

Bay County Retiree Health Care Plan

Actuarial Valuation Report

for Bay-Arenac Behavioral Health Authority

as of December 31, 2021



Table of Contents

<u>Section</u>	<u>Page</u>	
	--	Cover Letter
	1	Executive Summary
A		Valuation Results
	1	Results
	2	Comments
B	1	Retiree Premium Rate Development
C	1	Summary of Benefits
D		Summary of Valuation Data
	1	Schedule of Active Members
	2	Schedule of Inactive Members
	3	Reported Financial Information
E		Actuarial Cost Methods and Actuarial Assumptions
	1	Actuarial Methods
	2	Actuarial Assumptions
	6	Miscellaneous and Technical Assumptions
Appendix A	1	Historical Funded Ratio Information
Appendix B	1	Glossary



February 20, 2023

Bay County Voluntary Employees' Beneficiary
Association (VEBA) – Board of Trustees
Bay City, Michigan

**Re: Bay-Arenac Behavioral Health Authority Actuarial Funding Valuation as of December 31, 2021
Actuarial Disclosures**

Dear Board Members:

The results of the December 31, 2021 Biennial Actuarial Funding Valuation of the Bay-Arenac Behavioral Health Authority (BABH) via the Bay County Voluntary Employees' Beneficiary Association are presented in this report.

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

The purposes of the valuation are to measure the Plan's funding progress and to determine the Actuarially Determined Contribution for the calendar years ending December 31, 2024 and December 31, 2025. 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. This report does not include actuarial information needed to satisfy reporting requirements under Governmental Accounting Standards Board (GASB) Statement No. 75.

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.

Results presented in this report are developed using the actuarial assumptions and methods disclosed in this report. 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. This report does not include a robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of the investment and other significant risks that may have a material effect on the plan's financial condition.

The findings in this report are based on information furnished by Bay County and BABH concerning retiree health care 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 Bay County and BABH.

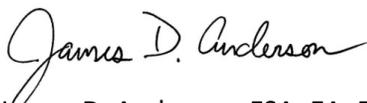
This report was prepared using assumptions adopted by the Board. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice. Additional information about the actuarial assumptions is included in the section of this report titled Actuarial Cost Methods and Actuarial Assumptions.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report has been prepared by actuaries who have substantial experience valuing public retiree health programs. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Bay County Retiree Health Care Plan - 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, Shana M. Neeson, and Stephanie Sullivan are Members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



James D. Anderson, FSA, EA, FCA, MAAA



Shana M. Neeson, ASA, FCA, MAAA



Stephanie Sullivan, ASA, MAAA

JDA/SMN/SS:sc



EXECUTIVE SUMMARY

Executive Summary

Actuarially Determined Contribution

We have calculated the Actuarially Determined Contribution for the calendar years ending December 31, 2024 and December 31, 2025 under an interest rate assumption of 7.00%. Below is a summary of the results. The Actuarially Determined Contribution and estimated premiums shown below include the impact of any implicit rate subsidy present in your pre-65 rates.

Calendar Year Ending	Actuarially Determined Contribution	Estimated Premiums Paid for Retirees
December 31, 2024	\$ 0	\$ 521,000
December 31, 2025	0	491,587

For additional details please see the Section titled "Valuation Results."

Liabilities and Assets – as of December 31, 2021

1. Present Value of Future Benefit Payments	\$ 9,136,362
2. Actuarial Accrued Liability	7,545,806
3. Plan Assets	26,464,691
4. Unfunded Actuarial Accrued Liability (2) – (3)	(18,918,885)
5. Funded Ratio (3)/(2)	350.7%

The Present Value of Future Benefit Payments (PVFB) is the present value of all benefits projected to be paid from the plan for past and future service to current members. The Actuarial Accrued Liability is the portion of the PVFB allocated to past service by the Plan's funding method (see the Section titled "Actuarial Cost Methods and Actuarial Assumptions").

