

**Bi-State Development Agency
of the Missouri-Illinois
Metropolitan District and Division 788
Amalgamated Transit Union
AFL-CIO Employees' Pension Plan
and Agreement**

April 1, 2017 Actuarial Valuation

Prepared November 2017

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Introduction and Purpose

In this report, we present the results of the April 1, 2017 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 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
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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, 2017 for determining contributions for the Plan Year ending March 31, 2018. Our findings are set forth in this actuary's report. This report reflects the benefit provisions in effect on April 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 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

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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 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 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

MJZ/WDW/crd



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

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Discussion of Valuation Results

1. Contribution Recommendation

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

| | <u>Actuarial Valuation as of</u> | |
|---|----------------------------------|----------------------|
| | <u>April 1, 2016</u> | <u>April 1, 2017</u> |
| Weekly Recommended Contribution Rate | \$156.78 | \$153.78 |
| Additional Weekly Five Year Contribution Required to Achieve 60% Funding Calculated in 2010 | \$8.87 | N/A |
| Total Weekly Contribution Rate | \$161.31 | \$153.78 * |

* At the November 3, 2016 meeting, the Pension Committee adopted a total weekly contribution rate of \$175.00. We do not recommend decreasing the contribution rate below the current level.

There was a decrease in the recommended contribution rate as compared to the preceding year. The primary reasons for the decrease were actuarial asset return greater than the assumed 7% for the year ended March 31, 2017 and contributions in excess of the recommended amount.

The additional amount to achieve 60% funding, which was required by the terms of the Plan in previous years, is no longer required due to the Plan exceeding the 60% funding level.

2. Plan Assets

The market value of plan assets increased from \$116,103,177 at April 1, 2016 to \$128,425,595 at April 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 13.0% versus -3.4% for the prior year.

The actuarial value of assets increased from \$122,802,782 at April 1, 2016 to \$129,194,067 at April 1, 2017. The development of the April 1, 2017 actuarial value of

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Discussion of Valuation Results (continued)

assets is presented on page 12. The net actuarial rate of return for the period was 7.4% 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 18-25.

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 increased from 1,378 in the previous valuation to 1,383 in the current valuation. The number of retirees and beneficiaries increased from 1,102 to 1,115. The number of deferred vested participants decreased from 54 to 52. The number of participants on LTD remained at 2. The number of terminated nonvested participants due a refund of employee contributions increased from 151 to 165.

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 62.5% 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 March 31, 2017 of approximately \$4,836,000. The reconciliation of the unfunded actuarial accrued liability from April 1, 2016 to April 1, 2017 is summarized on the next page.

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Discussion of Valuation Results (continued)

| | |
|--|--------------|
| Unfunded Actuarial Accrued Liability as of April 1, 2016 | \$82,259,000 |
| Normal Cost including Expense Load | 2,804,000 |
| Contributions | (13,444,000) |
| Interest | 5,492,000 |
| Expected Unfunded Actuarial Accrued Liability as of April 1, 2017 | 77,111,000 |
| Decrease due to Gain on Actuarial Assets | (498,000) |
| Decrease due to Gain on Expenses | (57,000) |
| Increase due to Loss on Liability (Including Data Corrections and Mortality Improvements) | 867,000 |
| Unfunded Actuarial Accrued Liability as of April 1, 2017 | 77,423,000 |

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
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Summary of Valuation Results

| | Valuation Date <u>April 1, 2016</u> | Valuation Date <u>April 1, 2017</u> |
|---|--|--|
| Number of Participants: | | |
| Active | 1,378 | 1,383 * |
| On LTD | 2 | 2 |
| Terminated Nonvested Due Refund | 151 | 165 |
| Terminated Vested | 54 | 52 |
| Receiving Payments | <u>1,102</u> | <u>1,115</u> |
| Total | 2,687 | 2,717 |
| Market Value of Assets | 116,103,177 | 128,425,595 |
| Actuarial Value of Assets | 122,802,782 | 129,194,067 |
| Present Value of Future Benefits | 223,295,361 | 224,815,300 ** |
| Entry Age Normal Accrued Liability | 205,061,983 | 206,616,631 ** |
| Unfunded Entry Age Normal Accrued Liability | 82,259,201 | 77,422,564 |
| Recommended Contribution | 11,234,276 | 11,059,323 |
| Required Weekly Contribution Rate | 156.78 | 153.78 |
| Additional Weekly Five Year Contribution Required to Achieve 60% Funded Ratio Calculated in 2010 | 8.87 | N/A |
| Total Weekly Contribution Rate | 165.65 | 153.78 |

* Includes 5 Participants who transferred from the Salaried Plan, with liability of \$23,404 that will be paid from the Salaried Plan.

