BI-STATE DEVELOPMENT
ATU LOCAL 788 EMPLOYEES' PENSION PLAN

Actuarial Valuation as of April 1, 2020

Prepared by

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November 3, 2020

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ATU Local 788 Employees' Pension Plan

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Introduction and Purpose

In this report, we present the results of the April 1, 2020 actuarial valuation for the Bi-State Development ATU Local 788 Employees' Pension Plan. The report has been prepared at the request of Bi-State Development's Board, for the sole use of the Board, Bi-State Development, and the Pension Committee.

PURPOSES OF THE VALUATION

The actuarial valuation of the Plan is intended to accomplish several purposes:

- The calculation of the actuarially determined employer contribution

- Assessment of the relative funded position of the plan on an ongoing basis, i.e., through a comparison of plan assets and projected plan liabilities

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Actuarial Certification

As requested, we have performed an actuarial valuation of the Bi-State Development Agency of the Missouri-Illinois Metropolitan District and Division 788 Amalgamated Transit Union, AFL-CIO Employees' Pension Plan (Plan) as of April 1, 2020. Our findings are set forth in this actuary's report. This report reflects the benefit provisions in effect on April 1, 2020.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by Bi-State Development, Milliman (administrative practice), UHY LLP and U.S. Bank. This information includes, but is not limited to, statutory provisions, member census data, and financial information. 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 our results may be different and our calculations may need to be revised.

Actuarial assumptions, including discount rates, mortality tables, and others identified in this report, and actuarial cost methods are prescribed jointly by Bi-State Development and the Pension Committee. These parties are responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies methods and assumptions used in this valuation are those that have been so prescribed and are described in the Actuarial Basis of this report. Bi-State Development and the Pension Committee are solely responsible for communicating to Milliman any changes required thereto.

This valuation report is only an estimate of the Plan's financial condition as of a single date. It can neither predict the Plan's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan 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 plan'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 purposes of calculating the actuarially determined contribution for the Plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals and the plan provisions described on pages 22-25 of this report. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the use and benefit of the Plan. 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) The Plan may provide a copy of Milliman's work, in its entirety, to the Plan's 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 Plan.

(b) The Plan 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 retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are 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. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,

Michael J. Zwiener, FSA Consulting Actuary Joint Board Enrollment #20-03686	William D. Winningham, EA Actuary Joint Board Enrollment #20-06367

MJZ/WDW/crd

Discussion of Valuation Results

1. **Actuarially Determined Contribution**

A comparison of the actuarially determined contribution rates for the current and immediately preceding valuations is shown below:

	Actuarial Valuation as of	
	April 1, 2019	April 1, 2020
Actuarially Determined Weekly Contribution Rate	$148.53	$157.85

* At the November 7, 2019 meeting, the Pension Committee voted to maintain the weekly contribution rate of $175.00 that was originally adopted at the November 3, 2016 Pension Committee meeting. We do not recommend decreasing the contribution rate below the current level.

There was an increase in the actuarially determined contribution rate as compared to the preceding year. The primary reason for the increase was actuarial asset return less than the assumed 7.0% for the year ended March 31, 2020 as well as the benefit increase discussed in item 3 below.

2. **Plan Assets**

The market value of plan assets decreased from $139,763,901 at April 1, 2019 to $127,989,619 at April 1, 2020. A balance sheet and statement of income and disbursements are presented on pages 9 and 10, respectively. The net market rate of return was -6.4% versus 2.0% for the prior year.

The actuarial value of assets increased from $142,494,408 at April 1, 2019 to $143,871,118 at April 1, 2020. The development of the April 1, 2020 actuarial value of assets is presented on page 12. The net actuarial rate of return for the period was 3.0% versus the assumed rate of 7.0%.

3. **Actuarial Assumptions, Methods and Plan Provisions**

This valuation reflects the benefit multiplier increase from $55 to $60 per full year of Credited Service earned after April 1, 2020 for those retiring with 25 or more years of Credited Service.

All other actuarial assumptions, methods and plan provisions remained the same as the prior year. Descriptions of these can be found on pages 18-25.

The funding method is the Entry Age Normal method where Normal Costs are computed as a level dollar amount. The Unfunded Actuarial Accrued Liability is amortized as a level dollar amount. The amortization period was reset to 30 years effective April 1, 2003.

