



Western Conference of Teamsters Pension Plan

January 1, 2020 Actuarial Valuation

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August 28, 2020

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, 2020, 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 law.

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

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

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

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Summary of Valuation Results

Overview of Results
(\$ in thousands)

Actuarial Valuation for Plan Year Beginning
January 1, 2019 January 1, 2020

Assets

Market Value of Assets	\$40,174,690	\$45,776,824
Actuarial Value of Assets	\$41,549,049	\$43,600,984
Investment Return (non-dedicated assets)		
Market Value of Assets	(1.74%)	17.06%
Actuarial Value of Assets	6.17%	7.52%

Funded Status

Actuarial Accrued Liability	\$44,822,315	\$47,393,483
Market Funded Percentage	89.6%	96.6%
Actuarial (Pension Protection Act) Funded Percentage	92.7%	92.0%

Withdrawal Liability

Present Value of Vested Benefits	\$42,821,266	\$45,274,964
Assets for Withdrawal Liability	\$41,549,049	\$43,600,984
Unfunded Vested Benefit Liability (UVBL)	\$1,272,217	\$1,673,980

Credit Balance and Contribution Requirements

Actuarial Accrued Liability	\$44,822,315	\$47,393,483
Actuarial Value of Assets	\$41,549,049	\$43,600,984
Unfunded Actuarial Accrued Liability	\$3,273,266	\$3,792,499
Credit Balance at End of Prior Year	\$5,057,235	\$5,591,603
Normal Cost (including expenses) ⁽¹⁾	\$1,063,629	\$1,459,460
Net Amortization Payment	\$766,483	\$885,460
Total Annual Cost	\$1,830,112	\$2,344,920
Anticipated Contributions	\$1,955,000	\$2,115,000
Maximum Deductible Contribution	\$68,166,143	\$79,839,344
Minimum Required Contribution	\$0	\$0
Actual Contributions	\$2,078,312	To Be Determined

⁽¹⁾ The 2020 Normal Cost is based on a 1.5% accrual rate for hours worked during 2020.

Amortization Period

Actuarial Value of Assets	4.5 years	5.6 years
Market Value of Assets	6.9 years	2.3 years

Participant Data

Retirees & Beneficiaries	233,589	235,247
Vested Inactive Participants	165,860	165,360
Active Participants	<u>216,520</u>	<u>220,540</u>
Total Participants in Valuation	615,969	621,147

Certification Status

Green	Green
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A. Purpose of this Report

This report has been prepared for the Western Conference of Teamsters Pension Plan as of January 1, 2020 to:

- Review the Plan's funded status as of January 1, 2020.
- Review the experience for the plan year ending December 31, 2019, 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, 2020.
- Determine the Plan's Amortization Period as of January 1, 2020.
- Determine the Plan's Unfunded Vested Benefit Liability for withdrawal liability purposes as of December 31, 2019, in accordance with the Multiemployer Pension Plan Amendments Act of 1980.
- Determine the actuarial present value of accumulated plan benefits as of December 31, 2019, 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, 2020. In particular, we have reflected a change of the benefit accrual rate for hours worked in 2020 to 1.50% of contributions from 1.20% of contributions. Hours worked in years after 2020 are credited at 1.20%. There were no other 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 liabilities not covered by the SBA Dedication was changed to 6.75% from 7.00%. The impact of changing the discount rate was an increase in liabilities of approximately \$1.28 billion and a funded percentage decrease of 2.55%.
- The mortality assumption was updated (see Appendix C) to reflect recent and future anticipated plan experience. The impact of changing the mortality assumption was a decrease in liabilities of approximately \$9.8 million and a funded percentage increase of 0.02%.

In addition, the following assumption changes were implemented and had a combined impact of an approximately \$1.4 million increase in liabilities and a funded percentage decrease of less than 0.01%:

- The discount rate used for the SBA Dedication was changed to 3.96% for 2020 from 4.16% for 2019.
- The form of payment factor was updated to reflect recent plan experience.
- The family composition for covered employees used to value the child survivor benefit was updated to reflect the latest available Actuarial Valuation published by the Railroad Retirement Board.

Further, the anticipated annual employer contributions were increased to \$2.115 billion for purposes of projecting the 2020 Funding Standard Account and determining the Amortization Period.

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

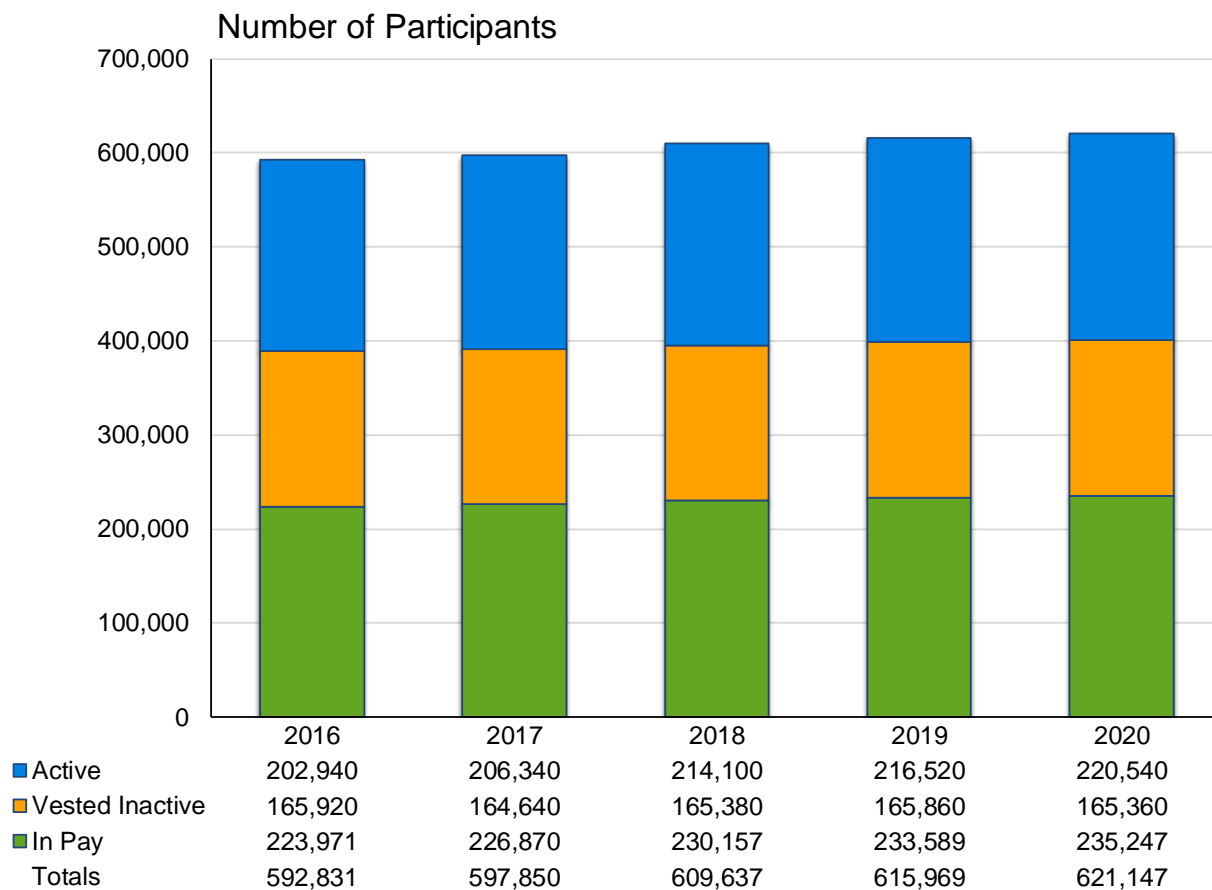
Changes in Actuarial Methods

There were no changes in the actuarial funding method for the January 1, 2020 valuation.

D. Participant Information

Participant Counts

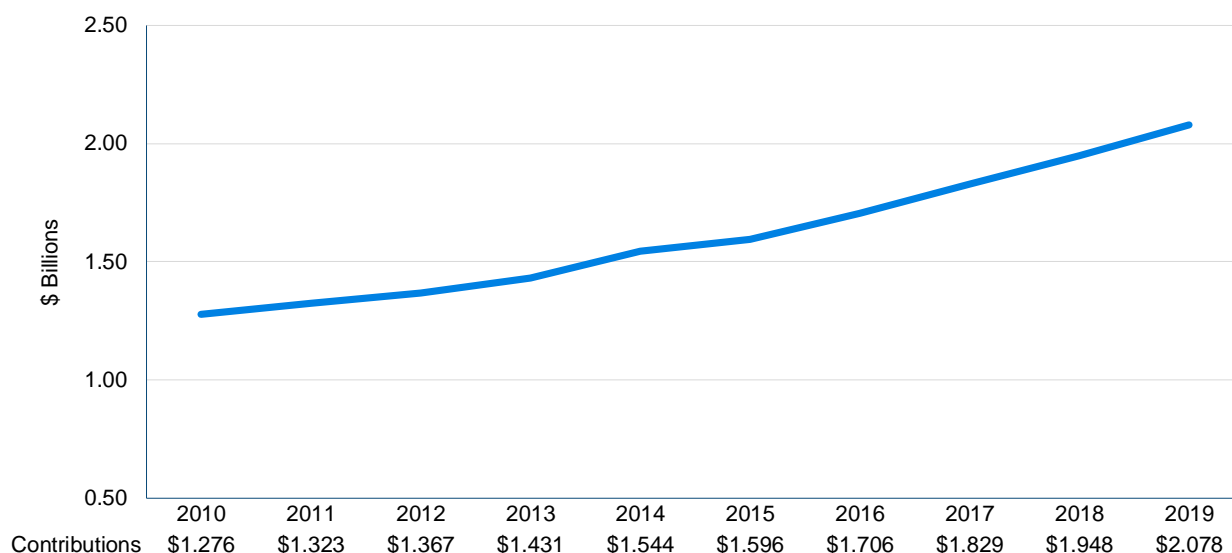
The following chart shows the number of participants included in this valuation, along with comparable information from the last several valuations.



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, 2019, contributions for the plan year beginning January 1, 2020, are expected to be \$2.115 billion. The graph below shows the Plan's historical level of contributions.



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 less the withdrawal liability receivable amounts. The Plan's assets are split into dedicated assets and non-dedicated assets.

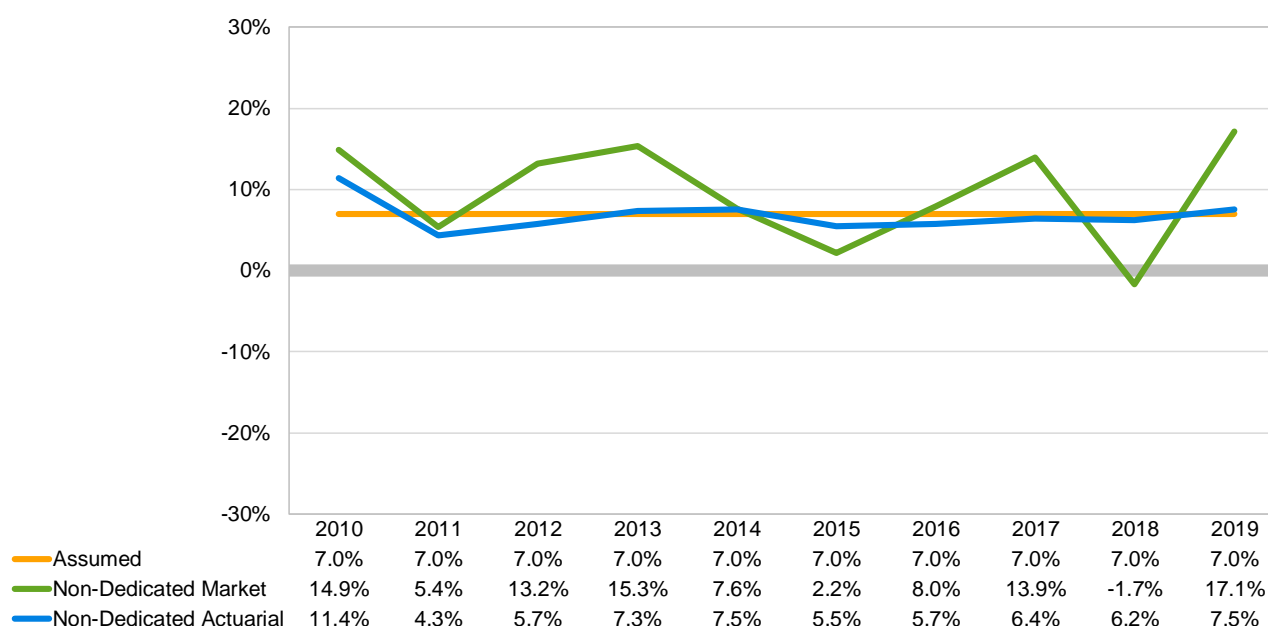
The dedicated assets are contained in the Strategic Bond Account (SBA). The market value of the FDA and 1982/84 Annuity Account (82/84 Account) are combined with non-dedicated assets for purposes of determining the actuarial value of assets.

