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## NMI Settlement Fund

Actuarial Valuation as of September 30, 2018

Prepared by:

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June 1, 2020

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**NMI Settlement Fund –  
Actuarial Valuation as of September 30, 2018**

As part of our engagement with the NMI Settlement Fund, we performed an actuarial valuation of the NMI Settlement Fund as of September 30, 2018. The purpose of the actuarial valuation is to project the minimum annual payments to be made by the Commonwealth of the Northern Mariana Islands (CNMI) to pay 75% of the Class Members' Full Benefits.

In preparing this report, I 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. 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.

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.

Actuarial computations presented in this report are for the purposes of determining the recommended funding amounts for the Fund. Determinations for other purposes may be

significantly different from the results contained in this report. Therefore, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the use and benefit of the NMI Settlement Fund. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

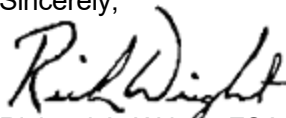
- (a) NMI Settlement Fund may provide a copy of Milliman's work, in its entirety, to its professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the NMI Settlement Fund.
- (b) NMI Settlement Fund may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

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.

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,

A handwritten signature in black ink that reads "Richard A. Wright".

Richard A. Wright, FSA, MAAA  
Principal, Consulting Actuary

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**SECTION I. VALUATION SUMMARY****INTRODUCTION**

Milliman, Inc. has been retained by the NMI Settlement Fund to provide an actuarial valuation of the Fund. The NMI Settlement Fund was created to pay pension benefits to members of the Northern Mariana Islands Retirement Fund who opted to become members of the NMI Settlement Fund.

Section 4.0 of the settlement agreement that created the NMI Settlement Fund requires the Commonwealth of the Northern Mariana Islands (CNMI) to make minimum annual payments each year to pay 75% of the Class Members' Full Benefits. The payments for fiscal years 2014 and 2015 were fixed at \$25,000,000 and \$27,000,000, respectively. The payments after fiscal year 2015 are to be determined by an independent actuary.

In our valuation we:

- Summarize the membership data.
- Estimate the future annual benefits to be paid by the NMI Settlement Fund.
- Review the current Fund balance.
- Project the fund balance forward for the expected life of the NMI Settlement Fund.
- Determine the minimum annual payments to be made by CNMI.

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**

- A payment of \$45,000,000 was made for fiscal year 2018. We have determined that the minimum annual payments from CNMI that were shown in the NMI Settlement Agreement should stay in effect for at least the next year. This includes a minimum payment of \$44,000,000 for fiscal year 2019. Starting in FY 2018, the Settlement Fund essentially became a "pay as you go" entity, as the CNMI minimum payments are approximately equal to the pension payments (at 75%).
- If we assume life expectancies based upon the mortality table used in the 2012 actuarial valuation of the Northern Mariana Islands Retirement Fund, the minimum payment for CNMI is estimated to be \$42,000,000 for FY 2020. The minimum payments are estimated to decline as follows: \$40,000,000 for FY 2021, \$38,000,000 for FY 2022, \$36,000,000 per year for FY 2023, \$34,000,000 for FY 2024, \$32,000,000 for FY 2025, \$30,000,000 for FY 2026, \$28,000,000 for FY 2027, \$27,000,000 for FY 2028, \$26,000,000 per year for FY 2029 through FY 2031, and \$25,000,000 for FY 2032 through FY 2038. After FY 2038, CNMI payments are expected to be equal to the benefits and expenses paid by the NMI Settlement Fund. Exhibit 7 shows the projected Fund balance for the next 40 years based upon the current mortality assumption.
- If we assume improved life expectancies, the minimum payment for CNMI is estimated to be \$42,000,000 for FY 2020. The minimum payments are estimated to decline as follows: \$41,000,000 for FY 2021, \$40,000,000 for FY 2022, \$39,000,000 for FY 2023, \$38,000,000 for FY 2024, \$37,000,000 for FY 2025 through FY 2029, and \$36,000,000 per year for FY 2030 through FY 2040. After FY 2040, CNMI payments are expected to be equal to the benefits and expenses paid by the NMI Settlement Fund. Exhibit 8 shows the projected Fund balance for the next 40 years assuming improved life expectancies.