** Includes 68 Participants who transferred to the Salaried Plan with total liability of \$5,295,395 and 5 Participants who transferred to the IBEW Plan with total liability of \$47,514 that is included in this valuation for prior ATU Local 788 service.

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Statement of Assets as of April 1, 2017

| <u>Assets</u> | <u>Market Value</u> |
|-------------------------------------|---------------------|
| 1. Cash and Cash Equivalents | 2,932,394 |
| 2. Investments | 125,360,217 |
| 3. Employer Contribution Receivable | 122,755 |
| 4. Employee Contribution Receivable | 52,758 |
| 4. Accrued Income | 25,359 |
| Total Assets | 128,493,483 |
| | |
| <u>Liabilities</u> | |
| 1. Accrued Expenses | 67,888 |
| Total Liabilities | 67,888 |
| | |
| Net Assets | <u>128,425,595</u> |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Statement of Income and Disbursements

| | |
|---|------------------|
| 1. Market Value of Assets as of April 1, 2016 | 116,103,177 |
| 2. Income | |
| a. Employer Contributions | 9,626,600 |
| b. Employee Contributions | 3,817,282 |
| c. Net Appreciation/(Depreciation) in Fair Value of Investments | 13,581,793 |
| d. Interest and Dividends | <u>1,537,679</u> |
| e. Total Income | 28,563,354 |
| 3. Disbursements | |
| a. Benefit Payments | 15,844,780 |
| b. Investment Related Expenses | 183,728 |
| c. Administrative Expenses | <u>212,428</u> |
| d. Total Disbursements | 16,240,936 |
| 4. Net Increase/(Decrease): (2e) - (3d) | 12,322,418 |
| 5. Market Value of Assets as of April 1, 2017: (1) + (4) | 128,425,595 |
| 6. Net Rate of Return | 13.0% |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan
April 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> |
|---------------------------|-------------------------|---------------------------------------|
| 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% |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Development of Actuarial Value of Assets

| | <u>Plan Year Ended 03/31/2014</u> | <u>Plan Year Ended 03/31/2015</u> | <u>Plan Year Ended 03/31/2016</u> | <u>Plan Year Ended 03/31/2017</u> |
|---|---|---|---|---|
| 1. Market Value at Beginning of Year | 102,970,249 | 118,343,677 | 123,027,014 | 116,103,177 |
| 2. Contributions | 12,844,192 | 12,902,384 | 13,026,927 | 13,443,882 |
| 3. Benefit Payments and Administrative Expenses | (14,706,210) | (15,558,553) | (15,778,579) | (16,057,208) |
| 4. Assumed Rate of Return | 7.25% | 7.25% | 7.25% | 7.00% |
| 5. Expected Return: (1) x (4) + [(2) + (3)] x {[1 + (4)] ^{0.5} - 1} | 7,399,026 | 8,485,315 | 8,821,456 | 8,037,303 |
| 6. Expected Market Value at End of Year: (1) + (2) + (3) + (5) | 108,507,257 | 124,172,823 | 129,096,818 | 121,527,154 |
| 7. Actual Market Value at End of Year | 118,343,677 | 123,027,014 | 116,103,177 | 128,425,595 |
| 8. (Gain) / Loss on Market Value: (6) - (7) | (9,836,420) | 1,145,809 | 12,993,641 | (6,898,441) |
| | <u>Plan Year Ended</u> | <u>(Gain) / Loss</u> | <u>Factor</u> | <u>Amount Deferred</u> |
| | 03/31/2017 | (6,898,441) | 0.8 | (5,518,753) |
| | 03/31/2016 | 12,993,641 | 0.6 | 7,796,185 |
| | 03/31/2015 | 1,145,809 | 0.4 | 458,324 |
| | 03/31/2014 | (9,836,420) | 0.2 | (1,967,284) |
| 9. Total | | | | 768,472 |
| 10. Actuarial Value of Assets: (7) + (9) | | | | 129,194,067 |
| 11. Net Rate of Return | | | | 7.4% |
| 12. Actuarial Value as a Percentage of Market Value | | | | 100.6% |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Development of Recommended Contribution