4. **Plan Population**

The number of active participants included in the current valuation decreased from 1,420 in the previous valuation to 1,374 in the current valuation. The number of retirees and beneficiaries increased from 1,129 to 1,137. The number of deferred vested participants increased from 60 to 63. The number of terminated nonvested participants due a refund of employee contributions increased from 183 to 214.

5. **Funded Status**

There are various bases for assessing the funded status of the Plan on an ongoing basis (see page 14 for detailed calculations). One basis is to divide the actuarial value of assets by the Accrued Liability. Page 14 shows this ratio to be 67.4% for the current year. An upward trend in this ratio over the years is considered a favorable indicator of the Plan's funding progress. Another measure displayed on page 14 is the Unfunded Accrued Liability as a percentage of covered payroll. A downward trend in this ratio over time is considered favorable.

6. **Reconciliation of Unfunded Actuarial Accrued Liability**

The Plan experienced an overall net decrease in unfunded actuarial accrued liability for the Plan year ending March 31, 2020 of approximately $370,000. The reconciliation of the unfunded actuarial accrued liability from April 1, 2019 to April 1, 2020 is summarized on the next page.

Discussion of Valuation Results (continued)

Unfunded Actuarial Accrued Liability as of April 1, 2019	$69,826,000
Normal Cost including Expense Load	2,963,000
Contributions	(13,920,000)
Interest	4,616,000
Increase due to Benefit Multiplier Change	1,070,000
Expected Unfunded Actuarial Accrued Liability as of April 1, 2020	64,555,000
Increase due to Loss on Actuarial Assets	5,635,000
Increase due to Loss on Expenses	75,000
Decrease due to Gain on Liability (Including Data Corrections and Mortality Improvements)	(809,000)
Unfunded Actuarial Accrued Liability as of April 1, 2020	69,456,000

7. **GASB Statement Nos. 67 and 68**

Results under GASB Statement Nos. 67 and 68 are provided in a separate report.

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Summary of Valuation Results

	Valuation Date April 1, 2019	Valuation Date April 1, 2020	
Number of Participants:			
Active	1,420	1,374	*
Terminated Nonvested Due Refund	183	214	
Terminated Vested	60	63	
Receiving Payments	1,129	1,137	
Total	2,792	2,788	
Market Value of Assets	139,763,901	127,989,619	
Actuarial Value of Assets	142,494,408	143,871,118	
Present Value of Future Benefits	232,207,502	232,813,605	**
Entry Age Normal Accrued Liability	212,320,074	213,326,870	**
Unfunded Entry Age Normal Accrued Liability	69,825,666	69,455,752	
Actuarially Determined Contribution	10,967,214	11,277,746	
Actuarially Determined Weekly Contribution Rate	148.53	157.85	

* Includes 3 Participants who transferred from the Salaried Plan, with liability of $26,224 that will be paid from the Salaried Plan.

** Includes 54 Participants who transferred to the Salaried Plan with total liability of $5,016,676 and 5 Participants who transferred to the IBEW Plan with total liability of $56,236 that is included in this valuation for prior ATU Local 788 service.

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Statement of Assets as of April 1, 2020

Assets	Market Value
1. Cash and Cash Equivalents	2,208,889
2. Investments	125,768,371
3. Employer Contribution Receivable	67,032
4. Employee Contribution Receivable	29,346
5. Accrued Income	10,398
Total Assets	128,084,036
Liabilities	
1. Accrued Expenses	94,417
Total Liabilities	94,417
Net Assets	127,989,619

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Statement of Income and Disbursements

1.	Market Value of Assets as of April 1, 2019	139,763,901
2.	Income	
	a. Employer Contributions	9,989,519
	b. Employee Contributions	3,930,215
	c. Net Appreciation/(Depreciation) in Fair Value of Investments	(10,848,088)
	d. Interest and Dividends	2,058,570
	e. Total Income	5,130,216
3.	Disbursements	
	a. Benefit Payments	16,498,849
	b. Investment Related Expenses	120,344
	c. Administrative Expenses	285,305
	d. Total Disbursements	16,904,498
4.	Net Increase/(Decrease): (2e) - (3d)	(11,774,282)
5.	Market Value of Assets as of April 1, 2020: (1) + (4)	127,989,619
6.	Net Rate of Return	-6.4%

