
Government of Guam Retirement Fund

Actuarial Valuation as of September 30, 2016

Prepared by:

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April 20, 2017



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**Government of Guam Retirement Fund –
Actuarial Valuation as of September 30, 2016**

As part of our engagement with the Board of Trustees, we performed an actuarial valuation of the Government of Guam Retirement Fund as of September 30, 2016. The purpose of this valuation is to determine the required contribution under the provisions of GCA Section 8137 and to provide the Fund with financial disclosures under GASB Statements 67 and 68.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the Fund's staff. This information includes, but is not limited to, financial information, member census data, and plan provisions. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete the results may be different and the calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the Fund have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Plan and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the Fund. The assumptions have been adopted by the Board of Trustees and are based on the 2007-2011 actuarial experience study.

This valuation report is only an estimate of the Fund's financial condition as of a single date. It can neither predict the Fund's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Fund benefits, only the timing of Fund contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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 Fund's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and actuarial cost methods.

Actuarial computations presented in this report are for the purposes of determining the recommended funding amounts for the Fund and for assisting the Fund and employer in fulfilling their financial accounting requirements under GASB Statements 67 and 68. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in this report have been made on a basis consistent with our understanding of the Fund's funding requirements and goals, and of GASB Statements 67 and 68. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

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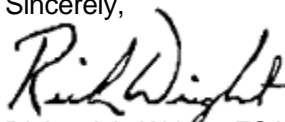
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No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs. The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuary is independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely,



Richard A. Wright, FSA, MAAA
Consulting Actuary

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SECTION I. VALUATION SUMMARY**INTRODUCTION**

Milliman, Inc. has been retained by the Government of Guam Retirement Fund to provide an actuarial valuation of the retirement fund. In our valuation we:

- Summarize the membership data.
- Calculate the actuarial accrued liability and normal cost.
- Determine the contribution requirements.
- Provide financial information required by GASB No. 67 and 68.
- Project the fund balance and security ratio forward 40 years.

This actuarial valuation **does not** reflect P.L. 33-186 because the provisions are not effective until January 1, 2018, and it is not yet known which or how many members will transfer to the new Defined Benefit 1.75 Plan or the new GRSP Plan. A separate report dated February 23, 2017, contains cost estimates of P.L. 33-186 based upon various transfer scenarios. P.L. 33-186 provides for the following:

1. Modifies contribution rates to the existing Defined Contribution Retirement System (“DC Plan”) effective January 1, 2018.
2. Establishes a new Defined Benefit 1.75 Retirement System (“DB 1.75 Plan”, formerly known as the “Hybrid Plan”) and provides an opportunity for current employees in the DC Plan to transfer to the DB 1.75 Plan or the Government of Guam Retirement Security Plan (see item 3) effective January 1, 2018. The DB 1.75 Plan will be closed to new employees on and after January 1, 2018.
3. Establishes a new cash balance retirement plan known as the Government of Guam Retirement Security Plan (GRSP) which will be the default retirement plan for new employees hired on and after January 1, 2018. Current employees in the DC Plan may transfer to the GRSP effective January 1, 2018.
4. Extends the period used to amortize the unfunded actuarial accrued liability (UAAL) of the Government of Guam Retirement Fund by two years from an end date of May 1, 2031 to an end date of May 1, 2033, effective January 1, 2018.
5. Provides that if the Government of Guam is authorized to extend Social Security coverage to government of Guam employees on a prospective basis, then all employees hired on or after the effective date shall be enrolled into Social Security and will not be eligible for the DB 1.75 Plan or the GRSP.

The results contained in this report represent our best estimates. However, it is likely that actual experience will vary from these estimates. To the extent that actual experience differs from the anticipated experience, actual plan costs will vary as well.

HIGHLIGHTS

- The required contribution under GCA Section 8137 is **27.83%** of payroll. Of this amount, 22.12% is for the unfunded actuarial accrued liability of the defined benefit (DB) plan, 1.60% is for the normal cost of the DB plan, and 4.11% is for contributions and expenses for the defined contribution (DC) plan.

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SECTION I. VALUATION SUMMARY

The primary reason for the increase in the contribution rate was the 1.0% reduction in total payroll, versus the assumption of a 3.0% increase in total payroll. There was also a slight increase in the contribution rate due to the net recognition of investment gains and losses over the last three years. These increases were partially offset by some actuarial gains due to demographic experience that differed from the actuarial assumptions, and due to assumption changes adopted from the 2011 to 2015 experience study.

Contribution rate from 9/30/15 actuarial valuation	27.41%
2013-14 investment gain (final 1/3 rd recognition) *	(0.27%)
2014-15 investment loss (second 1/3 rd recognition) *	0.60%
2015-16 investment gain (first 1/3 rd recognition) *	(0.23%)
Total payroll increase of -1.0% (vs. assumption of a 3.0% increase)	0.61%
Assumption changes adopted from 2011 to 2015 experience study	(0.06%)
Other factors, including demographic changes	<u>(0.23%)</u>
Contribution rate in 9/30/16 actuarial valuation	27.83%

* Investment returns that differ from the actuarial assumption of 7% are recognized over a 3 year period.

- Changes made to the actuarial assumptions are summarized beginning on page 5 under "Actuarial Assumptions". These changes were adopted based upon an actuarial experience study for the period from October 1, 2011, to September 30, 2015.
- Public Law 28-150 provided that the current employer contribution rate would increase over a 5-year period starting in the 2006-07 fiscal year until it reached the actuarial contribution rate, which is the rate specified in the Fund's actuarial valuation report. The employer contribution rate for the 2016-17 fiscal year is 27.41%.
- The defined benefit payroll for the 2015-16 fiscal year was \$141.3 million compared with \$155.5 million for the 2014-15 fiscal year. The total defined benefit and defined contribution payroll for the 2015-16 fiscal year, was \$506.3 million compared with \$511.4 million for the 2014-15 fiscal year, a decrease of 1.0%. The long term assumption is a 3.0% annual growth in total payroll. If total payroll had increased by 3.0%, the required contribution rate would have been 27.22%
- Based on the audited financial statements, we calculated an investment return on the total market value of assets of 9.5% for the fiscal year ending September 30, 2016. The average annual return on the market value of assets for the last 5 fiscal years has been 10.3%. The investment return on the actuarial value of assets, which recognizes investment gains and losses over a 3 year period, was 6.4% for the fiscal year ending September 30, 2016.
- The unfunded actuarial accrued liability decreased from \$1.298 billion as of September 30, 2015, to \$1.249 billion as of September 30, 2016. The payment required to amortize the unfunded actuarial accrued liability under GCA Section 8137 has increased from \$112.1 million to \$115.0 million. The payment as a percentage of payroll has increased from 21.60% to 22.12%.

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SECTION I. VALUATION SUMMARY

RESULTS OF VALUATION

	9/30/2016		9/30/2015	
Participant Counts				
Active				
– Non-Uniformed (DB)	1,990		2,211	
– Uniformed (DB)	<u>218</u>		<u>249</u>	
– Total (DB)	2,208		2,460	
Active Participants (DC)	<u>8,858</u>		<u>8,697</u>	
Total Active Participants (DB + DC)	11,066		11,157	
Retired (DB)	7,298		7,197	
Inactive and Terminated Members assumed to withdraw contributions (DB)	4,320		4,543	
Inactive and Terminated Members <u>not</u> assumed to withdraw contributions (DB)	143		158	
Total DB Participants	13,969		14,358	
	(\$millions)		(\$millions)	
Actual Payroll for Prior Fiscal Year				
Defined benefit (DB) payroll	\$141.3		\$155.5	
Total payroll (DB and DC)	506.3		511.4	
Expected Payroll for Next Fiscal Year				
Defined benefit (DB) payroll	\$130.0		\$144.3	
Total payroll (DB and DC)	520.2		519.0	
Financial Status				
Actuarial accrued liability	\$2,904.9		\$2,927.7	
Actuarial value of assets	<u>1,655.6</u>		<u>1,629.4</u>	
Unfunded actuarial accrued liability (UAAL)	\$1,249.3		\$1,298.3	
Security ratio	56.99%		55.66%	
		% of DB Payroll		% of DB Payroll
Normal Cost				
Total normal cost	\$ 20.8*	15.97%	\$ 23.5*	16.27%
Estimated employee contributions	<u>(12.4)</u>	<u>(9.55%)</u>	<u>(13.8)</u>	<u>(9.55%)</u>
Government normal cost	\$ 8.3	6.42%	\$ 9.7	6.71%
		% of Total Payroll		% of Total Payroll
Required Contribution per GCA §8137				
Unfunded actuarial accrued liability cost	\$ 115.1	22.12%	\$ 112.1	21.60%
Government DB normal cost	8.3	1.60%	9.7	1.87%
Expected government DC contributions	<u>21.4*</u>	<u>4.11%</u>	<u>20.5*</u>	<u>3.94%</u>
Total DB and DC contribution	\$ 144.8	27.83%	\$ 142.3	27.41%
Yield on Market Value of Assets		9.5%		0.6%

* Includes budgeted administrative expenses.

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SECTION I. VALUATION SUMMARY

5-YEAR HISTORICAL SUMMARY

The following table summarizes the principal valuation results over the last 5 years.

	9/30/2016	9/30/2015	9/30/2014	9/30/2013	9/30/2012
Participant Counts					
Active (DB)	2,208	2,460	2,692	2,878	3,090
Retired (DB)	7,298	7,197	7,226	7,196	7,155
Inactives (DB)	<u>4,463</u>	<u>4,701</u>	<u>4,941</u>	<u>5,394</u>	<u>5,507</u>
Total (DB)	13,969	14,358	14,859	15,468	15,752
Active (DC)	8,858	8,697	8,181	7,885	7,766
Actual Payroll					
DB payroll	\$141.3	\$155.5	\$169.9	\$164.3	\$169.9
DC payroll	<u>365.1</u>	<u>355.9</u>	<u>335.0</u>	<u>296.0</u>	<u>287.1</u>
Total payroll	\$506.3	\$511.4	\$504.9	\$460.3	\$457.0
Financial Status					
Accrued liability	\$2,904.9	\$2,927.7	\$2,931.7	\$2,855.4	\$2,811.4
Actuarial assets	<u>1,655.6</u>	<u>1,629.4</u>	<u>1,562.5</u>	<u>1,413.0</u>	<u>1,328.8</u>
UAAL	\$1,249.3	\$1,298.3	\$1,369.2	\$1,442.3	\$1,482.6
Security ratio	56.99%	55.66%	53.30%	49.49%	47.26%
Contribution Rate					
DB Normal Cost (as % of DB payroll)	6.42%	6.71%	6.32%	6.37%	7.11%
% of Total Payroll					
UAAL Rate	22.12%	21.60%	22.42%	24.09%	24.01%
DB Normal Cost	1.60%	1.87%	1.94%	2.05%	2.39%
DC Contribution	<u>4.11%</u>	<u>3.94%</u>	<u>3.80%</u>	<u>3.71%</u>	<u>3.62%</u>
Actuarial Rate *	27.83 %	27.41%	28.16%	29.85%	30.03%
Budget Rate	**	27.41%	28.16%	29.85%	30.03%
Investment Yield (Market Value)	9.5%	0.6%	10.0%	14.1%	18.1%

* "Actuarial Rate" is the contribution rate determined in the actuarial valuation. "Budget Rate" is the contribution rate set by the legislature. Contribution rates apply to the fiscal year beginning one year after the valuation date.

** The budget rate for 2017-18 has not yet been determined.

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SECTION I. VALUATION SUMMARY

ACTUARIAL ASSUMPTIONS

The following are the major assumptions used in the actuarial valuation. The assumptions are based upon the actuarial experience study for the period October 1, 2011, through September 30, 2015. The rationale for each significant assumption is provided in that experience study and in the discussion below. To the extent that actual experience differs from the assumptions below, future pension costs will differ.

Interest Rate: The interest rate used to discount future benefit payments to the present was 7.0% as of September 30, 2016. This assumption is unchanged from the prior valuation. The Fund's expected 30-year returns on various asset classes, which have been provided to us by GGRF's investment consultant, are shown below. The target asset allocation is the expected long-term asset allocation and is based on the Fund's investment policy.

Asset Class	Target Asset Allocation	Expected 30-Year Geometric Return
U.S. Equities (large cap)	29.00%	7.63%
U.S. Equities (small cap)	7.00%	7.63%
Non-U.S. Equities	12.00%	7.63%
Non-U.S. Equities (small cap)	4.00%	7.63%
Non-U.S. Equities (emerging markets)	2.00%	7.63%
U.S. Fixed Income (aggregate)	25.00%	4.75%
Risk Parity	8.00%	7.50%
High Yield Bonds	8.00%	6.90%
Global Real Estate (REITs)	5.00%	6.80%
Total Expected Return		7.18%

Using the expected 30-year returns for each asset class and the standard deviations and correlations of each asset class, we have calculated the 30-year geometric mean of the portfolio to be 7.18%. Note that if investments fail to achieve the assumed interest rate, future pension costs will increase.

Mortality. The mortality table used as of September 30, 2016, is the RP-2000 combined mortality table, set forward by 3 years for males and 2 years for females. The mortality table used for disabled lives is the RP-2000 disability mortality table, set forward by 6 years for males and 4 years for females. Mortality improvement is assumed to be 30% of Scale BB, projected generationally from 2016.

For the prior valuation, the mortality table used was the RP-2000 combined mortality table, set forward by 4 years for males and 1 year for females. The mortality table used for disabled lives was the RP-2000 disability mortality table for males and females. No provision was made for future mortality improvement in the prior valuation.

Salary Increases. Salaries are assumed to increase 7.5% per year for employees in their first 5 years of service, 6.0% for service between 6 and 10 years, 5.0% for service between 11 and

SECTION I. VALUATION SUMMARY

15 years, and 4.0% for service after 15 years. For the prior valuation, salaries were assumed to increase 7.5% per year for employees in their first 5 years of service, 6.0% for service between 6 and 10 years, 5.0% for service between 11 and 15 years, and 4.5% for service after 15 years.

Total Payroll Growth. Total payroll for defined benefit and defined contribution members is assumed to increase 2.75% per year. For the prior valuation, total payroll for defined benefit and defined contribution members was assumed to increase 3.0% per year.

