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## **NMI Settlement Fund**

Actuarial Valuation as of September 30, 2019

Prepared by:

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October 13, 2020



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**NMI Settlement Fund –  
Actuarial Valuation as of September 30, 2019**

As part of our engagement with the NMI Settlement Fund, we performed an actuarial valuation of the NMI Settlement Fund as of September 30, 2019. 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



NMI Settlement Fund  
October 13, 2020

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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## 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

- 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%). A payment of \$44,000,000 was made for fiscal year 2019. We have determined that the minimum annual payment from CNMI should be \$42,000,000 for fiscal year 2020.
- 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 \$40,000,000 for FY 2021. The minimum payments are estimated to decline as follows: \$38,000,000 for FY 2022, \$36,000,000 for FY 2023, \$34,000,000 per year for FY 2024, \$32,000,000 for FY 2025, \$30,000,000 for FY 2026, \$28,000,000 for FY 2027, \$26,000,000 for FY 2028, \$25,000,000 for FY 2029, and \$24,000,000 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 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 still estimated to be \$40,000,000 for FY 2021. However, the minimum payments for future years are estimated to decline more slowly, as follows: \$39,000,000 for FY 2022, \$38,000,000 for FY 2023, \$37,000,000 per year for FY 2024, \$36,000,000 for FY 2025, \$35,000,000 for FY 2026, \$34,000,000 for FY 2027 through FY 2037, and \$33,000,000 for FY 2038 through FY 2041. After FY 2041, 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, 2019	September 30, 2018
<b>Participant Counts</b>		
Active Employees (Class I)	54	64
Active Employees (Class II)	<u>4</u>	<u>6</u>
Total Active Employees	58	70
Retirees	2,780	2,847
Vested Terminees	<u>57</u>	<u>33</u>
Total Participants	2,895	2,950
<b>Market Value of Assets</b>	\$124,973,837	\$116,501,735
<b>Benefit Payments from NMI Settlement Fund</b>	\$42,457,809	\$43,287,483
<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
FY 2019	44,000,000	44,000,000
<b>Projected CNMI Payments (current mortality)</b>		
FY 2020	42,000,000	42,000,000
FY 2021	40,000,000	40,000,000
FY 2022	38,000,000	38,000,000
FY 2023	36,000,000	36,000,000
FY 2024	34,000,000	34,000,000
(see Exhibit 7 for FY 2025 and later years)		
<b>Projected CNMI Payments (improved mortality)</b>		
FY 2020	42,000,000	42,000,000
FY 2021	40,000,000	41,000,000
FY 2022	39,000,000	40,000,000
FY 2023	38,000,000	39,000,000
FY 2024	36,000,000	38,000,000
(see Exhibit 8 for FY 2025 and later years)		

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## 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 2020 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, 2019, 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 show the impact of using an improved mortality table, which is the RP 2000 mortality table for healthy lives projected to 2019 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 \$1,432,766 for fiscal year ending September 30, 2020, and are assumed to remain at that level until the fiscal year ending September 30, 2040, after which they are assumed to be 6.2% of benefit payments.

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, 2018 and 2019, CNMI made payments of \$30,000,000, \$33,000,000, \$45,000,000, and \$44,000,000 respectively. The payment for fiscal year 2020 is \$42,000,000.

