Segal Consulting

Sheet Metal Workers' National Pension Fund

Actuarial Valuation and Review as of January 1, 2017

Segal Consulting

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September 21, 2017

Board of Trustees
Sheet Metal Workers' National Pension Fund
Fairfax, Virginia

Dear Trustees:

We are pleased to submit the Actuarial Valuation and Review as of January 1, 2017. It establishes the funding requirements for the current year and analyzes the preceding year's experience. It also summarizes the actuarial data and includes the actuarial information that is required to be filed with Form 5500 to federal government agencies.

The census information upon which our calculations were based was prepared by the Fund Office, under the direction of Ms. Debbie Elkins. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Daniel V. Ciner, MAAA, Enrolled Actuary.

We look forward to reviewing this report with you at your next meeting and to answering any questions you may have.

Sincerely,

Segal Consulting, a Member of The Segal Group

By:

Richard G. Gerasta
Senior Vice President

Daniel V. Ciner, MAAA, EA
Senior Vice President and Actuary

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Sheet Metal Workers' National Pension Fund Actuarial Valuation and Review as of January 1, 2017

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Introduction

There are several ways of evaluating funding adequacy for a pension plan. In monitoring the Plan’s financial position, the Trustees should keep in mind all of these concepts.

Funding Standard Account	The ERISA Funding Standard Account (FSA) measures the cumulative difference between actual contributions and the minimum required contributions. If actual contributions exceed the minimum required contributions, the excess is called the credit balance. If actual contributions fall short of the minimum required contributions, a funding deficiency occurs.
Zone Information	The Pension Protection Act of 2006 (PPA’06) called on plan sponsors to actively monitor the projected FSA credit balance, the funded percentage (the ratio of the actuarial value of assets to the present value of benefits earned to date) and cash flow sufficiency. Based on these measures, plans are then categorized as critical (*Red Zone*), endangered (*Yellow Zone*), or neither (*Green Zone*). The Multiemployer Pension Reform Act of 2014 (MPRA), among other things, made the zone provisions permanent.
Solvency Projections	Pension plan funding anticipates that, over the long term, both contributions and investment earnings will be needed to cover benefit payments and expenses. To the extent that contributions are less than benefit payments, investment earnings and fund assets will be needed to cover the shortfall. In some situations, a plan may be faced with insufficient assets to cover its current obligations and may need assistance from the Pension Benefit Guaranty Corporation (PBGC). MPRA provides options for some plans facing insolvency.
Withdrawal Liability	ERISA provides for assessment of withdrawal liability to employers who withdraw from a multiemployer plan based on unfunded vested benefit liabilities. A separate report is available.

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future uncertain obligations of a pension plan. As such, it will never forecast the precise future contribution requirements or the precise future stream of benefit payments. In any event, it is an estimated forecast — the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

Plan Provisions	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. For example, a plan may require the award of a Social Security disability pension as a condition for receiving a disability pension from the plan. If so, changes in the Social Security law or administration may change the plan's costs without any change in the terms of the plan itself. It is important for the Trustees to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant Information	An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. For most plans, it is not possible nor desirable to take a snapshot of the actual workforce on the valuation date. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Financial Information	Part of the cost of a plan will be paid from existing assets – the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, typically reported by the auditor. Some plans include assets, such as private equity holdings, real estate, or hedge funds, that are not subject to valuation by reference to transactions in the marketplace. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets. Plan sponsors often use an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
Actuarial Assumptions	In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of participants in each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results and will have no impact on the actual cost of the plan (the total of benefits and expenses paid out over time). In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

- The actuarial valuation is prepared for use by the Trustees. It includes information for compliance with federal filing requirements and for the plan's auditor. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- Actuarial results in this report are not rounded, but that does not imply precision.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in employment levels and investment losses, not just the current valuation results.
- ERISA requires a plan's enrolled actuary to provide a statement for inclusion in the plan's annual report disclosing any event or trend that the actuary has not taken into account, if, to the best of the actuary's knowledge, such an event or trend may require a material increase in plan costs or required contribution rates. If the Trustees are currently aware of any event that was not considered in this valuation and that may materially increase the cost of the Plan, they must advise Segal, so that we can evaluate it and take it into account.
- A certification of "zone" status under PPA'06 is a separate document from the actuarial valuation.
- Segal does not provide investment, legal, accounting, or tax advice. This valuation is based on Segal's understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Trustees should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by the Trustees upon delivery and review. Trustees should notify Segal immediately of any questions or concerns about the final content.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

Section 1: Actuarial Valuation Summary

Summary of Key Valuation Results

		2016	2017
Certified Zone Status		*Endangered*	*Endangered*
Demographic Data:	Number of active participants	55,897	57,295
	Number of inactive participants with vested rights	34,033	33,149
	Number of alternate payees in deferred status	563	533
	Number of retired participants and beneficiaries	46,876	47,652
	Number of alternate payees in payment status	1,046	1,121
Assets:	Market value of assets (MVA)[1]	$3,972,648,053	$4,314,445,996
	Actuarial value of assets (AVA)	4,294,266,345	4,538,327,898
	AVA as a percent of MVA	108.1%	105.2%
Statutory Funding Information:	Minimum funding standard[2]	$310,273,236	$323,762,878
	Maximum deductible contribution	13,955,027,182	14,902,501,175
	Expected employer contributions for coming Plan Year	446,891,484	481,324,409
	Actual Contributions[3]	505,625,607	---
	Annual Funding Notice percentage	59.4%	60.6%
	Funding Standard Account deficiency projected in Plan Year ending[4]	2020	N/A
Cost Elements on an FSA Standard Account Basis:	Normal cost, including administrative expenses[5]	$179,443,659	$156,390,652
	Actuarial accrued liability	7,230,768,938	7,494,271,997
	Unfunded actuarial accrued liability (based on AVA)	2,936,502,593	2,955,944,099

[1] Excludes receivable liability payments of $19,786,725 for 2016 and $15,895,957 for 2017

[2] Amount required to maintain a $0 credit balance

[3] Includes withdrawal liability payments, liquidated damages, and adjustments for withdrawal liability receivable

[4] Recognizes the five-year amortization extension; contribution rate increases are based on current collective bargaining agreements only

[5] Reflects 1.25% Applicable Percentage under VBAR formula for 2016 and a 1.00% Applicable Percentage under VBAR formula for 2017

Comparison of Funded Percentages

	Funded Percentages as of January 1		2017	
	2016	2017	Liabilities	Assets
1. Present Value of Future Benefits	52.0%	52.1%	$8,716,273,437	$4,538,327,898
2. PPA'06 Liability and Annual Funding Notice	59.4%	60.6%	7,494,271,997	4,538,327,898
3. Accumulated Benefits Liability	54.9%	57.6%	7,494,271,997	4,314,445,996
4. Current Liability	31.7%	32.1%	13,458,573,898	4,314,445,996

Notes:

1. The value of benefits earned through the valuation date (accrued benefits) plus the value of benefits projected to be earned in the future for current participants. Used to develop the actuarial accrued liability, based on the long-term funding investment return assumption of 7.50% and the actuarial value of assets. The funded percentage using market value of assets is 48.1% for 2016 and 49.5% for 2017.
2. The present value of benefits earned through the valuation date (accrued benefits) defined by PPA'06, based on the long-term funding investment return assumption of 7.50% and compared to the actuarial value of assets.
3. The present value of accrued benefits for disclosure in the audited financial statements, based on the long-term funding investment return assumption of 7.50%, and compared to the market value of assets.
4. The present value of accrued benefits based on a government-prescribed mortality table and investment return assumption of 3.28% for 2016 and 3.05% for 2017, and compared to the market value of assets. Used to develop the maximum tax-deductible contribution and shown on the Schedule MB if less than 70%.

Disclosure: These measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations or the need for or the amount of future contributions.

This January 1, 2017 actuarial valuation report is based on financial and demographic information as of that date. Changes subsequent to that date are not reflected unless specifically identified, and will affect future results. Segal is prepared to work with the Trustees to analyze the effects of any subsequent developments. The current year's actuarial valuation results follow.

A. Developments Since Last Valuation

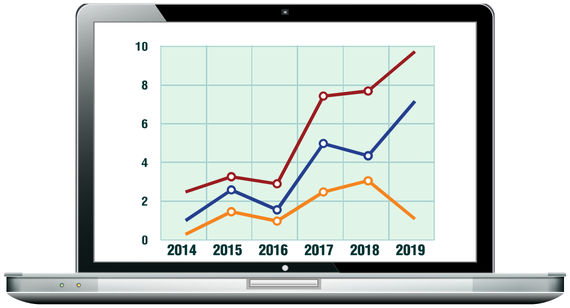
1. The rate of return on the market value of plan assets was 8.08% for the 2016 plan year. The rate of return on the actuarial value of assets was 5.20%. Given the low fixed income interest rate environment, target asset allocation and expectations of future investment returns for various asset classes, we will continue to monitor the Plan's actual and anticipated investment returns relative to the assumed long-term rate of return on investments of 7.50%.
2. The actuarial value of assets ($4.54 billion) is equal to 105.2% of market value ($4.31 billion). Last year, the actuarial value of assets was 108.1% of market value. There is one more year remaining in recognizing a portion of the 2008 investment loss in the actuarial value of assets.
3. Based on past experience and future expectations, the annual administrative expense assumption was changed from $14.5 million to $14.6 million, payable monthly.
4. Based on the 3-year average market value investment return of 8.75% for the Plan Years ended December 31, 2013-2015, the Applicable Percentage under the VBAR formula is 1.00% for the 2017 Plan Year. Based on the 3-year average market value investment return of 4.59% for the Plan Years ended December 31, 2014-2016, the Applicable Percentage under the VBAR formula is 0.50% for the 2018 Plan Year. Details of the VBAR formula are provided in Section 4, Exhibit 9.
5. Contribution rates increase in accordance with the Alternative Options of the Funding Improvement Plan. Since benefit accruals are tied to contribution rates, increases in contribution rates are recognized as plan amendments. The average contribution rate increased from $4.85 per hour as of January 1, 2016 to $5.09 per hour as of January 1, 2017.
6. Based on the census data used for this valuation (as of December 31, 2016), 70.7% of active participants were covered under the First Alternative Option (34.5% covered under 55/30 contracts), 25.6% were covered under the Default Option, 0.3% were covered under the benefit structure applicable to groups that did not continue bargaining increases under the Alternative Options and 3.2% were covered under the Second Alternative Option (0.1% covered under 60/30 contracts).
7. The 2017 actuarial status certification, issued on March 31, 2017, was based on the liabilities calculated in the 2016 actuarial valuation, projected to December 31, 2016, and estimated asset information as of December 31, 2016. The Plan was classified as endangered (*Yellow Zone*) status because the Plan was not critical (*Red Zone)* status and the projected funded percentage was less than 80%. In addition, the Plan was certified to be making the scheduled progress in meeting the requirements of its Funding Improvement Plan. It was not projected to be in critical status for any of the succeeding five Plan Years. This projection was based on the Trustees' industry activity assumption that the active population will remain at the December 31, 2013 level of 54,282 active participants and, on average, contributions will be made for 1,650 hours per year for each active participant.

B. Funded Percentage and Funding Standard Account

1. Based on this January 1, 2017 actuarial valuation, the funded percentage that will be reported on the 2017 Annual Funding Notice is 60.6%.
2. The funded percentage based on the market value of assets is 57.6%, an increase of 2.7% from 54.9% as of the prior year.
3. The credit balance in the FSA as of December 31, 2016 was $214.3 million (recognizing the five-year amortization extension), an increase of $23.3 million from the prior year value of $191.0 million.
4. A 10-year projection of the Funding Standard Account based on this 2017 valuation, assuming the Plan will experience a market rate of return of 7.50% each year into the future, administrative expenses increase by 3.0% per year, all other experience emerges as projected, and with no plan amendments or changes to laws/regulations or other actuarial assumptions, indicates that credit balance (recognizing the five-year amortization extension) will remain positive. If the five-year amortization extension is not considered, the Plan is projected to have funding deficiency throughout the projection period. These projections are based on the Trustees' industry activity assumption (54,282 active participants and 1,650 hours per year for each active participant) and reported bargained contribution rate increases. They also reflect the Applicable Percentage under the VBAR formula of 1.00% for 2017, 0.50% for 2018, and the average expected long-term Applicable Percentage of 0.86% for 2019 and later. The average expected long-term Applicable Percentage was developed based on stochastic projections as described in Section 4, Exhibit 8.

C. Solvency Projections

1. Based on this valuation, the current value of assets plus future investment earnings and contribution income is projected to exceed benefit payments and administrative expenses for at least 15 years, assuming experience is consistent with January 1, 2017 assumptions and there are no future changes in the Plan provisions, law/regulations, or actuarial assumptions. The projected assets are shown on page 30. If requested by the Trustees, we can perform additional projections of the financial status of the Plan.



D. Risk

1. Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions.
2. We have separately performed a detailed analysis of the potential range of future measurements, based on a range of possible investment returns, including a brief discussion of risks that may affect the Plan.

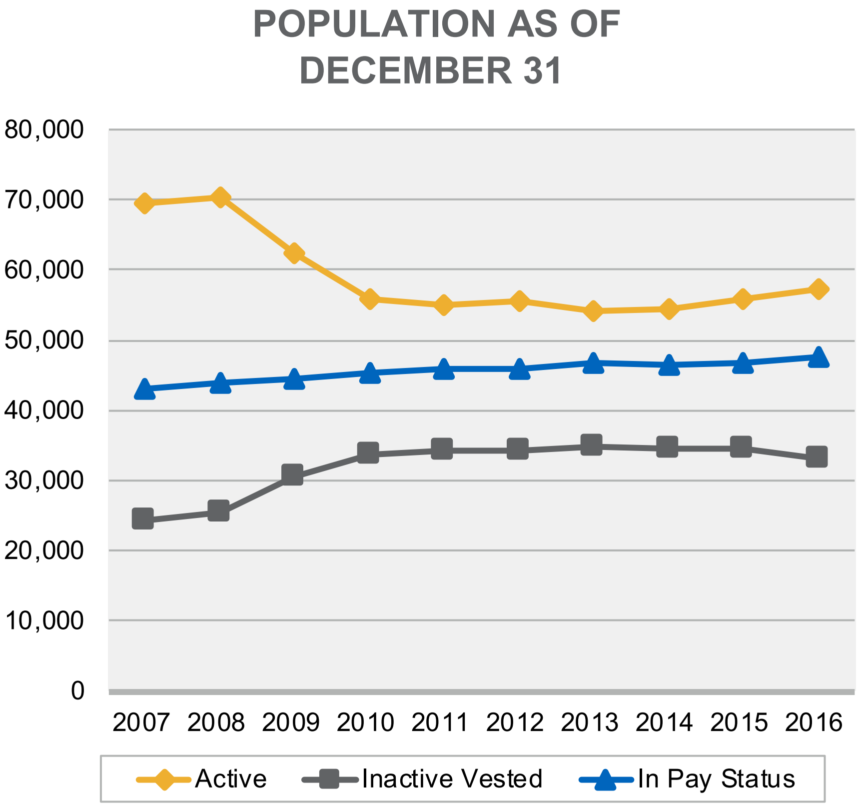
E. Withdrawal Liability

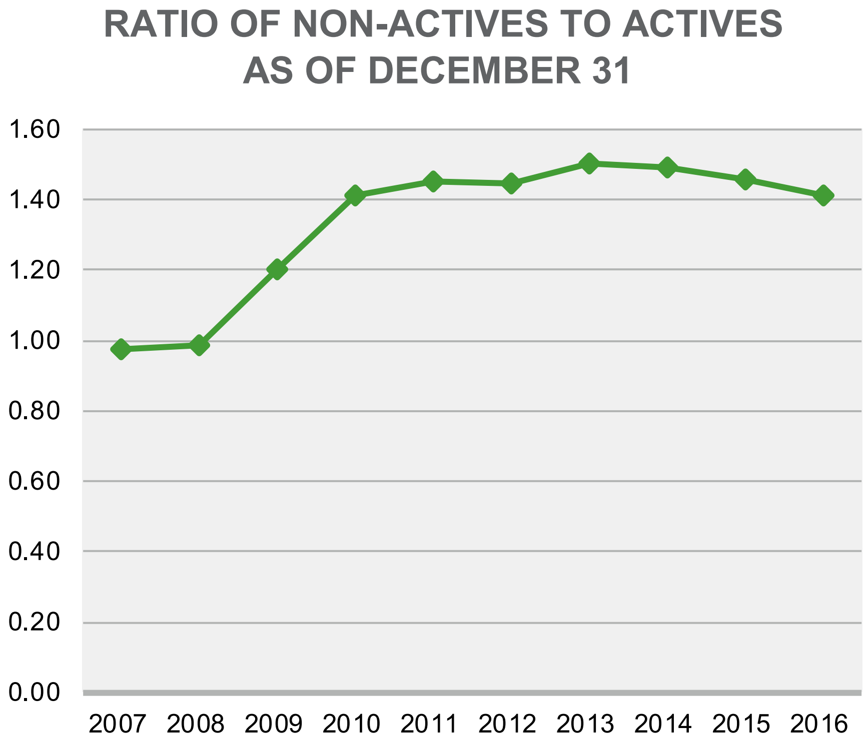
1. The actuarial present value of vested Plan benefits for withdrawal liability purposes is not the same figure as determined for FASB ASC 960 purposes because the two calculations involve different actuarial assumptions. A separate detailed report on withdrawal liability is available.