Retirement Age. We have assumed 50% of employees will retire when first eligible for unreduced retirement. Thereafter, 20% of employees will retire at each year until age 75, at which time all remaining employees are assumed to retire. For the prior valuation, we assumed 40% of employees would retire when first eligible for unreduced retirement. Thereafter, 15% of employees would retire at each year until age 65, and 20% of employees would retire from age 65 until age 70, at which time all remaining employees were assumed to retire.

Return of Contributions. We have assumed that any current employees who terminate employment prior to retirement and who have less than 20 years of service will elect a return of contributions in lieu of a deferred benefit. Employees with at least 20 years of service who terminate employment are assumed to retire upon eligibility for unreduced benefits. Employees with between 20 and 24 years of service who terminate employment and are ineligible for the service retirement benefit are assumed to retire at age 60 with an unreduced benefit with no survivor benefits.

Current terminated or inactive members with at least 5 years of service and a contributions balance that exceeds \$10,000 who have not withdrawn their contributions and for whom sufficient earnings data are available to value their retirement benefits are assumed to retire upon eligibility for unreduced benefits. All other terminated and inactive members are assumed to elect to withdraw their contributions. These assumptions are unchanged from the prior valuation.

Administrative Expenses. Total administrative expenses are assumed to be \$6,344,000, which is the amount budgeted for the year ending September 30, 2017. Of this amount, \$4,457,000 is allocated to the defined benefit plan and \$1,887,000 to the defined contribution plan.

Rates of Withdrawal. The assumed rates of withdrawal are shown in Appendix B. The withdrawal rates are unchanged from the prior valuation.

Rates of Disability. The assumed rates of disability are shown in Appendix B. These rates are based on the 1974-78 Society of Actuaries Long Term Disability Non-Jumbo table, with rates reduced by 50% for males and 75% for females. For the prior valuation, these rates were based on the 1974-78 Society of Actuaries Long Term Disability Non-Jumbo, with rates reduced by 50% for both males and females.

Probability of Marriage. We have assumed that 75% of retirees will be married at retirement. This assumption is unchanged from the prior valuation.

Leave Adjustments. We have assumed that unused leave increases a member's service by 1.5 years and increases average earnings by 5% at retirement. For the prior valuation, we assumed that unused leave increased service by 1.5 years and increased average earnings by 10% at retirement.

Survivor Benefit – Minor Children. We have assumed there to be an average of 0.2 eligible child survivors at the time of a retiree's death, with payments to the child survivor continuing for 6 years.

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SECTION I. VALUATION SUMMARY

For the prior valuation, this survivor benefit was assumed to increase the value of retirement benefits by 0.67% and survivor benefits by 20% for active members.

Asset Valuation Method. Investment gains/losses relative to the assumed investment return are phased in over a period of 3 years. Certain receivables and liabilities whose payments are deducted from employer contributions to the Fund are excluded from the actuarial value of assets. This valuation method is unchanged from the prior valuation.

A complete summary of actuarial assumptions is in Appendix B.

FUNDING METHOD

GCA Section 8137 requires a contribution sufficient to fully fund the unfunded actuarial accrued liability by 2031 (within 80 years from May 1, 1951). The required contribution shown in this report includes a payment for the normal cost of active members of the Fund, and amortizes the unfunded actuarial accrued liability over the remaining 14.58 years as a level percentage of total payroll (including both defined benefit and defined contribution members).

Exhibits 17 and 18 project the employer and employee contributions, fund balance, actuarial accrued liability and security ratio forward 40 years based upon the current funding method.

SECTION II. FUND ASSETS

EXHIBIT 1. SUMMARY OF DB PLAN ASSETS

Listed below are the assets reported for the defined benefit (DB) pension plan in the Fund's financial statements, excluding certain receivables and liabilities whose payments are deducted from employer contributions to the Fund.

	9/30/2016	9/30/2015
Investments		
Common stocks	\$ 956,950,473	\$ 861,614,420
Mutual funds	100,615,203	111,797,748
U.S. government securities	246,567,269	289,252,362
Corporate bonds and notes	295,367,509	265,438,566
Money market funds	<u>40,801,515</u>	<u>24,661,095</u>
Total investments	1,640,301,969	1,552,764,191
Receivables		
Employer contributions, net	1,074,223	1,408,852
Employer contributions, unfunded liability	1,413,129	2,830,720
Member contributions	366,991	465,097
Accrued investment income	5,008,642	6,751,454
Due from brokers for unsettled trades	32,067,172	15,356,179
Notes receivable for service credits	537,788	619,350
Notes receivable ERIP	3,118	18,078
Interest and penalties	372,402	444,931
Supplemental/insurance benefits advanced	3,511,215	3,511,215
Other receivables	535,674	475,451
Due from DC plan	<u>615,612</u>	<u>193,304</u>
Total receivables	45,505,966	32,074,631
Cash and cash equivalents	4,064,996	4,139,161
Property and equipment	<u>805,458</u>	<u>901,563</u>
Total assets	\$ 1,690,678,389	\$ 1,589,879,546
Liabilities		
Accounts payable and accrued expenses	\$ 2,772,336	\$ 2,773,135
Due to brokers for unsettled trades	<u>40,724,796</u>	<u>10,678,327</u>
Total liabilities	\$ 43,497,132	\$ 13,451,462
Valuation Assets	<u>\$ 1,647,181,257</u>	<u>\$ 1,576,428,084</u>
Excluded Assets ¹		
Receivable – ERIP employer share	\$ 0	\$ 0
Supplemental/COLA benefits receivable	32,557,914	38,641,883
Deferred revenue for service credits	<u>(705,023)</u>	<u>(801,544)</u>
Total excluded assets	\$ 31,852,891	\$ 37,840,339

¹ Excluded because payments towards these receivables are deducted from employer contributions.

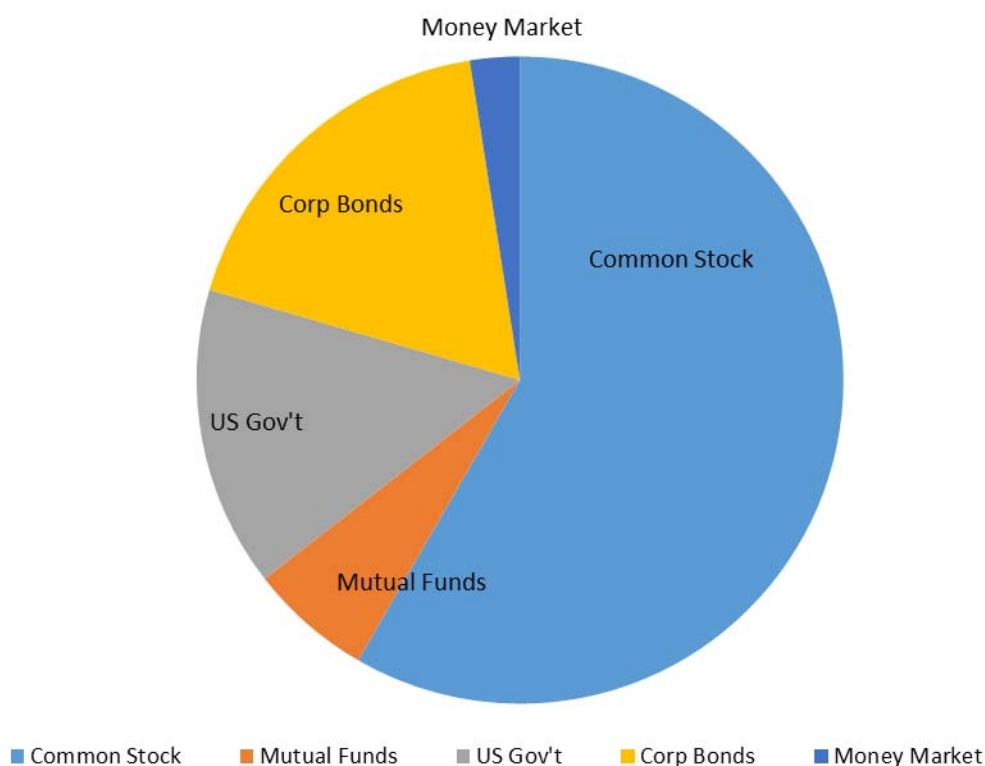
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SECTION II. FUND ASSETS

EXHIBIT 2. DB PLAN ASSET ALLOCATION

The allocation of assets among various investment classes is an important determinant of expected future investment returns.

	DB ASSET ALLOCATION	
	9/30/2016	9/30/2015
Common stocks	58.4%	55.5%
Mutual funds	6.1%	7.2%
U.S. government securities	15.0%	18.6%
Corporate bonds and notes	18.0%	17.1%
Money market funds	<u>2.5%</u>	<u>1.6%</u>
Total	100.0%	100.0%



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SECTION II. FUND ASSETS

EXHIBIT 3. CHANGES IN DB PLAN ASSETS

Assets increase or decrease each year due to employer contributions, investment income, benefit payments to retiring participants, plan expenses paid by the trust fund, and any realized and unrealized gains and losses from investments.

	FISCAL YEAR ENDING	
	9/30/2016	9/30/2015
Beginning Balance	\$ 1,576,428,084	\$ 1,625,255,354
Contributions		
Employer contributions	118,432,015	128,961,255
Member contributions	13,812,825	15,245,935
Decrease/(increase) in excluded assets	<u>5,987,448</u>	<u>5,545,114</u>
Total contributions	138,232,288	149,752,304
Investment Income		
Net appreciation in fair value	107,455,032	(20,642,359)
Interest	26,886,457	19,002,513
Dividends	13,459,859	16,070,108
Other investment income	3,224,611	771,597
Investment expenses	<u>(4,790,928)</u>	<u>(5,640,872)</u>
Total investment income	146,235,031	9,560,987
Benefit Payments		
Age and service annuities	174,153,820	168,366,770
Disability annuities	5,975,489	6,315,680
Survivor annuities	27,368,041	26,516,944
Refunds to separated employees	2,035,400	2,942,602
Interest on refunded contributions	1,284,833	939,653
Balances transferred to DC plan	<u>0</u>	<u>0</u>
Total benefit payments	210,817,583	205,081,649
Administrative Expenses	2,896,563	3,058,912
Ending Balance	\$ 1,647,181,257	\$ 1,576,428,084

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SECTION II. FUND ASSETS

EXHIBIT 4. ACTUARIAL VALUE OF ASSETS

The actuarial value of assets as of September 30, 2016, is equal to the market value of DB plan assets adjusted to phase in gains and losses relative to the assumed rate of return over a 3-year period, and to exclude certain receivables and liabilities whose payments are deducted from employer contributions to the Fund.

	9/30/2016	9/30/2015
Valuation assets at market value	\$ 1,647,181,257	\$ 1,576,428,084
(Gains)/Losses excluded from actuarial value (see below)	<u>8,411,122</u>	<u>52,966,849</u>
Actuarial value of assets	\$ 1,655,592,379	\$ 1,629,394,933
Actuarial value as % of market value	100.5%	103.4%

3-Year Phase-in of Gains and (Losses)

Year	Expected Return ¹	Actual Return	Gain/(Loss)	Percent Excluded	Excluded From Market Value
2015/2016	\$107,752,783	\$146,235,031	\$ 38,482,248	66.67%	\$ 25,654,832
2014/2015	111,758,849	9,560,987	(102,197,862)	33.33%	(34,065,954)
2013/2014	105,059,690	150,554,867	45,495,177	0.00%	<u>0</u>
Total					\$ (8,411,122)

¹ Expected return is based on the assumed investment return, which is 7.0%.

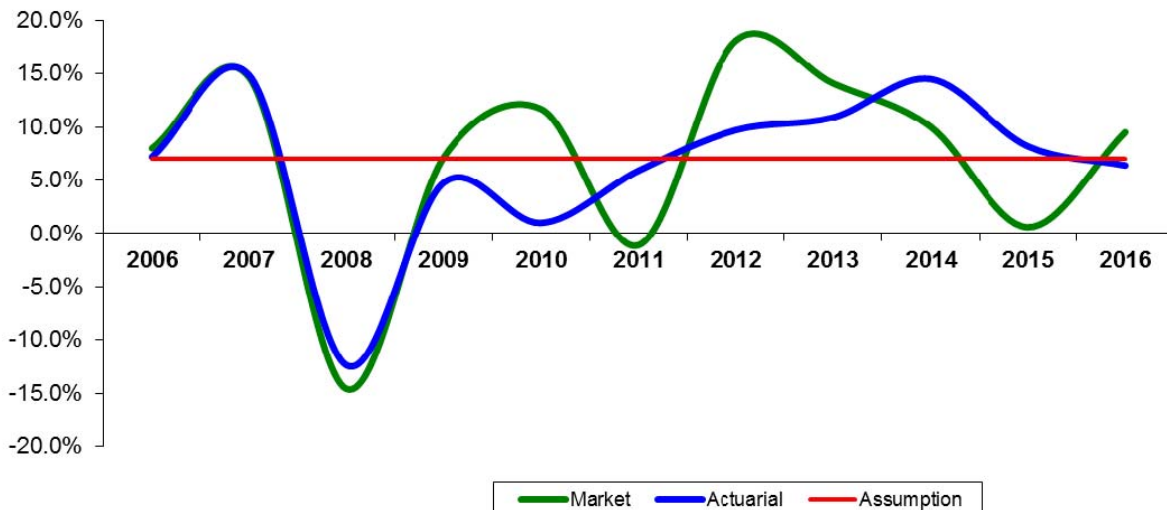
SECTION II. FUND ASSETS

EXHIBIT 5. HISTORICAL RETURNS ON DB PLAN ASSETS

The following table shows the historical return on DB plan assets over the last 15 years. The assumed actuarial valuation rate is 7.0%.

Fiscal Year Ending 9/30	Return on Market Value	Return on Actuarial Value
2016	9.5%	6.4%
2015	0.6%	8.2%
2014	10.0%	14.5%
2013	14.1%	10.9%
2012	18.1%	9.7%
2011	(1.1)%	5.9%
2010	11.7%	1.0%
2009	7.2%	4.8%*
2008	(14.6%)	(12.4%)
2007	14.7%	14.9%
2006	8.0%	7.2%
2005	9.7%	10.7%
2004	9.3%	10.4%
2003	9.9%	13.0%
2002	(0.5%)	(2.7%)
Average of last 5 years	10.3%	9.9%
Average of last 10 years	6.6%	6.1%

* Based on the asset valuation method as of September 30, 2008 (i.e., fixed income investments are valued at amortized cost).