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, computation of the Amortization Period, and determination of Unfunded Vested Benefit Liability. 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.

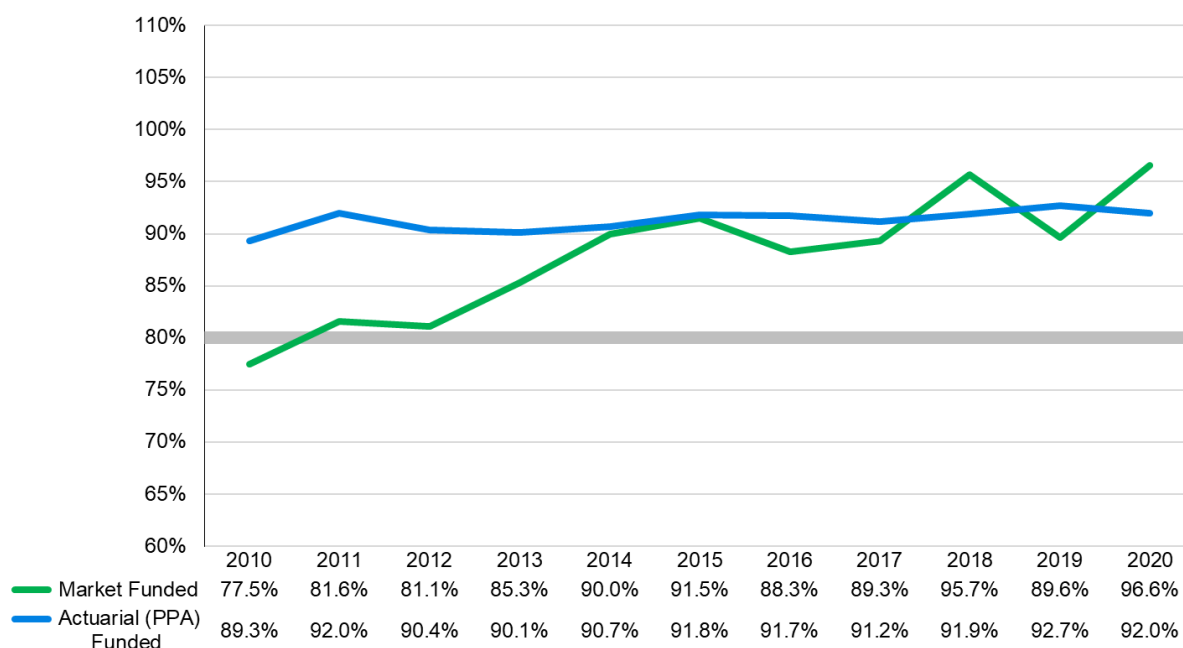
January 1,	Prior Year Rate of Return on Total Plan Assets		(\$ in thousands)		
	Market	Actuarial	Market Value of Assets	ERISA Actuarial Value of Assets	Assets for Withdrawal Liability
2020	16.45%	7.26%	45,776,824	43,600,984	43,600,984
2019	(1.76)	5.87	40,174,690	41,549,049	41,549,049
2018	13.08	6.27	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

Over the past 10 years, the Plan's total assets have averaged a 8.79% return on a market value basis, net of investment expenses. The Plan's non-dedicated assets have averaged a 9.39% 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.



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.



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		
2020	\$26,787,969	\$5,211,995	\$15,393,519	\$47,393,483	96.6%	92.0%
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

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 2018, 2019, and 2020, 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
2020	\$47,393,483	\$43,600,984	\$3,792,499
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 non-investment 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
2020	\$1,459,460 ⁽¹⁾	\$885,460	\$2,422,769	2,115,000 ⁽²⁾	\$5,651,436 ⁽²⁾
2019	1,063,629	766,483	1,893,083	2,078,312	5,591,603
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
⁽¹⁾ Based on 1.5% accrual rate for hours worked during 2020.					
⁽²⁾ 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, 2019	January 1, 2020
Unfunded Actuarial Liability (UAL)	\$ 3,273,266	\$ 3,792,499
Expected Employer Contributions	1,955,000	2,115,000
Expected Expenses	111,000	112,000
Normal Cost (payable monthly)	992,123	1,399,755
Excess Contributions in first year	851,877	603,245
Excess Contributions in future years	\$ 851,877	\$ 878,041
Years to Amortize UAL	4.5	5.6
Funding Shortfall on a Market Value basis	\$ 4,647,625	\$ 1,616,659
Years to Amortize Funding Shortfall on a Market Value basis	6.9	2.3

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
2019	\$45,274,964	\$43,600,984	\$1,673,980
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

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. The Plan has been certified as neither endangered nor critical (i.e. "Green") in every year since 2008, including the most recent certification for January 1, 2020.

Plan Year Beginning January 1,	Zone Status
2008 - 2020	Green

K. Plan Experience

Initial Observations

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

- Employer contributions in 2019 (exclusive of withdrawal liability payments) increased by 7.0% to \$2.064 billion in 2019 from \$1.929 billion in 2018.
- Benefit payments increased by 2.5% to \$2.90 billion in 2019 from \$2.83 billion in 2018.
- Operating expenses in 2019 amounted to 5.2% of total employer contributions compared to 5.6% of total contributions in 2018.
- The net assets available for plan benefits on a market value basis increased by approximately \$5.6 billion during 2019, compared with a decrease of approximately \$1.7 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 16.45% for 2019. The corresponding returns for 2018 and 2017 were (1.76%) and 13.08% respectively.

The estimated market value investment return for 2019 on non-dedicated assets was about 17.06%, resulting in an approximate \$3.73 billion gain compared to 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 7.52%, resulting in an approximate \$210 million gain. 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 7.26%. This resulted in an actuarial gain of about \$191 million.

Demographic Experience

The gains and losses due to all non-investment experience during 2019 increased the Plan's actuarial liability by approximately \$202 million, about 0.4% of total liability. The commentary below identifies the major components of the demographic gains and losses experienced during 2019.

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 2019. Additionally, continuing active participants earned larger benefits during 2019 due to higher hours than expected under the current assumptions. We estimated that the increase in the Plan's liabilities was about \$56 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 estimate the increase in liability due to new entrants to be approximately \$25 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 \$121 million demographic loss is small, relative to the overall Plan. Based on our annual review of the demographic experience of the Plan, we believe the assumptions are individually reasonable and in combination, offer our best estimate of anticipated experience under the Plan.

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, 2019, 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, 2020, and the Amortization Period as of January 1, 2020.
- In Section 5, we determine 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 assess 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, 2019. This asset value is the same as that used to determine employer liability upon withdrawal from the Plan during 2020. This exhibit also 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, 2019)

<u>ASSETS</u>	<u>2019</u>
INVESTMENTS - at fair value	
103-12 investment entities	\$ 3,101,455,173
Cash and cash equivalents	1,271,826,228
Common/collective trusts	15,949,841,656
Corporate debt securities	2,466,515,231
Equity securities	3,295,209,428
Insurance company contracts	7,107,254,648
Limited partnerships	6,213,868,999
Mutual fund	688,404,511
Other private equity	2,002,648,742
Pooled separate account	57,708,483
Real estate	1,549,661,901
U.S. Government and Government Agency obligations	774,827,929
	<u>44,479,222,929</u>
Securities on loan	
Corporate debt securities	11,975,741
Equity securities	332,550,645
Insurance company contracts	2,042,224,428
U.S. Government and Government Agency obligations	22,536,216
	<u>2,409,287,030</u>
Fair value of collateral held for securities on loan	<u>2,345,925,474</u>
Total investments	<u>49,234,435,433</u>
RECEIVABLES	
Due from broker for securities sold	173,376,471
Contributions due from employers - net	158,900,000
Withdrawal liability receivable - net ¹	0
Accrued investment income	39,115,904
Swaps receivable from counterparties	1,201,748
Forward foreign currency contracts	6,830,282
Total receivables	<u>379,424,405</u>
OTHER ASSETS	6,139,315
CASH	<u>10,914,508</u>
Total assets	<u>49,630,913,661</u>
LIABILITIES AND NET ASSETS	
LIABILITIES	
Liability to return collateral held for securities on loan	2,470,083,858
Securities sold, not yet purchased	1,136,111,463
Due to broker for securities purchased	203,343,286
Accounts payable and accrued expenses	18,968,896
Swaps payable to counterparties	18,761,945
Forward foreign currency contracts	6,820,071
Total liabilities	<u>3,854,089,519</u>
NET ASSETS AVAILABLE FOR BENEFITS	<u>\$ 45,776,824,142</u>

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

Exhibit 3.1 (Continued)

(\$ in thousands)		
	Year Ending December 31, 2018	Year Ending December 31, 2019
a. Strategic Bond Account	\$ 2,774,898	\$ 2,720,510
b. All Remaining Assets	<u>37,399,792</u>	<u>43,056,314</u>
c. Net Assets Available for Plan Benefits	\$ 40,174,690	\$ 45,776,824

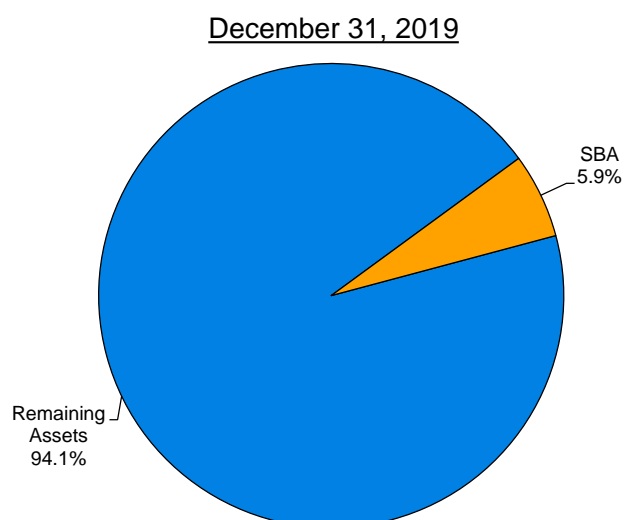
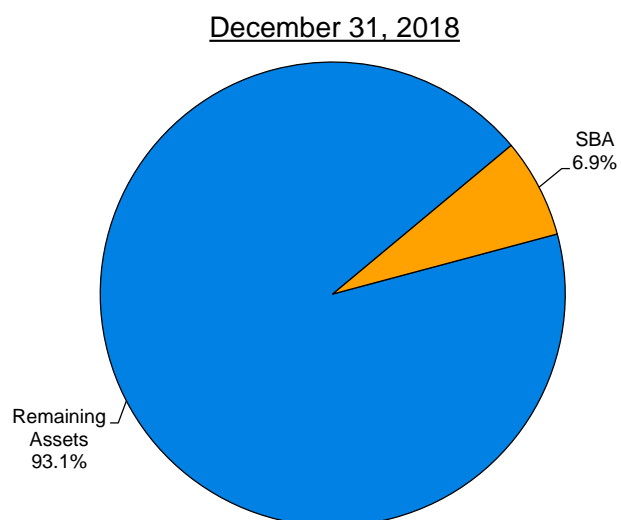


Exhibit 3.2

Receipts and Disbursements (Year Ended December 31, 2019)

	<u>2019</u>
ADDITIONS	
Investment income	
Interest, dividends and other investment income	\$ 838,949,492
Net appreciation/(depreciation) in fair value of investments	5,938,485,370
Net appreciation/(depreciation) in fair value of collateral held for securities on loan	<u>29,572</u>
	6,777,464,434
Less investment expenses	<u>(272,389,137)</u>
Investment income - net	6,505,075,297
Employer contributions	2,064,146,359
Employer withdrawal liability income ¹	14,165,353
Other income	<u>1,185,517</u>
Total additions	8,584,572,526
 DEDUCTIONS	
Pension benefits	2,900,499,455
Administrative expenses	108,826,523
Income tax expense	<u>23,514,126</u>
Total deductions	3,032,840,104
 NET CHANGE	 5,551,732,422
 TRANSFER OF ASSETS TO UNRELATED PLAN	 0
 NET ASSETS AVAILABLE FOR BENEFITS	
Beginning of year	<u>40,174,690,160</u>
Adjustment to beginning of year assets	50,401,560
End of year	<u>\$ 45,776,824,142</u>