Section 2: Actuarial Valuation Results

Participant Information

- The Actuarial Valuation is based on demographic data as of December 31, 2016.
- The number of active participants has declined from its peak of 70,448 as of December 31, 2008 to its lowest level of 54,282 as of December 31, 2013 and increased to 57,295 since then. The number in pay status has increased steadily over the past ten years.
- The ratio of non-actives to actives has decreased from 1.45 to 1.41 in the prior year.
- More details on the historical information are included in *Section 3, Exhibits A and B.*

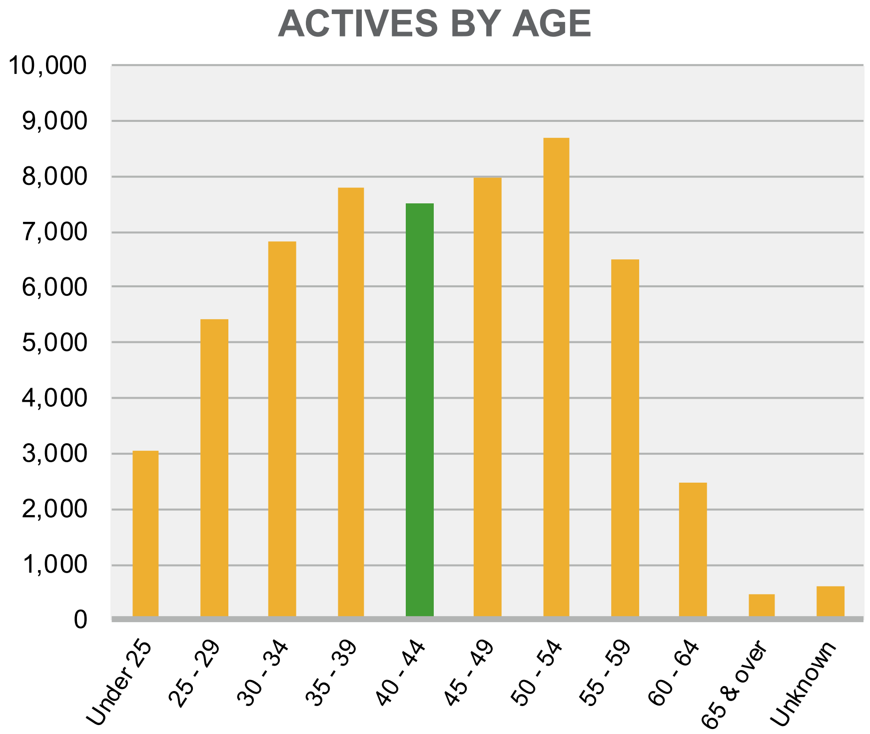




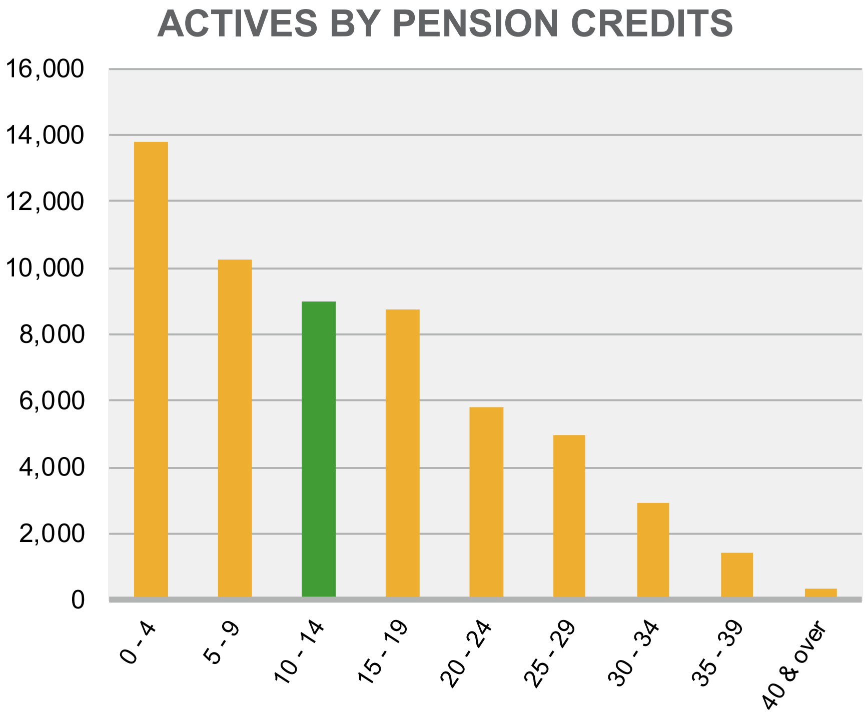
Active Participants

- There were 57,295 active participants this year, an increase of 2.5% compared to 55,897 in the prior year.
- There were 610 active participants with unknown age compared to 532 in the prior year. The actuarial calculations were adjusted for missing information by assuming that it was the same as information provided for other active participants with similar known characteristics.
- The age and service distribution is included in *Section 4, Exhibit 6*.

Distribution of Active Participants as of December 31, 2016



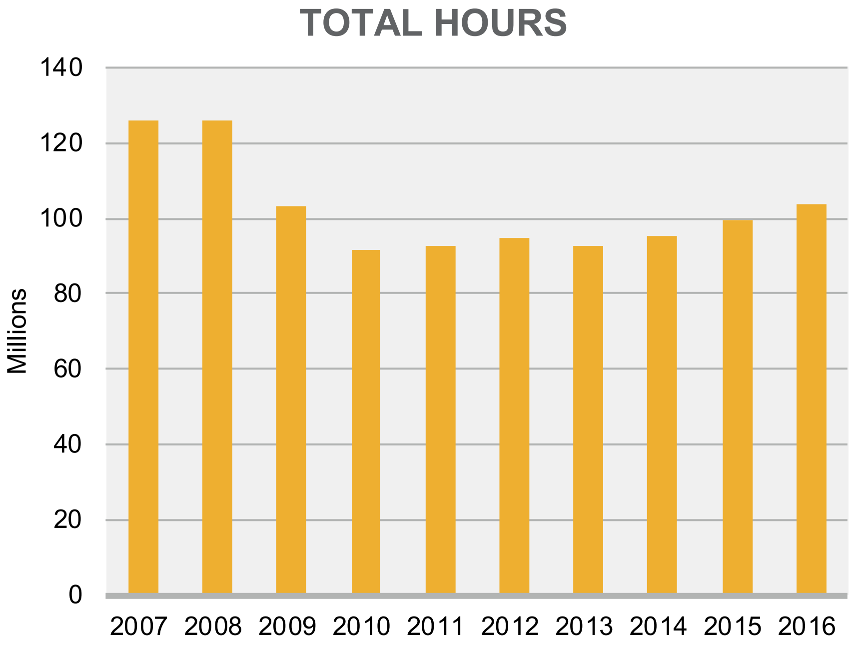
Average age	42.9
Prior year average age	43.0
Difference	-0.1

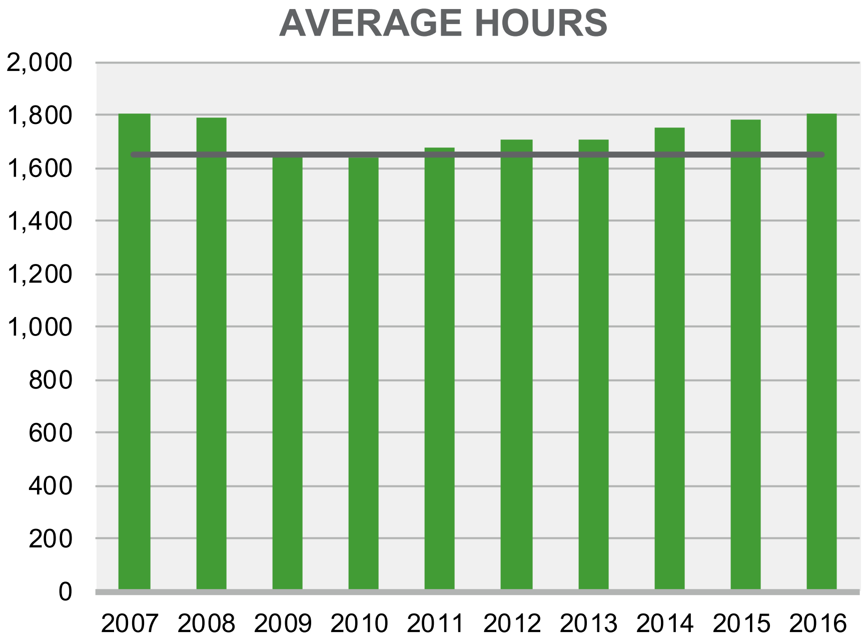


Average pension credits	13.6
Prior year average pension credits	13.8
Difference	-0.2

Historical Employment

- The charts below show a history of hours worked over the last 10 years. Additional detail is in *Section 3, Exhibit C*.
- The 2017 zone certification was based on an industry activity assumption of the number of active participants would remain at the December 31, 2013 level of 54,282 actives for all future years and, on the average, contributions will be made for each active for 1,650 hours each year. Recent average hours have been increasing.





Historical Average Total Hours	
Last year	103,613,586
Last five years	97,229,130
Last 10 years	102,518,214
Long-term assumption	89,565,300

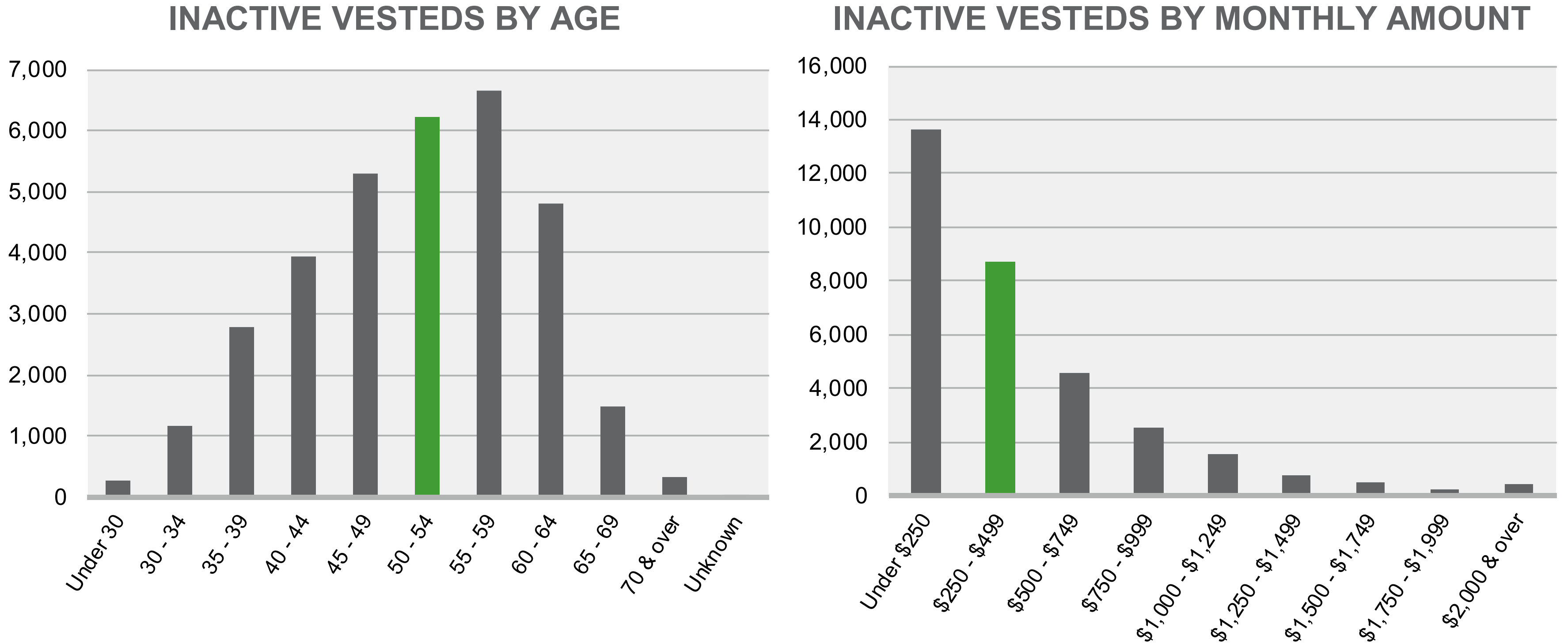
Historical Average Hours	
Last year	1,808
Last five years	1,753
Last 10 years	1,734
Long-term assumption	1,650

Note: The total hours of contributions are based on total hours reported in the census data.

Inactive Vested Participants

- A participant who is not currently active and has satisfied the requirements for, but has not yet commenced, a pension is considered an "inactive vested" participant. There were 33,027 inactive vested participants this year, a decrease of 2.5% compared to 33,869 last year.
- There were 34 inactive vested with unknown age compared to 39 in the prior year. The actuarial calculations were adjusted for missing information by assuming that it was the same as information provided for other active participants with similar known characteristics.
- In addition, there were 122 beneficiaries and 533 alternate payees eligible for deferred benefits in this valuation as compared to 164 beneficiaries and 563 alternate payees in the prior year. These participants are excluded from the charts shown below.