| | <u>April 1, 2017</u> |
|---|----------------------|
| 1. Present Value of Future Benefits | |
| a. Active Participants | 88,407,143 |
| b. Participants on LTD | 51,480 |
| c. Terminated Vested Participants/Nonvested Return of Contributions | 2,537,162 |
| d. Participants Receiving Payments | <u>133,819,515</u> |
| e. Total | 224,815,300 |
| 2. Present Value of Future Normal Costs | 18,198,669 |
| 3. Entry Age Normal Accrued Liability: (1e) - (2) | 206,616,631 |
| 4. Actuarial Value of Assets | 129,194,067 |
| 5. Unfunded Entry Age Normal Accrued Liability: (3) - (4) | 77,422,564 |
| 6. Entry Age Normal Cost | 2,552,660 |
| 7. Expense Load | 299,871 |
| 8. Entry Age Normal Cost with Expense Load: (6) + (7) | 2,852,531 |
| 9. Amortization of Unfunded Entry Age Normal Accrued Liability Over 30 Years from April 1, 2003 | 7,659,599 |
| 10. Preliminary Recommended Contribution at Beginning of Year: (8) + (9) | 10,512,130 |
| 11. Recommended Contribution with Interest | 11,059,323 |
| 12. Number of Active Participants | 1,383 |
| 13. Required Weekly Contribution per Active Participant | \$153.78 |
| 14. Additional Weekly Five Year Contribution Required to Achieve 60% Funded Ratio | N/A |
| 15. Total Weekly Contribution at Year End: (13) + (14) | \$153.78 |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Schedule of Funding Progress *

| <u>Date of Valuation</u> | <u>Actuarial Value of Assets</u> | <u>Entry Age Normal (EAN) Accrued Liability</u> | <u>Unfunded EAN Accrued Liability (UAL)</u> | <u>Funded Ratio</u> | <u>Covered Payroll</u> | <u>UAL as a Percentage of Covered Payroll</u> |
|--------------------------|----------------------------------|---|---|---------------------|------------------------|---|
| (1) | (2) | (3) | (4) = (3) - (2) | (5)=(2)/(3) | (6) | (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% |

* 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.

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Summary of Participant Data

| | <u>April 1, 2016</u> | <u>April 1, 2017</u> |
|---|----------------------|----------------------|
| 1. Active Participants | | |
| a. Count | 1,378 | 1,383 * |
| b. Average Age | 46.3 | 46.4 |
| c. Average Service | 12.1 | 12.1 |
| 2. Participants on LTD | | |
| a. Count | 2 | 2 |
| b. Total Monthly Benefits | \$500 | \$500 |
| c. Average Monthly Benefit | \$250 | \$250 |
| 3. Terminated Nonvested Participants Due Refund | | |
| a. Count | 151 | 165 |
| b. Total Refund Due | \$523,418 | \$584,782 |
| 4. Terminated Vested Participants | | |
| a. Count | 54 | 52 |
| b. Total Monthly Benefits | \$26,691 | \$26,843 |
| c. Average Monthly Benefit | \$494 | \$516 |
| 5. Participants Receiving Payments | | |
| a. Count | 1,102 | 1,115 |
| b. Total Monthly Benefits | \$1,227,623 | \$1,238,448 |
| c. Average Monthly Benefit | \$1,114 | \$1,111 |