¹ Includes \$4,194,500 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, 2019		
Plan Year Ending December 31,	All Assets	Non- Dedicated Assets	Period	All Assets	Non-Dedicated Assets
2019	16.45%	17.06%	1	16.45%	17.06%
2018	-1.76%	-1.74%	2	6.96%	7.25%
2017	13.08%	13.90%	3	8.96%	9.42%
2016	7.84%	7.95%	4	8.68%	9.05%
2015	1.78%	2.22%	5	7.26%	7.65%
2014	7.56%	7.56%	6	7.31%	7.64%
2013	12.59%	15.25%	7	8.05%	8.69%
2012	11.93%	13.15%	8	8.53%	9.24%
2011	6.26%	5.35%	9	8.28%	8.80%
2010	13.53%	14.87%	10	8.79%	9.39%
2009	10.96%	12.60%	11	8.99%	9.68%
2008	-20.58%	-25.23%	12	6.15%	6.23%
2007	5.41%	5.67%	13	6.09%	6.19%
2006	10.61%	12.98%	14	6.41%	6.66%
2005	6.05%	6.55%	15	6.38%	6.65%
2004	9.49%	10.22%	16	6.58%	6.87%
2003	16.33%	20.76%	17	7.13%	7.64%
2002	-2.29%	-7.56%	18	6.58%	6.74%
2001	2.05%	0.89%	19	6.34%	6.42%
2000	3.35%	0.46%	20	6.19%	6.12%

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

Exhibit 3.4

Actuarial Value of Assets (January 1, 2020)

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)
2019	\$37,399,792	\$2,078,312	\$2,635,035	\$108,827	\$0	(\$665,550)	\$6,322,072	\$43,056,314
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

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
2019	17.06%	\$6,322,072	\$2,595,085	\$3,726,987
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

Market Value of Non-Dedicated Assets on January 1, 2020	\$	43,056,314
Subtract 80% of \$3,726,987 gain		(2,981,590)
Add back 60% of \$3,356,399 loss		2,013,839
Subtract 40% of \$2,371,530 gain		(948,612)
Subtract 20% of \$309,079 gain		(61,815)
Actuarial Value of Non-Dedicated Assets on January 1, 2020	\$	41,078,136
Preliminary Actuarial Value as a Percentage of Market Value		95.4%
Actuarial Value of Non-dedicated Assets (limited to 80%-120% of Market Value)	\$	41,078,136
Actuarial Value of Dedicated Funds: SBA (see Appendix C)		2,522,848
Actuarial Value of Assets on January 1, 2020	\$	43,600,984

* 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, 2020										
	Investment Gain / (Loss) Market over Actuarially Expected					Investment Gain / (Loss) Recognized in Current Year	Investment Gain / (Loss) Recognized in Future Years			
Year		2015	2016	2017	2018	2019	2020	2021	2022	2023
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)	
2019	\$3,726,987					\$745,397	\$745,397	\$745,397	\$745,397	\$745,397
Net Gains / (Losses) Recognized by Year						\$299,965	\$610,239	\$548,424	\$74,118	\$745,397
Interest on Prior Year Gains / (Losses)						(\$101,419)	\$138,473	\$95,756	\$57,366	\$52,178
Additional Gains / (Losses) Recognized in Current year because of 80% - 120% Corridor						\$0				
Total Gain / (Loss) Recognized by year						\$198,546	\$748,712	\$644,179	\$131,484	\$797,575
Total Gains / (Losses) Deferred and to be Recognized in Future Years						\$1,978,178	\$1,367,939	\$819,515	\$745,397	\$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
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	(944,121)	(727,420)	(1,721,541)
2019	2,078,312	108,827	2,900,499	(931,014)	6,533,148	5,602,134
Total as of 12/31/19	\$27,698,827	\$1,601,550	\$43,372,585	(\$17,275,308)	\$39,436,841	\$22,161,533

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 accrued liability 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 for service rendered to the date of the actuarial valuation. The chart below illustrates the allocation of the actuarial accrued liability among these categories of participants. In prior reports this chart reflected future accruals for active participants.

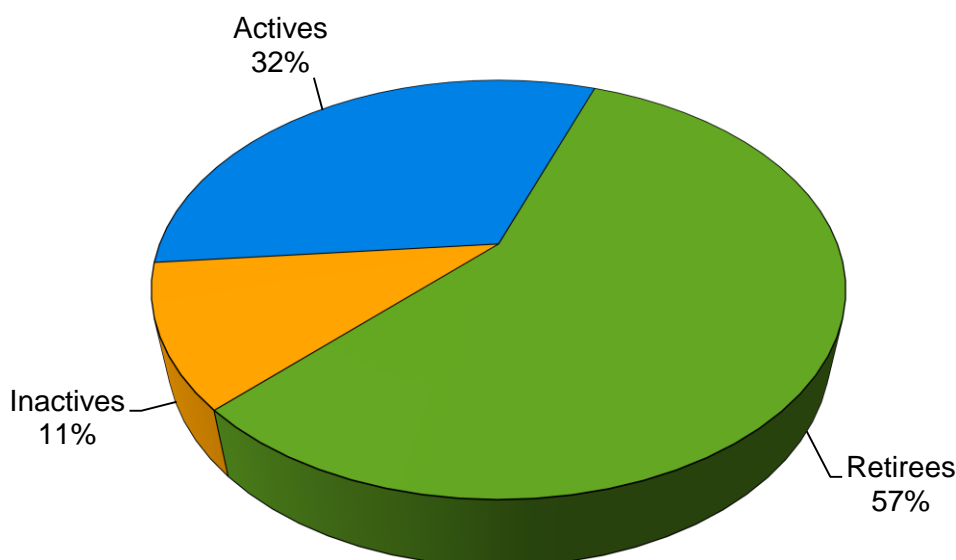


Exhibit 4.1 contains information on the actuarial balance sheet. Plan requirements consist of the actuarial accrued liability on January 1, 2020. As illustrated above, 68% of the Plan's liabilities are for benefits to be paid to participants for whom contributions are no longer being made to the Plan.

Exhibit 4.2 details the changes in the value of the Plan's unfunded actuarial liability from January 1, 2019, to January 1, 2020. 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. The Normal Cost in this report reflects a 1.5% accrual rate for hours worked during 2020.

ERISA Minimum Funding Requirements

Exhibit 4.4 details the entries to the Plan's Funding Standard Account for the plan year ending December 31, 2019.

Exhibit 4.5 projects the Plan's Funding Standard Account through December 31, 2020 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 2020 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, 2020)

Requirements (\$ in thousands)

Actuarial Accrued Liability		
Retired Participants		\$ 26,787,969
Vested Inactive Participants		5,211,995
Active Participants		
Retirement	\$ 13,746,541	
Vested Withdrawal	941,351	
Death	245,599	
Disability	<u>460,028</u>	<u>15,393,519</u>
Total Actuarial Accrued Liability		\$ 47,393,483

Resources (\$ in thousands)

Actuarial Value of Assets	\$ 43,600,984
Unfunded Actuarial Liability	<u>3,792,499</u>
Total	\$ 47,393,483

Exhibit 4.2

Analysis of Change in the Unfunded Actuarial Liability (January 1, 2020)

Expected Unfunded Actuarial Liability on January 1, 2020	(\$ in thousands)
Unfunded Actuarial Liability as of January 1, 2019	\$ 3,273,266
Normal Cost, Including Expenses	1,063,629
Interest on the above items	316,999
Contributions	(2,078,312)
Interest on Contributions	<u>(60,270)</u>
Expected Unfunded Actuarial Liability as of January 1, 2020	\$ 2,515,312

Changes

Assumption changes	\$ 1,265,483	
Discount rate changes on dedicated funds	2,861	
Method Change	0	
Demographic (Gain)/Loss	201,603	
Expense (Gain)/Loss	(1,947)	
Asset (Gain)/Loss	<u>(190,813)</u>	
Total		<u>1,277,187</u>

Unfunded Actuarial Liability on January 1, 2020	\$ 3,792,499
--	---------------------

Exhibit 4.3

Normal Cost (January 1, 2020)

Unit Credit Normal Cost		(\$ in thousands)	
Retirement	\$	1,100,537	
Vested Withdrawal		158,027	
Death		17,964	
Disability		<u>45,580</u>	\$ 1,322,108 ⁽¹⁾
New Entrant Adjustment			29,226
Expenses (\$112,000,000 Payable Mid-Year)			<u>108,126</u>
Total Normal Cost (Beginning of Year)			\$ 1,459,460

⁽¹⁾Based on 1.5% accrual rate for hours worked during 2020

Exhibit 4.4

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	<u>128,108</u>
Total Charges	\$ 1,958,220
Credits to Funding Standard Account	
Prior Year Credit Balance, if any	\$ 5,057,235
Employer Contributions	2,078,312
Amortization Credits	0
Interest on Credit Balance, Amortization Credits, and Contributions	<u>414,276</u>
Total Credits	\$ 7,549,823
Balance	
Credit Balance, if any	\$ 5,591,603

Exhibit 4.5

Projected Funding Standard Account (Year Ending December 31, 2020)

Charges to Funding Standard Account		(\$ in thousands)
Prior Year Fund Deficiency, if any	\$	0
Normal Cost for Year		1,459,460
Amortization Charges*		885,460
Interest on Fund Deficiency, Normal Cost, and Amortization Charges		<u>158,282</u>
Total Charges	\$	2,503,202
 Credits to Funding Standard Account		
Prior Year Credit Balance, if any	\$	5,591,603
Expected Employer Contributions		2,115,000
Amortization Credits*		0
Interest on Credit Balance, Amortization Credits, and Contributions		<u>448,035</u>
Total Credits	\$	8,154,638
 Balance		
Projected Credit Balance, if any	\$	5,651,436
 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	01/01/2020 Balance	Years Remaining	Amortization Payment
Charges					
2008 Net Investment Loss	2009	\$4,407,752	\$3,611,268	18.000	\$330,262
2008 Net Investment Loss	2010	\$588,120	\$487,429	18.000	\$44,577
2008 Net Investment Loss	2011	\$671,272	\$563,316	18.000	\$51,517
2008 Net Investment Loss	2012	\$467,560	\$397,707	18.000	\$36,372
2008 Net Investment Loss	2013	\$875,912	\$756,068	18.000	\$69,145
2008 Net Investment Loss	2014	\$1,635,968	\$1,434,812	18.000	\$131,218
Prior Combined/Offset Base	2019	\$880,592	\$842,898	13.329	\$91,716
Assumption Change	2020	\$1,268,344	\$1,268,344	15.000	\$128,400
Experience Loss	2020	\$22,260	\$22,260	15.000	\$2,253
<i>Total Charges</i>		\$10,817,780	\$9,384,102		\$885,460
Credits					
<i>Total Credits</i>		\$0	\$0		\$0
Net Charges/(Credits)					
			\$9,384,102		\$885,460

Combined/Offset

(\$ in thousands)					
	Year Established	Original Balance	01/01/2020 Balance	Years Remaining	Amortization Payment
Charges					
2008 Net Investment Loss	2009	\$4,407,752	\$3,611,268	18.000	\$330,262
2008 Net Investment Loss	2010	\$588,120	\$487,429	18.000	\$44,577
2008 Net Investment Loss	2011	\$671,272	\$563,316	18.000	\$51,517
2008 Net Investment Loss	2012	\$467,560	\$397,707	18.000	\$36,372
2008 Net Investment Loss	2013	\$875,912	\$756,068	18.000	\$69,145
2008 Net Investment Loss	2014	\$1,635,968	\$1,434,812	18.000	\$131,218
Combined Offset Base	2020	\$2,133,502	\$2,133,502	14.292	\$222,369
<i>Total Charges</i>		\$10,780,086	\$9,384,102		\$885,460
Credits					
<i>Total Credits</i>		\$0	\$0		\$0
Net Charges/(Credits)					
			\$9,384,102		\$885,460

Exhibit 4.6

Maximum Tax-Deductible Contribution (Plan Year Ending December 31, 2020) (\$ in thousands)