## 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, 2019	September 30, 2018
<b>ASSETS</b>		
<b>Current Assets</b>		
Cash	\$ 6,566,740	\$ 1,182,154
Receivables, net	188,869	193,056
Due from CNMI Government	17,693,037	29,227,559
CNMI judicial building loan receivable	2,019,860	2,816,620
Investments	98,408,431	83,035,676
Prepaid expenses	<u>67,951</u>	<u>67,904</u>
Total current assets	\$ 124,944,888	\$ 116,522,969
<b>Property and equipment</b>	<u>\$ 325,985</u>	<u>\$ 217,397</u>
<b>Total Assets</b>	\$ 125,270,873	\$ 116,740,366
<b>LIABILITIES</b>		
<b>Current Liabilities</b>		
Accounts payable and accrued expenses	<u>297,036</u>	<u>238,631</u>
<b>TOTAL NET ASSETS</b>	\$ 124,973,837	\$ 116,501,735
<b>Assets Temporarily Restricted</b>	<u>30,797</u>	<u>34,350</u>
<b>UNRESTRICTED NET ASSETS</b>	\$ <u>124,943,040</u>	\$ <u>116,467,385</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, 2019	September 30, 2018
<b>Beginning Balance</b>	\$ 116,467,385	\$ 94,625,890
<b>Contributions and Payments</b>		
CNMI Government Contribution	44,000,000	45,000,000
Employer supplemental payments	1,744,922	1,853,065
Active Settlement Class Member contributions	<u>573,235</u>	<u>596,345</u>
Total contributions	46,318,157	47,449,410
<b>Investment Income</b>		
Interest and dividends	3,536,509	2,947,040
Net appreciation in fair value of investments	<u>1,731,074</u>	<u>(2,028,259)</u>
Total investment income	5,267,583	918,781
<b>Other Additions</b>		
CNMI Government Contribution (APGA)	0	17,693,037
Local investment income	192,225	252,665
Rental and other income	588,265	101,700
Net assets released from restriction	<u>14,153,971</u>	<u>14,408,059</u>
Total other additions	14,934,461	32,455,461
<b>TOTAL ADDITIONS</b>	66,520,201	80,823,652
<b>Benefit Payments</b>		
Retirement benefits	47,812,085	48,830,621
Survivors benefits	8,255,098	8,208,241
Disability benefits	489,765	569,975
Death lump sum distributions	41,613	44,483
Refunds	<u>13,219</u>	<u>42,222</u>
Total benefit and refund payments	56,611,780	57,695,542
<b>Other Deductions</b>		
Personnel expenses	652,009	683,898
Professional expenses	233,315	380,783
General and administrative expenses	<u>547,442</u>	<u>221,934</u>
Total other deductions	1,432,766	1,286,615
<b>TOTAL DEDUCTIONS</b>	58,044,546	58,982,157
<b>Ending Balance</b>	\$ 124,943,040	\$ 116,467,385

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## SECTION II. VALUATION EXHIBITS

## EXHIBIT 3. SUMMARY OF CENSUS DATA

	September 30, 2019	September 30, 2018
<b>Active Employees</b>		
Class 1	54	64
Class 2	<u>4</u>	<u>6</u>
Total	58	70
Average age	53.5	52.7
Average service	22.8	21.7
Total salary	\$ 2,964,898	\$ 3,602,481
<b>Retirees</b>		
Healthy retiree	1,957	1,989
Disabled retiree	28	36
Back to service retirees	23	27
Surviving spouse	668	664
Child pensioner	<u>104</u>	<u>131</u>
Total	2,780	2,847
Vested Terminees	57	33
Average age	64.1	63.1
Average remaining life expectancy (years)		
Current mortality	16.0	16.7
Improved mortality	21.7	22.5
Annual benefit payments at 100% (current mortality)	\$ 57,749,609	\$ 58,823,704
Annual benefit payments at 75% (current mortality)	\$ 43,312,207	\$ 44,117,778

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## EXHIBIT 4. RECONCILIATION OF CENSUS DATA