SECTION A

VALUATION RESULTS

Bay County Retiree Health Care Plan - BABH - Results as of December 31, 2021

A. Present Value of Future Benefits	
i) Retirees and Beneficiaries	\$ 4,758,664
ii) Vested Terminated Members	0
iii) Active Members	<u>4,377,698</u>
Total Present Value of Future Benefits	\$ 9,136,362
B. Present Value of Future Normal Costs	1,590,556
C. Actuarial Accrued Liability (A.-B.)	7,545,806
D. Actuarial Value of Assets	26,464,691
E. Unfunded Actuarial Accrued Liability (C.-D.)	\$(18,918,885)
F. Funded Ratio (D./C.)	350.7%
G. Calendar Year Ending December 31, 2024	
i) Employer Normal Cost	\$ 204,321
ii) Amortization of UAAL*	<u>(1,996,970)</u>
Actuarially Determined Contribution	\$ 0
H. Calendar Year Ending December 31, 2025	
Actuarially Determined Contribution	\$ 0

* The Unfunded Actuarial Accrued Liabilities (UAAL) were amortized as a level percent of active member payroll over a closed 14-year period for the calendar year ending December 31, 2024 and decreasing by one each year thereafter.

The long-term rate of investment return used in this valuation is 7.00%.



Comments

Comment A: The Actuarial Accrued Liability and Present Value of Future Benefit Payments (PVFB) decreased and Actuarially Determined Contribution remained level since the prior valuation.

Reasons for the decrease in liability, PVFB, and continued \$0 contribution include, but are not limited to the following:

- Favorable investment performance;
- Favorable post-65 premium experience; and
- An assumption change: Adjustment to the retiree benefit election assumption in order to better reflect actual Plan experience.

Partially offsetting these factors was unfavorable experience due to:

- Unfavorable pre-65 premium experience; and
- An assumption change: Adjustment to the health care cost trend rates.

The impact of the assumption changes noted above increased the liabilities by approximately \$134,000.

Comment B: One of the key assumptions used in any valuation of the cost of postemployment benefits is the rate of return on the assets that will be used to pay Plan benefits. Higher assumed investment returns will result in a lower Actuarially Determined Contribution. Lower returns will tend to increase the Actuarially Determined Contribution. We have calculated the liability and the resulting Actuarially Determined Contribution using an assumed annual rate of investment return of 7.00%. The investment return assumption should not exceed reasonable market expectations.

Comment C: The plan sponsor is required by GASB to perform actuarial valuations at least biennially or more frequent if significant changes in the OPEB are made in the interim.

Comment D: The contribution amounts shown include amortization of the unfunded actuarial accrued liability over a closed 14-year period for the calendar year ending December 31, 2024 and decreasing by one each year thereafter. For this valuation, assets represent 350.7% of accrued liabilities; for the last valuation, the ratio was 256.5%. Given the funded status of the Plan, BABH should consider starting to pay benefits from the trust, if the Plan document allows.

Comment E: The asset split between the various groups was provided by the County.

Comment F: This valuation covers the retiree health benefits provided by the Bay-Arenac Behavioral Health Authority (BABH) via the Bay County Voluntary Employees' Beneficiary Association.

Comment G: The GASB issued Statement Nos. 74 and 75 for OPEB valuations. GASB Statement No. 74 for the plan OPEB disclosures is effective for fiscal years beginning after June 15, 2016. GASB Statement No. 75 for employer OPEB disclosures is effective for employer fiscal years beginning after June 15, 2017. The GASB implementation guides for Statement Nos. 74 and 75 provide additional clarification related to the implementation of these Statements. It is our understanding that the Bay-Arenac Behavioral Health Authority and the County will need to comply with GASB Statement No. 75 for each measurement date ending December 31st. The basis for the September 30, 2022 and September 30, 2023 GASB Statement No. 75 reporting information is expected to be this valuation (as of December 31, 2021) where roll-forward techniques will be applied.



Comments

Comment H: The Michigan State Treasurer has established uniform actuarial assumptions as required by Public Act 202 (PA 202) of 2017 for use with annual Form 5572 (Retirement System Annual Report). The use of the uniform assumptions for reporting purposes is required for each future fiscal year ending September 30th. Consistent with past practice, GRS plans to provide the necessary PA 202 uniform assumption information as part of the GASB Statement No. 75 reports.

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

- The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations;
- A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the Plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit). In the instance of the BABH, the contribution requirement is \$0 because the over funding credit is more than sufficient to offset the normal cost contribution; and
- The measurement is inappropriate for assessing the need for or the amount of future employer contributions.