Distribution of Inactive Vested Participants as of December 31, 2016


INACTIVE VESTEDS BY AGE

INACTIVE VESTEDS BY MONTHLY AMOUNT

Average age	**51.6**
Prior year average age	51.2
Difference	**0.4**

Average amount	**$457**
Prior year average amount	$454
Difference	**$3**

New Pensions Awarded

	Total		Normal		Standard Early*		Unsubsidized Early*		Special Early		55/30 (60/30)		Disability	
Year Ended Dec 31	No.	Average Amount/ Ret Age	No.	Average Amount/ Ret Age	No.	Average Amount/ Ret Age	No.	Average Amount/ Ret Age	No.	Average Amount/ Ret Age	No.	Average Amount/ Ret Age	No.	Average Amount/ Ret Age
2007	1,934	$1,113	287	$599	449	$723	--	--	713	$1,084	266	$2,566	219	$907
		59.7		66.6		59.8		--		59.8		57.9		52.0
2008	1,763	$951	342	$547	387	$545	--	--	732	$972	214	$2,343	88	$740
		60.1		66.5		59.9		--		59.1		57.6		49.8
2009	1,765	$838	411	$609	499	$342	--	--	597	$1,008	174	$2,357	84	$542
		60.8		66.8		59.6		--		60.1		57.5		49.5
2010	1,909	$868	457	$564	516	$406	--	--	630	$1,001	200	$2,516	106	$523
		60.8		67.0		59.5		--		60.1		57.8		49.9
2011	1,856	$967	505	$582	333	$434	--	--	701	$1,065	229	$2,453	88	$543
		61.0		66.5		60.1		--		60.1		57.6		49.4
2012	1,644	$972	465	$651	387	$386	--	--	499	$1,190	214	$2,383	79	$536
		61.4		66.6		60.6		--		60.5		57.9		49.8
2013	2,065	$930	592	$645	563	$440	--	--	585	$1,090	240	$2,552	85	$477
		61.5		66.8		60.6		--		60.3		57.5		49.9
2014	1,962	$916	576	$626	569	$402	--	--	504	$1,077	245	$2,544	68	$611
		61.7		66.7		60.9		--		60.2		57.5		51.1
2015	1,655	$957	511	$732	94	$578	370	$385	446	$1,131	179	$2,623	55	$611
		61.6		66.5		60.7		60.5		59.9		57.7		49.9
2016	2,237	$975	523	$792	150	$517	707	$354	516	$1,228	289	$2,649	52	$765
		62.0		66.2		61.9		62.7		58.3		57.7		51.0

*Unsubsidized Early pensions not separately identified prior to 2015.

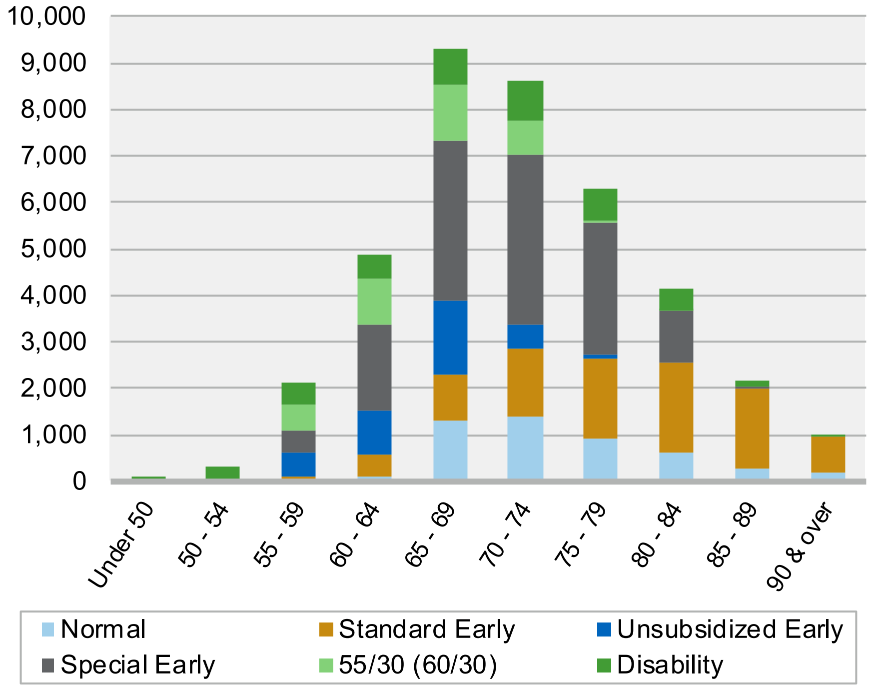
Pay Status Information

December 31, 2015	vs.	December 31, 2016
38,211 pensioners, **8,601** beneficiaries and **1,046** alternate payees	→	**38,952** pensioners, **8,666** beneficiaries and **1,121** alternate payees
$38,244,041 total monthly benefits received[1]	→	**$39,551,388** total monthly benefits received[1]

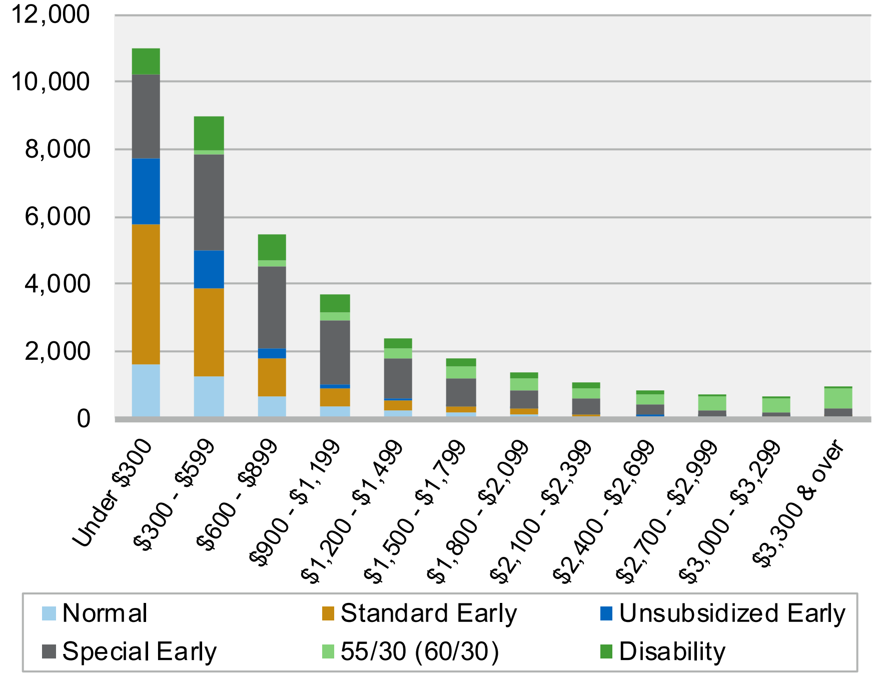
There were 34 suspended pensioners as of December 31, 2016 compared with 63 suspended pensioners and 1 suspended beneficiary as of December 31, 2015. These participants are excluded from the charts below.

Distribution of Pensioners as of December 31, 2016

PENSIONERS BY TYPE AND BY AGE



PENSIONERS BY TYPE AND MONTHLY AMOUNT



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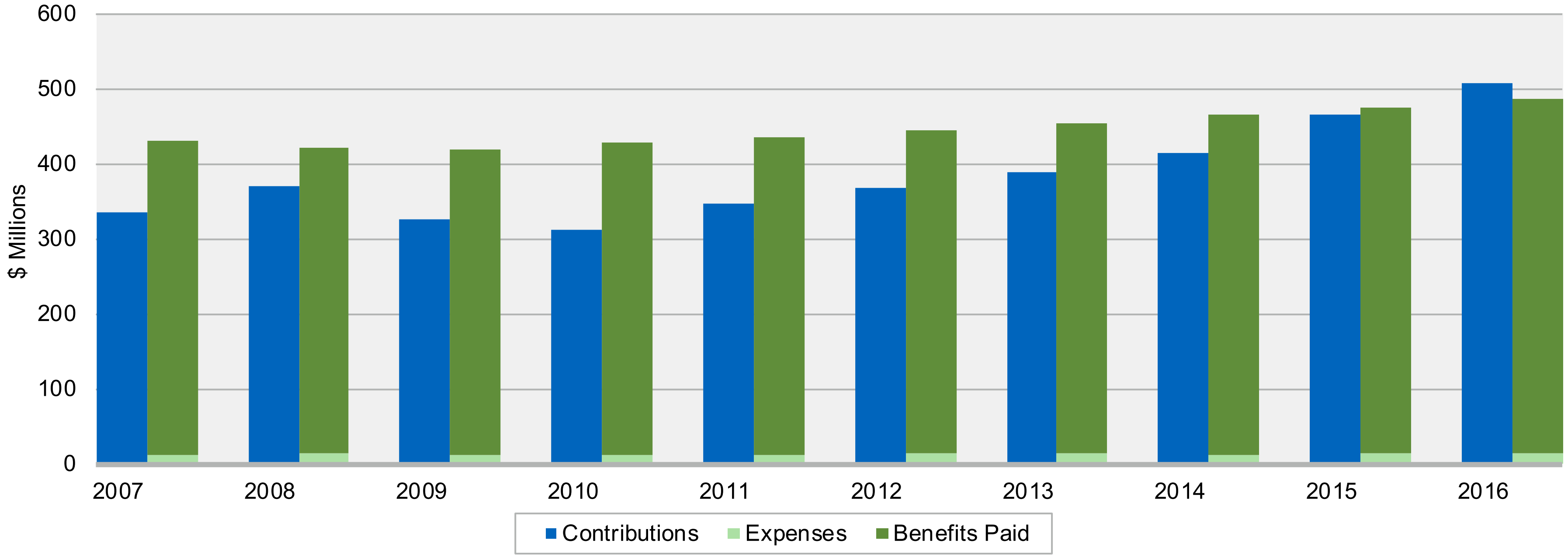
[1] Includes one-twelfth of annual COLA payments

Financial Information

- Benefits and expenses are funded solely from contributions and investment earnings.
- Additional detail is in *Section 3, Exhibit E*.
- For the most recent year, contributions ($505.6 million) exceeded benefit payments ($472.4 million) plus expenses ($14.5 million).

COMPARISON OF EMPLOYER CONTRIBUTIONS WITH BENEFITS AND EXPENSES PAID



Determination of Actuarial Value of Assets

- The asset valuation method gradually recognizes annual market value fluctuations to help mitigate volatility in the actuarial cost calculations.
- In the next valuation, the investment loss for year ended December 31, 2008 will be fully recognized.
- Less volatility in the actuarial cost better aligns with negotiated contribution rates.

			Original Amount*	Unrecognized Return**	
1	Market value of assets, December 31, 2016				$4,314,445,996
2	Calculation of unrecognized return				
	(a)	Year ended December 31, 2016	$23,047,095	$18,437,676	
	(b)	Year ended December 31, 2015	-316,167,649	-189,700,590	
	(c)	Year ended December 31, 2014	-52,249,711	-20,899,884	
	(d)	Year ended December 31, 2013	417,070,836	83,414,167	
	(e)	Year ended December 31, 2012	130,519,310	0	
	(f)	Year ended December 31, 2008	-1,151,332,711	-115,133,271	
	(g)	Total unrecognized return			-$223,881,902
3	Preliminary actuarial value: **(1) - (2g)**				4,538,327,898
4	Adjustment to be within 20% corridor				0
5	Final actuarial value of assets as of December 31, 2016: **(3) + (4)**				4,538,327,898
6	Actuarial value as a percentage of market value: **(5) ÷ (1)**				105.2%
7	Amount deferred for future recognition: **(1) - (5)**				-$223,881,902

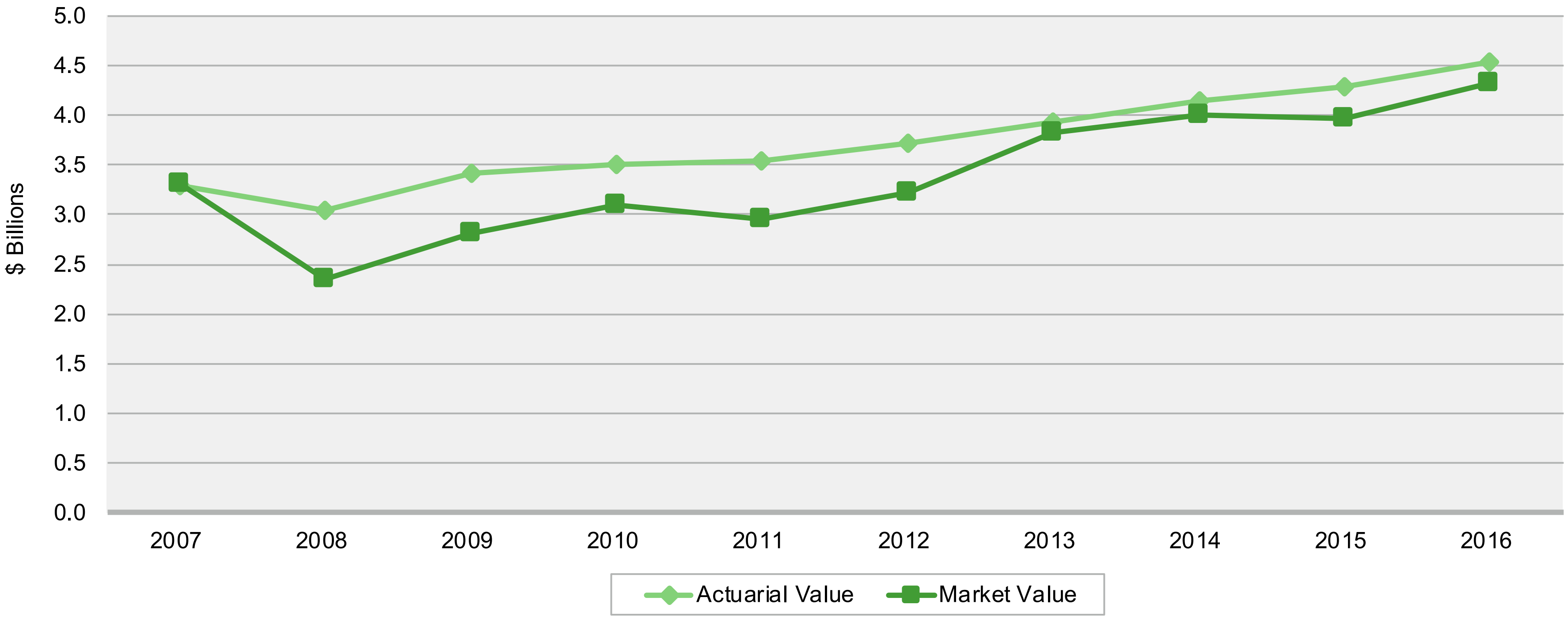
* Total return minus expected return on a market value basis

** Recognition at 10% per year over 10 years for year ended December 31, 2008, and 20% per year over 5 years for remaining years

Asset History for Years Ended December 31

- Both the actuarial value and the market value of assets are representations of the Plan's financial status.
- The actuarial value is significant because it is subtracted from the Plan's total actuarial accrued liability to determine the portion that is not funded and is used to determine the PPA'06 funded percentage.
- Amortization of the unfunded accrued liability is an important element in the contribution requirements of the Plan.