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## SECTION I. VALUATION SUMMARY

## RESULTS OF VALUATION

	September 30, 2018	September 30, 2017
<b>Participant Counts</b>		
Active Employees (Class I)	64	65
Active Employees (Class II)	<u>6</u>	<u>6</u>
Total Active Employees	70	71
Retirees	2,847	2,888
Vested Terminees	<u>33</u>	<u>0</u>
Total Participants	2,950	2,959
<b>Market Value of Assets</b>	\$116,501,735	\$94,660,646
<b>Benefit Payments from NMI Settlement Fund</b>	\$43,287,483	\$44,299,935
<b>CNMI Annual Payments</b>		
FY 2014	\$25,000,000	\$25,000,000
FY 2015	27,000,000	27,000,000
FY 2016	30,000,000	30,000,000
FY 2017	33,000,000	33,000,000
FY 2018	45,000,000	45,000,000
<b>Projected CNMI Payments (current mortality)</b>		
FY 2019	44,000,000	44,000,000
FY 2020	42,000,000	43,000,000
FY 2021	40,000,000	41,000,000
FY 2022	38,000,000	39,000,000
FY 2023	36,000,000	37,000,000
(see Exhibit 7 for FY 2024 and later years)		
<b>Projected CNMI Payments (improved mortality)</b>		
FY 2019	44,000,000	44,000,000
FY 2020	42,000,000	43,000,000
FY 2021	41,000,000	42,000,000
FY 2022	40,000,000	41,000,000
FY 2023	39,000,000	40,000,000
(see Exhibit 8 for FY 2024 and later years)		

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**SECTION I. VALUATION SUMMARY****ACTUARIAL ASSUMPTIONS**

The following are the major assumptions used in the actuarial valuation. The assumptions are generally the same as those used in the 2012 actuarial valuation performed by the prior actuary, as stated in the audited financial statements of the Northern Mariana Islands Retirement Fund for the fiscal year ending September 30, 2012, except where indicated below. To the extent that actual experience differs from the assumptions below, future pension costs will differ.

Expected Investment Return. We have used the investment return assumption provided by the investment consultant of 3.6% for fiscal year 2019 and later.

Mortality. The mortality table used in the previous actuarial study was the 1971 Group Annuity Mortality table for Males, with ages set forward 3 years for males. Based upon the experience observed during the 12 months ending September 30, 2018, we have determined that this table is still reasonable to use for this purpose. However, due to the relatively small sample size and the potential for adverse experience, we also will show the impact of using an improved mortality table, which is the RP 2000 mortality table for healthy lives projected to 2018 using Scale AA.

Salary Increases. Salaries are not assumed to increase in future years.

Retirement Age. The earlier of age 62, if eligible, or 25 years of vesting service.

Administrative Expenses. Administrative expenses and fees are assumed to be \$1,431,615 for fiscal year ending September 30, 2019, and are assumed to remain at that level until the fiscal year ending September 30, 2035, and then decline by 10% per year.

Rates of Withdrawal and Disability. The assumed rates of withdrawal and disability are shown in Appendix B.

Probability of Marriage. We have assumed that 94% of participants are married and that males are 5 years older than their female spouses.

A complete summary of actuarial assumptions is in Appendix B.

**FUNDING METHOD**

Section 4.0 of the settlement agreement that created the NMI Settlement Fund requires the Commonwealth of the Northern Mariana Islands (CNMI) to make minimum annual payments each year to pay 75% of the Class Members' Full Benefits. The payments for fiscal years 2014 and 2015 were fixed at \$25,000,000 and \$27,000,000, respectively. The payments after fiscal year 2015 are to be determined by an independent actuary. For fiscal years 2016, 2017 and 2018, CNMI made payments of \$30,000,000, \$33,000,000 and \$45,000,000, respectively. The payment for fiscal year 2019 is \$44,000,000.

## SECTION II. VALUATION EXHIBITS

## EXHIBIT 1. SUMMARY OF FUND ASSETS

Listed below are the assets reported for the NMI Settlement Fund in the Fund's financial statements.

	September 30, 2018	September 30, 2017
<b>ASSETS</b>		
<b>Current Assets</b>		
Cash	\$ 1,182,154	\$ 6,014,276
Receivables, net	193,056	222,700
Due from CNMI Government	29,227,559	11,534,522
Due from NMI Retirement Fund, net	0	176,175
CNMI judicial building loan receivable	2,816,620	3,664,852
Investments	83,035,676	72,990,397
Prepaid expenses	<u>67,904</u>	<u>69,112</u>
Total current assets	\$ 116,522,969	\$ 94,672,034
<b>Property and equipment</b>	<u>\$ 217,397</u>	<u>\$ 227,605</u>
<b>Total Assets</b>	\$ 116,740,366	\$ 94,899,639
<b>LIABILITIES</b>		
<b>Current Liabilities</b>		
Accounts payable and accrued expenses	<u>238,631</u>	<u>238,993</u>
<b>TOTAL NET ASSETS</b>	\$ 116,501,735	\$ 94,660,646
<b>Assets Temporarily Restricted</b>	<u>34,350</u>	<u>34,756</u>
<b>UNRESTRICTED NET ASSETS</b>	<u>\$ 116,467,385</u>	<u>\$ 94,625,890</u>