SECTION B

RETIREE PREMIUM RATE DEVELOPMENT

Retiree Premium Rate Development

Rate Development

Initial premium rates were developed for the two classes of retirees (pre-65 and post-65). The January 1, 2021 fully-insured rates provided by Bay County BABH were utilized to determine the appropriate premium rates. The pre-65 fully-insured premiums are blended rates based on the combined experience of active and pre-65 retired members; therefore, there is an implicit employer subsidy for the non-Medicare eligible retirees since the average cost of providing health care benefits to retirees under age 65 is higher than the average cost of providing health care benefits to active employees. The true per capita cost for the pre-65 retirees is developed by adjusting the demographic differences between the active employees and retirees to reflect this implicit rate subsidy for the retirees. For the post-65 retirees, the fully-insured premium rates were used as the basis of the initial per capita cost without adjustments since the rate reflects the demographics of the post-65 retiree group.

In a Medicare Advantage Program, the liability is based on the difference between the present value of future claims minus the present value of future reimbursements from CMS. CMS’ reimbursement is based on a very competitive bid process and has resulted in recent Medicare Advantage premiums trending at low rates of increase. Previously, a margin has been added to Medicare Advantage rates to recognize that increases in CMS reimbursements may lag behind the trends for healthcare costs. In developing the post-65 rates used in this valuation a transition to removing the load completely was begun. This adjustment will be revisited at the time of the next valuation.

Age graded and sex distinct premiums are utilized in this valuation. The premiums developed by the preceding processes are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process “distributes” the average premium over all age/sex combinations and assigns a unique premium for each specific age/sex combination. The age/sex specific premiums more accurately reflect the health care utilization and cost at that age.

Future Retirees

Expected Health Care Cost by Age for Medical and Prescription Drugs		
Age	Male	Female
45	\$ 408.18	\$ 563.34
50	531.49	654.75
55	699.39	763.63
60	903.30	889.44
64	1,098.43	1,036.62
65	215.92	203.66
70	235.22	227.61
75	252.63	246.51

Current Retirees

Expected Health Care Cost by Age for Medical and Prescription Drugs		
Age	Male	Female
45	\$ 420.59	\$ 580.47
50	547.66	674.66
55	720.66	786.85
60	930.77	916.49
64	1,131.84	1,068.15
65	215.92	203.66
70	235.22	227.61
75	252.63	246.51



Retiree Premium Rate Development

Rate Development (Concluded)

The dental and vision premium rates were not “age graded” for this valuation because dental and vision claims do not vary significantly by age. The monthly dental and vision premium rates used in this valuation are shown below:

Group	Dental and Vision			
	Pre-65		Post-65	
	One-Person	Two-Person	One-Person	Two-Person
BABH	\$23.35	\$45.72	\$23.35	\$45.72

Retiree Premium Rate Development

Health Care Cost Trend Assumption

The health care cost trend rate is the rate of change in per capita health care claims over time as a result of factors such as medical inflation, utilization of health care services, plan design, and technological improvements. It is a crucial economic assumption that is required for measuring retiree health care benefit obligations.

Retiree health care valuations use a health care cost trend assumption (trend vector) that changes over the years. The trend vector used in this valuation begins with a near-term trend assumption and declines over a time to an ultimate trend rate. The near-term rates reflect the increases in the current cost of health care goods and services. The process of trending down to a lower ultimate trend relies on the theory that premiums will moderate over the long term, otherwise the healthcare sector would eventually consume the entire GDP. It is on this basis that we project premium rate increases will continue to exceed wage inflation for the next eleven years, but by less each year until leveling off at an ultimate rate, assumed to be 3.50% in this valuation.

While experience is often the best starting point for future costs, GRS does not rely on a group's experience in setting the near-term trend assumptions since trends vary significantly from year to year and are not credible for most groups. Therefore, professional judgment, trends from GRS' book of business and industry benchmarks (e.g., trend reports from various Pharmacy Benefit Management (PBM) organizations and national healthcare benefit consulting firms) are used in conjunction with a group's historical experience to establish the trend assumptions.