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Historical Returns on Market Value of Assets

Plan Year Ended	Annual Return	Geometric Average Return
03/31/2009	-26.1%	-26.1%
03/31/2010	35.8%	0.2%
03/31/2011	13.1%	4.3%
03/31/2012	4.0%	4.2%
03/31/2013	9.7%	5.3%
03/31/2014	16.6%	7.1%
03/31/2015	6.1%	7.0%
03/31/2016	-3.4%	5.6%
03/31/2017	13.0%	6.4%
03/31/2018	10.4%	6.8%
03/31/2019	2.0%	6.4%
03/31/2020	-6.4%	5.2%

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Development of Actuarial Value of Assets

		Plan Year Ended 03/31/2017	Plan Year Ended 03/31/2018	Plan Year Ended 03/31/2019	Plan Year Ended 03/31/2020
1.	Market Value at Beginning of Year	116,103,177	128,425,595	139,091,378	139,763,901
2.	Contributions	13,443,882	13,521,259	14,348,498	13,919,734
3.	Benefit Payments and Administrative Expenses	(16,057,208)	(16,096,642)	(16,470,425)	(16,784,154)
4.	Assumed Rate of Return	7.00%	7.00%	7.00%	7.00%
5.	Expected Return: (1) x (4) + [(2) + (3)] x {[1 + (4)]^0.5 - 1}	8,037,303	8,901,178	9,663,385	9,684,914
6.	Expected Market Value at End of Year: (1) + (2) + (3) + (5)	121,527,154	134,751,390	146,632,836	146,584,395
7.	Actual Market Value at End of Year	128,425,595	139,091,378	139,763,901	127,989,619
8.	(Gain) / Loss on Market Value: (6) - (7)	(6,898,441)	(4,339,988)	6,868,935	18,594,776

Plan Year Ended	(Gain) / Loss	Factor	Amount Deferred
03/31/2020	18,594,776	0.8	14,875,821
03/31/2019	6,868,935	0.6	4,121,361
03/31/2018	(4,339,988)	0.4	(1,735,995)
03/31/2017	(6,898,441)	0.2	(1,379,688)

9.	Total	15,881,499
10.	Actuarial Value of Assets: (7) + (9)	143,871,118
11.	Net Rate of Return	3.0%
12.	Actuarial Value as a Percentage of Market Value	112.4%

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Development of Actuarially Determined Contribution

	April 1, 2020
1. Present Value of Future Benefits	
a. Active Participants	92,387,670
b. Terminated Vested Participants/Nonvested Return of Contributions	3,360,257
c. Participants Receiving Payments	137,065,678
d. Total	232,813,605
2. Present Value of Future Normal Costs	19,486,735
3. Entry Age Normal Accrued Liability: (1d) - (2)	213,326,870
4. Actuarial Value of Assets	143,871,118
5. Unfunded Entry Age Normal Accrued Liability: (3) - (4)	69,455,752
6. Entry Age Normal Cost	2,713,521
7. Expense Load	239,459
8. Entry Age Normal Cost with Expense Load: (6) + (7)	2,952,980
9. Amortization of Unfunded Entry Age Normal Accrued Liability Over 30 Years from April 1, 2003	7,766,766
10. Actuarially Determined Contribution at Beginning of Year: (8) + (9)	10,719,746
11. Actuarially Determined Contribution with Interest	11,277,746
12. Number of Active Participants	1,374
13. Actuarially Determined Weekly Contribution per Active Participant	$157.85

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Schedule of Funding Progress *