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 2. CHANGES IN FUND 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	
	September 30, 2018	September 30, 2017
<b>Beginning Balance</b>	\$ 94,625,890	\$ 81,442,808
<b>Contributions and Payments</b>		
CNMI Government Contribution	45,000,000	33,000,000
Employer supplemental payments	1,853,065	1,899,487
Active Settlement Class Member contributions	<u>596,345</u>	<u>545,122</u>
Total contributions	47,449,410	35,444,609
<b>Investment Income</b>		
Interest and dividends	2,947,040	2,383,263
Net appreciation in fair value of investments	<u>(1,883,259)</u>	<u>1,876,240</u>
Total investment income	1,063,781	4,259,503
<b>Other Additions</b>		
CNMI Government Contribution (APGA)	17,693,037	18,663,564
Local investment income	252,665	318,612
Rental and other income	101,700	131,229
Net assets released from restriction	<u>14,408,059</u>	<u>14,740,001</u>
Total other additions	32,455,461	33,853,406
<b>TOTAL ADDITIONS</b>	80,968,652	73,557,518
<b>Benefit Payments</b>		
Retirement benefits	48,830,621	50,176,091
Survivors benefits	8,208,241	8,118,609
Disability benefits	569,975	680,657
Death lump sum distributions	44,483	55,478
Refunds	<u>42,222</u>	<u>9,101</u>
Total benefit and refund payments	57,695,542	59,039,936
<b>Other Deductions</b>		
Personnel expenses	856,761	786,233
Professional expenses	352,920	337,007
General and administrative expenses	<u>221,934</u>	<u>211,260</u>
Total other deductions	1,431,615	1,334,500
<b>TOTAL DEDUCTIONS</b>	59,127,157	60,374,436
<b>Ending Balance</b>	\$ 116,467,385	\$ 94,625,890

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 3. SUMMARY OF CENSUS DATA

	September 30, 2018	September 30, 2017
<b>Active Employees</b>		
Class 1	64	65
Class 2	<u>6</u>	<u>6</u>
Total	70	71
Average age	52.7	51.8
Average service	21.7	21.2
Total salary	\$ 3,602,481	\$ 3,270,675
<b>Retirees</b>		
Healthy retiree	1,989	2,041
Disabled retiree	36	39
Back to service retirees	27	15
Surviving spouse	664	663
Child pensioner	<u>131</u>	<u>130</u>
Total	2,847	2,888
Vested Terminees	33	0
Average age	63.1	62.4
Average remaining life expectancy (years)		
Current mortality	16.7	17.2
Improved mortality	22.5	23.0
Annual benefit payments at 100%	\$ 58,823,704	\$ 59,583,347
Annual benefit payments at 75%	\$ 44,117,778	\$ 44,687,510

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 4. RECONCILIATION OF CENSUS DATA

	Actives	Healthy Retirees*	Disabled Retirees	Surviving Spouses	Child Pensioners	Vested Terminees	Total
<b>As of 9/30/17</b>	<b>71</b>	<b>2,056</b>	<b>39</b>	<b>663</b>	<b>130</b>	<b>0</b>	<b>2,959</b>
New Participants	3	16		36	37	33	125
Active to Healthy Retiree	(3)	3					0
Disabled Retiree to Healthy Retiree		2	(2)				0
Reclassification				1	(1)		0
Other (drops)	<u>(1)</u>	<u>(61)</u>	<u>(1)</u>	<u>(36)</u>	<u>(35)</u>	<u>-</u>	<u>(134)</u>
<b>As of 9/30/18</b>	<b>70</b>	<b>2,016</b>	<b>36</b>	<b>664</b>	<b>131</b>	<b>33</b>	<b>2,950</b>

\* Includes healthy retirees and back to service retirees

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**SECTION II. VALUATION EXHIBITS**