The combined medical and prescription drug per capita costs are projected to increase as shown in the table below:

Year After Valuation	Health Care Trend Inflation Rates		
	Medical/Drug		Dental/Vision
	Non-Medicare (Pre-65)	Medicare (Post-65)	
1	7.50%	6.25%	3.50%
2	7.25%	6.00%	3.50%
3	6.75%	5.75%	3.50%
4	6.50%	5.50%	3.50%
5	6.00%	5.25%	3.50%
6	5.75%	5.00%	3.50%
7	5.25%	4.75%	3.50%
8	5.00%	4.50%	3.50%
9	4.50%	4.25%	3.50%
10	4.25%	4.00%	3.50%
11	3.75%	3.75%	3.50%
12	3.50%	3.50%	3.50%
13	3.50%	3.50%	3.50%
14	3.50%	3.50%	3.50%
15	3.50%	3.50%	3.50%
16+	3.50%	3.50%	3.50%



Retiree Premium Rate Development

Actuarial Disclosures

The premium rates used in this valuation were developed using the proprietary Excel models which, in James E. Pranschke's professional judgment, provide the initial projected costs which are consistent with the purposes of the valuation. We performed tests to ensure that the models, in their entirety, reasonably represent that which is intended to be modeled.

Aging factors used in the premium development models were developed based on the information and data from a 2013 study commissioned by the Society of Actuaries entitled "Health Care Costs – From Birth to Death."

James E. Pranschke is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to certify the per capita retiree health care rates shown on page B-1 and the health care trend rates shown on page B-3.


James E. Pranschke, FSA, FCA, MAAA

SECTION C

SUMMARY OF BENEFITS

Bay County Retiree Health Care Plan - BABH

Summary of the Benefit Provisions as of December 31, 2021

Leaving Employment as a Result of	Eligibility for Pension Benefit	Eligibility for Retiree Health Benefit	When do retiree health benefits commence?	Coverage Provided by Employer		Retiree Health Care Provider(s)	Type of Insurance	Retiree Share of Cost for		
				Retiree	Spouse			Retiree	Spouse (while Retiree is alive)	Spouse (after Retiree's death)
Normal/Early Retirement	Age 55 with 8/10 [~] yrs of svc ** Age 55 with 8/10 ^{&} yrs of svc ** Age 55 with 30 yrs of svc Age 60 with 8/62 with 10 [~] yrs of svc Age 60 with 8/62 with 10 ^{&} yrs of svc	Age 55 with 30 yrs of svc Age 60 with 8 yrs of svc Age 62 with 10 yrs of svc	Immediately	Medical Drug Dental Vision	Medical Drug Dental Vision	BC/BS BCBS MA [^]	fully-insured fully-insured fully-insured fully-insured	See Schedule D See Schedule D Zero cost for Retiree with at least 20 yrs svc. Zero cost for Retiree with at least 20 yrs svc.	See Schedule D See Schedule D See Schedule D See Schedule D	See Schedule D See Schedule D See Schedule D See Schedule D
Deferred Vested Termination	8 yrs of svc 10 yrs of svc [~] 10 yrs of svc ^{&}	None				N/A N/A N/A N/A		N/A N/A N/A N/A	N/A N/A N/A N/A	N/A N/A N/A N/A
Non-Duty Disability	10 or more years of credited svc	10 or more years of credited svc	Immediately	Medical Drug Dental Vision	Medical Drug Dental Vision	BC/BS BCBS MA [^]	fully-insured fully-insured fully-insured fully-insured	See Schedule D See Schedule D	See Schedule D See Schedule D	See Schedule D See Schedule D
Duty Disability	No age or svc requirement	No age or svc requirement	Immediately	Medical Drug Dental Vision	Medical Drug Dental Vision	BC/BS BCBS MA [^]	fully-insured fully-insured fully-insured fully-insured	See Schedule D See Schedule D	See Schedule D See Schedule D	See Schedule D See Schedule D
Non-Duty Death-in-Svc	10 or more years of credited svc	10 or more years of credited svc	Immediately -Surviving Spouse		Medical Drug Dental Vision	BC/BS BCBS MA [^]	fully-insured fully-insured fully-insured fully-insured			See Schedule D See Schedule D
Duty Death-in-Svc	No age or svc requirement Benefits begin upon termination of Worker's Compensation	No age or svc requirement Benefits begin upon termination of Worker's Compensation	Immediately -Surviving Spouse		Medical Drug Dental Vision	BC/BS BCBS MA [^]	fully-insured fully-insured fully-insured fully-insured			See Schedule D See Schedule D

Medicare Reimbursement is not offered to any members.
[~] Behavioral Health AFSCME (Div No. 23): 10 yrs of svc (age 62 with 10 yrs of svc) for members hired on or after 10/1/2014.
[&] Behavioral Health General (Div No. 24): 10 yrs of svc (age 62 with 10 yrs of svc) for members hired after 1/1/2015.
^{**} Eligible for retirement with a reduced pension.
[^] Medicare Advantage

BABH part-time members do not qualify for retiree health care. They do not have access to the plan.