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SECTION III. MEMBERSHIP DATA

EXHIBIT 6. ACTIVE EMPLOYEES (DB)

	9/30/2016	9/30/2015
Reconciliation of Census		
Members reported in raw data	6,735	7,199
Number excluded due to:		
Reported as inactive	4,236	4,475
Reported as terminated	224	226
Zero earnings	3	0
Refund of contributions	0	0
Duplicate inactive records	60	30
Included as retirees or deceased	<u>4</u>	<u>8</u>
Total exclusions	4,527	4,739
Active employees in valuation	2,208	2,460
Active Employees – Non-Uniformed		
Number vested	1,970	2,190
Number not vested	<u>20</u>	<u>21</u>
Total	1,990	2,211
Average age	53.8	53.3
Average service	25.5	25.0
Average earnings	\$ 57,722	\$ 57,193
Average accumulated contributions	\$ 156,871	\$ 148,423
Active Employees – Uniformed		
Number vested	218	249
Number not vested	<u>0</u>	<u>0</u>
Total	218	249
Average age	50.2	50.2
Average service	26.6	26.4
Average earnings	\$ 89,611	\$ 92,481
Average accumulated contributions	\$ 209,865	\$ 200,502
Active Employees – Total		
Number vested	2,188	2,439
Number not vested	<u>20</u>	<u>21</u>
Total	2,208	2,460
Average age	53.5	53.0
Average service	25.6	25.1
Average earnings	\$ 60,871	\$ 60,765
Average accumulated contributions	\$ 162,103	\$ 153,694

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SECTION III. MEMBERSHIP DATA

EXHIBIT 7. ACTIVE EMPLOYEES BY AGENCY

	9/30/2016 (DC)	9/30/2016 (DB)	9/30/2015 (DC)	9/30/2015 (DB)
Agency For Human Resources Development	37	5	33	7
Bureau of Budget & Management Research	12	6	12	9
Bureau of Statistics and Plans	27	8	21	10
Chamorro Land Trust	8	1	9	2
Chief Medical Examiner	3	0	3	0
Customs & Quarantine	95	36	108	39
Dept of Administration	108	45	108	46
Dept of Agriculture	52	24	53	28
Dept of Corrections	213	26	180	30
Dept of Labor	33	13	33	13
Dept of Land Management	24	27	24	26
Dept of Law	162	35	146	36
Dept of Mental Health & Substance Abuse	167	28	170	31
Dept of Military Affairs	33	7	29	7
Dept of Parks and Recreation	39	14	42	16
Dept of Public Health & Social Services	315	93	319	99
Dept of Public Works	248	100	227	112
Dept of Revenue and Taxation	118	42	123	45
Dept of Youth Affairs	60	15	54	18
D.I.S.I.D.	14	4	15	5
Governor's Office	90	4	93	8
Guam CAHA*	0	0	0	0
Guam Energy Office	1	1	3	2
Guam Environmental Protection Agency	39	8	38	9
Guam Fire Dept	164	90	166	111
Guam Legislature	41	8	44	6
Guam Police Dept	276	76	286	95
Guam Public Library*	0	0	0	0
Judiciary Of Guam	323	75	318	86
KGTF	4	5	4	5
Lt. Governor's Office	18	0	17	1
Mayor's Council	206	17	207	17
Public Auditors	14	1	11	1
Public Defender	47	14	39	16
General Fund Total	2,991	828	2,935	936
Dept of Chamorro Affairs*	31	10	28	11
Dept of Education	3,172	717	3,060	783
Government of Guam Retirement Fund	24	12	25	12
Guam Airport Authority	169	64	166	69
Guam Community College	198	54	214	59
Guam Economic Development Agency	26	5	29	5
Guam Housing & Urban Renewal Agency	78	18	71	20
Guam Housing Corporation	16	6	19	6
Guam Memorial Hospital Authority	848	123	872	147
Guam Power Authority	337	127	347	144
Guam Visitors Bureau	31	7	30	7
Guam Waterworks Authority	283	41	251	51
Port Authority Of Guam	262	72	260	77
University Of Guam	392	124	390	133
Others Total	5,867	1,380	5,762	1,524
GRAND TOTAL	8,858	2,208	8,858	2,208

* The Dept. of Chamorro Affairs' member count includes Guam CAHA and Guam Public Library.

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SECTION III. MEMBERSHIP DATA

EXHIBIT 8. RETIRED EMPLOYEES (DB)

	9/30/2016	9/30/2015
Service Retirees		
Count	5,203	5,119
Average age	69.3	69.0
Average benefit	\$34,094	\$33,129
Median benefit	\$30,984	\$30,323
Disabled Retirees		
Count	269	280
Average age	67.8	67.0
Average benefit	\$21,900	\$21,813
Median benefit	\$19,865	\$19,876
Survivors		
Count	1,635	1,600
Average age	71.5	71.1
Average benefit	\$16,592	\$16,259
Median benefit	\$14,493	\$14,154
Child Pensioners		
Count	191	198
Average age	16.8	16.4
Average benefit	\$2,880	\$2,880
Median benefit	\$2,880	\$2,880
Total Retirees and Survivors		
Count	7,107	6,999
Average age*	69.7	69.4
Average benefit*	\$29,606	\$28,820
Median benefit*	\$26,202	\$25,626

* Excludes child pensioners.

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SECTION III. MEMBERSHIP DATA

EXHIBIT 9. TERMINATED AND INACTIVE MEMBERS (DB)

	9/30/2016	9/30/2015
Reported as Inactive		
Count	4,230	4,475
Accumulated contributions	\$ 12,051,874	\$ 13,601,193
Reported as Terminated		
Count	224	226
Accumulated contributions	\$ 536,926	\$ 534,864
Zero Earnings		
Count	9	0
Accumulated contributions	\$ 761,149	\$ 0
Refund of Contributions		
Count	0	0
Accumulated contributions	\$ 0	\$ 0
Total Terminateds and Inactives		
Count	4,463	4,701
Accumulated contributions	\$ 13,349,949	\$ 14,136,057
Assumed to Withdraw Contributions		
Count	4,320	4,543
Accumulated contributions	\$ 3,156,366	\$ 3,365,695
Not Assumed to Withdraw Contributions		
Count	143	158
Average age	55.2	54.4
Average benefit	\$ 13,862	\$ 13,846
Accumulated contributions	\$ 10,193,582	\$ 10,770,362

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SECTION III. MEMBERSHIP DATA

EXHIBIT 10. RECONCILIATION OF MEMBERSHIP DATA (DB)

	Act	Assumed to Withdraw Contributions				No With'd Inact	Ret	Surv	Disab	Child	Total
		Inact	Term	Zero	Refund						
9/30/2015	2,460	4,317	226	0	0	158	5,119	1,600	280	198	14,358
Additions from:											
Actives		13	0	2	0	7	225	0	2	0	249
Inactives	8		0	1	0	0	0	0	0	0	9
Terminations	0	1		0	0	0	0	0	0	0	1
Zero earnings	0	0	0		0	0	0	0	0	0	0
Refunds	0	0	0	0		0	0	0	0	0	0
Inactives no w/d	7	1	0	0	0		7	0	0	0	15
Retiree	0	0	0	0	0	0		0	0	0	0
Survivor	0	0	0	0	0	0	0		0	0	0
Disability	0	0	0	0	0	0	0	0		0	0
Child	0	0	0	0	0	0	0	0	0		0
Other adds ¹	0	2	0	0	0	0	1	98	0	22	123
Subtotal	15	17	0	3	0	7	233	98	2	22	397
Subtractions due to:											
Actives		-8	0	0	0	-7	0	0	0	0	-15
Inactives	-13		-1	0	0	-1	0	0	0	0	-15
Terminations	0	0		0	0	0	0	0	0	0	0
Zero earnings	-2	-1	0		0	0	0	0	0	0	-3
Refunds	0	0	0	0		0	0	0	0	0	0
Inactives no w/d	-7	0	0	0	0		0	0	0	0	-7
Retiree	-225	0	0	0	0	-7		0	0	0	-232
Survivor	0	0	0	0	0	0	0		0	0	0
Disability	-2	0	0	0	0	0	0	0		0	-2
Child	0	0	0	0	0	0	0	0	0		0
Other drops ²	-18	-232	-1	0	0	-7	-149	-63	-13	-29	-512
Subtotal	-267	-241	-2	0	0	-22	-149	-63	-13	-29	-786
9/30/2016	2,208	4,093	224	3	0	143	5,203	1,635	269	191	13,969

1 Other additions indicate members or beneficiaries who were reported this year but who were not included in the prior year's valuation (e.g. a new beneficiary, etc.).

2 Other drops indicate members or beneficiaries who were in the prior year's valuation but who were not reported in this year's census data (e.g. members who received a complete refund, retirees or beneficiaries who are now deceased, children who have reached the maximum age, etc.).

SECTION IV. VALUATION EXHIBITS

EXHIBIT 11. ACTUARIAL ACCRUED LIABILITY

The actuarial accrued liability has been calculated using the Entry Age Normal actuarial cost method, and is equal to the present value of benefits for all DB members less the present value of future normal costs for active DB employees.

	9/30/2016	9/30/2015
Present Value of Benefits		
Active employees –		
Retirement	\$ 869,431,636	\$ 974,114,563
Disability	14,253,025	25,406,595
Death	16,626,915	26,079,558
Withdrawal	<u>32,620,263</u>	<u>37,655,284</u>
Total active PVB	932,931,839	1,063,256,000
Retirees and Survivors		
Retirees	1,754,518,896	1,673,803,685
Disabled retirees	50,201,112	55,884,705
Survivors	<u>242,317,598</u>	<u>238,716,901</u>
Total retirees and survivors	2,047,037,606	1,968,405,291
Terminated and inactive members		
Assumed to retire	16,369,006	17,715,728
Assumed to elect return of contributions	<u>3,156,366</u>	<u>3,365,695</u>
Total terminated and inactive members	19,525,372	21,081,423
Total PVB	\$ 2,999,494,817	\$ 3,052,742,714
Present Value of Future Normal Cost		
Active employees –		
Retirement	\$ 72,043,379	\$ 93,716,549
Disability	4,122,850	7,357,600
Death	3,547,323	5,769,669
Withdrawal	<u>14,872,399</u>	<u>18,237,335</u>
Total active PVFNC	\$ 94,585,951	\$ 125,081,153
Actuarial Accrued Liability		
Active members	\$ 838,345,888	\$ 938,174,847
Retirees and survivors	2,047,037,606	1,968,405,291
Terminations and inactives	<u>19,525,372</u>	<u>21,081,423</u>
Total accrued liability	\$ 2,904,908,866	\$ 2,927,661,561

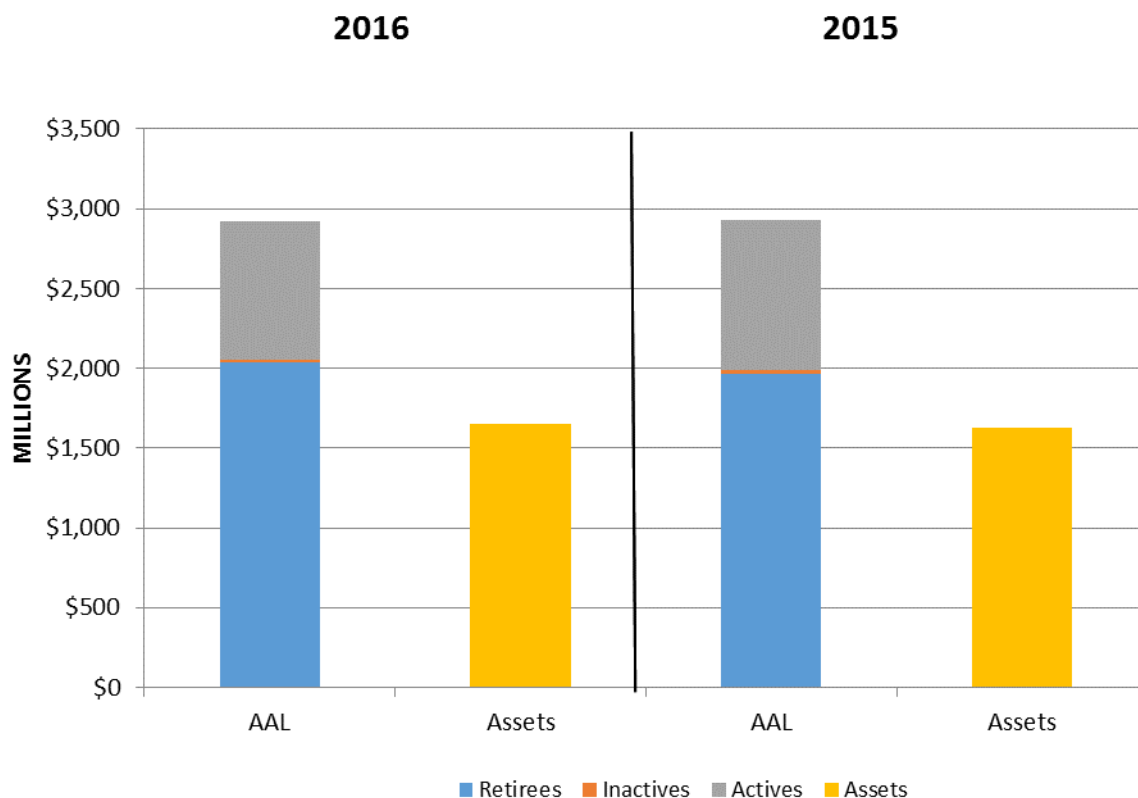
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SECTION IV. VALUATION EXHIBITS

EXHIBIT 12. CALCULATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

The unfunded actuarial accrued liability is used to determine the funding requirements. The unfunded actuarial accrued liability equals the actuarial accrued liability less the valuation assets.

