

**Pension Plan for  
Salaried Employees of the  
Bi-State Development Agency  
of the Missouri-Illinois  
Metropolitan District**

**June 1, 2017 Actuarial Valuation**

**Prepared November 2017**

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**Bi-State Development  
Salaried Employees' Pension Plan  
June 1, 2017 Actuarial Valuation**

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Introduction and Purpose**

In this report, we present the results of the June 1, 2017 actuarial valuation for the Bi-State Development Salaried 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 determination of the recommended level of employer contributions
- 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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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Actuarial Certification**

As requested, we have performed an actuarial valuation of the Pension Plan for Salaried Employees of the Bi-State Development Agency of the Missouri-Illinois Metropolitan District (Plan) as of June 1, 2017 for determining contributions for the Plan Year ending May 31, 2018. Our findings are set forth in this actuary's report. This report reflects the benefit provisions in effect on June 1, 2017.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by Bi-State Development, Milliman Seattle, Mayer Hoffman McCann, The Bank of New York Mellon 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 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

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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 determining the recommended funding amounts 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 21-24 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 Bi-State Development. 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 pension 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.

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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 #17-03686



William D. Wunningham, EA  
Actuary  
Joint Board Enrollment #17-06367

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Discussion of Valuation Results**

**1. Contribution Recommendation**

The results of this valuation are used to determine the recommended contribution to the Plan. A comparison of recommended contributions for the current and immediately preceding valuations is shown below:

	<u>Actuarial Valuation as of</u>	
	<u>June 1, 2016</u>	<u>June 1, 2017</u>
Recommended Employer Contribution	\$3,688,023	\$3,444,382
Actual Employer Contribution	\$6,960,275	N/A

There was a decrease in the recommended contribution as compared to the preceding year. The primary reason for the decrease was the large contribution made to the Plan for the year ended May 31, 2017.

**2. Plan Assets**

The market value of plan assets increased from \$54,855,337 at June 1, 2016 to \$63,318,812 at June 1, 2017. A balance sheet and statement of income and disbursements are presented on pages 9 and 10, respectively. The net market rate of return was 9.8% versus -3.6% for the prior year.

The actuarial value of assets increased from \$59,578,888 at June 1, 2016 to \$66,248,667 at June 1, 2017. The development of the June 1, 2017 actuarial value of assets is presented on page 12. The net actuarial rate of return for the period was 6.1% versus the assumed rate of 7%.

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

All actuarial assumptions, methods and plan provisions remained the same as the prior year. Descriptions of these can be found on pages 18-24.

The funding method is the Projected Unit Credit method. The Unfunded Actuarial Accrued Liability is amortized as a level dollar amount over 30 years. Negative unfunded liability is not amortized. The amortization period was reset to 30 years effective June 1, 2010.

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Discussion of Valuation Results (continued)**

**4. Plan Population**

The number of active participants included in the valuation decreased from 329 in the previous valuation to 312 in the current valuation. The number of retirees and beneficiaries increased from 353 to 362. The number of deferred vested participants decreased from 103 to 102. The number of participants on LTD decreased from 4 to 3. The number of terminated nonvested participants due employee contribution refunds remained at 2.

**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 76.5% 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 May 31, 2017 of approximately \$3,637,000. The reconciliation of the unfunded actuarial accrued liability from June 1, 2016 to June 1, 2017 is summarized on the next page.

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Discussion of Valuation Results (continued)**

Unfunded Actuarial Accrued Liability as of June 1, 2016	\$23,991,000
Normal Cost Including Expense Load	2,121,000
Contributions	(7,495,000)
Interest	1,570,000
Expected Unfunded Actuarial Accrued Liability as of June 1, 2017	20,187,000
Increase due to Loss on Actuarial Assets	562,000
Decrease due to Gain on Expenses	(1,000)
Decrease due to Gain on Liability (Including Salary Experience, Data Changes and Mortality Improvements)	(394,000)
Unfunded Actuarial Accrued Liability as of June 1, 2017	20,354,000

**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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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Valuation Results**

	Valuation Date <u>June 1, 2016</u>	Valuation Date <u>June 1, 2017</u>
Number of Participants:		
Active	329	312 *
On LTD	4	3
Terminated Nonvested Due Refund	2	2
Terminated Vested	103	102
Receiving Payments	<u>353</u>	<u>362</u>
Total	791	781
Market Value of Assets	54,855,337	63,318,812
Actuarial Value of Assets	59,578,888	66,248,667
Present Value of Future Benefits	99,377,598	101,276,883 **
Actuarial Accrued Liability	83,570,358	86,602,702 **
Unfunded Actuarial Accrued Liability	23,991,470	20,354,035
Recommended Contribution	3,688,023	3,444,382

\* Includes 68 Participants who transferred from the ATU Local 788 Plan, with liability of \$5,295,395 that will be paid from the ATU Local 788 Plan and 7 Participants who transferred from the IBEW Plan, with liability of \$205,136 that will be paid from the IBEW Plan.