Date of Valuation (1)	Actuarial Value of Assets (2)	Entry Age Normal (EAN) Accrued Liability (3)	Unfunded EAN Accrued Liability (UAL) (4) = (3) - (2)	Funded Ratio (5)=(2)/(3)	Covered Payroll (6)	UAL as a Percentage of Covered Payroll (7) = (4) / (6)
04/01/1993	$29,089,335	$61,346,858	$32,257,523	47.4%	N/A	N/A
04/01/1994	31,850,904	61,471,344	29,620,440	51.8%	N/A	N/A
04/01/1995	34,973,543	64,153,388	29,179,845	54.5%	N/A	N/A
04/01/1996	39,770,628	73,139,123	33,368,495	54.4%	49,022,647	68.1%
04/01/1997	44,845,813	77,935,155	33,089,342	57.5%	49,647,750	66.6%
04/01/1998	51,166,074	83,432,798	32,266,724	61.3%	52,117,583	61.9%
04/01/1999	59,726,873	106,971,502	47,244,629	55.8%	N/A	N/A
04/01/2000	70,016,827	109,257,324	39,240,497	64.1%	55,549,645	70.6%
04/01/2001	77,458,087	114,112,881	36,654,794	67.9%	57,644,875	63.6%
04/01/2002	82,852,495	117,803,132	34,950,637	70.3%	46,215,304	75.6%
04/01/2003	84,075,111	129,645,438	45,570,327	64.9%	47,064,243	96.8%
04/01/2004	87,121,238	142,359,132	55,237,894	61.2%	50,282,012	109.9%
04/01/2005	90,066,198	138,783,821	48,717,623	64.9%	48,808,651	99.8%
04/01/2006	94,032,935	142,175,988	48,143,053	66.1%	48,763,512	98.7%
04/01/2007	97,050,487	151,535,366	54,484,879	64.0%	49,474,125	110.1%
04/01/2008	99,123,171	149,889,177	50,766,006	66.1%	54,380,281	93.4%
04/01/2009	95,099,820	154,636,364	59,536,544	61.5%	52,442,843	113.5%
04/01/2010	93,422,609	168,931,028	75,508,419	55.3%	51,185,202	147.5%
04/01/2011	91,133,410	170,438,165	79,304,755	53.5%	54,299,232	146.1%
04/01/2012	90,572,184	173,975,933	83,403,749	52.1%	54,168,878	154.0%
04/01/2013	92,629,812	176,399,555	83,769,743	52.5%	54,486,307	153.7%
04/01/2014	104,406,512	185,059,221	80,652,709	56.4%	54,978,206	146.7%
04/01/2015	117,889,375	197,892,376	80,003,001	59.6%	60,491,434	132.3%
04/01/2016	122,802,782	205,061,983	82,259,201	59.9%	64,405,182	127.7%
04/01/2017	129,194,067	206,616,631	77,422,564	62.5%	67,321,405	115.0%
04/01/2018	136,906,941	208,700,699	71,793,758	65.6%	70,202,205	102.3%
04/01/2019	142,494,408	212,320,074	69,825,666	67.1%	70,111,475	99.6%
04/01/2020	143,871,118	213,326,870	69,455,752	67.4%	71,784,066	96.8%

* The amounts shown prior to April 1, 2015 are for the pre-merger ATU Local 788 Plan.
GASB Accounting disclosures as of March 31, 2015 and later are included in separate reports.

This work product was prepared solely for the Bi-State Development ATU Local 788 Employees' Pension Plan for the purpos described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuar or other qualified professional when reviewing the Milliman work product.

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Summary of Participant Data

	April 1, 2019	April 1, 2020	
1. Active Participants			
a. Count	1,420	1,374	*
b. Average Age	46.0	46.5	
c. Average Service	11.9	12.2	
2. Terminated Nonvested Participants Due Refund			
a. Count	183	214	
b. Total Refund Due	$638,192	$795,077	
3. Terminated Vested Participants			
a. Count	60	63	
b. Total Monthly Benefits	$31,368	$35,639	
c. Average Monthly Benefit	$523	$566	
4. Participants Receiving Payments			
a. Count	1,129	1,137	
b. Total Monthly Benefits	$1,275,918	$1,279,011	
c. Average Monthly Benefit	$1,130	$1,125	

* Includes 3 Participants who transferred from the Salaried Plan. In addition, there are 54 Participants who transferred to the Salaried Plan and 5 Participants who transferred to the IBEW Plan that have liabilities included in this valuation for prior ATU Local 788 service.