	9/30/2016	9/30/2015
Actuarial Accrued Liability		
Active members	\$ 838,345,888	\$ 938,174,847
Retirees and survivors	2,047,037,606	1,968,405,291
Terminations and inactives	<u>19,525,372</u>	<u>21,081,423</u>
Total accrued liability	\$ 2,904,908,866	\$ 2,927,661,561
Actuarial Value of Assets	1,655,592,379	1,629,394,933
Unfunded Actuarial Accrued Liability	\$ 1,249,316,487	\$ 1,298,266,628
Security Ratio = (Assets/AAL)	56.99%	55.66%



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SECTION IV. VALUATION EXHIBITS

EXHIBIT 13. CALCULATION OF ACTUARIAL GAIN/LOSS

	9/30/2016	9/30/2015
Unfunded Actuarial Accrued Liability, beginning of year	\$ 1,298,266,628	\$ 1,369,237,802
Additions:		
Normal cost	9,361,310	9,449,212
Interest to end of year	<u>91,533,956</u>	<u>96,508,091</u>
Total additions	100,895,266	105,957,303
Deductions:		
Employer contributions for year	124,419,463	134,506,369
Interest on contributions	<u>4,281,030</u>	<u>4,628,101</u>
Total deductions	128,700,493	139,134,470
Other Changes:		
Plan amendments	0	0
Changes in assumptions and methods	<u>(13,482,669)</u>	<u>0</u>
Net other changes	(13,482,669)	0
Expected UAAL, end of year	\$ 1,256,978,732	\$ 1,336,060,635
Actual UAAL, end of year	<u>1,249,316,487</u>	<u>1,298,266,628</u>
Actuarial Gain/(Loss)	\$ 7,662,245	\$ 37,794,007
Components of Actuarial Gain/(Loss):		
Investment gain/(loss) on actuarial value of assets	\$ (9,781,158)	\$ 17,952,402
Other gains/(losses)	<u>17,443,403</u>	<u>19,841,605</u>
Total actuarial gain/(loss)	\$ 7,662,245	\$ 37,794,007

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SECTION IV. VALUATION EXHIBITS

EXHIBIT 14. NORMAL COST

The normal cost has been calculated using the Entry Age Normal actuarial cost method.

	9/30/2016		9/30/2015	
Expected defined benefit payroll for next fiscal year	\$ 129,999,048		\$ 144,248,356	
		% of DB Payroll		% of DB Payroll
Normal cost ¹				
Retirement	\$ 12,465,744	9.60%	\$ 14,313,675	9.92%
Disability	708,066	0.54%	1,148,171	0.80%
Withdrawal	2,510,359	1.93%	2,741,335	1.90%
Death	<u>614,530</u>	<u>0.47%</u>	<u>900,358</u>	<u>0.62%</u>
Total active normal cost	\$ 16,298,699	12.54%	\$ 19,103,539	13.24%
Assumed DB administrative expenses	<u>4,457,000</u>	<u>3.43%</u>	<u>4,361,000</u>	<u>3.02%</u>
Total normal cost and expenses	\$ 20,755,699	15.97%	\$ 23,464,539	16.27%
Expected member contributions	<u>(12,405,790)</u>	<u>(9.55%)</u>	<u>(13,781,125)</u>	<u>(9.55%)</u>
Government portion of normal cost	\$ 8,349,909	6.42%	\$ 9,683,414	6.71%

¹ Includes interest to mid-year.

SECTION IV. VALUATION EXHIBITS

EXHIBIT 15. AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY

Pursuant to GCA Section 8137, the unfunded liabilities of the Government of Guam Retirement Fund are to be completely funded within 80 years from May 1, 1951. As of September 30, 2016, there are 14.58 years remaining in the funding period. The amortization of the unfunded actuarial accrued liability is calculated as a constant percentage of total payroll, which is assumed to grow at 2.75% per year.

	9/30/2016	9/30/2015
Total payroll (DB and DC) for fiscal year following	\$ 520,246,146	\$ 519,036,907
Unfunded actuarial accrued liability	1,249,316,487	1,298,266,628
Remaining funding period	14.58 years	15.58 years
Annual amortization	\$ 115,041,140	\$ 112,145,408
As % of total payroll (DB and DC)	22.12%	21.60%

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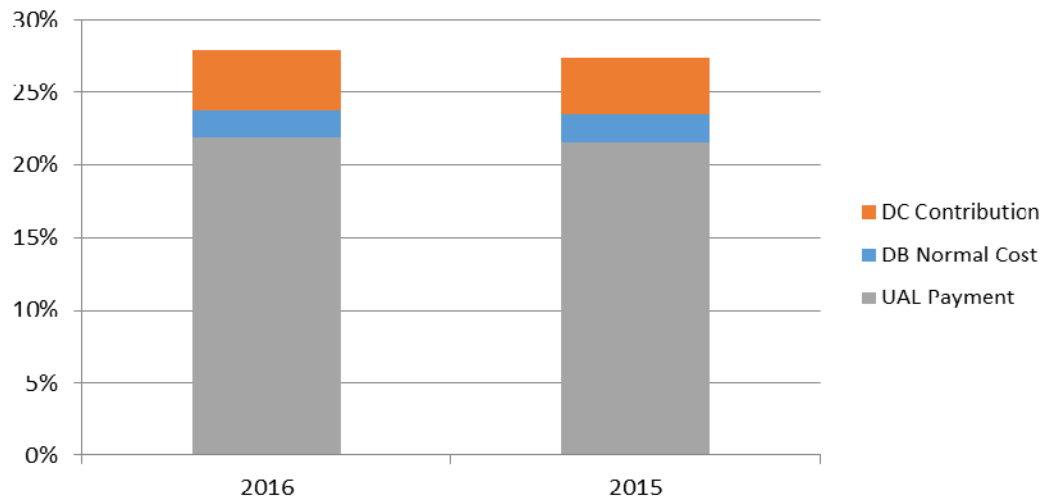
SECTION IV. VALUATION EXHIBITS

EXHIBIT 16. ACTUARIALLY DETERMINED CONTRIBUTION

The Actuarially Determined Contribution (ADC) is equal to the sum of (1) the government normal cost for the defined benefit (DB) plan, (2) the amortization payment towards the unfunded actuarial accrued liability of the defined benefit (DB) plan, and (3) the expected government contributions to the defined contribution (DC) plan. The required contribution is then divided by the sum of the DB and DC payroll to determine the contribution rate as a percentage of payroll.

	9/30/2016	9/30/2015
Expected payroll for next fiscal year		
Defined benefit (DB)	\$ 129,999,048	\$ 144,248,356
Defined contribution (DC)	<u>390,247,098</u>	<u>374,788,551</u>
Total payroll (DB and DC)	\$ 520,246,146	\$ 519,036,907
Government normal cost excluding expenses (DB)	\$ 8,349,909	\$ 9,683,414
As % of DB payroll	6.42%	6.71%
As % of total payroll (DB and DC)	1.60%	1.87%
Amortization of UAAL (DB)	\$ 115,041,140	\$ 112,145,408
As % of total payroll (DB and DC)	22.12%	21.60%
Government DC contributions	\$ 21,399,355	\$ 20,456,428
As % of DC payroll	5.48%	5.46%
As % of total payroll (DB and DC)	4.11%	3.94%
Total DB and DC contributions	\$ 144,790,404	\$ 142,285,250
% of total payroll (DB and DC)	27.83%	27.41%

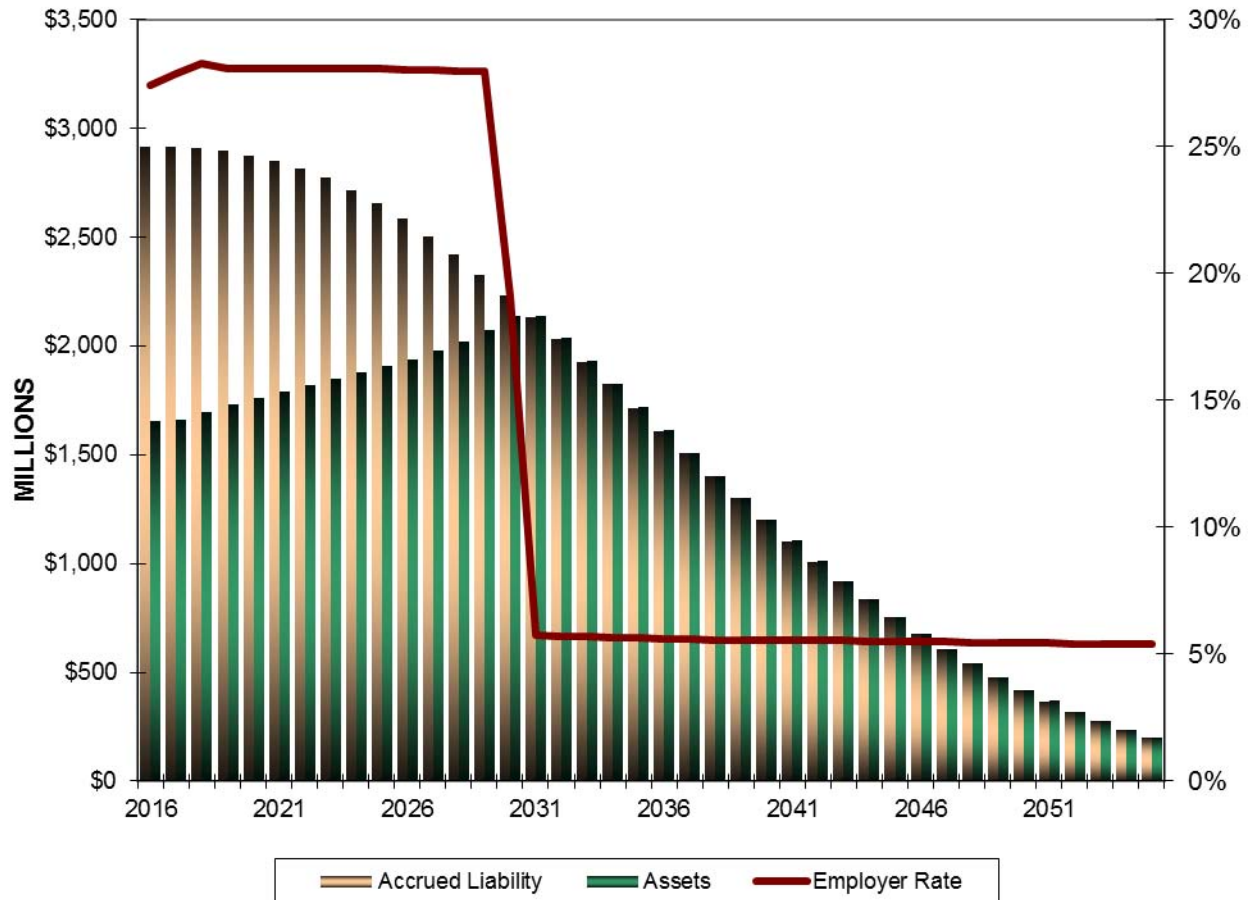
CONTRIBUTION RATE



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SECTION IV. VALUATION EXHIBITS

EXHIBIT 17. PROJECTION OF CONTRIBUTION RATE¹



¹ The contribution rate is the combined employer rate for the DB and DC plans.

SECTION IV. VALUATION EXHIBITS

EXHIBIT 17. PROJECTION OF CONTRIBUTION RATE (values)

Year Ending	PAYROLL ¹		CONTRIB RATE		CONTRIBUTIONS			Invest Gain ³	Benefits/ Expenses	DB Fund Actuarial
	DB	DC	DB	DC ²	DB	DC ²	EE			
2016										\$1,655.59
2017	\$130.00	\$390.25	27.41%	21.93%	\$35.63	\$ 85.57	\$12.37	\$111.28	\$(219.70)	1,659.51
2018	122.92	411.63	27.83%	22.37%	34.21	92.09	11.70	113.04	(223.77)	1,699.60
2019	114.70	434.55	28.27%	22.84%	32.43	99.25	10.92	114.93	(228.23)	1,728.89
2020	105.22	459.13	28.08%	22.67%	29.55	104.10	10.01	116.82	(233.17)	1,756.20
2021	94.52	485.36	28.09%	22.70%	26.55	110.18	9.01	118.59	(238.46)	1,782.07
2022	83.04	512.78	28.12%	22.75%	23.35	116.68	7.92	120.26	(244.07)	1,806.22
2023	71.31	540.90	28.15%	22.80%	20.07	123.34	6.80	121.81	(249.55)	1,828.69
2024	59.85	569.20	28.18%	22.85%	16.87	130.08	5.70	123.28	(254.37)	1,850.25
2025	49.32	597.02	28.20%	22.89%	13.91	136.64	4.71	124.74	(257.90)	1,872.35
2026	40.24	623.87	28.22%	22.91%	11.36	142.95	3.84	126.30	(260.01)	1,896.79
2027	33.05	649.33	28.21%	22.92%	9.32	148.83	3.15	128.12	(260.18)	1,926.03
2028	27.25	673.89	28.20%	22.92%	7.68	154.44	2.61	130.34	(258.66)	1,962.45
2029	22.48	697.95	28.18%	22.91%	6.34	159.91	2.15	133.12	(256.04)	2,007.92
2030	18.56	721.68	28.16%	22.90%	5.23	165.27	1.78	136.58	(252.33)	2,064.44
2031	15.26	745.34	19.20%	13.95%	2.93	103.95	1.46	138.52	(247.78)	2,063.53
2032	12.47	769.05	5.75%	0.51%	0.72	3.91	1.20	135.14	(242.41)	1,962.09
2033	10.15	792.86	5.74%	0.50%	0.58	3.95	0.98	128.26	(236.40)	1,859.46
2034	8.20	816.89	5.72%	0.49%	0.47	4.00	0.79	121.34	(229.61)	1,756.45
2035	6.53	841.25	5.70%	0.48%	0.37	4.03	0.63	114.41	(222.30)	1,653.59
2036	5.13	865.96	5.68%	0.46%	0.29	4.02	0.50	107.50	(214.61)	1,551.29
2037	4.04	891.01	5.66%	0.45%	0.23	4.01	0.39	100.66	(206.40)	1,450.18
2038	3.14	916.52	5.64%	0.43%	0.18	3.97	0.31	93.91	(197.82)	1,350.72
2039	2.36	942.60	5.62%	0.42%	0.13	3.93	0.23	87.29	(188.92)	1,253.39
2040	1.76	969.18	5.61%	0.41%	0.10	4.02	0.17	80.84	(179.82)	1,158.70
2041	1.30	996.34	5.60%	0.41%	0.07	4.13	0.13	74.58	(170.52)	1,067.09
2042	0.96	1,024.12	5.60%	0.41%	0.05	4.22	0.10	68.53	(161.11)	978.88
2043	0.69	1,052.57	5.59%	0.41%	0.04	4.29	0.07	62.73	(151.69)	894.32
2044	0.50	1,081.73	5.58%	0.40%	0.03	4.34	0.05	57.18	(142.29)	813.63
2045	0.35	1,111.64	5.56%	0.39%	0.02	4.36	0.04	51.90	(132.98)	736.97
2046	0.24	1,142.33	5.55%	0.38%	0.01	4.38	0.02	46.89	(123.83)	664.45
2047	0.14	1,173.85	5.53%	0.37%	0.01	4.39	0.02	42.17	(114.85)	596.19
2048	0.07	1,206.20	5.52%	0.36%	-	4.40	0.01	37.73	(106.11)	532.22
2049	0.04	1,239.41	5.51%	0.36%	-	4.40	-	33.59	(97.61)	472.61
2050	0.02	1,273.51	5.49%	0.35%	-	4.40	-	29.74	(89.39)	417.36
2051	0.01	1,308.54	5.48%	0.34%	-	4.40	-	26.18	(81.50)	366.46
2052	-	1,344.54	n/a	0.33%	-	4.40	-	22.92	(73.95)	319.82
2053	-	1,381.51	n/a	0.32%	-	4.40	-	19.94	(66.78)	277.38
2054	-	1,419.50	n/a	0.31%	-	4.40	-	17.23	(60.01)	239.00
2055	-	1,458.54	n/a	0.30%	-	4.40	-	14.79	(53.66)	204.54

¹ Payroll is assumed to increase 2.75% per year.