**1. Ten Year Amortization Limitation:
(IRC Section 404(a)(1)(A)(iii))**

Normal Cost	\$	1,459,460	
Amortization of Unfunded Actuarial Liability	+	499,994	
Interest	+	<u>132,263</u>	\$ 2,091,717

**2. Full Funding Limitation:
(IRC Section 412(c)(7)(A)(i))**

Actuarial Liability at Beginning of Year	\$	47,393,483	
Unit Credit Normal Cost, including expenses, at Beginning of Year	+	1,459,460	
Test Value of Assets, at Beginning of Year	-	43,600,984	
Interest	+	<u>354,507</u>	\$ 5,606,466

3. Unfunded Current Liability

90% of Current Liability, at End of Year	\$	79,197,792	
Actuarial Value of Assets Projected to End of Year	-	<u>43,473,833</u>	\$ 35,723,959

**4. Unfunded Current Liability Limitation:
(IRC Section 404(a)(1)(D))**

140% of Current Liability at Year End	\$	123,196,566	
Actuarial Value of Assets at Year End	-	<u>43,357,222</u>	
Unfunded Current Liability			\$ 79,839,344

**5. Maximum Tax-Deductible Contribution
Lesser of (1) or (2), but not less than (3) or (4)**

\$ 79,839,344

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 2.52% interest assumption and mortality as specified by the IRS. The 2.52% 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	\$ 40,118,295
Vested Inactive Participants	11,353,592
Active Participants	<u>33,896,603</u>
Total	\$ 85,368,490
Changes Expected During 2020 Plan Year	
Accrual of Benefits	\$ 3,400,844
Expected Benefit Payments	- 2,971,565
Interest	<u>+ 2,199,778</u>
Total	\$ 2,629,057
Current Liability, End of Year	\$ 87,997,547

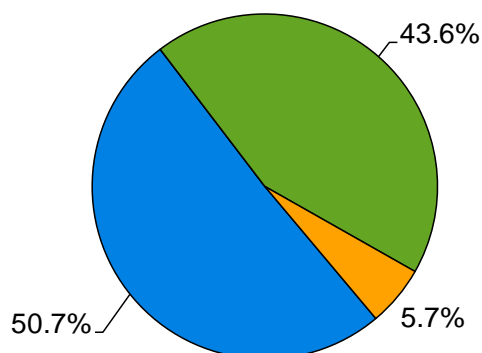
Exhibit 4.7 Amortization Period

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

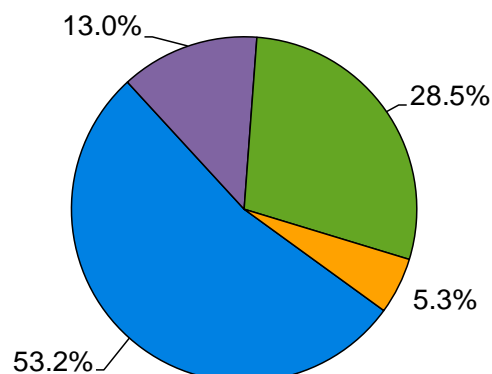
(\$ in thousands)		
	January 1, 2019	January 1, 2020
a. Estimated Employer Contributions	\$1,955,000	\$2,115,000
b. Expenses	\$111,000	\$112,000
c. Normal Cost (payable monthly)		
1. Long-Term at 1.2% Accrual Rate	\$992,123	\$1,124,959
2. Temporary Increase to 1.5% Accrual Rate	\$0	\$274,796
d. Estimated First Year Employer Contribution to Amortize Unfunded Actuarial Liability (a.-b.-c.)	\$851,877	\$603,245
e. Unfunded Actuarial Liability	\$3,273,266	\$3,792,499
f. Amortization Period	4.5 years	5.6 years
g. Funding Shortfall on a Market Value basis	\$4,647,625	\$1,616,659
h. Estimated Period to Amortize the Unfunded Actuarial Liability using Market Value of Assets	6.9 years	2.3 years

Estimated Employer Contributions

2019 - \$1.955 Billion



2020 - \$2.115 Billion



● UAL Amortization
 ● Expenses
 ● 1.2% Accrual NC
 ● Bonus Accrual NC

Note that the 2020 Normal Cost includes the impact of increasing the accrual rate to 1.50% for hours worked during 2020.

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, 2019. Exhibit 5.2 shows the change in the Present Value of Accumulated Plan Benefits from December 31, 2018, to December 31, 2019.

Exhibit 5.3 shows the Plan's Unfunded Vested Benefits Liability for purposes of determining withdrawal liability. As of December 31, 2019, 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 2020 plan year.

Exhibit 5.1

Statement of Actuarial Present Value of Accumulated Plan Benefits

	FASB ASC Topic 960 (\$ in thousands)	
	December 31, 2018	December 31, 2019
Vested Benefits		
Retirees & Beneficiaries	\$ 25,888,473	\$ 26,783,764
Vested Inactive Participants	4,898,348	5,211,976
Active Participants	12,034,445	13,279,224
Total	\$ 42,821,266	\$ 45,274,964
Non-Vested Benefits		
Active and Other Non-Vested Benefits	2,001,049	2,118,519
Total	\$ 2,001,049	\$ 2,118,519
Actuarial Present Value of Accumulated Plan Benefits	\$ 44,822,315	\$ 47,393,483
Assets		
Market Value of Assets (MVA)	\$ 40,174,690	\$ 45,776,824
Actuarial Value of Assets (AVA)	\$ 41,549,049	\$ 43,600,984
Funding Ratios		
Ratio of MVA to Present Value of Vested Benefits	93.8%	101.1%
Ratio of MVA to Present Value of Accumulated Plan Benefits	89.6%	96.6%
PPA Funding Ratio		
Ratio of AVA to Present Value of Accumulated Plan Benefits	92.7%	92.0%

Exhibit 5.2

Statement of Changes in Actuarial Present Value of Accumulated Plan Benefits

	(\$ in thousands)
Value as of December 31, 2018	\$ 44,822,315
Changes	
Benefits Accumulated	956,603
Actuarial (Gain)/Loss	201,603
Interest	3,045,117
Benefit Payments	(2,900,499)
Assumption Changes	<u>1,268,344</u>
Net Change	\$ 2,571,168
Value as of December 31, 2019	\$ 47,393,483

Exhibit 5.3

Unfunded Vested Benefit Liability

	(\$ in thousands)	
	December 31, 2018	December 31, 2019
Actuarial Present Value of Vested Benefits		
Active Participants	\$ 12,034,445	\$ 13,279,224
Vested Inactive Participants	4,898,348	5,211,976
Retirees & Beneficiaries	<u>25,888,473</u>	<u>26,783,764</u>
Total	\$ 42,821,266	\$ 45,274,964
Assets for Withdrawal Liability	<u>\$ 41,549,049</u>	<u>\$ 43,600,984</u>
Unfunded Vested Benefit Liability	\$ 1,272,217	\$ 1,673,980
Excess of the Assets for Withdrawal Liability over the Vested Benefit Liability	NA	NA
Percentage Funded	97.0%	96.3%

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. Because the Plan's liabilities do not change as a result of the Plan's investment returns (this mismatch is sometimes referred to as asset / liability mismatch risk), investment returns less than expected can result in significantly different funded status in the future than expected. This is best illustrated through funding projections.

Assessment: Approximately 4% 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 9.39% over the last 10 years, and 6.12% 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 6.75%. 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.

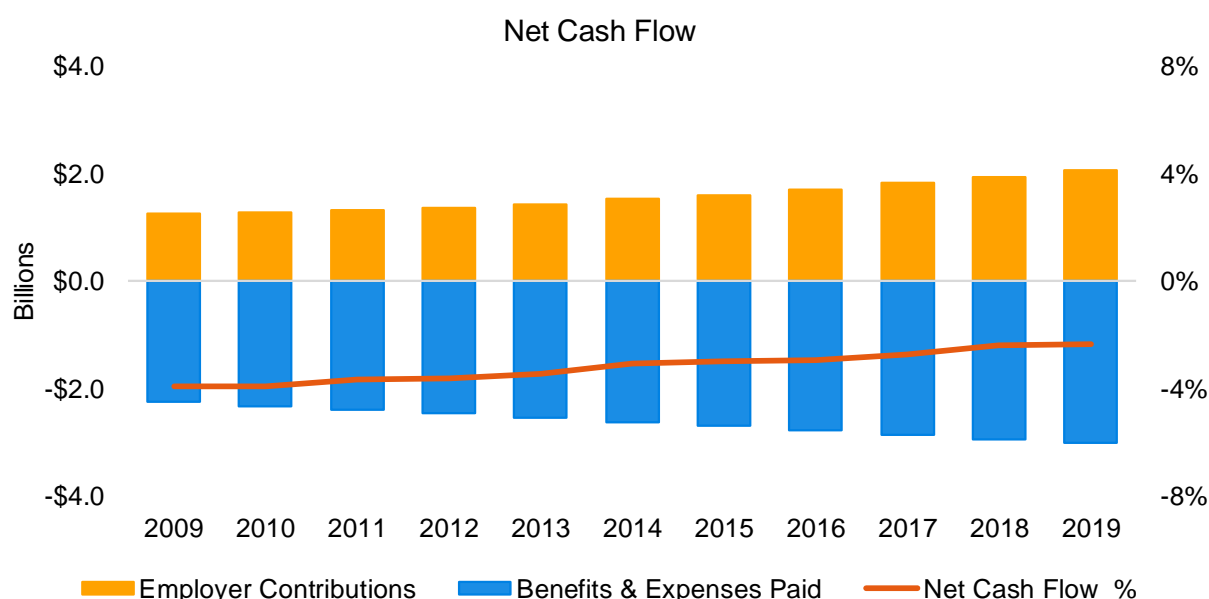
Assessment: If the interest rate changes by 1%, the estimated percentage change in pension liability is a plan's duration in years. The approximate duration of the plan's non-dedicated pension liability is 12 years as of the current valuation date. As such, if the interest rate changes by 1%, the estimated 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 -2.3% during 2019 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.

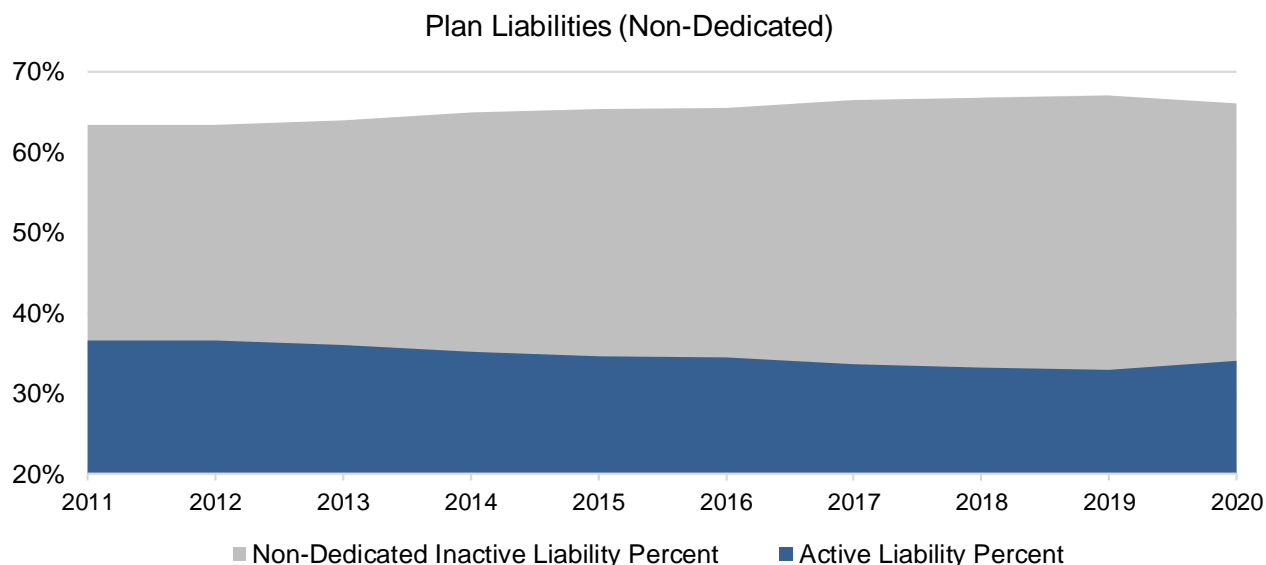
Maturity Risk

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, 2011 to 66% at January 1, 2020.