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Distribution of Active Participants by Age and by Years of Service
(as of April 1, 2020)

	YEARS OF CREDITED SERVICE										
Age	Under 1 No.	1 to 4 No.	5 to 9 No.	10 to 14 No.	15 to 19 No.	20 to 24 No.	25 to 29 No.	30 to 34 No.	35 to 39 No.	40 and up No.	Total
Under 25	9	13	0	0	0	0	0	0	0	0	22
25 to 29	26	80	21	0	0	0	0	0	0	0	127
30 to 34	14	70	49	8	0	0	0	0	0	0	141
35 to 39	7	50	49	33	6	0	0	0	0	0	145
40 to 44	8	33	47	31	24	14	0	0	0	0	157
45 to 49	6	36	64	33	35	32	2	0	0	0	208
50 to 54	3	11	44	43	32	38	26	3	0	0	200
55 to 59	1	13	40	21	30	26	30	11	1	0	173
60 to 64	3	6	19	28	20	23	16	11	5	9	140
65 to 69	0	0	10	1	5	9	8	8	2	11	54
70 and up	0	0	0	0	1	1	1	1	0	3	7
Total	77	312	343	198	153	143	83	34	8	23	1,374

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Summary of Changes in Participant Data

	Active Participants	Terminated Nonvested Due Refund	Terminated Vested	Retirees	Total
Count as of April 1, 2019	1,420	183	60	1,129	2,792
New Entrants	79	0	0	0	79
Rehired	3	(1)	(2)	0	0
Disability Pension Ceased	0	0	0	0	0
Disability Pension Reinstated	0	0	(1)	1	0
Retired	(25)	0	(5)	36	6
Became Disabled	(5)	0	0	5	0
Died with Beneficiary	(3)	0	0	(13)	(16)
Died with Beneficiary - Beneficiary Received Refund	(1)	0	0	0	(1)
Died without Beneficiary	0	0	0	(36)	(36)
New Beneficiaries	0	0	0	18	18
New Alternate Payees	0	0	0	1	1
Terminated Vested - Did Not Receive Refund	(10)	0	13	0	3
Terminated Vested - Received Refund	(5)	0	(3)	0	(8)
Terminated Nonvested - Due Refund	(35)	69	0	0	34
Terminated Nonvested - Received Refund	(44)	(37)	0	0	(81)
Certain Period Expired	0	0	0	(4)	(4)
Net Data Adjustments	0	0	1	0	1
Net Changes	(46)	31	3	8	(4)
Count as of April 1, 2020	1,374	214	63	1,137	2,788

Actuarial Assumptions and Methods

Interest

7.00% per annum, net of expenses, compounded annually (effective 4/1/2016)

Mortality

Healthy Lives Pre-Retirement: RP-2014 Employees Mortality Table, with Blue Collar adjustment, male and female rates, projected 5 years from the valuation date based on Scale BB

Healthy Lives Post-Retirement: RP-2014 Healthy Annuitant Mortality Table, with Blue Collar adjustment, male and female rates, projected 5 years from the valuation date based on Scale BB

Disabled Lives: RP-2014 Disabled Mortality Table, male and female rates

Withdrawal

Rates at selected ages are:

Age	Percent Terminating During Year
25	6.3
30	5.0
35	4.0
40	3.0
45	2.5
50	2.0
55	1.0
60	0.0

Actuarial Assumptions and Methods (continued)

Retirement

For Clerical Unit Participants who first became Participants in the Clerical Plan prior to 04/01/2015, rates vary by age as follows:

Age	Percent Retiring During Year
50-54	1%
55-60	5
61	10
62	15
63-64	10
65	65
66	25
67 & over	100

15% of Participants are assumed to retire when first eligible, but not prior to age 50.

For all other Participants, rates vary by age as follows:

Age	Percent Retiring During Year
55-60	5%
61	10
62	15
63-64	10
65	65
66	25
67 & over	100

15% of Participants are assumed to retire when first eligible, but not prior to age 55.

<u>Actuarial Assumptions and Methods (continued)</u>

Disability

For Clerical Unit Participants who first became Participants in the Clerical Plan prior to 04/01/2015, rates at selected ages are:

Age	Percent Becoming Disabled During Year
25	0.251%
30	0.275
35	0.359
40	0.487
45	0.554
50	0.836
55	0.000

For all other Participants, rates at selected ages are:

Age	Percent Becoming Disabled During Year
25	0.251%
30	0.275
35	0.359
40	0.488
45	0.738
50	1.113
55	1.922
60	3.300
65	0.000

After 3 years on disability, 2/3 of Participants are assumed to continue to qualify for disability benefits.