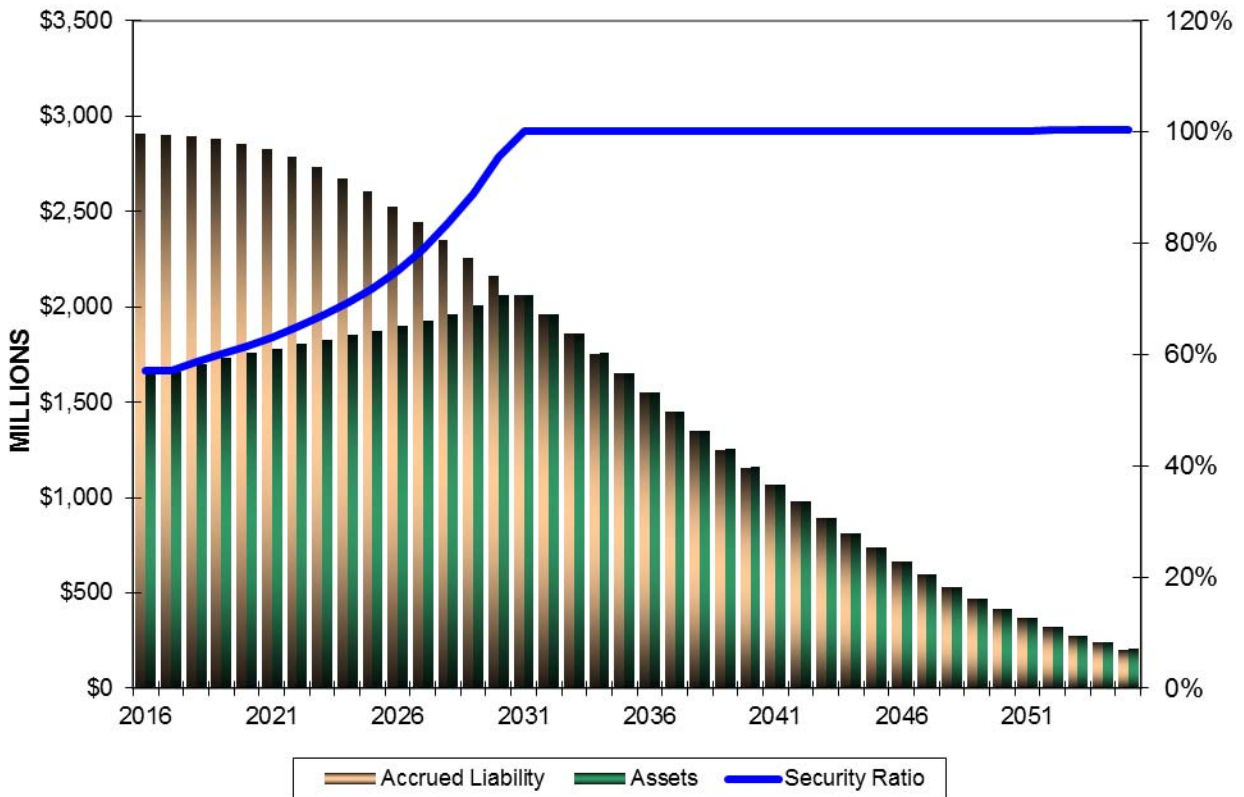
² DC rate and contributions are those for payment towards UAAL and plan expenses only.

³ Investment earnings are assumed to be 7.0% per year on the market value of assets.

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SECTION IV. VALUATION EXHIBITS

EXHIBIT 18. PROJECTION OF SECURITY RATIO



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SECTION IV. VALUATION EXHIBITS

EXHIBIT 18. PROJECTION OF SECURITY RATIO (values)

Year Ending	EMPLOYER CONTRIBUTIONS					Security Ratio
	Payroll ¹	DB Rate	Contribs DB Plan	DB Fund AVA ²	Accrued Liability	
2016				\$1,655.59	\$2,904.91	56.99%
2017	\$ 520.25	27.41%	121.20	1,659.51	2,901.42	57.20%
2018	534.55	27.83%	126.30	1,699.60	2,892.54	58.76%
2019	549.25	28.27%	131.68	1,728.89	2,877.37	60.09%
2020	564.36	28.08%	133.65	1,756.20	2,854.83	61.52%
2021	579.88	28.09%	136.73	1,782.07	2,823.93	63.11%
2022	595.82	28.12%	140.03	1,806.22	2,783.59	64.89%
2023	612.21	28.15%	143.41	1,828.69	2,733.27	66.90%
2024	629.04	28.18%	146.95	1,850.25	2,672.93	69.22%
2025	646.34	28.20%	150.55	1,872.35	2,603.32	71.92%
2026	664.12	28.22%	154.31	1,896.79	2,525.41	75.11%
2027	682.38	28.21%	158.15	1,926.03	2,440.86	78.91%
2028	701.15	28.20%	162.12	1,962.45	2,351.20	83.47%
2029	720.43	28.18%	166.24	2,007.92	2,257.33	88.95%
2030	740.24	28.16%	170.49	2,064.44	2,160.21	95.57%
2031	760.60	19.20%	106.88	2,063.53	2,060.59	100.14%
2032	781.51	5.75%	4.63	1,962.09	1,959.21	100.15%
2033	803.00	5.74%	4.53	1,859.46	1,856.66	100.15%
2034	825.09	5.72%	4.47	1,756.45	1,753.72	100.16%
2035	847.78	5.70%	4.40	1,653.59	1,650.96	100.16%
2036	871.09	5.68%	4.31	1,551.29	1,548.81	100.16%
2037	895.05	5.66%	4.24	1,450.18	1,447.89	100.16%
2038	919.66	5.64%	4.15	1,350.72	1,348.71	100.15%
2039	944.95	5.62%	4.06	1,253.39	1,251.73	100.13%
2040	970.94	5.61%	4.12	1,158.70	1,157.34	100.12%
2041	997.64	5.60%	4.20	1,067.09	1,065.95	100.11%
2042	1,025.07	5.60%	4.28	978.88	977.88	100.10%
2043	1,053.26	5.59%	4.33	894.32	893.41	100.10%
2044	1,082.23	5.58%	4.37	813.63	812.77	100.11%
2045	1,111.99	5.56%	4.38	736.97	736.13	100.11%
2046	1,142.57	5.55%	4.40	664.45	663.63	100.12%
2047	1,173.99	5.53%	4.40	596.19	595.37	100.14%
2048	1,206.27	5.52%	4.40	532.22	531.41	100.15%
2049	1,239.45	5.51%	4.40	472.61	471.80	100.17%
2050	1,273.53	5.49%	4.40	417.36	416.55	100.19%
2051	1,308.55	5.48%	4.40	366.46	365.65	100.22%
2052	1,344.54	5.47%	4.40	319.82	319.01	100.25%
2053	1,381.51	5.46%	4.40	277.38	276.57	100.29%
2054	1,419.50	5.44%	4.40	239.00	238.19	100.34%
2055	1,458.54	5.43%	4.40	204.54	203.73	100.40%

¹ Payroll is assumed to increase 2.75% per year.

² Actuarial Value of Assets. Investment earnings are assumed to be 7.0% per year on the market value of assets.

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SECTION V. ACCOUNTING EXHIBITS

EXHIBIT 19. NET PENSION LIABILITY

GASB 67 requires the disclosure of the Net Pension Liability. The Total Pension Liability was determined by an actuarial valuation as of the prior valuation date, calculated based on the discount rate and actuarial assumptions listed below and shown in Appendix B, and was then projected forward to the measurement date taking into account any significant changes between the valuation date and the fiscal year end as prescribed by GASB 67 and 68.

The liabilities are calculated using a discount rate that is a blend of the expected investment rate of return and a high quality bond index rate. The expected investment rate of return applies for as long as the plan assets (including future contributions) are projected to be sufficient to make the projected benefit payments. If plan assets are projected to be depleted at some point in the future, the rate of return of a high quality bond index is used for the period after the depletion date. In this case, there are always expected to be sufficient plan assets to make the projected benefit payments. For that reason, the expected investment rate of return of 7.00% is used as the discount rate.

	September 30, 2016	September 30, 2015
Total Pension Liability	\$ 2,934,287,321	\$ 2,946,602,018
Fiduciary Net Position	<u>1,647,181,257</u>	<u>1,576,428,084</u>
Net Pension Liability	\$ 1,287,106,064	\$ 1,370,173,934
Fiduciary Net Position as a % of Total Pension Liability	56.14%	53.50%
Covered Payroll (DB and DC)	\$ 506,322,283	\$ 511,366,411
Net Pension Liability as of % of Covered Payroll	254.21%	267.94%
Valuation Date	9/30/2015	9/30/2014
Measurement date	9/30/2016	9/30/2015
GASB 67 Reporting date	9/30/2016	9/30/2015
GASB 68 Reporting date	9/30/2017	9/30/2016
Depletion date	None	None
Discount rate	7.00%	7.00%
Expected rate of return, net of investment expenses	7.00%	7.00%
Municipal bond rate	n/a	n/a

Sensitivity Analysis	As of September 30, 2016		
	1% Decrease in Discount Rate 6.00%	Current Discount Rate 7.00%	1% Increase in Discount Rate 8.00%
Total Pension Liability	\$ 3,221,163,664	\$ 2,934,287,321	\$ 2,687,016,110
Fiduciary Net Position	<u>1,647,181,257</u>	<u>1,647,181,257</u>	<u>1,647,181,257</u>
Net Pension Liability	\$ 1,573,982,407	\$ 1,287,106,064	\$ 1,039,834,853

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SECTION V. ACCOUNTING EXHIBITS

EXHIBIT 20. NET PENSION LIABILITY BY COMPONENT UNIT

GGRF is a single employer plan under GASB 68. For the purpose of allocating the Net Pension Liability among the component units listed below, we have used the ratio of each component unit's expected contribution to the total expected employer contributions. The expected contributions for the DB plan are based upon a contribution rate of 28.16% of defined benefit (DB) payroll and 23.16% of defined contribution (DC) payroll.

GASB 68 permits an employer to report its net pension liability as of a measurement date one year earlier than the net pension liability reported by the plan. The allocation below is as of the current measurement date, which may be reported by the employer in the subsequent fiscal year.

FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 2016 TO BE REPORTED AS OF SEPTEMBER 30, 2017					
Component Unit	DB Payroll	DC Payroll	Expected DB Contributions	% Share	Allocated Net Pension Liability
Gov't of Guam General Fund	\$ 46,901,918	\$ 95,238,911	\$ 35,264,911	28.36%	\$ 365,083,420
Attorney General	2,263,278	7,875,850	2,461,386	1.98%	25,481,738
Mayors' Council of Guam	700,561	5,803,374	1,541,339	1.24%	15,956,862
Department of Chamorro Affairs	534,751	941,127	368,551	0.30%	3,815,460
KGTF	172,003	176,916	89,410	0.07%	925,626
Gov't of Guam Retirement Fund	566,603	1,038,748	400,130	0.32%	4,142,385
Guam Community College	3,496,895	8,948,410	3,057,177	2.46%	31,649,722
Guam Department of Education	39,885,822	113,488,609	37,515,809	30.18%	388,386,061
Guam Econ. Dev. Authority	352,077	1,498,348	446,162	0.36%	4,618,935
Guam Housing and UR Authority	1,242,465	2,918,817	1,025,876	0.83%	10,620,481
Guam Housing Corporation	301,958	909,944	295,774	0.24%	3,062,029
Guam Int'l Airport Authority	4,434,594	7,760,189	3,046,042	2.45%	31,534,446
Guam Legislature	397,280	1,931,481	559,205	0.45%	5,789,224
Guam Memorial Hosp. Authority	8,202,540	38,532,727	11,234,015	9.04%	116,301,233
Guam Power Authority	8,644,748	17,381,623	6,459,945	5.20%	66,877,209
Guam Visitors Bureau	446,737	1,415,661	453,668	0.36%	4,696,642
Guam Waterworks Authority	2,997,506	11,573,676	3,524,561	2.83%	36,488,361
Judiciary of Guam	5,887,991	14,929,396	5,115,706	4.11%	52,960,844
Port Authority of Guam	4,716,262	11,443,652	3,978,449	3.20%	41,187,280
Public Auditor	113,965	618,050	175,233	0.14%	1,814,117
University of Guam	<u>8,992,779</u>	<u>20,644,041</u>	<u>7,313,526</u>	<u>5.88%</u>	<u>75,713,989</u>
Total	\$141,252,733	\$365,069,550	\$124,326,875	100.00%	\$1,287,106,064

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EXHIBIT 21. SCHEDULE OF CHANGES IN NET PENSION LIABILITY

GASB 67 requires a 10-Year schedule of changes in the Net Pension Liability. Changes for the most recent four years are shown below.