As of the valuation date, non-dedicated assets are equal to about 47 times the expected annual contributions net of expenses and Normal Cost, based on a 1.2% accrual rate, indicating a one-year non-dedicated asset loss of 10% would be equal to about 4.7 times the expected annual net 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 about \$2.1 billion in 2019. 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, 2019 was 85%, 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 aggregate actual to expected experience is shown below. A ratio of 100% means actual experience matched expected experience.

Demographic Assumption	Aggregate Actual to Expected Experience Ratio
Mortality	105%
Retirement	87%
Termination	105%

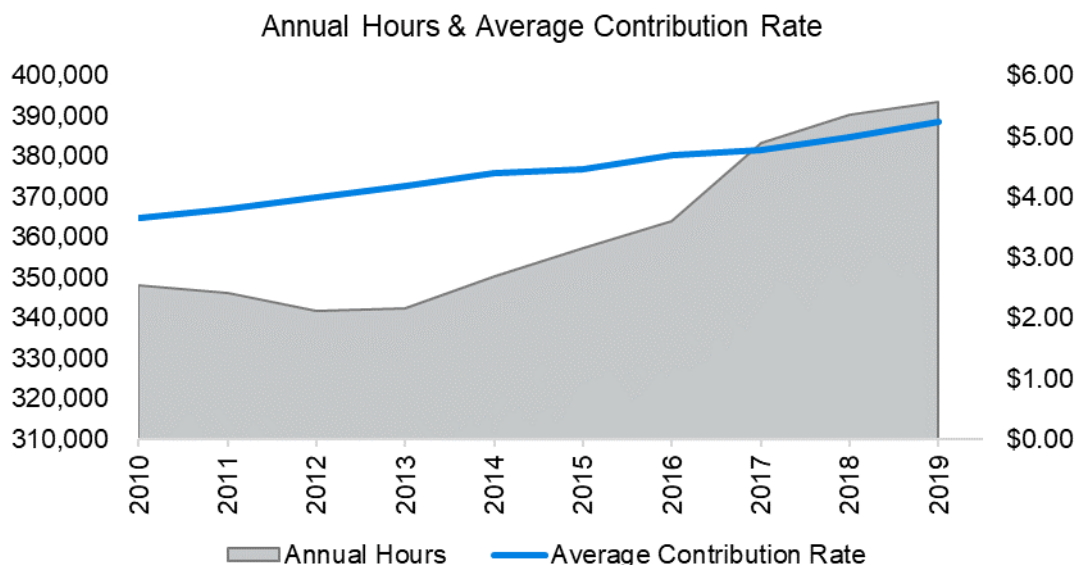
The experience of some demographic groups pose a greater risk to the plan than other groups. For example, termination experience for seasonal members has less impact on plan costs than the termination experience for non-seasonal member. The smaller the group the lower the risk exposure, all other things equal.

Covered Employment Risk

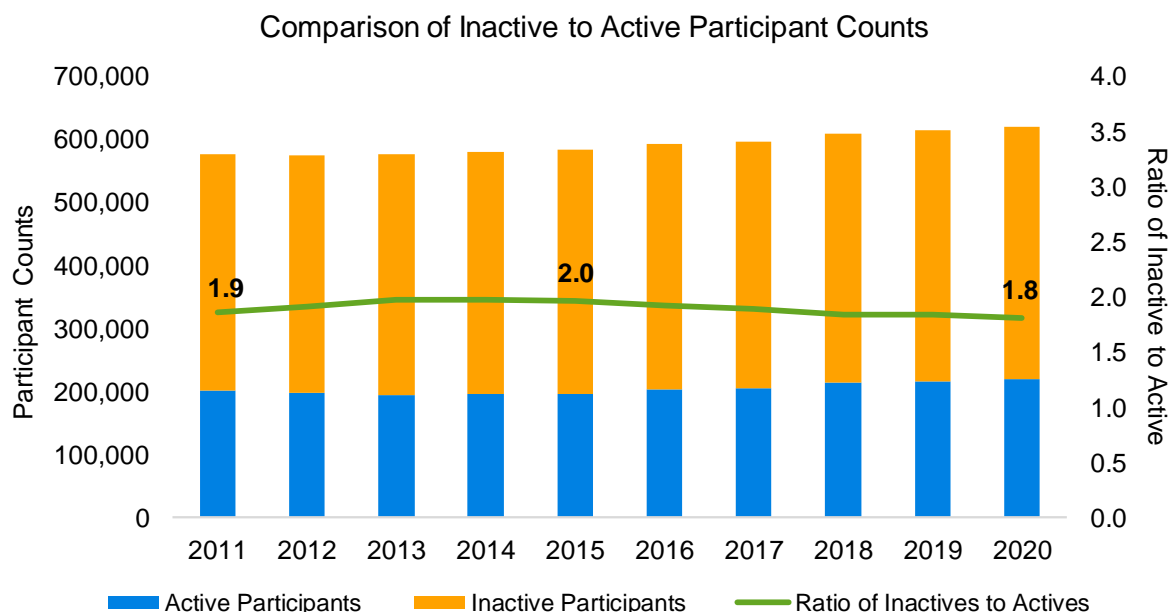
Definition: Covered employment risk is the potential that future covered employment is lower than expected due to a declining workforce in a company or industry, or a temporary workforce reduction due to market forces.

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 342 million hours in 2013 and then to over 393 million hours for the most recent plan year. During the last 10 years, the average total contribution rate has changed from \$3.66 in 2010 to \$5.25 in 2019.



The Plan's number of active participants has also fluctuated from 211,700 in 2010, to 194,080 in 2013 and then to 220,540 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 85 industries in 29 states. One employer contributed about 46% of total contributions to the plan in 2019 and recently 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 (\$30 per participant for 2020 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

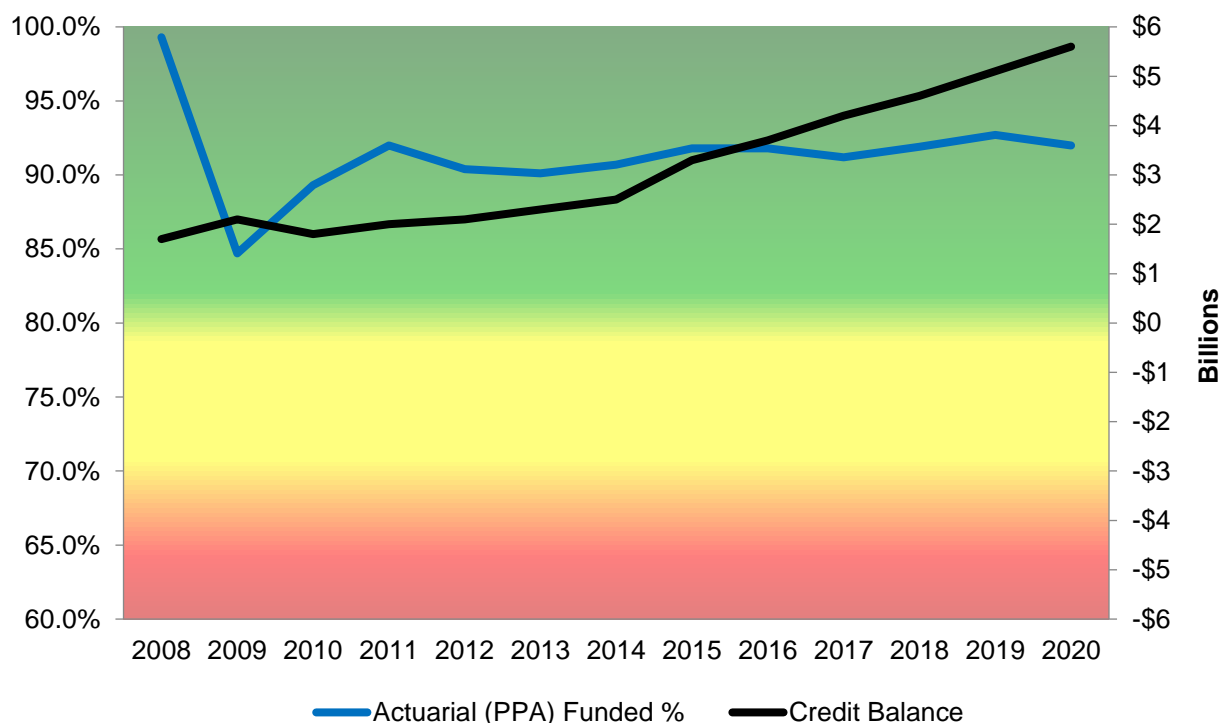
program. It is not known how large these premiums may become. Currently, various ideas are being considered.

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 for the 2020 actuarial certification was 92.2% before reflecting demographic experience and audited financial statements. The PPA funded percentage is 90.0% after reflecting updated demographic information and updated plan assets. The Plan's approximate \$5.6 billion credit balance as of December 31, 2019 is about 2.7 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)

	<u>January 1, 2020</u>	<u>January 1, 2019</u>	<u>January 1, 2018</u>	<u>January 1, 2017</u>	<u>January 1, 2016</u>
<u>Actuarial Present Value of Accumulated Plan Benefits</u>					
Vested Benefits					
Retirees	\$ 26,783,764	\$ 25,888,473	\$ 25,209,307	\$ 24,516,762	\$ 23,282,149
Inactives	5,211,976	4,898,348	4,794,926	4,626,756	4,591,771
Actives	<u>13,279,224</u>	<u>12,034,445</u>	<u>11,835,063</u>	<u>11,576,703</u>	<u>11,360,257</u>
Total	\$ 45,274,964	\$ 42,821,266	\$ 41,839,296	\$ 40,720,221	\$ 39,234,177
Non-Vested Benefits	\$ 2,118,519	\$ 2,001,049	\$ 1,931,251	\$ 1,846,548	\$ 1,840,022
Accumulated Plan Benefits	\$ 47,393,483	\$ 44,822,315	\$ 43,770,547	\$ 42,566,769	\$ 41,074,199
Normal Cost (Benefits Only)	\$ 1,351,334	\$ 956,603	\$ 912,904	\$ 862,380	\$ 796,789
<u>Assets</u>					
Market Value of Fund	\$ 45,776,824	\$ 40,174,690	\$ 41,896,232	\$ 38,020,891	\$ 36,288,138
Market Value Return in Prior Year	16.45%	(1.76%)	13.08%	7.84%	1.78%
Actuarial Value for Funding	\$ 43,600,984	\$ 41,549,049	\$ 40,212,390	\$ 38,840,852	\$ 37,692,694
Credit Balance at End of Prior Year	\$ 5,591,603	\$ 5,057,235	\$ 4,593,954	\$ 4,177,724	\$ 3,727,967
PPA Funded Percentage	92.0%	92.7%	91.9%	91.2%	91.7%
<u>Actuarial Gains / Losses for prior year</u>					
Assumption, Discount, and Method	\$ 1,268,344	\$ (18,437)	\$ 66,731	\$ 513,564	\$ 60,201
Demographic	201,603	28,631	150,987	77,558	(28,716)
Investment	<u>(190,813)</u>	<u>375,404</u>	<u>208,550</u>	<u>319,678</u>	<u>546,445</u>
Total	\$ 1,279,134	\$ 385,598	\$ 426,268	\$ 910,800	\$ 595,930
<u>Actuarial Assumptions</u>					
Interest Assumption	6.75%	7.00%	7.00%	7.00%	7.00%
Expected Contributions	\$ 2,115,000	\$ 1,955,000	\$ 1,857,000	\$ 1,735,000	\$ 1,617,000
Actual Contributions	TBD	\$ 2,078,312	\$ 1,948,038	\$ 1,828,897	\$ 1,705,556

Exhibit 6.1 (Continued)

Historical Statistics (\$ in thousands)