ACTUARIAL VALUE OF ASSETS VS. MARKET VALUE OF ASSETS



Actuarial Experience

- Assumptions should reflect experience and should be based on reasonable expectations for the future.
- Each year actual experience is compared to that projected by the assumptions. Differences are reflected in the contribution requirement as an experience gain or loss.
- Assumptions are not changed if experience is believed to be a short-term development and that, over the long run, experience will return to assumed levels.
- The net experience variation for the year ended December 31, 2016, other than investment experience, was less than 0.4% of the projected actuarial accrued liability from the prior valuation, and was not significant when compared to that liability.

EXPERIENCE FOR THE YEAR ENDED DECEMBER 31, 2016

1	Net loss from investments	-$98,810,667
2	Net gain from administrative expenses	43,730
3	Net loss from other experience	-30,969,597
4	**Net experience loss: 1 + 2 + 3**	**-$129,736,534**

Actuarial Value Investment Experience

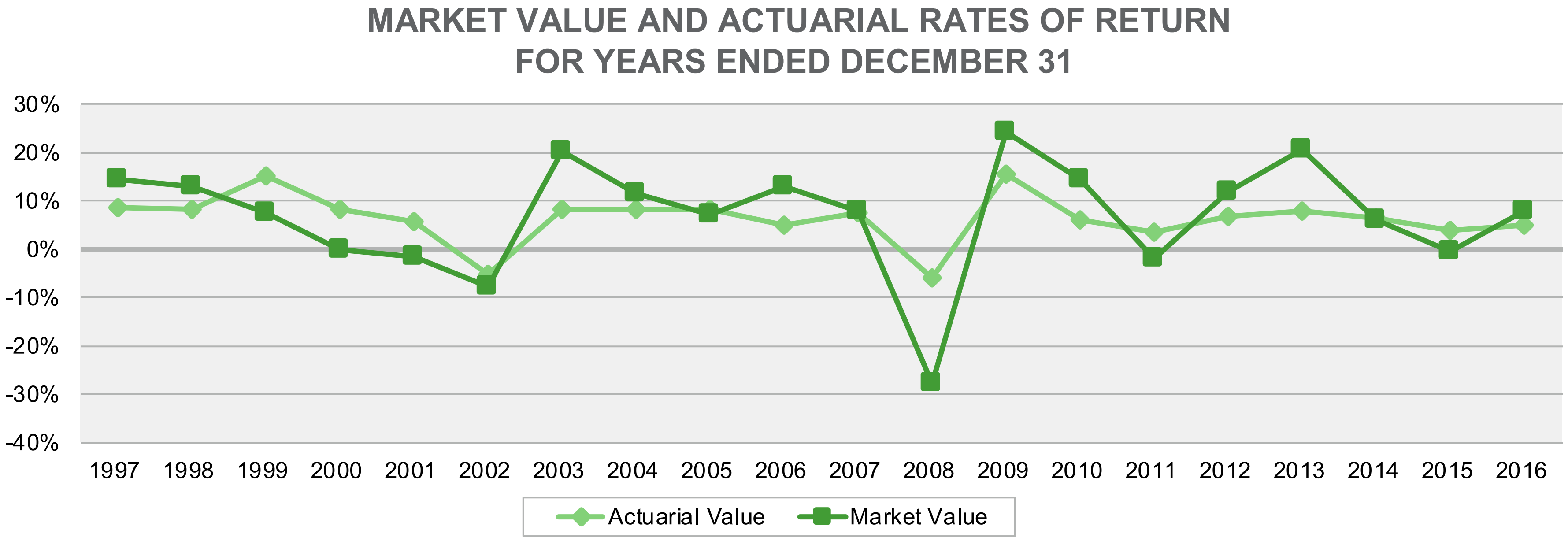
- Net investment income consists of expected investment income at the actuarially assumed rate of return, and an adjustment for market value changes. Investment expenses are subtracted.
- The actuarial value of assets does not yet fully recognize past investment gains and losses, which will affect future actuarial investment returns. There is one payment remaining as of December 31, 2016.
- The market value rate of return was 8.08% for the year ended December 31, 2016. The actuarial value rate of return was 5.20%.

INVESTMENT EXPERIENCE FOR THE YEAR ENDED DECEMBER 31, 2016

1	Net investment income	$224,011,197
2	Average actuarial value of assets	4,304,291,523
3	Rate of return: **1** ÷ **2**	5.20%
4	Assumed rate of return	7.50%
5	Expected net investment income: **2 x 4**	$322,821,864
6	**Actuarial loss: 1 - 5**	**-$98,810,667**

Historical Investment Returns

- Actuarial planning is long term. The obligations of a pension plan are expected to continue for the lifetime of all its participants.
- The assumed long-term rate of return of 7.50% considers past experience, the Trustees' asset allocation policy and future expectations.



Average Rates of Return	Actuarial Value	Market Value
Most recent three-year average return:	5.19%	4.59%
Most recent five-year average return:	6.02%	8.63%
Most recent ten-year average return:	5.63%	5.53%
20-year average return:	6.17%	6.40%

Note: The average return for the most recent three years is the arithmetic average of the returns. For average returns over five or more years, the average return is weighted by the asset value.

The actuarial value investment returns for 1999, 2006 and 2008 include the effect of a change in the method for determining the actuarial value of assets.

Non-Investment Experience

Administrative Expenses

- Administrative expenses for the year ended December 31, 2016 totaled $14,457,705, as compared to the assumption of $14,500,000.
- We have updated our assumption recognizing the prior year experience and the increase in the PBGC premium rate.

Mortality Experience

- Mortality experience (more or fewer than expected deaths) yields actuarial gains or losses.
- The average number of deaths for nondisabled pensioners over the past two years was 1,331 per year compared to 1,296 projected deaths per year. The average number of deaths for disabled pensioners over the past two years was 204 per year compared to 221 projected deaths per year.

Other Experience

- Other differences between projected and actual experience include the extent of turnover among the participants, and retirement experience (earlier or later than projected), and the number of disability retirements.

Actuarial Assumptions

- The following actuarial assumption change is recognized in this valuation:
  - Administrative expenses were increased from $14,500,000 to $14,600,000 for the year beginning January 1, 2017.
- Details on actuarial assumptions and methods are in *Section 4, Exhibit 6*.

Plan Provisions

- Contribution rates increase in accordance with the Alternative Options of the Funding Improvement Plan. Since benefit accruals are tied to contribution rates, increases in contribution rates are recognized as plan amendments. The average contribution rate increased from $4.85 per hour as of January 1, 2016 to $5.09 per hour as of January 1, 2017.
- A summary of plan provisions is in *Section 4, Exhibit 5*.

Pension Protection Act of 2006

2017 Actuarial Status Certification

Year	Zone Status
2008	Red
2009	Red
2010	Red
2011	Red
2012	Red
2013	Red
2014	Yellow
2015	Yellow
2016	Yellow
2017	Yellow

- PPA'06 requires trustees to actively monitor their plans' financial prospects to identify emerging funding challenges so they can be addressed effectively. Details are shown in *Section 3, Exhibit I*.
- The 2017 certification, completed on March 31, 2017, was based on the liabilities calculated in the January 1, 2016 actuarial valuation projected to December 31, 2016, and estimated asset information as of December 31, 2016. The Trustees provided an industry activity assumption that the number of active participants will remain level at the December 31, 2013 level of 54,282 and, on the average, contribution will be made for each active for 1,650 hours each year.
- The Plan was classified as endangered (*Yellow Zone*) status because the Plan was not critical (Red Zone) status and the projected funded percentage was less than 80%. In addition, the Plan was not projected to be in critical status for any of the succeeding five Plan Years.

Funding Improvement Plan Update

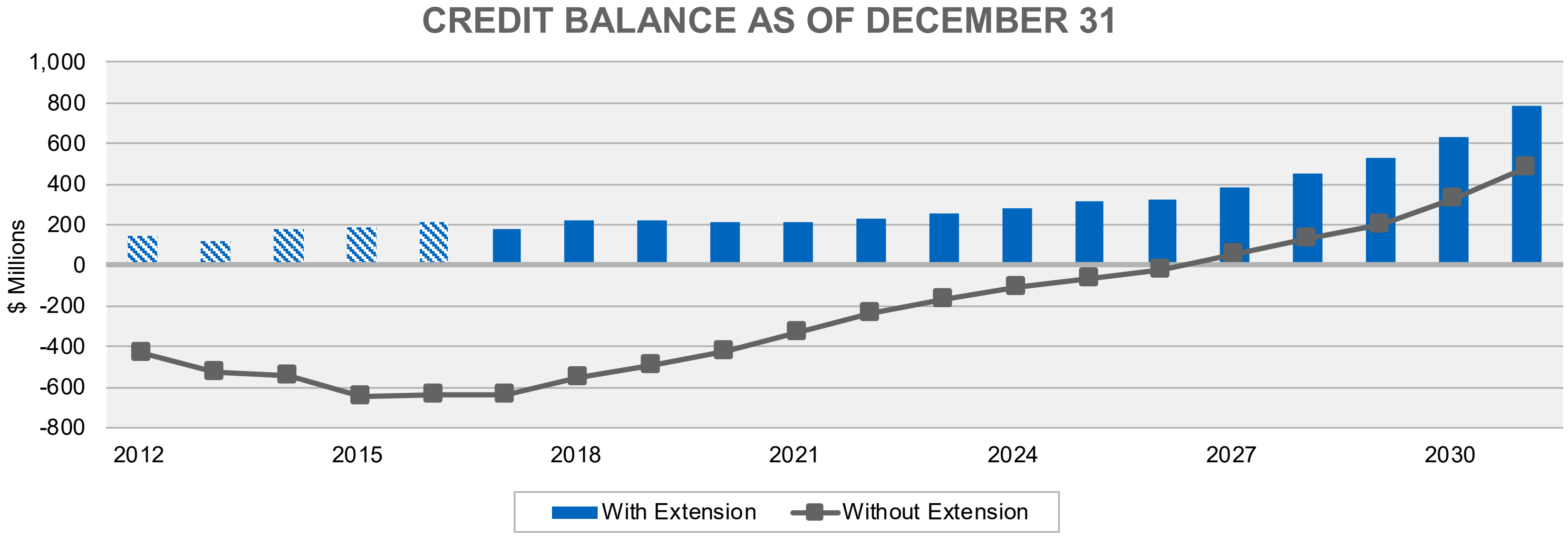
- The Plan's Funding Improvement Period is the 10-year period beginning January 1, 2017. The Plan is making the scheduled progress in meeting the requirements of its Funding Improvement Plan.
- Segal will continue to assist the Trustees in evaluating and, if necessary, updating the Funding Improvement Plan.

Funding Standard Account (FSA)

- On December 31, 2016, the FSA had a credit balance of $214,313,331, as will be shown on the 2016 Schedule MB. Contributions meet the legal requirement on a cumulative basis if that account shows no deficiency.
- The minimum funding requirement for the year beginning January 1, 2017 is $323,762,878.
- Based on the assumption that 57,295 participants will work an average of 1,650 hours at a $5.0914 average contribution rate, the contributions projected for the year beginning January 1, 2017 are $481,324,409. The credit balance is projected to decrease by approximately $38,702,135 to a total of $175,611,196 as of December 31, 2017.
- A summary of the ERISA minimum funding requirements and the FSA for the year ended December 31, 2016 is included in *Section 3, Exhibit G.*

Funding Standard Account Projection

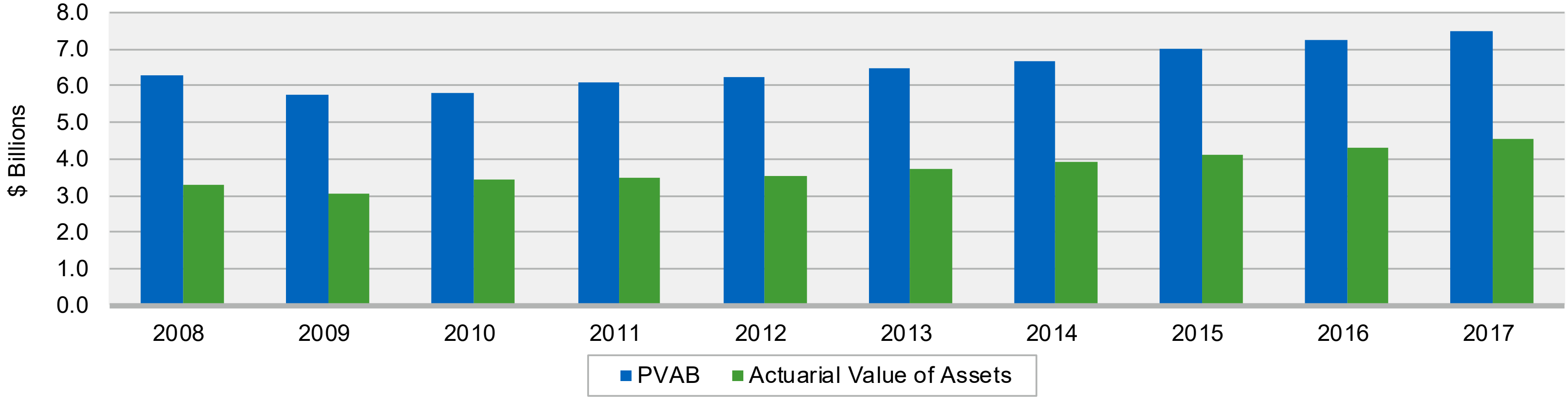
- A 10-year projection indicates the credit balance will be remain positive, assuming that:
  - The Plan will earn a market rate of return equal to 7.50% each year,
  - The long-term applicable percentage under the VBAR is 0.86% for 2019 and after,
  - No contribution increases other than those already in effect (i.e., disregarding remaining contribution rate increases under the Funding Improvement Plan),
  - All other experience emerges as assumed, no assumption changes are made (other than a 3% per year increase in administrative expenses), and
  - There are no plan amendments or changes in law/regulation.
- The projection is based on a level number of active employees (at 54,282) and 1,650 hours per capita.