	FOR THE FISCAL YEAR ENDING				
	Sept 30, 2016	Sept 30, 2015	Sept 30, 2014	Sept 30, 2013	Sept 30, 2012
Total Pension Liability - Beginning of Year	\$ 2,946,602,018	\$ 2,871,562,108	\$ 2,829,439,663	\$ 2,811,399,525	\$ n/a
Service cost	19,103,539	20,388,657	22,323,496	21,089,199	n/a
Interest on the total pension liability	198,339,804	199,590,092	191,594,023	190,558,974	n/a
Changes of benefit terms	0	0	0	0	n/a
Differences between actual and expected experience with regard to economic or demographic factors	(18,940,457)	60,142,810	27,739,034	0	n/a
Changes of assumptions	0	0	0	0	n/a
Benefit payments	<u>(210,817,583)</u>	<u>(205,081,649)</u>	<u>(199,534,108)</u>	<u>(193,608,035)</u>	<u>n/a</u>
Total changes	(12,314,697)	75,039,910	42,122,445	18,040,138	n/a
Total Pension Liability - End of Year	\$ 2,934,287,321	\$ 2,946,602,018	\$ 2,871,562,108	\$ 2,829,439,663	\$ n/a
Fiduciary Net Position – Beginning of Year	\$ 1,576,428,084	\$ 1,625,255,354	\$ 1,526,135,027	\$ 1,391,421,887	\$ n/a
Contributions from employers	124,419,463	134,506,369	134,106,867	121,940,930	n/a
Member contributions	13,812,825	15,245,935	16,626,009	16,290,014	n/a
Net investment income	146,235,031	9,560,987	150,599,955	192,776,061	n/a
Benefit payments	(210,817,583)	(205,081,649)	(199,534,108)	(193,608,035)	n/a
Administrative expense	<u>(2,896,563)</u>	<u>(3,058,912)</u>	<u>(2,678,396)</u>	<u>(2,685,830)</u>	<u>n/a</u>
Total changes	70,753,173	(48,827,270)	99,120,327	134,713,140	n/a
Fiduciary Net Position – End of Year	\$ 1,647,181,257	\$ 1,576,428,084	\$ 1,625,255,354	\$ 1,526,135,027	\$ n/a
Net Pension Liability - End of Year	\$ 1,287,106,064	\$ 1,370,173,934	\$ 1,246,306,754	\$ 1,303,304,636	\$ n/a
Fiduciary Net Position as a % of TPL	56.14%	53.50%	56.60%	53.94%	n/a%
Covered employee payroll	\$ 506,322,283	\$ 511,366,411	\$ 504,943,471	\$ 460,347,780	\$ n/a
Net Pension Liability as a % of Covered Employee Payroll	254.21%	267.94%	246.82%	283.11%	n/a%

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SECTION V. ACCOUNTING EXHIBITS

EXHIBIT 22. SCHEDULE OF EMPLOYER CONTRIBUTIONS

Plan Year Ending September 30	Actuarially Determined Contribution	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll	Contribution as a % of Covered Payroll
2016	\$124,419,000	\$124,419,000	\$0	\$ 506,322,000	24.57%
2015	134,506,000	134,506,000	0	511,366,000	26.30%
2014	134,107,000	134,107,000	0	504,943,000	26.56%
2013	121,698,000 ¹	121,941,000	(243,000)	460,348,000	26.49%
2012	121,078,000	113,876,000	7,202,000	456,985,000	24.92%
2011	113,964,000	111,527,000	2,437,000	461,211,000	24.18%
2010	113,944,000	101,232,000	12,712,309	429,044,000	23.59%
2009	95,945,000	92,921,000	3,024,000	423,774,000	21.93%
2008	98,743,000	86,806,000	11,937,000	411,383,000	21.10%
2007	92,207,000	76,973,000	15,234,000	377,049,000	20.41%
2006	110,940,000	85,771,000	25,169,000	376,604,000	22.77%

¹ Based upon actuarial valuation as of September 30, 2010.

Actuarially determined contribution rates are calculated as of September 30, two years prior to the end of the fiscal year in which contributions are reported. The methods and assumptions used to determine contribution rates are as follows:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	May 1, 2031 (14.58 years remaining as of September 30, 2016)
Asset valuation method	3-year smoothed market value (effective September 30, 2009)
Inflation	2.75% per year
Total payroll growth	3.00% per year
Salary increases	7.5% per year for the first 5 years of service, 6% for 5-10 years, 5% for 11-15 years and 4.5% for service over 15 years.
Investment rate of return	7.00%, net of investment expenses, including inflation of 2.75%
Retirement age	40% are assumed to retire upon first eligibility for unreduced retirement. Thereafter, the probabilities of retirement are 15% until age 65, 20% from 65-69, and 100% at age 70.
Mortality	RP-2000 healthy mortality table set forward by 4 years for males and 1 year for females. Mortality for disabled lives is the RP 2000 disability mortality table with no set forwards.
Other information	Actuarial assumptions are based upon periodic experience studies. The last experience study reviewed experience from 2007-2011, and was first reflected in the actuarial valuation as of September 30, 2012.

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SECTION V. ACCOUNTING EXHIBITS

EXHIBIT 23. CALCULATION OF PENSION EXPENSE

GASB 68 requires the calculation of the pension expense for fiscal years beginning on or after June 15, 2014, and permits the use of a measurement period ending one year prior to the reporting date.

Pension Expense	For the Fiscal Year Ending To Be Reported as of	September 30, 2016 September 30, 2017	September 30, 2015 September 30, 2016
Service cost		\$ 19,103,539	\$ 20,388,657
Interest on the total pension liability		198,339,804	199,590,092
Effect of plan changes		0	0
Administrative expense		2,896,563	3,058,912
Member contributions		(13,812,825)	(15,245,935)
Expected investment return, net of investment expenses		(107,752,783)	(111,758,849)
Recognition of Deferred Inflows/Outflows of Resources			
Economic/demographic (gains) or losses		2,614,078	52,205,495
Assumption changes		0	0
Investment (gains) or losses		<u>(15,840,113)</u>	<u>(8,143,663)</u>
Total Recognition		(13,226,035)	44,061,832
Pension expense		\$ 85,548,263	\$ 140,094,709

Deferred Inflows / Outflows of Resources	To Be Reported as of September 30, 2017	
	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	\$ (4,370,875)	\$ 0
Changes of assumptions	0	0
Net difference between projected and actual earnings	(7,158,679)	0
Changes in Proportion/Differences Between Employer Contributions and Proportionate Share	(4,619,072)	4,619,072
Contributions made subsequent to measurement date	<u>0</u>	<u>TBD</u>
Total	\$ (16,148,626)	\$ TBD

Amounts currently reported as deferred inflows and outflows of resources related to pensions will be recognized in pension expense as follows:

Fiscal Year Ending June 30	Recognized Deferred Inflows/Outflows
2018	\$ (20,210,998)
2019	3,634,758
2020	12,743,124
2021	(7,696,448)
2022	0
Thereafter	0

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SECTION V. ACCOUNTING EXHIBITS

EXHIBIT 24. SCHEDULE OF DEFERRED INFLOWS AND OUTFLOWS OF RESOURCES

Investment (gains)/losses are recognized in pension expense over a period of five years. Economic/demographic (gains)/losses and assumption changes or inputs are recognized over the average remaining service life for all active and inactive members.

Measurement Period in which Experience Occurred	Original Amount	Original Recognition Period	For the Fiscal Year Ending September 30, 2016 To Be Reported as of September 30, 2017		
			Amount Recognized in Expense	Balance of Deferred Inflows	Balance of Deferred Outflows
Investment (gains) or losses					
2012-2013	\$ (97,374,360)	5.0	\$ (19,474,872)	\$ (19,474,872)	\$ 0
2013-2014	(45,541,816)	5.0	(9,108,363)	(18,216,727)	0
2014-2015	102,197,862	5.0	20,439,572	0	61,318,718
2015-2016	(38,482,248)	5.0	(7,696,450)	(30,785,798)	0
Economic/demographic (gains) or losses					
2013-2014	27,739,034	1.5	0	0	0
2014-2015	60,142,810	1.4	17,183,660	0	0
2015-2016	(18,940,457)	1.3	(14,569,582)	(4,370,875)	0
Assumption changes or inputs					
2013-2014	\$ 0	n/a	\$ 0	\$ 0	\$ 0
2014-2015	0	n/a	0	0	0
2015-2016	0	n/a	0	0	0
Changes in Proportion/Differences Between Employer Contributions and Proportionate Share					
2013-2014	\$ 0	1.5	\$ 0	\$ 0	\$ 0
2014-2015	0	1.4	0	0	0
2015-2016	0	1.3	0	(4,619,072)	4,619,072

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APPENDIX A. SUMMARY OF PLAN PROVISIONS

The following description is only a brief summary of the more important provisions of the retirement plan. Actual plan provisions are contained in Chapter 8 of the Guam Code.

Membership Conditions and Exclusions: All employees of the Government of Guam hired on or before September 30, 1995 are required to participate as a condition of employment, except:

- a) Persons who are compensated on a fee basis;
- b) Independent contractors;
- c) Persons employed for a specific project;
- d) Persons employed in the Senior Citizens' Community Employment Program; and
- e) Persons with less than 20 years of service prior to September 30, 1995 who elect to transfer to the Government of Guam Defined Contribution Fund. Participants have an annual opportunity to transfer.

Membership is optional for:

- a) Temporary, seasonal, intermittent and part-time employees;
- b) Persons employed for a specific period of time and not domiciled in Guam; and
- c) Employees of a public corporation of the Government of Guam.

Membership is also applicable to members of the Legislature with special provisions for:

- a) The determination of average annual salary for pension computation purposes; and
- b) Contributions.

Pension Credits: Employees are entitled to pension credit for:

- a) Service rendered to the Government prior to May 1, 1951 when the Fund began operations.
- b) Service on or after May 1, 1951 for which contributions are required to be made by the employees.
- c) Casual or part-time employment under prescribed conditions for which contributions must be made.
- d) Unused and accumulated sick and annual (vacation) leaves with 12 days of service counted as a full month; 6 to 11 days, ½ month; and less than 6 days disregarded.
- e) For employees hired before June 1, 1989, pension credit is granted up to a maximum of 5 years for Federal service, provided the employee terminates membership in the Federal Civil Service Retirement Fund and makes a contribution to the Government of Guam Retirement Fund equal to the amount contributed by the member and his employer during the period which is equal in length to the period for which service credit is requested, and which ends on the member's termination date of such employment with interest from the date of such termination to the date of payment.
- f) For employees hired before June 1, 1989, educational leave time or periods of termination for educational training purposes, if contributions are made to the Fund with interest. Members who first joined the fund prior to January 31, 1987, may receive credit for up to the normal period of time required to complete degree without having been employed by the government prior to the period during which the degree was earned.

SECTION VI. APPENDICES

- g) Military service prior to May 1, 1951, if not considered for any Federal Government Pension other than for disability. If entry into military service occurred after May 1, 1951, total pension credit is limited to 5 years in the aggregate, provided the employee was in the service of the Government of Guam at date of entry into military service and returned to the Government of Guam service within one year following discharge from military service under conditions other than dishonorable, or within 6 months after completion of education under the various education benefits programs for veterans; otherwise the total credit is limited to three years.

Schedule for Computing Service: The following schedule shall govern the computation of pension credit: 12 days or more during any month constitutes a month of service; 6 to 11 days, ½ month; less than 6 days is disregarded. Nine months or more during any year constitutes a year of service.

Vesting of Pension Credit: Vesting occurs after at least 5 years of service.

Upon separation from service, an employee may optionally leave the contribution credits in the Fund and qualify for a deferred retirement annuity, based upon the total pension credit. If the pension credit is 25 years or more, no refund of contributions is payable and the employee must accept a deferred retirement annuity.

Conditions for Service Retirement: With respect to any employee who originally became a member of the Fund prior to October 1, 1981:

- a) Such member may retire on a service retirement annuity at age 60 or over, or at age 55 in the case of a member of the uniformed personnel after at least 10 years of service. Upon retirement, a member of the uniformed personnel shall be considered one grade above that held at date of retirement.
- b) A member with at least 25 years of service may retire at any age on an unreduced retirement annuity.
- c) Any retired employee with at least 25 years of credit service shall be entitled to the full retirement annuity on and after September 30, 1981.
- d) Any member, active or inactive, may retire after 20 years of service, regardless of age. In such case, the retirement annuity shall be reduced ¼ of 1% for each month that the age of the member is less than 60 years (3% per year).

With respect to an employee who became a member of the Fund on or after October 1, 1981, and prior to August 22, 1984, the following provisions shall govern:

- a) Such member may retire on a service retirement annuity at age 60 or over, or at age 55 if a member of the uniformed personnel after at least 15 years of service and upon retirement shall be considered one rank grade above that held at such date.
- b) A member with at least 30 years of service shall be eligible for service retirement, regardless of age, without reduction for early retirement.
- c) Any member, whether in an active or inactive status, may retire after 25 years of service, at any age, on an annuity reduced ¼ of 1% per month (3% per year) for each month member's age is less than 60.

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With respect to any employee becoming a member of the Fund on or after August 22, 1984:

- a) Such member may retire on a service retirement annuity at age 65 or over, or at age 60 in the case of a member of the uniformed personnel after at least 15 years of service. Upon retirement, a member of the uniformed personnel shall be considered one grade above that held at date of retirement.
- b) A member with at least 30 years of service may retire at any age on an unreduced retirement annuity.
- c) Any member, active or inactive, may retire after 25 years of service, regardless of age. In such case, the retirement annuity shall be reduced $\frac{1}{4}$ of 1% for each month that the age of the member is less than 65 years (3% per year).

Amount of Service Retirement Annuity: A basic annuity of 2.00% of “average annual salary” for each of the first 10 years of credited service; and 2.5% of “average annual salary” for each full year of pension credit above 10 years, plus twenty dollars (\$20.00) multiplied by years of credited service reduced by an amount equal to one hundredth of one percent (.01%) of said amount for each one dollar (\$1.00) that a member’s average annual salary exceeds the amount of six thousand dollars (\$6,000).

The minimum amount of service retirement annuity payable by the Fund is \$1,200 per year. The maximum retirement annuity is 85% of “average annual salary.”

Average Annual Salary: Average of three highest annual salaries received by a member during the entire period of pension credit, or \$6,000, whichever is greater.

The annual salary of the member shall include the basic rate of salary on which contributions were made by the member and any salary on which the member made contributions as required under GCA, Section 8136(a). Effective October 1, 1986, salary can include payment for unused annual leave upon retirement.