**EXHIBIT 5. PROJECTED BENEFIT PAYMENTS – CURRENT MORTALITY**

Fiscal Year Ending 9/30	Active Employee Count	Active Employee Salary	Current Retirees and VTs	Future Retirees	Total Retirees and VTs	Benefit Payments
2019	70.0	\$3,602,481	2,880.0	-	2,880.0	\$44,117,778
2020	36.8	1,672,444	2,848.4	33.1	2,881.5	44,030,564
2021	32.8	1,495,345	2,802.1	36.9	2,839.0	43,904,930
2022	24.4	1,050,240	2,747.3	45.2	2,792.5	43,610,037
2023	20.1	833,052	2,669.2	49.3	2,718.5	43,153,889
2024	16.0	607,374	2,582.4	53.2	2,635.6	42,473,746
2025	14.7	537,497	2,504.8	54.2	2,559.0	41,777,999
2026	13.6	506,412	2,419.0	55.0	2,474.0	40,971,958
2027	12.5	447,050	2,332.5	55.8	2,388.2	40,104,234
2028	10.5	355,659	2,244.0	57.3	2,301.3	39,117,177
2029	8.7	290,870	2,154.9	58.6	2,213.5	38,082,710
2030	5.6	178,707	2,062.9	61.2	2,124.1	36,935,026
2031	4.8	151,180	1,969.4	61.3	2,030.7	35,709,255
2032	4.2	129,619	1,877.0	61.2	1,938.2	34,425,490
2033	2.7	65,941	1,783.2	61.9	1,845.1	33,074,044
2034	1.3	21,299	1,687.6	62.3	1,749.9	31,640,785
2035	1.3	20,981	1,592.6	61.3	1,653.9	30,171,475
2036	1.3	20,645	1,497.9	60.1	1,558.0	28,669,633
2037	0.6	14,271	1,403.7	59.5	1,463.2	27,140,812
2038	0.6	14,066	1,309.8	58.1	1,367.9	25,597,738
2039	0.6	13,849	1,218.6	56.6	1,275.2	24,043,763
2040	0.6	13,619	1,129.4	55.0	1,184.4	22,497,711
2041	0.6	13,375	1,042.7	53.3	1,096.0	20,963,387
2042	-	-	958.9	52.0	1,010.9	19,450,419
2043	-	-	878.3	50.0	928.3	17,972,596
2044	-	-	801.1	48.0	849.1	16,528,982
2045	-	-	727.6	45.9	773.5	15,129,818
2046	-	-	658.0	43.6	701.6	13,784,010
2047	-	-	592.3	41.4	633.7	12,497,207
2048	-	-	530.8	39.1	569.8	11,274,157
2049	-	-	473.3	36.7	510.0	10,118,655
2050	-	-	419.9	34.3	454.3	9,033,590
2051	-	-	370.7	32.0	402.6	8,020,938
2052	-	-	325.4	29.6	355.0	7,081,771
2053	-	-	284.1	27.3	311.4	6,216,354
2054	-	-	246.6	25.0	271.6	5,424,181
2055	-	-	212.8	22.8	235.7	4,703,998
2056	-	-	182.6	20.7	203.3	4,053,887
2057	-	-	155.6	18.7	174.3	3,471,254
2058	-	-	131.9	16.7	148.6	2,952,917

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 6. PROJECTED BENEFIT PAYMENTS – IMPROVED MORTALITY

Fiscal Year Ending 9/30	Active Employee Count	Active Employee Salary	Current Retirees and VTs	Future Retirees	Total Retirees and VTs	Benefit Payments
2019	70.0	\$3,602,481	2,880.0	-	2,880.0	\$44,371,562
2020	37.0	1,681,994	2,865.0	32.9	2,897.9	44,876,082
2021	33.2	1,511,828	2,841.3	36.6	2,877.9	45,406,424
2022	24.7	1,065,602	2,813.9	45.0	2,858.9	45,820,791
2023	20.5	849,949	2,766.9	49.2	2,816.1	46,122,291
2024	16.2	618,955	2,714.2	53.3	2,767.5	46,236,219
2025	15.0	550,901	2,672.8	54.4	2,727.2	46,365,264
2026	14.0	522,150	2,624.6	55.4	2,680.1	46,406,974
2027	12.9	463,989	2,576.6	56.4	2,633.0	46,402,313
2028	10.9	370,648	2,526.7	58.3	2,585.0	46,282,249
2029	9.1	304,900	2,475.9	60.0	2,535.9	46,111,742
2030	5.8	187,572	2,421.2	63.1	2,484.3	45,811,922
2031	5.1	160,631	2,363.6	63.6	2,427.2	45,409,404
2032	4.5	139,558	2,305.2	64.0	2,369.2	44,915,416
2033	2.9	70,677	2,243.0	65.4	2,308.4	44,308,118
2034	1.4	22,695	2,176.2	66.5	2,242.7	43,562,804
2035	1.4	22,536	2,106.9	66.2	2,173.0	42,715,849
2036	1.4	22,367	2,034.2	65.7	2,099.9	41,762,138
2037	0.6	15,236	1,958.4	66.0	2,024.4	40,699,032
2038	0.6	15,128	1,878.7	65.4	1,944.1	39,533,228
2039	0.6	15,014	1,797.5	64.8	1,862.3	38,262,218
2040	0.6	14,892	1,714.1	64.1	1,778.2	36,902,558
2041	0.6	14,761	1,629.0	63.3	1,692.2	35,456,301
2042	-	-	1,542.6	62.9	1,605.5	33,933,061
2043	-	-	1,455.4	61.9	1,517.3	32,349,286
2044	-	-	1,367.9	60.8	1,428.7	30,707,017
2045	-	-	1,280.8	59.5	1,340.3	29,021,564
2046	-	-	1,194.4	58.2	1,252.6	27,308,123
2047	-	-	1,109.4	56.7	1,166.1	25,579,888
2048	-	-	1,026.2	55.1	1,081.2	23,849,966
2049	-	-	945.2	53.3	998.5	22,131,236
2050	-	-	866.9	51.5	918.3	20,435,909
2051	-	-	791.5	49.5	841.0	18,775,298
2052	-	-	719.4	47.4	766.8	17,160,045
2053	-	-	650.7	45.2	695.9	15,599,357
2054	-	-	585.7	42.9	628.6	14,101,712
2055	-	-	524.5	40.5	565.0	12,674,333
2056	-	-	467.1	38.1	505.2	11,322,773
2057	-	-	413.6	35.6	449.3	10,051,961
2058	-	-	364.1	33.1	397.2	8,866,057