Expenses

Average of the actual administrative expenses for the last 3 plan years

Actuarial Assumptions and Methods (continued)

Marriage

90% of members are assumed to be married at the time of withdrawal, retirement, death or disability. Males are assumed to be 3 years older than their spouses.

Supplemental Pension

Liability associated with the Supplemental Pension is assumed equivalent to plan sponsor sick leave cash out deposits.

Form of Payment

All members are assumed to elect the Life Annuity.

Actuarial Cost Method

The Entry Age Normal Cost Method on a closed group basis was used. Normal costs are computed as a level dollar amount. Changes in the Entry Age Normal Unfunded Accrued Liability (UAL) are amortized as a level dollar amount over a 30 year period effective April 1, 2003. For the April 1, 2020 valuation, the remaining amortization period is 13 years.

Asset Valuation Method

The actuarial value of assets was determined using the expected return method, without phase-in, effective April 1, 2010. This method is fully defined in IRS Revenue Procedure 2000-40, Section 3.15.

Under this method, the gain or loss for a year is the difference between the expected value of assets for the year and the market value. The expected value is the market value brought forward one year at the assumed rate of return with appropriate adjustments for contributions and disbursements. The actuarial value of assets is equal to the market value of assets, with the gains and losses deferred as follows:

- i. 80% of the prior year gain/loss
- ii. 60% of the second preceding year’s gain/loss
- iii. 40% of the third preceding year’s gain/loss
- iv. 20% of the fourth preceding year’s gain/loss

Summary of Plan Provisions

A summary of the current primary provisions of the Plan is presented below.

Effective Date

The Plan was originally effective November 1, 1967. The most recent restatement was effective April 1, 2015. An Amendment is currently pending for the collectively bargained benefit change mentioned in the Retirement Benefit section of this Summary of Plan Provisions.

Eligibility

Members become eligible after their first hour of employment.

Employee

Employed by Bi-State Development on a full-time or part-time basis, in the bargaining unit represented by the union and in Covered Employment. The administrative practice of the Plan is for part-time employees to enter the Plan upon their promotion to full-time, with any contributions owed by the employee and Bi-State Development paid in arrears. Part-time Clerical Unit employees are not eligible to enter the Plan.

Credited Service

Continuous Service from date of hire until date of termination earned in terms of weeks and credited in full years. Part-time non-Clerical Unit employees earn service at a rate of 70% of a full week, credited in full years.

Vesting

Members become 100% vested upon completion of 10 years of Credited Service and are entitled to a monthly benefit payable at age 65. Members that terminate prior to vesting are entitled to their employee contributions with interest compounded at 3.0% per year paid to them in a lump sum.

Retirement Date

For Clerical Unit Participants who first became Participants in the Clerical Plan prior to April 1, 2015, first of the month coincident with or next following the earlier of age 65 with 10 or more years of Credited Service, age 55 with 20 or more years of Credited Service, or any age with 25 or more years of Credited Service.

For all other Participants, first of the month coincident with or next following the earlier of age 65, age 55 with 20 or more years of Credited Service, or any age with 25 or more years of Credited Service.

Retirement Benefit

A monthly benefit commencing on the Participant's retirement date in the amount of $40 times years of Credited Service. If the Participant has 25 or more years of Credited Service, the rate is increased to $55 for years of Credited Service earned through March 31, 2020 and $60 for years of Credited Service earned after March 31, 2020.

Early Retirement Date

For Clerical Unit Participants who first became Participants in the Clerical Plan prior to April 1, 2015, first of the month coincident with or next following age 54 with 15 years of Credited Service or age 62 with 10 years of Credited Service.

For all other Participants, first of the month coincident with or next following age 55 with 15 years of Credited Service.

Early Retirement Benefit

A monthly benefit equal to $40 times the number of years of Credited Service, reduced ¼% for each month by which the benefit commencement date precedes age 65

Late Retirement Benefit

Accrued Benefit calculated at Late Retirement Date

Summary of Plan Provisions (continued)

Disability Benefit

If Participants become disabled while in employment after completing 10 years of Credited Service, they may be entitled to a disability benefit. The disability benefit ceases after 3 years if Participants do not qualify for disability under Social Security at that time.