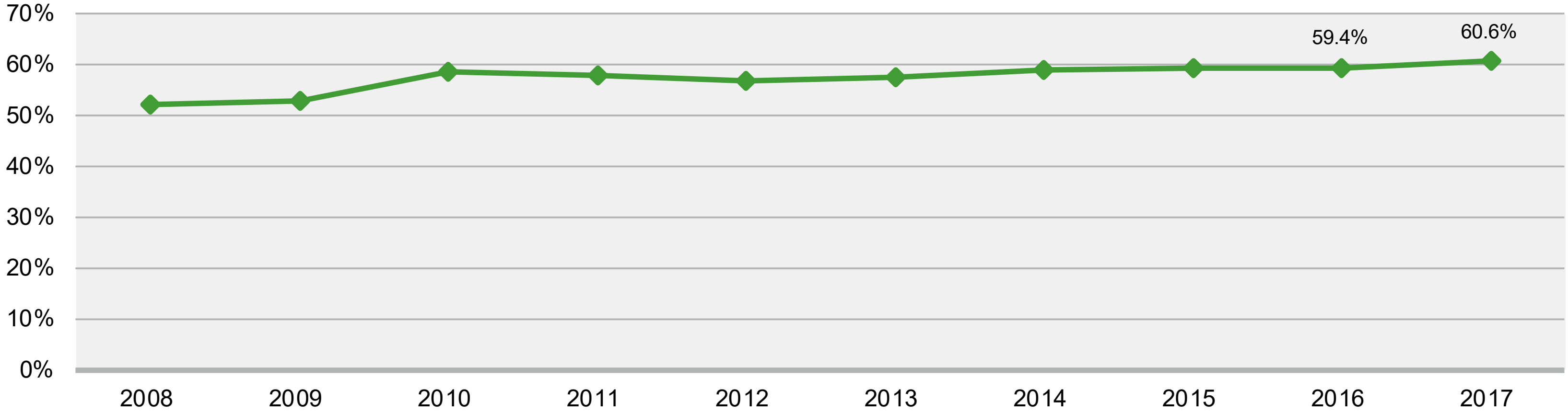
Additional scenarios would demonstrate sensitivity to investment return, employment and other alternative assumptions.

PPA’06 Funded Percentage Historical Information

PRESENT VALUE OF ACCRUED BENEFITS (PVAB) VS. ACTUARIAL VALUE OF ASSETS AS OF JANUARY 1



PPA ’06 FUNDED PERCENTAGE AS OF JANUARY 1

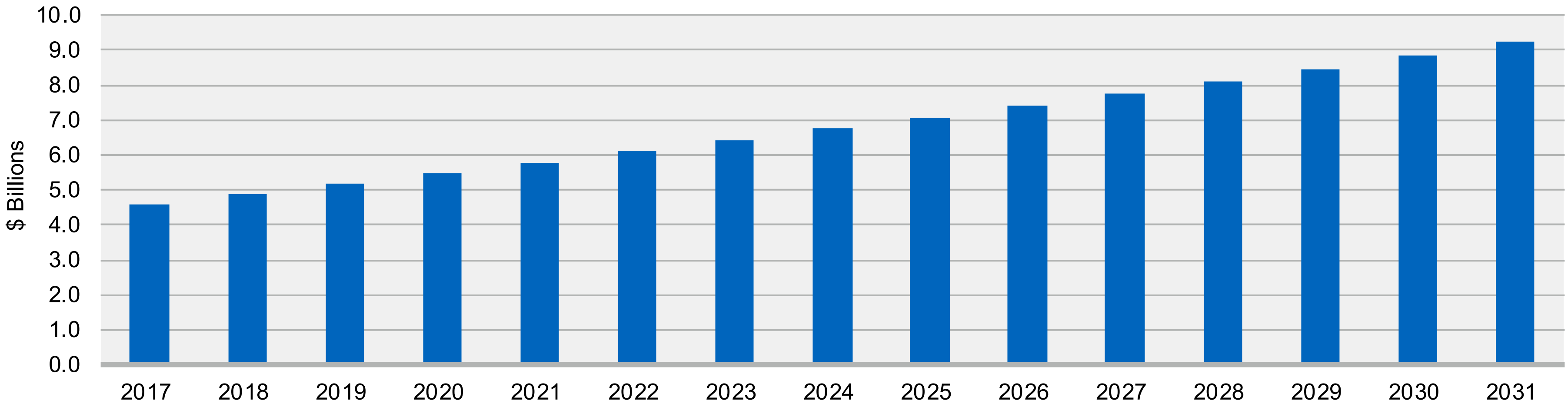


The PPA funded percentage is based on the actuarial value of assets. If the market value of assets were used, the 2016 funded percentage would be 57.6%, as compared to 54.9% last year.

Solvency Projection

- PPA'06 requires Trustees to monitor plan solvency - the ability to pay benefits and expenses when due. The Multiemployer Pension Reform Act of 2014 further classifies plans that are projected to become insolvent with 15 or 20 years as "critical and declining." See Section 3, Exhibit K for more information.
- Projections using the current actuarial valuation assumptions show the Plan is not expected to be insolvent within 15 years, based on the negotiated contribution rates, the current plan of benefits and the Trustees' industry activity assumption. This projection also reflects the Applicable Percentage under the VBAR formula of 1.00% for 2017, 0.50% for 2018, and the average expected long-term Applicable Percentage of 0.86% for 2019 and later.

PROJECTED ASSETS AS OF DECEMBER 31



Additional scenarios would demonstrate sensitivity to investment return, employment and other alternative assumptions.

Risk

- Since the actuarial valuation results are dependent on a given set of assumptions, there is a risk that emerging results may differ significantly as actual experience proves to be different from the assumptions.
- We have separately performed a detailed analysis of the potential range of future measurements, based on a range of possible investment returns, including risks that may affect the Plan.

EXHIBIT A - TABLE OF PLAN COVERAGE

Category	Year Ended December 31		Change from Prior Year
	2015	2016	
Participants in Fund Office tabulation	58,265	59,685	2.4%
Less: Participants with less than one year of vesting service	2,368	2,390	N/A
Active participants in valuation:			
First Alternative Schedule without 55/30			
• Number	21,690	20,759	-4.3%
• Percentage of total active population	38.8%	36.2%	N/A
• Average contribution rate as of the valuation date	$3.26	$3.60	10.4%
First Alternative Schedule with 55/30			
• Number	20,167	19,759	-2.0%
• Percentage of total active population	36.1%	34.5%	N/A
• Average contribution rate as of the valuation date	$8.74	$9.45	8.1%
Default Schedule			
• Number	13,634	14,694	7.8%
• Percentage of total active population	24.4%	25.7%	N/A
• Average contribution rate as of the valuation date	$1.66	$2.23	34.3%
No contribution increases but previously covered under an Alternative Schedule			
• Number	215	188	-12.6%
• Percentage of total active population	0.4%	0.3%	N/A
• Average contribution rate as of the valuation date	$1.34	$1.40	4.5%
Second Alternative Schedule without 60/30			
• Number	118	1,830	> 100.0%
• Percentage of total active population	0.2%	3.2%	N/A
• Average contribution rate as of the valuation date	$2.96	$3.46	16.9%
Second Alternative Schedule with 60/30			
• Number	73	65	-11.0%
• Percentage of total active population	0.1%	0.1%	N/A
• Average contribution rate as of the valuation date	$8.21	$8.61	4.9%
Total			
• Number	55,897	57,295	2.5%
• Average age	43.1	42.9	-0.2
• Average pension credits	13.8	13.6	-0.1
• Number with unknown age information	532	610	14.7%
• Average contribution rate as of the valuation date	$4.85	$5.09	4.9%
• Total active vested participants	43,586	43,586	0.5%

EXHIBIT A - TABLE OF PLAN COVERAGE (CONTINUED)

Category	Year Ended December 31		Change from Prior Year
	2015	2016	
Inactive participants with rights to a pension:			
• Number	33,869	33,027	-2.5%
• Average age	51.3	51.6	0.4
• Average monthly benefit	$454	$457	0.5%
• Number with unknown age	39	34	-12.9%
Beneficiaries with rights to deferred payments	164	122	-25.6%
Alternate payees with rights to deferred payments	563	533	-5.3%
Pensioners:			
• Number in pay status	38,211	38,952	1.9%
• Average age	72.1	72.2	0.1
• Average monthly benefit*	$906	$919	1.4%
• Number in suspended status	63	34	-46.0%
Beneficiaries:			
• Number in pay status	8,601	8,666	0.8%
• Number in suspended status	1	0	-100.0%
• Average age	76.6	76.8	0.2
• Average monthly benefit	$421	$433	2.7%
Number of alternate payees in pay status	1,046	1,121	7.2%

*Includes one-twelfth of annual COLA payments

EXHIBIT B - PARTICIPANT POPULATION

Year Ended December 31	Active Participants	Inactive Vested Participants[1]	Pensioners and Beneficiaries[2]	Ratio of Non-Actives to Actives
2007	69,408	24,436	43,166	0.97
2008	70,448	25,517	43,794	0.98
2009	62,321	30,569	44,444	1.20
2010	55,940	33,749	45,281	1.41
2011	55,131	34,122	46,049	1.45
2012	55,440	34,161	45,974	1.45
2013	54,282	34,338	45,909	1.48
2014	54,319	34,450	46,501	1.49
2015	55,897	34,033	46,876	1.45
2016	57,295	33,149	47,652	1.41

[1] Includes deferred beneficiaries; excludes deferred alternate payees for 2013 and later

[2] Excludes alternate payees in pay status for 2013 and later

EXHIBIT C - EMPLOYMENT HISTORY

Year Ended December 31	Total Hours of Contributions[1]		Active Participants		Average Hours of Contributions	
	Number	Percent Change	Number	Percent Change	Number	Percent Change
2007	125,691,762	3.0%	69,408	2.0%	1,811	0.9%
2008	126,093,952	0.3%	70,448	1.5%	1,790	-1.2%
2009	103,117,103	-18.2%	62,321	-11.5%	1,655	-7.5%
2010	91,693,289	-11.1%	55,940	-10.2%	1,639	-1.0%
2011	92,440,381	0.8%	55,131	-1.4%	1,677	2.3%
2012	94,923,571	2.7%	55,440	0.6%	1,712	2.1%
2013	92,829,393	-2.2%	54,282	-2.1%	1,710	-0.1%
2014	95,139,413	2.5%	54,319	0.1%	1,751	2.4%
2015	99,639,689	4.7%	55,897	2.9%	1,783	1.8%
2016	103,613,586	4.0%	57,295	2.5%	1,808	1.4%
			Five-year average hours:		**1,753**	
			Ten-year average hours:		**1,734**	

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[1] The total hours of contributions are based on total hours reported in the census data.

EXHIBIT D – COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL

	As of December 31, 2015					As of December 31, 2016				
Local	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
001	368	44.39	15.95	1,689.07	$7.41	380	44.78	15.69	1,638.58	$7.93
002	1,109	42.62	14.71	1,688.45	11.02	1,198	42.44	14.22	1,764.79	11.63
003	426	41.49	11.63	1,741.56	5.42	420	41.65	11.94	1,757.06	5.83
004	195	43.33	16.09	1,759.49	0.53	192	44.41	16.91	1,810.36	0.75
005	493	42.50	10.45	1,822.35	4.38	475	43.26	10.57	1,755.41	4.63
007	1,026	41.01	12.98	1,815.15	1.49	1,011	41.02	13.01	1,814.85	1.72
009	751	42.73	12.48	1,773.43	0.60	814	42.73	11.88	1,768.10	0.63
010	2,774	42.44	13.46	1,780.26	4.31	2,828	42.43	13.35	1,732.42	4.60
012	987	42.02	14.12	1,680.36	8.15	997	41.79	13.77	1,704.83	8.52
015	539	42.96	9.31	1,869.55	2.45	563	46.23	9.19	1,826.64	2.44
016	1,264	41.62	11.72	1,681.63	1.87	1,289	42.12	12.19	1,740.12	2.05
017	1,343	42.95	14.83	1,774.46	10.43	1,321	42.97	14.95	1,721.50	11.18
018	2,437	43.22	15.65	1,772.95	9.13	2,481	43.13	15.50	1,802.26	9.73
019	259	46.46	15.14	1,828.71	3.68	225	47.71	15.88	1,775.65	4.28
020	2,211	43.15	14.88	1,779.00	5.45	2,315	43.04	14.45	1,816.47	5.64
022	1	39.83	1.02	1,689.00	7.56	-	-	-	-	-
023	211	43.39	13.33	1,670.07	1.73	213	43.46	13.40	1,592.22	1.75
024	1,196	43.40	15.25	1,742.98	4.27	1,235	43.02	14.65	1,818.05	4.42
025	505	46.21	17.22	1,700.82	11.52	509	46.17	17.10	1,712.16	12.24
026	165	39.90	10.87	1,707.59	2.88	205	40.38	10.20	1,805.74	2.98
027	439	45.00	16.02	1,551.26	10.86	456	45.32	15.91	1,630.30	11.64
028	2,430	42.86	13.65	1,635.97	12.73	2,574	43.14	13.43	1,725.10	13.55
029	167	37.44	12.30	1,813.71	4.87	181	38.35	12.59	1,796.00	5.38
032	317	43.62	11.59	1,737.45	3.11	383	44.30	9.85	1,689.91	2.93

[1] Does not reflect contribution rate increases scheduled to occur during subsequent Plan years

EXHIBIT D – COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL (CONTINUED)

	As of December 31, 2015					As of December 31, 2016				
Local	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
033	2,181	42.74	13.99	1,705.05	$6.10	2,170	43.04	14.14	1,747.75	$6.35
036	1,720	44.92	16.12	1,635.47	2.45	1,778	44.51	15.65	1,772.21	2.55
038	526	43.62	15.36	1,663.77	10.61	465	44.12	15.81	1,582.96	11.22
040	387	44.50	14.40	1,635.74	0.84	378	45.02	14.86	1,698.44	0.88
044	182	43.53	14.43	1,487.49	0.86	183	44.37	15.14	1,438.51	0.92
045	404	40.49	13.65	1,730.38	6.43	424	40.50	13.24	1,848.97	6.92
046	337	41.89	14.60	1,674.58	3.09	361	41.49	14.00	1,747.92	3.12
048	196	44.15	16.21	1,814.49	7.34	193	44.57	16.43	1,857.96	7.87
049	416	42.78	12.87	1,789.83	5.49	430	43.66	12.51	1,778.56	5.71
054	751	42.54	12.13	1,909.20	5.32	699	42.93	12.37	1,771.59	5.76
055	880	42.58	12.74	1,711.36	1.47	881	42.81	12.77	1,792.28	1.52
058	146	43.25	11.34	1,317.80	7.43	143	43.81	12.34	1,552.55	8.09
063	285	44.83	15.75	1,574.79	8.08	276	44.93	15.60	1,573.40	8.68
066	1,940	43.48	13.58	1,733.15	3.59	2,134	43.39	13.09	1,777.87	3.55
067	670	42.34	13.77	1,763.89	7.33	678	42.79	13.76	1,810.06	7.98
068	423	43.09	11.39	1,747.17	4.58	410	43.87	11.37	1,828.55	4.97
071	332	42.28	13.50	1,763.87	6.64	363	41.62	12.74	1,961.90	7.00
073	1,919	46.57	17.21	1,825.04	4.72	1,941	46.63	17.09	1,869.96	5.03
080	73	40.33	7.55	1,375.99	6.38	63	38.38	6.72	1,447.11	7.11
083	370	43.34	12.68	1,702.06	10.04	295	43.98	14.01	1,658.05	10.67
085	797	41.26	13.01	1,770.41	1.04	861	41.27	12.62	1,906.57	1.12
088	495	42.96	13.55	1,597.36	2.71	516	43.39	13.68	1,643.35	2.90
091	651	39.97	13.00	1,712.29	4.68	639	40.14	13.05	1,740.05	5.18
100	442	42.77	12.79	1,618.37	6.58	485	43.49	12.61	1,679.82	6.87

[1] Does not reflect contribution rate increases scheduled to occur during subsequent Plan years

EXHIBIT D – COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL (CONTINUED)