AFSCME withdrew representation in 2019. Former AFSCME Union employees are eligible to begin accruing eligibility for retiree health insurance (and dental/vision) as of 1/1/2020.

Retiree eligibility for dental and vision coverage is based on criteria in place at the time of retirement and years of eligible service credit.



Bay County Retiree Health Care Plan - BABH

Summary of the Benefit Provisions as of December 31, 2021

Schedule D Bay-Arenac Behavioral Health Retiree Health Insurance Premium Contribution for Those Who Retire on or After January 16, 2004

Retiree Health Insurance Coverage - % paid by the employer based on years of service at retirement
(subject to eligibility)

Years of Service	Employer Paid (%)	Retiree Paid (%)	Employer Paid Spousal Coverage	Retiree Paid Spousal Coverage
8	40%	60%	0%	100%
9	45%	55%	0%	100%
10	50%	50%	0%	100%
11	55%	45%	0%	100%
12	60%	40%	0%	100%
13	65%	35%	0%	100%
14	70%	30%	0%	100%
15	75%	25%	0%	100%
16	80%	20%	0%	100%
17	85%	15%	0%	100%
18	90%	10%	0%	100%
19	95%	5%	0%	100%
20	100%	0%	0%	100%
21	100%	0%	5%	95%
22	100%	0%	10%	90%
23	100%	0%	15%	85%
24	100%	0%	20%	80%
25	100%	0%	25%	75%
26	100%	0%	30%	70%
27	100%	0%	35%	65%
28	100%	0%	40%	60%
29	100%	0%	45%	55%
30	100%	0%	50%	50%
31	100%	0%	55%	45%
32	100%	0%	60%	40%
33	100%	0%	65%	35%
34	100%	0%	70%	30%
35	100%	0%	75%	25%
36	100%	0%	80%	20%
37	100%	0%	85%	15%
38	100%	0%	90%	10%
39	100%	0%	95%	5%
40	100%	0%	100%	0%



SECTION D

SUMMARY OF VALUATION DATA

Bay County Retiree Health Care Plan - BABH
Total Eligible Active Members as of December 31, 2021
by Age and Years of Eligibility Service*

Age	Years of Eligibility Service to Valuation Date							Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.
15-19	1							1
20-24	6							6
25-29	16	2						18
30-34	16	11						27
35-39	15	15	4					34
40-44	17	6	7	3				33
45-49	12	5	12	4	4			37
50-54	7	4	9	6	5	2		33
55-59	9	4	3	3	4	4	1	28
60-64	4	1	6	1	1	1	1	15
65 & Over				1				1
Totals	103	48	41	18	14	7	2	233

* Excludes 7 part-time employees. Members who belong to Behavioral Health AFSCME (Division 23) did not begin to accrue benefit service until 1/1/2020.

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: 8.2 years



Bay County Retiree Health Care Plan - BABH Inactive Members as of December 31, 2021

Number of Retiree and Beneficiary Contracts[^]

	Opt-Out/ Ineligible	One-Person Coverage	Two-Person Coverage*	Total
Male	23	17	4	44
Female	53	54	6	113
Total	76	71	10	157

* Includes family coverage.

[^] Coverage based on medical/prescription drug coverage.

Age	Current Retirees
	Number of Those Covered
	BABH
0-44	
45-49	
50-54	
55-59	8
60-64	23
65-69	24
70-74	15
75-79	7
80-84	3
85-89	
90-94	1
95 +	
Totals	81

There are no terminated members eligible for deferred Plan benefits.