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 7. PROJECTED FUND BALANCE – CURRENT MORTALITY

FYE 9/30	Beginning Balance	CNMI Payments	Other Contribs	Investment Earnings	Benefit Payments	Expenses & Fees	Ending Balance
2019	\$116,467,385	\$44,000,000	\$1,466,138	\$4,191,327	(\$44,117,778)	(\$1,431,615)	\$120,575,457
2020	120,575,457	42,000,000	680,651	4,290,649	(44,030,564)	(1,431,615)	122,084,578
2021	122,084,578	40,000,000	608,576	4,309,941	(43,904,930)	(1,431,615)	121,666,550
2022	121,666,550	38,000,000	427,427	4,260,940	(43,610,037)	(1,431,615)	119,313,265
2023	119,313,265	36,000,000	339,036	4,146,841	(43,153,889)	(1,431,615)	115,213,638
2024	115,213,638	34,000,000	247,189	3,973,844	(42,473,746)	(1,431,615)	109,529,310
2025	109,529,310	32,000,000	218,751	3,745,220	(41,777,999)	(1,431,615)	102,283,667
2026	102,283,667	30,000,000	206,100	3,462,657	(40,971,958)	(1,431,615)	93,548,851
2027	93,548,851	28,000,000	181,940	3,127,388	(40,104,234)	(1,431,615)	83,322,330
2028	83,322,330	27,000,000	144,746	2,758,331	(39,117,177)	(1,431,615)	72,676,615
2029	72,676,615	26,000,000	118,378	2,375,231	(38,082,710)	(1,431,615)	61,655,899
2030	61,655,899	26,000,000	72,730	1,998,322	(36,935,026)	(1,431,615)	51,360,310
2031	51,360,310	26,000,000	61,527	1,649,543	(35,709,255)	(1,431,615)	41,930,510
2032	41,930,510	25,000,000	52,752	1,315,020	(34,425,490)	(1,431,615)	32,441,177
2033	32,441,177	25,000,000	26,837	997,264	(33,074,044)	(1,431,615)	23,959,619
2034	23,959,619	25,000,000	8,668	717,399	(31,640,785)	(1,431,615)	16,613,286
2035	16,613,286	25,000,000	8,539	479,376	(30,171,475)	(1,431,615)	10,498,111
2036	10,498,111	25,000,000	8,402	288,838	(28,669,633)	(1,288,454)	5,837,265
2037	5,837,265	25,000,000	5,808	150,839	(27,140,812)	(1,159,608)	2,693,492
2038	2,693,492	25,000,000	5,725	67,524	(25,597,738)	(1,043,647)	1,125,355
2039	1,125,355	23,852,054	5,636	-	(24,043,763)	(939,283)	-
2040	-	23,337,523	5,543	-	(22,497,711)	(845,354)	-
2041	-	21,718,763	5,443	-	(20,963,387)	(760,819)	-
2042	-	20,135,156	-	-	(19,450,419)	(684,737)	-
2043	-	18,588,859	-	-	(17,972,596)	(616,263)	-
2044	-	17,083,619	-	-	(16,528,982)	(554,637)	-
2045	-	15,628,991	-	-	(15,129,818)	(499,173)	-
2046	-	14,233,266	-	-	(13,784,010)	(449,256)	-
2047	-	12,901,537	-	-	(12,497,207)	(404,330)	-
2048	-	11,638,054	-	-	(11,274,157)	(363,897)	-
2049	-	10,446,163	-	-	(10,118,655)	(327,508)	-
2050	-	9,328,347	-	-	(9,033,590)	(294,757)	-
2051	-	8,286,219	-	-	(8,020,938)	(265,281)	-
2052	-	7,320,524	-	-	(7,081,771)	(238,753)	-
2053	-	6,431,232	-	-	(6,216,354)	(214,878)	-
2054	-	5,617,571	-	-	(5,424,181)	(193,390)	-
2055	-	4,878,049	-	-	(4,703,998)	(174,051)	-
2056	-	4,210,533	-	-	(4,053,887)	(156,646)	-
2057	-	3,612,235	-	-	(3,471,254)	(140,981)	-
2058	-	3,079,800	-	-	(2,952,917)	(126,883)	-