	As of December 31, 2015					As of December 31, 2016				
Local	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
103	331	43.35	13.53	1,683.46	$1.31	319	42.90	13.24	1,725.24	$1.42
104	4,265	42.73	13.25	1,627.29	1.82	4,557	42.54	12.77	1,646.82	1.79
105	3,129	41.17	11.58	1,695.61	2.99	3,351	41.12	11.34	1,718.45	3.10
110	579	44.05	14.39	1,885.61	8.38	552	44.11	14.59	1,817.53	9.14
112	283	40.78	11.28	1,732.04	2.24	271	41.88	12.19	1,716.26	2.44
124	334	42.77	13.74	1,789.49	1.98	331	42.93	13.96	1,784.76	2.01
137	340	43.83	13.45	1,685.35	9.85	329	44.56	14.25	1,730.67	10.62
162	2	44.37	10.53	511.00	0.94	-	-	-	-	-
170	838	45.21	11.43	2,109.87	1.48	793	45.25	11.35	2,052.84	1.54
177	425	42.11	11.65	1,786.20	1.23	406	42.17	11.92	1,794.97	1.12
206	490	41.51	10.44	1,745.75	4.63	474	41.29	10.68	1,705.89	4.85
214	590	42.50	13.89	1,818.59	2.77	555	43.30	14.45	1,770.30	2.99
218	327	43.75	15.32	1,640.32	3.40	317	43.38	15.21	1,671.72	3.83
219	296	42.19	14.91	1,750.29	6.00	299	41.83	14.38	1,845.80	6.41
256	39	47.15	8.74	1,890.69	1.00	41	46.80	6.98	1,898.27	1.14
263	305	40.37	12.73	1,852.41	5.95	320	39.77	12.19	1,914.84	6.26
265	1,169	44.61	16.93	1,634.99	1.17	1,227	44.78	16.66	1,699.34	1.28
268	368	44.76	16.91	1,678.80	4.71	355	45.08	17.16	1,709.87	5.03
270	182	41.38	11.94	1,793.01	5.48	161	41.80	12.68	1,572.69	5.98
273	202	42.26	12.23	1,674.54	3.15	206	42.57	12.63	1,614.51	3.44
292	445	44.10	14.04	1,912.60	1.10	391	44.37	14.94	1,887.55	1.22
293	3	50.03	8.03	1,756.33	1.22	5	48.77	8.44	1,744.20	1.95
312	852	41.41	13.55	1,839.95	0.28	945	40.48	12.21	1,847.32	0.27

[1] Does not reflect contribution rate increases scheduled to occur during subsequent Plan years

EXHIBIT D – COMPARISON OF ACTIVE PARTICIPANTS BY LOCAL (CONTINUED)

	As of December 31, 2015					As of December 31, 2016				
Local	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]	Number of Members	Average Age	Average Service	Average Hours	Average Rate as of 12/31[1]
359	335	43.64	14.36	1,440.40	2.89	350	44.31	14.54	1,582.63	$2.69
399	320	41.74	7.63	1,781.41	7.02	320	41.91	7.91	1,792.17	7.19
435	162	41.86	14.08	1,799.10	5.87	227	41.34	11.29	1,835.88	5.87
441	191	44.34	14.41	1,788.98	5.47	182	44.36	14.98	1,747.04	5.72
450	132	46.59	13.32	2,346.62	2.15	130	46.94	13.65	2,352.64	2.15
464	115	54.99	25.46	1,883.16	0.89	99	55.57	26.40	1,950.34	0.88
480	519	44.24	14.07	2,217.04	2.40	545	44.40	13.56	2,121.77	2.48
555	165	43.36	9.85	1,982.65	0.79	181	45.23	9.05	2,019.81	0.79
565	1	60.67	36.09	1,956.00	6.20	-	-	-	-	-
997	27	49.02	10.66	1,879.93	6.20	24	50.55	10.28	1,962.96	6.63
Total	55,897	43.09	13.77	1,736.34	$4.85	57,295	43.05	13.59	1,761.12	$5.09

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[1] Does not reflect contribution rate increases scheduled to occur during subsequent Plan years

EXHIBIT E – PROGRESS OF PENSION ROLLS OVER THE PAST TEN YEARS

IN PAY STATUS AT YEAR END

Year	Number	Average Age	Average Amount[1]	Terminations[2]	Additions[3]
2007	35,747	70.5	$852	1,285	1,934
2008	36,019	70.8	861	1,491	1,763
2009	36,408	71.0	854	1,376	1,765
2010	36,892	71.2	850	1,425	1,909
2011	37,321	71.4	857	1,427	1,856
2012	37,165	71.5	868	1,800	1,644
2013	37,648	71.7	877	1,582	2,065
2014	38,074	71.8	888	1,536	1,962
2015	38,211	72.1	906	1,518	1,655
2016	38,952	72.2	919	1,496	2,237

[1] Includes one-twelfth of annual COLA payments.

[2] Terminations include pensioners who died or were suspended during the prior plan year, less those suspended who were reinstated.

[3] Additions to the pension rolls include new pensions awarded.

EXHIBIT F - SUMMARY STATEMENT OF INCOME AND EXPENSES ON AN ACTUARIAL BASIS

	Year Ended December 31, 2015		Year Ended December 31, 2016	
Contribution income:				
- Employer contributions and withdrawal liability payments	$462,170,646		$501,571,367	
- Liquidated damages	127,567		163,472	
- Adjustment for withdrawal liability receivable	3,480,693		3,890,768	
- Less administrative expenses	-14,401,594		-14,457,705	
Net contribution income		*$451,377,312*		*$491,167,902*
Other Income		23,299		1,260,936
Investment income:				
- Expected investment income	$310,146,502		$322,821,864	
- Adjustment toward market value	-146,173,901		-98,810,667	
Net investment income		*163,972,601*		*224,011,197*
Total income available for benefits		**$615,373,212**		**$716,440,035**
Less benefit payments		-$461,386,501		-$472,378,482
Change in reserve for future benefits		**$153,986,711**		**$244,061,553**

EXHIBIT G - INVESTMENT RETURN – ACTUARIAL VALUE VS. MARKET VALUE

Year Ended December 31	Actuarial Value Investment Return[1]		Market Value Investment Return		Year Ended December 31	Actuarial Value Investment Return[1]		Market Value Investment Return	
	Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent
1997	$168,993,853	8.62%	$283,878,769	14.49%	2007	$235,073,194	7.57%	$243,628,390	7.84%
1998	205,324,555	8.50%	314,421,636	13.04%	2008	-193,649,545	-5.93%	-905,604,097	-27.64%
1999	363,401,597	15.40%	190,707,659	7.52%	2009	463,585,989	15.45%	561,785,116	24.45%
2000	226,303,645	8.50%	3,560,195	0.13%	2010	209,948,846	6.25%	398,844,675	14.48%
2001	159,799,521	5.63%	-36,479,361	-1.39%	2011	122,036,155	3.52%	-52,598,539	-1.72%
2002	-154,706,918	-5.26%	-194,048,412	-7.69%	2012	243,627,164	6.95%	349,221,467	11.98%
2003	229,560,422	8.50%	458,228,754	20.44%	2013	293,987,827	7.99%	656,623,939	20.56%
2004	239,619,449	8.50%	298,949,842	11.55%	2014	250,531,303	6.40%	232,193,895	6.12%
2005	249,128,731	8.50%	201,693,098	7.31%	2015	163,972,601	3.97%	-16,599,604	-0.42%
2006	153,183,390	5.01%	370,984,124	13.07%	2016	224,011,197	5.20%	321,747,587	8.08%
					Total	$3,853,732,976		$3,681,139,133	
	Most recent three-year average return:						**5.19%**		**4.59%**
	Most recent five-year average return:						**6.02%**		**8.63%**
	Most recent ten-year average return:						**5.63%**		**5.53%**
	20-year average return:						**6.17%**		**6.40%**

Note: The average return for the most recent three years is the arithmetic average of the returns. For average returns over five or more years, the average return is weighted by the asset value.

[1] The actuarial value investment returns for 1999, 2006 and 2008 include the effect of a change in the method for determining the actuarial value of assets.

EXHIBIT H - ANNUAL FUNDING NOTICE FOR PLAN YEAR BEGINNING JANUARY 1, 2017 AND ENDING DECEMBER 31, 2017

	2017 **Plan Year**	2016 **Plan Year**	2015 **Plan Year**
Actuarial valuation date	January 1, 2017	January 1, 2016	January 1, 2015
Funded percentage	60.6%	59.4%	59.3%
Value of assets	$4,538,327,898	$4,294,266,345	$4,140,279,634
Value of liabilities	7,494,271,997	7,230,768,938	6,987,384,126
Fair market value of assets as of plan year end*	Not available	4,314,445,996	3,972,648,053

*Excludes withdrawal liability payments receivable

Critical or Endangered Status

The Plan is in endangered status for the 2017 Plan year because it is not in critical status and its funded percentage is less than 80%. In addition, the Plan is not projected to be in critical status for any of the five succeeding Plan years.

EXHIBIT I - FUNDING STANDARD ACCOUNT

- ERISA imposes a minimum funding standard that requires the Plan to maintain an FSA. The accumulation of contributions in excess of the minimum required contributions is called the FSA credit balance. If actual contributions fall short on a cumulative basis, a funding deficiency has occurred. For a plan that is in critical status under PPA'06, employers will generally not be penalized if a funding deficiency develops, provided the parties fulfill their obligations in accordance with the Rehabilitation Plan developed by the Trustees and the negotiated bargaining agreements reflect that Rehabilitation Plan.

- The FSA is charged with the normal cost and the amortization of increases or decreases in the unfunded actuarial accrued liability due to plan amendments, experience gains or losses, and changes in actuarial assumptions and funding methods. The FSA is credited with employer contributions. All items, including the prior credit balance or deficiency, are adjusted with interest at the actuarially assumed rate.

- Increases or decreases in the unfunded actuarial accrued liability are amortized over 15 years except that short-term benefits, such as 13th checks, are amortized over the scheduled payout period.

FSA FOR THE YEAR ENDED DECEMBER 31, 2016
(RECOGNIZING FIVE-YEAR AMORTIZATION EXTENSION)

Charges			Credits		
1	Prior year funding deficiency	$0	**6**	Prior year credit balance	$190,973,941
2	Normal cost, including administrative expenses	179,443,659	**7**	Employer contributions	505,625,607
3	Total amortization charges	596,515,514	**8**	Total amortization credits	296,358,966
4	Interest to end of the year	58,196,938	**9**	Interest to end of the year	55,510,928
5	*Total charges*	*$834,156,111*	**10**	Full-funding limitation credit	0
			11	*Total credits*	*$1,048,469,442*
			Credit balance: 11 - 5		**$214,313,331**

EXHIBIT J - FUNDING STANDARD ACCOUNT (CONTINUED)

- PPA'06 requires the Internal Revenue Service (IRS) to permit multiemployer plans facing a funding deficiency within 10 years to extend the schedule for paying off their liabilities by five years. The Trustees elected to utilize this provision effective January 1, 2009.

- The chart below shows the development of the Funding Standard Account without the five-year amortization extension.

FUNDING STANDARD ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 2016
(DISREGARDING FIVE-YEAR AMORTIZATION EXTENSION)

Charges			Credits		
1	Prior year funding deficiency	$598,736,647	**6**	Prior year credit balance	$0
2	Normal cost, including administrative expenses	179,443,659	**7**	Employer contributions	505,625,607
3	Total amortization charges	602,748,013	**8**	Total amortization credits	296,358,966
4	Interest to end of the year	102,571,801	**9**	Interest to end of the year	41,187,882
5	*Total charges*	*$1,484,497,943*	**10**	Full-funding limitation credit	0
			11	*Total credits*	*$843,172,455*
				Credit balance/(funding deficiency): 11 - 5	**-$641,325,488**

EXHIBIT J - MAXIMUM DEDUCTIBLE CONTRIBUTION

- Employers that contribute to defined benefit pension plans are allowed a current deduction for payments to such plans. There are various measures of a plan's funded level that are considered in the development of the maximum deductible contribution amount.
- One of the limits is the excess of 140% of "current liability" over assets. "Current liability" is one measure of the actuarial present value of all benefits earned by the participants as of the valuation date. This limit is significantly higher than the current contribution level.
- Contributions in excess of the maximum deductible amount are not prohibited; only the deductibility of these contributions is subject to challenge and may have to be deferred to a later year. In addition, if contributions are not fully deductible, an excise tax in an amount equal to 10% of the non-deductible contributions may be imposed. However, the plan sponsor may elect to exempt the non-deductible amount up to the ERISA full-funding limitation from the excise tax.
- The Trustees should review the interpretation and applicability of all laws and regulations concerning any issues as to the deductibility of contribution amounts with Fund Counsel.

1	Normal cost, including administrative expenses	$156,390,652
2	Amortization of unfunded actuarial accrued liability	400,594,844
3	Preliminary maximum deductible contribution: **1 + 2**, with interest to the end of the plan year	$598,759,408
4	Full-funding limitation (FFL)	8,026,796,752
5	Preliminary maximum deductible contribution, adjusted for FFL: **lesser of 3 and 4**	598,759,408
6	Current liability for maximum deductible contribution, projected to the end of the plan year	13,751,408,847
7	Actuarial value of assets, projected to the end of the plan year	4,349,471,210
8	Excess of 140% of current liability over projected assets at end of plan year: [140% of (6)] - (7), not less than zero	14,902,501,175
9	End of year minimum required contribution	323,762,878
Maximum deductible contribution: greatest of 5, 8, and 9		**$14,902,501,175**

EXHIBIT K - PENSION PROTECTION ACT OF 2006

PPA’06 Zone Status

- Based on projections of the credit balance in the FSA, the funded percentage, and cash flow sufficiency tests, plans are categorized in one of three “zones”: critical status, endangered status, or neither.
- The funded percentage is determined using the actuarial value of assets and the present value of benefits earned to date, based on the actuary’s best estimate assumptions.

Critical Status (***Red Zone***)	A plan is classified as being in critical status (the *Red Zone*) if: • The funded percentage is less than 65%, and either there is a projected FSA deficiency within five years or the plan is projected to be unable to pay benefits within seven years, or • There is a projected FSA deficiency within four years, or • There is a projected inability to pay benefits within five years, or • The present value of vested benefits for inactive participants exceeds that for actives, contributions are less than the value of the current year’s benefit accruals plus interest on existing unfunded accrued benefit liabilities, and there is a projected FSA deficiency within five years, or • As permitted by the Multiemployer Pension Reform Act of 2014, the plan is projected to be in the *Red Zone* within five years and the plan sponsor elects to be in critical status. A critical status plan is further classified as being in critical and declining status if: • The ratio of inactives to actives is at least 2 to 1, and there is an inability to pay benefits projected within 20 years, or • The funded percentage is less than 80%, and there is an inability to pay benefits projected within 20 years, or • There is an inability to pay benefits projected within 15 years. Any amortization extensions are ignored for testing initial entry into the *Red Zone* but are used for determining emergence. The Trustees are required to adopt a formal Rehabilitation Plan, designed to allow the plan to emerge from critical status by the end of the rehabilitation period. If they determine that such emergence is not reasonable, the Rehabilitation Plan must be designed to emerge as of a later time or to forestall possible insolvency. Trustees of *Red Zone* plans have tools, such as the ability to reduce or eliminate early retirement subsidies, to remedy the situation. Accelerated forms of benefit payment (such as lump sums) are prohibited. However, unless the plan is critical and declining, Trustees may not reduce benefits of participants who retired before being notified of the plan’s critical status (other than rolling back recent benefit increases) or alter core retirement benefits payable at normal retirement age.