Bay County Retiree Health Care Plan - BABH

Reported Financial Information

(Market Value)

	December 31, 2020	December 31, 2021
Additions		
Contributions		
Employer	\$ 0	\$ 0
Nonemployer contributing entities	0	0
Active Employees	0	0
Member	0	0
Total Contributions	\$ 0	\$ 0
Investment Income		
Total Investment Income	\$ 3,485,256	\$ 3,041,381
Less Investment Expense	(42,919)	(47,667)
Net Investment Income	\$ 3,442,337	\$ 2,993,714
Other Miscellaneous income	\$ 0	\$ 0
Total Additions	\$ 3,442,337	\$ 2,993,714
Deductions		
Health Benefit Payments and Refunds	\$ 0	\$ 0
OPEB Plan Administrative Expense	31,778	23,111
Total Deductions	\$ 31,778	\$ 23,111
Net Increase in Net Position	\$ 3,410,559	\$ 2,970,603
Net Position Restricted for OPEB		
Beginning of Year	\$ 20,083,529	\$ 23,494,088
Audit Adjustment	0	0
End of Year	\$ 23,494,088	\$ 26,464,691



SECTION E

ACTUARIAL COST METHODS AND ACTUARIAL ASSUMPTIONS

Actuarial Methods for Bay County Retiree Health Care Plan - BABH as of December 31, 2021

Actuarial Cost Method. Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

- (i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member’s 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.

Actuarial gains (losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded Actuarial Accrued Liabilities (UAAL) (full funding credit if assets exceed liabilities) were amortized as a level percent of payroll. The UAAL was determined using the actuarial value of assets and actuarial accrued liability calculated as of the valuation date and projected to the beginning of the calendar year at the assumed rate of investment return.

Actuarial Value of Assets. The Actuarial Value of Assets is set equal to the reported market value of assets. The County reported the asset split between the various groups.

Amortization Factors. The following amortization factors were used in developing the Actuarially Determined Contribution for the calendar years shown:

	Calendar Year Ending December 31,	
	2024	2025
Amortization Period	14	13
Level Percent of Pay	10.8465	10.2385

Actuarial Assumptions for Bay County Retiree Health Care Plan - BABH as of December 31, 2021

The rationale for all assumptions, except the investment return which was investigated separately and changed by the Board in fall 2018, used in this valuation is included in the five-year experience study ending December 31, 2015, issued August 1, 2017. All assumptions are expectations of future experience, not market measures.

Investment Return (net of investment expenses): 7.00% a year, compounded annually.

Rates of price inflation are not specifically used for this valuation. However, a rate of price inflation of 2.50% would be consistent with other assumptions in this report. This assumption was first adopted for the December 31, 2016 pension actuarial valuation.

Pay Projections. These assumptions are used to project current pays into the future. In addition to the Merit and Longevity rates shown in the table, members are also assumed to receive a base increase of 3.25%.

Years of Service	Annual Rate of Pay Increase for Merit & Longevity BABH
1	3.00 %
2	2.25
3	1.50
4	1.50
5	0.75
6+	0.75

The payroll growth assumptions were first adopted for the December 31, 2016 pension actuarial valuation.

Actuarial Assumptions for Bay County Retiree Health Care Plan - BABH as of December 31, 2021

Mortality. The mortality rates utilized are based upon the RP-2014 tables, as extended, and include a margin for future mortality improvements projected using a fully generational improvement scale. The mortality assumptions were first adopted for the December 31, 2016 pension actuarial valuation. The tables used were as follows:

- **Healthy 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.

Sample Ages	Healthy Pre-Retirement Future Life Expectancy (Years)^		Healthy Post-Retirement Future Life Expectancy (Years)^		Disabled Retirement Future Life Expectancy (Years)^	
	Men	Women	Men	Women	Men	Women
	50	35.24	40.46	33.78	36.79	25.01
55	30.19	35.35	28.99	31.85	21.82	25.56
60	25.33	30.34	24.41	27.11	18.71	21.94
65	20.81	25.46	20.10	22.58	15.75	18.45
70	16.69	20.73	16.12	18.29	12.94	15.04
75	12.92	16.20	12.49	14.31	10.29	11.85
80	9.52	11.92	9.30	10.76	7.87	9.07

[^] Based on retirements in 2021. Retirements in future years will reflect improvements in life expectancy.

Actuarial Assumptions for Bay County Retiree Health Care Plan - BABH as of December 31, 2021

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Retirement Ages	Percent of Active Members Retiring within Next Year BABH
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 Pension Retirement provision:

Retirement Ages	55 & 8 and/or 55 & 10 Early Retirement 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 pension actuarial valuation.