The disability benefit is equal to the Accrued Benefit as of the date of disability

Pre-Retirement Death Benefit

If a Participant dies prior to retirement and after completing 10 years of Credited Service, an immediate monthly benefit will be payable to his or her beneficiary equal to the Accrued Benefit earned as of the date of death.

Participants who die prior to becoming eligible for retirement benefits will have their employee contributions accumulated with interest at 3% per year paid to their beneficiary or beneficiaries.

Unused Sick Leave

Participants who retire under Normal, Early, Late or Disability Retirement and beneficiaries of Participants who die with 10 or more years of Credited Service are entitled to a Supplemental Pension based on their unused sick leave account. Sick leave may be converted to either a single lump sum or monthly payments for 3, 5, 7, 10, 15 or 20 years based on conversion factors contained in the Plan Document.

Normal Form of Payment

Single Life Annuity

Optional Forms of Payment

Ten-Year Certain and Life Option
Fifteen-Year Certain and Life Option *
Contingent Annuitant Options (100% or 50%)

- * The Fifteen-Year Certain and Life Option is not available to Clerical Unit Participants who first became Participants in the Clerical Plan prior to April 1, 2015.

Summary of Plan Provisions (continued)

Transferred Participants

Participants who have transferred to another Bi-State Development Pension Plan will have their benefit based on Credited Service under this Plan calculated according to the benefit formula of the Bi-State Development Pension Plan that they are active in at the time of their termination. Due to changes to Bi-State Development’s Salaried Pension Plan, there is a small group of former ATU employees who have made elections resulting in them no longer having a pension benefit. For the purpose of this valuation, we have assumed that their benefits under this Plan revert to the benefit provisions of this Plan based on service through their date of transfer. The Plan may require an amendment to accommodate some of the changes made to the Salaried Pension Plan.

Contributions

For Clerical Unit Participants who first became Participants in the Clerical Plan prior to April 1, 2015, Bi-State Development pays 68% of the weekly contributions to the Plan, and the Participants pay 32%.

For all other Participants, Bi-State Development pays 70% of the weekly contributions to the Plan, and the Participants pay 30%.

An additional $5 per week contribution was collectively bargained along with the benefit increase mentioned in the Retirement Benefit section of this Summary of Plan Provisions. Employees will pay 100% of the $5 increase until such time as the Plan reaches 85% funded, at which point Bi-State Development will pay $3.50 of the increase and employees will pay $1.50 of the increase.

Actuarial Standard of Practice No. 51 (ASOP 51)

The purpose of this appendix is to identify, assess, and provide illustrations of risks that are significant to the Plan, and in some cases to the Plan's 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, investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these potential differences when making decisions that may affect the future financial health of the Plan, or of the Plan's participants.

In addition, as plans mature they accumulate larger pools of assets and liabilities. This increases the potential risk to plan funding and the finances of those who are responsible for plan funding. 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 pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the plan 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.
- 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.

Maturity Risk

- Definition: This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time.

- Identification: The Plan is subject to maturity risk because as Plan assets and liabilities continue to grow, the impact of any gains or losses on the assets or liabilities also becomes larger.
- Assessment: Currently assets are equal to 9 times last year's contributions indicating a one-year asset loss of 10% would be equal to 0.9 times last year's contributions.

Retirement Risk

- Definition: This is the potential for participants to retire and receive subsidized benefits more valuable than expected.
- Identification: This plan has valuable early and unreduced retirement benefits. If participants retire at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

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.

Interest Rate Risk

- Definition: The potential that interest rates will be different than expected.
- Identification: The pension liabilities reported herein have been calculated by computing the present value of expected future benefit payments using the interest rate(s) described in the appendix. If interest rate(s) in future valuations are different from those used in this valuation, future pension liabilities, funding contributions and funded status may differ significantly from those presented in this valuation. As a general rule, using a higher interest rate to compute the present value of future benefit payments will result in a lower pension liability, and vice versa. One aspect that can be used to estimate the impact of different interest rates is the plan's duration.
- Assessment: If the interest rate changes by 1%, the estimated percentage change in pension liability is approximately 9%.

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 the appendix. 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.