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 8. PROJECTED FUND BALANCE – IMPROVED MORTALITY

FYE 9/30	Beginning Balance	CNMI Payments	Other Contribs	Investment Earnings	Benefit Payments	Expenses & Fees	Ending Balance
2019	\$116,467,385	\$44,000,000	\$1,466,138	\$4,186,759	(\$44,371,562)	(\$1,431,615)	\$120,317,105
2020	120,317,105	42,000,000	684,538	4,266,199	(44,876,082)	(1,431,615)	120,960,145
2021	120,960,145	41,000,000	615,284	4,260,556	(45,406,424)	(1,431,615)	119,997,946
2022	119,997,946	40,000,000	433,679	4,197,189	(45,820,791)	(1,431,615)	117,376,408
2023	117,376,408	39,000,000	345,912	4,077,807	(46,122,291)	(1,431,615)	113,246,221
2024	113,246,221	38,000,000	251,902	3,907,377	(46,236,219)	(1,431,615)	107,737,666
2025	107,737,666	37,000,000	224,206	3,688,248	(46,365,264)	(1,431,615)	100,853,241
2026	100,853,241	37,000,000	212,505	3,439,447	(46,406,974)	(1,431,615)	93,666,604
2027	93,666,604	37,000,000	188,834	3,180,386	(46,402,313)	(1,431,615)	86,201,896
2028	86,201,896	37,000,000	150,846	2,913,134	(46,282,249)	(1,431,615)	78,552,012
2029	78,552,012	37,000,000	124,088	2,640,326	(46,111,742)	(1,431,615)	70,773,069
2030	70,773,069	36,000,000	76,338	2,346,821	(45,811,922)	(1,431,615)	61,952,691
2031	61,952,691	36,000,000	65,374	2,036,335	(45,409,404)	(1,431,615)	53,213,381
2032	53,213,381	36,000,000	56,797	1,730,458	(44,915,416)	(1,431,615)	44,653,605
2033	44,653,605	36,000,000	28,764	1,432,732	(44,308,118)	(1,431,615)	36,375,368
2034	36,375,368	36,000,000	9,236	1,147,780	(43,562,804)	(1,431,615)	28,537,965
2035	28,537,965	36,000,000	9,172	880,877	(42,715,849)	(1,431,615)	21,280,550
2036	21,280,550	36,000,000	9,103	639,353	(41,762,138)	(1,288,454)	14,878,414
2037	14,878,414	36,000,000	6,201	430,279	(40,699,032)	(1,159,608)	9,456,254
2038	9,456,254	36,000,000	6,157	258,152	(39,533,228)	(1,043,647)	5,143,687
2039	5,143,687	36,000,000	6,110	127,656	(38,262,218)	(939,283)	2,075,953
2040	2,075,953	36,000,000	6,061	43,381	(36,902,558)	(845,354)	377,482
2041	377,482	35,833,630	6,007	-	(35,456,301)	(760,819)	-
2042	-	34,617,798	-	-	(33,933,061)	(684,737)	-
2043	-	32,965,549	-	-	(32,349,286)	(616,263)	-
2044	-	31,261,654	-	-	(30,707,017)	(554,637)	-
2045	-	29,520,737	-	-	(29,021,564)	(499,173)	-
2046	-	27,757,379	-	-	(27,308,123)	(449,256)	-
2047	-	25,984,218	-	-	(25,579,888)	(404,330)	-
2048	-	24,213,863	-	-	(23,849,966)	(363,897)	-
2049	-	22,458,744	-	-	(22,131,236)	(327,508)	-
2050	-	20,730,666	-	-	(20,435,909)	(294,757)	-
2051	-	19,040,579	-	-	(18,775,298)	(265,281)	-
2052	-	17,398,798	-	-	(17,160,045)	(238,753)	-
2053	-	15,814,235	-	-	(15,599,357)	(214,878)	-
2054	-	14,295,102	-	-	(14,101,712)	(193,390)	-
2055	-	12,848,384	-	-	(12,674,333)	(174,051)	-
2056	-	11,479,419	-	-	(11,322,773)	(156,646)	-
2057	-	10,192,942	-	-	(10,051,961)	(140,981)	-
2058	-	8,992,940	-	-	(8,866,057)	(126,883)	-

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## APPENDIX A. SUMMARY OF PLAN PROVISIONS

The following description is a brief summary of the provisions of the Northern Marinas Islands Retirement Plan, as shown in the audited financial statements for the NMI Retirement Fund for the fiscal year ending September 30, 2012.