Endangered Status (*Yellow Zone*)	A plan not in critical status (*Red Zone*) is classified as being in endangered status (the *Yellow Zone*) if: • The funded percentage is less than 80%, or • There is a projected FSA deficiency within seven years. A plan that has both of the endangered conditions present is classified as seriously endangered. Trustees of a plan that was in the *Green Zone* in the prior year can elect not to enter the *Yellow Zone* in the current year (although otherwise required to do so) if the plan's current provisions would be sufficient (with no further action) to allow the plan to emerge from the *Yellow Zone* within 10 years. The Trustees are required to adopt a formal Funding Improvement Plan, designed to improve the current funded percentage, and avoid a funding deficiency as of the emergence date.

Green Zone	A plan not in critical status (the *Red Zone*) nor in endangered status (the *Yellow Zone*) is classified as being in the *Green Zone.*

Early Election of Critical Status	Trustees of a *Green* or *Yellow Zone* plan that is projected to enter the *Red Zone* within the next five years must elect whether or not to enter the *Red Zone* for the current year.

Section 4: Certificate of Actuarial Valuation

SEPTEMBER 21, 2017

CERTIFICATE OF ACTUARIAL VALUATION

This is to certify that Segal Consulting, a Member of The Segal Group, Inc. (“Segal”) has prepared an actuarial valuation of the Sheet Metal Workers' National Pension Fund as of January 1, 2017 in accordance with generally accepted actuarial principles and practices. It has been prepared at the request of the Board of Trustees to assist in administering the Fund and meeting filing requirements of federal government agencies. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Trustees and may only be provided to other parties in its entirety.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

The valuation is based on the assumption that the Plan is qualified as a multiemployer plan for the year and on draft information supplied by the auditor with respect to contributions and assets and reliance on the Plan Administrator with respect to the participant data. Segal Consulting does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. To the extent we can, however, Segal does review the data for reasonableness and consistency. Based on our review of the data, we have no reason to doubt the substantial accuracy of the information on which we have based this report and we have no reason to believe there are facts or circumstances that would affect the validity of these results. Adjustments for incomplete or apparently inconsistent data were made as described in the attached *Exhibit 8*.

I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate, except as noted in *Exhibit 1*. Each prescribed assumption for the determination of Current Liability was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

Daniel V. Ciner, MAAA
Senior Vice President and Actuary
Enrolled Actuary No. 17-05773

EXHIBIT 1 - SUMMARY OF ACTUARIAL VALUATION RESULTS

The valuation was made with respect to the following data supplied to us by the Plan Administrator:

Pensioners as of the valuation date (including 8,666 beneficiaries in pay status and 34 pensioners in suspended status)		47,652
Participants inactive during year ended December 31, 2016 with vested rights (including 122 beneficiaries with rights to deferred pensions and 34 participants with unknown age)		33,149
Participants active during the year ended December 31, 2016 (including 610 participants with unknown age)		57,295
• Fully vested	43,586	
• Not vested	13,709	
Total participants		**138,096**

The actuarial factors as of the valuation date are as follows:

Normal cost, including administrative expenses		$156,390,652
Actuarial accrued liability		7,494,271,997
• Pensioners and beneficiaries[1]	$4,209,867,923	
• Inactive participants with vested rights[2]	856,439,167	
• Active participants	2,427,964,907	
Actuarial value of assets ($4,314,445,996[3] at market value as reported in draft financial statements by Calibre CPA Group)		$4,538,327,898
Unfunded actuarial accrued liability		2,955,944,099

[1] Includes liabilities for 1,121 alternate payees in pay status who are excluded from the above counts

[2] Includes liabilities for 533 alternate payees with deferred benefits who are excluded from the above counts

[3] Excludes receivable withdrawal liability payments of $15,895,957

EXHIBIT 2 - ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS

The actuarial present value of accumulated plan benefits calculated in accordance with FASB ASC 960 is shown below as of January 1, 2016 and as of January 1, 2017. In addition, the factors that affected the change between the two dates follow.

	Benefit Information Date	
	January 1, 2016	January 1, 2017
Actuarial present value of vested accumulated plan benefits:		
• Participants currently receiving payments	$4,065,913,451	$4,209,867,923
• Other vested benefits	2,813,081,617	2,922,483,657
• Total vested benefits	$6,878,995,068	$7,132,351,580
Actuarial present value of non-vested accumulated plan benefits	351,773,870	361,920,417
Total actuarial present value of accumulated plan benefits	**$7,230,768,938**	**$7,494,271,997**

Factors	Change in Actuarial Present Value of Accumulated Plan Benefits
Plan amendments*	$1,151,911
Benefits accumulated, net experience gain or loss, changes in data	210,136,153
Benefits paid	-472,378,482
Interest	524,593,477
Total	**$263,503,059**

*Increased benefit accruals due to contribution rate changes during the year.

EXHIBIT 3 - CURRENT LIABILITY[1]

The table below presents the current liability for the Plan Year beginning January 1, 2017.

Item		Amount
Retired participants and beneficiaries receiving payments		$5,979,922,947
Inactive vested participants		1,940,169,767
Active participants		
- Non-vested benefits	$860,788,369	
- Vested benefits	4,677,692,815	
- *Total active*		*$5,538,481,184*
Total		**$13,458,573,898**

Expected increase in current liability due to benefits accruing during the plan year	$374,049,835
Expected release from current liability for the plan year	495,552,731
Expected plan disbursements for the plan year, including administrative expenses of $14,600,000	510,152,731

Current value of assets	$4,314,445,996
Percentage funded for Schedule MB	32.1%

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[1] The actuarial assumptions used to calculate these values are shown in Exhibit 8.

EXHIBIT 4 - INFORMATION ON PLAN STATUS AS OF JANUARY 1, 2017

Plan status (as certified on March 31, 2017, for the 2017 zone certification)	***Endangered***
Scheduled progress (as certified on March 31, 2017, for the 2017 zone certification)	Yes
Actuarial value of assets for FSA	$4,538,327,898
Accrued liability under unit credit cost method	7,494,271,997
Funded percentage for monitoring plan's status	60.6%

EXHIBIT 5 - SCHEDULE OF PROJECTION OF EXPECTED BENEFIT PAYMENTS

(SCHEDULE MB, LINE 8b(1))

Plan Year	Expected Annual Benefit Payments[1]
2017	$495,012,177
2018	508,660,539
2019	522,807,040
2020	537,209,738
2021	551,286,757
2022	564,426,783
2023	576,996,942
2024	588,175,677
2025	598,331,691
2026	606,854,722

[1] Assuming as of the valuation date:

- no additional accruals,
- experience is in line with valuation assumptions, and
- no new entrants are covered by the plan.

EXHIBIT 6 - SCHEDULE OF ACTIVE PARTICIPANT DATA

(SCHEDULE MB, LINE 8b(2))

The participant data is for the year ended December 31, 2016.

		Pension Credits								
Age	**Total**	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	3,062	2,929	133	–	–	–	–	–	–	–
25 - 29	5,414	3,477	1,799	138	–	–	–	–	–	–
30 - 34	6,836	2,438	2,635	1,685	78	–	–	–	–	–
35 - 39	7,789	1,659	2,069	2,278	1,723	60	–	–	–	–
40 - 44	7,510	1,026	1,316	1,697	2,246	1,179	46	–	–	–
45 - 49	7,987	700	920	1,305	1,930	1,847	1,226	59	–	–
50 - 54	8,688	495	696	990	1,467	1,466	2,199	1,298	77	–
55 - 59	6,494	338	442	616	889	876	1,161	1,246	888	38
60 - 64	2,458	118	204	258	324	300	316	313	428	197
65 - 69	393	15	37	41	61	53	41	35	33	77
70 & over	54	9	5	5	10	4	7	1	3	10
Unknown	610	592	17	1	–	–	–	–	–	–
Total	**57,295**	**13,796**	**10,273**	**9,014**	**8,728**	**5,785**	**4,996**	**2,952**	**1,429**	**322**

Note: Excludes 2,390 participants with less than one year of vesting service.

EXHIBIT 7 - FUNDING STANDARD ACCOUNT

The table below presents the FSA for the Plan Year ending December 31, 2017.

Charges			Credits		
1	Prior year funding deficiency	$0	**6**	Prior year credit balance	$214,313,331
2	Normal cost, including administrative expenses	156,390,652	**7**	Amortization credits	251,211,544
3	Amortization charges	610,308,993	**8**	Interest on **6 and 7**	34,914,366
4	Interest on **1, 2 and 3**	57,502,473	**9**	Full-funding limitation credit	0
5	Total charges	$824,202,118	**10**	Total credits	$500,439,241
Minimum contribution with interest required to avoid a funding deficiency: **5 - 10**, not less than zero					$323,762,878

Full Funding Limitation (FFL) and Credits	
ERISA FFL (accrued liability FFL)	$3,816,819,733
RPA'94 override (90% current liability FFL)	8,026,796,752
FFL credit	0

Schedule MB, line 8e
Difference between minimum required contribution for the year and the minimum that would have been required without extending the amortization bases is $842,199,615.

EXHIBIT 7 - FUNDING STANDARD ACCOUNT (*CONTINUED)*

Schedule of FSA Bases (Charges) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Initial Base[1]	01/01/1989	$39,990,460	1	$39,990,460
Plan Amendment[1]	01/01/1989	14,770,976	7	84,103,666
Prior Local 137 Combined Bases[1]	01/01/1990	75,591	6	381,426
Prior Local 12 Combined Bases[1]	01/01/1990	1,227,046	1	1,227,046
Plan Amendment[1]	01/01/1990	4,751,277	8	29,916,894
Prior Local 51 Combined Bases[1]	01/01/1991	41,541	4	149,571
Prior Local 17 Combined Bases[1]	01/01/1991	411,697	4	1,482,327
Plan Amendment[1]	01/01/1991	4,891,545	9	33,542,806
Plan Amendment[1]	01/01/1992	24,338,561	10	179,591,495
Plan Amendment[1]	01/01/1993	5,201,027	11	40,901,294
Plan Amendment[1]	01/01/1994	6,086,650	12	50,613,080
Plan Amendment[1]	01/01/1995	1,519,236	13	13,270,949
Plan Amendment[1]	01/01/1996	6,412,433	14	58,518,842
Change in Assumptions[1]	01/01/1996	9,939,333	14	90,704,761
Plan Amendment[1]	01/01/1997	8,866,050	15	84,131,316
Actuarial Loss[1]	01/01/1998	5,040,097	1	5,040,097
Plan Amendment[1]	01/01/1998	2,160,881	16	21,235,241
Prior Local 38 Combined Bases[1]	01/01/1999	538,165	3	1,504,474
Plan Amendment[1]	01/01/1999	555,299	17	5,631,564
Actuarial Loss[1]	01/01/1999	5,275,115	2	10,182,198

[1] Denotes bases that were extended five years (not to exceed 30 years for the extended recognition of the 2008 investment loss) under IRC Section 431(d)(1)

EXHIBIT 7 - FUNDING STANDARD ACCOUNT (*CONTINUED)*

Schedule of FSA Bases (Charges) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Actuarial Loss[1]	01/01/2000	4,068,171	3	11,372,836
Plan Amendment[1]	01/01/2000	19,037,630	18	198,637,870
Plan Amendment[1]	01/01/2001	192,228	19	2,057,997
Actuarial Loss[1]	01/01/2001	5,338,829	4	19,222,593
Plan Amendment[1]	01/01/2002	10,255,333	20	112,388,995
Actuarial Loss[1]	01/01/2002	35,807,007	5	155,736,358
Plan Amendment[1]	01/01/2003	3,719,186	21	41,634,393
Actuarial Loss[1]	01/01/2003	60,459,486	6	305,071,606
Actuarial Loss[1]	01/01/2004	4,431,608	7	25,232,897
Plan Amendment[1]	01/01/2004	12,476,475	22	142,400,007
Actuarial Loss[1]	01/01/2005	7,680,390	8	48,360,351
Actuarial Loss[1]	01/01/2006	3,351,822	9	22,984,464
Plan Amendment[1]	01/01/2006	3,205,525	24	37,846,640
Actuarial Loss[1]	01/01/2007	4,600,188	10	33,944,265
Plan Amendment[1]	01/01/2007	3,652,210	25	43,764,306
Change in Asset Method[1]	01/01/2007	10,417,797	5	45,310,398
Change in Assumptions[1]	01/01/2007	75,824,731	25	908,605,233
Actuarial Loss[1]	01/01/2008	4,486,880	11	35,285,186
Actuarial Loss[1]	01/01/2009	2,228,556	12	18,531,385
Extended Recognition of 2008 Investment Loss[1]	01/01/2009	53,243,117	22	607,689,268

[1] Denotes bases that were extended five years (not to exceed 30 years for the extended recognition of the 2008 investment loss) under IRC Section 431(d)(1)

EXHIBIT 7 - FUNDING STANDARD ACCOUNT (*CONTINUED)*

Schedule of FSA Bases (Charges) (Schedule MB, Line 9c)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Change in Assumptions	01/01/2011	15,855,236	9	108,724,169
Extended Recognition of 2008 Investment Loss	01/01/2011	25,516,211	21	285,641,000
Plan Amendment	01/01/2012	429,327	10	3,167,957
Extended Recognition of 2008 Investment Loss	01/01/2012	5,765,101	21	64,537,369
Actuarial Loss	01/01/2012	10,376,023	10	76,563,504
Plan Amendment	01/01/2013	486,781	11	3,828,086
Change in Assumptions	01/01/2013	4,648,382	11	36,555,252
Extended Recognition of 2008 Investment Loss	01/01/2013	6,588,833	21	73,758,629
Plan Amendment	01/01/2014	285,758	12	2,376,197
Extended Recognition of 2008 Investment Loss	01/01/2014	16,044,274	21	179,607,488
Plan Amendment	01/01/2015	360,874	13	3,152,334
Actuarial Loss	01/01/2015	7,597,483	13	66,366,131
Change in Assumptions	01/01/2015	17,095,062	13	149,330,124
Plan Amendment	01/01/2016	449,715	14	4,104,029
Actuarial Loss	01/01/2016	18,446,305	14	168,338,029
Actuarial Loss	01/01/2017	13,672,087	15	129,736,534
Plan Amendment	01/01/2017	121,392	15	1,151,911
Total		**$610,308,993**		**$4,925,135,298**

EXHIBIT 7 - FUNDING STANDARD ACCOUNT (*CONTINUED)*

Schedule of FSA Bases (Credits) (Schedule MB, Line 9h)

Type of Base	Date Established	Amortization Amount	Years Remaining	Outstanding Balance
Change in Assumptions	01/01/1989	$4,851,477	3	$13,562,619
Prior Local 501 Combined Bases	01/01/1990	22,416	4	80,708
Change in Method	01/01/1991	40,285	2	77,760
Change in Assumptions	01/01/1992	11,419,593	5	49,667,537
Change in Method	01/01/1992	15,774,802	5	68,609,760
Plan Amendment	07/01/1994	13,462	13.5	120,267
Plan Amendment	01/01/1996	14,769,689	9	101,280,238
Plan Amendment	09/01/2003	21,285,335	16.67	213,687,873
Plan Amendment	01/01/2005	3,079,758	18	32,134,069
Plan Amendment	01/01/2008	2,607,010	6	13,154,673
Plan Amendment	03/01/2008	49,137,498	6.17	253,518,557
Plan Amendment	08/01/2008	27,770,774	6.58	150,723,059
Change in Asset Method (Funding Relief)	01/01/2009	18,467,501	22	210,778,465
Plan Amendment	01/01/2010	627,691	8	3,952,317
Actuarial Gain	01/01/2010	12,696,666	8	79,945,843
Extended Recognition of 2008 Investment Loss	01/01/2010	14,218,584	21	159,169,821
Plan Amendment	01/01/2011	1,357,810	9	9,310,915
Actuarial Gain	01/01/2011	30,219,651	9	207,225,317
Plan Amendment	01/01/2013	21,746	11	171,016
Actuarial Gain	01/01/2013	4,724,529	11	37,154,079
Actuarial Gain	01/01/2014	18,105,267	12	150,552,975
Total		**$251,211,544**		**$1,754,877,868**

EXHIBIT 8 - STATEMENT OF ACTUARIAL ASSUMPTIONS/METHODS

(SCHEDULE MB, LINE 6)

Mortality Rates	*Healthy Employee*: RP-2014 Blue Collar Employee Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014 *Healthy Pensioner or Beneficiary:* RP-2014 Blue Collar Healthy Annuitant Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014 *Disabled:* RP-2014 Disabled Retiree Mortality Tables (sex distinct), with ages set forward 1 year, projected generationally using Scale MP-2014 The mortality tables with ages set forward 1 year and projected with Scale MP-2014 from 2014 reasonably reflect the mortality experience of the Plan as of the measurement date. These mortality tables were then adjusted to future years using the generational projection to reflect future mortality improvement between the measurement date and those years. The mortality rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of deaths by age and liability change and the projected number and liability change based on the prior year's assumption over the most recent two years.

