### **Actuarial Valuation**

As of January 1, 2017



### **Actuarial Valuation as of January 1, 2017**

October 19, 2017

Board of Trustees Western States Office & Professional Employees Plan

#### Dear Trustees:

Following is our report on the actuarial valuation of the Pension Plan as of January 1, 2017. Here is a summary of the valuation results:

- 1. The Plan has an Unfunded Accrued Liability of \$184.6 million as of January 1, 2017.
- 2. Net investment income was \$22.9 million for an annual rate of return of 6.84% (based on the Actuarial Value of Assets). The Market Value rate of return was 6.44%. Both returns are net of all expenses.
- The Plan experienced an actuarial loss of \$1.0 million during 2016. The Plan's 2016 net actuarial loss due to asset performance was \$1.4 million. On the liability side, a gain of \$0.3 million was realized during the 2016 Plan Year.
- 4. Based on the Pension Protection Act of 2006 (PPA) and the Plan's interest assumption of 7.25%, the funded ratio for the 2017 Plan Year provided in notices to be distributed during April 2018 is 65.0%.
- 5. As of January 1, 2017, the favorable credit balance in the Funding Standard Account was \$35.3 million, a decrease of \$15.4 million from the prior year. The credit balance reflects the 5-year amortization extension which was approved by the IRS in 2009. As of December 31, 2017, the credit balance is projected to be \$17.2 million. As a result, contributions are expected to meet minimum funding requirements for the 2017 Plan Year.

- 6. As of January 1, 2017, the Plan was certified under the PPA, as modified by the Multiemployer Pension Reform Act of 2014 (MPRA), as being in critical and declining status. That certification indicated that the Plan is projected to be insolvent by the end of the 2034 Plan Year.
- 7. The projected employer contributions exceed the estimated cost of benefits to be earned during 2017 by about \$7.7 million. Based on asset and liability measures on the valuation date, this excess is insufficient for funding the projected Unfunded Accrued Liability over a reasonable period. Without future investment return gains, Board and/or bargaining corrective action may be needed in the future to fund the projected unfunded liability over a reasonable period.
- 8. Contributions for 2017 are projected to be fully deductible as they will fall within the maximum limits set by the IRS.
- As of December 31, 2016, there is an unfunded vested benefit liability of \$224.1 million for withdrawal liability purposes. Pursuant to the IRC, the determination of the unfunded vested benefit liability disregards certain benefit reductions implemented as part of the Rehabilitation Plan. Additional information is provided in Section V.

Sincerely,

Paul Graf, ASA, EA, MAAA

cc: Kim Gould Joe Reinhart, Esq. Alex Miller



### **Actuarial Valuation as of January 1, 2017**

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**Actuarial Valuation as of January 1, 2017** 

## PLAN

**HISTORY** 

There were 53 active
terminations from vested
status and 49 active
terminations from
non-vested status during the
2016 Plan Year.

Total employer contributions decreased by approximately \$0.6 million in 2016.

#### **VALUATION HIGHLIGHTS**

The Western States Office & Professional Employees Plan became effective in 1959 as a result of collective bargaining between Locals 29 and 11 of OPEIU and Pacific Intermountain Express. The Plan was last restated effective January 1, 2017, and received a favorable determination letter in February 2016.

VALUATION HIGHLIGHTS	·	·		•	·	·
	Ja	anuary 1, 2016	J	anuary 1, 2017		Change
Number of Participants:						
Actives		868		809		(59)
Non-Vested Inactives <sup>1</sup>		376		359		(17)
Vested Inactives		2,939		2,827		(112)
Retirees and Beneficiaries <sup>2</sup>		3,744		3,845		101
Total Participants		7,927		7,840		(87)
Employer Contributions	\$	11,811,952	\$	11,250,910	\$	(561,042)
Market Value of Assets (MVA)	\$	334,210,200	\$	326,919,954	\$	(7,290,246)
Actuarial Value of Assets	\$	347,859,875	\$	342,812,133	\$	(5,047,742)
Actuarial Accrued Liability	\$	534,860,955	\$	527,455,968	\$	(7,404,987)
Unfunded Accrued Liability	\$	187,001,080	\$	184,643,835	\$	(2,357,245)
PPA Funded Percentage		65.0%		65.0%		0.0%
MVA Funded Percentage		62.5%		62.0%		(0.5)%
Credit Balance	\$	50,699,080	\$	35,343,447	\$	(15,355,633)
Unfunded Vested Benefits (Withdrawal Liability)	\$	219,085,340	\$	224,055,799	\$	4,970,459

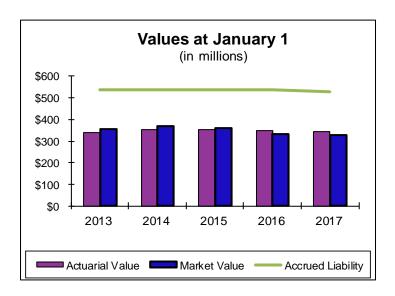
These are non-vested inactive participants who have not incurred a permanent break-in-service.



Includes 17 Alternate Payees as of January 1, 2016 and 18 Alternate Payees as of January 1, 2017.

**Actuarial Valuation as of January 1, 2017** 

#### SECTION I DISCUSSION OF ASSETS AND LIABILITIES



The PPA Funded
Percentage remained level
from 65.0% at January 1,
2016 to 65.0% at
January 1, 2017.

The Actuarial Value of Assets is \$15.9 million more than the Market Value of Assets as of January 1, 2017.

ASSETS	
A. Cash and Cash Equivalents	\$ 2,887,426
B. Marketable Securities	320,499,774
C. Net Receivables, Payables and Prepaid Expenses	 3,532,754
D. Market Value of Assets (A + B + C)	\$ 326,919,954
E. Actuarial Adjustment (Appendix D)	 15,892,179
F. Total Assets at Actuarial Value (D + E)	\$ 342,812,133
IABILITIES	
- Funding	
G. Actives	\$ 55,572,171
I. Vested Inactives	110,897,213
J. Retirees and Beneficiaries	 360,986,584
K. Actuarial Accrued Liability (G + H + I + J)	\$ 527,455,968
L. Unfunded Accrued Liability (K - F)	\$ 184,643,835
PPA (Statutory)	
M. Actives	\$ 55,572,171
O. Vested Inactives	110,897,213
P. Retirees and Beneficiaries	 360,986,584
Q. Actuarial Accrued Liability (M + N + O + P)	\$ 527,455,968
R. PPA Funded Percentage (F / Q)	65.0 %



**Actuarial Valuation as of January 1, 2017** 

#### SECTION I DISCUSSION OF ASSETS AND LIABILITIES (CONTINUED)

The financial status of the Plan provides us with the means of measuring the actuarial position of the Trust as of January 1, 2017.

#### **ASSETS**

The total Market Value of Assets as of January 1, 2017 is \$326,919,954. Information regarding assets was taken from the final audit report provided by Hemming Morse, LLP.

We have utilized an asset valuation method that recognizes net investment income on Trust assets that is more or less than 7.25% per year over a five-year period. The value of Trust assets based on this method is \$342,812,133, which represents 104.9% of the Market Value of Assets. This method is intended to dampen the volatility associated with year to year changes in the market value of Trust assets, while at the same time systematically recognizing overall investment performance over the long term. The derivation of the Actuarial Value of Assets is shown in Appendix D.

Contributions receivable from Employers for hours worked in the 2016 Plan Year but received after December 31, 2016 are included with net receivables.

#### LIABILITIES

The liabilities are listed separately for pensioners and for active and inactive benefits earned by non-retired participants. The \$360,986,584 liability for pensioners represents the estimated amount required as of the valuation date to pay all benefits as they come due in the future. The Actuarial Accrued Liability is the sum of the separate liability amounts and is equal to \$527,455,968.

#### **UNFUNDED ACCRUED LIABILITIES**

The liabilities of the Plan exceed the Actuarial Value of Assets by \$184,643,835. This amount is known as the Unfunded Accrued Liability, which is amortized by the excess of contributions received over the cost of each future year's accumulation of benefits. If the Market Value of Assets is used, the Unfunded Accrued Liability is equal to \$200,536,014. As shown in Section IV, the current excess of contributions over benefit accruals is about \$7.7 million and is not sufficient to pay down the Unfunded Accrued Liability on both an Actuarial Value of Assets basis and a Market Value of Assets basis assuming all future actuarial assumptions are realized. Without future investment return gains, Board and/or bargaining corrective action may be needed in the future to fund the projected Unfunded Accrued Liability over a reasonable period. Note that the Rehabilitation Plan was updated in 2012 to include reasonable measures to forestall possible insolvency.



**Actuarial Valuation as of January 1, 2017** 

### SECTION II ACTUARIAL GAIN/(LOSS) ANALYSIS

#### **ACTUARIAL VALUATION**

An actuarial valuation is a snapshot of asset and liability measures of the pension fund. It is used to estimate the amount of funds needed to help assure the future payment of retirement, termination, disability and death benefits to Plan participants based on Plan benefits in effect on the valuation date. The valuation is based on the actual service rendered by these participants prior to the valuation date and on a set of actuarial assumptions and methods. These assumptions have been selected by the Actuary while the methods have been adopted by the Trustees upon the recommendation of the Actuary. Both are described in Appendix B.

#### **Actuarial Experience**

In the paragraphs below, we have outlined the experience over the 2016 Plan Year and have also shown experience for the previous 4 Plan Years. This information will provide an ongoing review of the appropriateness of each actuarial assumption.

#### **Development of Gain / (Loss)**

To the extent that actual experience during the year is different than what was expected, gains or losses are realized. The following exhibit develops the total gain or loss for the Plan Year:

A. Unfunded Accrued Liability on January 1, 2016	\$ 187,001,080
B. Normal Cost	1,228,069
C. Contributions for 2016	(11,250,910)
D. Interest on A, B and C	13,238,768
E. Assumption Change	 (6,594,691)
F. Expected Unfunded Accrued Liability on January 1, 2017 (A + B + C + D + E)	\$ 183,622,316
G. Actual Unfunded Accrued Liability on January 1, 2017	\$ 184,643,835
H. Net Actuarial Gain/(Loss) (F - G)	\$ (1,021,519)



**Actuarial Valuation as of January 1, 2017** 

#### SECTION II ACTUARIAL GAIN/(LOSS) ANALYSIS (CONTINUED)

#### Net Investment Return - 7.25% per annum, net of all expenses

The net investment yield on the Actuarial Value of Assets during the Plan Year was 6.84%. Appendix D shows the details of the actual investment income calculation.

INCOME	DOL	LAR AMOUNT	YIELD
A. Gross Investment Income	\$	26,177,772	7.84 %
B. Operating Expenses		(1,525,874)	(0.46)
C. Investment Expenses		(1,796,828)	(0.54)
D. Net Investment Income (A + B + C)	\$	22,855,070	6.84 %
E. Expected Investment Income		24,208,364	7.25
F. Investment Loss (D - E)		(1,353,294)	(0.41) %

NET YIELD ON						
YEAR	ACTUARIAL VALUE <sup>1</sup>	MARKET VALUE <sup>2</sup>				
2012	(1.99) %	11.53 %				
2013	11.24	12.97				
2014	9.07	4.47				
2015	6.22	0.63				
2016	6.84	6.44				

The 5-year geometric average return on the Actuarial Value of Assets is 6.18%, and the 10-year geometric average return is 3.62%.



The 5-year geometric average return on the Market Value of Assets is 7.11%, and the 10-year geometric average return is 2.92%.

**Actuarial Valuation as of January 1, 2017** 

#### SECTION II ACTUARIAL GAIN/(LOSS) ANALYSIS (CONTINUED)

# Mortality – 1983 GAM F Mortality Table for healthy lives, and 1983 F Mortality Table 17-year set-forward (until age 62) for disabled lives

We compared the mortality experienced by the Plan during the 2016 Plan Year with that expected according to the above tables. During the Plan Year, there were 111 deaths with an average age of 80.9 and average monthly benefit for those in pay status of \$618 with 22 continuing beneficiaries. This compares to 131 deaths with an average age of 79.7 and average monthly benefit for those in pay status of \$728 with 24 continuing beneficiaries in the prior year. The liability released during the year was less than anticipated, resulting in a **loss** of **\$1,248,878**.

YEAR	GAIN/(LOSS)
2012	\$ (646,955)
2013	(21,395)
2014	665,209
2015	1,762,830
2016	(1,248,878)
5-Year Total	\$ 510,811

For valuation dates on or after July 1, 2011, actuaries are required to separately consider an assumption for mortality improvement. Recent studies have shown that mortality for the general population has improved at a fairly consistent rate (1% per year). Whether it will continue at this rate is controversial. Failure to fully reflect mortality improvement will result in an undervaluation of the Plan's liabilities and corrective action in the future.

Effective January 1, 2017, the mortality assumptions have been updated to the RP-2014 Blue Collar Mortality Table for males and females, adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016 for healthy lives, and to the RP-2014 Disabled Retiree Mortality Table for males and females adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016 for disabled lives. We believe these assumptions reasonably reflect anticipated mortality experience for the Plan. We will continue to monitor the appropriateness of these assumptions on an annual basis.



**Actuarial Valuation as of January 1, 2017** 

#### SECTION II ACTUARIAL GAIN/(LOSS) ANALYSIS (CONTINUED)

# Turnover - Table T-7, <u>The Actuary's Pension Handbook</u> (Crocker-Sarason-Straight)

If a participant terminates prior to acquiring vested rights in their benefits or prior to retirement, then all or part of the liability accumulated for their benefit is released. This is offset by the liability for inactives who return to active status. During 2016, there were 53 active terminations from vested status and 49 terminations from non-vested status, offset by 2 rehired participants. This compares to 130 active terminations from vested status and 60 terminations from non-vested status, offset by 5 rehired participants in the prior year. The combined net turnover **gain** for the year was **\$175,220**.

YEAR		GAIN/(LOSS)
2012	\$	(157,632)
2013		52,665
2014		(509,163)
2015		(227,227)
2016		175,220
5-Year Total	\$	(666,137)

#### Retirement

We assume that participants will retire in accordance with an explicit set of retirement rates as described in Appendix B. A gain to the Fund results if a participant delays retirement. During the 2016 Plan Year, there were 177 healthy retirements with an average age of 62.7 and an average monthly benefit of \$771. This compares to 140 healthy retirements with an average age of 64.4 and an average monthly benefit of \$573 in the prior year. The net result of this experience was a **gain** of **\$1,647,552**.

YEAR	GAIN/(LOSS)
2012	\$ 1,757,478
2013	1,943,164
2014	2,462,900
2015	1,615,254
2016	1,647,552
5-Year Total	\$ 9,426,348



**Actuarial Valuation as of January 1, 2017** 

### SECTION II ACTUARIAL GAIN/(LOSS) ANALYSIS (CONTINUED)

#### Disability - 1952 Society of Actuaries Table, Period 2, Benefit 5

During the 2016 Plan Year, there was 1 disability retirement with an age of 54.0 and an average monthly benefit of \$1,715. This compares to no disability retirements in the prior year. The actuarial **loss** attributable to disabilities was **\$92,794**.

YEAR		GAIN/(LOSS)
2012	\$	(127,345)
2013		(136,510)
2014		(94,877)
2015		(95,159)
2016		(92,794)
5-Year Total	\$	(546,685)

#### **Miscellaneous**

Each year there are miscellaneous gains and losses due to data adjustments, corrections, new entrants and actual versus expected hours. The miscellaneous items in 2016 resulted in a net loss of \$149,325.

YEAR	GAIN/(LOSS)
2012	\$ (407,394)
2013	(344,116)
2014	(404,437)
2015	(58,520)
2016	(149,325)
5-Year Total	\$ (1,363,792)

**Actuarial Valuation as of January 1, 2017** 

### SECTION II ACTUARIAL GAIN/(LOSS) ANALYSIS (CONTINUED)

#### **SUMMARY OF GAINS AND LOSSES**

The following shows a summary of the gains and losses from various sources:

SUMMARY OF 2016 GAIN/(LOSS) AMOUNTS				
SOURCE	GAIN/(LOSS)			
Investment Income	\$ (1,353,294)			
Mortality	(1,248,878)			
Turnover	175,220			
Retirement	1,647,552			
Disability	(92,794)			
Miscellaneous	(149,325)			
Total Experience Loss	\$ (1,021,519)			

Fluctuations in experience for all assumptions are to be expected from year to year. It is the net result over a period of time that must be viewed to determine the validity of the assumptions used.

FIVE-YEAR SUMMARY OF GAIN/(LOSS) AMOUNTS						
YEAR	ASSETS		ASSETS LIABILITIES			TOTAL
2012	\$	(33,450,978)	\$	418,152	\$	(33,032,826)
2013		13,070,644		1,493,808		14,564,452
2014		6,155,370		2,119,632		8,275,002
2015		(3,503,794)		2,997,178		(506,616)
2016		(1,353,294)		331,775		(1,021,519)
5-Year Total	\$	(19,082,052)	\$	7,360,545	\$	(11,721,507)



**Actuarial Valuation as of January 1, 2017** 

#### SECTION III CHANGES SINCE LAST VALUATION AND OTHER PLAN ITEMS

# CHANGES IN PLAN PROVISIONS AND VALUATION METHODOLOGY

No changes to Plan provisions or valuation methodology have been made since the prior valuation as of January 1, 2016.

#### MANDATED CHANGES TO PLAN ASSUMPTIONS

The current liability interest and mortality assumptions were updated as prescribed by IRS regulations. Refer to Appendix B for a description of these changes.

#### OTHER CHANGES TO PLAN ASSUMPTIONS

The Plan's actuarial assumptions for mortality, retirement for vested inactives, form of benefit election, spousal age difference and operating expenses were revised to reflect historical experience and the actuary's opinion on reasonable expectations for future experience.

The following changes were made to the Plan's assumptions:

1. Healthy Mortality: Updated from 1983 GAM (F) Mortality Table to RP2014 Blue Collar Mortality Table for males and females adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016.

- Disabled Mortality: Updated from 1983 GAM(F) Mortality Table with ages set forward 17 years until age 62 to RP2014 Disabled Retiree Mortality Table for males and females adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016.
- Retirement age for Vested Inactive Participants: Updated from age
   62 to a varied rate table based on age. Refer to Appendix B for additional details.
- 4. Form of Benefit Payment Election (non-retired participants): Updated from 100% assumed to elect a single life annuity to 55% assumed to elect a single life annuity and 45% assumed to elect a 50% Joint and Survivor Annuity.
- 5. Spousal Age Difference: Updated from spouse assumed to be the same age as the participant to the spouse assumed to be one year younger than the participant.
- 6. Operating Expenses: Updated from assumed covered by investment earnings to \$1,400,000, payable mid-year (or \$1,352,681 as of the beginning of the year) for 2017.

The overall impact of these assumption changes was a decrease in liabilities of approximately \$6.6 million and an increase in normal cost (including operating expenses) of approximately \$1.2 million as of January 1, 2017.



**Actuarial Valuation as of January 1, 2017** 

#### SECTION IV PROJECTION OF EMPLOYER CONTRIBUTIONS AND COSTS

The following is an estimate of Employer contributions and costs for the 2017 Plan Year based on expected contributions, including base, surcharge, and supplemental contributions as well as expected withdrawal liability payments, and actual hours worked during 2016 adjusted for known withdrawals to date. The difference between the Employer contributions and the cost of benefits is the excess (if any) that can be used to pay down the Unfunded Accrued Liability.

A. Employer Contributions	\$ 10,110,000
B. Estimated Cost of Benefits <sup>1</sup>	 2,375,000
C. Available for Funding <sup>2</sup> (A - B)	\$ 7,735,000

<sup>&</sup>lt;sup>1</sup> Includes \$1.4 million for anticipated operating expenses.

The projected Employer contributions exceed the estimated cost of benefits to be earned during 2017 by about \$7.7 million, but the interest on the current Unfunded Accrued Liability at 7.25% is \$13.4 million. Based on asset and liability measures on the valuation date, this excess of about \$7.7 million is not sufficient to pay down the Unfunded Accrued Liability on both an Actuarial Value of Assets basis and a Market Value of Assets basis assuming all future actuarial assumptions are realized. Without future investment return gains, Board and/or bargaining corrective action may be needed in the future to fund the projected Unfunded Accrued Liability over a reasonable period.

	Actuarial Value Basis	Market Value Basis
Unfunded Accrued Liability (UAL)	\$ 184,643,835	\$ 200,536,014
Amount Available for Funding <sup>3</sup>	7,473,561	7,473,561
Period to Pay off UAL	Cannot Pay Off	Cannot Pay Off

Beginning of year.

The Trustees originally adopted a Rehabilitation Plan on October 16, 2009, which was updated in 2012 to include reasonable measures to forestall possible insolvency. The Plan was first certified in critical and declining status for the 2016 Plan Year with a projected insolvency date in 2035. Based on the results of the January 1, 2017 valuation, including all assumption changes, the Plan is now projected to become insolvent in 2033.



<sup>&</sup>lt;sup>2</sup> Mid-year.

**Actuarial Valuation as of January 1, 2017** 

#### SECTION V WITHDRAWAL LIABILITY

Withdrawal liability assessments, if any, are based on the amount of "Unfunded Vested Benefits" (UVB) and an employer's contribution history. For this purpose, benefits in which a participant is not immediately vested are excluded from the determination of vested benefits – this includes disability and death benefits other than the Qualified Pre-retirement Survivor Annuity (QPSA). Assets are based on the Market Value of Assets for withdrawal liability purposes.

The simplified method was adopted to comply with the PPA's requirement for Red Zone plans to disregard any reduction in protected benefits when determining the UVB for withdrawal liability – this includes early retirement subsidies, including those for the Rule of 80, and the 60-month guarantee in life annuity. Please refer to Appendix I for development of the Vested Benefit Liabilities. The resulting UVB as of December 31, 2016 is as follows:

WITHDRAWAL LIABILITY		
A. Vested Benefit Liabilities Earned to Date <sup>1</sup>	\$	550,975,753
B. Market Value of Assets		326,919,954
C. UVB as of December 31, 2016 (A - B, not less than \$0)	\$	224,055,799

Value at December 31, 2016, which does not include the January 1, 2017 assumption changes. These changes will be reflected in the December 31, 2017 Vested Benefit Liabilities.

A positive Unfunded Vested Benefits value means that Employers who withdraw in the 2017 Plan Year may be subject to a withdrawal liability assessment.



**Actuarial Valuation as of January 1, 2017** 

#### SECTION VI COMMENTS AND CERTIFICATION

This is to certify that we have completed an actuarial valuation of the Plan as of January 1, 2017 in accordance with generally accepted actuarial principles and practices, including Actuarial Standards of Practice (ASOP) Nos. 4, 23, 27, 35, 41, and 44. This report has been prepared for the Board of Trustees of the Western States Office & Professional Employees Plan to provide information on the Plan's funded status, to review the recent experience under the Plan, and to supply figures needed by the auditor.

This report on the results of the valuation was based on the assumption that the Plan is qualified under the Internal Revenue Code and on information supplied by the auditor with respect to contributions and assets and by the Plan Administrator with respect to participant data. We have not verified and customarily would not verify such information, but we have no reason to doubt its substantial accuracy.

To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate and, in our opinion, the individual assumptions used: (a) are reasonably related to the experience of the Plan and to reasonable expectations; and (b) represent our best estimate of anticipated experience under the Plan.

We are not aware of any events, subsequent to January 1, 2017, that would have a material effect on the actuarial findings presented in this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: 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 (for instance, 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 the assignment, we did not perform analysis of the potential range of such future measurements.

In preparation of this report and the actuarial findings contained herein, there has been no conflict of interest between any relevant parties; no findings for which we, the actuaries, do not assume responsibility; and no deviation from ASOP Nos. 4, 23, 27, 35, 41, and 44.



**Actuarial Valuation as of January 1, 2017** 

#### SECTION VI COMMENTS AND CERTIFICATION (CONTINUED)

All information pertaining to the findings presented in this report is contained within this report and should not be relied upon for any other purpose than as stated above.

The Pension Protection Act of 2006 (PPA) became effective for this Plan on January 1, 2008, and the Multiemployer Pension Reform Act of 2014 (MPRA) became effective for this Plan on January 1, 2015. In accordance with Internal Revenue Code Section 432(b), the Plan was certified to be in critical and declining status as of the beginning of the 2017 Plan Year. The Plan was initially certified to be in critical status for the 2009 Plan Year. In response, the Board of Trustees adopted a Rehabilitation Plan on October 16, 2009, which complies with Internal Revenue Code Section 432(e). It was updated in 2012 to include reasonable measures to forestall possible insolvency. The Plan's rehabilitation period began on January 1, 2012. We will update the Plan's status and the adopted Rehabilitation Plan, if necessary, near the beginning of the following plan year based on investment results for 2017.

We have determined that the projected contributions for the 2017 Plan Year will meet the minimum funding requirements of ERISA and will be fully deductible by the Employers.

We, Paul Graf and Wendy Londa, are actuaries for Rael & Letson. We are members of the American Academy of Actuaries and each meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Certified by: \_\_\_\_\_\_A.S.A., E.A., M.A.

Enrolled Actuary No. 17-05627

Reviewed by: Wendy Londa A.S.A., E.A., F.C.A M.A.A.A.

Wendy Londa Enrolled Actuary No. 17-07600

Prepared by: \_\_\_\_\_\_ A.S.A., M.A.A.A.

Winnie Ngan

**Actuarial Valuation as of January 1, 2017** 

### SECTION VII APPENDICES

Appendix A	Participant	Counts	and	<b>Statistics</b>
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Appendix B Actuarial Methods and Assumptions

Appendix C Summary of Principal Plan Provisions

Appendix D Plan Assets

Appendix E Funding Standard Account (for Schedule MB)

Appendix F Current Liability (for Schedule MB)

Appendix G Maximum Deductible Contribution

Appendix H Auditor Information (FASB ASC 960)

Appendix I Determination of Vested Benefit Liabilities for Withdrawal Liability Purposes

Appendix J Funding Standard Account (No Amortization Extension)

Appendix K Historical Information



**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX A PARTICIPANT COUNTS AND STATISTICS

	January	1, 2016	Januar	ry 1, 2017	Char	nge	Percent Change
Actives:							
Number		868		809		(59)	(6.8)%
Averages:						, ,	, ,
Age		48.3		48.6		0.3	0.6%
Years of Credited Service		12.4		12.5		0.1	0.8%
Hours		1,781		1,628		(153)	(8.6)%
Non-Vested Inactives							
Number		376		359		(17)	(4.5)%
Averages:							
Age		40.9		41.4		0.5	1.2%
Years of Credited Service		2.3		2.1		(0.2)	(8.7)%
Accrued Benefit	\$	53	\$	51	\$	(2)	(3.8)%
Vested Inactives:							
Number		2,939		2,827		(112)	(3.8)%
Averages:							
Age		51.8		52.2		0.4	0.8%
Years of Credited Service		11.9		11.8		(0.1)	(0.8)%
Vested Accrued Benefit	\$	558	\$	562	\$	4	0.7%
Retirees and Beneficiaries:							
Number:							
Healthy Retirees		3,502		3,512		10	0.3%
Disabled Retirees		31		107		76	245.2%
Beneficiaries <sup>1</sup>		211		226		<u> 15</u>	7.1%
Total		3,744		3,845		101	2.7%
Averages:							
Age		72.1		72.3		0.2	0.3%
Monthly Benefit	\$	860	\$	860	\$	0	0.0%

<sup>&</sup>lt;sup>1</sup> Includes 17 Alternate Payees as of January 1, 2016 and 18 Alternate Payees as of January 1, 2017.



**Actuarial Valuation as of January 1, 2017** 

### APPENDIX A PARTICIPANT COUNTS AND STATISTICS (CONTINUED)

PARTICIPANT RECONCILIATION					
	ACTIVES	NON-VESTED INACTIVES	VESTED INACTIVES	RETIREES AND BENEFICIARIES	TOTAL
Total as of January 1, 2016	868	376	2,939	3,744	7,927
New Entrants	77	0	0	0	77
Vested Terminations <sup>1</sup>	(53)	0	53	0	0
Non-Vested Terminations	(49)	49	0	0	0
Returned to Work	2	0	(2)	0	0
Healthy Retirements	(34)	0	(143)	177	0
Disabled Retirements	(1)	0	0	1	0
Deaths in Year	(1)	0	(6)	(104)	(111)
Benefit Period Expired	0	0	0	0	0
New Beneficiaries	0	0	0	22	22
New Alternate Payees	0	0	0	2	2
Lump Sum	0	0	(6)	0	(6)
Permanent Break in Service	0	(73)	0	0	(73)
Data Corrections	0	7	(8)	3	2
Net Change	(59)	(17)	(112)	101	(87)
Total as of January 1, 2017	809	359	2,827	3,845	7,840

Includes one participant who was vested under Special Eligibility Rule.



**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX A PARTICIPANT COUNTS AND STATISTICS (CONTINUED)

#### DISTRIBUTION OF ACTIVE PARTICIPANTS BY AGE AND CREDITED SERVICE (FOR 2017 SCHEDULE MB) YEARS OF CREDITED SERVICE **AGE GROUP** < 1 1 - 4 5 - 9 10 - 14 15 - 19 20 - 24 25 - 29 30 - 34 35 - 39 40 + **TOTAL** Under 25 25 - 29 30 - 34 35 - 39 40 - 44 45 - 49 50 - 54 55 - 59 60 - 6465 - 69 70 and Over Total

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX A PARTICIPANT COUNTS AND STATISTICS (CONTINUED)

DISTRIBUTION OF NON-RETIRED PARTICIPANTS BY AGE						
		ACTIVES		INACTIVES		
AGE GROUP	NON-VESTED	VESTED	TOTAL ACTIVES	NON-VESTED	VESTED	TOTAL INACTIVES
Under 25	12	0	12	5	0	5
25 - 29	39	7	46	44	9	53
30 - 34	33	38	71	78	64	142
35 - 39	34	51	85	65	151	216
40 - 44	17	62	79	33	271	304
45 - 49	20	74	94	37	497	534
50 - 54	14	102	116	36	592	628
55 - 59	20	105	125	40	709	749
60 - 64	12	112	124	11	427	438
65 - 69	4	43	47	10	90	100
70 and Over	2	8	10	0	17	17
Total	207	602	809	359	2,827	3,186
Average Age	40.2	51.5	48.6	41.4	52.2	51.0
Average Accrued Benefit	\$ 67	\$ 1,192	\$ 904	\$ 51	\$ 562	\$ 504

**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX A PARTICIPANT COUNTS AND STATISTICS (CONTINUED)

#### **DISTRIBUTION OF RETIREES AND BENEFICIARIES BY AGE** CONTINUING **NEW** CONTINUING **NEW HEALTHY HEALTHY DISABLED DISABLED** CONTINUING **NEW GRAND RETIREES AGE GROUP** RETIREES **RETIREES RETIREES** BENEFICIARIES1 BENEFICIARIES1 TOTAL Under 50 0 0 0 10 16 50 - 54 0 0 6 5 2 14 55 - 59 76 29 12 0 7 128 4 60 - 64 357 86 31 0 20 2 496 2 65 - 69858 56 24 24 964 70 - 74 839 6 12 0 31 3 891 75 - 79 541 0 3 36 3 583 80 - 84 316 0 4 0 25 5 350 85 and Over 348 0 9 0 44 2 403 Total 3,335 177 106 202 24 3,845 Average Age 73.0 62.7 65.9 54.0 73.8 69.5 72.3 \$ \$ Average Monthly Benefit 890 \$ 771 \$ 931 \$ 1,715 442 524 \$ 860

<sup>&</sup>lt;sup>1</sup> Includes 16 continuing Alternate Payees and 2 new Alternate Payees.

**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS

METHODOLOGY:	
Asset Valuation Method	Assets are valued according to a method which recognizes 20% of each year's excess (or deficiency) of actual investment return on the Market Value of Assets over the expected return on the Market Value of Assets in the year the excess (or deficiency) occurs. An additional 20% of the excess (or deficiency) is recognized in each of the succeeding four years until it is totally recognized. In no event will the Actuarial Value of Assets be less than 80% or more than 120% of the Market Value of Assets.
Actuarial Cost Method	Under this method, we determine the present value of all benefits earned through the valuation date. An individual's normal cost is the present value of the benefit expected to be earned in the valuation year. The total accrued liability is the sum of the individual present values for all participants. The Unfunded Accrued Liability is the difference between the accrued liability and the assets of the Trust. If the assets exceed the accrued liability, the Plan is in a surplus position. This method requires that each year's contributions be applied first to the normal cost, and the balance of the contributions applied to amortize the Unfunded Accrued Liability. The normal cost is adjusted at the close of the Plan Year to reflect the actual level of Contributions received during that Plan Year
Withdrawal Liability Basis	The present value of accrued vested benefits for withdrawal liability determination uses an interest rate of 7.25% along with all other valuation assumptions. The simplified method issued by the Pension Benefit Guaranty Corporation is used to account for the protected benefits that were reduced in accordance with the Plan's critical status and subsequent Rehabilitation Plan. Assets for this purpose are based on the Market Value of Assets.

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS (CONTINUED)

ASSUMPTIONS:						
Interest Discount Rate	7.25% for funding and FASB ASC 960, 7.25% for withdrawal liability, and 3.05% for current liability.					
Assumed Rate of Return on Investments	7.25% compounded annually, net of investment expenses. (Prior to January 1, 2017: 7.25% compounded annually, net of all expenses.)					
Derivation of Net Investment Return and Discount Rate for FASB ASC 960 Accounting:	The expected return assumptions are established based on a long run outlook and are based on past experience future expectations and professional judgement. We have modeled the assumptions based on average long-term future expected returns and their respective capital market assumptions as provided by several investment professionals. Based on the inputs of the Plan's specific target asset allocation, we have established the reasonability of the Plan's assumption.					
Operating Expenses	A total annual amount of \$1,400,000 paid in monthly installments (\$1,352,681 at beginning of year). (Prior to January 1, 2017: assumed covered by investment earnings.)					
Mortality	Healthy Lives: RP-2014 Blue Collar Mortality Table for males and females, adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016. (Prior to January 1, 2017: 1983 GAM (F) Mortality Table.)					
	Disabled Lives: RP-2014 Disabled Retiree Mortality Table for males and females, adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016. (Prior to January 1, 2017: 1983 GAM (F) Mortality Table with ages set forward 17 years until age 62.)					
	Current Liability: RP-2000 Mortality Tables (static, separate for annuitants and non-annuitants), projected forward to the valuation year plus seven years for annuitants and 15 years for non-annuitants, as prescribed by IRS regulations.					
Mortality Improvement	Effective January 1, 2017, the mortality assumption has been updated to reflect full generational mortality improvements using the MP-2016 scaling factors.					
Turnover	Table T-7 (Less 51 GAT) of The <u>Actuary's Pension Handbook.</u> Non-Vested Participants are assumed to earn one year of vesting credit annually until vested.					

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS (CONTINUED)

ASSUMPTIONS:			
Retirement Rates	Active participants are assumed to retire based on the following rate table:		
	Age Rate of Retirement		
	55 20%		
	56 15%		
	57-59 12%		
	60 15%		
	61 20%		
	62 40%		
	63-70 35%		
	71+ 100%		
	Vested inactive participants are assumed to retire based on the following rate table:		
	Age Rate of Retirement		
	55 15%		
	56-61 5%		
	62 18%		
	63-64 3%		
	65+ 100%		
	(Prior to January 1, 2017: Vested inactive participants are assumed to retire at age 62.)		
Disablement	1952 Society of Actuaries Table, Period 2, Benefit 5.		
Form of Benefit	For those not yet in pay status, 55% of participants are assumed to elect a Life Annuity and 45% of participants are assumed to elect a 50% Joint and Survivor Annuity. (Prior to January 1, 2017: All non-retired participants are assumed to elect a Life Annuity.)		
Marital Status	80% of non-retired male participants and 75% of non-retired female participants are assumed to be married. Females are assumed to be one years younger than their spouses. (Prior to January 1, 2017: Spouses are assumed to be the same age as participants.)		
Active Participant	Worked at least 200 hours in covered employment.		
Future Employment	Each active participant is assumed to work the same amount of hours worked in the prior plan year.		

**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX B ACTUARIAL METHODS AND ASSUMPTIONS (CONTINUED)

ASSUMPTIONS:				
Missing Data	If not specified, participants are assumed to be female and the same age as the average of participants with the same status code.			
	The demographic and other noneconomic assumptions are established based on a long-term outlook and are based on past actuarial experience, future expectations and professional judgement. We believe the current demographic and other noneconomic assumptions reasonably reflect anticipated experience for the Plan.			

#### **CHANGES SINCE PRIOR VALUATION**

The current liability interest rate was changed from 3.28% to 3.05% due to a change in the allowable interest rate range, and the current liability mortality table was updated as required.

The following assumption changes have been made to better reflect future anticipated experience:

- Mortality tables have been updated to RP-2014 Blue Collar Mortality Table for males and females adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016 for healthy lives and to RP-2014 Disabled Retiree Mortality Table for males and females adjusted backward to 2006 using MP-2014, then projected forward from 2006 with Fully Generational Mortality Improvement under MP-2016 for disabled lives.
- 2. Assumed retirement age for vested inactive participants has been changed to a varied rate table based on age.
- 3. Form of benefit elected has been updated to reflect 55% of participants assumed to elect a Life Annuity and 45% assumed to elect a 50% Joint and Survivor Annuity.
- 4. The spousal age difference has been updated to one year younger than the participant.

A separate operating expense assumption of \$1,400,000 payable monthly (\$1,352,681 payable at the beginning of the year) has been established. The investment return assumption is now 7.25%, net of investment expenses only.

Accruing and supplemental/surcharge contributions for 18 employers known to have withdrawn during 2016 have been removed from future expected contributions and costs, and quarterly withdrawal liability payments have been added to future expected contributions. No withdrawal liability payments are expected from ATPA due to its recent bankruptcy filing.

**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX C SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Western States Office & Professional Employees Plan was established on 1959. It has been amended from time to time since that date. The most recent restatement of the Plan is effective January 1, 2017. The principal provisions of the Plan as of January 1, 2017 are summarized below.

NORMAL RETIREMENT							
Eligibility	Age 65 and vested. Special eligibility if age 65 with 2 years of Vesting Credit (one immediately prior to retirement) and at least a \$10.00 Total Service Benefit.						
Monthly Benefit	Service after 2009: 0.75% of Employer Contributions. 2004 - 2009: 1.8% of Employer Contributions. 2003 Service: 2.2% of Employer Contributions up to \$6,240, plus 1.8% of excess.						
	2001 - 2002 Service: 3.2% of Employer Contributions up to \$6,240 each year; plus 1.8% of excess. 1997 - 2000 Service: 3.65% of Employer Contributions up to \$6,240 each year, plus 1.8% of excess. Prior to 1997: 3.65% of Employer Contributions. Past Service: \$8.20 per year of past service (maximum 15 years).						
Fast Service. \$6.20 per year of past service (maximum 15 years).							
EARLY RETIREMENT							
Eligibility	Age 55 and vested.						
Monthly Benefit	Normal Retirement Benefit actuarially reduced from age 62 for benefits earned before January 1, 2010 and from age 65 for benefits earned on or after January 1, 2010.						
POSTPONED RETIREMENT							
Eligibility	After Normal Retirement Age.						
Monthly Benefit	Normal Retirement Benefit increased 6% per year (½% per month) past age 62 for benefits earned before January 1, 2010 and past age 65 for benefits earned on or after January 1, 2010.						
	Effective for annuity starting dates on or after September 1, 2015, participants who continue working for a contributing employer will receive the greater of (a) or (b) below:						
	(a) Normal Retirement Benefit increased ½ of 1% for each full month retirement is postponed.						
	(b) Accrued benefit as of the participant's postponed retirement date.						

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX C SUMMARY OF PRINCIPAL PLAN PROVISIONS (CONTINUED)

DISABILITY RETIREMENT (Effective January 1, 2010)							
Eligibility	Vested with at least 200 hours in year prior to onset of Total and Permanent Disability.						
Monthly Benefit	50% of Normal Retirement Benefit payable until age 55.						
PRE-RETIREMENT DEATH BENEFIT (Effective January 1, 2010)							
Eligibility	Vested at time of death.						
Monthly Benefit Married: 50% Spousal Joint and Survivor Annuity (reduced for Early Retirement and for joint lives).							
All Others: Lump sum payment of \$500 per year of service (maximum of \$5,000 total).							
FORMS OF ANNUITY PAYMENTS							
Normal Form	For Married Participants: An actuarially reduced benefit payable as a 50% Spousal Joint and Survivor Annuity.						
	For Unmarried Participants: A life annuity.						
Optional Forms	Straight Life Annuity						
	50%, 66-2/3% or 100% Spousal Joint and Survivor Annuity						
	50%, 66-2/3% or 100% Spousal Joint and Survivor Annuity with Pop-up						
	50%, 66-2/3% or 100% Non-Spousal Joint and Survivor Annuity						
	Lump Sum if present value of accrued benefit ≤ \$5,000						
OTHER							
Vesting Service	A Participant will receive one year of Vesting Credit if 200 or more hours are worked in a plan year.						
Break in Service Rules	A one-year break in service is incurred if a Participant works less than 200 hours in a plan year.						

CHANGES SINCE PRIOR VALUATION	None.



**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX D PLAN ASSETS

SUMMARY OF MARKET VALUE OF ASSETS		
Assets as of December 31, 2016	Market Value	Percent of Total
Cash and Cash Equivalents	\$ 2,887,426	0.9%
Partnership / Joint Venture Interests	45,342,595	13.9%
Value of Interest in Common / Collective Trusts	200,652,274	61.3%
Value of Interest in 103-12 Investment Entities	48,644,555	14.9%
Value of Interest in Registered Investment Companies (e.g. mutual funds)	12,748,047	3.9%
Other Assets	13,112,303	4.0%
Net Receivables, Payables and Prepaid Expenses	3,532,754	1.1%
Total Assets	\$ 326,919,954	100.0%

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX D PLAN ASSETS (CONTINUED)

SUMMARY OF RECEIPTS AND DISBURSEMENTS								
	Market Value		Market Value		Actuarial Value		Actuarial Value	
		2015	2016		2015		2016	
Assets (Beginning of Year)	\$	359,268,671	\$	334,210,200	\$	353,925,354	\$	347,859,875
Receipts During Year								
Contributions <sup>1</sup>	\$	11,811,952	\$	11,250,910	\$	11,811,952	\$	11,250,910
Investment Income (Net of Investment and Operating Expenses)		2,175,568		20,612,566		21,168,560		22,855,070
Subtotal Receipts	\$	13,987,520	\$	31,863,476	\$	32,980,512	\$	34,105,980
Disbursements During Year								
Benefit Payments	\$	(39,045,991)	\$	(39,153,722)	\$	(39,045,991)	\$	(39,153,722)
Subtotal Disbursements	\$	(39,045,991)	\$	(39,153,722)	\$	(39,045,991)	\$	(39,153,722)
Assets (End of Year)	\$	334,210,200	\$	326,919,954	\$	347,859,875	\$	342,812,133
Net Yield on Value of Assets		0.63 %		6.44 %		6.22 %		6.84 %

Includes \$4,883,040 of base contributions, \$3,509,909 of supplemental contributions, \$81,811 of surcharge contributions and \$3,337,192 of withdrawal liability payments in 2015, and \$4,318,217 of base contributions, \$3,016,465 of supplemental contributions, \$43,983 of surcharge contributions and \$3,872,245 of withdrawal liability payments in 2016.

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX D PLAN ASSETS (CONTINUED)

DETERMINATION	ON OF NET INVESTMENT EARNINGS ON MARKET VALUE OF ASSETS					
Expected N	et Investment Income					
A. Market	Value of Assets	\$	334,210,200			
B. Contrib	utions		11,250,910			
C. Benefit	Payments		(39,153,722)			
D. Expect	ed Net Investment Income <sup>1</sup>	\$	23,218,763			
2. Market Val	ue Earnings					
A. Interes	and Dividends	\$	1,584,823			
B. Realize	d and Unrealized Gains/(Losses)		22,339,020			
C. Investm	ent Expenses		(1,796,828)			
D. Operat	onal Expenses		(1,525,874)			
E. Other I	ncome		11,425			
F. Total M	arket Value Earnings (A + B + C + D + E)	\$	20,612,566			
3. Excess/(De	ficit) of Market Value Earnings Over Expected Investment Earnings (2F - 1D)		(2,606,197)			
4. Current Yea	r Recognition of Excess/(Deficit) Earnings (Calculated on Next Page)		(363,693)			
5. Net Investm	ent Earnings (1D + 4)		22,855,070			
6. Recognition	6. Recognition of Assets in Excess of the Corridor					
7. Total Net In	vestment Earnings (5 + 6)	\$	22,855,070			

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX D PLAN ASSETS (CONTINUED)

#### **DETERMINATION OF ACTUARIAL VALUE OF ASSETS**

AMOUNT OF EXCESS/(DEFICIT) EARNINGS RECOGNIZED OR TO BE RECOGNIZED

PLAN YEAR ENDED DECEMBER 31	EXCESS/(DEFICIT) EARNINGS	PRIOR YEARS	CURRENT YEAR	FUTURE YEARS
2016	\$ (2,606,197)	\$ 0	\$ (521,239)	\$ (2,084,958)
2015	(22,884,177)	(4,576,835)	(4,576,835)	(13,730,507)
2014	(9,936,255)	(3,974,502)	(1,987,252)	(3,974,501)
2013	19,488,943	11,693,367	3,897,789	3,897,787
2012	14,119,228	11,295,384	2,823,844	0
Total	\$ (1,818,458)	\$ 14,437,414	\$ (363,693)	\$ (15,892,179)
A. Market Value of Ass	ets as of January 1, 2017			\$ 326,919,954
B. Amount of Excess/(	Deficit) Earnings to be Re	cognized in Future Years		(15,892,179)
C. Preliminary Actuaria	\$ 342,812,133			
D. Recognition of Asse	ts in Excess of the 20% (	Corridor		0
E. Actuarial Value of A	ssets as of January 1, 20	17 (C + D)		\$ 342,812,133

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX E FUNDING STANDARD ACCOUNT (FOR SCHEDULE MB)

FUNDING STANDARD ACCOUNT <sup>1</sup>		
	2016	2017 (Estimated)
1. Credit Balance on January 1	\$ 50,699,080	\$ 35,343,447
2. Charges		
A. Normal Cost (Beginning of Year)	\$ 1,228,069	\$ 2,295,000
B. Amortization Charges	35,938,969	36,045,202
C. Interest on 2A and 2B	2,694,610	2,779,665
D. Subtotal Charges (A + B + C)	\$ 39,861,648	\$ 41,119,867
3. Credits		
A. Employer Contributions for Year <sup>2</sup>	\$ 11,250,910	\$ 10,110,000
B. Amortization Credits	8,551,586	9,237,401
C. Interest on 1, 3A and 3B	4,703,519	3,598,599
D. Subtotal Credits (A + B + C)	\$ 24,506,015	\$ 22,946,000
4. Credit Balance on December 31 (1 - 2D + 3D)	\$ 35,343,447	\$ 17,169,580

<sup>&</sup>lt;sup>1</sup> Incorporates the 5-year extension of charge bases effective January 1, 2009.

<sup>&</sup>lt;sup>2</sup> 2017 estimated contributions reflect one quarterly payment for the 2016 withdrawn Employers.

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX E FUNDING STANDARD ACCOUNT (FOR SCHEDULE MB) (CONTINUED)

#### **FUNDING STANDARD ACCOUNT AMORTIZATION BASES (As of January 1, 2017)**

	Amortization Period Balances						
	Date	Date Initial Remaining			Beginning-of-Year		
Charges	Established	Period	Period	Initial	Remaining	Payment	
Initial Liability	1/1/1976	45.00	4.00	\$ 13,447,933	\$ 2,349,253	\$ 650,335	
Actuarial Assumption	1/1/1978	43.00	4.00	1,960,033	347,695	96,252	
Plan Amendment	1/1/1980	45.00	8.00	395,897	143,472	22,619	
Plan Amendment	1/1/1981	45.00	9.00	3,609,259	1,462,711	211,562	
Plan Amendment	1/1/1983	35.00	1.00	7,215,979	289,534	289,534	
Plan Amendment	1/1/1984	35.00	2.00	3,740,561	325,806	168,603	
Plan Amendment	1/1/1985	35.00	3.00	3,177,239	437,080	156,003	
Plan Amendment	1/1/1986	35.00	4.00	3,832,226	725,852	200,933	
Plan Amendment	1/1/1987	35.00	5.00	4,466,400	1,077,570	246,686	
Plan Amendment	1/1/1988	35.00	6.00	7,521,437	2,198,190	433,319	
Plan Amendment	1/1/1989	35.00	7.00	6,238,198	2,132,375	372,143	
Plan Amendment	1/1/1990	35.00	8.00	1,991,358	775,504	122,268	
Plan Amendment+Act Assump	1/1/1991	35.00	9.00	3,867,632	1,682,460	243,346	
Plan Amendment	1/1/1992	35.00	10.00	2,315,769	1,107,961	148,790	
Plan Amendment	1/1/1993	35.00	11.00	8,009,694	4,162,510	524,040	
Plan Amendment+Act Assump	1/1/1994	35.00	12.00	5,816,782	3,250,050	386,626	
Plan Amendment	1/1/1995	35.00	13.00	3,954,934	2,355,692	266,543	
Actuarial Assumption	1/1/1996	35.00	14.00	2,334,000	1,471,424	159,236	
Plan Amendment	1/1/1996	35.00	14.00	19,722,004	12,433,307	1,345,523	
Plan Amendment	1/1/1997	35.00	15.00	12,051,000	7,992,150	831,144	
Plan Amendment	1/1/1998	35.00	16.00	12,834,000	8,906,933	893,747	
Actuarial Assumption	1/1/1998	35.00	16.00	5,651,596	3,922,263	393,572	
Actuarial Assumption	1/1/1999	35.00	17.00	500,000	361,488	35,122	
Plan Amendment	1/1/1999	35.00	17.00	21,615,699	15,627,344	1,518,376	
Plan Amendment	1/1/2000	35.00	18.00	7,937,933	5,954,558	561,942	

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX E FUNDING STANDARD ACCOUNT (FOR SCHEDULE MB) (CONTINUED)

#### FUNDING STANDARD ACCOUNT AMORTIZATION BASES (As of January 1, 2017) (CONTINUED)

	Amortiz	ation Pe	riod	Bala	ances	
Chargos	Date	Initial	Remaining			Beginning-of-Year
Charges	Established	Period	Period	Initial	Remaining	Payment
Actuarial Assumption	1/1/2000	35.00	18.00	\$ 4,389,753	\$ 3,292,925	\$ 310,759
Plan Amendment	1/1/2001	35.00	19.00	12,746,807	9,886,835	908,708
Plan Amendment	1/1/2002	35.00	20.00	2,268,072	1,813,391	162,714
Plan Amendment	1/1/2003	35.00	21.00	2,964,980	2,436,960	213,933
Experience Loss	1/1/2003	20.00	6.00	12,151,612	4,796,550	945,524
Experience Loss	1/1/2004	20.00	7.00	23,109,456	10,663,991	1,861,090
Experience Loss	1/1/2005	20.00	8.00	12,406,469	6,522,418	1,028,346
Plan Amendment	1/1/2005	35.00	23.00	1,000,895	863,270	72,938
Actuarial Assumption	1/1/2005	35.00	23.00	1,063,519	917,276	77,502
Experience Loss	1/1/2006	20.00	9.00	6,485,444	3,808,609	550,865
Plan Amendment	1/1/2006	35.00	24.00	1,459,383	1,285,506	106,809
Plan Amendment	1/1/2007	35.00	25.00	1,475,698	1,325,215	108,429
Plan Amendment	1/1/2008	20.00	11.00	1,383,243	970,428	122,173
Experience Loss	1/1/2009	20.00	12.00	123,105,349	92,856,149	11,046,176
Experience Loss	1/1/2011	15.00	9.00	5,600,066	4,026,496	582,379
Experience Loss	1/1/2012	15.00	10.00	39,179,040	30,340,223	4,074,425
Experience Loss	1/1/2013	15.00	11.00	33,032,826	27,286,628	3,435,249
Experience Loss	1/1/2016	15.00	14.00	506,616	486,840	52,686
Experience Loss	1/1/2017	15.00	15.00	1,021,519	1,021,519	106,233
Total Charges					\$ 286,094,411	\$ 36,045,202

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX E FUNDING STANDARD ACCOUNT (FOR SCHEDULE MB) (CONTINUED)

FUNDING STANDARD ACCOUNT AMORTIZATION BASES (As of January 1, 2017)	(CONTINUED)

	Amortiz	ation Pe	eriod Balances			
Credits	Date	Initial	Remaining			Beginning-of-Year
	Established	Period	Period	Initial	Remaining	Payment
Experience Gain	1/1/2010	15.00	8.00	\$ (27,345,881)	\$ (18,037,405)	\$ (2,843,835)
Plan Amendment	1/1/2010	15.00	8.00	(32,045,400)	(21,137,215)	(3,332,562)
Experience Gain	1/1/2014	15.00	12.00	(14,564,452)	(12,732,258)	(1,514,630)
Experience Gain	1/1/2015	15.00	13.00	(8,275,002)	(7,605,560)	(860,559)
Assumption Change	1/1/2017	15.00	15.00	(6,594,691)	(6,594,691)	(685,815)
Total Credits					\$ (66,107,129)	\$ (9,237,401)

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX F CURRENT LIABILITY (FOR SCHEDULE MB)

CURRENT LIABILITY (FOR 2017 SCHEDULE MB)	
	January 1, 2017
A. Retirees and Beneficiaries	\$ 498,873,239
B. Vested Inactive Participants	221,276,838
C. Active Participants	
1. Non-Vested	\$ 1,227,650
2. Vested	99,704,019
3. Sub-total (1 + 2)	\$ 100,931,669
D. Total Current Liability (A + B + C3)	\$ 821,081,746
E. Market Value of Assets	326,919,954
F. Funded Ratio Using Market Value of Assets (E / D)	39.82%
G. Expected Increase in Current Liability	\$ 1,981,554
H. Expected Release from Current Liability	41,174,289
I. Expected Disbursements <sup>1</sup>	41,174,289
J. Current Liability Interest Rate	3.05%

Actual disbursements during the 2017 Plan Year will be used in the 2017 Schedule MB.



**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX G MAXIMUM DEDUCTIBLE CONTRIBUTION

MAXIMUM DEDUCTIBLE CONTRIBUTION	
A. Normal Cost	\$ 2,295,000
B. 10-Year Amortization of Unfunded Accrued Liability	24,796,039
C. Interest to End of Plan Year	1,964,100
D. Preliminary Max (A + B + C)	\$ 29,055,139
E. Full Funding Limitation	
1. ERISA	\$ 217,535,920
2. RPA Full Funding Limit Override	402,180,089
3. Greater of E1 or E2	402,180,089
F. Regular Maximum Deductible Contribution (lesser of D and E3)	29,055,139
G. Minimum Required Contribution, End of Year	0
H. 140% of Current Liability Basis	
1. Current Liability, Projected to End of Year	\$ 806,364,993
2. Actuarial Value of Assets Projected to End of Year	323,548,405
3. Excess of 140% of Current Liability over Actuarial Value of Assets at End of Year (140% x H1 - H2)	\$ 805,362,585
I. Maximum Deductible Contribution (greater of F, G and H3)	\$ 805,362,585

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX H AUDITOR INFORMATION (FASB ASC 960)

RECONCILIATION OF ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFI	TS		
		2015	2016
Actuarial Present Value of Accumulated Plan Benefits at Beginning of Year (January 1)	\$	537,887,774	\$ 534,860,955
Increase/(Decrease) during the Year Attributable to:			
Benefits Accumulated and Actuarial Experience	\$	(1,562,274)	\$ 985,329
Plan Amendments		0	0
Actuarial Assumption Changes		0	0
Increase for Interest		37,581,446	37,358,097
Benefits Paid		(39,045,991)	(39,153,722)
Net Increase/(Decrease)	\$	(3,026,819)	\$ (810,296)
Actuarial Present Value of Accumulated Plan Benefits at End of Year (December 31)	\$	534,860,955	\$ 534,050,659
ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS			
		2015	2016
Actuarial Present Value of Accrued Benefits			
Vested Benefits			
Participants Currently Receiving Benefits	\$	354,476,819	\$ 360,262,305
Other Participants		179,801,794	173,056,751
Total Vested Benefits	\$	534,278,613	\$ 533,319,056
Non-Vested Benefits		582,342	 731,603
Actuarial Present Value of Accumulated Plan Benefits at End of Year (December 31)	\$	534,860,955	\$ 534,050,659

**Actuarial Valuation as of January 1, 2017** 

# APPENDIX I DETERMINATION OF VESTED BENEFIT LIABILITIES FOR WITHDRAWAL LIABILITY PURPOSES

DETERMINATION OF VESTED BENEFIT LIABILITIES FOR WITHDRAWAL LIABILITY PURPOSES						
	Dec	ember 31, 2015	Dec	ember 31, 2016		
1. Vested Benefit Liabilities Earned to Date	\$	534,278,613	\$	533,319,056		
2. PBGC 10-3 Base		19,016,927		17,656,697		
3. Vested Benefit Liabilities (1 + 2)	\$	553,295,540	\$	550,975,753		

PBGC Technical Update 10-3 describes the simplified method for plans in the Red Zone to disregard certain adjustable benefits in determining withdrawal liability. This involves the establishment of a base equal to the reduction in these adjustable benefits, which is then amortized over 15 years. The PBGC 10-3 base is the outstanding balance as of the applicable date.

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX J FUNDING STANDARD ACCOUNT (NO AMORTIZATION EXTENSION)

FUNDING STANDARD ACCOUNT (No Amortization Extension)¹							
		2016		2017 (Estimated)			
Credit Balance / (Funding Deficiency) on January 1	\$	2,778,626	\$	(19,213,990)			
2. Charges							
A. Normal Cost (Beginning of Year)	\$	1,228,069		\$ 2,295,000			
B. Amortization Charges		38,887,920		38,650,417			
C. Interest on 2A and 2B / 1, 2A and 2B		2,908,409		4,361,557			
D. Subtotal Charges (A + B + C)	\$	43,024,398		\$ 45,306,974			
3. Credits							
A. Employer Contributions for Year <sup>2</sup>	\$	11,250,910		\$ 10,110,000			
B. Amortization Credits		8,551,586		9,237,401			
C. Interest on 1, 3A and 3B / 3A and 3B		1,229,286		1,036,199			
D. Subtotal Credits (A + B + C)	\$	21,031,782		\$ 20,383,600			
4. Funding Deficiency on December 31 (1 - 2D + 3D)	\$	(19,213,990)	\$	(44,137,364)			

<sup>&</sup>lt;sup>1</sup> This is the Funding Standard Account used to determine if the Plan falls into the Red Zone.

<sup>&</sup>lt;sup>2</sup> 2017 estimated contributions reflect one quarterly payment for the 2016 withdrawn Employers.

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX J FUNDING STANDARD ACCOUNT (NO AMORTIZATION EXTENSION) (CONTINUED)

#### FUNDING STANDARD ACCOUNT AMORTIZATION BASES (No Amortization Extension) (As of January 1, 2017)

	ation Pe	Bal	ances			
Ohamman	Date	Initial	Remaining			Beginning-of-Year
Charges	Established	Period	Period	Initial	Remaining	Payment
Plan Amendment	1/1/1980	40.00	3.00	\$ 395,897	\$ 79,511	\$ 28,380
Plan Amendment	1/1/1981	40.00	4.00	3,609,259	935,704	259,026
Plan Amendment	1/1/1988	30.00	1.00	7,521,437	579,135	579,135
Plan Amendment	1/1/1989	30.00	2.00	6,238,198	928,626	480,558
Plan Amendment	1/1/1990	30.00	3.00	1,991,358	429,798	153,404
Plan Amendment+Act Assump	1/1/1991	30.00	4.00	3,867,632	1,076,278	297,941
Plan Amendment	1/1/1992	30.00	5.00	2,315,769	779,258	178,395
Plan Amendment	1/1/1993	30.00	6.00	8,009,694	3,130,094	617,024
Plan Amendment+Act Assump	1/1/1994	30.00	7.00	5,816,782	2,567,566	448,093
Plan Amendment	1/1/1995	30.00	8.00	3,954,934	1,932,391	304,667
Actuarial Assumption	1/1/1996	30.00	9.00	2,334,000	1,243,109	179,799
Plan Amendment	1/1/1996	30.00	9.00	19,722,004	10,504,089	1,519,277
Plan Amendment	1/1/1997	30.00	10.00	12,051,000	6,912,922	928,344
Plan Amendment	1/1/1998	30.00	11.00	12,834,000	7,853,079	988,662
Actuarial Assumption	1/1/1998	30.00	11.00	5,651,596	3,458,184	435,369
Actuarial Assumption	1/1/1999	30.00	12.00	500,000	323,787	38,517
Plan Amendment	1/1/1999	30.00	12.00	21,615,699	13,997,604	1,665,157
Plan Amendment	1/1/2000	30.00	13.00	7,937,933	5,404,360	611,495
Actuarial Assumption	1/1/2000	30.00	13.00	4,389,753	2,988,659	338,162
Plan Amendment	1/1/2001	30.00	14.00	12,746,807	9,073,667	981,945
Plan Amendment	1/1/2002	30.00	15.00	2,268,072	1,680,085	174,720
Plan Amendment	1/1/2003	30.00	16.00	2,964,980	2,276,256	228,407
Experience Loss	1/1/2003	15.00	1.00	12,151,612	1,263,707	1,263,707
Experience Loss	1/1/2004	15.00	2.00	23,109,456	4,644,075	2,403,269
Experience Loss	1/1/2005	15.00	3.00	12,406,469	3,614,881	1,290,211

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX J FUNDING STANDARD ACCOUNT (NO AMORTIZATION EXTENSION) (CONTINUED)

#### FUNDING STANDARD ACCOUNT AMORTIZATION BASES (No Amortization Extension) (As of January 1, 2017) (CONTINUED)

	Amortization Period			Bal	ances	
Charges	Date Established	Initial Period	Remaining Period	Initial	Remaining	Beginning-of-Year Payment
Plan Amendment	1/1/2005	30.00	18.00	\$ 1,000,895	\$ 817,015	\$ 77,104
Actuarial Assumption	1/1/2005	30.00	18.00	1,063,519	868,133	81,928
Experience Loss	1/1/2006	15.00	4.00	6,485,444	2,436,378	674,454
Plan Amendment	1/1/2006	30.00	19.00	1,459,383	1,223,170	112,423
Plan Amendment	1/1/2007	30.00	20.00	1,475,698	1,266,912	113,680
Plan Amendment	1/1/2008	15.00	6.00	1,383,243	729,742	143,850
Experience Loss	1/1/2009	15.00	7.00	123,105,349	73,357,092	12,802,342
Experience Loss	1/1/2011	15.00	9.00	5,600,066	4,026,495	582,379
Experience Loss	1/1/2012	15.00	10.00	39,179,040	30,340,228	4,074,425
Experience Loss	1/1/2013	15.00	11.00	33,032,826	27,286,625	3,435,249
Experience Loss	1/1/2016	15.00	14.00	506,616	486,840	52,686
Experience Loss	1/1/2017	15.00	15.00	1,021,519	1,021,519	106,233
Total Charges					\$ 231,536,974	\$ 38,650,417

**Actuarial Valuation as of January 1, 2017** 

### APPENDIX J FUNDING STANDARD ACCOUNT (NO AMORTIZATION EXTENSION) (CONTINUED)

	Amortization Period Balances		Amortization Period			
Credits	Date Established	Initial Period	Remaining Period	Initial	Remaining	Beginning-of-Year Payment
Experience Gain	1/1/2010	15.00	8.00	\$ (27,345,881)	\$ (18,037,405)	\$ (2,843,835)
Plan Amendment	1/1/2010	15.00	8.00	(32,045,400)	(21,137,215)	(3,332,562)
Experience Gain	1/1/2014	15.00	12.00	(14,564,452)	(12,732,258)	(1,514,630)
Experience Gain	1/1/2015	15.00	13.00	(8,275,002)	(7,605,560)	(860,559)
Assumption Change	1/1/2017	15.00	15.00	(6,594,691)	(6,594,691)	(685,815)
<b>Total Credits</b>					\$ (66,107,129)	\$ (9,237,401)

**Actuarial Valuation as of January 1, 2017** 

#### APPENDIX K HISTORICAL INFORMATION

HISTORICAL CONTRIBUTIONS AND BENEFIT PAYMENTS						
Plan Year	Contributions	Benefit Payments				
2000	\$ 9,366,427	\$ 18,819,097				
2001	9,660,131	20,927,583				
2002	9,277,458	20,835,583				
2003	7,854,003	24,206,237				
2004	6,935,726	26,487,895				
2005	7,357,903	28,371,211				
2006	7,399,605	29,919,215				
2007	7,678,247	32,970,957				
2008	8,277,807	32,853,989				
2009	8,004,785	34,155,460				
2010	8,489,009	37,136,630				
2011	8,630,961	37,224,104				
2012	9,797,048	37,280,366				
2013	11,044,341	37,690,222				
2014	10,411,438	38,445,844				
2015	11,811,952	39,045,991				
2016	11,250,910	39,153,722				