\*\* Includes 5 Participants who transferred to the ATU Local 788 Plan with liability of \$23,404 that is included in this valuation for prior Salaried service.

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**Bi-State Development  
Salaried Employees' Pension Plan  
June 1, 2017 Actuarial Valuation**

**Statement of Assets as of June 1, 2017**

<u>Assets</u>	<u>Market Value</u>
1. Cash and Cash Equivalents	5,245,119
2. Investments	58,049,066
3. Participant Contributions Receivable	24,919
4. Receivable for Securities Sold	623
Total Assets	63,319,727
<u>Liabilities</u>	
1. Accrued Expenses	915
Total Liabilities	915
Net Assets	<u>63,318,812</u>

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**Bi-State Development  
Salaried Employees' Pension Plan  
June 1, 2017 Actuarial Valuation**

**Statement of Income and Disbursements**

1. Market Value of Assets as of June 1, 2016	54,855,337
2. Income	
a. Employer Contributions	6,960,275
b. Employee Contributions	534,888
c. Net Appreciation/(Depreciation) in Fair Value of Investments	5,061,813
d. Interest and Dividends	<u>549,750</u>
e. Total Income	13,106,726
3. Disbursements	
a. Benefit Payments	4,439,358
b. Investment Related Expenses	107,929
c. Administrative Expenses	<u>95,964</u>
d. Total Disbursements	4,643,251
4. Net Increase/(Decrease): (2e) - (3d)	8,463,475
5. Market Value of Assets as of June 1, 2017: (1) + (4)	63,318,812
6. Net Rate of Return	9.8%

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**Bi-State Development  
Salaried Employees' Pension Plan  
June 1, 2017 Actuarial Valuation**

**Historical Returns on Market Value of Assets**

Plan Year <u>Ended</u>	Annual <u>Return</u>	Geometric Average <u>Return</u>
05/31/2009	-22.3%	-22.3%
05/31/2010	13.3%	-6.2%
05/31/2011	17.4%	1.1%
05/31/2012	-5.1%	-0.5%
05/31/2013	16.0%	2.6%
05/31/2014	11.1%	4.0%
05/31/2015	4.6%	4.1%
05/31/2016	-3.6%	3.1%
05/31/2017	9.8%	3.8%

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**Bi-State Development  
Salaried Employees' Pension Plan  
June 1, 2017 Actuarial Valuation**

**Development of Actuarial Value of Assets**

	Plan Year Ended <u>05/31/2014</u>	Plan Year Ended <u>05/31/2015</u>	Plan Year Ended <u>05/31/2016</u>	Plan Year Ended <u>05/31/2017</u>
1. Market Value at Beginning of Year	51,002,640	57,614,052	58,030,855	54,855,337
2. Contributions	4,998,198	4,030,220	3,308,431	7,495,163
3. Benefit Payments	(3,911,063)	(6,012,252)	(4,275,398)	(4,439,358)
4. Administrative Expenses	(56,298)	(66,058)	(168,111)	(95,964)
5. Assumed Rate of Return	7.50%	7.50%	7.50%	7.00%
6. Expected Return: (1) x (5) + [(2) + (3) + (4)] x {[1 + (5)] <sup>0.5</sup> - 1}	3,863,156	4,245,639	4,310,518	3,941,716
7. Expected Market Value at End of Year: (1) + (2) + (3) + (4) + (6)	55,896,633	59,811,601	61,206,295	61,756,894
8. Actual Market Value at End of Year	57,614,052	58,030,855	54,855,337	63,318,812
9. (Gain) / Loss on Market Value: (7) - (8)	(1,717,419)	1,780,746	6,350,958	(1,561,918)
	Plan Year Ended	<u>(Gain) / Loss</u>	<u>Factor</u>	Amount <u>Deferred</u>
	05/31/2017	(1,561,918)	0.8	(1,249,534)
	05/31/2016	6,350,958	0.6	3,810,575
	05/31/2015	1,780,746	0.4	712,298
	05/31/2014	(1,717,419)	0.2	(343,484)
10. Total				2,929,855
11. Actuarial Value of Assets: (8) + (10)				66,248,667
12. Net Rate of Return				6.1%
13. Actuarial Value as a Percentage of Market Value				104.6%