**Membership:** Class II members are all persons who were Fund members prior to the effective date of Public Law 6-17 and who did not choose to become Class I members.

**Membership Service:** Service is earned for actual compensated government employment after becoming a Fund member. 1/12 year of service is earned for each month of employment.

### **Benefit Formulas:**

**Class I Formula:** The sum of (i) and (ii) below, but not less than \$6,000 nor greater than 85% of average annual salary.

- (i) The sum of 2.5% of average annual salary for each of the first 25 years of service with a maximum of 50% of average annual salary, plus
- (ii) 2.5% of average annual salary for each year of service in excess of 25 years.

The minimum amount of service retirement annuity payable by the Fund is \$6,000 per year. The maximum retirement annuity is 85% of “average annual salary.”

**Class II Formula:** The sum of (i) and (ii) below, but not less than \$6,000 nor greater than 85% of average annual salary.

- (i) The sum of 2% of average annual salary for each of the first 10 years of service and 2.5% of average annual salary for each year of service in excess of 10 years, plus
- (ii) Twenty dollars (\$20) for each year of service reduced by 1/100<sup>th</sup> of 1% for each dollar that average annual salary exceeds \$6,000.

The minimum amount of service retirement annuity payable by the Fund is \$6,000 per year. The maximum retirement annuity is 85% of “average annual salary.”

Class II members receive the greater of the benefit determined using the Class II formula or the benefit determined using the Class I formula as if all service had been rendered as a Class I member.

**Average Annual Salary:** Average of three highest annual salaries, or \$6,000, whichever is greater.

### **Normal Retirement:**

**Eligibility:** Eligibility for Class I benefit is age 62 and 10 years of contributing membership after May 7, 1989. Eligibility for Class II benefit is age 60 or 25 years of membership service.

**Form of Benefit:** Payment is in the form of a life annuity with a cost of living increase each year for the first \$30,000 of benefits equal to that which is used by the United States of America Social



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Security System commencing on January 1 of each year subsequent to the anniversary of retirement after attainment of age 55.

**Early Retirement:**

*Eligibility:* Eligibility for Class I early retirement is age 52 and 10 years of membership service or 25 years of membership service. At least 10 years of membership service must be earned after May 7, 1989. Class II members are not eligible for early retirement.

*Amount of Benefit:* Same as normal retirement benefit, except reduced by an actuarially determined amount (3%) for each month the member is under 62 years of age.

*Form of Benefit:* Same as normal retirement benefit.

**Termination:**

*Eligibility:* Eligibility for Class I termination benefit is 10 years of contributing membership service. Eligibility for Class II termination benefit is 3 years of vesting service.

*Amount of Benefit:* Same as normal retirement benefit.

*Form of Benefit:* Same as normal retirement benefit, except the annuity commences at age 62 for Class I members and age 60 for Class II members.

**Disability Retirement:**

*Eligibility:* Members who are less than age 62, who are totally and permanently disabled and, in the case of non-occupational causes, who accumulate at least 5 years of membership service.

*Amount of Benefit:* 50% of the member's salary in effect as of the date of disability or 66 2/3% of member's salary in effect if individual became a member prior to December 5, 2003. At age 62, the member will receive a normal retirement benefit calculated assuming service had continued to age 62 at the same salary received at the time of disability and the Class I formula is used. Disability benefits will be reduced by the U.S. Social Security System, Workers' Compensation or other disability insurance payments.

*Form of Benefit:* Same as normal retirement benefit.

**Survivor's Benefits:**

*Eligibility:* Members who were active employees with at least 18 months of service for Class I and at least 3 years of service for Class II, or members who were receiving retirement or disability benefits.

*Amount of Benefit:* A surviving spouse will receive 50% of the member's normal retirement benefit, or benefit being paid at death, but not less than \$6,000 per year. Each surviving minor child (with a maximum of three children) will receive the greater of \$1,080 and 16 2/3% of the member's normal retirement benefit or the benefit being paid at death.

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**Form of Benefit:** The surviving spouse benefit will commence immediately if there are minor children, otherwise at the spouse's attainment of age 35, and continues until remarriage or death. Payment will be in the form of a life annuity with a cost of living increase each year equal to that which is used by the U.S. Social Security System, commencing January 1 subsequent to the anniversary of the spouse's annuity date after attainment of age 55.

The children's benefit commences immediately and continues until the respective child's attainment of age 18 (age 22 if a full-time student) unless the child is disabled.

**Lump Sum Death Benefit:**

**Eligibility:** Members who were active employees or members who were receiving retirement or disability benefits.

**Amount of Benefit:** A lump sum of \$1,000 plus, if there is no surviving spouse or children, a refund, reduced by pension payments already received, of 1/3<sup>rd</sup> of the accumulated employee contributions with interest.