In case of members of the Legislature, the average annual salary is the salary of the Director of Administration at the member’s date of retirement, or the average of the three highest annual salaries received by the member during the period of membership credit, whichever is greater.

Automatic Increase in Annuity: Effective July 1, 1984, any member retiring from service and entitled to benefits after September 1, 1972, is to receive each year, on the anniversary date of retirement, an increment of \$600 if the annual annuity is \$3,500 or less; \$400 if the annuity is between \$3,500 and \$6,300 per year; \$300 if the annuity is between \$6,300 and \$10,100; and \$200 if the annuity exceeds \$10,100 per year.

Disability Retirement: Upon total and permanent disability due to physical or mental causes, an employee under age 65 is entitled to a disability retirement annuity. For employees hired prior to August 22, 1984, the amount of the disability retirement annuity will be 66-2/3% of the employee’s salary in effect on the date of disability. Subsequent employees will have an annuity amount based on 66-2/3% of the average of the highest three years of salary. If the disability was not due to occupational causes, the employee must have Government of Guam service credit of at least six years, or five years in the case of terminal illness, in order to qualify, except that new members since May 28, 1985, may not retire if a disability arises from impairment or conditions existing prior to employment.

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A disability retirement annuitant must submit to a medical examination at least once a year during the first five years of disability, and at least once every three years thereafter, by a physician or physicians designated by the Board in order to establish continuing disability and entitlement to benefits. Should a disability annuitant resume gainful employment in a position other than the particular job in which he was engaged when declared disabled, the disability retirement benefit shall continue as initially determined.

A member receiving disability retirement benefits since December 1, 1972, is entitled to receive on the anniversary date of retirement, an annual increase of \$300 if the benefit is \$3,000 per year or less; \$250 per year where the annuity is between \$3,000 and \$6,000 per year; \$200 per year where the annuity is between \$6,000 and \$10,000 per year; and \$100 if the annuity exceeds \$10,000 per year.

Re-entry Into Service: A member on retirement who re-enters services as an employee eligible for membership shall have the annuity suspended during the period of employment without losing rights to automatic increases in the retirement annuity during the period of re-employment. This provision does not apply to Department of Education employees who occupy positions dealing with the Chamorro Language and Culture Program in Guam schools, persons employed as classroom teachers, guidance or health counselors when critical need arises, nor elected officials.

Benefits to Survivors: Benefits are payable to a surviving spouse and children under age 21, upon the death of a member while in service after at least three years of service, or occurring while on retirement. The benefit to children of an annuitant or member whose death occurs while in service after at least three years of service is payable until age 25 if they are full-time students in an accredited educational institution, or payable regardless of age if disabled and disability occurred before age 18.

If only a spouse survives the active or retired member, the annuity payable is 60% of the service or disability retirement annuity earned by the member, subject to a minimum of \$1,200 per year.

The annuity to a child is \$2,880 per year, subject to a maximum payment to five or more minor children of \$14,400 per year. The term "child" or "children" includes any natural child or adopted child under age 21, or any permanently disabled child whose incapacity began before the child attained age 21.

A survivor annuitant is entitled to an automatic increase in annuity each year on the anniversary date of the annuity of \$600 if the annuity is \$3,500 per year or less; \$400 if the annuity is between \$3,500 and \$6,300 per year; \$300 if the annuity is between \$6,300 and \$10,100; and \$200 if the annuity is more than \$10,100 per year.

A surviving spouse or minor child surviving the member is entitled, in addition to the above, a death benefit of \$1,000 payable in a lump sum.

A survivor's annuity terminates upon death or re-marriage under the age of 40, attainment of age 21 of the child, or the termination of the incapacity of a disabled child.

Optional Privilege at Retirement: Upon retirement from service, any unmarried employee, if in good health as determined by medical examination, may elect to receive, on an actuarial equivalent basis in lieu of the full retirement annuity, a reduced retirement annuity payable during the

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annuitant's lifetime, plus an annuity to a designated beneficiary to become payable at death of the annuitant. The annuity to the beneficiary is to be paid at the same rate and under the same conditions that apply to a survivor of a married member whose death occurs while in service.

Death Benefit – Active and Retired Members Without Survivors: Upon death of a member while in service, leaving no survivors eligible for annuities, the designated beneficiary or estate is entitled to a refund of the contribution credits, plus interest, together with a death benefit of \$1,000 payable in a lump sum.

Upon death of a retired member, if no survivors' annuities are payable, the death benefit to a designated beneficiary or the estate of the member consists of the excess, if any, of: (1) the total contribution credits of the member at retirement, plus interest, over (2) the total amount of annuity payments made to the retired member, plus the sum of \$1,000.

Death Benefit – Inactive Members: Upon the death of an inactive member with at least 20 years of pension credit, and survived by a spouse or minor children, the following benefit options are provided: (a) the surviving spouse or children, as the case may be, may elect to receive the annuities prescribed if the death of a member occurs while in service; or (b) a refund of the deceased member's total contribution credits, plus interest.

Refund of Members' Contributions: Upon complete separation from service, or transfer to the Government of Guam Defined Contribution Fund, a member with less than 25 years of pension credit may receive a refund of the total contributions, plus interest (except that no interest is payable if the total pension credit is less than one year).

Contributions by Members: Each member shall contribute to the Fund 9½% of salary earned and accruing after October 1, 1997; and at the member's option, 10½% of non-base pay subsequent to October 1, 1997.

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APPENDIX B. ACTUARIAL COST METHOD AND ASSUMPTIONS

	September 30, 2016		September 30, 2015	
Actuarial Cost Method	Entry Age Normal		Entry Age Normal	
Interest Rate	7.00%		7.00%	
Long-term Expected Rate of Return on Plan Assets	7.00%		7.00%	
Salary Increases	<u>Service</u>	<u>% Increase</u>	<u>Service</u>	<u>% Increase</u>
	0 – 5	7.5%	0 – 5	7.5%
	6 – 10	6.0%	6 – 10	6.0%
	11 – 15	5.0%	11 – 15	5.0%
	16 – 20	4.0%	16 – 20	4.5%
	Over 20	4.0%	Over 20	4.5%
Total Payroll Growth (DB and DC)	2.75%		3.00%	
Cost of Living Adjustment	Specified in Plan		Specified in Plan	
Mortality	RP-2000 Combined Healthy table +3 for males +2 for females projected generationally using 30% of Scale BB		RP-2000 Combined Healthy table +4 for males +1 for females No provision was made for future mortality improvement.	
Disability Incidence	1974-78 SOA LTD Non-Jumbo, with rates reduced by 50% for males and 75% for females		1974-78 SOA LTD Non-Jumbo, with rates reduced by 50%	
Post-disability mortality	RP-2000 Disabled table +6 for males +4 for females projected generationally using 30% of Scale BB		RP 2000 Disability male/female tables	
Withdrawal Rates	Service-based rates (see attached)		Service-based rates (see attached)	
Retirement Age	50% assumed to retire at earliest eligibility for unreduced benefits.		40% assumed to retire at earliest eligibility for unreduced benefits.	
	20% per year thereafter until age 75		15% per year thereafter until age 65	
	100% at age 75		20% per year thereafter until age 70	
			100% at age 70	

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	September 30, 2016	September 30, 2015
Return of Contributions	<p>100% of current employees who withdraw before retirement and who have less than 20 years of service are assumed to elect a return of contributions</p> <p>Terminated or inactive members with at least 5 years of service and an account balance of at least \$10,000 and who have not withdrawn their contributions are assumed to retire upon eligibility for unreduced benefits. All other employees who have previously withdrawn are assumed to elect a return of contributions.</p> <p>Contributions earn 4.5% interest</p>	<p>100% of current employees who withdraw before retirement and who have less than 20 years of service are assumed to elect a return of contributions</p> <p>Terminated or inactive members with at least 5 years of service and an account balance of at least \$10,000 and who have not withdrawn their contributions are assumed to retire upon eligibility for unreduced benefits. All other employees who have previously withdrawn are assumed to elect a return of contributions.</p> <p>Contributions earn 4.5% interest</p>
Marital Status	<p>Retiree data included spouse information. For active employees, 75% are assumed to have spouses at retirement. The assumed age difference is 3 years (+3 for a male spouse; -3 for a female spouse).</p>	<p>Retiree data included spouse information. For active employees, 75% are assumed to have spouses at retirement. The assumed age difference is 3 years (+3 for a male spouse; -3 for a female spouse).</p>
Leave Adjustments	<p>Assumed to add 1.5 years of service and increase average earnings by 5% at retirement</p>	<p>Assumed to add 1.5 years of service and increase average earnings by 10% at retirement</p>
Administrative Expenses	<p>\$6,344,000 per year (equal to budgeted expense for year ending 9/30/17), allocated 70% to DB and 30% to DC</p>	<p>\$6,078,000 per year (equal to budgeted expense for year ending 9/30/16), allocated 72% to DB and 28% to DC</p>
Survivor Benefit – Minor Children	<p>Assumed to be 0.2 eligible child survivors at time of retiree death, with payments to minor child continuing for 6 years</p>	<p>Assumed to increase value of retirement benefits by 0.67% and survivor benefits by 20% for active members</p>
Asset Valuation Method	<p>3-year phase-in of gains/losses relative to interest rate assumption</p>	<p>3-year phase-in of gains/losses relative to interest rate assumption</p>
Data Inconsistencies	<p>None</p>	<p>None</p>

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Probabilities of Separation from Active Service
(per 100 working at each age)

MALE					FEMALE				
Age	Death	Disability	Service	Withdrawal	Age	Death	Disability	Service	Withdrawal
20	0.04	0.05	0	15.0	20	0.02	0.03	0	15.0
21	0.04	0.05	1	14.0	21	0.02	0.03	1	14.0
22	0.04	0.05	2	13.0	22	0.02	0.03	2	13.0
23	0.04	0.05	3	12.0	23	0.02	0.03	3	12.0
24	0.04	0.05	4	11.0	24	0.02	0.03	4	11.0
25	0.04	0.05	5	10.0	25	0.02	0.03	5	10.0
26	0.04	0.05	6	9.0	26	0.02	0.03	6	9.0
27	0.04	0.05	7	8.0	27	0.02	0.03	7	8.0
28	0.05	0.05	8	7.0	28	0.03	0.03	8	7.0
29	0.06	0.05	9	6.0	29	0.03	0.03	9	6.0
30	0.06	0.05	10	5.0	30	0.04	0.03	10	5.0
31	0.07	0.05	11	4.5	31	0.04	0.03	11	4.5
32	0.08	0.05	12	4.0	32	0.04	0.03	12	4.0
33	0.08	0.05	13	3.5	33	0.05	0.03	13	3.5
34	0.09	0.05	14	3.0	34	0.05	0.03	14	3.0
35	0.10	0.05	15	2.5	35	0.06	0.03	15	2.5
36	0.10	0.05	16	2.0	36	0.06	0.03	16	2.0
37	0.11	0.05	17	2.0	37	0.06	0.03	17	2.0
38	0.11	0.05	18	2.0	38	0.07	0.03	18	2.0
39	0.12	0.05	19	2.0	39	0.08	0.03	19	2.0
40	0.13	0.10	20 & over	2.0	40	0.09	0.05	20 & over	2.0
41	0.14	0.10			41	0.09	0.05		
42	0.15	0.10			42	0.10	0.05		
43	0.16	0.10			43	0.11	0.05		
44	0.17	0.10			44	0.12	0.05		
45	0.19	0.18			45	0.13	0.09		
46	0.20	0.18			46	0.14	0.09		
47	0.21	0.18			47	0.16	0.09		
48	0.24	0.18			48	0.17	0.09		
49	0.27	0.18			49	0.19	0.09		
50	0.29	0.32			50	0.20	0.16		
51	0.32	0.32			51	0.22	0.16		
52	0.36	0.32			52	0.24	0.16		
53	0.42	0.32			53	0.27	0.16		
54	0.47	0.32			54	0.31	0.16		
55	0.53	0.53			55	0.35	0.27		
56	0.59	0.53			56	0.39	0.27		
57	0.67	0.53			57	0.44	0.27		
58	0.77	0.53			58	0.51	0.27		
59	0.88	0.53			59	0.58	0.27		
60	1.00	0.76			60	0.67	0.38		
61	1.13	0.76			61	0.76	0.38		
62	1.27	0.76			62	0.86	0.38		
63	1.44	0.76			63	0.97	0.38		
64	1.61	0.76			64	1.10	0.38		

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APPENDIX C. SUMMARY OF PARTICIPANT DATA

Active Non-Uniformed

Age	COUNT			ANNUAL SALARIES		
	Males	Females	Total	Males	Females	Total
Under 20	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-
35 – 39	1	1	2	*	*	*
40 – 44	73	72	145	\$ 3,530,710	\$ 3,683,680	\$ 7,214,390
45 – 49	191	234	425	10,076,708	12,842,285	22,918,993
50 – 54	240	327	567	13,698,459	18,545,443	32,243,902
55 – 59	211	250	461	11,823,303	14,620,781	26,444,084
60 – 64	94	144	238	6,293,331	7,822,424	14,115,755
65 – 69	34	74	108	2,317,774	4,440,569	6,758,343
70 & Over	<u>21</u>	<u>23</u>	<u>44</u>	<u>1,344,531</u>	<u>1,209,962</u>	<u>2,554,493</u>
Total	865	1,125	1,990	\$49,084,816	\$63,165,144	\$112,249,960

* Not shown if less than 20 members. The totals only sum the cells that are displayed.

Age	SERVICE									Total
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 20	-	-	-	-	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-	-	-	-	-
35 – 39	-	1	-	-	1	-	-	-	-	2
40 – 44	6	6	10	12	98	13	-	-	-	145
45 – 49	5	7	7	19	187	191	9	-	-	425
50 – 54	7	12	8	21	146	259	108	6	-	567
55 – 59	9	10	8	15	130	176	85	27	1	461
60 – 64	2	5	1	8	59	101	36	20	6	238
65 – 69	1	1	-	2	27	43	17	10	7	108
70 & Over	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>12</u>	<u>17</u>	<u>5</u>	<u>5</u>	<u>45</u>	<u>44</u>
Total	30	42	34	77	660	800	260	68	19	1,990

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Active Uniformed

Age	COUNT			ANNUAL SALARIES		
	Males	Females	Total	Males	Females	Total
Under 20	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-
35 – 39	-	-	-	-	-	-
40 – 44	26	1	27	\$ 1,784,647	*	\$ 1,784,647
45 – 49	67	2	69	5,984,812	*	5,984,812
50 – 54	82	4	86	7,394,978	*	7,394,978
55 – 59	27	3	30	2,664,233	*	2,664,233
60 – 64	5	-	5	*	-	*
65 – 69	-	-	-	*	-	*
70 & Over	<u>1</u>	<u>-</u>	<u>1</u>	<u>*</u>	<u>-</u>	<u>*</u>
Total	208	10	218	\$ 17,828,670	*	\$ 17,828,670

* Not shown if less than 20 members. The totals only sum the cells that are displayed.

Age	SERVICE									Total
	0 – 4	5 – 9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 20	-	-	-	-	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-	-	-	-	-
35 – 39	-	-	-	-	-	-	-	-	-	-
40 – 44	-	-	-	5	18	4	-	-	-	27
45 – 49	-	1	-	2	26	37	3	-	-	69
50 – 54	-	-	-	1	19	44	21	1	-	86
55 – 59	-	-	-	-	3	15	11	1	-	30
60 – 64	-	-	-	-	1	-	1	3	-	5
65 – 69	-	-	-	-	-	-	-	-	-	-
70 & Over	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>1</u>
Total	-	1	-	8	67	100	37	5	-	218

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SECTION VI. APPENDICES

Active Total

Age	COUNT			ANNUAL SALARIES		
	Males	Females	Total	Males	Females	Total
Under 20	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-
35 – 39	1	1	2	*	*	*
40 – 44	99	73	172	\$ 5,315,357	\$ 3,683,680	\$ 8,999,037
45 – 49	258	236	494	16,061,520	12,842,285	28,903,805
50 – 54	322	331	653	21,093,437	18,545,443	39,638,880
55 – 59	238	253	491	14,487,536	14,620,781	29,108,317
60 – 64	99	144	243	6,293,331	7,822,424	14,115,755
65 – 69	34	74	108	2,317,774	4,440,569	6,758,343
70 & Over	<u>22</u>	<u>23</u>	<u>45</u>	<u>1,344,531</u>	<u>1,209,962</u>	<u>2,554,493</u>
Total	1,073	1,135	2,208	\$66,913,486	\$63,165,144	\$130,078,630

* Not shown if less than 20 members. The totals only sum the cells that are displayed.

Age	SERVICE									Total
	0 - 4	5 – 9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 20	-	-	-	-	-	-	-	-	-	-
20 – 24	-	-	-	-	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-	-	-	-	-
35 – 39	-	1	-	-	1	-	-	-	-	2
40 – 44	6	6	10	17	116	17	-	-	-	172
45 – 49	5	8	7	21	213	228	12	-	-	494
50 – 54	7	12	8	22	165	303	129	7	-	653
55 – 59	9	10	8	15	133	191	96	28	1	491
60 – 64	2	5	1	8	60	101	37	23	6	243
65 – 69	1	1	-	2	27	43	17	10	7	108
70 & Over	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>12</u>	<u>17</u>	<u>6</u>	<u>5</u>	<u>5</u>	<u>45</u>
Total	30	43	34	85	727	900	297	73	19	2,208

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SECTION VI. APPENDICES

Service Retirees

Age	COUNT			ANNUAL BENEFITS		
	Males	Females	Total	Males	Females	Total
Under 25	-	1	1	-	*	*
25 – 29	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-
35 – 39	-	-	-	-	-	-
40 – 44	-	-	-	-	-	-
45 – 49	14	2	16	-	-	-
50 – 54	123	64	187	\$ 5,811,024	\$ 2,497,898	\$ 8,308,922
55 – 59	292	214	506	13,207,158	8,118,899	21,326,057
60 – 64	484	500	984	19,065,654	17,338,489	36,404,143
65 – 69	587	590	1,177	21,738,097	18,699,056	40,437,153
70 – 74	409	502	911	15,062,037	15,395,292	30,457,329
75 – 79	289	353	642	9,943,034	9,552,889	19,495,923
80 – 84	205	237	442	5,802,357	5,919,057	11,721,414
85 – 89	103	137	240	2,908,833	3,331,107	6,239,940
90 & Over	<u>41</u>	<u>56</u>	<u>97</u>	<u>922,302</u>	<u>1,235,265</u>	<u>2,157,567</u>
Total	2,547	2,656	5,203	\$94,460,496	\$82,087,952	\$176,548,448

* Not shown if less than 20 members. The totals only sum the cells that are displayed. Payees receiving benefits under Qualified Domestic Relations Orders (QDROs) are included with service retirees.

Age	ANNUAL BENEFIT LEVEL									Total
	<\$5k	\$5-10k	\$10-15k	\$15-20k	\$20-25k	\$25-30k	\$30-40k	\$40-50k	\$50k+	
Under 40	-	-	-	-	1	-	-	-	-	1
40 – 44	-	-	-	-	-	-	-	-	-	-
45 – 49	-	-	-	-	-	2	3	2	9	16
50 – 54	-	2	6	9	16	22	31	36	65	187
55 – 59	-	3	10	25	51	63	117	106	131	506
60 – 64	3	6	35	49	123	138	269	184	177	984
65 – 69	2	17	67	88	145	183	326	198	151	1,177
70 – 74	1	11	51	84	135	162	224	137	106	911
75 – 79	1	16	68	93	102	89	147	61	65	642
80 – 84	-	13	73	92	67	64	77	30	26	442
85 – 89	-	1	49	60	35	25	37	13	20	240
90 & Over	<u>-</u>	<u>-</u>	<u>29</u>	<u>30</u>	<u>10</u>	<u>11</u>	<u>9</u>	<u>4</u>	<u>4</u>	<u>97</u>
Total	7	69	388	530	685	759	1,240	771	754	5,203

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SECTION VI. APPENDICES

Disabled Retirees

Age	COUNT			ANNUAL BENEFITS		
	Males	Females	Total	Males	Females	Total
Under 25	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-
35 – 39	-	-	-	-	-	-
40 – 44	2	1	3	*	*	*
45 – 49	1	3	4	*	*	*
50 – 54	12	4	16	*	*	*
55 – 59	9	13	22	*	*	*
60 – 64	32	22	54	\$ 798,349	\$ 466,072	\$1,264,421
65 – 69	25	36	61	635,130	753,656	1,388,786
70 – 74	17	21	38	*	453,540	453,540
75 – 79	18	22	40	*	439,912	439,912
80 – 84	7	9	16	*	*	*
85 – 89	4	7	11	*	*	*
90 & Over	<u>1</u>	<u>3</u>	<u>4</u>	<u>*</u>	<u>*</u>	<u>*</u>
Total	128	141	269	\$1,433,479	\$2,113,180	\$3,546,659

* Not shown if less than 20 members. The totals only sum the cells that are displayed.

Age	ANNUAL BENEFIT LEVEL									Total
	<\$5k	\$5-10k	\$10-15k	\$15-20k	\$20-25k	\$25-30k	\$30-40k	\$40-50k	\$50k+	
Under 40	-	-	-	-	-	-	-	-	-	-
40 – 44	-	-	-	3	-	-	-	-	-	3
45 – 49	-	-	-	2	1	-	1	-	-	4
50 – 54	-	-	-	3	6	2	3	1	1	16
55 – 59	-	-	2	12	3	5	-	-	-	22
60 – 64	-	-	5	18	12	10	6	2	1	54
65 – 69	-	-	7	23	13	10	5	2	1	61
70 – 74	-	-	4	12	7	9	5	1	-	38
75 – 79	-	-	5	17	13	2	3	-	-	40
80 – 84	-	-	5	5	3	2	1	-	-	16
85 – 89	-	-	7	2	2	-	-	-	-	11
90 & Over	<u>-</u>	<u>-</u>	<u>3</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>4</u>
Total	-	-	38	98	60	40	24	6	3	269

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SECTION VI. APPENDICES

Surviving Spouses and Child Pensioners

Age	COUNT			ANNUAL BENEFITS		
	Males	Females	Total	Males	Females	Total
Under 25	73	79	152	\$ 210,240	\$ 227,520	\$ 437,760
25 – 29	-	1	1	-	*	*
30 – 34	2	1	3	*	*	*
35 – 39	2	12	14	*	*	*
40 – 44	5	15	20	*	*	*
45 – 49	5	44	49	*	677,604	677,604
50 – 54	9	61	70	*	1,018,603	1,018,603
55 – 59	14	119	133	*	2,178,457	2,178,457
60 – 64	19	166	185	*	3,205,908	3,205,908
65 – 69	41	218	259	578,176	3,753,273	4,331,449
70 – 74	41	211	252	696,609	3,594,400	4,291,009
75 – 79	49	189	238	764,820	3,221,843	3,986,663
80 – 84	40	170	210	569,879	2,501,322	3,071,201
85 – 89	40	114	154	619,432	1,623,778	2,243,210
90 & Over	<u>14</u>	<u>72</u>	<u>86</u>	<u>*</u>	<u>1,064,096</u>	<u>1,064,096</u>
Total	354	1,472	1,826	\$3,439,156	\$23,066,804	\$26,505,960

* Not shown if less than 20 members. The totals only sum the cells that are displayed.

Surviving Spouses Only

Age	ANNUAL BENEFIT LEVEL									Total
	<\$5k	\$5-10k	\$10-15k	\$15-20k	\$20-25k	\$25-30k	\$30-40k	\$40-50k	\$50k+	
Under 40	-	3	2	2	1	-	-	-	-	8
40 – 44	-	3	5	2	1	1	-	-	-	12
45 – 49	-	6	16	15	5	2	1	-	-	45
50 – 54	-	10	22	16	6	4	6	-	-	64
55 – 59	-	9	41	36	29	8	1	2	3	129
60 – 64	-	12	62	40	30	14	17	5	1	181
65 – 69	-	21	110	57	40	13	14	1	-	256
70 – 74	1	14	110	63	34	15	14	1	-	252
75 – 79	-	18	112	54	26	14	10	3	1	238
80 – 84	-	32	103	47	15	10	3	-	-	210
85 – 89	-	16	90	29	11	5	1	2	-	154
90 & Over	<u>-</u>	<u>4</u>	<u>61</u>	<u>14</u>	<u>5</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>86</u>
Total	1	148	734	375	203	87	67	14	6	1,635

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SECTION VI. APPENDICES

Inactive and Terminated Members Who are Assumed Not to Withdraw Contributions

Age	COUNT			ANNUAL BENEFITS		
	Males	Females	Total	Males	Females	Total
Under 25	-	-	-	-	-	-
25 – 29	-	-	-	-	-	-
30 – 34	-	-	-	-	-	-
35 – 39	-	-	-	-	-	-
40 – 44	5	2	7	*	*	*
45 – 49	15	15	30	*	*	*
50 – 54	20	18	38	372,155	*	372,155
55 – 59	21	15	36	318,199	*	318,199
60 – 64	8	8	16	*	*	*
65 – 69	5	3	8	*	*	*
70 – 74	2	1	3	*	*	*
75 – 79	2	3	5	*	*	*
80 – 84	-	-	-	-	-	-
85 – 89	-	-	-	-	-	-
90 & Over	-	-	-	-	-	-
Total	78	65	143	\$690,354	-	\$690,354

* Not shown if less than 20 members. The totals only sum the cells that are displayed.

Age	ANNUAL BENEFIT LEVEL									Total
	<\$5k	\$5-10k	\$10-15k	\$15-20k	\$20-25k	\$25-30k	\$30-40k	\$40-50k	\$50k+	
Under 40	-	-	-	-	-	-	-	-	-	-
40 – 44	1	3	2	-	1	-	-	-	-	7
45 – 49	5	10	7	5	1	-	2	-	-	30
50 – 54	2	9	7	8	5	4	2	1	-	38
55 – 59	2	11	6	5	6	4	1	-	1	36
60 – 64	2	7	5	-	-	-	2	-	-	16
65 – 69	3	4	1	-	-	-	-	-	-	8
70 – 74	1	1	-	-	-	-	1	-	-	3
75 – 79	1	2	1	-	-	1	-	-	-	5
80 – 84	-	-	-	-	-	-	-	-	-	-
85 – 89	-	-	-	-	-	-	-	-	-	-
90 & Over	-	-	-	-	-	-	-	-	-	-
Total	17	47	29	18	13	9	8	1	1	143

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APPENDIX D. GLOSSARY OF KEY TERMS

Actuarial Accrued Liability or Total Pension Liability. The Present Value of Future Benefits allocated to past service in accordance with the actuarial cost method. GASB 67 uses the term Total Pension Liability.

Actuarial Cost Method. A method of allocating the present value of benefits to past and future periods. Actuarial cost methods take into consideration the effect of wage inflation.

Actuarial Gains and Losses. Changes to the Actuarial Accrued Liability due to deviations from the actuarial assumptions. These can include gains and losses from investments, employee turnover, disability, retirement, mortality, and administrative expenses.

Actuarial Value of Assets. A method of valuing Fund assets that may smooth gains and losses that occur in the market value over a period of time.

GASB. Government Accounting Standards Board. GASB Statements No. 67, and 68 are accounting standards issued by GASB that require certain items be disclosed in the Fund's financial statements.

Fiduciary Net Position. The market value of Fund assets.

Net Pension Liability. The dollar value of the Total Pension Liability that exceeds the market value of Fund assets. A fully funded plan will have no Net Pension Liability.

Normal Cost or Service Cost. The value of benefits earned for one year of service. The normal cost is calculated in accordance with the actuarial cost method. The accumulation of all normal costs assigned to past service equals the Actuarial Accrued Liability. GASB 68 uses the term Service Cost.

Present Value of Benefits. The sum of all benefits expected to be paid in the future by the retirement system, with the payments discounted to the present using the valuation interest rate. This includes benefits to be earned in the future for current employees.

Present Value of Future Normal Cost. The sum of all future normal costs expected for current employees, with the costs discounted back to the present using the valuation interest rate.

Security Ratio. The percentage of the Actuarial Accrued Liability that is funded by the Fund assets. A fully funded plan will have a security ratio of 100%.

Unfunded Actuarial Accrued Liability. The dollar value of the Actuarial Accrued Liability that exceeds the Actuarial Value of Assets. A fully funded plan will have no unfunded actuarial accrued liability.