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**Bi-State Development  
Salaried Employees' Pension Plan  
June 1, 2017 Actuarial Valuation**

**Development of Recommended Contribution**

	<u>June 1, 2017</u>
1. Actuarial Accrued Liability	
a. Active Participants	37,983,102
b. Participants on LTD	529,170
c. Terminated Vested Participants/Nonvested Return of Contributions	4,920,995
d. Participants Receiving Payments	<u>43,169,435</u>
e. Total	86,602,702
2. Actuarial Value of Assets	66,248,667
3. Unfunded Actuarial Accrued Liability: (1e) - (2)	20,354,035
4. Projected Unit Credit Normal Cost	2,030,733
5. Expected Employee Contributions	498,524
6. Expense Load	110,044
7. Projected Unit Credit Normal Cost, Net of Expected Employee Contributions, with Expense Load: (4) - (5) + (6)	1,642,253
8. Amortization of Unfunded Actuarial Accrued Liability Liability Over 30 Years from June 1, 2010	1,687,557
9. Recommended Contribution at Beginning of Year: (7) + (8)	3,329,810
10. Recommended Contribution with Interest	3,444,382

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Schedule of Funding Progress \***

Date of Valuation (1)	Actuarial Value of Assets (2)	Actuarial Accrued Liability ** (3)	Unfunded		Covered Payroll (6)	UAL as a Percentage of Covered Payroll (7) = (4) / (6)
			Actuarial Accrued Liability (UAL) (4) = (3) - (2)	Funded Ratio (5)=(2)/(3)		
06/01/1996	\$19,614,381	\$19,614,381	\$0	100.0%	\$13,692,612	0.0%
06/01/1997	21,951,099	21,951,099	0	100.0%	14,175,675	0.0%
06/01/1998	24,893,733	24,893,733	0	100.0%	14,856,228	0.0%
06/01/1999	27,945,872	27,945,872	0	100.0%	16,425,700	0.0%
06/01/2000	29,683,563	29,683,563	0	100.0%	15,996,616	0.0%
06/01/2001	30,858,863	30,858,863	0	100.0%	20,221,778	0.0%
06/01/2002	32,918,196	32,918,196	0	100.0%	21,554,152	0.0%
06/01/2003	35,069,865	35,069,865	0	100.0%	23,885,228	0.0%
06/01/2004	37,865,040	37,321,892	(543,148)	101.5%	25,201,532	-2.2%
06/01/2005	40,281,552	39,850,200	(431,352)	101.1%	27,630,438	-1.6%
06/01/2006	42,880,931	42,280,212	(600,719)	101.4%	25,601,698	-2.3%
06/01/2007	44,751,281	43,192,896	(1,558,385)	103.6%	25,417,682	-6.1%
06/01/2008	47,677,929	46,380,318	(1,297,611)	102.8%	25,645,092	-5.1%
06/01/2009	48,126,959	47,280,017	(846,942)	101.8%	25,465,982	-3.3%
06/01/2010	47,226,544	56,933,387	9,706,843	83.0%	25,286,621	38.4%
06/01/2011	47,127,952	58,573,502	11,445,550	80.5%	26,578,943	43.1%
06/01/2012	47,628,801	63,034,360	15,405,559	75.6%	26,309,983	58.6%
06/01/2013	49,704,047	67,865,918	18,161,871	73.2%	27,621,000	65.8%
06/01/2014	55,612,180	73,512,998	17,900,818	75.6%	21,841,333	82.0%
06/01/2015	58,097,258	74,159,799	16,062,541	78.3%	21,825,710	73.6%
06/01/2016	59,578,888	83,570,358	23,991,470	71.3%	22,657,974	105.9%
06/01/2017	66,248,667	86,602,702	20,354,035	76.5%	22,111,116	92.1%

\* GASB Accounting disclosures as of May 31, 2015 and later are included in separate reports.

\*\* The Aggregate Cost Method was used prior to June 1, 2004.