Actuarial Assumptions for Bay County Retiree Health Care Plan - BABH as of December 31, 2021

Rates of Disability. These rates represent the probabilities of active members becoming disabled. This assumption was first adopted for the December 31, 2016 pension actuarial valuation.

Percent Becoming Disabled Within the Next Year	
Sample Ages	BABH
20	0.07 %
25	0.07
30	0.07
35	0.07
40	0.19
45	0.25
50	0.46
55	0.84
60	1.33

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

Rates of Separation from Active Membership. These 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, 2016 pension actuarial valuation.

% of Active Members Separating within Next Year		
Sample Ages	Years of Service	BABH
ALL	0	16.50%
	1	9.90%
	2	9.90%
	3	8.80%
	4	8.80%
20	5 & Over	8.25
25		8.25
30		7.70
35		7.70
40		4.40
45		3.30
50		2.20
55		2.20
60		2.20



Miscellaneous and Technical Assumptions for Bay County Retiree Health Care Plan - BABH as of December 31, 2021

- Administrative Expenses** No explicit assumption has been made for administrative expenses.
- Decrement Operation** Disability and death-in-service decrements do not operate during the first five years of service. Disability and withdrawal do not operate during retirement eligibility.
- 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.
- Incidence of Contributions** Contributions are assumed to be received continuously throughout the year based upon the contributions shown in this report.
- 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.
- Medicare Coverage** Assumed to be available for all covered employees on attainment of age 65. Disabled retirees were assumed to be eligible for Medicare coverage at age 65.
- Part-Time Employees** Part-time employees are not eligible for retiree health care benefits even if they are eligible for benefits from the Retirement System. Part-time employees were excluded from the valuation.
- Data Adjustments** New retirees reported with coverage and no reported cost share were assigned a cost share based on the amount of benefit service reported on the individual’s pension retirement calculation.
- Health Care Coverage at Retirement** The table below shows the assumed portion of future retirees electing one-person or two-person/family coverage, or opting out of coverage entirely. For those that elect two-person coverage, the assumption regarding the percentage of retirees that would continue coverage to the spouse upon death of the retiree is also shown.

	One-Person	Two-Person/Family		Opt-Out
		Electing	Continuing	
Male	45%	30%	80%	25%
Female	55%	20%	80%	25%

APPENDIX A

HISTORICAL FUNDED RATIO INFORMATION

Historical Funded Ratio

Actuarial Valuation Date December 31	Actuarial Value of Assets ¹ (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded (Overfunded) AAL (b)-(a)	Funded Ratio (a)/(b)	Present Value of Future Benefits (c)
2015 ²	\$ 14,398,127	\$ 8,502,548	\$ (5,895,579)	169.3 %	\$10,176,104
2017	17,542,745	9,145,032	(8,397,713)	191.8 %	10,954,894
2018	16,701,533	9,580,256	(7,121,277)	174.3 %	11,594,789
2019	20,083,529	7,829,565	(12,253,964)	256.5 %	9,391,625
2021	26,464,691	7,545,806	(18,918,885)	350.7 %	9,136,362

¹⁾ The Actuarial Value of Assets is set equal to the Market Value of Assets.

²⁾ Results based on 7.50% rate of investment return.

APPENDIX B

GLOSSARY

Glossary

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarially Determined Contribution. The Actuarially Determined Contribution is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The Actuarially Determined Contribution is an amount that is actuarially determined so that, if paid on an ongoing basis, it would be expected to provide sufficient resources to fund both the normal cost for each year and the amortized unfunded actuarial accrued liability.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Governmental Accounting Standards Board (GASB). GASB is the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting them to the public.

Implicit Rate Subsidy. It is common practice for employers to allow retirees to continue in the employer's group health insurance plan (which also covers active employees), often charging the retiree some portion of the premium charged for active employees. Under the theory that retirees have higher utilization of services, the difference between the true cost of providing retiree coverage and what the retiree is being charged is known as the implicit rate subsidy.



Glossary

Medical Trend Rate (Health Care Inflation). The increase in the cost of providing health care benefits over time. Trend includes such elements as pure price inflation, changes in utilization, advances in medical technology, and cost shifting.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Other Postemployment Benefits (OPEB). OPEB are postemployment benefits other than pensions. OPEB generally takes the form of health insurance, dental, vision, prescription drugs, life insurance or other health care benefits.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded actuarial accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes.