Western Conference of Teamsters Pension Plan

January 1, 2019 Actuarial Valuation

Prepared by:

Milliman, Inc.

Principal and Consulting Actuaries:

Peter Sturdivan, FSA, EA, MAAA

Grant Camp, FSA, EA, MAAA

Consulting Actuaries:

Noah Llanda, FSA, EA, MAAA

Actuarial Analysts:

David Moonitz

Penny Horan

Joseph Haines

Milliman, Inc.
19200 Von Karman Avenue, Suite 950
Irvine, CA 92612

Tel +1 714 634 8337
Fax +1 714 634 4458

milliman.com

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19200 Von Karman Avenue
Suite 950
Irvine, CA 92612
USA

Tel +1 714 634 8337
Fax +1 714 634 4458

milliman.com

August 28, 2019

Board of Trustees
Western Conference of Teamsters Pension Plan

Dear Trustees:

As requested, we performed an actuarial valuation of the Western Conference of Teamsters Pension Plan as of January 1, 2019, for the Plan Year ending December 31, 2019. Our findings are set forth in this actuary's report.

In preparing this report, we relied, without audit, on information supplied by the administrative office, the Plan's independent auditor and the Plan's attorney. This information includes, but is not limited to, Plan documents and provisions, employee data, and financial information. The financial information was taken from a draft of the audit report and is, hence, subject to finalization. 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.

For actuarial requirements under ERISA, all costs, liabilities, rates of interest, and other factors under the Plan (except when mandated directly by the Internal Revenue Code and its regulations) have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Plan and reasonable expectations) and which, in combination, offer our best estimate of anticipated experience under the Plan. We completed this actuarial valuation in accordance with our understanding of IRS minimum funding requirements as amended by subsequent legislation, including the Pension Protection Act of 2006 (PPA), the Pension Relief Act of 2010 (PRA) and the Multiemployer Pension Reform Act of 2014 (MPRA), and reflecting all proposed regulations and guidance issued to date.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to many factors, including: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. Actuarial computations under ERISA are to determine the minimum required, and maximum allowable funding amounts, and the unfunded vested benefit liability for purposes of withdrawal liability for an ongoing plan. The calculations in the enclosed report have been made on a basis consistent with our understanding of ERISA.

For actuarial requirements under FASB ASC Topic 960, all liabilities, rates of interest, and other factors under the Plan have been determined on the basis of actuarial assumptions and methods which are reasonable and consistent with our understanding of FASB ASC Topic 960. Results for other purposes may be significantly different than the results in this report; other calculations may be needed for other purposes, such as judging benefit security at plan termination.

Milliman's work is prepared solely for the internal business use of the Trust and its Trustees and employees (for their use in administering the Trust). 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 exceptions:

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(b) The Trust may distribute certain work products that Milliman and the Trust mutually agree is appropriate for distribution to participating employers, pension participants and other parties as may be required by PPA and MPRA.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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

Sincerely,

Peter Sturdivan, FSA, EA, MAAA
Principal and Consulting Actuary

Grant Camp, FSA, EA, MAAA
Principal and Consulting Actuary

PRS:GC:ccg

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Summary of Valuation Results

Overview of Results ($ in thousands)	Actuarial Valuation for Plan Year Beginning January 1, 2018	January 1, 2019
Assets		
Market Value of Assets	$41,896,232	$40,174,690
Actuarial Value of Assets	$40,212,390	$41,549,049
Investment Return (non-dedicated assets)		
Market Value of Assets	13.90%	(1.74%)
Actuarial Value of Assets	6.37%	6.17%
Funded Status		
Actuarial Accrued Liability	$43,770,547	$44,822,315
Market Funded Percentage	95.7%	89.6%
Actuarial (Pension Protection Act) Funded Percentage	91.9%	92.7%
Withdrawal Liability		
Present Value of Vested Benefits	$41,839,296	$42,821,266
Assets for Withdrawal Liability	$40,212,390	$41,549,049
Unfunded Vested Benefit Liability (UVBL)	$1,626,906	$1,272,217
Credit Balance and Contribution Requirements		
Actuarial Accrued Liability	$43,770,547	$44,822,315
Actuarial Value of Assets	$40,212,390	$41,549,049
Unfunded Actuarial Accrued Liability	$3,558,157	$3,273,266
Credit Balance at End of Prior Year	$4,593,954	$5,057,235
Normal Cost (including expenses)	$1,014,145	$1,063,629
Net Amortization Payment	$726,968	$766,483
Total Annual Cost	$1,741,113	$1,830,112
Anticipated Contributions	$1,857,000	$1,955,000
Maximum Deductible Contribution	$65,866,037	$68,166,143
Actual Contributions	$1,948,038	To Be Determined
Amortization Period		
Actuarial Value of Assets	5.4 years	4.5 years
Market Value of Assets	2.6 years	6.9 years
Participant Data		
Retirees & Beneficiaries[1]	230,157	233,589
Vested Inactive Participants	165,380	165,860
Active Participants	214,100	216,520
Total Participants in Valuation	609,637	615,969
Certification Status	Green	Green

[1] The retired life valuation included 272,980 records as of January 1, 2018 and 279,602 records as of January 1, 2019.

A. Purpose of this Report

This report has been prepared for the Western Conference of Teamsters Pension Plan as of January 1, 2019 to:

- Review the Plan's funded status as of January 1, 2019.
- Review the experience for the plan year ending December 31, 2018, including the Plan's trust fund activity and investment return, and changes in plan participant demographics that impact liabilities.
- Calculate the Plan's funding requirements under ERISA for the plan year beginning January 1, 2019.
- Determine the Plan's Amortization Period as of January 1, 2019.
- Determine the Plan's Unfunded Vested Benefit Liability for withdrawal liability purposes as of December 31, 2018, in accordance with the Multiemployer Pension Plan Amendments Act of 1980.
- Determine the actuarial present value of accumulated plan benefits as of December 31, 2018, for purposes of disclosing the Plan's liabilities under FASB ASC Topic 960.

B. Plan Provisions

The valuation reflects the plan provisions in effect on January 1, 2019. There were no changes to the plan provisions during the year that affected the valuation.

C. Actuarial Methods and Assumptions

Changes in Assumptions

Other than the assumptions mandated by the IRS, the following changes were made to the assumptions for this valuation in order to reflect recent and anticipated plan experience:

- The discount rate used for the SBA Dedication was changed to 4.16% for 2019 from 4.05% for 2018.
- The form of payment factor was updated to reflect recent plan experience.
- Retired participants aged 100 or older with a due and unpaid benefit were assumed to never receive payment.

The combined impact of these assumption changes was a decrease in liabilities of approximately $18.4 million.

- In addition, the anticipated annual employer contributions were increased to $1.955 billion for purposes of projecting the 2019 Funding Standard Account and determining the Amortization Period.

Details on the updated assumptions can be found in Appendix C of this report.

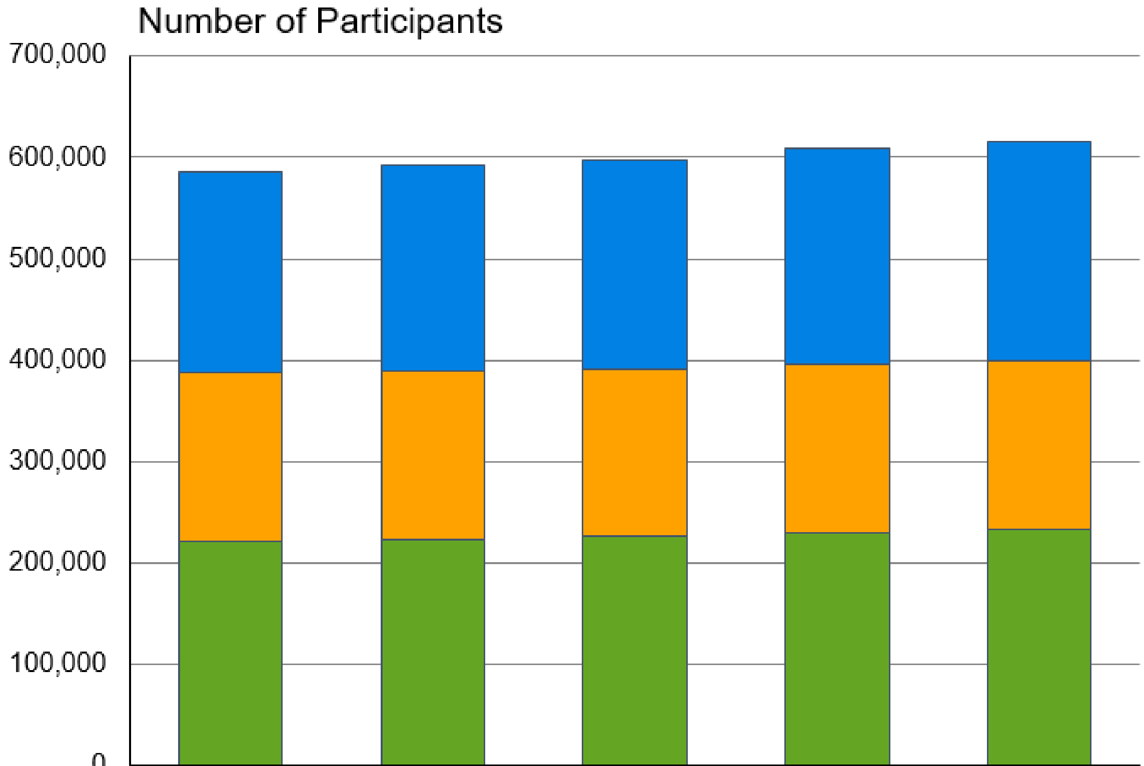
Changes in Actuarial Methods

There were no changes in the actuarial funding method for the January 1, 2019 valuation.

D. Participant Information

Participant Counts

The following chart shows the number of participants included in this valuation, along with comparable information from the last several valuations.

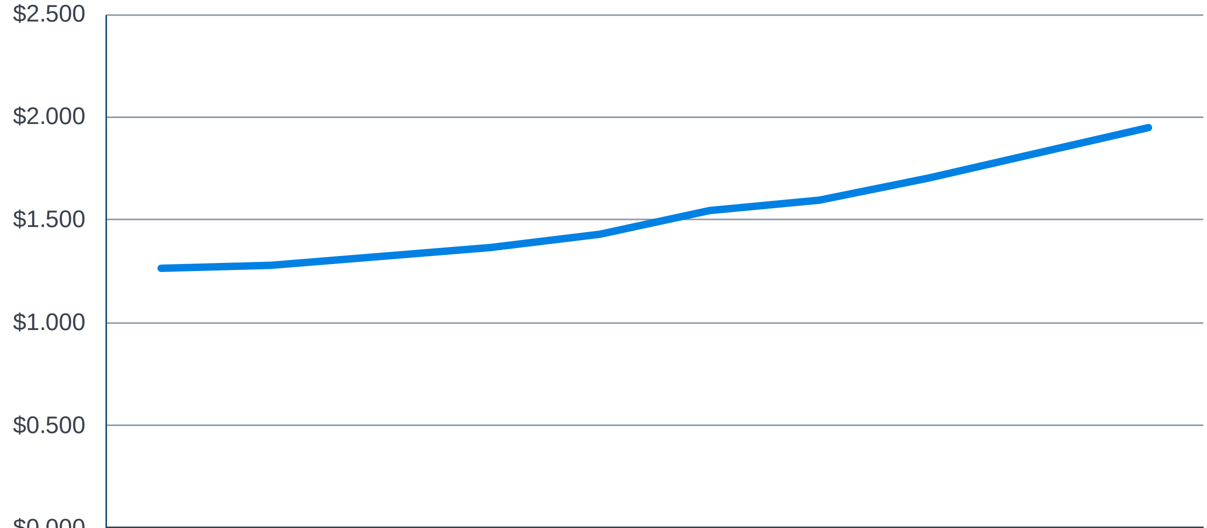


	2015	2016	2017	2018	2019
Active	197,120	202,940	206,340	214,100	216,520
Vested Inactive	166,440	165,920	164,640	165,380	165,860
In Pay	221,502	223,971	226,870	230,157	233,589
Totals	585,062	592,831	597,850	609,637	615,969

For valuation purposes, an active participant is not retired, terminated or deceased on the valuation date, has satisfied the participation requirements of the Plan, and worked at least 250 hours in the plan year immediately prior to the valuation date, or worked at least one hour in the plan year immediately prior to the valuation date and worked at least 250 hours in the second plan year preceding the valuation date.

Contributions

Based on the hours assumptions and the contribution rates in effect for December 31, 2018, contributions for the plan year beginning January 1, 2019, are expected to be $1.955 billion. The graph below shows how this level compares with the Plan's historical level of contributions.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Contributions	$1.265	$1.276	$1.323	$1.367	$1.431	$1.544	$1.596	$1.706	$1.829	$1.948

E. Plan Assets

The Plan's market value of assets is the value of net assets available for benefits as shown on the Plan's audit. The Plan's assets are split into dedicated assets and non-dedicated assets.

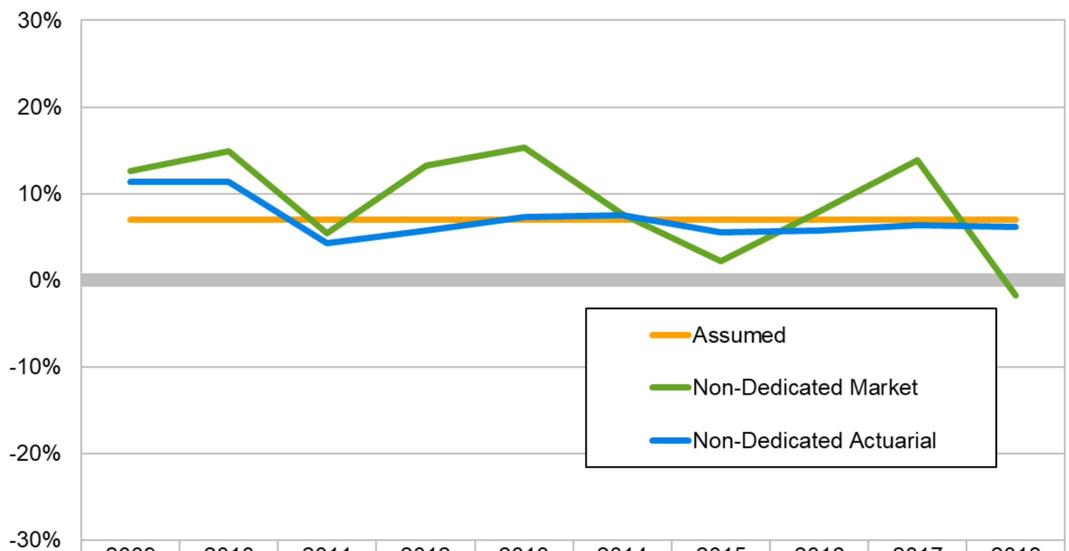
The dedicated assets are contained in the Strategic Bond Account (SBA). The market value of the FDA and 1982/84 Annuity Account (82/84 Account) are combined with non-dedicated assets for purposes of determining the actuarial value of assets.

The Plan uses an asset smoothing method on the non-dedicated portion of the assets that recognizes market value investment gains and losses over a period of five years.

The sum of the dedicated assets and the smoothed value of non-dedicated assets is called the actuarial value of assets, and is used for determining the PPA funded percentage, the minimum and maximum contributions under ERISA, and computation of the Amortization Period. The table below shows these values along with the Plan's rate of investment return, net of investment expenses, over the past five years on total plan assets.

	Prior Year Rate of Return on Total Plan Assets		($ in thousands)		
January 1,	**Market**	**Actuarial**	**Market Value of Assets**	**ERISA Actuarial Value of Assets**	**UVBL Actuarial Value of Assets**
2019	(1.76%)	5.87%	$40,174,690	$41,549,049	$41,549,049
2018	13.08	6.27	41,896,232	40,212,390	40,212,390
2017	7.84	5.97	38,020,891	38,840,852	37,976,193
2016	1.78	5.26	36,288,138	37,692,694	35,963,376
2015	7.56	7.08	36,739,196	36,878,833	34,284,858

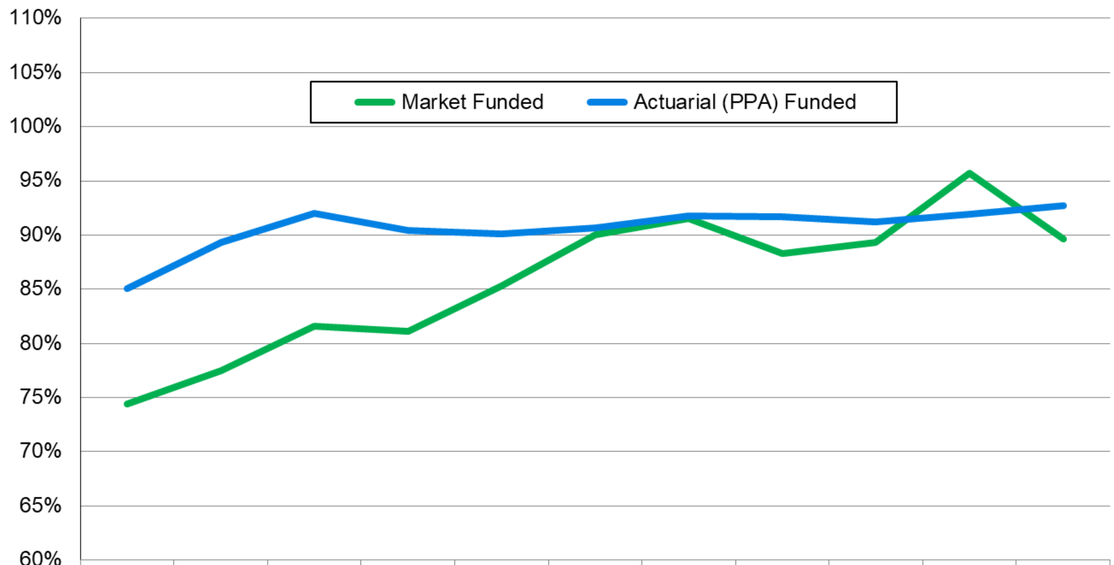
Over the past 10 years, the Plan's total assets have averaged a 8.27% return on a market value basis, net of investment expenses. The Plan's non-dedicated assets have averaged a 8.97% return on a market value basis, net of investment expenses over the same time period. The numerical history can be found on Exhibit 3.3 in this report. The graph below shows the Plan's annual returns on the non-dedicated assets over the last ten years, compared with the Plan's investment return assumption.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Assumed	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%
Non-Dedicated Market	12.6%	14.9%	5.4%	13.2%	15.3%	7.6%	2.2%	8.0%	13.9%	-1.7%
Non-Dedicated Actuarial	11.4%	11.4%	4.3%	5.7%	7.3%	7.5%	5.5%	5.7%	6.4%	6.2%

F. Funded Status

An important indicator of the Plan's funded status is the ratio of the Plan's *market value of assets* to the Plan's liability for all benefits earned to date, called the actuarial accrued liability. For purposes of determining the Plan's zone status under the PPA, the Plan's *actuarial value of assets* is compared with this liability measurement. Below is a chart showing a historical comparison of these measurements at the beginning of each plan year.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Market Funded	74.4%	77.5%	81.6%	81.1%	85.3%	90.0%	91.5%	88.3%	89.3%	95.7%	89.6%
Actuarial (PPA) Funded	85.1%	89.3%	92.0%	90.4%	90.1%	90.7%	91.8%	91.7%	91.2%	91.9%	92.7%

Below is a table that details the relevant information for the past several valuations.

January 1,	Actuarial Accrued Liability ($ in thousands)				Market Value Funded %	Actuarial Value (PPA) Funded %
	Retirees & Beneficiaries	Vested Inactive	Active	Total		
2019	$25,893,785	$4,898,382	$14,030,148	$44,822,315	89.6%	92.7%
2018	25,215,056	4,794,963	13,760,528	43,770,547	95.7	91.9
2017	24,522,851	4,626,792	13,417,126	42,566,769	89.3	91.2
2016	23,289,314	4,591,771	13,193,114	41,074,199	88.3	91.7
2015	22,796,728	4,494,421	12,876,462	40,167,611	91.5	91.8

The **Annual Funding Notice** to participants must be distributed within 120 days of the end of the plan year and will include the actuarial (PPA) funded percentage for 2017, 2018, and 2019, as shown above.

G. Contribution Requirements

Actuarial Accrued Liability

For computing ERISA minimum and maximum funding requirements, the actuarial cost method takes into account benefits that are earned to date. The resulting liability is called the actuarial accrued liability, and is compared with the actuarial value of assets, as shown below.

January 1,	($ in thousands)		
	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability
2019	$44,822,315	$41,549,049	3,273,266
2018	43,770,547	40,212,390	3,558,157
2017	42,566,769	38,840,852	3,725,917
2016	41,074,199	37,692,694	3,381,505

Development of Minimum Required Contribution and Credit Balance

The Plan's minimum required contribution consists of two components:

- Gross normal cost, which includes the cost of benefits allocated to the next plan year and administrative expenses expected to be paid in the next plan year, and
- Amortization payments to the unfunded actuarial accrued liability.

If contributions do not meet these costs, the Plan's credit balance, which was created by contributions in excess of minimum required contributions in past years, may be used to offset the costs. The table below summarizes the Plan's contribution requirements, actual contributions, and credit balance over the last several years.

($ in thousands)					
December 31,	Normal Cost	Net Amortization Payment	Annual Cost, Middle of Year	Actual Contribution	Credit Balance, End of Year
2019	$1,063,629	766,483	$1,893,083	$1,955,000[(1)]	$5,475,672[(1)]
2018	1,014,145	726,968	1,801,021	1,948,038	5,057,235
2017	959,764	683,228	1,699,524	1,828,897	4,593,954
2016	890,316	574,107	1,514,811	1,705,556	4,177,724
2015	849,190	505,410	1,401,209	1,596,395	3,727,967

[(1)] Expected based on hours assumption for valuation.

H. Amortization Period

The Plan's amortization period is a measure of the long-term financial solvency of the Plan. The amortization period is the number of years necessary for a level excess of anticipated employer contributions over the normal cost and non-investment expenses to pay off the unfunded actuarial liability or funding shortfall. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets. The funding shortfall is the difference between the actuarial liability and the market value of assets.

PPA requires plans to amortize changes in the unfunded actuarial liability (i.e. annual experience gains and losses, changes in assumptions and plan amendments) over a 15-year period. The average amortization period at any point in time under PPA is about 10 years. Therefore, based on the unfunded actuarial liability, an amortization period of less than 10 years is desired.

Amortization Period ($ in thousands)		
	January 1, 2018	January 1, 2019
Unfunded Actuarial Liability (UAL)	$ 3,558,157	$ 3,273,266
Expected Employer Contributions	1,857,000	1,955,000
Expected Expenses	105,000	111,000
Normal Cost (payable monthly)	946,802	992,123
Excess Contributions	$ 805,198	$ 851,877
Years to Amortize UAL	5.4	4.5
Funding Shortfall on a Market Value basis	$ 1,874,315	$ 4,647,625
Years to Amortize Funding Shortfall on a Market Value basis	2.6	6.9

I. Unfunded Vested Benefit Liability

Withdrawing employers are assessed a portion of the Plan's unfunded vested benefit liability for withdrawal liability, which is determined by subtracting the Plan's assets (calculated in Exhibit 3.4) from the liability for all *vested* benefits earned to date. The assets for withdrawal liability are identical to the actuarial value of assets. The table below summarizes this information for the past several years.

	($ in thousands)		
December 31,	Present Value of Vested Benefits	Assets For Withdrawal Liability	Unfunded Vested Benefit Liability
2018	$42,821,266	$41,549,049	$1,272,217
2017	41,839,296	40,212,390	1,626,906
2016	40,720,221	37,976,193	2,744,028
2015	39,234,177	35,963,376	3,270,801
2014	38,337,368	34,284,858	4,052,510

J. Zone Status

Zone Status

The following chart shows the Plan's Zone Status that has been reported in the Actuarial Certification since PPA became effective beginning in 2008.

Plan Year Beginning January 1,	Zone Status
2019	**Green**
2018	**Green**
2017	**Green**
2016	**Green**
2015	**Green**
2014	**Green**
2013	**Green**
2012	**Green**
2011	**Green**
2010	**Green**
2009	**Green**
2008	**Green**

As shown above, the Plan is neither endangered nor critical for the plan year beginning January 1, 2019.

K. Plan Experience

Initial Observations

We note the following comparisons from last year's valuation:

- Employer contributions in 2018 (exclusive of withdrawal liability payments) increased by 6.5% to $1.929 billion from $1.811 billion in 2017.
- Benefit payments increased by 2.5% to $2.83 billion in 2018 from $2.76 billion in 2017.
- Operating expenses in 2018 amounted to 5.6% of total employer contributions; the same percentage as in 2017.
- The net assets available for plan benefits on a market value basis decreased by approximately $1.7 billion during 2018, compared with an increase of approximately $3.9 billion during the previous year.

Impact of Plan Experience during Prior Plan Year

Actuarial gains are produced from more favorable experience than assumed in the previous valuation. On the other hand, actuarial losses are produced from experience less favorable than assumed. The most important of these gains and losses are shown below and described in the paragraphs that follow.

Investment Return

The estimated investment return on the net market value of assets was approximately (1.76%) for 2018. The corresponding returns for 2017 and 2016 were 13.08% and 7.84% respectively.

The estimated market value investment return for 2018 on non-dedicated assets was about (1.74%), resulting in an approximate $3.36 billion loss under the assumed net investment return of 7.00%.

In the same year, the net investment return on the actuarial value of non-dedicated assets was approximately 6.17%, resulting in an approximate $306 million loss. The investment return on the actuarial value of non-dedicated assets is different from the investment return on the market value of non-dedicated assets because of the smoothing of investment gains and losses.

The investment return on the actuarial value of total assets was estimated to be 5.87%. This resulted in an actuarial loss of about $375 million.

Demographic Experience

The gains and losses due to all non-investment experience during 2018 increased the Plan's actuarial liability by approximately $29 million, less than 0.1% of total liability. The commentary below identifies the major components of the demographic gains and losses experienced during 2018.

Contribution Rates and Hours Expectations

Various bargaining parties negotiated increases in contribution rates which, due to the Plan's benefit formula, increased benefits earned during 2018. Additionally, continuing active participants earned larger benefits during 2018 due to higher hours than expected under the current assumptions. We estimated that the increase in the Plan's liabilities was about $37 million due to these factors.

We note that, the increase in liability due to higher contribution rates and higher hours is offset by higher contributions to the Trust and in aggregate, the unfunded actuarial liability is reduced due to contributions exceeding the value of the additional benefits.

New Entrants

Actual new entrants also displayed different demographic characteristics than expected, and likely earned larger benefits than expected under the new entrant assumption. We estimated the increase in liability due to new entrants to be approximately $26 million.

The following is a summary of the remaining major demographic gains and losses.

Demographic Losses

A source of demographic loss this year was increases in active participant benefits that were not attributable to increased contributions during the year. These increases are likely due to accrual of past service benefits, changes in PEER level, and other data revisions.

Another source of demographic loss was increases in benefits for participants in pay status. These increases are likely due to working retirees accruing additional benefits.

Demographic Gains

Sources of demographic gains include fewer participants retiring from active status, more terminations of active participants, and fewer active participants becoming disabled compared with the current assumptions. These gains are consistent with the Plan's experience in recent years.

Comments

The overall $34 million demographic gain is small indicating that, in the aggregate, the assumptions produce reasonable results. However, we continue to monitor the demographic experience of the plan on an annual basis in order to confirm that the assumptions remain individually reasonable.

Sensitivity of Results

The results presented in this report are dependent upon the actuarial assumptions being realized in the future. To the extent that actual Plan experience differs from the assumptions, future actuarial costs will differ from those presented in this report. For example, actuarial gains and losses emerge in plan years where actual contribution amounts differ from those anticipated by our assumptions. Section 6 has additional information on the risk faced by the Plan.

SECTION 2
Introduction

The purpose of this actuarial valuation of the Western Conference of Teamsters Pension Plan is to review last year's activity, compute this year's cost, and test the Plan's funded status. Specifically:

- In Section 3, we summarize the Plan's trust fund activity and measure its investment return.
- In Section 4, we evaluate the Plan's contribution requirements, determine the appropriate charges and credits to the ERISA minimum Funding Standard Account for the plan year ending December 31, 2018, and estimate the credit balance at the end of this year. We also calculate the maximum tax-deductible contribution for the plan year ending December 31, 2019, and the Amortization Period as of January 1, 2019.
- In Section 5, we test the Plan's funded status by comparing the market value of assets with the actuarial present value of accumulated plan benefits, computed in accordance with FASB ASC Topic 960. We also summarize the Plan's Present Value of Vested Benefits in Exhibit 5.3 and calculate the Plan's Unfunded Vested Benefit Liability for withdrawal liability purposes.
- In Section 6, we identify and asses the risks that may be significant to the Plan. We also disclose various historical measures of the Plan, and projected the next 20 years of benefit payments on a closed group basis.

The appendices present a summary of the Plan, participant statistics (active, retired, inactive vested), a description of the unit credit actuarial cost method, and a summary of our actuarial assumptions.

SECTION 3
Trust Fund Activity

In this section, we show the present status of the Plan's trust fund, trust activity over the past year, and historical investment return.

Exhibit 3.1 lists the types of assets held and their market value.

Exhibit 3.2 summarizes the fund's receipts and disbursements during the past year.

Exhibit 3.3 summarizes the fund's investment return, net of investment-related expenses. The exhibit displays annual rates of return at market value on all assets and non-dedicated assets for each of the last 20 years.

Exhibit 3.4 develops the actuarial value of assets as of December 31, 2018. Since the 2008 investment loss has been fully recognized, this asset value is the same as that used to determine employer liability upon withdrawal from the Plan during 2019.

Operation of the Actuarial Asset Valuation Method for Non-Dedicated Assets presents the recognition of investment gains and losses on a market value basis over actuarial expectation.

Exhibit 3.5 presents the progress of the fund balance for the past 20 years in terms of employer contributions, benefit payments, operating expenses, and net investment income.

Exhibit 3.1

Market Value of Assets
(December 31, 2018)

ASSETS	2018
INVESTMENTS - at fair value	
103-12 investment entities	$ 1,437,864,603
Cash and cash equivalents	1,363,353,784
Common/collective trusts	12,346,328,669
Corporate debt securities	2,766,531,668
Equity securities	4,014,280,115
Insurance company contracts	7,311,597,035
Limited partnerships	5,078,698,020
Mutual fund	637,109,230
Other private equity	1,661,161,994
Pooled separate account	55,482,135
Real estate	1,489,225,656
U.S. Government and Government Agency obligations	588,261,107
	38,749,894,016
Securities on loan	
Corporate debt securities	15,869,304
Equity securities	488,140,377
Insurance company contracts	2,027,695,010
U.S. Government and Government Agency obligations	30,011,044
	2,561,715,735
Fair value of collateral held for securities on loan	2,472,113,906
Total investments	43,783,723,657
RECEIVABLES	
Due from broker for securities sold	182,391,100
Contributions due from employers - net	153,300,000
Withdrawal liability receivable - net[1]	0
Accrued investment income	95,770,841
Swaps receivable from counterparties	5,464,103
Forward foreign currency contracts	1,334,924
Total receivables	438,260,968
OTHER ASSETS	5,615,085
CASH	6,358,741
Total assets	44,233,958,451

LIABILITIES AND NET ASSETS

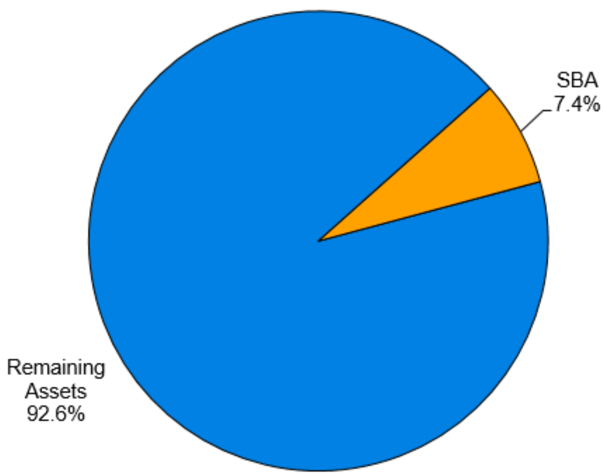
LIABILITIES	
Liability to return collateral held for securities on loan	2,596,301,862
Securities sold, not yet purchased	1,276,447,806
Due to broker for securities purchased	161,878,769
Accounts payable and accrued expenses	22,009,594
Swaps payable to counterparties	1,299,734
Forward foreign currency contracts	1,330,526
Total liabilities	4,059,268,291
NET ASSETS AVAILABLE FOR BENEFITS	$ 40,174,690,160

[1] For valuation purposes, receivable Withdrawal liability payments are excluded from assets.

Exhibit 3.1
(Continued)

($ in thousands)		
	Year Ending December 31, 2017	Year Ending December 31, 2018
a. Strategic Bond Account	$ 3,115,637	$ 2,774,898
b. All Remaining Assets	38,780,595	37,399,792
c. Net Assets Available for Plan Benefits	$ 41,896,232	$ 40,174,690

December 31, 2017



December 31, 2018

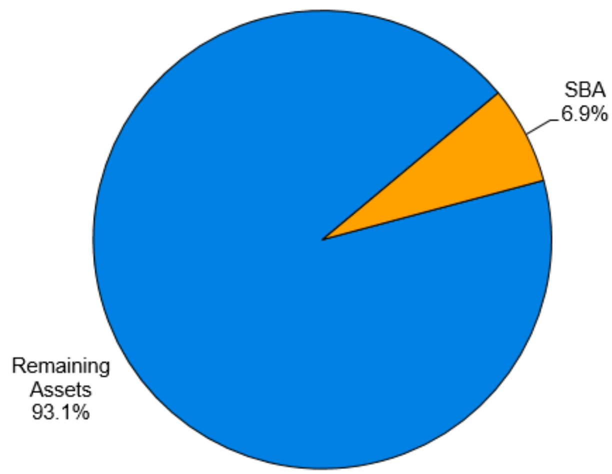


Exhibit 3.2

Receipts and Disbursements
(Year Ended December 31, 2018)

	2018
ADDITIONS	
Investment income	
Interest, dividends and other investment income	$ 875,730,234
Net appreciation/(depreciation) in fair value of investments	(1,387,117,685)
Net appreciation/(depreciation) in fair value of collateral held for securities on loan	(14,337,379)
	(525,724,830)
Less investment expenses	(244,562,109)
Investment income - net	(770,286,939)
Employer contributions	1,929,063,297
Employer withdrawal liability income[1]	18,975,095
Other income	1,000,875
Total additions	1,178,752,328
DEDUCTIONS	
Pension benefits	2,833,944,163
Administrative expenses	108,215,341
Income tax expense	7,516,954
Total deductions	2,949,676,458
NET CHANGE	(1,770,924,130)
TRANSFER OF ASSETS TO UNRELATED PLAN	0
NET ASSETS AVAILABLE FOR BENEFITS	
Beginning of year	41,896,231,739
Adjustment to beginning of year assets	49,382,551
End of year	$ 40,174,690,160

[1] Includes ($4,000,000) adjustment to withdrawal liability payments held as receivable as of the end of the prior plan year.

Exhibit 3.3

Investment Return

Market Value of Assets Annual Rate of Investment Return					
Annual Rate for One-Year Period			Average Annual Rate for Period Ending December 31, 2018		
Plan Year Ending December 31,	All Assets	Non-Dedicated Assets	Period	All Assets	Non-Dedicated Assets
2018	-1.76%	-1.74%	1	-1.76%	-1.74%
2017	13.08%	13.90%	2	5.40%	5.79%
2016	7.84%	7.95%	3	6.21%	6.51%
2015	1.78%	2.22%	4	5.08%	5.42%
2014	7.56%	7.56%	5	5.57%	5.84%
2013	12.59%	15.25%	6	6.71%	7.36%
2012	11.93%	13.15%	7	7.44%	8.17%
2011	6.26%	5.35%	8	7.29%	7.81%
2010	13.53%	14.87%	9	7.97%	8.57%
2009	10.96%	12.60%	10	8.27%	8.97%
2008	-20.58%	-25.23%	11	5.26%	5.30%
2007	5.41%	5.67%	12	5.27%	5.33%
2006	10.61%	12.98%	13	5.67%	5.90%
2005	6.05%	6.55%	14	5.70%	5.95%
2004	9.49%	10.22%	15	5.95%	6.23%
2003	16.33%	20.76%	16	6.57%	7.08%
2002	-2.29%	-7.56%	17	6.03%	6.16%
2001	2.05%	0.89%	18	5.80%	5.86%
2000	3.35%	0.46%	19	5.67%	5.57%
1999	8.08%	14.06%	20	5.79%	5.98%

All rates reflect total investment return, net of investment-related expenses.

Exhibit 3.4

Actuarial Value of Assets
(January 1, 2019)

Non-Dedicated Asset Reconciliation
($ in thousands)

Year	(1) Market Value of Assets beginning of year	(2) Contributions*	(3) Benefit Payments	(4) Operating Expenses	(5) Other Transactions	(6) Cash Flow (2)-(3)-(4)+(5)	(7) Actual Investment Income	(8) Market Value of Assets End of Year (1)+(6)+(7)
2018	$38,780,595	$1,948,038	$2,553,877	$108,215	$0	($714,054)	($666,749)	$37,399,792
2017	34,738,820	1,828,897	2,462,641	101,978	0	(735,722)	4,777,497	38,780,595
2016	32,767,214	1,705,556	2,350,054	98,841	138,287	(605,052)	2,576,658	34,738,820
2015	32,808,706	1,596,395	2,254,987	93,897	(7,636)	(760,125)	718,633	32,767,214

Development of the Actuarial Value of Assets
($ in thousands)

Year	Market Investment Rate of Return	Market Investment Return	Expected Investment Return	Difference between Actual and Expected
2018	(1.74%)	($666,749)	$2,689,650	$ (3,356,399)
2017	13.90	4,777,497	2,405,967	2,371,530
2016	7.95	2,576,658	2,267,579	309,079
2015	2.22	718,633	2,270,005	(1,551,372)

Market Value of Non-Dedicated Assets on January 1, 2019	$	37,399,792
Add back 80% of $3,356,399 loss		2,685,119
Subtract 60% of $2,371,530 gain		(1,422,918)
Subtract 40% of $309,079 gain		(123,631)
Add back 20% of $1,551,372 loss		310,274
Actuarial Value of Non-Dedicated Assets on January 1, 2019	$	38,848,636
Preliminary Actuarial Value as a Percentage of Market Value		103.9%
Actuarial Value of Non-dedicated Assets (limited to 80%-120% of Market Value)	$	38,848,636
Actuarial Value of Dedicated Funds: SBA (see Appendix C)		2,700,413
Actuarial Value of Assets on January 1, 2019	$	41,549,049

* Includes actual withdrawal liability payments made during the plan year.

Exhibit 3.4
(Continued)

Operation of the Actuarial Asset Valuation Method for Non-Dedicated Assets ($ in thousands)

Investment Gain / (Loss) Recognized as of January 1, 2019										
	Investment Gain / (Loss) Market over Actuarially Expected	Investment Gain / (Loss) Recognition in Past Years				Investment Gain / (Loss) Recognized in Current Year	Investment Gain / (Loss) Recognized in Future Years			
Year		2014	2015	2016	2017	2018	2019	2020	2021	2022
2014	$173,720	$34,744	$34,744	$34,744	$34,744	$34,744				
2015	($1,551,372)		($310,274)	($310,274)	($310,274)	($310,274)	($310,274)			
2016	$309,079			$61,816	$61,816	$61,816	$61,816	$61,816		
2017	$2,371,530				$474,306	$474,306	$474,306	$474,306	$474,306	
2018	($3,356,399)					($671,280)	($671,280)	($671,280)	($671,280)	($671,280)
Net Gains / (Losses) Recognized by Year						($410,689)	($445,433)	($135,158)	($196,974)	($671,280)
Interest on Prior Year Gains / (Losses)						$104,781	($101,419)	($70,239)	($60,778)	($46,990)
Additional Gains / (Losses) Recognized in Current year because of 80% - 120% Corridor						$0				
Total Gain / (Loss) Recognized by year						($305,908)	($546,852)	($205,397)	($257,752)	($718,269)
Total Gains / (Losses) Deferred and to be Recognized in Future Years						($1,448,844)	($1,003,412)	($868,254)	($671,280)	$0

Exhibit 3.5

Net Cash Flow for Total Fund

($ in thousands)

December 31,	Contributions	Operating Expenses	Benefit Payments	Net Cash Flow	Net Investment Income	Net Cash Flow + Investment Income
1999	912,445	50,024	1,230,062	(367,641)	1,776,796	1,409,155
2000	981,425	52,791	1,352,093	(423,459)	784,219	360,760
2001	1,008,409	54,737	1,437,374	(483,702)	893,971	410,269
2002	1,030,563	57,454	1,557,808	(584,699)	(550,761)	(1,135,460)
2003	1,068,717	59,761	1,649,918	(640,962)	3,741,095	3,100,133
2004	1,117,378	59,232	1,746,603	(688,457)	2,466,296	1,777,839
2005	1,199,154	64,061	1,838,524	(703,431)	1,679,009	975,578
2006	1,258,898	71,638	1,919,384	(732,124)	3,045,672	2,313,548
2007	1,320,358	73,833	1,996,396	(749,871)	1,677,254	927,383
2008	1,350,530	80,375	2,059,601	(789,446)	(6,570,632)	(7,360,078)
2009	1,264,683	87,502	2,154,335	(977,154)	2,683,399	1,706,245
2010	1,276,476	84,716	2,232,529	(1,040,769)	3,537,349	2,496,580
2011	1,322,549	83,757	2,305,404	(1,066,612)	1,792,951	726,339
2012	1,367,269	83,759	2,367,600	(1,084,090)	3,502,770	2,418,680
2013	1,431,091	87,541	2,458,053	(1,114,503)	3,974,410	2,859,907
2014	1,544,129	88,635	2,530,265	(1,074,771)	2,620,954	1,546,183
2015	1,596,395	93,897	2,598,766	(1,096,268)	645,209	(451,059)
2016	1,705,556	98,841	2,676,620	(1,069,905)	2,802,657	1,732,752
2017	1,828,897	101,978	2,756,869	(1,029,950)	4,905,291	3,875,341
2018	1,948,038	108,215	2,833,944	(994,121)	(727,420)	(1,721,541)
Total as of 12/31/18	$26,532,960	$1,542,747	$41,702,148	($16,711,935)	$34,680,489	$17,968,554

SECTION 4
Contribution Requirements and Amortization Period

In this section, we calculate the projected ERISA minimum Funding Standard Account and the maximum tax-deductible limit under the Internal Revenue Code. Under the law, an Enrolled Actuary must calculate costs using an approved actuarial cost method and actuarial assumptions which, in combination, are the actuary's best estimate of future Plan experience. We also determine the Plan's Amortization Period which provides the Trustees an additional indication of the Plan's ability to pay all benefits expected to be paid for by the Plan. Our actuarial cost method and assumptions are fully explained in Appendix C: the following discussion explains only the highlights of our cost method.

The actuarial present value of projected plan benefits is made up of liabilities for benefits being paid to current retirees and their beneficiaries and of liabilities that are projected to be paid to future retirees. The chart below illustrates the allocation of the actuarial present value of projected plan benefits among these categories of participants.

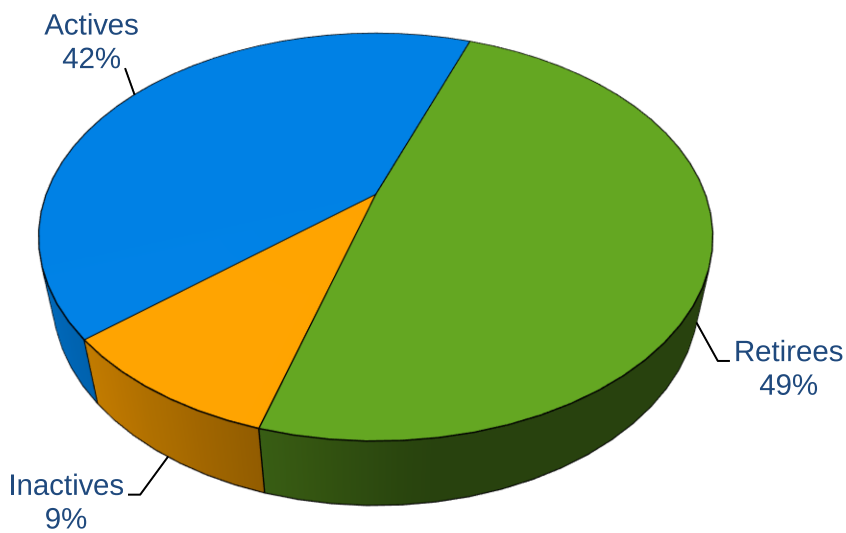


Exhibit 4.1 contains information on the actuarial balance sheet. Plan requirements consist of the actuarial present value of projected plan benefits on January 1, 2019. As illustrated above, 58% of the Plan's liabilities are for benefits to be paid to participants for whom contributions are no longer being made to the Plan. Plan resources consist of the actuarial value of assets and expected contributions to pay for projected future normal costs and expected future payments to eliminate the Plan's unfunded actuarial liability.

Exhibit 4.2 details the changes in the value of the Plan's unfunded actuarial liability from January 1, 2018, to January 1, 2019. Unfunded actuarial (accrued) liability changes during the year result from benefit accruals, contributions to the Plan, and actuarial gains and losses, which arise from actual experience different from expected. Changes to Plan provisions, actuarial assumptions, or the Plan's funding method can also impact the unfunded actuarial liability.

This year's normal cost is shown in Exhibit 4.3. The normal cost is the annual cost of benefits allocated to a plan year by the cost method and includes an allowance for non-investment expenses expected during the plan year.

ERISA Minimum Funding Requirements

Exhibit 4.4 details the entries to the Plan's Funding Standard Account for the plan year ending December 31, 2018.

Exhibit 4.5 projects the Plan's Funding Standard Account through December 31, 2019, and provides detail on the amortization charges and credits. A positive credit balance is produced by cumulative contributions sufficient to pay normal costs and to amortize the unfunded actuarial liability faster than required.

Maximum Deductible Contribution

Exhibit 4.6 calculates the maximum deductible contribution for the 2019 plan year. The anticipated contributions are less than the maximum deductible contribution, and are therefore expected to be fully deductible.

Amortization Period

Exhibit 4.7 displays the calculation of the period to amortize the Plan's unfunded actuarial liability using the actuarial value of assets and the market value of assets.

Exhibit 4.1

Actuarial Balance Sheet
(January 1, 2019)

Requirements
($ in thousands)

Present Value of Projected Benefits				
Retired Participants			$	25,893,785
Vested Inactive Participants				4,898,382
Active Participants				
Retirement	$	19,404,854		
Vested Withdrawal		1,428,879		
Death		504,578		
Disability		696,655		22,034,966
Total Present Value of Projected Benefits			$	52,827,133

Resources
($ in thousands)

Actuarial Value of Assets	$	41,549,049
Present Value of Future Normal Costs		8,004,818
Unfunded Actuarial Liability		3,273,266
Total	$	52,827,133

Exhibit 4.2

Analysis of Change in the Unfunded Actuarial Liability (January 1, 2019)

Expected Unfunded Actuarial Liability on January 1, 2019		**($ in thousands)**
Unfunded Actuarial Liability as of January 1, 2018		$ 3,558,157
Normal Cost, Including Expenses		1,014,145
Interest on the above items		320,061
Contributions		(1,948,038)
Interest on Contributions		(56,657)
Expected Unfunded Actuarial Liability as of January 1, 2019		$ 2,887,668
Changes		
Assumption changes	$ (1,904)	
Discount rate changes on dedicated funds	(16,533)	
Method Change	0	
Demographic (Gain)/Loss	28,631	
Asset (Gain)/Loss	375,404	
Total		385,598
Unfunded Actuarial Liability on January 1, 2019		$ 3,273,266

Exhibit 4.3

Normal Cost
(January 1, 2019)

Unit Credit Normal Cost			**($ in thousands)**	
Retirement	$	773,893		
Vested Withdrawal		106,745		
Death		20,597		
Disability		33,675	$	934,910
New Entrant Adjustment				21,693
Expenses ($111,000,000 Payable Mid-Year)				107,026
Total Normal Cost (Beginning of Year)			$	1,063,629

Exhibit 4.4

Funding Standard Account
(Year Ending December 31, 2018)

Charges to Funding Standard Account	($ in thousands)
Prior Year Fund Deficiency, if any	$ 0
Normal Cost for Year	1,014,145
Amortization Charges	726,968
Interest on Fund Deficiency, Normal Cost, and Amortization Charges	121,878
Total Charges	$ 1,862,991

Credits to Funding Standard Account	
Prior Year Credit Balance, if any	$ 4,593,954
Employer Contributions	1,948,038
Amortization Credits	0
Interest on Credit Balance, Amortization Credits, and Contributions	378,234
Total Credits	$ 6,920,226

Balance	
Credit Balance, if any	$ 5,057,235

Exhibit 4.5

Projected Funding Standard Account
(Year Ending December 31, 2019)

Charges to Funding Standard Account		**($ in thousands)**
Prior Year Fund Deficiency, if any	$	0
Normal Cost for Year		1,063,629
Amortization Charges*		766,483
Interest on Fund Deficiency, Normal Cost, and Amortization Charges		128,108
Total Charges	$	1,958,220
Credits to Funding Standard Account		
Prior Year Credit Balance, if any	$	5,057,235
Expected Employer Contributions		1,955,000
Amortization Credits*		0
Interest on Credit Balance, Amortization Credits, and Contributions		421,657
Total Credits	$	7,433,892
Balance		
Projected Credit Balance, if any	$	5,475,672
Minimum Required Contribution	$	0

* *See table on the following page for detail.*

Amortization Bases

The following table shows the various entries used to establish the year-by-year charges and credits with respect to the Funding Standard Account.

Before Combine/Offset

($ in thousands)	Year Established	Original Balance	01/01/2019 Balance	Years Remaining	Amortization Payment
Charges					
2008 Net Investment Loss	2009	$4,407,752	$3,710,536	19.000	$335,519
2008 Net Investment Loss	2010	$588,120	$500,827	19.000	$45,286
2008 Net Investment Loss	2011	$671,272	$578,802	19.000	$52,338
2008 Net Investment Loss	2012	$467,560	$408,640	19.000	$36,951
2008 Net Investment Loss	2013	$875,912	$776,851	19.000	$70,245
2008 Net Investment Loss	2014	$1,635,968	$1,474,253	19.000	$133,307
Prior Combined/Offset Base	2018	$515,932	$494,993	13.820	$53,322
Experience Loss	2019	$404,036	$404,036	15.000	$41,459
Total Charges		$9,566,552	$8,348,938		$768,427
Credits					
Assumption Change	2019	$18,437	$18,437	15.000	$1,892
Total Credits		$18,437	$18,437		$1,892
Net Charges/(Credits)			$8,330,501		$766,535

Combined/Offset

($ in thousands)	Year Established	Original Balance	01/01/2019 Balance	Years Remaining	Amortization Payment
Charges					
2008 Net Investment Loss	2009	$4,407,752	$3,710,536	19.000	$335,519
2008 Net Investment Loss	2010	$588,120	$500,827	19.000	$45,286
2008 Net Investment Loss	2011	$671,272	$578,802	19.000	$52,338
2008 Net Investment Loss	2012	$467,560	$408,640	19.000	$36,951
2008 Net Investment Loss	2013	$875,912	$776,851	19.000	$70,245
2008 Net Investment Loss	2014	$1,635,968	$1,474,253	19.000	$133,307
Combined/Offset Base	2019	$880,592	$880,592	14.329	$92,837
Total Charges		$9,527,176	$8,330,501		$766,483
Credits					
		$0	$0		$0
Total Credits		$0	$0		$0
Net Charges/(Credits)			$8,330,501		$766,483

Exhibit 4.6

Maximum Tax-Deductible Contribution
(Plan Year Ending December 31, 2019)

($ in thousands)

1.	**Ten Year Amortization Limitation: (IRC Section 404(a)(1)(A)(iii))**				
	Normal Cost	$	1,063,629		
	Amortization of Unfunded Actuarial Liability	+	435,551		
	Interest	+	104,943	$	1,604,123
2.	**Full Funding Limitation: (IRC Section 412(c)(7)(A)(i))**				
	Actuarial Liability at Beginning of Year	$	44,822,315		
	Unit Credit Normal Cost, including expenses, at Beginning of Year	+	1,063,629		
	Test Value of Assets, at Beginning of Year	-	40,174,690		
	Interest	+	399,788	$	6,111,042
3.	**Unfunded Current Liability**				
	90% of RPA Current Liability, at End of Year	$	70,400,505		
	Actuarial Value of Assets Projected to End of Year	-	39,990,073	$	30,410,432
4.	**Unfunded Current Liability Limitation: (IRC Section 404(a)(1)(D))**				
	140% of Current Liability at Year End	$	109,511,896		
	Actuarial Value of Assets at Year End	-	41,345,753		
	Unfunded Current Liability			$	68,166,143
5.	**Maximum Tax-Deductible Contribution Lesser of (1) or (2), but not less than (3) or (4)**			$	68,166,143

There are alternative calculations of the Maximum Deductible Contribution under IRC Section 404 that may produce a different amount than illustrated above. Please consult your tax advisors regarding the deductibility of cash contributions.

Exhibit 4.6
(Continued)

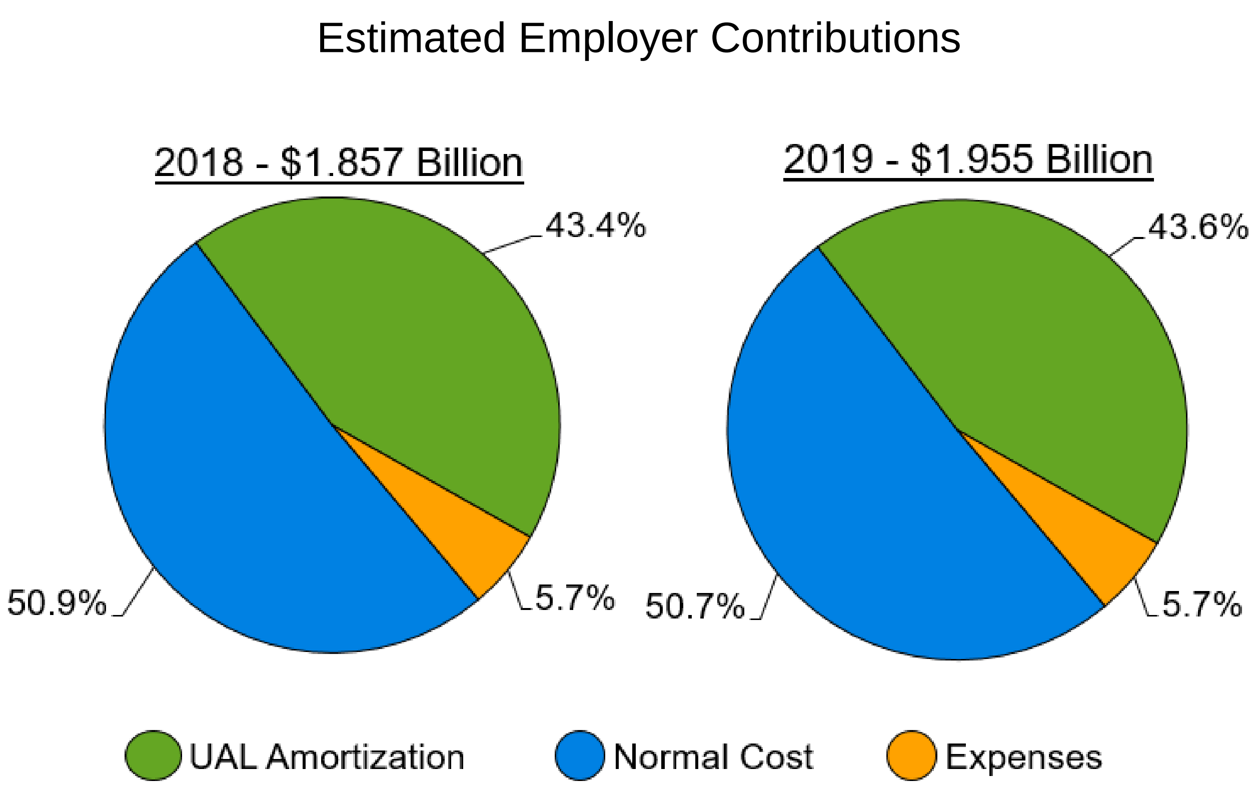
The current liability defined under IRC Section 404(a)(1)(D) is developed in the following table. Current liability is determined using a 3.06% interest assumption and mortality as specified by the IRS. The 3.06% interest assumption is within the required corridor of the weighted average of 30-Year Treasury Bond Rates published by the IRS.

		($ in thousands)
Current Liability, Beginning of Year		
Retirees	$	37,278,204
Vested Inactive Participants		10,188,794
Active Participants		29,067,289
Total	$	76,534,287
Changes Expected During 2019 Plan Year		
Accrual of Benefits	$	2,218,465
Expected Benefit Payments	-	2,895,502
Interest	+	2,365,533
Total	$	1,688,496
Current Liability, End of Year	$	78,222,783

Exhibit 4.7
Amortization Period

Exhibit 4.7 shows the amortization periods as of the current and prior valuation dates.

($ in thousands)		
	January 1, 2018	January 1, 2019
a. Estimated Employer Contributions	$1,857,000	$1,955,000
b. Expenses	$105,000	$111,000
c. Normal Cost (payable monthly)	$946,802	$992,123
d. Estimated Employer Contribution to Amortize Unfunded Actuarial Liability (a.-b.-c.)	$805,198	$851,877
e. Unfunded Actuarial Liability	$3,558,157	$3,273,266
f. Amortization Period	5.4 years	4.5 years
g. Funding Shortfall on a Market Value basis	$1,874,315	$4,647,625
h. Estimated Period to Amortize the Unfunded Actuarial Liability using Market Value of Assets	2.6 years	6.9 years



SECTION 5
Funded Status

In this section, we provide the Plan's funded status by comparing the Fund's Market Value of Assets with the Actuarial Present Value of Accumulated Plan Benefits and the Plan's Present Value of Vested Benefits under FASB ASC Topic 960. As shown on Exhibit 5.1, the Market Value of the Plan's Assets is less than the Present Value of Accumulated Plan Benefits as of December 31, 2018. Exhibit 5.2 shows the change in the Present Value of Accumulated Plan Benefits from December 31, 2017, to December 31, 2018.

Exhibit 5.3 shows the Plan's Unfunded Vested Benefits Liability for purposes of determining withdrawal liability. As of December 31, 2018, the Assets for Withdrawal Liability are less than the Present Value of Vested Benefits. This determination will impact withdrawal liability calculations for employers withdrawing from the Plan during the 2019 plan year.

Exhibit 5.1

Statement of Actuarial Present Value of Accumulated Plan Benefits

	FASB ASC Topic 960 ($ in thousands)	
	December 31, 2017	December 31, 2018
Vested Benefits		
Retirees & Beneficiaries	$ 25,209,307	$ 25,888,473
Vested Inactive Participants	4,794,926	4,898,348
Active Participants	11,835,063	12,034,445
Total	$ 41,839,296	$ 42,821,266
Non-Vested Benefits		
Active and Other Non-Vested Benefits	1,931,251	2,001,049
Total	$ 1,931,251	$ 2,001,049
Actuarial Present Value of Accumulated Plan Benefits	$ 43,770,547	$ 44,822,315
Assets		
Market Value of Assets (MV)	$ 41,896,232	$ 40,174,690
Actuarial Value of Assets (AV)	$ 40,212,390	$ 41,549,049
Funding Ratios		
Ratio of MV to Present Value of Vested Benefits	100.1%	93.8%
Ratio of MV to Present Value of Accumulated Plan Benefits	95.7%	89.6%
PPA Funding Ratio		
Ratio of AV to Present Value of Accumulated Plan Benefits	91.9%	92.7%

Exhibit 5.2

Statement of Changes in Actuarial Present Value of Accumulated Plan Benefits

	($ in thousands)
Value as of December 31, 2017	$ 43,770,547
Changes	
Benefits Accumulated	912,904
Actuarial (Gain)/Loss	28,631
Interest	2,962,614
Benefit Payments	(2,833,944)
Assumption Changes	(18,437)
Net Change	$ 1,051,768
Value as of December 31, 2018	$ 44,822,315

Exhibit 5.3

Unfunded Vested Benefit Liability

	($ in thousands) December 31, 2017	($ in thousands) December 31, 2018
Actuarial Present Value of Vested Benefits		
Active Participants	$ 11,835,063	$ 12,034,445
Vested Inactive Participants	4,794,926	4,898,348
Retirees & Beneficiaries	25,209,307	25,888,473
Total	$ 41,839,296	$ 42,821,266
UVBL Asset Value	$ 40,212,390	$ 41,549,049
Unfunded Vested Benefit Liability	$ 1,626,906	$ 1,272,217
Excess of the Actuarial Value of Assets over the Vested Benefit Liability	NA	NA
Percentage Funded	96.1%	97.0%

SECTION 6
Risk Disclosure, History, and Projections

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is certain that future experience will not exactly match the assumptions. As an example, investments may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these differences when making decisions that may affect the future financial health of the Plan.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan.
- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

Below is a summary of the significant risks that could impact the plan. **Exhibit 6.1** displays historical statistics. **Exhibit 6.2** displays plan maturity measures. **Exhibit 6.3** provides a projection of benefit payments on a closed group basis.

Investment Risk

Definition: Investment risk is the potential that investment returns will be different than expected.

Identification: To the extent that actual investment returns differ from the assumed investment return, the Plan's future assets, funding contributions, and funded status may differ significantly from those presented in this valuation.

Assessment: Approximately 5% of the plan's liabilities are matched by a dedicated bond portfolio and are substantially insulated from investment risk. The annualized return for the plan's non-dedicated assets has been 8.97% over the last 10 years, and 5.98% over the last 20 years. The 20-year return reflects the -25.2% net investment return in 2008. Exhibit 3.3 provides more detail on the actual annual return on all assets and the non-dedicated assets.

Interest Rate Risk

Definition: Interest rate risk is the potential that interest rates will be different than expected.

Identification: The non-dedicated pension liabilities have been calculated by using the interest rate described in Appendix C, currently 7%. If interest rates in future valuations differ from this valuation, future pension liabilities, funding contributions, and the Plan's funded status may differ significantly from those presented in this valuation. As a general rule, using a lower interest rate will result in a higher pension liability, and vice versa. One aspect that can be used to estimate the impact of different interest rates is a plan's duration.

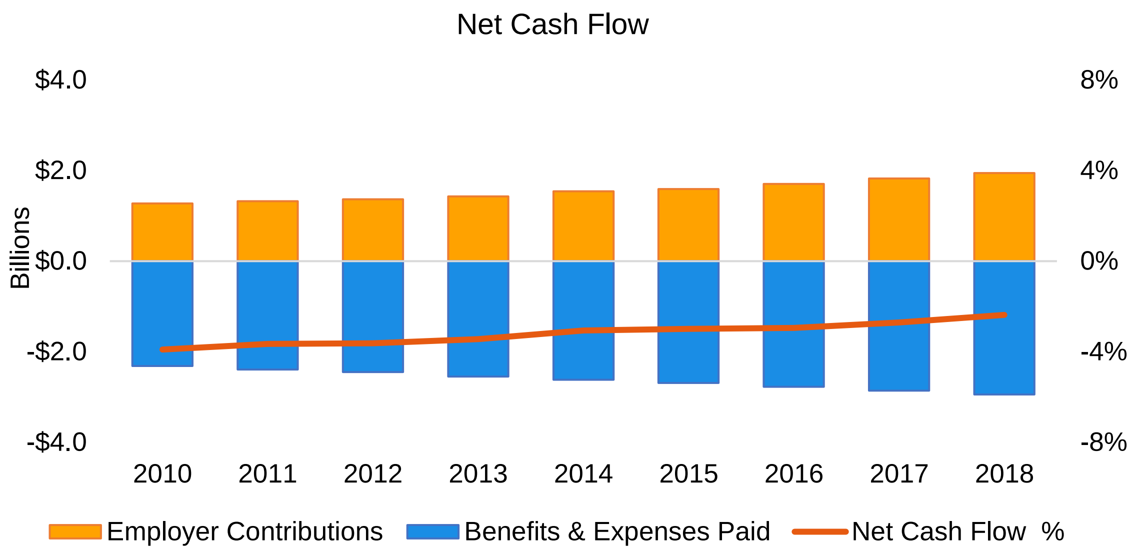
Assessment: If the interest rate changes by 1%, the estimated percentage change in pension liability is a plan's duration in years. The approximate duration of the plan's non-dedicated pension liability is 12 years as of the current valuation date. As such, if the interest rate changes by 1%, the estimated change in non-dedicated pension liability is about 12%.

Liquidity Risk

Definition: Liquidity risk is the potential that assets must be liquidated at a loss earlier than planned in order to pay for the plan's benefits and operating costs. This risk is meaningfully heightened for plans with significant negative cash flow, in which contributions are substantially less than annual benefit payments plus expenses.

Identification: The plan has negative annual cash flow because the sum of benefit payments plus non-investment expenses is larger than contributions. The plan also has an allocation to illiquid assets such as real estate and private equity. As a result, there is a risk that assets may need to be liquidated at a loss before planned in order to pay benefits and expenses.

Assessment: *Negative Cash-flow*. The plan's negative cash-flow has improved from -3.9% during 2010 to -2.4% during 2018 as a percent of the beginning of year market value of assets. As such, the investment return required to cover the negative cash-flow has declined over this time period.



Illiquid Assets. The Plan's investment consultant regularly conducts liquidity tests to maintain a sufficient level of liquid assets to make benefit payments.

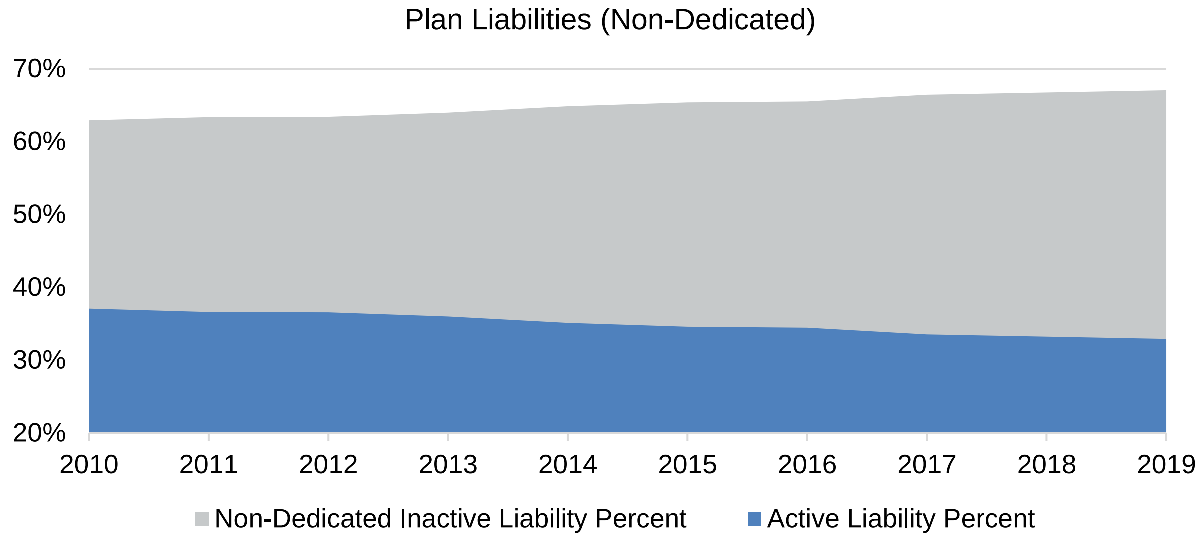
Maturity Risk

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

Identification: The plan is subject to maturity risk because as plan assets and liabilities continue to grow, the impact of any gains or losses on the assets or liabilities also becomes larger.

Assessment: A portion of retiree liability is covered by a dedicated bond portfolio, mitigating some maturity risk. The ratio of the Plan's non-dedicated inactive liability to total non-dedicated liability rose from 63% at January 1, 2010 to 67% at January 1, 2019.

As of the valuation date, non-dedicated assets are equal to about 19 times the prior year's contributions indicating a one-year non-dedicated asset loss of 10% would be equal to about 1.9 times the prior year's contributions.



Contribution Risk

Definition: Contribution risk is the possibility that actual future contributions are lower than expected future contributions.

Identification: Future annual contributions are assumed to continue at the same level as the previous year for the Pension Protection Act of 2006 (PPA) actuarial certification. To the extent that actual contributions differ from assumed contributions the Plan's future funded percentage and PPA zone status may be different.

Assessment: Actual annual contributions have increased from about $1.3 billion in 2010 to over $1.9 billion in 2018. Thus, actual annual contributions have exceeded the assumed level of contributions in each plan year after 2010.

Retirement Risk

Definition: Retirement risk is the potential for participants to retire and receive subsidized benefits more valuable than expected.

Identification: The plan has unreduced (PEER) early retirement benefits. If participants retire at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

Assessment: The actual to expected ratio of retirements for active participants who are eligible for unreduced PEER early retirement benefits during the period from January 1, 2013 through December 31, 2018 was 86%, indicating that the number of active participants recently electing unreduced early retirement benefits has been less than expected.

Other Demographic Risks

Definition: Other demographic risks include the potential that mortality or other demographic experience will be different than expected.

Identification: The liabilities reported herein have been calculated by assuming that participants will follow patterns of demographic experience (e.g., mortality, withdrawal, disability, retirement, form of payment election, etc.) as described in Appendix C. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, funding contributions, and funded status may differ significantly from those presented in this valuation.

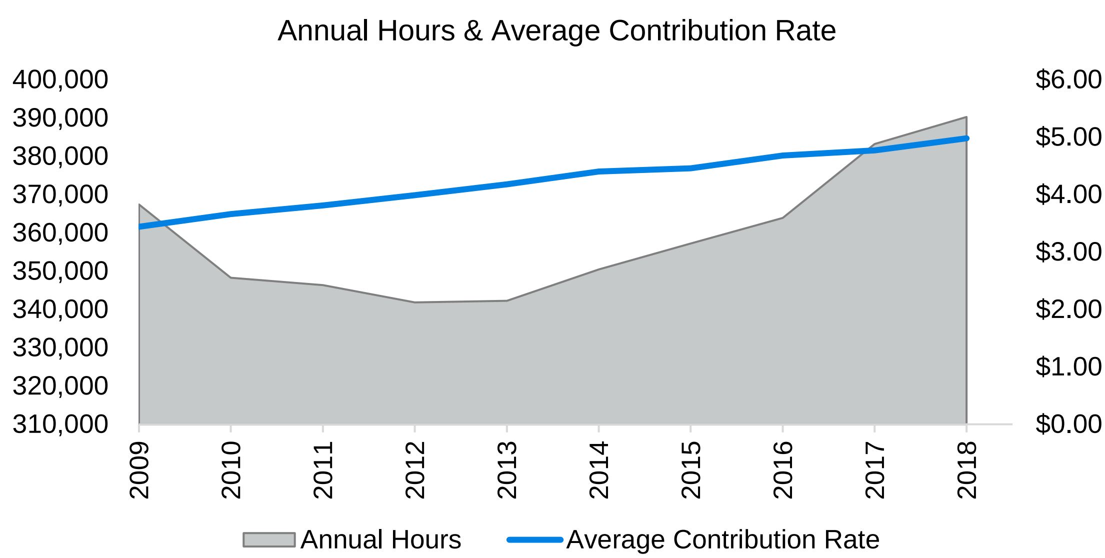
Assessment: Based on the most recent annual experience study, the actual to expected healthy mortality rates was 101% for males, and 107% for females who are in pay status. The mortality rates are based on recently published mortality tables and include a projection for future mortality improvement. The actual to expected withdrawal rate ratio has been 102%, and 131% for non-seasonal active participants and seasonal active participants respectively.

Covered Employment Risk

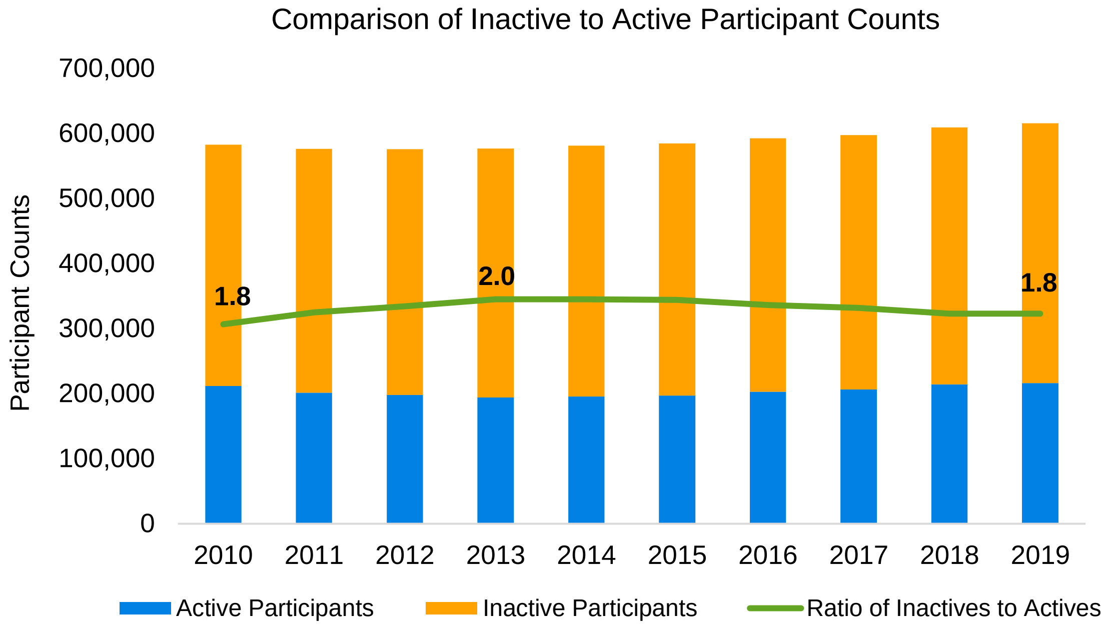
Definition: Covered employment risk is the potential that future covered employment is lower than expected due to a declining workforce in a company or industry, or a temporary workforce reduction due to market forces.

Identification: A significant reduction in the Plan's contribution base can potentially threaten its ability to recover from another market downturn. A decline in the active population may require higher contributions to be paid on fewer active participants. Reduced contributions will also demand higher investment returns to make up for the contribution shortfall.

Assessment: The Plan's contributory hours peaked at about 414 million hours in 2007 and have fluctuated since that time to about 340 million hours in 2013 and then to over 390 million hours for the most recent plan year. During the last 10 years, the average total contribution rate has changed from $3.44 in 2009 to $4.98 in 2018.



The Plan's number of active participants has also fluctuated from 211,700 in 2010, to 194,080 in 2013 and then to 216,520 for the most recent plan year. There are currently 1.8 inactive participants for every active, and slightly over 1 retiree for every active.



Generally through 2011, annual hours and the number of active participants decreased; and there was a concurrent increase in the inactive to active ratio. However, these metrics have improved generally since 2011, returning to near 2008 levels. Further, the bargaining parties have negotiated higher contribution rates over this time period while the plan has been in the green zone.

Business Risk

Definition: Business risk is the potential that a company suffers a financial setback which impairs its ability to make contributions or withdrawal liability payments to the Plan.

Identification: If contributions cannot be recovered, it will shift the weight of maintaining/improving the Plan's funded status upon the remaining employers of the Plan.

Assessment: The plan is sponsored by over 1,400 employers across 21 business sectors in 29 states. Thus, industry and geographic risk is mitigated by diversification. One employer contributed about 43% of total contributions to the plan in 2018 and has just signed a multi-year agreement. No significant employer has withdrawn from the plan since 2011**,** and new bargaining units have negotiated into the plan throughout the country.

PBGC premium risk

Definition: PBGC premium risk is the potential that Pension Benefit Guaranty Corporation (PBGC) premiums ($29 per participant for 2019 for multiemployer plans) increase significantly in order to restore the funded status of the PBGC multiemployer insurance program, which the agency projects will become insolvent in fiscal year 2025 or 2026. Such a significant increase in premiums will divert needed contributions away from restoring or maintaining the plan's funded status and may require benefit changes or increases to employer contributions.

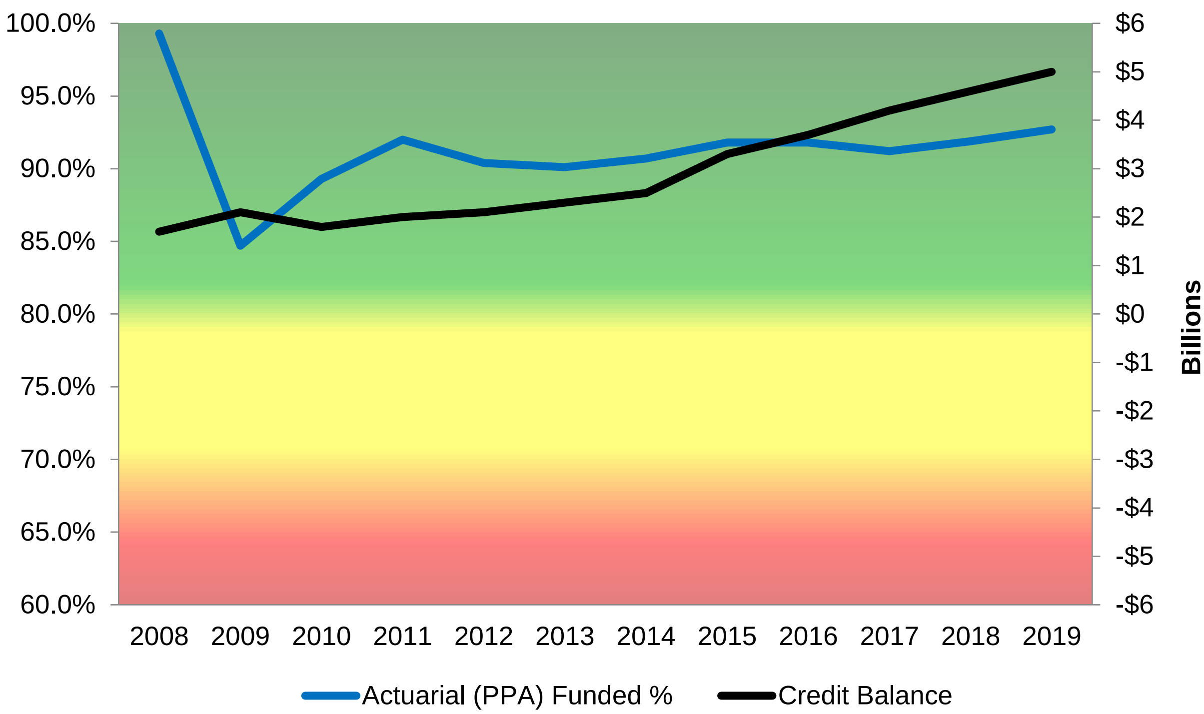
Identification and Assessment: All multiemployer plans are currently subject to the risk that PBGC premiums will increase in order to restore the funded status of the agency's multiemployer insurance program. PBGC premiums are $29 per participant for 2019. It is not known how large these premiums may become. Currently, various ideas are being considered.

Zone Status Risk

Definition: Zone status risk is the potential that the Plan will deteriorate to a zone status such that the Trustees would need to take action to improve the Plan's funded status through the development of a recovery plan that increases contributions, reduces benefits, or both.

Identification: The type of benefit reductions and/or contribution rate increases would depend on the zone status. Specifically, yellow zone plans are generally limited to reducing benefits, rights, and features on future accruals only. Red zone plans can reduce features on all accrued benefits (such as early retirement subsidies), but cannot reduce benefits to those in pay status. Deep red zone plans (critical and declining status) have the same tools as red zone plans, but can also apply to the Treasury to reduce benefits to participants and beneficiaries in pay status. Contribution rate increases can be sought by the Trustees if a plan is not in the green zone, and can be agreed to by the bargaining parties with regard to zone status.

Assessment: The plan has been in the green zone since 2008.



The plan's PPA funded percentage was certified at 92.7% for 2019. The Plan's approximate $5 billion credit balance as of December 31, 2018 is about 2.6 times annual employer contributions. Both measurements are expected to increase into the future if all assumptions are met.

Exhibit 6.1

Historical Statistics
($ in thousands)

	January 1, 2019	January 1, 2018	January 1, 2017	January 1, 2016	January 1, 2015
Actuarial Present Value of Accumulated Plan Benefits					
Vested Benefits					
Retirees	$ 25,888,473	$ 25,209,307	$ 24,516,762	$ 23,282,149	$ 22,789,078
Inactives	4,898,348	4,794,926	4,626,756	4,591,771	4,494,421
Actives	12,034,445	11,835,063	11,576,703	11,360,257	11,053,869
Total	$ 42,821,266	$ 41,839,296	$ 40,720,221	$ 39,234,177	$ 38,337,368
Non-Vested Benefits	$ 2,001,049	$ 1,931,251	$ 1,846,548	$ 1,840,022	$ 1,830,243
Accumulated Plan Benefits	$ 44,822,315	$ 43,770,547	$ 42,566,769	$ 41,074,199	$ 40,167,611
Normal Cost (Benefits Only)	$ 956,603	$ 912,904	$ 862,380	$ 796,789	$ 755,663
Assets					
Market Value of Fund	$ 40,174,690	$ 41,896,232	$ 38,020,891	$ 36,288,138	$ 36,739,196
Market Value Return in Prior Year	(1.76%)	13.08%	7.84%	1.78%	7.56%
Actuarial Value for Funding	$ 41,549,049	$ 40,212,390	$ 38,840,852	$ 37,692,694	$ 36,878,833
Credit Balance at End of Prior Year	$ 5,057,235	$ 4,593,954	$ 4,177,724	$ 3,727,967	$ 3,304,054
PPA Funded Percentage	92.7%	91.9%	91.2%	91.7%	91.8%
Actuarial Gains / Losses for prior year					
Assumption, Discount, and Method	$ (18,437)	$ 66,731	$ 513,564	$ 60,201	$ 220,371
Demographic	28,631	150,987	77,558	(28,716)	28,829
Investment	375,404	208,550	319,678	564,445	(117,358)
Total	$ 385,598	$ 426,268	$ 910,800	$ 595,930	$ 131,842
Actuarial Assumptions					
Interest Assumption	7.00%	7.00%	7.00%	7.00%	7.00%
Expected Contributions	$ 1,955,000	$ 1,857,000	$ 1,735,000	$ 1,617,000	$ 1,500,000
Actual Contributions	TBD	$ 1,948,038	$ 1,828,897	$ 1,705,556	$ 1,596,395

Exhibit 6.1 (Continued)

Historical Statistics
($ in thousands)

	January 1, 2014	January 1, 2013	January 1, 2012	January 1, 2011	January 1, 2010
Actuarial Present Value of Accumulated Plan Benefits					
Vested Benefits					
Retirees	$ 22,103,238	$ 20,973,585	$ 20,386,683	$ 19,747,735	$ 18,870,847
Inactives	4,422,913	4,464,195	4,247,074	4,194,021	4,135,149
Actives	10,754,230	10,671,106	10,359,810	9,887,354	9,502,573
Total	$ 37,280,381	$ 36,108,886	$ 34,993,567	$ 33,829,110	$ 32,508,569
Non-Vested Benefits	$ 1,835,647	$ 1,756,561	$ 1,853,770	$ 1,900,116	$ 1,905,989
Accumulated Plan Benefits	$ 39,116,028	$ 37,865,447	$ 36,847,337	$ 35,729,226	$ 34,414,558
Normal Cost (Benefits only)	$ 714,573	$ 711,206	$ 687,389	$ 449,783	$ 442,932
Assets					
Market Value of Fund	$ 35,193,014	$ 32,309,867	$ 29,891,186	$ 29,164,847	$ 26,668,267
Market Value Return in Prior Year	12.59%	11.93%	6.26%	13.53%	10.96%
Actuarial Value for Funding	$ 35,478,550	$ 34,132,485	$ 33,310,140	$ 32,880,990	$ 30,734,944
Credit Balance at End of Prior Year	$ 2,466,164	$ 2,277,520	$ 2,120,933	$ 1,981,792	$ 1,790,833
PPA Funded Percentage	90.7%	90.1%	90.4%	92.0%	89.3%
Actuarial Gains / Losses for prior year*					
Assumption, Discount, and Method	$ 227,644	Not Available	Not Available	Not Available	Not Available
Demographic	257,484	Not Available	Not Available	Not Available	Not Available
Investment	(190,186)	Not Available	Not Available	Not Available	Not Available
Total	$ 294,942	Not Available	Not Available	Not Available	Not Available
Actuarial Assumptions					
Interest Assumption	7.00%	7.00%	7.00%	7.00%	7.00%
Expected Contributions	$ 1,401,000	$ 1,375,000	$ 1,320,000	$ 1,270,000	$ 1,280,000
Actual Contributions	$ 1,544,129	$ 1,431,091	$ 1,367,269	$ 1,322,549	$ 1,276,476

*Actuarial Gains / Losses prior to 2014 are not available as valuation was performed by the prior actuary.

Exhibit 6.2

Plan Maturity Measures
($ in thousands)

	January 1, 2019	January 1, 2018	January 1, 2017	January 1, 2016	January 1, 2015
Actuarial Present Value of Accumulated Plan Benefits (Non-Dedicated)					
Retirees	$ 23,665,758	$ 22,830,973	$ 21,949,890	$ 20,500,665	$ 19,826,947
Inactives	4,898,382	4,794,963	4,626,792	4,591,771	4,494,421
Actives	14,030,148	13,760,528	13,417,126	13,193,114	12,876,462
Total Non-Dedicated Liability	$ 42,594,288	$ 41,386,464	$ 39,993,808	$ 38,285,550	$ 37,197,830
Inactive Liability Percent	67%	67%	66%	66%	65%
Active Liability Percent	33%	33%	34%	34%	35%
Participant Statistics					
Retired Participants and Beneficiaries					
Number of Retirees and Beneficiaries	233,589	230,157	226,870	223,971	221,502
Total Annual Benefits	$ 2,833,944	$ 2,756,869	$ 2,671,041	$ 2,598,766	$ 2,530,265
Active Participants					
Number of Participants	216,520	214,100	206,340	202,940	197,120
Average Age	43.0	43.1	43.3	43.3	43.4
Average Credited Service	11.2	11.4	11.9	12.0	12.3
Total Annual Hours (in thousands)	TBD	390,281	383,230	363,909	357,200
Average Contribution Rate	TBD	$ 4.98	$ 4.77	$ 4.68	$ 4.46
Vested Inactive Participants					
Number of Participants	165,860	165,380	164,640	165,920	166,440
Ratio of Inactives to Actives	1.8	1.8	1.9	1.9	2.0
Net Cash Flow					
Employer Contributions	TBD	$ 1,948,038	$ 1,828,897	$ 1,705,556	$ 1,596,395
Benefit Payments	TBD	(2,833,944)	(2,756,869)	(2,676,620)	(2,598,766)
Operating Expenses	TBD	(108,215)	(101,978)	(98,841)	(93,897)
Net Cash Flow	TBD	$ (994,121)	$ (1,029,950)	$ (1,069,905)	$ (1,096,268)
Net Cash Flow as a percent of BOY Market Value of Fund	TBD	(2.4%)	(2.7%)	(2.9%)	(3.0%)
Ratio of Benefit Payments to Contributions	TBD	1.5	1.5	1.6	1.6

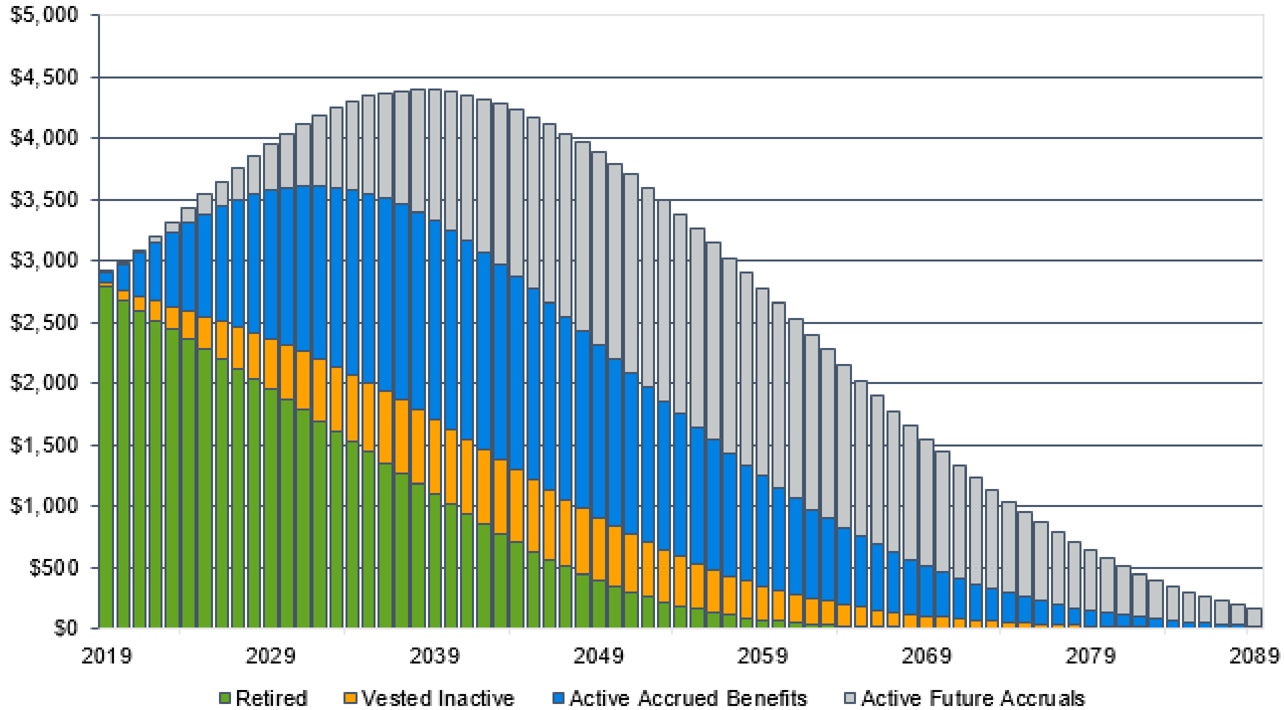
Exhibit 6.2 (Continued)

Plan Maturity Measures
($ in thousands)

	January 1, 2014	January 1, 2013	January 1, 2012	January 1, 2011	January 1, 2010
Actuarial Present Value of Accumulated Plan Benefits (Non-Dedicated)					
Retirees	$ 18,823,924	$ 17,612,119	$ 16,909,704	$ 16,160,188	$ 15,157,260
Inactives	4,422,913	4,465,074	4,247,924	4,194,890	4,136,105
Actives	12,581,733	12,419,003	12,204,678	11,759,007	11,369,662
Total Non-Dedicated Liability	$ 35,828,570	$ 34,496,196	$ 33,362,306	$ 32,114,085	$ 30,663,027
Inactive Liability Percent	65%	64%	63%	63%	63%
Active Liability Percent	35%	36%	37%	37%	37%
Participant Statistics					
Retired Participants and Beneficiaries					
Number of Retirees and Beneficiaries	217,924	213,780	210,123	206,645	203,381
Total Annual Benefits	$ 2,458,053	$ 2,367,600	$ 2,305,404	$ 2,232,529	$ 2,154,335
Active Participants					
Number of Participants	195,620	194,080	197,900	201,740	211,700
Average Age	43.7	43.6	43.4	42.9	42.4
Average Credited Service	12.4	12.3	12.1	11.8	11.1
Total Annual Hours (in thousands)	350,458	342,241	341,828	346,349	348,256
Average Contribution Rate	$ 4.40	$ 4.18	$ 3.99	$ 3.81	$ 3.66
Vested Inactive Participants					
Number of Participants	167,940	169,020	168,080	168,240	167,720
Ratio of Inactives to Actives	2.0	2.0	1.9	1.9	1.8
Net Cash Flow					
Employer Contributions	$ 1,544,129	$ 1,431,091	$ 1,367,269	$ 1,322,549	$ 1,276,476
Benefit Payments	(2,530,265)	(2,458,053)	(2,367,600)	(2,305,404)	(2,232,529)
Operating Expenses	(88,635)	(87,541)	(83,759)	(83,757)	(84,716)
Net Cash Flow	$ (1,074,771)	$ (1,114,503)	$ (1,084,090)	$ (1,066,612)	$ (1,040,769)
Net Cash Flow as a percent of BOY Market Value of Fund	(3.1%)	(3.4%)	(3.6%)	(3.7%)	(3.9%)
Ratio of Benefit Payments to Contributions	1.6	1.7	1.7	1.7	1.7

Exhibit 6.3

Projected Benefit Payments
($ in millions)



Detail of Total Projected Payments for Next 20 Years
($ in thousands)

Plan Year	Estimated Payout of Retirement Benefits	Plan Year	Estimated Payout of Retirement Benefits
2019	$2,909,459	2029	$3,951,991
2020	2,980,319	2030	4,039,410
2021	3,086,314	2031	4,117,975
2022	3,200,003	2032	4,186,980
2023	3,311,031	2033	4,247,765
2024	3,424,088	2034	4,298,254
2025	3,538,630	2035	4,338,724
2026	3,648,655	2036	4,368,012
2027	3,755,560	2037	4,385,270
2028	3,857,552	2038	4,392,422

This is a closed group projection of benefit payments based on plan participants as of the valuation date and does not included projected payments due to future new entrants.

Appendix A

Summary of the Plan

1. **Active Participation**

Non-Seasonal employees for whom contributions are required to be made to the Trust under the terms of a pension agreement become “Active Participants” on the day on which they first accumulate 750 covered hours in the current and immediately preceding calendar years. Seasonal employees become “Active Participants” if they satisfy one-half of the covered hour requirement of Non-Seasonal employees.

2. **Monthly Pension at Normal Retirement**

The monthly pension earned for service prior to 1987 is determined based on the 1986 Plan provisions as outlined in the Actuarial Report as of January 1, 1986. The final five-year average contribution rate used for this determination recognizes contribution rates applicable to all 500 hour years through 1991.

For service after 1986, monthly pension benefits are earned as follows:

Calendar Year	Contribution Percentage	
	First 20 Years	After 20 Years
1987-1991	2.00%	2.65%
1992-1996	2.30%	3.05%
1997-1999	2.46%	3.26%
2000-2002	2.70%	3.58%
1/2003-6/2003	2.20%	2.92%
7/2003-2006	1.20%	1.20%
2007	1.65%	1.65%
2008	2.00%	2.65%
2009+	1.20%	1.20%

3. **Past Service Credits**

A participant is granted credit for the number of years and months of specified types of unbroken employment rendered prior to his or her first covered hour, subject to limits specified in the Plan.

4. **Vesting Service**

A Plan member earns a vesting service year for each year after 1975 during which he or she is credited with at least 500 covered hours (250 covered hours for Seasonal Plan members). For service before 1976, a Plan member is credited with a vesting service year for each year of continuous coverage under the Plan.

5. **Normal Retirement Age**

A participant reaches Normal Retirement Age upon the later of age 65 or an Active participant’s age on the second anniversary of his or her first covered hour.

6. Normal Pension Form

The normal form of pension for unmarried participants is a Life Only Pension. In general, married participants who do not elect otherwise receive a reduced Employee and Spouse Pension. This reduced amount is an "actuarial equivalent" of the Life Only Pension. Participants who retired under the Employee and Spouse Pension Option will have their pension restored to the amount payable under the Normal Form if the spouse dies first. In the event that the participant dies first, the amount of spouse pension is 66 2/3% of the retiree's pension for those who retired after 1991 with recent coverage; otherwise the amount of spouse pension is 50% of the retiree's pension. In both instances, the actuarial reduction factor for the Employee and Spouse Pension amount is calculated as though the spouse pension benefit would be 50% of the reduced Employee and Spouse Pension.

7. Other Pension Forms

An Optional Employee and Spouse Pension providing a 75% spouse pension is available. Participants retiring under age 65 may elect a Benefit Adjustment Option with or without the regular or Optional Employee and Spouse Pension.

8. Early Retirement Eligibility Date

In general, this date is the first day of the month coincident with or immediately following the later of the participant's 55th birthday or the date the individual becomes a vested participant. However, a participant with recent coverage may retire at any age if he or she meets the Rule of 84 (or Rule of 82 or Rule of 80) under the Program for Enhanced Early Retirement (PEER program); that is, the sum of his or her attained age plus years of contributory service is equal to or greater than 84 (or 82 or 80).

9. Monthly Pension at Early Retirement for a Participant with Recent Coverage

If a participant meets the Rule of 84 and has recent coverage, the monthly pension benefit is reduced by the sum of 0.45% for each of the first 60 months that the early retirement date precedes his or her 62nd birthday plus 0.33% for each month that the early retirement date precedes his or her 57th birthday.

If a participant has recent coverage but does not meet the Rule of 84, his or her monthly pension benefit is reduced by the sum of 0.60% for each of the first 60 months that the early retirement date precedes his or her 62nd birthday plus 0.40% for each month that the early retirement date precedes his or her 57th birthday.

10. Monthly Pension at Early Retirement for a Participant with Current PEER Coverage

If a participant meets the Rule of 84 (or Rule of 82 or Rule of 80), is a member of a bargaining unit which has negotiated PEER 84 (or PEER 82 or PEER 80) contribution surcharges, and has current PEER coverage, the early retirement benefit equals 100% of the earned pension benefits. A participant has current PEER coverage at his or her retirement effective date if the applicable PEER contributions have been paid for at least 1,000 covered hours in the 24-month period immediately preceding his or her retirement effective date.

Note: If a participant is in a category of early retirement where benefits are subsidized (as described in paragraph 1 of Item 9 or in Item 10) and accumulates 25 years of service under the Plan while so covered, then his or her subsidized early retirement benefits are "locked-in" and cannot be forfeited.

11. Disability Benefit

Upon a vested participant's total and permanent disability before age 65, the monthly benefit is the greater of (a) 85% of the earned monthly pension benefit or (b) the early retirement pension otherwise payable, provided the vested participant has met the specified recent coverage requirement on the disability onset date.

12. Vested Benefit Upon Termination of Employment

Upon termination of employment, a participant is vested in his or her accrued pension, based on past and future service credits, if he or she has completed at least 5 years of vesting service, one of which was completed during or after 1991.

A terminated vested participant may elect early commencement of the earned retirement benefit at any time on or after the Early Retirement Eligibility Date. If the participant does not have recent coverage and has not "locked-in" rights to unreduced pension benefits by having completed 25 years of Plan service before termination, the benefit is reduced by the sum of 0.60% per month for each of the first 60 months that the early retirement date precedes the participant's 65th birthday plus 0.40% per month for each month that such early retirement date precedes the participant's 60th birthday.

Vested participants who are not covered by the current Plan provisions may be subject to additional limitations on their benefits.

13. Extra Check

An annual "Extra Check" is payable to: (i.) pre-1985 retirees in the amount of $540 and to (ii.) their eligible survivors in the amount of $450.

14. Death Benefits

Upon the death of a participant or pensioner who has met the specified recent coverage requirement, a temporary monthly pension is payable to the surviving children under conditions specified in the Plan.

A pre-retirement benefit to the surviving spouse is payable upon the death of a vested participant. If a married participant had recent coverage at the time of death, the spouse receives an immediate benefit based on the participant's earned benefit. The earned benefit is reduced to reflect early retirement, as specified in the Plan, and the appropriate Employee and Spouse Pension factor. 66 2/3% of the resulting amount is then payable immediately to the spouse. If the participant does not have recent coverage, the benefit is calculated as described above, but a 50% factor is applied in lieu of the 66 2/3% factor, and, if the participant was not eligible to retire on the date of death, commencement of the pension is deferred until the time the participant would have been first eligible to retire.

A single sum death benefit equal to 50% of contributions, subject to a maximum of $10,000, is payable upon the death of an Active or Terminated participant who has completed at least 5 years of vesting service. In addition, for unmarried vested participants who satisfy the recent coverage requirements and would otherwise be eligible to retire, a death benefit of 48 times the participant's accrued pension, reduced to reflect early retirement as specified in the Plan, is payable as a lump sum amount.

Upon the death of a pensioner with a retirement date before January 1, 1992, a single sum benefit of 12 times the monthly normal form pension (Life Only annuity), subject to a maximum of $10,000 is payable. Beginning with retirements in 1992, beneficiaries of retirees with recent coverage who elect a Life Only or Benefit Adjustment Option (without the Spouse Pension) receive a 4-Year Certain death benefit payment equal to 48 times the pensioner’s Life Only benefit minus the total monthly payments already received by the pensioner.

If a pensioner retires after January 1, 1992, he or she may elect an Optional Lump Sum Death Benefit equal to 12 times the monthly normal form pension (Life Only annuity). The Optional Lump Sum Death Benefit is paid for by reducing the pensioner’s monthly payment.

15. Transition Provisions

Certain minimum benefits are provided to participants who were covered by prior versions of the Plan.

PLAN AMENDMENT HISTORY

The following is a summary of the Plan changes since 2000 that impact the valuation.

Effective Date	Description of Change
1/1/2011	Annual "Extra Checks" to pre-1985 retirees and their eligible survivors were made a permanent part of the Plan.
1/1/2009	A 75% Optional Employee and Spouse Pension was added. Also, a $40 million reserve for extra check payments was established.
1/1/2008	Effective for calendar year 2008 only, the percentages used to calculate Plan participant account benefits have been increased from 1.20% to 2.00% for participants who have not completed 20 years of service, and from 1.20% to 2.65% for participants who have completed at least 20 years of service. The percentages for years 2009 and later remain at 1.20%.
1/1/2007	Effective for calendar year 2007 only, the percentage used to calculate Plan participant account benefits was increased from 1.20% to 1.65%. The percentages for years 2008 and later remain at 1.20%.
7/1/2003	Effective July 1, 2003, the percentage used to calculate Plan participant account benefits has been reduced to 1.20% for the second half of 2003 and all subsequent years.
1/1/2000	Effective for calendar years 2000, 2001 and 2002, the percentage used to calculate Plan participant account benefits has been increased. An Active participant will earn a monthly pension benefit of 2.70% instead of 2.16% for contributions credited in this period if he/she has not completed 20 year of service. If such participant has completed at least 20 years of contributory service, he/she will earn a monthly pension benefit of 3.58% instead of 2.86% during this same period. Effective for calendar years 2003, 2004 and 2005, the percentage used to calculate Plan participant contribution account benefits has been increased. An Active participant will earn a monthly pension benefit of 2.20% instead of 2.00% for contributions credited in this period, if he/she has not completed 20 years of service. If such participant has completed at least 20 years of contributory service, he/she will earn a monthly pension benefit of 2.92% instead of 2.65% during this same period. Effective with calendar year 2000, all Disability Pensioner benefits have been increased to 85% of his/her Normal Retirement Benefit unless said Disability Pensioner's benefits are already payable in a greater amount. Spouses of certain deceased Disability Pensioners have had their benefits appropriately adjusted, as applicable. The same 85% "floor" monthly pension benefit shall be paid to all Disability Pensioners and, as applicable, to their spouses for Plan participants who become Disabled Pensioners after calendar year 1999. Effective with calendar year 2000, the maximum Child Survivor Benefits have been increased to $1,000 and such increased benefits shall be payable, in general, upon the death of a person who was an Active Participant on 1/1/1987 or thereafter and who otherwise satisfied the applicable recency of employment requirements at the time of death. Effective with calendar year 2000, PEER eligible participants with 25 years of contributory service "lock-in" PEER coverage by working at least 1,000 covered hours during any consecutive 24 month period that ends on or after completion of 25 years of contributory service.

Appendix B

Participant Statistics

The sources of WCT Plan participant data for our actuarial calculations are: (a) extracts from Prudential Investments' Annuitant Benefit Consolidation (ABC) System file, (b) extracts from the T2 Participant Data File (PDF) maintained by Northwest Administrators and Prudential Investments, and (c) extracts from the Western States Food data base supplied by Northwest Administrators.

The following paragraphs describe how the data were prepared for valuation purposes and present statistical characteristics of the data base.

1. <u>Data Base for Non-Retired Plan Participants</u>

Northwest Administrators sent us a December 31, 2018, valuation data file that included T2 extract records for all non-retired plan participants who have not incurred a permanent break in service, and all claims and deaths for the last ten years.

From this file containing 553,809 records, we selected the 5% sample valuation file for all active participants, (both vested and non-vested), and for all vested inactive participants. A participant was considered Active as of January 1, 2019 if he or she was not included on the ABC file as retired as of the valuation date, and if he/she earned at least 250 covered hours during 2018, or earned at least 1 covered hour in 2018 and at least 250 covered hours in 2017.

10,391 Non-Seasonal Active 5% sample records representing 207,820 participants were included in the valuation. For this purpose, Active participant records with non-seasonal industry codes or with 1,000 or more covered hours in each of the last two years were considered Non-Seasonal.

435 Seasonal Active 5% sample records representing 8,700 participants were included in the valuation. Active participants with a seasonal industry code and less than 1,000 covered hours in one or both of the last two years were considered Seasonal.

8,293 Vested Inactive 5% sample records representing 165,860 participants were included in the valuation.

534,690 T2 extract records were not used for the valuation. These records primarily represent non-5% sample participant records, pre-valuation date claims, and non-vested inactives.

2. Statistical Information

Highlights of the data characteristics for Active Plan participants on January 1, 2019 are shown below, together with corresponding information from the January 1, 2018 and January 1, 2017 Actuarial Reports.

- For actuarial valuation purposes, the Active participant population was 206,340 as of January 1, 2017, 214,100 as of January 1, 2018 and 216,520 as of January 1, 2019. The aggregate proportion of Active participants covered under PEER is 82.7% (including Non-Seasonal and Seasonal employees) on January 1, 2019. All information summarized below was based on 5% sample data.

NUMBER OF ACTIVE PLAN PARTICIPANTS			
Industry	As of 1/1/2017	As of 1/1/2018	As of 1/1/2019
All Actives			
Non-Seasonal	196,280	204,420	207,820
Seasonal	10,060	9,680	8,700
Total	206,340	214,100	216,520
PEER Units			
Non-Seasonal PEER 80	59,400	60,640	62,320
Non-Seasonal PEER 82	4,980	4,900	4,940
Non-Seasonal PEER 84	99,920	101,160	103,860
Seasonal PEER 80	7,340	7,200	6,300
Seasonal PEER 82	380	380	320
Seasonal PEER 84	1,460	1,460	1,420
Total PEER Participants	173,480	175,740	179,160
Non-PEER Units			
Non-Seasonal	31,980	37,720	36,700
Seasonal	880	640	660
Total Non-PEER Participants	32,860	38,360	37,360

- The average attained age of Active Plan participants included in the valuation is 42.8 years for Non-Seasonal participants and 48.7 years for Seasonal participants. The corresponding ages as of January 1, 2018 were 42.9 years for Non-Seasonal employees and 48.1 years for Seasonal employees. The average attained ages for all Active participants for the last three years, including the separate PEER units, are summarized below.

AVERAGE ATTAINED AGES FOR ACTIVE PLAN PARTICIPANTS			
Industry	As of 1/1/2017	As of 1/1/2018	As of 1/1/2019
All Actives			
Non-Seasonal	43.1	42.9	42.8
Seasonal	47.9	48.1	48.7
PEER Units			
Non-Seasonal PEER 80	44.8	44.5	43.9
Non-Seasonal PEER 82	45.2	45.4	45.2
Non-Seasonal PEER 84	40.9	40.8	40.9
Seasonal PEER 80	48.5	48.6	49.3
Seasonal PEER 82	44.4	48.7	49.0
Seasonal PEER 84	45.7	47.0	46.9
Non-PEER Units			
Non-Seasonal	46.3	45.8	46.1
Seasonal	47.7	45.8	46.4

- The average number of years of contributory service for Active Plan participants is 11.2 years for Non-Seasonal participants and 11.9 years for Seasonal participants. As of January 1, 2018 the corresponding average number of years of contributory service was 11.4 years for Non-Seasonal employees and 12.0 years for Seasonal employees. The average number of years of contributory service for Active participants during the last three years is compared below.

AVERAGE CONTRIBUTORY SERVICE YEARS FOR ACTIVE PLAN PARTICIPANTS

Industry	As of 1/1/2017	As of 1/1/2018	As of 1/1/2019
All Actives			
Non-Seasonal	11.9	11.4	11.2
Seasonal	12.1	12.0	11.9
PEER Units			
Non-Seasonal PEER 80	16.2	15.8	15.2
Non-Seasonal PEER 82	13.2	13.3	13.3
Non-Seasonal PEER 84	10.5	10.3	10.1
Seasonal PEER 80	13.1	12.9	12.9
Seasonal PEER 82	10.3	11.1	11.8
Seasonal PEER 84	8.0	7.7	7.0
Non-PEER Units			
Non-Seasonal	7.8	6.9	7.1
Seasonal	11.0	12.4	12.6

- The end of year average basic hourly contribution rate for Non-Seasonal Actives included in the valuation was $4.56 as of December 31, 2017 and $4.72 as of December 31, 2018. The average basic hourly contribution rate for Seasonal Actives included in this valuation was $1.14 as of December 31, 2017 and $1.13 as of December 31, 2018. This information is displayed for Active participants, including separate data for PEER units, in the following table.

AVERAGE BASIC HOURLY CONTRIBUTIONS FOR ACTIVE PLAN PARTICIPANTS			
Industry	As of 12/31/2016	As of 12/31/2017	As of 12/31/2018
All Actives			
Non-Seasonal	$4.40	$4.56	$4.72
Seasonal	$1.11	$1.14	$1.13
PEER Units			
Non-Seasonal PEER 80	$6.02	$6.32	$6.56
Non-Seasonal PEER 82	$4.62	$5.01	$5.00
Non-Seasonal PEER 84	$4.38	$4.61	$4.70
Seasonal PEER 80	$1.31	$1.34	$1.33
Seasonal PEER 82	$0.11	$0.11	$0.11
Seasonal PEER 84	$0.27	$0.34	$0.39
Non-PEER Units			
Non-Seasonal	$1.47	$1.51	$1.58
Seasonal	$1.28	$1.36	$1.42

- The average contribution rates increased by 3.5% for non-seasonal active participants and decreased by 0.9% for seasonal active participants during 2018.

3. Comparison of Sample Data Characteristics with Full Population Data Characteristics

Each year, we receive Employee Census Reports from the Administrative Office based on the T2 Participant Data File (PDF) for both the full population of the Plan participants and the 5% sample. A comparison of key information from the full population and 5% reports is used to corroborate our assumption that the sample records adequately represent the total population.

4. Procedures to Account for Data with Missing or Invalid Birthdates or Gender Codes

Records with missing or invalid birthdates were accounted for by creating valuation input records with imputed dates of birth. Since the average entry age has been approximately 31 in recent years, we assigned dates of birth 31 years prior to the first covered hour date. All remaining fields were taken from the T2 records provided by the administrative office.

Records with missing gender codes were assumed to represent males in the Non-Seasonal group and females in the Seasonal group. We have concluded that this assumption is reasonable based on the population characteristics illustrated in this section.

There were 146 non-retired valuation records, representing 2,920 participants with missing or invalid dates of birth. There were 2,649 Non-Seasonal non-retired sample valuation records with missing or invalid gender codes that are assumed to be males and 127 Seasonal non-retired sample valuation records with missing or invalid gender codes that are assumed to be female.

5. Healthy Retirees, Disabled Retirees, and Healthy Beneficiaries

We based our actuarial calculations for retired lives on extracts from the ABC retired file provided by Prudential Investments. This file contains records for all Pensioners and Beneficiaries.

We received 292,045 records from Prudential. Of these, 12,443 were disregarded as non-liability records (10,883 deaths, 205 expirations, 66 over the age of 100 with benefits due and unpaid, and 1,289 others, such as cancellations, post-valuation date retirements, etc.), resulting in 279,602 valuation records. These represent all benefits for approximately 233,589 pensioners and beneficiaries. Approximately 78.0% of these records are for Healthy Retirees, 7.4% are for Disabled Pensioners, and 14.6% are for Healthy Beneficiaries. There were no missing birthdates in these records.

TABLES OF STATISTICAL DATA

In the process of completing the actuarial valuation, we have compiled a considerable amount of statistical information that may prove useful in understanding the operation of the Plan. This information is illustrated in the following tables:

- **TABLE 2019-1 Active Participant Data Summary**
  Participant counts, average hours and average basic contribution rates are provided for Active participants. The table provides breakdowns of the data by eighty-cent rate bands through $10.40, and for rates over $10.40.

- **TABLES 2019-2N and 2S Distribution of Non-Seasonal and Seasonal Active Participants in PEER and Non-PEER Units by Contribution Rate**
  These tables show the distribution of Non-Seasonal and Seasonal Actives in PEER and Non-PEER units by their basic hourly contribution rates.

- **TABLES 2019-3N, 3S and 3VI Distributions of Non-Seasonal and Seasonal Active Participants by Attained Age and Contributory Service, and of Vested Inactive Participants by Attained Age.**
  The first two tables show how Non-Seasonal and Seasonal active life participants are distributed by attained age and length of service. The third table shows how PEER and Non-PEER vested inactive participants are distributed by attained age, and shows average monthly accrued benefits by age band.

- **TABLE 2019-4 Data Build-Through Report/Participant Reconciliation**
  This table exhibits data reconciliation by status for Active and Vested Terminated participants.

- **TABLE 2019-5 Recent History of New Pensioners**
  Table 2019-5 shows counts, average monthly pensions, and average ages for Healthy Pensioners, Disabled Pensioners and Beneficiaries and Healthy Beneficiaries who were new to the December 31, 2018, retiree data file. The data for Healthy Pensioners is shown by option election.

- **TABLE 2019-6 Historical Statistics by Year of Retirement for Healthy Pensioners**
  For this table, all records representing Healthy Pensioners were analyzed by year of retirement.

- **TABLE 2019-7 through 2019-9 Age/Longevity of Healthy Pensioners, Healthy Beneficiaries, and Disabled Pensioners**
  These tables show the distribution of Pensioners and Beneficiaries by attained age group and number of years since retirement or pension commencement, as applicable.

TABLE 2019-1
Active Participant Data Summary

	5% Sample		
Contribution Rates	No. of Participants (Times 20)	Avg. 2018 Hrs. per Participant	Avg. 2018 Basic Contrib. Rate
Seasonals - Food Processing			
All Contribution Rates	8,700	620	$1.13
Regulars - Food Processing			
All Contribution Rates	7,060	1,906	$2.07
Non-Seasonals - Non-Food Processing			
$0.80 and under	11,380	1,620	$0.39
Over $0.80 but not more than $1.60	31,760	1,712	$1.22
Over $1.60 but not more than $2.40	18,040	1,793	$2.00
Over $2.40 but not more than $3.20	16,000	1,803	$2.84
Over $3.20 but not more than $4.00	22,040	1,835	$3.68
Over $4.00 but not more than $4.80	17,480	1,877	$4.40
Over $4.80 but not more than $5.60	15,420	1,926	$5.24
Over $5.60 but not more than $6.40	4,700	1,923	$5.93
Over $6.40 but not more than $7.20	4,280	1,904	$6.73
Over $7.20 but not more than $8.00	3,540	1,830	$7.56
Over $8.00 but not more than $8.80	19,560	1,338	$8.48
Over $8.80 but not more than $9.60	18,980	1,581	$9.31
Over $9.60 but not more than $10.40	13,780	1,635	$9.85
Over $10.40	3,800	1,903	$10.65
Total Non-Seasonals - Non-Food Processing	200,760	1,726	$4.81

TABLE 2019-2N
Distribution of Non-Seasonal Active Participants in PEER and Non-PEER Units by Contribution Rate

End of Year Basic Contribution Rate	Number of PEER Actives	Number of Non-PEER Actives	Total Number of Actives
$0.80 and under	2,880	8,600	11,480
Over $0.80 but not more than $1.60	17,680	15,880	33,560
Over $1.60 but not more than $2.40	15,220	5,120	20,340
Over $2.40 but not more than $3.20	14,800	4,040	18,840
Over $3.20 but not more than $4.00	20,040	2,000	22,040
Over $4.00 but not more than $4.80	17,120	360	17,480
Over $4.80 but not more than $5.60	15,200	220	15,420
Over $5.60 but not more than $6.40	4,600	100	4,700
Over $6.40 but not more than $7.20	4,200	80	4,280
Over $7.20 but not more than $8.00	3,260	280	3,540
Over $8.00 but not more than $8.80	19,540	20	19,560
Over $8.80 but not more than $9.60	19,000	0	19,000
Over $9.60 but not more than $10.40	13,780	0	13,780
Over $10.40	3,800	0	3,800
Total for All Rates	171,120	36,700	207,820

PEER Eligibility Statistics (Non-Seasonal Actives)

PEER Unit	Number of Actives	Percentage of Non-Seasonal Actives by PEER Unit	Prior Year's Percentage of Non-Seasonal Actives by PEER Unit
Non-PEER	36,700	17.6%	18.4%
PEER 84	103,860	50.0%	49.5%
PEER 82	4,940	2.4%	2.4%
PEER 80	62,320	30.0%	29.7%

TABLE 2019-2S Distribution of Seasonal Active Participants in PEER and Non-PEER Units by Contribution Rate			
End of Year Contribution Rate	Number of PEER Actives	Number of Non-PEER Actives	Total Number of Actives
$0.40 and under	1,920	100	2,020
Over $0.40 but not more than $0.80	0	0	0
Over $0.80 but not more than $1.20	160	0	160
Over $1.20 but not more than $1.60	5,700	460	6,160
Over $1.60 but not more than $2.00	140	20	160
Total for Rates $2.00 and under	7,920	580	8,500
Over $2.00 but not more than $2.40	40	40	80
Over $2.40 but not more than $2.80	60	0	60
Over $2.80 but not more than $3.20	20	40	60
Over $3.20 but not more than $3.60	0	0	0
Over $3.60 but not more than $4.00	0	0	0
Total for Rates over $2.00 but not more than $4.00	120	80	200
Total for Rates over $4.00	0	0	0
Total for All Rates	8,040	660	8,700

PEER Eligibility Statistics (Seasonal Actives)			
PEER Unit	Number of Actives	Percentage of Seasonal Actives by PEER Unit	Prior Year's Percentage of Seasonal Actives by PEER Unit
Non-PEER	660	7.6%	6.6%
PEER 84	1,420	16.3%	15.1%
PEER 82	320	3.7%	3.9%
PEER 80	6,300	72.4%	74.4%

TABLE 2019-3N

Distribution of Non-Seasonal Active Participants by Attained Age and Contributory Service

Age Last Birthday	Years of Contributory Service							
	Less than 5	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 and Over	Total
Under 20	1,060	0	0	0	0	0	0	1,060
20 - 24	13,280	860	0	0	0	0	0	14,140
25 - 29	14,760	6,420	520	0	0	0	0	21,700
30 - 34	13,060	5,360	5,640	720	0	0	0	24,780
35 - 39	8,340	4,820	5,900	5,100	400	0	0	24,560
40 - 44	6,360	3,720	5,140	4,400	4,020	300	0	23,940
45 - 49	6,080	3,760	4,380	4,680	4,100	3,780	560	27,340
50 - 54	4,420	2,920	4,680	4,120	3,960	3,560	2,760	26,420
55 - 59	3,980	2,160	3,720	4,420	3,200	2,800	4,560	24,840
60 - 64	2,400	2,100	2,320	2,620	1,580	1,300	3,660	15,980
65 - 69	880	500	280	260	200	100	300	2,520
70 and Over	400	20	60	20	20	0	20	540
Total	75,020	32,640	32,640	26,340	17,480	11,840	11,860	207,820

TABLE 2019-3S Distribution of Seasonal Active Participants by Attained Age and Contributory Service								
	Years of Contributory Service							
Age Last Birthday	Less than 5	5 – 9	10 - 14	15 - 19	20 – 24	25 - 29	30 and Over	Total
Under 20	100	0	0	0	0	0	0	100
20 - 24	280	20	0	0	0	0	0	300
25 - 29	320	120	20	0	0	0	0	460
30 - 34	520	160	40	20	0	0	0	740
35 - 39	360	80	40	80	20	0	0	580
40 - 44	280	180	80	140	40	0	0	720
45 - 49	260	160	160	200	20	20	0	820
50 - 54	360	180	280	360	180	220	40	1,620
55 - 59	240	180	220	300	220	240	80	1,480
60 - 64	80	240	80	180	220	280	300	1,380
65 - 69	80	40	80	60	0	0	40	300
70 and Over	100	0	40	20	0	0	40	200
Total	2,980	1,360	1,040	1,360	700	760	500	8,700

TABLE 2019-3VI

Distribution of Vested Inactive Participants by Attained Age

Ages	Number PEER	Average Monthly Benefit	Number Non PEER	Average Monthly Benefit
20 - 24	0	$0	60	$294
25 - 29	0	$0	1,860	$301
30 - 34	0	$0	6,840	$377
35 - 39	0	$0	11,540	$426
40 - 44	0	$0	15,960	$499
45 - 49	80	$1,195	25,140	$519
50 - 54	280	$1,866	33,520	$537
55 - 59	640	$1,607	33,380	$534
60 - 64	420	$1,670	25,540	$476
65 - 69	100	$2,445	7,660	$303
70 and over	40	$2,621	2,800	$163
Total	1,560	$1,729	164,300	$486

TABLE 2019-4 Data Build-Through Report Participant Reconciliation		
Active Participants 1/1/2018		**214,100**
New Participants		
	Non-Vested	26,420
	Vested	600
	Rehires	1,020
Terminations		
	Non-Vested	(13,180)
	Vested	(6,980)
Retirements		(5,340)
Deaths		(120)
Data Adjustments		0
Active Participants 1/1/2019		**216,520**
Vested Terminations 1/1/2018		**165,380**
	New Vested Terminations	7,200
	Rehires	(1,020)
	Retirements	(4,720)
	Deaths	(200)
	Data Adjustments	(780)
Vested Terminations 1/1/2019		**165,860**

TABLE 2019-5

Recent History of New Pensioners
Option Elections, Average Monthly Pensions and Average Ages
(Based on Number of Participants)

	1/1/2018			1/1/2019		
Option	Count	Average Monthly Pension	Average Age As of January 1 2018	Count	Average Monthly Pension	Average Age As of January 1 2019
Life Only	3,084	$923	64.4	3,220	$975	64.5
Benefit Adjustment	2,373	$1,525	59.4	2,480	$1,497	59.7
Employee and Spouse	2,214	$1,102	64.7	2,225	$1,152	64.9
Employee and Spouse with Benefit Adjustment	1,506	$1,740	60.2	1,525	$1,779	60.2
All Healthy Pensioners	9,177	$1,256	62.5	9,450	$1,284	62.6
Disabled Pensioners	598	$1,162	56.6	477	$1,184	57.2
Healthy Beneficiaries	374	$389	52.2	325	$476	52.1
Total	10,149	$1,218	61.8	10,252	$1,253	62.0

Notes: This exhibit includes all pensions associated with participants new to the ABC files as of December 31, 2017 and 2018.

The average monthly pension amount shown for the Benefit Adjustment Option and the Employee and Spouse with Benefit Adjustment Option is the sum of the lifetime portion of the benefit, plus any temporary benefit remaining as of December 31, 2017 and 2018.

TABLE 2019-6

Historical Statistics by Year of Retirement for Healthy Pensioners
(Based on Number of Participants[1])

Year of Retirement	Number of Surviving Retirees	Average Age at Retirement	Average Age as of 1/1/2019	Average Monthly Pension
1993 and prior	17,711	58.3	87.7	$573
1994 – 1998	18,614	58.7	81.0	$893
1999 – 2003	29,067	58.9	76.2	$1,148
2004 – 2008	34,145	59.4	71.8	$1,120
2009 – 2013	40,824	60.6	68.0	$1,112
2014 – 2018	41,857	61.4	63.9	$1,265
Total	182,218	59.9	72.3	$1,080

[1] In the January 1, 2018 valuation, the statistics in this table were based on the total number of records valued. For the January 1, 2019 valuation, these statistics are based on the number of individual lives.

TABLE 2019-7

Age / Longevity of Healthy Pensioners
(Based on Number of Participants[1])

Attained Age Group	Years Since Pension Commencement						
	Less than 1	1 – 4	5 – 9	10 - 14	15 - 19	Greater than 19	Total
Under 50	14	45	17	9	1	1	87
50 - 54	336	696	85	26	5	1	1,149
55 - 59	1,273	5,382	1,405	127	35	9	8,231
60 - 64	2,438	9,328	8,928	2,165	118	16	22,993
65 - 69	2,645	17,032	12,436	9,224	1,758	86	43,181
70 - 74	113	2,516	15,766	10,779	9,019	797	38,990
75 - 79	4	26	2,141	10,617	10,209	6,970	29,967
80 - 84	1	2	37	1,166	7,019	11,491	19,716
85 - 89	1	1	5	22	880	10,145	11,054
90 - 94	0	4	3	5	19	5,270	5,301
95 - 99	0	0	1	4	3	1,379	1,387
100 and Over	0	0	0	1	1	160	162
Total	6,825	35,032	40,824	34,145	29,067	36,325	182,218

[1] In the January 1, 2018 valuation, the statistics in this table were based on the total number of records valued. For the January 1, 2019 valuation, these statistics are based on the number of individual lives.

TABLE 2019-8

Age / Longevity of Healthy Beneficiaries
(Based on Number of Participants[1])

Attained Age Group	Years Since Pension Commencement							
	Deferred	Less than 1	1 - 4	5 - 9	10 - 14	15 - 19	Greater than 19	Total
39 and Under	4	30	269	258	130	18	0	709
40 - 44	13	10	57	54	36	12	1	183
45 - 49	45	9	113	122	79	39	22	429
50 - 54	73	39	190	207	150	96	78	833
55 - 59	36	39	400	511	382	230	228	1,826
60 - 64	16	38	434	845	711	532	443	3,019
65 - 69	1	15	293	859	1,128	1,032	891	4,219
70 - 74	1	4	85	595	1,235	1,707	1,985	5,612
75 - 79	0	0	22	157	654	1,586	3,650	6,069
80 - 84	0	0	4	32	151	662	4,272	5,121
85 - 89	0	0	1	8	33	133	3,367	3,542
90 - 94	0	0	0	1	7	28	1,915	1,951
95 - 99	0	0	0	1	0	5	563	569
100 and Over	0	0	0	0	0	0	93	93
Total	189	184	1,868	3,650	4,696	6,080	17,508	34,175

[1] In the January 1, 2018 valuation, the statistics in this table were based on the total number of records valued. For the January 1, 2019 valuation, these statistics are based on the number of individual lives.

TABLE 2019-9

Age / Longevity of Disabled Pensioners
(Based on Number of Participants[1])

	Years Since Pension Commencement						
Attained Age Group	Less than 1	1 - 4	5 - 9	10 - 14	15 - 19	Greater than 19	Total
39 and Under	0	18	41	26	16	24	125
40 - 44	2	26	50	32	6	14	130
45 - 49	5	84	123	87	44	33	376
50 - 54	10	192	276	173	117	87	855
55 - 59	36	589	737	342	238	160	2,102
60 - 64	29	676	1,299	734	480	360	3,578
65 - 69	1	209	977	1,070	715	560	3,532
70 - 74	0	0	171	742	955	925	2,793
75 - 79	0	0	0	117	602	1,188	1,907
80 - 84	0	0	0	0	68	1,023	1,091
85 - 89	0	0	0	0	0	498	498
90 - 94	0	0	0	0	0	167	167
95 - 99	0	0	0	0	2	36	38
100 and Over	0	0	0	0	0	4	4
Total	83	1,794	3,674	3,323	3,243	5,079	17,196

[1] In the January 1, 2018 valuation, the statistics in this table were based on the total number of records valued. For the January 1, 2019 valuation, these statistics are based on the number of individual lives.

Appendix C

Actuarial Assumptions and Cost Methods

Actuarial Assumptions

Investment Earnings Assumptions

Strategic Bond Account (SBA)

The assumed rate of return for these assets 4.16%. This assumption is used to value 85.20% of the pension benefits related to service through December 31, 1985, based on December 31, 1984, Plan provisions and not covered by the prior asset dedications.

Remaining Assets

The assumed rate of investment return which is used to value all benefits expected to be paid out of remaining assets and future contributions is 7.00%, net of investment expenses.

Post-retirement Mortality Rates

Healthy Males

- RP2014 Blue Collar Male Employee/Healthy Annuitant table, adjusted to base year of 2006
- Ages up through 63, set to 90% of the adjusted table
- Ages 64-68, set to 85% of the adjusted table
- Ages 69-73, set to 90% of the adjusted table
- Ages 79 and later, set to 110% of the adjusted table
- All projected with fully generational improvements using Scale MP-2016 from 2006 forward.

Healthy Females

- Ages up through 49, RP2014 Blue Collar Female Employee table
- Ages 50 and above, RP2014 Blue Collar Female Healthy Annuitant table
- Set forward one year, and projected 6 years using female Scale BB; projection scale also set forward one year
- Ages 79 through 119, 95% of the resulting mortality rate after projection is used.
- All projected with fully generational improvements using Scale MP-2016 from 2017 forward.

Disabled Males

- RP2014 Disabled Male Annuitant table, adjusted to base year of 2006, then projected 15 years using Scale BB.
- Ages 54-58, set to 85% of the adjusted table
- Ages 59-63, set to 90% of the adjusted table
- Ages 64-73, set to 80% of the adjusted table
- All projected with fully generational improvements using Scale MP-2016 from 2017 forward.

Disabled Females

- RP2014 Disabled Female Annuitant table, adjusted to base year of 2006, set back 2 years and then projected 15 years using Scale BB, set back 2 years.
- Projected with fully generational improvements using Scale MP-2016 from 2017 forward.

The following tables show the life expectancies for healthy and disabled retirees under the mortality assumptions described above at the current and future valuation dates.

Assumed Years of Life Expectancy – Healthy Males					
Age	2019	2024	2029	2034	2039
55	27.9	28.4	28.8	29.3	29.8
60	23.4	23.9	24.3	24.7	25.2
65	19.2	19.6	20.0	20.4	20.8
70	15.1	15.5	15.8	16.2	16.6

Assumed Years of Life Expectancy – Healthy Females					
Age	2019	2024	2029	2034	2039
55	31.7	32.1	32.6	33.1	33.5
60	26.9	27.4	27.8	28.3	28.7
65	22.4	22.8	23.2	23.6	24.1
70	18.2	18.5	18.9	19.3	19.7

Assumed Years of Life Expectancy – Disabled Males					
Age	2019	2024	2029	2034	2039
55	22.3	22.9	23.4	24.0	24.6
60	19.0	19.5	20.0	20.5	21.0
65	15.8	16.2	16.7	17.1	17.6
70	12.8	13.1	13.5	13.9	14.3

Assumed Years of Life Expectancy – Disabled Females					
Age	2019	2024	2029	2034	2039
55	27.2	27.8	28.3	28.9	29.5
60	23.4	23.9	24.4	25.0	25.5
65	19.8	20.2	20.7	21.1	21.6
70	16.3	16.7	17.1	17.5	17.9

Pre-retirement Mortality Rates

The assumed annual rates of healthy mortality for males is based on the RP2014 Blue Collar Male Employee table with the same adjustments and projection scale as the Post-Retirement table.

The assumed annual rates of healthy mortality for females is based on the RP 2014 Blue Collar Female Employee table with the same adjustments and projection scale as the Post-Retirement table.

Retirement Rates

Retirement rates apply only to retirement eligible participants.

For active PEER participants, different rates apply before and after eligibility for unreduced retirement. For active non-PEER participants, different rates apply before and after meeting the contributory service requirements for Table Two early retirement factors or age requirements for unreduced retirement.

For vested terminated participants, different rates apply for participants who are assumed to have recent PEER coverage, recent non-PEER coverage, and no recent coverage at retirement.

Active Participant Retirement Rates

Age	PEER - Before Contributory Service Requirement	PEER - After Contributory Service Requirement	Non-PEER - Before Contributory Service Requirement	Non-PEER - After Contributory Service Requirement
<= 48	0.00	0.00	0.00	0.00
49	0.00	0.12	0.00	0.03
50	0.00	0.12	0.00	0.03
51	0.00	0.12	0.00	0.03
52	0.00	0.12	0.00	0.03
53	0.00	0.12	0.00	0.03
54	0.01	0.10	0.01	0.03
55	0.01	0.10	0.01	0.03
56	0.01	0.10	0.01	0.03
57	0.01	0.10	0.01	0.03
58	0.01	0.10	0.02	0.03
59	0.05	0.15	0.02	0.03
60	0.05	0.15	0.02	0.03
61	0.20	0.20	0.15	0.15
62	0.20	0.20	0.15	0.15
63	0.15	0.15	0.15	0.15
64	0.50	0.50	0.40	0.40
65	0.50	0.50	0.40	0.40
66	0.30	0.30	0.30	0.30
67	0.30	0.30	0.30	0.30
68	0.30	0.30	0.30	0.30
69	0.30	0.30	0.30	0.30
>= 70	1.00	1.00	1.00	1.00

Vested Terminated Participant Retirement Rates

Age	Less than 25 years of Contributory Service	25 or more years of Contributory Service	PEER Eligible on Valuation Date
<= 48	0.00	0.00	0.00
49	0.00	0.15	0.40
50	0.00	0.15	0.50
51	0.00	0.15	0.40
52	0.00	0.15	0.35
53	0.00	0.15	0.35
54	0.04	0.15	0.35
55	0.04	0.05	0.25
56	0.04	0.05	0.20
57	0.04	0.05	0.20
58	0.04	0.05	0.20
59	0.04	0.05	0.20
60	0.04	0.05	0.15
61	0.10	0.20	0.25
62	0.10	0.15	0.25
63	0.10	0.10	0.15
64	0.30	0.30	0.50
65	0.30	0.30	0.50
66	0.15	0.20	0.30
67	0.10	0.10	0.30
68	0.10	0.10	0.30
69	0.15	0.15	0.30
>= 70	1.00	1.00	1.00

Disability Retirement

Disability rates apply only to employees with 4 or more years of vesting service.

Age Last Birthday	Examples of Annual Probability of Disability Retirement
32	0.0006
37	0.0008
42	0.0011
47	0.0017
52	0.0030
57	0.0052

Employee Termination Rates

The termination rates shown below exclude death, disability and retirement rates. Termination rates are not applied when an individual is eligible for retirement. Below are the annual probabilities of employment termination for active employees.

Seasonal Participant Termination Rates

Years of Service:	< 2	2	3	4	5	6	7	8	9	10 - 14	15 - 19	20 - 24	25 - 29	>= 30
Age 15 - 30	0.30	0.35	0.30	0.15	0.15	0.10	0.09	0.07	0.06	0.05	0.04	0.04	0.03	0.02
Age 31 - 40	0.25	0.25	0.20	0.10	0.10	0.10	0.09	0.07	0.06	0.05	0.04	0.04	0.03	0.02
Age 41 -50	0.12	0.15	0.15	0.10	0.10	0.07	0.09	0.07	0.06	0.05	0.04	0.04	0.03	0.02
Age >= 51	0.12	0.15	0.15	0.10	0.10	0.07	0.09	0.07	0.06	0.05	0.04	0.04	0.03	0.02

Non-Seasonal Participant Termination Rates

Years of Service:	< 2	2	3	4	5	6	7	8	9	10 - 14	15 - 19	20 - 24	25 - 29	>= 30
Age 15 - 30	0.20	0.25	0.20	0.15	0.12	0.12	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01
Age 31 - 40	0.16	0.18	0.15	0.12	0.10	0.10	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01
Age 41 -50	0.14	0.15	0.12	0.10	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01
Age >= 51	0.13	0.13	0.10	0.10	0.08	0.08	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01

Future Annual Hours and Contributions

Projected benefit amounts for future years were calculated assuming that: (a) Active Non-Seasonal employees work an average of 1,800 hours per year; (b) Active Seasonal employees work an average of 600 hours per year; and (c) contribution rates in effect as of December 31 prior to the valuation date.

A non-retired participant was considered Active as of the valuation date, if he or she earned at least 250 covered hours during the prior year, or at least 1 covered hour in the prior year and at least 250 covered hours in second prior year.

Expected Annual Employer Contributions

The annual employer contributions expected during 2019 have been assumed to be $1.955 billion. This amount is used to determine the projected Funding Standard Account and the expected amortization period of the UAL.

Provision for Non-investment Expenses

Administrative expenses are assumed to be $111 million per year, payable mid-year.

Sample Valuation Data

We have relied on data supplied by Prudential Investments and Northwest Administrators. The actuarial values for non-retired participants are based on a sample of the employees covered under the Plan, as described in Appendix B. The actuarial values for records with valid data are adjusted for sampling and incomplete data, and the results are assumed to represent the values of the entire covered group.

Form of Payment

Participants without recent coverage are assumed to elect the single life annuity. Participants with recent coverage are assumed to elect a four year certain and life annuity. A factor of 1.0037 is applied in order to account for the availability of a subsidized joint and survivor benefit.

Probability of Marriage

Non-retired participants are assumed to have a probability of marriage of 80%.

Spouse Age Difference

Where applicable, husbands are assumed to be two years older than their wives.

Past Employment

Total past employment (continuous past employment plus special past employment) for each employee was calculated as the number of years from year of union membership until year of coverage, but not less than the known continuous past employment for the employee.

Survivor Benefit Costs

The family composition of covered employees was assumed to be similar to that tabulated in the 15th Actuarial Valuation published by the Railroad Retirement Board. This assumption was used to estimate the probability that an employee will be survived by a beneficiary eligible for a survivor benefit and to establish the probable duration of the benefit.

Inactive Participants

Vested inactive participants who are 75 or older as of the valuation date are assumed to be deceased and excluded from this valuation. Inactive participants who are coded as a claim for more than one year are expected to be either deceased or not eligible for a benefit from the Plan. We assume that any such participants do not have and will not create any liability for the Plan. As of 2019, in-pay participants aged 100 or older with a due and unpaid benefit are expected to never receive payment.

Actuarial Value of Assets

The SBA was valued on an amortized cost basis. The actuarial value of the SBA at January 1, 2019 was $2,700,413.

The remaining assets were valued using a smoothing procedure under which market value gains and losses are recognized at the rate of 20% per year over five years. The actuarial value of the remaining assets may not be greater than 120% or less than 80% of the market value.

The actuarial value of assets for purposes of determining the unfunded vested benefit liability is the same method used for ERISA funding purposes.

Actuarial Cost Method

The Unit Credit actuarial cost method was used for this valuation. Under this method, the Actuarial Liability is the Accrued Benefit Liability for all participants included on the valuation date.

The Normal Cost is:

- (i.) the expected increase in Accrued Benefit Liability for these participants resulting from benefits earned during the current year, plus,
- (ii.) as permitted under section 1.412(c)(3)-1(d)(2) of the Regulations, the expected increase in Accrued Benefit Liabilities resulting from new participants who are covered employees on the valuation date. The additional cost for these employees is based on a sample population that has the same demographic characteristics of a representative cross-section of recent new entrants, reflecting the actuary's best estimate of the number of new hires and number of hours worked by covered employees who are expected to become new participants in the Plan.

Each year, all Funding Standard Account charge and credit amounts to be amortized, except those set up due to PRA 2010, are combined and offset under IRC 431(b)(5).

Assumption Changes Incorporated in This Valuation

- The current liability interest rate was increased from 2.98% to 3.06% to remain within the IRS prescribed corridor.
- The current liability mortality tables were changed from annuitant / non-annuitant projected version of the RP-2000 Mortality Tables for 2018 to the annuitant / non-annuitant projected version of the RP-2000 Mortality Tables for 2019 as prescribed by the IRS.
- The anticipated annual employer contributions were increased to $1.955 billion based on recent plan experience.
- The form of payment factor was updated to reflect recent plan experience.
- Retired participants aged 100 or older with a due and unpaid benefit were assumed to never receive payment.
- The in pay liabilities were valued on the number of participants rather than records.

Method Changes Incorporated in This Valuation

There are no method changes for the January 1, 2019 valuation.