	<u>January 1, 2015</u>	<u>January 1, 2014</u>	<u>January 1, 2013</u>	<u>January 1, 2012</u>	<u>January 1, 2011</u>
<u>Actuarial Present Value of Accumulated Plan Benefits</u>					
Vested Benefits					
Retirees	\$ 22,789,078	\$ 22,103,238	\$ 20,973,585	\$ 20,386,683	\$ 19,747,735
Inactives	4,494,421	4,422,913	4,464,195	4,247,074	4,194,021
Actives	<u>11,053,869</u>	<u>10,754,230</u>	<u>10,671,106</u>	<u>10,359,810</u>	<u>9,887,354</u>
Total	\$ 38,337,368	\$ 37,280,381	\$ 36,108,886	\$ 34,993,567	\$ 33,829,110
Non-Vested Benefits	\$ 1,830,243	\$ 1,835,647	\$ 1,756,561	\$ 1,853,770	\$ 1,900,116
Accumulated Plan Benefits	\$ 40,167,611	\$ 39,116,028	\$ 37,865,447	\$ 36,847,337	\$ 35,729,226
Normal Cost (Benefits only)	\$ 755,663	\$ 714,573	\$ 711,206	\$ 687,389	\$ 449,783
<u>Assets</u>					
Market Value of Fund	\$ 36,739,196	\$ 35,193,014	\$ 32,309,867	\$ 29,891,186	\$ 29,164,847
Market Value Return in Prior Year	7.56%	12.59%	11.93%	6.26%	13.53%
Actuarial Value for Funding	\$ 36,878,833	\$ 34,478,550	\$ 34,132,485	\$ 33,310,140	\$ 32,880,990
Credit Balance at End of Prior Year	\$ 3,304,054	\$ 2,466,164	\$ 2,277,520	\$ 2,120,933	\$ 1,981,792
PPA Funded Percentage	91.8%	90.7%	90.1%	90.4%	92.0%
<u>Actuarial Gains / Losses for prior year*</u>					
Assumption, Discount, and Method	\$ 220,371	\$ 227,644	Not Available	Not Available	Not Available
Demographic	28,829	257,484	Not Available	Not Available	Not Available
Investment	<u>(117,358)</u>	<u>(190,186)</u>	<u>Not Available</u>	<u>Not Available</u>	<u>Not Available</u>
Total	\$ 131,842	\$ 294,942	Not Available	Not Available	Not Available
<u>Actuarial Assumptions</u>					
Interest Assumption	7.00%	7.00%	7.00%	7.00%	7.00%
Expected Contributions	\$ 1,500,000	\$ 1,401,000	\$ 1,375,000	\$ 1,320,000	\$ 1,270,000
Actual Contributions	\$ 1,596,395	\$ 1,544,129	\$ 1,431,091	\$ 1,367,269	\$ 1,322,549

*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)

	<u>January 1, 2020</u>	<u>January 1, 2019</u>	<u>January 1, 2018</u>	<u>January 1, 2017</u>	<u>January 1, 2016</u>
<u>Actuarial Present Value of Accumulated Plan Benefits (Non-Dedicated)</u>					
Retirees	\$ 24,710,948	\$ 23,665,758	\$ 22,830,973	\$ 21,949,890	\$ 20,500,665
Inactives	5,211,995	4,898,382	4,794,963	4,626,792	4,591,771
Actives	<u>15,393,519</u>	<u>14,030,148</u>	<u>13,760,528</u>	<u>13,417,126</u>	<u>13,193,114</u>
Total Non-Dedicated Liability	\$ 45,316,462	\$ 42,594,288	\$ 41,386,464	\$ 39,993,808	\$ 38,285,550
Inactive Liability Percent	66%	67%	67%	66%	66%
Active Liability Percent	34%	33%	33%	34%	34%
<u>Participant Statistics</u>					
Retired Participants and Beneficiaries					
Number of Retirees and Beneficiaries	235,247	233,589	230,157	226,870	223,971
Total Annual Benefits	\$ 2,900,499	\$ 2,833,944	\$ 2,756,869	\$ 2,676,620	\$ 2,598,766
Active Participants					
Number of Participants	220,540	216,520	214,100	206,340	202,940
Average Age	42.9	43.1	43.1	43.3	43.3
Average Credited Service	11.2	11.2	11.4	11.9	12.0
Total Annual Hours (in thousands)	TBD	393,583	390,281	383,230	363,909
Average Contribution Rate	TBD	\$ 5.25	\$ 4.98	\$ 4.77	\$ 4.68
Vested Inactive Participants					
Number of Participants	165,360	165,860	165,380	164,640	165,920
Ratio of Inactives to Actives	1.8	1.8	1.8	1.9	1.9
<u>Net Cash Flow</u>					
Employer Contributions	TBD	\$ 2,078,312	\$ 1,948,038	\$ 1,828,897	\$ 1,705,556
Benefit Payments	TBD	(2,900,499)	(2,833,944)	(2,756,869)	(2,676,620)
Operating Expenses	<u>TBD</u>	<u>(108,827)</u>	<u>(108,215)</u>	<u>(101,978)</u>	<u>(98,841)</u>
Net Cash Flow	TBD	\$ (934,014)	\$ (994,121)	\$ (1,029,950)	\$ (1,069,905)
Net Cash Flow as a percent of BOY Market Value of Fund	TBD	(2.3%)	(2.4%)	(2.7%)	(2.9%)
Ratio of Benefit Payments to Contributions	TBD	1.4	1.5	1.5	1.6

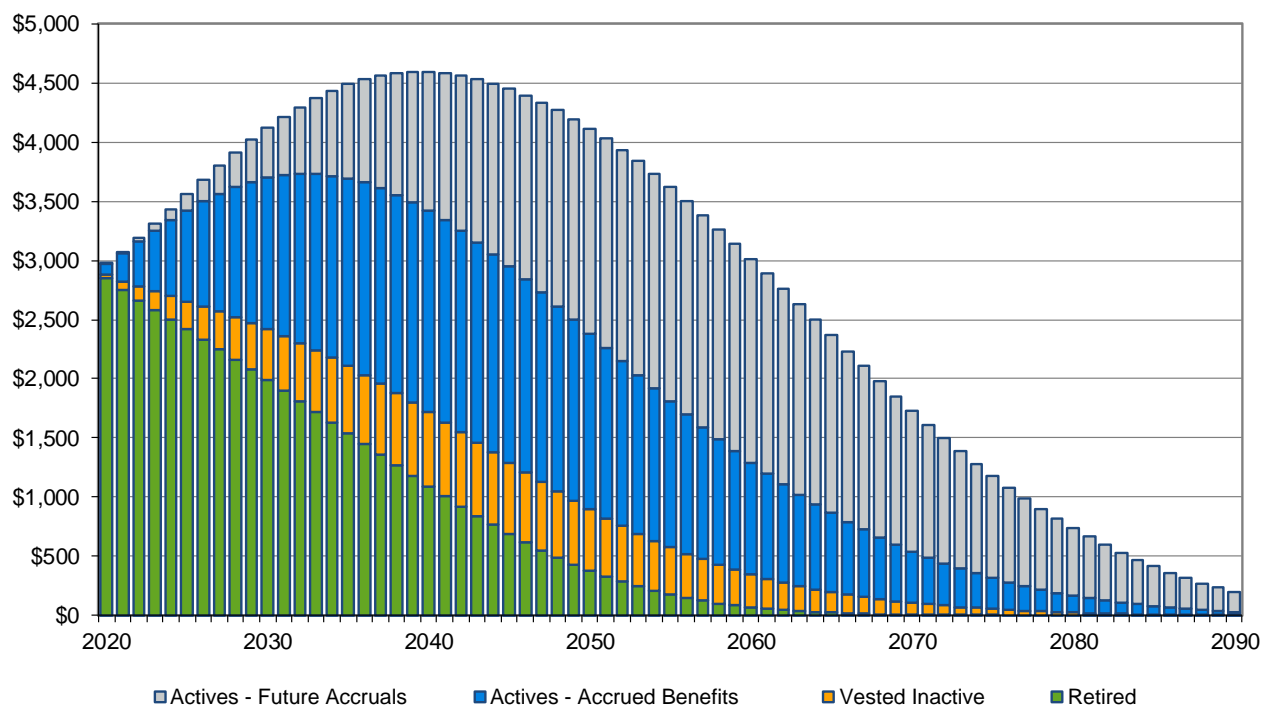
Exhibit 6.2 (Continued)

Plan Maturity Measures (\$ in thousands)

	<u>January 1, 2015</u>	<u>January 1, 2014</u>	<u>January 1, 2013</u>	<u>January 1, 2012</u>	<u>January 1, 2011</u>
<u>Actuarial Present Value of Accumulated Plan Benefits (Non-Dedicated)</u>					
Retirees	\$ 19,826,947	\$ 18,823,924	\$ 17,612,119	\$ 16,909,704	\$ 16,160,188
Inactives	4,494,421	4,422,913	4,465,074	4,247,924	4,194,890
Actives	<u>12,876,462</u>	<u>12,581,733</u>	<u>12,419,003</u>	<u>12,204,678</u>	<u>11,759,007</u>
Total Non-Dedicated Liability	\$ 37,197,830	\$ 35,828,570	\$ 34,496,196	\$ 33,362,306	\$ 32,114,085
Inactive Liability Percent	65%	65%	64%	63%	63%
Active Liability Percent	35%	35%	36%	37%	37%
<u>Participant Statistics</u>					
Retired Participants and Beneficiaries					
Number of Retirees and Beneficiaries	221,502	217,924	213,780	210,123	206,645
Total Annual Benefits	\$ 2,530,265	\$ 2,458,053	\$ 2,367,600	\$ 2,305,404	\$ 2,232,529
Active Participants					
Number of Participants	197,120	195,620	194,080	197,900	201,740
Average Age	43.4	43.7	43.6	43.4	42.9
Average Credited Service	12.4	12.4	12.3	12.1	11.8
Total Annual Hours (in thousands)	357,200	350,458	342,241	341,828	346,349
Average Contribution Rate	\$ 4.46	\$ 4.40	\$ 4.18	\$ 3.99	\$ 3.81
Vested Inactive Participants					
Number of Participants	166,440	167,940	169,020	168,080	168,240
Ratio of Inactives to Actives	2.0	2.0	2.0	1.9	1.9
<u>Net Cash Flow</u>					
Employer Contributions	\$ 1,596,395	\$ 1,544,129	\$ 1,431,091	\$ 1,367,269	\$ 1,322,549
Benefit Payments	(2,598,766)	(2,530,265)	(2,458,053)	(2,367,600)	(2,305,404)
Operating Expenses	<u>(93,897)</u>	<u>(88,636)</u>	<u>(87,541)</u>	<u>(83,759)</u>	<u>(84,757)</u>
Net Cash Flow	\$ (1,096,268)	\$ (1,074,772)	\$ (1,114,503)	\$ (1,084,090)	\$ (1,066,612)
Net Cash Flow as a percent of BOY Market Value of Fund	(3.0%)	(3.1%)	(3.4%)	(3.6%)	(3.7%)
Ratio of Benefit Payments to Contributions	1.6	1.6	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)

<u>Plan Year</u>	<u>Estimated Payout of Retirement Benefits</u>	<u>Plan Year</u>	<u>Estimated Payout of Retirement Benefits</u>
2020	\$2,978,387	2030	\$4,121,030
2021	\$3,071,434	2031	\$4,212,932
2022	\$3,189,450	2032	\$4,296,108
2023	\$3,311,734	2033	\$4,371,916
2024	\$3,434,615	2034	\$4,437,111
2025	\$3,558,199	2035	\$4,492,296
2026	\$3,679,749	2036	\$4,535,813
2027	\$3,798,886	2037	\$4,566,429
2028	\$3,913,025	2038	\$4,587,005
2029	\$4,020,159	2039	\$4,596,088

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%
2009-2019	1.20%	1.20%
2020	1.50%	1.50%
2021+	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.

A participant has recent coverage if they have at least 1,500 covered hours in the 60-month period ending just before their earliest retirement date or their pension effective date.

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
1/1/2020	Effective for hours worked in calendar year 2020 only, the percentage used to calculate Plan participant benefits was increased from 1.20% to 1.50%. The percentages for years 2021 and later remain at 1.20%.
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 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 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 benefits has been reduced to 1.20% for the second half of 2003 and all subsequent years.
1/1/2000	<p>Effective for calendar years 2000, 2001 and 2002, the percentage used to calculate Plan participant 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.</p> <p>Effective for calendar years 2003, 2004 and 2005, the percentage used to calculate Plan participant 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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

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. Data Base for Non-Retired Plan Participants

Northwest Administrators sent us a December 31, 2019, 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 562,008 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, 2020 if they were not included on the ABC file as retired as of the valuation date, and if they earned at least 250 covered hours during 2019, or earned at least 1 covered hour in 2019 and at least 250 covered hours in 2018.

10,620 Non-Seasonal Active 5% sample records representing 212,400 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.

