% Incr. in		Discounted Value of Allowances		
Year		Annual		Annual		Annual Annual Ann		Average			
Ended	No.	Allowances	No.	Allowances	No.	Allowances#	Allowances	Allowance	Total	Average	
12/31/1991	29	\$ 358,208	15	\$ 43,361	334	\$ 1,741,147	22.1	\$ 5,213	\$ 16,803,661	\$ 50,310	
12/31/1992	15	157,350	4	8,780	345	1,889,717	8.5	5,477	18,909,686	54,811	
12/31/1993	27	306,059	3	16,365	369	2,179,407	15.3	5,906	21,666,249	58,716	
12/31/1994	18	131,596	14	50,875	373	2,260,128	3.7	6,059	22,112,422	59,283	
12/31/1995	24	261,820	12	31,551	386	2,490,397	10.2	6,452	24,080,999	62,386	
12/31/1996	29	404,810	7	55,615	408	2,839,592	14.0	6,960	27,838,060	68,231	
12/31/1997	28	392,818	8	44,327	428	3,188,083	12.3	7,449	31,558,085	73,734	
12/31/1998	24	393,550	7	46,973	445	3,534,660	10.9	7,943	34,794,848	78,191	
12/31/1999	23	295,915 @	29	83,717	439	3,746,858	6.0	8,535	36,670,326	83,531	
12/31/2000	46	645,474	27	201,656	458	4,190,676	11.8	9,150	40,970,172	89,455	
12/31/2001	31	732,306 @	13	45,724	476	4,877,258	16.4	10,246	46,616,261	97,933	
12/31/2002	34	464,636	18	126,234	492	5,215,660	6.9	10,601	49,634,941	100,884	
12/31/2003	37	514,935	17	72,960	512	5,657,635	8.5	11,050	53,369,747	104,238	
12/31/2004	95	2,073,773	16	133,099	591	7,598,309	34.3	12,857	74,362,328	125,825	
12/31/2005	43	786,641	26	170,645	608	8,214,306	8.1	13,510	80,594,476	132,557	
12/31/2006	39	844,464	24	579,276	623	8,479,494	3.2	13,611	85,797,333	137,716	
12/31/2007	29	423,246	14	93,660	638	8,809,080	3.9	13,807	88,063,580	138,031	
12/31/2008	47	725,060	26	204,104	659	9,330,036	5.9	14,158	92,573,860	140,476	
12/31/2009	58	1,303,182	34	338,544	683	10,294,674	10.3	15,073	102,921,818	150,691	
12/31/2010	46	1,166,301	24	210,133	705	11,250,842	9.3	15,959	112,893,161	160,132	
12/31/2011	51	953,802	16	199,264	740	12,005,380	6.7	16,223	119,532,453	161,530	
12/31/2012	58	1,114,368	12	127,382	786	12,992,366	8.2	16,530	126,736,278	161,242	
12/31/2013	98	2,545,500	1	20,928	883	15,516,938	19.4	17,573	153,936,777	174,334	
12/31/2014	35	826,083	2	10,254	916	16,332,767	5.3	17,831	159,912,340	174,577	
12/31/2015	3	82,645	2	9,425	120	2,800,532	N/A	23,338	29,345,292	244,544	

For Years Ended prior to 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the Year Ended 2015, the results displayed are for BABH.

^{*} Includes survivors of deceased retirees and annual allowance adjustments.

[@] Includes one-time benefit increases.

[#] Annual Allowances based on pre-change age amount for members with applicable pension benefit types.

Retirees and Beneficiaries December 31, 2015 Tabulated by Type of Pension Paid

Type of Pensions Being Paid	ВАВН
Regular	53
A - 10 Year Certain	8
B - 100% J & S	34
C - 50% J & S	11
Social Security Equated	
- Regular	4
- 10 Year Certain	1
- 100% J & S	2
- 50% J & S	1
Survivor	6
Total Pensions Being Paid	120

Retirees and Beneficiaries December 31, 2015 Tabulated by Attained Age*

		ВАВН
Attained Age	No.	Annual Allowances
40 - 44	1	\$ 15,148
45 - 49	2	34,865
50 - 54 55 - 59	6 24	125,082 817,290
60 - 64	39	870,302
65 - 69	26	570,665
70 - 74	11	254,310
75 - 79	6	78,991
81	1	8,129
83	1	3,289
86	1	3,817
90	1	15,350
92	1	3,294
Totals	120	\$2,800,532

^{*} Annual Allowances based on pre-change age amount for members with applicable pension benefit types.

Average Age at Retirement: 58.0 years

Average Age Now: 64.2 years

Inactive Members December 31, 2015

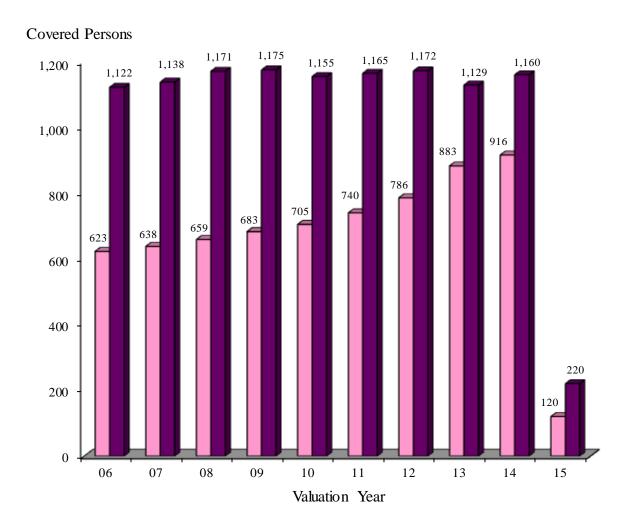
An inactive member is a person who has left County employment with entitlement to a retirement allowance after attaining voluntary retirement age. There were 29 inactive members as of December 31, 2015.

The schedule below is an age distribution of the inactive members.

Tabulated by Attained Age

Attained		Estimated Deferred
Age	No.	Allowances
35	1	\$ 9,084
37	1	15,804
43	1	9,840
45	2	26,193
47	1	12,828
48	3	58,152
49	2	22,032
50	2	14,339
51	1	8,100
52	3	44,391
53	1	15,199
55	3	39,068
56	1	7,282
57	1	18,236
58	3	34,797
59	1	49,632
61	1	7,262
62	1	19,781
Total	29	\$412,020

Active Members & Benefit Recipients



■Benefit Recipients ■Active Members

For Valuation Years prior to 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the 2015 Valuation Year, the results displayed are for BABH.

Active Members December 31, 2015 Comparative Schedule

Valuation				Active	Member	S			Valuation		Average	
Date	Gen.	DWS	Library	BABH	M.C.F.	She riff's	Road	Total	Payroll	Age	Service	Pay
12/31/1996	676				279	73	73	1,101	\$30,677,224	42.8	10.0	\$27,835
12/31/1997	688				283	76	74	1,121	32,216,234	43.1	10.0	28,739
12/31/1998	713				286	77	72	1,148	34,308,505	43.4	10.1	29,885
12/31/1999	718				284	76	73	1,151	35,763,978	43.7	10.4	31,072
12/31/2000	742				300	77	75	1,194	38,314,967	43.4	10.0	32,090
12/31/2001	465	40	63	180	296	78	75	1,197	39,761,644	43.8	10.3	33,218
12/31/2002	465	42	64	195	308	80	74	1,228	41,331,916	44.0	10.5	33,658
12/31/2003	456	41	67	206	302	76	76	1,224	43,053,950	44.7	10.7	35,175
12/31/2004	427	41	72	208	303	76	76	1,203	43,550,999	44.3	10.3	36,202
12/31/2005	429	41	74	211	293	75	74	1,197	43,104,046	44.7	10.5	36,010
12/31/2006	412	41	30	205	292	75	67	1,122	42,024,045	45.0	11.1	37,455
12/31/2007	415	39	39	216	288	74	67	1,138	44,687,752	45.3	11.3	39,269
12/31/2008	410	38	42	235	305	75	66	1,171	46,482,897	45.3	11.4	39,695
12/31/2009	407	39	45	253	297	76	58	1,175	47,244,573	45.1	11.3	40,208
12/31/2010	389	37	45	261	295	74	54	1,155	47,090,560	45.4	11.4	40,771
12/31/2011	378	38	44	274	298	77	56	1,165	48,583,176	45.3	11.2	41,702
12/31/2012	365	39	42	276	319	75	56	1,172	48,571,798	45.0	11.1	41,444
12/31/2013	351	36	41	219	350	76	56	1,129	44,535,708	44.1	10.6	39,447
12/31/2014	365	40	36	220	361	79	59	1,160	46,494,417	43.8	10.4	40,081
12/31/2015				220					10,331,351	43.8	8.6	46,961

For Valuation Dates prior to 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the 2015 Valuation Date, the results displayed are for BABH.

BABH Active Members December 31, 2015 by Age and Years of Service

			7	Fotals					
		Ye		Valuation					
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
20-24	3							3	\$ 45,357
25-29	17							17	573,663
30-34	20	11	1					32	1,360,886
35-39	11	6	6					23	1,061,059
40-44	17	12	5	6				40	2,024,226
45-49	10	7	6	6	2			31	1,541,528
50-54	7	6	7	4	2	9	1	36	1,990,147
55-59	9	8	2	6		1	2	28	1,284,472
60		4		4				2	122.555
60		1		1		1		3	123,666
61				1		1		2	80,663
62			1					1	35,726
63		1						1	55,100
64		3						3	154,858
Totals	94	55	28	24	4	12	3	220	\$10,331,351

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.8 years

Service: 8.6 years

Annual Pay: \$46,961

SECTION D

ACTUARIAL COST METHODS AND ACTUARIAL ASSUMPTIONS

Valuation Methodology

Normal Cost/Accrued Liability. Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

- (i) the annual normal costs for each individual active member, payable from date of hire to the member's projected date of retirement, are sufficient to accumulate the actuarial present value of the member's anticipated benefit at the time of retirement; and
- (ii) each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Amortization of Unfunded Actuarial Accrued Liabilities. Unfunded Actuarial Accrued Liabilities (UAAL) or asset surpluses were amortized as a as level percent-of-payroll contributions (principal and interest combined) as follows: If the liabilities exceed the assets (unfunded liabilities), the difference is amortized over a closed period of 27 years; if the assets exceed the liabilities (overfunding) the difference is amortized over an open period of 10 years. The amortization method was first adopted for the December 31, 2012 actuarial valuation. The increase in UAAL associated with the Early Retirement Incentive Program was amortized over a closed period of 10 years starting with the contribution for the calendar year beginning January 1, 2015. The UAAL payment reflects any payments expected to be made between the valuation date and the date contributions determined by this report are scheduled to begin. Active member payroll was assumed to increase 3.5% for the purpose of determining the level-percent contributions.

Asset valuation method. The actuarial value equals:

- (a) Actuarial value of assets from the previous valuation, plus
- (b) employer and member contributions since the last valuation, minus
- (c) benefit payments and refunds since the last valuation, plus
- (d) estimated investment income at the assumed investment return, plus
- (e) portion of gain/(loss) recognized in the current valuation.

For the above purpose, gain/(loss) is defined as the excess during the period of the investment return on the market value of assets over the expected investment income. Twenty percent of the difference is recognized over a 5-year period in the actuarial value of assets.

This method was first adopted for the December 31, 2003 actuarial valuation.

Actuarial Assumptions Used for the Valuation

The rationale for the assumptions used in this valuation is included in the 5-year experience study ending December 31, 2011, issued July 3, 2013. All assumptions are expectations of future experience, not market measures. There were no assumption changes from the prior valuation.

Investment Return (net of investment expenses).

4.0% per year in excess of pay inflation. If pay inflation matches the assumption of 3.5%, this implies a 7.5% rate of return. This assumption was first adopted for the December 31, 2012 actuarial valuation and is used to equate the value of payments due at different points in time. Approximate rates of investment return, for the purpose of comparisons with assumed rates, are shown below for the Bay County Employees' Retirement System (in total). Actual increases in average active member pay for the Bay County Employees' Retirement System (in total) are also shown for comparative purposes.

		5-Year				
	2015	2014	2013	2012	2011	Average*
Rate of Investment Return	8.4 %	11.3 %	13.4 %	2.1 %	1.4 %	7.2 %
Average Increase in Pay [#]	7.1	8.0	2.5	2.4	4.0	4.8
Real Rate of Return	1.3	3.3	10.9	(0.3)	(2.6)	2.4

^{*} Compound rate of increase.

The nominal rate of return was computed using the approximate formula i = I divided by 1/2 (A + B - I), where I is actual investment income net of expenses, A is the beginning of year asset value, and B is the end of year asset value.

Please note that this analysis uses asset values and investment income as defined for the actuarial valuation which deals with market value changes on a gradual basis.

These rates of return should not be used for measurement of an investment advisor's performance or for comparisons with other systems.

Rates of price inflation are not specifically used for this valuation. However, a rate of price inflation of 2.75% would be consistent with other assumptions in this report.

[#] Based on employees active during both years, for the Bay County Employees' Retirement System (in total).

Pay Projections. These assumptions are used to project current pays to those upon which benefits will be based. In addition to the Merit and Longevity rates shown in the table, members are also assumed to receive a base increase of 3.5%.

Annual Rate of Pav

0.75%

0.75%

	minual Rate of Lay							
	Increase for Merit							
	& Longevity							
Years of								
Service	BABH							
1	3.75%							
2	3.00%							
3	2.25%							
4	2.25%							

5 6+

If the number of active members remains constant, the total active member payroll will increase by about the level of pay inflation (assumed to be 3.5% per year). This increasing payroll was recognized in amortizing unfunded actuarial accrued liabilities. The payroll growth assumptions were first adopted for the December 31, 2012 actuarial valuation.

Changes actually experienced in pays have averaged as follows, for the Bay County Employees' Retirement System (in total):

	5-Year				
2015	2014	2013	2012	2011	Average*
				_	
7.1%	8.0%	2.5%	2.4%	4.0%	4.8%

^{*} Compound rate of increase.

Lump sum payments. Lump sum payments for unused sick leave and vacation were assumed to increase final average compensation by 5%. The lump sum payment assumption was first adopted for the December 31, 2012 actuarial valuation.

Mortality. This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. The RP-2000 Mortality Combined Healthy Tables, projected 20 years with U.S. Population Scale BB (multiplied by 75% for pre-retirement mortality and 110% for post-retirement mortality for both males and females) were used for healthy lives. The present values and the life expectancy at various ages under this mortality table are shown below:

	Actuarial Present Value of		Future Life		
Sample	\$1 Monthly for Life*		Expectancy (Years)		
Ages	Men	Men Women		Women	
50	\$143.50	\$146.82	32.15	34.70	
55	136.00	140.26	27.56	30.04	
60	126.67	131.76	23.16	25.50	
65	115.39	121.27	19.01	21.19	
70	102.07	109.03	15.16	17.19	
75	86.95	95.23	11.66	13.58	
80	70.84	80.10	8.62	10.36	

^{*} These present value amounts were calculated using a 7.5% interest rate and post-retirement mortality.

The RP-2000 Mortality Combined Healthy Tables, projected 20 years with U.S. Population Scale BB with ages set forward 10 years was used for disabled lives.

The mortality assumptions were first adopted for the December 31, 2012 actuarial valuation. The mortality rates were adjusted to include margin for future mortality improvements as described in the table shown above.

Administration Expenses. Non-investment administration expenses are assumed to average 0.4% of payroll annually. This assumption is unchanged from previous valuations. This assumption was not changed as a result of the experience study.

Active Member Group Size. The number of active members was assumed to remain constant. This assumption is unchanged from the previous valuation for all groups.

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

Rates of separation from active membership. The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This assumption measures the probabilities of members remaining in employment. This assumption was first adopted for the December 31, 2012 actuarial valuation.

% of Active
Members Separating
within Next Year

	_	within Next Year
Sample	Years of	
Ages	Service	BABH
ALL	0	15.00%
	1	9.00
	2	9.00
	3	8.00
	4	8.00
20	5 & Over	7.50
25		7.50
30		7.00
35		7.00
40		4.00
45		2.00
45		3.00
50		2.00
55		2.00
60		2.00

Rates of Disability. These rates represent the probabilities of active members becoming disabled. This assumption was first adopted for the December 31, 2012 actuarial valuation.

Percent Becoming				
Disabled				
Sample				
Ages	BABH			
20	0.06 %			
25	0.06			
30	0.06			
35	0.06			
40	0.15			
45	0.20			
50	0.37			
55	0.67			
60	1.06			

We assumed that 85% of disabilities are non-duty related and 15% are duty related.

Rates of Retirement. These rates are used to measure the probabilities of an eligible member retiring during the next year.

Percent of Active Members Retiring within Next Year

	reding within tone rear
Retirement Ages	ВАВН
55	15 %
56	10
57	10
58	10
59	10
60	25
61	20
62	10
63	10
64	10
65	25
66	10
67	10
68	10
69	10
70	100

The following table shows the rates of retirement for the 55 & 8 and/or 55 & 10 Early Retirement provision:

55 & 8 and/or 55 & 10

_	Early Retirement
Retirement	
Ages	BABH
55	5 %
56	5
57	5
58	5
59	5
60	5
61	5

The retirement assumptions were first adopted for the December 31, 2012 actuarial valuation.

Miscellaneous and Technical Assumptions

Marriage Assumption: 100% of males and 100% of females are assumed to be married

for purposes of death-in-service benefits. Male spouses are

assumed to be three years older than female spouses.

Pay Increase Timing: Six months after the valuation date.

Decrement Timing: Decrements of all types are assumed to occur mid-year.

Eligibility Testing: Eligibility for benefits is determined based upon the age nearest

birthday and service nearest whole year on the date the

decrement is assumed to occur.

Benefit Service: Exact fractional service is used to determine the amount of

benefit payable.

Decrement Relativity: Decrement rates are used directly from the experience study,

without adjustment for multiple decrement table effects.

Decrement Operation: Disability and death-in-service decrements do not operate during

the first 5 years of service. Disability and withdrawal do not

operate during retirement eligibility.

Normal Form of Benefit: The assumed normal form of benefit is straight life form.

Loads: Lump sum payments for unused sick leave and vacation. For

current retirees who elected a joint and survivor form of payment with a pop-up and retired prior to January 1, 2013 or who elected a social security equated joint and survivor form of payment with a pop-up the liabilities are loaded 2% because the

pop-up benefits are not provided in the data.

Incidence of Contributions: Contributions are assumed to be received continuously

throughout the year based upon the computed percent-of-payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions

are applied to the funding of new entrant benefits.

Data Adjustment: Payroll was annualized for new entrants.



Schedule of Funding Progress

	Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL a Percentag Covered P [(b) - (a)]	ge of ayroll
_	12/31/2006 *	\$237,681,108	\$189,810,766	\$(47,870,342)	125.2	\$42,024,045	none	
	12/31/2007 *	253,492,248	200,933,482	(52,558,766)	126.2	44,687,752	none	
	12/31/2008	246,577,567	212,530,757	(34,046,810)	116.0	46,482,897	none	
	12/31/2009	243,271,514	221,407,973	(21,863,541)	109.9	47,244,573	none	
	12/31/2010 *	244,728,050	231,625,254	(13,102,796)	105.7	47,090,560	none	
	12/31/2011 *	241,207,722	241,791,817	584,095	99.8	48,583,176	1.20	%
	12/31/2012 #	239,280,740	245,269,867	5,989,127	97.6	48,571,798	12.33	
	12/31/2013 *	263,364,669	262,118,015	(1,246,654)	100.5	44,535,708	none	
	12/31/2014	282,166,070	271,995,030	(10,171,040)	103.7	46,494,417	none	
	12/31/2015	46,894,673	48,624,039	1,729,366	96.4	10,331,351	16.74	%

For Actuarial Valuation Dates prior to 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the 2015 Actuarial Valuation Date, the results displayed are for BABH.

[#] Certain assumptions or methods revised.

Actuarial Cost Method	Individual Entry Age Normal Cost.		
Amortization Method	Level percent-of-payroll		
Amortization periods	27 years closed for groups that are underfunded (unfunded accrued liability is positive). 10 years closed for BABH ERIP starting with the contribution for the calendar year beginning January 1, 2015.		
Asset Valuation Method	Market value with 5-year smoothing of gains and losses.		
Principal Actuarial Assumptions (last revised for the 12/31/12 valuation):			
- Net Investment Return	7.5%		
- Projected Salary Increases	3.5% pay inflation plus merit and longevity		

None

- Cost-of-Living Adjustments

^{*} Plan amended.

Schedule of Employer Contributions

Plan Year Ended	Fiscal Year Ended	Annual Required
December 31	December 31	Contribution
2006	2007	\$ 644,945
2007	2008	688,871
2008	2009	1,578,548
2009^	2011	2,443,118
2010	2012	3,074,891
2011 2012	2013 2014	4,289,438 4,038,100
2013\$	2015	4,477,504
2014	2016	2,535,295
2015	2017	990,514

For Plan Years Ended prior to December 31, 2015, the results displayed are for the entire Retirement System (including BABH). Beginning with the Plan Year Ended December 31, 2015, the results displayed are for BABH.

[^] Implementation of a one year lag between valuation date and first day of the calendar year to which the contributions apply.

^{\$} Annual Required Contribution reflects an advanced payment of the BABH unfunded ERIP liability.