**Contributions:** Class I members who are active employees contribute 10.5% per year. Class II members who are active employees contribute 11% per year.

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## APPENDIX B. ACTUARIAL COST METHOD AND ASSUMPTIONS

	September 30, 2018		September 30, 2017	
<b>Actuarial Cost Method</b>	Entry Age Normal		Entry Age Normal	
<b>Investment Return</b>	3.60% for all future years		4.48% for FY 2018, 4.33% for FY 2019, 4.19% for FY 2020, 4.00% for FY 2021, 3.65% for FY 2022, then 3.33% for each FY thereafter	
<b>Salary Increases</b>	No future salary increases		No future salary increases	
<b>Mortality (current)</b>	1971 Group Annuity Mortality Table for Males with ages set forward 3 years for Males		1971 Group Annuity Mortality Table for Males with ages set forward 3 years for Males	
<b>Mortality (improved)</b>	RP-2000 Combined Healthy table for Males and Females, projected to 2018 using Mortality Improvement Scale AA		RP-2000 Combined Healthy table for Males and Females, projected to 2017 using Mortality Improvement Scale AA	
<b>Retirement Age</b>	Earlier of age 62, if eligible, or 25 years of vesting service.		Earlier of age 62, if eligible, or 25 years of vesting service.	
<b>Marital Status</b>	94% of participants are assumed to be married and males are assumed to be 5 years older than female spouses.		94% of participants are assumed to be married and males are assumed to be 5 years older than female spouses.	
<b>Survivor Benefit – Minor Children</b>	Married participants are assumed to have two minor children aged 13 on benefit commencement date.		Married participants are assumed to have two minor children aged 13 on benefit commencement date.	
<b>Turnover</b>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
	20	.1303	20	.1303
	25	.1078	25	.1078
	30	.0858	30	.0858
	35	.0683	35	.0683
	40	.0508	40	.0508
	45	.0333	45	.0333
	50	.0158	50	.0158
	55 & up	.0000	55 & up	.0000

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**SECTION III. APPENDICES**

	September 30, 2018			September 30, 2017		
<b>Disability</b>	<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>Male</u>	<u>Female</u>
	25	.00020	.00021	25	.00020	.00021
	30	.00023	.00036	30	.00023	.00036
	35	.00035	.00061	35	.00035	.00061
	40	.00060	.00093	40	.00060	.00093
	45	.00112	.00135	45	.00112	.00135
	50	.00310	.00185	50	.00310	.00185
	55	.00334	.00261	55	.00334	.00261
	60	.00441	.00352	60	.00441	.00352
<b>Cost of Living Adjustment</b>	2% per year			2% per year		
<b>Administrative Expenses</b>	<u>Current Mortality</u> \$1,431,615 per year from FY 2019 to FY 2035, then decreasing 10% per year.			<u>Current Mortality</u> \$1,334,500 per year from FY 2018 to FY 2035, then decreasing 10% per year.		
	<u>Improved Mortality</u> \$1,431,615 per year from FY 2019 to FY 2035, then decreasing 10% per year.			<u>Improved Mortality</u> \$1,334,500 per year from FY 2018 to FY 2035, then decreasing 10% per year.		

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## APPENDIX C. RISK DISCLOSURE

The purpose of this appendix is to identify, assess, and provide illustrations of risks that are significant to the Settlement Fund, and in some cases to the Fund participants.

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match the assumptions. As an example, life expectancies may be longer or shorter than anticipated. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Settlement Fund.

In addition, investment returns may differ from the assumption. The larger the pool of assets, the more difficult it becomes to recover from unfavorable investment results. As an example, it is more difficult for a plan sponsor to deal with the effects of a 10% investment loss on a plan with \$1 billion in assets and liabilities than if the same plan sponsor is responsible for a 10% investment loss on a plan with \$1 million in assets and liabilities. Since plans make long-term promises and rely on long-term funding, it is important to consider how mature the Fund is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

Identify risks that may be significant to the Plan.

Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.

Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

This appendix uses the framework of ASOP 51 to communicate important information about: significant risks to the Plan, the Plan's maturity, and relevant historical plan data.

### Investment Risk

**Definition:** The potential that investment returns will be different than expected.

**Identification:** To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, funding contributions, and funded status may differ significantly from those presented in this valuation.

## Demographic Risks

**Definition:** The potential that mortality or other demographic experience will be different than expected.

**Identification:** The pension liabilities reported herein have been calculated by assuming that participants will follow patterns of demographic experience (e.g., mortality, withdrawal, disability, retirement, form of payment election, etc.) as described in Appendix B. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, funding contributions, and funded status may differ significantly from those presented in this valuation.