407 Seasonal Active 5% sample records representing 8,140 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.

8,268 Vested Inactive 5% sample records representing 165,360 participants were included in the valuation.

542,713 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, 2020 are shown below, together with corresponding information from the January 1, 2019 and January 1, 2018 Actuarial Reports.

- For actuarial valuation purposes, the Active participant population was 214,100 as of January 1, 2018, 216,520 as of January 1, 2019 and 220,540 as of January 1, 2020. The aggregate proportion of Active participants covered under PEER is 82.4% (including Non-Seasonal and Seasonal employees) on January 1, 2020. All information summarized below was based on 5% sample data.

NUMBER OF ACTIVE PLAN PARTICIPANTS			
Industry	As of 1/1/2018	As of 1/1/2019	As of 1/1/2020
All Actives			
Non-Seasonal	204,420	207,820	212,400
Seasonal	9,680	8,700	8,140
Total	214,100	216,520	220,540
PEER Units			
Non-Seasonal PEER 80	60,640	62,320	63,860
Non-Seasonal PEER 82	4,900	4,940	5,020
Non-Seasonal PEER 84	101,160	103,860	105,560
Seasonal PEER 80	7,200	6,300	5,800
Seasonal PEER 82	380	320	320
Seasonal PEER 84	1,460	1,420	1,220
Total PEER Participants	175,740	179,160	181,780
Non-PEER Units			
Non-Seasonal	37,720	36,700	37,960
Seasonal	640	660	800
Total Non-PEER Participants	38,360	37,360	38,760

- The average attained age of Active Plan participants included in the valuation is 42.7 years for Non-Seasonal participants and 48.6 years for Seasonal participants. The corresponding ages as of January 1, 2019 were 42.8 years for Non-Seasonal employees and 48.7 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 1/1/2018	As of 1/1/2019	As of 1/1/2020
All Actives			
Non-Seasonal	42.9	42.8	42.7
Seasonal	48.1	48.7	48.6
PEER Units			
Non-Seasonal PEER 80	44.5	43.9	43.7
Non-Seasonal PEER 82	45.4	45.2	45.0
Non-Seasonal PEER 84	40.8	40.9	41.0
Seasonal PEER 80	48.6	49.3	49.5
Seasonal PEER 82	48.7	49.0	44.4
Seasonal PEER 84	47.0	46.9	46.1
Non-PEER Units			
Non-Seasonal	45.8	46.1	45.5
Seasonal	45.8	46.4	47.2

- The average number of years of contributory service for Active Plan participants is 11.1 years for Non-Seasonal participants and 12.1 years for Seasonal participants. As of January 1, 2019 the corresponding average number of years of contributory service was 11.2 years for Non-Seasonal employees and 11.9 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 1/1/2018	As of 1/1/2019	As of 1/1/2020
All Actives			
Non-Seasonal	11.4	11.2	11.1
Seasonal	12.0	11.9	12.1
PEER Units			
Non-Seasonal PEER 80	15.8	15.2	15.1
Non-Seasonal PEER 82	13.4	13.3	13.4
Non-Seasonal PEER 84	10.3	10.1	10.1
Seasonal PEER 80	12.9	12.9	13.2
Seasonal PEER 82	11.1	11.8	8.4
Seasonal PEER 84	7.7	7.0	7.6
Non-PEER Units			
Non-Seasonal	6.9	7.1	7.0
Seasonal	12.4	12.6	12.1

- The end of year average basic hourly contribution rate for Non-Seasonal Actives included in the valuation was \$4.72 as of December 31, 2018 and \$4.99 as of December 31, 2019. The average basic hourly contribution rate for Seasonal Actives included in this valuation was \$1.13 as of December 31, 2018 and \$1.23 as of December 31, 2019. 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 12/31/2017	As of 12/31/2018	As of 12/31/2019
All Actives			
Non-Seasonal	\$4.56	\$4.72	\$4.99
Seasonal	\$1.14	\$1.13	\$1.23
PEER Units			
Non-Seasonal PEER 80	\$6.32	\$6.56	\$6.89
Non-Seasonal PEER 82	\$5.01	\$5.00	\$5.43
Non-Seasonal PEER 84	\$4.61	\$4.70	\$5.01
Seasonal PEER 80	\$1.34	\$1.33	\$1.44
Seasonal PEER 82	\$0.11	\$0.11	\$0.11
Seasonal PEER 84	\$0.34	\$0.39	\$0.40
Non-PEER Units			
Non-Seasonal	\$1.51	\$1.58	\$1.66
Seasonal	\$1.36	\$1.42	\$1.44

- Benefit accruals are based on the basic hourly contributions.
- The average contribution rates increased by 5.7% for non-seasonal active participants and increased by 8.8% for seasonal active participants during 2019.

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

A comparison of key information from the full population and 5% reports is performed by the actuary to support 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 124 non-retired valuation records, representing 2,480 participants with missing or invalid dates of birth. There were 2,953 Non-Seasonal non-retired sample valuation records with missing or invalid gender codes representing 59,060 participants that are assumed to be males and 122 Seasonal non-retired sample valuation records with missing or invalid gender codes representing 2,440 participants 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 297,763 records from Prudential. Of these, 15,231 were disregarded as non-liability records (13,760 deaths, 177 expirations, 30 over the age of 100 with benefits due and unpaid, and 1,264 others, such as cancellations, post-valuation date retirements, etc.), resulting in 282,532 valuation records. These represent all benefits for approximately 235,247 pensioners and beneficiaries. Approximately 78.2% of these records are for Healthy Retirees, 7.2% 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 2020-1 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 one dollar rate bands through \$11.00, and for rates over \$11.00.
- **TABLES 2020-2N and 2S Distribution of Non-Seasonal and Seasonal Active Participants in PEER and Non-PEER Units by Basic 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 2020-3N, 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 2020-4 Data Build-Through Report/Participant Reconciliation**
This table exhibits data reconciliation by status for Active and Vested Terminated participants.
- **TABLE 2020-5 Recent History of New Pensioners**
Table 2020-5 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, 2019, retiree data file. The data for Healthy Pensioners is shown by option election.
- **TABLE 2020-6 Historical Statistics by Year of Retirement for Healthy Pensioners**
For this table, all records representing Healthy Pensioners were analyzed by year of retirement.
- **TABLE 2020-7 through 2020-9 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 2020-1 Active Participant Data Summary			
Contribution Rates	5% Sample		
	No. of Participants (Times 20)	Avg. 2019 Hrs. per Participant	Avg. 2019 Basic Contrib. Rate
Seasonals - Food Processing			
All Contribution Rates	8,140	659	\$1.23
Regulars - Food Processing			
All Contribution Rates	6,920	1,873	\$2.09
Non-Seasonals - Non-Food Processing			
\$1.00 and under	13,180	1,608	\$0.44
Over \$1.00 but not more than \$2.00	39,100	1,732	\$1.39
Over \$2.00 but not more than \$3.00	19,080	1,755	\$2.51
Over \$3.00 but not more than \$4.00	25,540	1,840	\$3.56
Over \$4.00 but not more than \$5.00	20,880	1,871	\$4.47
Over \$5.00 but not more than \$6.00	15,900	1,912	\$5.42
Over \$6.00 but not more than \$7.00	7,140	1,899	\$6.54
Over \$7.00 but not more than \$8.00	3,380	1,855	\$7.50
Over \$8.00 but not more than \$9.00	10,920	1,593	\$8.66
Over \$9.00 but not more than \$10.00	25,180	1,187	\$9.40
Over \$10.00 but not more than \$11.00	23,500	1,860	\$10.41
Over \$11.00	1,680	1,948	\$11.52
Total Non-Seasonals - Non-Food Processing	205,480	1,718	\$5.09

TABLE 2020-2N 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
\$1.00 and under	4,200	9,300	13,500
Over \$1.00 but not more than \$2.00	24,020	18,280	42,300
Over \$2.00 but not more than \$3.00	16,860	5,000	21,860
Over \$3.00 but not more than \$4.00	22,600	3,560	26,160
Over \$4.00 but not more than \$5.00	19,720	1,160	20,880
Over \$5.00 but not more than \$6.00	15,840	60	15,900
Over \$6.00 but not more than \$7.00	6,960	180	7,140
Over \$7.00 but not more than \$8.00	3,280	100	3,380
Over \$8.00 but not more than \$9.00	10,660	260	10,920
Over \$9.00 but not more than \$10.00	25,160	20	25,180
Over \$10.00 but not more than \$11.00	23,500	0	23,500
Over \$11.00	1,640	40	1,680
Total for All Rates	174,440	37,960	212,400

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	37,960	17.8%	17.6%
PEER 84	105,560	49.7%	50.0%
PEER 82	5,020	2.4%	2.4%
PEER 80	63,860	30.1%	30.0%

TABLE 2020-2S
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
\$0.50 and under	1,620	120	1,740
Over \$0.50 but not more than \$1.00	80	0	80
Over \$1.00 but not more than \$1.50	5,340	100	5,440
Over \$1.50 but not more than \$2.00	240	520	760
Total for Rates \$2.00 and under	7,280	740	8,020
Over \$2.00 but not more than \$2.50	0	20	20
Over \$2.50 but not more than \$3.00	40	0	40
Over \$3.00 but not more than \$3.50	0	40	40
Over \$3.50 but not more than \$4.00	0	0	0
Total for Rates over \$2.00 but not more than \$4.00	40	60	100
Total for Rates over \$4.00	20	0	20
Total for All Rates	7,340	800	8,140

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	800	9.8%	7.6%
PEER 84	1,220	15.0%	16.3%
PEER 82	320	3.9%	3.7%
PEER 80	5,800	71.3%	72.4%

TABLE 2020-3N								
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	1,440	0	0	0	0	0	0	1,440
20 - 24	14,180	1,180	0	0	0	0	0	15,360
25 - 29	14,620	6,980	300	0	0	0	0	21,900
30 - 34	13,460	6,680	4,880	640	0	0	0	25,660
35 - 39	8,160	5,220	5,160	4,840	680	0	0	24,060
40 - 44	6,900	4,080	4,460	5,040	3,880	480	0	24,840
45 - 49	5,880	4,240	3,960	4,480	4,340	3,440	580	26,920
50 - 54	4,900	3,260	4,000	4,200	3,720	3,740	3,240	27,060
55 - 59	4,300	2,620	2,940	4,080	3,380	2,760	4,720	24,800
60 - 64	2,660	2,020	2,320	2,700	1,860	1,420	3,840	16,820
65 - 69	980	520	300	420	260	80	420	2,980
70 and Over	320	60	40	40	20	0	80	560
Total	77,800	36,860	28,360	26,440	18,140	11,920	12,880	212,400

TABLE 2020-3S								
Distribution of 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	60	0	0	0	0	0	0	60
20 - 24	380	20	0	0	0	0	0	400
25 - 29	340	100	20	0	0	0	0	460
30 - 34	520	80	20	20	0	0	0	640
35 - 39	360	180	40	100	0	0	0	680
40 - 44	180	200	40	120	40	0	0	580
45 - 49	160	140	160	200	80	20	0	760
50 - 54	260	220	260	200	140	100	60	1,240
55 - 59	240	160	140	380	260	280	80	1,540
60 - 64	160	200	80	140	200	180	340	1,300
65 - 69	80	60	20	80	20	40	60	360
70 and Over	60	0	20	20	0	0	20	120
Total	2,800	1,360	800	1,260	740	620	560	8,140

TABLE 2020-3VI				
Distribution of Vested Inactive Participants by Attained Age				
Ages	Number PEER	Average Monthly Benefit	Number Non PEER	Average Monthly Benefit
20 - 24	0	\$0	20	\$98
25 - 29	0	\$0	1,960	\$293
30 - 34	0	\$0	6,340	\$393
35 - 39	0	\$0	11,860	\$418
40 - 44	0	\$0	15,320	\$487
45 - 49	80	\$1,087	23,560	\$526
50 - 54	300	\$1,635	32,540	\$530
55 - 59	540	\$1,619	34,340	\$529
60 - 64	520	\$2,086	26,200	\$476
65 - 69	80	\$1,171	8,800	\$298
70 and over	20	\$3,408	2,880	\$189
Total	1,540	\$1,752	163,820	\$482

TABLE 2020-4 Participant Reconciliation	
Active Participants 1/1/2019	216,520
New Participants	
Non-Vested	28,280
Vested	320
Rehires	1,340
Terminations	
Non-Vested	(14,000)
Vested	(7,220)
Retirements	(4,560)
Deaths	(140)
Data Adjustments	0
Active Participants 1/1/2020	220,540
Vested Terminations 1/1/2019	165,860
New Vested Terminations	7,600
Rehires	(1,340)
Retirements	(5,500)
Deaths	(260)
Data Adjustments	(1,000)
Vested Terminations 1/1/2020	165,360

TABLE 2020-5						
Recent History of New Pensioners						
Option Elections, Average Monthly Pensions and Average Ages						
(Based on Number of Participants)						
Option	1/1/2019			1/1/2020		
	Count	Average Monthly Pension	Average Age As of January 1 2019	Count	Average Monthly Pension	Average Age As of January 1 2020
Life Only	3,220	\$975	64.5	3,427	\$936	64.8
Benefit Adjustment	2,480	\$1,497	59.7	2,401	\$1,480	59.8
Employee and Spouse	2,225	\$1,152	64.9	2,426	\$1,131	64.9
Employee and Spouse with Benefit Adjustment	1,525	\$1,779	60.2	1,483	\$1,788	60.1
All Healthy Pensioners	9,450	\$1,284	62.6	9,737	\$1,248	62.9
Disabled Pensioners	477	\$1,184	57.2	483	\$1,150	56.9
Healthy Beneficiaries	325	\$476	52.1	382	\$497	53.1
Total	10,252	\$1,253	62.0	10,602	\$1,217	62.3

Notes: This exhibit includes all pensions associated with participants new to the ABC files as of December 31, 2018 and 2019.

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, 2018 and 2019.

The total average monthly pension amount includes the options listed above as well as the Child Survivor Benefit amounts as of December 31, 2018 and 2019.

TABLE 2020-6				
Historical Statistics by Year of Retirement for Healthy Pensioners (Based on Number of Participants)				
Year of Retirement	Number of Surviving Retirees	Average Age at Retirement	Average Age as of 1/1/2020	Average Monthly Pension
1994 and prior	17,801	58.1	87.5	\$631
1995 – 1999	18,880	58.6	80.8	\$934
2000 – 2004	29,267	58.9	76.2	\$1,189
2005 – 2009	34,339	59.6	72.0	\$1,116
2010 – 2014	40,793	60.8	68.1	\$1,114
2015 – 2019	42,920	61.6	64.1	\$1,274
Total	184,000	60.0	72.4	\$1,098
Total Last Year	182,218	59.9	72.3	\$1,080

TABLE 2020-7							
Age / Longevity of Healthy Pensioners (Based on Number of Participants)							
Attained Age Group	Years Since Pension Commencement						
	Less than 1	1 – 4	5 – 9	10 - 14	15 - 19	Greater than 19	Total
Under 50	20	40	21	7	0	1	89
50 - 54	351	707	72	21	3	3	1,157
55 - 59	1,212	5,200	1,299	136	28	11	7,886
60 - 64	2,327	9,302	8,511	1,999	116	16	22,271
65 - 69	2,842	17,970	12,415	8,936	1,919	100	44,182
70 - 74	117	2,775	16,276	10,924	9,128	924	40,144
75 - 79	4	40	2,157	11,016	10,073	7,232	30,522
80 - 84	1	5	32	1,273	7,118	11,702	20,131
85 - 89	0	3	5	21	862	10,082	10,973
90 - 94	0	4	3	2	17	5,157	5,183
95 - 99	0	0	2	3	0	1,293	1,298
100 and Over	0	0	0	1	3	160	164
Total	6,874	36,046	40,793	34,339	29,267	36,681	184,000
Total Last Year	6,825	35,032	40,824	34,145	29,067	36,325	182,218

TABLE 2020-8								
Age / Longevity of Healthy Beneficiaries (Based on Number of Participants)								
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	5	24	285	233	126	19	0	692
40 - 44	13	7	48	57	32	12	1	170
45 - 49	41	15	95	111	81	40	18	401
50 - 54	63	35	196	204	132	84	74	788
55 - 59	43	39	382	483	355	244	217	1,763
60 - 64	19	40	404	848	705	520	462	2,998
65 - 69	2	16	278	855	1,128	1,017	909	4,205
70 - 74	1	5	89	606	1,212	1,729	1,985	5,627
75 - 79	0	1	23	155	689	1,596	3,778	6,242
80 - 84	0	0	3	39	147	669	4,457	5,315
85 - 89	0	0	2	6	35	128	3,418	3,589
90 - 94	0	0	0	1	8	20	1,883	1,912
95 - 99	0	0	0	1	0	3	572	576
100 and Over	0	0	0	0	0	1	96	97
Total	187	182	1,805	3,599	4,650	6,082	17,870	34,375
Total Last Year	189	184	1,868	3,650	4,696	6,080	17,508	34,175

TABLE 2020-9							
Age / Longevity of Disabled Pensioners (Based on Number of Participants)							
Attained Age Group	Years Since Pension Commencement						
	Less than 1	1 - 4	5 - 9	10 - 14	15 - 19	Greater than 19	Total
39 and Under	4	16	36	25	16	22	119
40 - 44	2	19	47	29	5	14	116
45 - 49	2	57	113	83	40	24	319
50 - 54	19	166	227	169	105	89	775
55 - 59	37	542	658	338	239	166	1,980
60 - 64	27	634	1,246	728	472	348	3,455
65 - 69	0	198	986	1,048	748	580	3,560
70 - 74	0	0	180	722	985	949	2,836
75 - 79	0	0	0	102	622	1,187	1,911
80 - 84	0	0	0	0	71	1,038	1,109
85 - 89	0	0	0	0	0	485	485
90 - 94	0	0	0	0	0	176	176
95 - 99	0	0	0	0	2	26	28
100 and Over	0	0	0	0	0	3	3
Total	91	1,632	3,493	3,244	3,305	5,107	16,872
Total Last Year	83	1,794	3,674	3,323	3,243	5,079	17,196

Appendix C

Actuarial Assumptions and Cost Methods

Actuarial Assumptions

Investment Earnings Assumptions

Strategic Bond Account (SBA)

The assumed rate of return for these assets is 3.96%. 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 6.75%, net of investment expenses.

The investment return assumption was selected based on the Plan's target asset allocation as of the valuation date (shown below), combined with capital market assumptions from several sources, as well as published studies summarizing the expectations of various investment experts. This information was then used to develop forward looking expected long-term expected returns, producing a range of potential reasonable expectations according to industry experts. Based on this information, an assumption was selected that, in our professional judgement, is not expected to have any significant bias.

Investment Policy Target Allocation Percentages:

Public US Equity	29.0%
Public International Equity	15.0%
Fixed Income	16.0%
Private Debt	9.0%
Commodities	1.5%
Real Estate	8.0%
Private Equity	7.5%
Infrastructure	4.0%
Multi-Asset	10.0%
Total	100.0%

Post-retirement Mortality Rates

Healthy Males

- For retirees and beneficiaries prior to the retiree's death, Pri-2012 Total Dataset Amount-Weighted Healthy Annuitant adjusted as follows:
 - 80% of the mortality rate for ages 55 to 60,
 - 100% of the mortality rate for ages 61 to 65,
 - 105% of the mortality rate for ages 66 to 69,
 - 115% of the mortality rate for ages 70 to 85,
 - 105% of the mortality rate for ages 86 to 94,
 - 100% of the mortality rate for all other ages.
- For beneficiaries after the retiree's death, Pri-2012 Total Dataset Amount-Weighted Contingent Annuitant table
- Both tables projected with fully generational improvements from 2012 using Scale MP-2019.

Healthy Females

- For retirees and beneficiaries prior to the retiree's death, Pri-2012 Total Dataset Amount-Weighted Healthy Annuitant adjusted as follows:
 - 60% of the mortality rate for ages 55 to 60,
 - 90% of the mortality rate for ages 61 to 70,

- 105% of the mortality for ages 71 to 79,
- 95% of the mortality rate for ages 80 to 90,
- 100% of the mortality rate for all other ages.
- For beneficiaries after the retiree's death, Pri-2012 Total Dataset Amount-Weighted Contingent Annuitant adjusted as follows:
 - 85% of the mortality rate for ages 55 to 64,
 - 100% of the mortality rate for ages 65 to 74,
 - 110% of the mortality rate for ages 75 to 84,
 - 105% of the mortality rate for ages 85 to 90,
 - 100% of the mortality rate for all other ages.
- Both tables projected with fully generational improvements from 2012 using Scale MP-2019.

Disabled Males

- Pri-2012 Total Dataset Amount-Weighted Disabled Retiree table
- Projected with fully generational improvements from 2012 using Scale MP-2019.

Disabled Females

- Pri-2012 Total Dataset Amount-Weighted Disabled Retiree table.
- Projected with fully generational improvements from 2012 using Scale MP-2019.

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

Assumed Years of Life Expectancy – Healthy Male Retirees					
Age	2020	2025	2030	2035	2040
55	28.4	28.9	29.3	29.8	30.3
60	23.8	24.2	24.6	25.1	25.5
65	19.4	19.8	20.2	20.6	21.0
70	15.3	15.6	16.0	16.4	16.7

Assumed Years of Life Expectancy – Healthy Male Contingent Annuitants*					
Age	2020	2025	2030	2035	2040
55	23.5	24.0	24.6	25.2	25.7
60	20.1	20.5	21.1	21.6	22.1
65	16.9	17.3	17.8	18.2	18.7
70	13.9	14.2	14.6	15.0	15.4

Assumed Years of Life Expectancy – Healthy Female Retirees					
Age	2020	2025	2030	2035	2040
55	31.9	32.4	32.8	33.2	33.7
60	27.0	27.4	27.8	28.2	28.6
65	22.3	22.7	23.1	23.5	23.9
70	17.9	18.2	18.6	19.0	19.4

Assumed Years of Life Expectancy – Healthy Female Contingent Annuitants*					
Age	2020	2025	2030	2035	2040
55	29.1	29.6	30.1	30.6	31.1
60	24.7	25.2	25.6	26.1	26.6
65	20.6	20.9	21.4	21.8	22.2
70	16.7	17.0	17.4	17.8	18.2

*Assumed years of life expectancy for beneficiaries when participant has already passed away. Otherwise, assumed years of life expectancy for beneficiaries is the same as a healthy retiree.

Assumed Years of Life Expectancy – Disabled Males					
Age	2020	2025	2030	2035	2040
55	21.5	22.0	22.5	23.1	23.6
60	18.3	18.7	19.2	19.7	20.2
65	15.2	15.5	16.0	16.4	16.9
70	12.2	12.5	12.8	13.2	13.6

Assumed Years of Life Expectancy – Disabled Females					
Age	2020	2025	2030	2035	2040
55	25.0	25.5	26.0	26.6	27.2
60	21.5	21.9	22.4	22.9	23.4
65	18.1	18.5	18.9	19.3	19.8
70	14.7	15.0	15.4	15.8	16.2

Pre-retirement Mortality Rates

The assumed annual rates of healthy mortality for males is based on the Pri-2012 Total Dataset Amount-Weighted Male Employee table with the same adjustments and projection scale as the Post-Retirement Retiree table.

The assumed annual rates of healthy mortality for females is based on the Pri-2012 Total Dataset Amount-Weighted Female Employee table with the same adjustments and projection scale as the Post-Retirement Retiree 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

*or otherwise locked-in

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 2020 have been assumed to be \$2.115 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 \$112 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 1.0034 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 27th 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. The probable duration of the benefit is then converted to a period certain factor.

At each age, a present value factor is established that is the product of the probability that an employee at that age is survived by an eligible beneficiary and the period certain factor.

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. 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, 2020 was \$2,522,848,000.

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 assumed rate of investment return used to value all benefits expected to be paid out of assets and future contributions not covered by prior asset dedications was changed from 7.00% to 6.75% effective December 31, 2019, to better reflect anticipated plan experience.
- The mortality assumptions for healthy and disabled males and females were updated to better reflect recent and anticipated plan experience.
- The current liability interest rate was changed from 3.06% to 2.52% 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 2019 to the annuitant / non-annuitant projected version of the RP-2000 Mortality Tables for 2020 as prescribed by the IRS.
- The anticipated annual employer contributions were increased to \$2.115 billion based on recent plan experience.
- The form of payment factor was updated to reflect recent plan experience.
- The family composition for covered employees used to value the child survivor benefit was updated to reflect the latest available Actuarial Valuation published by the Railroad Retirement Board.

Method Changes Incorporated in This Valuation

There are no method changes for the January 1, 2020 valuation.