	Actives	Healthy Retirees*	Disabled Retirees	Surviving Spouses	Child Pensioners	Vested Terminées	Total
<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>
New Participants				6	11	22	39
Active to Retiree, Surviving Spouse or Vested Terminée	(11)	6		2		3	0
Retiree to Surviving Spouse		(27)		27			0
Disabled Retiree to Healthy Retiree or Surviving Spouse		6	(8)	2			0
Vested Terminée to Retiree		1				(1)	0
Other (drops)	(1)	(22)	—	(33)	(38)	—	(94)
<b>As of 9/30/19</b>	<b>58</b>	<b>1,980</b>	<b>28</b>	<b>668</b>	<b>104</b>	<b>57</b>	<b>2,895</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 at 75%
2020	58.0	\$2,964,898	2,837.0	-	2,837.0	\$43,312,207
2021	29.1	1,247,211	2,803.8	28.3	2,832.1	43,160,536
2022	21.5	806,028	2,764.4	35.2	2,799.7	42,860,567
2023	17.1	613,004	2,721.2	39.0	2,760.1	42,448,100
2024	14.8	542,181	2,655.4	40.6	2,695.9	41,899,805
2025	13.6	475,944	2,588.1	41.1	2,629.2	41,022,491
2026	12.4	444,910	2,516.1	41.5	2,557.6	40,255,914
2027	11.3	387,529	2,441.4	41.9	2,483.2	39,454,847
2028	9.3	303,238	2,365.2	43.1	2,408.3	38,555,670
2029	7.5	240,676	2,288.9	44.1	2,333.0	37,616,713
2030	4.2	136,162	2,209.4	46.4	2,255.8	36,596,624
2031	3.5	112,258	2,126.5	46.1	2,172.6	35,516,830
2032	2.8	89,149	2,043.9	45.8	2,089.7	34,330,419
2033	2.1	62,389	1,959.7	45.5	2,005.2	33,099,130
2034	0.7	15,672	1,871.9	45.8	1,917.7	31,797,995
2035	0.7	15,484	1,783.5	44.6	1,828.1	30,454,790
2036	0.6	15,286	1,693.9	43.4	1,737.3	29,047,858
2037	0.6	15,080	1,603.5	42.0	1,645.5	27,607,659
2038	0.6	14,863	1,511.5	40.6	1,552.1	26,159,385
2039	0.6	14,634	1,420.8	39.2	1,459.9	24,672,252
2040	0.6	14,391	1,330.5	37.7	1,368.2	23,182,145
2041	0.6	14,133	1,241.3	36.2	1,277.5	21,700,952
2042	-	-	1,153.7	35.2	1,188.9	20,218,972
2043	-	-	1,068.0	33.5	1,101.5	18,760,686
2044	-	-	984.7	31.8	1,016.5	17,325,326
2045	-	-	904.1	30.2	934.3	15,923,825
2046	-	-	826.5	28.5	855.0	14,566,144
2047	-	-	752.3	26.7	779.0	13,259,066
2048	-	-	681.5	25.0	706.6	12,008,668
2049	-	-	614.5	23.3	637.9	10,819,865
2050	-	-	551.4	21.6	573.1	9,696,590
2051	-	-	492.3	20.0	512.2	8,641,863
2052	-	-	437.1	18.4	455.5	7,657,676
2053	-	-	386.0	16.8	402.8	6,745,193
2054	-	-	338.9	15.3	354.2	5,904,746
2055	-	-	295.8	13.8	309.6	5,135,880
2056	-	-	256.5	12.4	269.0	4,437,469
2057	-	-	221.1	11.1	232.2	3,807,695
2058	-	-	189.2	9.9	199.1	3,244,028
2059	-	-	160.8	8.8	169.6	2,743,364