* Includes 5 Participants who transferred from the Salaried Plan. In addition, there are 68 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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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Distribution of Active Participants by Age and by Years of Service
(as of April 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 | 14 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 |
| 25 to 29 | 21 | 74 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 30 to 34 | 16 | 56 | 44 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 128 |
| 35 to 39 | 10 | 39 | 47 | 20 | 14 | 1 | 0 | 0 | 0 | 0 | 131 |
| 40 to 44 | 4 | 51 | 55 | 41 | 30 | 9 | 0 | 0 | 0 | 0 | 190 |
| 45 to 49 | 4 | 29 | 60 | 46 | 41 | 19 | 6 | 0 | 0 | 0 | 205 |
| 50 to 54 | 4 | 37 | 40 | 30 | 34 | 40 | 14 | 7 | 0 | 0 | 206 |
| 55 to 59 | 6 | 17 | 37 | 32 | 32 | 30 | 22 | 11 | 8 | 0 | 195 |
| 60 to 64 | 0 | 5 | 14 | 18 | 24 | 21 | 22 | 10 | 22 | 5 | 141 |
| 65 to 69 | 1 | 2 | 4 | 2 | 3 | 3 | 1 | 4 | 5 | 7 | 32 |
| 70 and up | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 4 |
| Total | 80 | 335 | 319 | 201 | 179 | 123 | 66 | 32 | 35 | 13 | 1,383 |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Summary of Changes in Participant Data

| | <u>Active Participants</u> | <u>Participants on LTD</u> | <u>Terminated Nonvested Due Refund</u> | <u>Terminated Vested</u> | <u>Retirees</u> | <u>Total</u> |
|--|--------------------------------|--------------------------------|--|------------------------------|-----------------|--------------|
| Count as of April 1, 2016 | 1,378 | 2 | 151 | 54 | 1,102 | 2,687 |
| New Entrants | 107 | 0 | 0 | 0 | 0 | 107 |
| Rehired | 3 | 0 | (1) | (2) | 0 | 0 |
| Disability Pension Ceased | 1 | 0 | 0 | 0 | (1) | 0 |
| Disability Pension Reinstated | 0 | 0 | 0 | (1) | 1 | 0 |
| Retired | (31) | 0 | 0 | (2) | 35 | 2 |
| Became Disabled | (6) | 0 | 0 | 0 | 6 | 0 |
| Died with Beneficiary | (1) | 0 | 0 | (1) | (11) | (13) |
| Died with Beneficiary - Beneficiary Received Refund | 0 | 0 | 0 | 0 | 0 | 0 |
| Died without Beneficiary | 0 | 0 | 0 | 0 | (34) | (34) |
| New Beneficiaries | 0 | 0 | 0 | 0 | 14 | 14 |
| New Alternate Payees | 0 | 0 | 0 | 0 | 4 | 4 |
| Terminated Vested - Did Not Receive Refund | (7) | 0 | 0 | 9 | 0 | 2 |
| Terminated Vested - Received Refund | (7) | 0 | 0 | (5) | 0 | (12) |
| Terminated Nonvested - Due Refund | (23) | 0 | 23 | 0 | 0 | 0 |
| Terminated Nonvested - Received Refund | (31) | 0 | (19) | 0 | 0 | (50) |
| Certain Period Expired | 0 | 0 | 0 | 0 | (1) | (1) |
| Net Data Adjustments | <u>0</u> | <u>0</u> | <u>11</u> | <u>0</u> | <u>0</u> | <u>11</u> |
| Net Changes | <u>5</u> | <u>0</u> | <u>14</u> | <u>(2)</u> | <u>13</u> | <u>30</u> |
| Count as of April 1, 2017 | 1,383 | 2 | 165 | 52 | 1,115 | 2,717 |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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:

| <u>Age</u> | <u>Percent Terminating During Year</u> |
|------------|--|
| 25 | 6.3 |
| 30 | 5.0 |
| 35 | 4.0 |
| 40 | 3.0 |
| 45 | 2.5 |
| 50 | 2.0 |
| 55 | 1.0 |
| 60 | 0.0 |

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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:

| <u>Age</u> | <u>Percent Retiring During Year</u> |
|------------|---|
| 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:

| <u>Age</u> | <u>Percent Retiring During Year</u> |
|------------|---|
| 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.

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Actuarial Assumptions and Methods (continued)

Disability

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

| <u>Age</u> | <u>Percent Becoming Disabled During Year</u> |
|------------|--|
| 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:

| <u>Age</u> | <u>Percent Becoming Disabled During Year</u> |
|------------|--|
| 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

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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, 2017 valuation, the remaining amortization period is 16 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

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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.

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.

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

Summary of Plan Provisions (continued)

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.

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

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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.

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**Bi-State Development
ATU Local 788 Employees' Pension Plan**

April 1, 2017 Actuarial Valuation

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%.

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