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Participant Data**

	<u>June 1, 2016</u>	<u>June 1, 2017</u>
1. Active Participants		
a. Count	329	312 *
b. Average Salary	\$70,073	\$72,645
c. Average Age	53.1	54.2
d. Average Service	15.3	16.3
2. Participants on LTD		
a. Count	4	3
b. Total Monthly Benefits	\$7,671	\$6,004
c. Average Monthly Benefit	\$1,918	\$2,001
3. Terminated Nonvested Participants Due Refund		
a. Count	2	2
b. Total Refund Due	\$3,609	\$6,586
4. Terminated Vested Participants		
a. Count	103	102
b. Total Monthly Benefits	\$61,402	\$61,386
c. Average Monthly Benefit	\$596	\$602
5. Participants Receiving Payments		
a. Count	353	362
b. Total Monthly Benefits	\$357,967	\$366,011
c. Average Monthly Benefit	\$1,014	\$1,011

\* Includes 68 Participants who transferred from the ATU Local 788 Plan and 7 Participants who transferred from the IBEW Plan. In addition, there are 5 Participants who transferred to the ATU Local 788 Plan that have liabilities included in this valuation for prior Salaried service.

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Distribution of Active Participants by Age and by Years of Service**  
(as of June 1, 2017)

Age	YEARS OF CREDITED SERVICE										Total	
	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.		
Under 25	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	4	5	0	0	0	0	0	0	0	9
35 to 39	0	2	3	8	3	0	0	0	0	0	0	16
40 to 44	0	1	8	9	2	2	0	0	0	0	0	22
45 to 49	0	2	8	16	18	4	1	0	0	0	0	49
50 to 54	0	1	15	9	12	14	6	3	0	0	0	60
55 to 59	0	0	8	20	18	5	6	6	1	0	0	64
60 to 64	0	0	10	19	6	7	5	7	6	2	0	62
65 to 69	0	0	3	11	3	3	1	2	0	0	0	23
70 and up	0	0	1	3	2	0	1	0	0	0	0	7
Total	0	6	60	100	64	35	20	18	7	2	0	312

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Changes in Participant Data**

	<u>Active Participants</u>	<u>On LTD</u>	<u>Terminated Nonvested Due Refund</u>	<u>Terminated Vested</u>	<u>Retirees</u>	<u>Total</u>
Count as of June 1, 2016	329	4	2	103	353	791
Rehires	0	0	0	0	0	0
Transferred to 788	0	0	0	0	0	0
Went on LTD	0	0	0	0	0	0
Retired	(6)	(1)	0	(8)	15	0
Lump Sum Payouts	0	0	0	0	0	0
Died with Beneficiary	0	0	0	(1)	(1)	(2)
Died without Beneficiary	0	0	0	0	(7)	(7)
New Beneficiaries	0	0	0	0	2	2
New Alternate Payees	0	0	0	0	1	1
Terminated Vested	(9)	0	0	9	0	0
Terminated Nonvested - Due Refund	(1)	0	1	0	0	0
Terminated Nonvested - Received Refund	(1)	0	(1)	0	0	(2)
Certain Period Expired	0	0	0	0	0	0
Net Data Corrections	<u>0</u>	<u>0</u>	<u>0</u>	<u>(1)</u>	<u>(1)</u>	<u>(2)</u>
Net Changes	<u>(17)</u>	<u>(1)</u>	<u>0</u>	<u>(1)</u>	<u>9</u>	<u>(10)</u>
Count as of June 1, 2017	312	3	2	102	362	781

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Actuarial Assumptions and Methods**

**Interest**

7.00% per annum, net of expenses, compounded annually (effective 6/1/2016)

**Salary Increases**

4.5% per annum

**Mortality**

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

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

**Withdrawal**

Rates at selected ages are:

<u>Age</u>	<u>Percent Terminating During Year</u>
25	10.6
30	10.0
35	9.4
40	7.0
45	3.5
50	0.0
55	0.0
60	0.0

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Actuarial Assumptions and Methods (continued)**

**Retirement**

Rates vary by age as follows:

<u>Age</u>	<u>Percent Retiring During Year</u>
55	10%
56	5
57	5
58	5
59	5
60	10
61	10
62	40
63	20
64	20
65	50
66-69	30
70 & over	100

**Disability**

Rates at selected ages are:

<u>Age</u>	<u>Percent Becoming Disabled During Year</u>
25	0.064%
30	0.075
35	0.092
40	0.124
45	0.188
50	0.300
55	0.489
60	0.000
65	0.000

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Actuarial Assumptions and Methods (continued)**

**Expenses**

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

**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.

**Form of Payment**

All members are assumed to elect the Life Annuity.

**Actuarial Cost Method**

Service Pro-Rate Unit Credit: The normal cost for each participant is the present value of the benefit earned during the year. The accrued liability for each participant is the present value of the Participant's accrued benefit as of the valuation date. The plan normal cost and accrued liability are the respective sums for all Participants. Changes in the accrued liability are amortized as a level dollar amount over a 30 year period effective June 1, 2010.

**Asset Valuation Method**

The actuarial value of assets was determined using the expected return method, without phase-in, effective June 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

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions**

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

**Effective Date**

Originally effective June 1, 1964; The most recent restatement was effective January 1, 2014, including the amendments signed September 8, 2014 and September 25, 2015.

**Eligibility**

Participants become eligible after their first hour of employment. Employees hired on or after July 1, 2013 do not participate in the Plan.

**Covered Employment**

Employed by Bi-State Development as a salaried employee on a full-time basis and not covered under a collective bargaining unit

**Employee Contributions**

Effective January 1, 2014, Participants contribute 3% of Bi-Weekly Base Pay, less reimbursements and allowances.

**Credited Service**

Continuous Service from date of hire until date of termination earned in terms of years, months, weeks and days

**Vesting**

A member becomes 100% vested upon completion of 5 years of Credited Service.

**Monthly Earnings**

Base pay including cost-of-living adjustments and excluding bonuses, overtime and commissions and any other additional compensation

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions (continued)**

**Final Average Monthly Earnings**

The highest average amount of monthly earnings on the three consecutive plan anniversary dates while in Covered Employment

**Normal Retirement Date**

First of the month coincident with or next following the earlier of age 60 with 5 or more years of Credited Service

**Normal Retirement Benefit**

The greater of the following:

1. The Accrued Benefit as of May 31, 1989 plus 1.5% of Final Average Monthly Earnings times years of Credited Service after May 31, 1989
2. 1.5% of Final Average Monthly Earnings times all years of Credited Service

Note that years of Credited Service prior to February 1, 1985 are not recognized for Participants who received a distribution of their Accumulated Cash Share.

**Early Retirement Date**

First of the month coincident with or next following age 55 and 10 years of Credited Service

**Early Retirement Benefit**

A monthly benefit equal to the Accrued Benefit reduced  $\frac{1}{4}\%$  for each month by which the Benefit Commencement Date precedes age 60

**Late Retirement Benefit**

Accrued Benefit calculated at Late Retirement Date

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions (continued)**

**Disability Benefit**

If Participants become disabled while in employment after completing 5 years of Credited Service, they will continue to earn Credited Service up until their Normal Retirement Date as long as they continue to qualify as disabled.

**Pre-Retirement Death Benefit**

If a Participant dies prior to retirement and after completing 5 years of Credited Service, a monthly benefit will be payable to his or her beneficiary equal to 50% of the Accrued Benefit earned as of the date of death. If the Participant completed at least 10 years of Credited Service, the benefit will be payable immediately to their beneficiary in a reduced amount according to the Plan's Early Retirement provisions. If the Participant had less than 10 years of Credited Service, the benefit is payable beginning on the Participant's Normal Retirement Date.

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

**Unused Sick Leave**

Participants who retire under Normal, Early or Late Retirement and beneficiaries of Participants who die with 5 or more years of Credited Service will have their unused sick leave, if any, converted to Credited Service in an amount equal to 1 week of Credited Service for every 8 hours of unused sick leave, to a maximum of 3 years. For terminations of employment after January 1, 2014, unused sick leave will not be converted to Credited Service.

**Unused Excess Sick Leave**

Participants who retire under Normal, Early or Late Retirement and beneficiaries of Participants who die with 5 or more years of Credited Service are entitled to a Supplemental Pension based on their unused excess sick leave account. Unused excess sick leave may be converted to either a single lump sum of 85% of the unused excess sick leave amount or monthly payments for either 3 or 7 years based on conversion factors contained in the Plan Document.

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**Bi-State Development  
Salaried Employees' Pension Plan**

**June 1, 2017 Actuarial Valuation**

**Summary of Plan Provisions (continued)**

**Unused Banked Vacation Time**

Participants' unused banked vacation time in excess of 45 days as of December 31, 2009 will be converted to Credited Service in an amount equal to 1 week of Credited Service for every 8 hours of unused banked vacation time. For terminations of employment after June 14, 2013, unused banked vacation will not be converted to Credited Service.

**Normal Form of Payment**

Single Life Annuity

**Optional Forms of Payment**

Ten-Year Certain and Life Option

Contingent Annuitant Options (100%, 66 2/3% or 50%)

**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.

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