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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 at 75%
2020	58.0	\$2,964,898	2,837.0	-	2,837.0	\$43,508,399
2021	29.2	1,254,034	2,820.3	28.4	2,848.6	43,901,160
2022	21.7	813,239	2,800.9	35.5	2,836.4	44,193,439
2023	17.4	621,173	2,780.7	39.5	2,820.2	44,416,121
2024	15.1	550,658	2,740.7	41.4	2,782.1	44,543,880
2025	13.8	486,046	2,701.7	42.3	2,744.0	44,555,405
2026	12.7	456,996	2,659.6	43.1	2,702.7	44,521,622
2027	11.7	400,569	2,616.3	43.8	2,660.1	44,466,170
2028	9.6	314,563	2,572.7	45.5	2,618.2	44,317,358
2029	7.7	250,867	2,529.7	47.0	2,576.7	44,128,982
2030	4.4	141,531	2,483.9	49.9	2,533.9	43,852,015
2031	3.7	117,899	2,434.6	50.2	2,484.9	43,502,045
2032	3.0	94,784	2,384.8	50.5	2,435.3	43,018,200
2033	2.2	66,595	2,332.3	50.8	2,383.0	42,459,666
2034	0.7	16,393	2,275.0	51.7	2,326.7	41,793,221
2035	0.7	16,297	2,215.2	51.2	2,266.3	41,037,368
2036	0.7	16,195	2,151.8	50.5	2,202.3	40,160,320
2037	0.7	16,087	2,085.0	49.8	2,134.8	39,188,102
2038	0.7	15,973	2,014.0	49.0	2,062.9	38,141,603
2039	0.7	15,852	1,940.8	48.2	1,989.0	36,978,094
2040	0.7	15,724	1,864.7	47.3	1,912.0	35,732,811
2041	0.7	15,586	1,786.0	46.3	1,832.4	34,413,923
2042	-	-	1,705.1	45.9	1,751.1	33,007,891
2043	-	-	1,622.3	44.8	1,667.1	31,540,433
2044	-	-	1,538.0	43.7	1,581.7	30,010,882
2045	-	-	1,452.8	42.4	1,495.2	28,432,919
2046	-	-	1,367.1	41.1	1,408.2	26,820,738
2047	-	-	1,281.5	39.7	1,321.2	25,186,634
2048	-	-	1,196.5	38.3	1,234.8	23,543,330
2049	-	-	1,112.6	36.7	1,149.4	21,903,470
2050	-	-	1,030.4	35.1	1,065.5	20,279,045
2051	-	-	950.1	33.5	983.6	18,681,372
2052	-	-	872.2	31.8	904.0	17,121,530
2053	-	-	797.2	30.1	827.2	15,609,187
2054	-	-	725.2	28.3	753.5	14,153,148
2055	-	-	656.5	26.5	683.0	12,760,964
2056	-	-	591.2	24.7	615.9	11,438,611
2057	-	-	529.6	22.9	552.5	10,191,036
2058	-	-	471.7	21.1	492.8	9,022,225
2059	-	-	417.5	19.4	436.9	7,934,885

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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 at 75%	Expenses & Fees	Ending Balance
2020	\$124,943,040	\$42,000,000	\$1,206,654	\$4,470,260	(\$43,312,207)	(\$1,432,766)	\$127,874,981
2021	127,874,981	40,000,000	507,590	4,529,956	(43,160,536)	(1,432,766)	128,319,225
2022	128,319,225	38,000,000	328,037	4,512,117	(42,860,567)	(1,432,766)	126,866,046
2023	126,866,046	36,000,000	249,480	4,429,813	(42,448,100)	(1,432,766)	123,664,473
2024	123,664,473	34,000,000	220,657	4,287,907	(41,899,805)	(1,432,766)	118,840,466
2025	118,840,466	32,000,000	193,700	4,093,549	(41,022,491)	(1,432,766)	112,672,458
2026	112,672,458	30,000,000	181,069	3,849,071	(40,255,914)	(1,432,766)	105,013,918
2027	105,013,918	28,000,000	157,717	3,551,363	(39,454,847)	(1,432,766)	95,835,385
2028	95,835,385	26,000,000	123,412	3,200,503	(38,555,670)	(1,432,766)	85,170,864
2029	85,170,864	25,000,000	97,950	2,815,024	(37,616,713)	(1,432,766)	74,034,359
2030	74,034,359	24,000,000	55,415	2,413,705	(36,596,624)	(1,432,766)	62,474,089
2031	62,474,089	24,000,000	45,687	2,016,797	(35,516,830)	(1,432,766)	51,586,977
2032	51,586,977	24,000,000	36,282	1,646,047	(34,330,419)	(1,432,766)	41,506,121
2033	41,506,121	24,000,000	25,391	1,305,103	(33,099,130)	(1,432,766)	32,304,719
2034	32,304,719	24,000,000	6,378	996,931	(31,797,995)	(1,432,766)	24,077,267
2035	24,077,267	24,000,000	6,302	724,919	(30,454,790)	(1,432,766)	16,920,932
2036	16,920,932	24,000,000	6,221	492,614	(29,047,858)	(1,432,766)	10,939,143
2037	10,939,143	24,000,000	6,137	303,192	(27,607,659)	(1,432,766)	6,208,047
2038	6,208,047	24,000,000	6,049	158,940	(26,159,385)	(1,432,766)	2,780,885
2039	2,780,885	24,000,000	5,956	62,329	(24,672,252)	(1,432,766)	744,152
2040	744,152	24,000,000	5,857	15,826	(23,182,145)	(1,432,766)	150,924
2041	150,924	22,885,497	5,752	-	(21,700,952)	(1,341,221)	-
2042	-	21,468,600	-	-	(20,218,972)	(1,249,628)	-
2043	-	19,920,185	-	-	(18,760,686)	(1,159,499)	-
2044	-	18,396,113	-	-	(17,325,326)	(1,070,787)	-
2045	-	16,907,993	-	-	(15,923,825)	(984,168)	-
2046	-	15,466,400	-	-	(14,566,144)	(900,256)	-
2047	-	14,078,539	-	-	(13,259,066)	(819,473)	-
2048	-	12,750,860	-	-	(12,008,668)	(742,192)	-
2049	-	11,488,584	-	-	(10,819,865)	(668,719)	-
2050	-	10,295,885	-	-	(9,696,590)	(599,295)	-
2051	-	9,175,971	-	-	(8,641,863)	(534,108)	-
2052	-	8,130,957	-	-	(7,657,676)	(473,281)	-
2053	-	7,162,078	-	-	(6,745,193)	(416,885)	-
2054	-	6,269,687	-	-	(5,904,746)	(364,941)	-
2055	-	5,453,302	-	-	(5,135,880)	(317,422)	-
2056	-	4,711,726	-	-	(4,437,469)	(274,257)	-
2057	-	4,043,029	-	-	(3,807,695)	(235,334)	-
2058	-	3,444,524	-	-	(3,244,028)	(200,496)	-
2059	-	2,912,917	-	-	(2,743,364)	(169,553)	-

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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 at 75%	Expenses & Fees	Ending Balance
2020	\$124,943,040	\$42,000,000	\$1,206,654	\$4,466,728	(\$43,508,399)	(\$1,432,766)	\$127,675,257
2021	127,675,257	40,000,000	510,367	4,509,485	(43,901,160)	(1,432,766)	127,361,183
2022	127,361,183	39,000,000	330,972	4,471,688	(44,193,439)	(1,432,766)	125,537,638
2023	125,537,638	38,000,000	252,805	4,382,625	(44,416,121)	(1,432,766)	122,324,181
2024	122,324,181	37,000,000	224,107	4,246,125	(44,543,880)	(1,432,766)	117,817,767
2025	117,817,767	36,000,000	197,811	4,065,213	(44,555,405)	(1,432,766)	112,092,620
2026	112,092,620	35,000,000	185,988	3,841,503	(44,521,622)	(1,432,766)	105,165,723
2027	105,165,723	34,000,000	163,024	3,574,720	(44,466,170)	(1,432,766)	97,004,531
2028	97,004,531	34,000,000	128,021	3,282,965	(44,317,358)	(1,432,766)	88,665,393
2029	88,665,393	34,000,000	102,098	2,985,680	(44,128,982)	(1,432,766)	80,191,423
2030	80,191,423	34,000,000	57,600	2,684,802	(43,852,015)	(1,432,766)	71,649,044
2031	71,649,044	34,000,000	47,983	2,383,403	(43,502,045)	(1,432,766)	63,145,619
2032	63,145,619	34,000,000	38,575	2,085,819	(43,018,200)	(1,432,766)	54,819,047
2033	54,819,047	34,000,000	27,103	1,795,910	(42,459,666)	(1,432,766)	46,749,628
2034	46,749,628	34,000,000	6,672	1,517,039	(41,793,221)	(1,432,766)	39,047,352
2035	39,047,352	34,000,000	6,633	1,253,362	(41,037,368)	(1,432,766)	31,837,213
2036	31,837,213	34,000,000	6,591	1,009,583	(40,160,320)	(1,432,766)	25,260,301
2037	25,260,301	34,000,000	6,547	790,313	(39,188,102)	(1,432,766)	19,436,293
2038	19,436,293	33,000,000	6,501	581,485	(38,141,603)	(1,432,766)	13,449,910
2039	13,449,910	33,000,000	6,451	386,917	(36,978,094)	(1,432,766)	8,432,418
2040	8,432,418	33,000,000	6,399	228,702	(35,732,811)	(1,432,766)	4,501,942
2041	4,501,942	33,000,000	6,343	110,944	(34,413,923)	(1,432,766)	1,772,540
2042	1,772,540	32,609,579	-	-	(33,007,891)	(1,374,228)	-
2043	-	32,853,566	-	-	(31,540,433)	(1,313,133)	-
2044	-	31,260,335	-	-	(30,010,882)	(1,249,453)	-
2045	-	29,616,676	-	-	(28,432,919)	(1,183,757)	-
2046	-	27,937,374	-	-	(26,820,738)	(1,116,636)	-
2047	-	26,235,237	-	-	(25,186,634)	(1,048,603)	-
2048	-	24,523,517	-	-	(23,543,330)	(980,187)	-
2049	-	22,815,384	-	-	(21,903,470)	(911,914)	-
2050	-	21,123,329	-	-	(20,279,045)	(844,284)	-
2051	-	19,459,140	-	-	(18,681,372)	(777,768)	-
2052	-	17,834,356	-	-	(17,121,530)	(712,826)	-
2053	-	16,259,049	-	-	(15,609,187)	(649,862)	-
2054	-	14,742,391	-	-	(14,153,148)	(589,243)	-
2055	-	13,292,245	-	-	(12,760,964)	(531,281)	-
2056	-	11,914,838	-	-	(11,438,611)	(476,227)	-
2057	-	10,615,323	-	-	(10,191,036)	(424,287)	-
2058	-	9,397,850	-	-	(9,022,225)	(375,625)	-
2059	-	8,265,241	-	-	(7,934,885)	(330,356)	-

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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



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.

**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.

## SECTION III. APPENDICES

## APPENDIX B. ACTUARIAL COST METHOD AND ASSUMPTIONS

	September 30, 2019		September 30, 2018	
<b>Actuarial Cost Method</b>	Entry Age Normal		Entry Age Normal	
<b>Investment Return</b>	3.60% for all future years		3.60% for all future years	
<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 2019 using Mortality Improvement Scale AA		RP-2000 Combined Healthy table for Males and Females, projected to 2018 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, 2019			September 30, 2018		
<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> \$1,432,766 per year from FY 2020 to FY 2040, then remaining a constant percentage of benefit payments.			<u>Current Mortality</u> \$1,431,615 per year from FY 2019 to FY 2035, then decreasing 10% per year.		
	<u>Improved Mortality</u> \$1,432,766 per year from FY 2020 to FY 2041, then remaining a constant percentage of benefit payments.			<u>Improved Mortality</u> \$1,431,615 per year from FY 2019 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. Exhibits 7 and 8 show alternative projections of benefit payments based upon different mortality assumptions.