Termination Rates before Retirement

	Rate (%)				
	Mortality[1]		Withdrawal[3]		
Age	Male	Female	Disability[2]	Construction	Production
20	0.05	0.02	0.04	13.00	24.00
25	0.06	0.02	0.04	10.17	20.00
30	0.06	0.03	0.04	7.00	14.84
35	0.07	0.03	0.05	5.42	11.57
40	0.09	0.05	0.07	4.72	9.57
45	0.13	0.08	0.14	3.53	8.43
50	0.23	0.13	0.30	3.00	7.40
55	0.38	0.20	0.64	3.00	7.40
60	0.66	0.29	1.30	0.00	7.40

[1] Mortality rates are projected on a generational basis using Scale MP-2014. Rates above are sample rates in 2017.
[2] Participants are assumed to elect non-disability pensions upon eligibility.
[3] Withdrawal rates do not apply at or beyond early retirement age.

The termination rates and disability rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of terminations and disability retirements and the projected number based on the prior years' assumption over the most recent five years.

Retirement Rates for Active Participants

Age	Annual Retirement Rates	
	Not Eligible for 55/30 (60/30) Pension	Eligible for 55/30 (60/30) Pension*
55	5	25
56-57	5	14
58-59	7	14
60-61	14	20
62	35	40
63-69	25	35
70	100	100

*Rate at first eligibility for 55/30 (60/30, if applicable) Pension is 25% or above rate at applicable age, if higher

The retirement rates were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of retirements by age and liability change and the projected number and liability change based on the prior years' assumption over the most recent five years.

Description of Weighted Average Retirement Age

Age 61, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the January 1, 2017 actuarial valuation.

Retirement Rates for Inactive Vested Participants

Age	Annual Retirement Rates*
55-61	5
62-63	10
64	30
65	35
66-79	20
80	100

*20% of inactive participants are assumed to retire with a Special Early, or 55/30 Pension (60/30 if applicable) if expected to be eligible based on reported Funding Improvement Plan Option, and 80% are assumed to retire with a Normal or Standard Early Pension, depending upon age and service at retirement.

The retirement rates for inactive vested participants were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number retirements by age and the projected number based on the prior years' assumption over the most recent five years.

Future Benefit Accruals

For Construction employees: 1,650 hours per year

For Production employees: 1,700 hours per year

The Funding Improvement Plan Option covering each participant, based on the census data provided for this valuation, is assumed to remain unchanged.

The Applicable Percentage under the Plan's benefit formula is 1.00% for 2017 and 0.50% for 2018. For 2019 and beyond, the average expected Applicable Percentage is 0.86%.

The assumed hours used to calculate future benefit accruals were based on historical and current demographic data, adjusted to reflect estimated future experience and professional judgment. As part of the analysis, a comparison was made between the assumed and the actual benefit accruals over the most recent five years.

The average expected Applicable Percentage was determined by stochastically projecting the Plan's market investment returns after 2016. The stochastic projections were based on the long-term expected returns and volatility estimates as provided by the Plan's Investment Manager in 2017, as well as the Plan's target asset allocation.

Unknown Data for Participants

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

Definition of Active Participants	Employees with at least 435 hours in the most recent plan year and who have accumulated at least one year of vesting service, excluding those who have retired as of the valuation date.
Percent Married	80%
Age and Sex of Spouse	Spouse of male participant is assumed to be three years younger than the participant and spouse of female participant is assumed to be three years older than the participant. If the spouse's sex is not provided, the spouse is assumed to be the opposite sex of the participant.
Benefit Election	Married participants are assumed to elect the 50% joint and survivor annuity (with the "pop-up" feature if available) and non-married participants are assumed to elect the single life annuity. The benefit elections were based on historical and current demographic data, adjusted to reflect the plan design, and estimated future experience and professional judgment.
Delayed Retirement Factors	Inactive vested participants after attaining age 65, with increases up to age 80.
Net Investment Return	7.50% The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Segal Marco Advisors, and the long-term expected returns and volatility estimates as provided by the Plan's Investment Manager in 2017, as well as the Plan's target asset allocation.
Annual Administrative Expenses	$14,600,000 for the year beginning January 1, 2017 (equivalent to $14,042,160 payable at the beginning of the year) The annual administrative expenses were based on historical and current data, adjusted to reflect the budget for the upcoming year, and estimated future experience and professional judgment.
Actuarial Value of Assets	The market value of assets less unrecognized returns in prior years. Unrecognized return is equal to the difference between the actual market return and the projected market return, and is recognized 20% per year over a five-year period (10% per year over a 10-year period for the year ended December 31, 2008). The actuarial value is further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method	Unit Credit Actuarial Cost Method. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis.
Benefits Valued	Unless otherwise indicated, includes all benefits summarized in *Exhibit 9*.
Current Liability Assumptions	*Interest: 3.05%*, within the permissible range prescribed under IRC Section 431(c)(6)(E) *Mortality:* Mortality prescribed under IRS Regulations 1.431(c)(6)-1 and 1.430(h)(3)-1: RP-2000 tables projected forward to the valuation year plus seven years for annuitants and 15 years for nonannuitants
Estimated Rate of Investment Return	*On actuarial value of assets (Schedule MB, line 6g):* 5.2%, for the Plan Year ending December 31, 2016 *On current (market) value of assets (Schedule MB, line 6h):* 8.1%, for the Plan Year ending December 31, 2016

FSA Contribution Timing (Schedule MB, line 3a)	Unless otherwise noted, contributions are paid periodically throughout the year pursuant to collective bargaining agreements. The interest credited in the FSA is therefore assumed to be equivalent to a June 30 contribution date.

Justification for Change in Actuarial Assumptions (Schedule MB, line 11)	Based on past experience and future expectations, the following actuarial assumption was changed as of January 1, 2017 for funding purposes: Annual administrative expenses, previously $14,500,000, payable monthly

EXHIBIT 9 - SUMMARY OF PLAN PROVISIONS

(SCHEDULE MB, LINE 6)

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year	January 1 through December 31
Pension Credit Year	January 1 through December 31
Plan Status	Ongoing plan
Regular Pension	• *Age Requirement:* 65 • *Service Requirement:* Five years of participation in the Plan • *Amount:* Described below **For service on and after January 1, 2014:** Participant's *Benefit Rate* multiplied by the participant's *Contribution Hours* for the Plan Year multiplied by the *Applicable Percentage* for the Plan Year. *Benefit Rate* is the portion of the participant's contribution rate that is subject to benefit accruals. For Participants working under a Collective Bargaining Agreement that qualifies for a 55/30 (or 60/30) Pension, the *Benefit Rate* is the total Contribution Rate less the 55/30 (or 60/30) Rate (30% of the Contribution Rate for periods after December 1, 2007). *Contribution Hours* are the hours for which contributions are required to be made for the participant's work in Covered Employment. *Applicable Percentage* is based on the average of the Plan's rate of market value investment return for each of the three most recent Plan Years reported in the Actuarial Valuation and Review as of January 1 of the immediately preceding Plan Year and is defined in the following table:

Applicable Percentage	Average of Market Value Investment Return Percentages for 3 Most Recent Plan Years
1.25%	10.0% or higher
1.00%	8.5% or higher but less than 10.0%
0.75%	6.5% or higher but less than 8.5%
0.50%	Greater than 0% but less than 6.5%
0.00%	0% or less

The above formula applies unless otherwise stated in a Funding Improvement Plan Option.

The Applicable Percentage for the 2017 Plan Year is 1.00%.

For service and on and after adoption of Rehabilitation Plan Schedule and before January 1, 2014:

Default Schedule/Persons for Whom Contribution were Not Required to be Made ("Persons for Whom"): 1% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year.

First Alternative Schedule: Same as accrual for service on and after December 1, 2007 and before adoption of Rehabilitation Plan Schedule.

Second Alternative Schedule: 1% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year.

Formerly Alternative Schedule and Agreement Did Not Include Required Contribution Rate Increases - No Increase Consequences ("NIC"): 1% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year.

For service on and after December 1, 2007 and before adoption of Rehabilitation Plan Schedule:

Employers that have not made required contribution rate increases: Same as accrual for service after August 31, 2003.

Employers that have made required contribution rate increases: 1.5% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours for the Plan Year (up to 1,200 hours), plus 0.7% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (over 1,200 hours). The 1.5% multiplier is applied to the first 1,200 hours at the highest Benefit Rate in effect during the Plan Year.

For service after August 31, 2003 and before December 1, 2007:

0.8571% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (up to 1,400 hours), plus 0.3% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (over 1,400 hours). For participants in 55/30 Locals, 80% of the total contribution rate is subject to benefit accruals. The 0.8571% multiplier is applied to the first 1,400 hours at the highest Benefit Rate in effect during the Plan Year.

<u>Supplemental accruals</u>:
Locals are required to increase their contribution rates subject to benefit accruals by 10% annually for eligibility. Participants of Locals that make the required increases earn a supplemental accrual that brings the total accrual to twice the normal rate in the year following the increase.

For service after December 31, 1999 and before September 1, 2003:

1.7142% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (up to 1,400 hours), plus 0.6% of the amount determined by multiplying the participant's Benefit Rate by the participant's Contribution Hours (over 1,400 hours). The 1.7142% multiplier is applied to the first 1,400 hours at the highest Benefit Rate in effect during the Plan Year.

For service before January 1, 2000:

Benefit accrued according to the rules of the Plan in effect on December 31, 1999

Past Service:

$10.00 for each year of Past Service Credit, if any, up to 10 years

- *Post-Normal Retirement Age Adjustment:* Regular pension accrued at Normal Retirement Age (NRA), increased by 1.0% for each month greater than NRA, and 1.5% for each month greater than age 70.

Standard Early Retirement

- *Age Requirement:* 55
- *Service Requirement:* Fulfill any one of the following:
    a. 10 years of Pension Credits, including at least five years of Future Service Credit, or
    b. 10 years of Vesting Service, or
    c. 15 years of Pension Credits, including at least 12 months of Future Service Credit
- *Amount:* Normal Retirement benefit reduced as described below.

For benefits accrued on and after January 1, 2014:

Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option	Actuarially from age 65 (Unsubsidized Early Retirement Pension)
First Alternative Option	6% per year from age 65
Second Alternative Option	Actuarially from age 65 (Unsubsidized Early Retirement Pension)

For benefits accrued before January 1, 2014:

Reductions based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/ Persons for Whom	Actuarially from age 65 (Unsubsidized Early Retirement Pension)
First Alternative Schedule	6% per year from age 65
Second Alternative Schedule	Actuarially from age 65 (Unsubsidized Early Retirement Pension)
NIC	Actuarially from age 65 (Unsubsidized Early Retirement Pension)

Special Early Retirement

- *Age Requirement:* 55
- *Service Requirement:* Fulfill any one of the following:
  a. 10 years of Pension Credits, including at least five years of Future Service Credit, or
  b. 10 years of Vesting Service, or
  c. 15 years of Pension Credits, including at least 12 months of Future Service Credit
- *Active Service Requirement:* Complete at least 3,500 hours of work in covered employment during the five consecutive calendar years immediately preceding retirement
- *Amount:* Normal Retirement benefit reduced as described below.

For benefits accrued on and after January 1, 2014:

Reductions based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option	Unavailable
First Alternative Option	6% per year from age 62
Second Alternative Option	Unavailable

For benefits accrued before January 1, 2014:

Reductions based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/ Persons for Whom	Unavailable
First Alternative Schedule	6% per year from age 62
Second Alternative Schedule	Unavailable
NIC	Unavailable

Age 62 Pension

- *Age Requirement:* 62
- *Service Requirement:* Same as Special Early Retirement
- *Active Service Requirement:* Same as Special Early Retirement
- *Amount:* Described below

For benefits accrued on and after January 1, 2014:

Amount based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option	Unavailable
First Alternative Option	Unavailable
Second Alternative Option	Normal Retirement Benefit amount

For benefits accrued before January 1, 2014:

Amount based on the participant's Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/ Persons for Whom	Unavailable
First Alternative Schedule	Unavailable
Second Alternative Schedule	Normal Retirement Benefit amount
NIC	Normal Retirement Benefit amount

55/30 Pension

- *Age Requirement:* 55
- *Service Requirement:* 30 years of Future Service Credit with at least 60 months of the last 120 months of Future Service Credit subject to a 55/30 Rate
- *Active Service Requirement:* Complete at least 3,500 hours of work in covered employment at 55/30 Rate during the five consecutive calendar years immediately preceding retirement
- *Amount:* Described below

For benefits accrued on and after January 1, 2014:

Amount based on the participant's Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option	Unavailable
First Alternative Option	Normal Retirement benefit amount

Second Alternative Option	Unavailable

For benefits accrued before January 1, 2014:

Amount based on the participant’s Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/ Persons for Whom	Unavailable
First Alternative Schedule	Normal Retirement Benefit amount
Second Alternative Schedule	Unavailable
NIC	Unavailable

60/30 Pension

- *Age Requirement:* 60
- *Service Requirement:* Same as 55/30 Pension
- *Active Service Requirement:* Same as 55/30 Pension
- *Amount:* Described below

For benefits accrued on and after January 1, 2014:

Amount based on the participant’s Funding Improvement Plan Option, which depends upon the Schedule or Rehabilitation Plan provision which applied to the classification of employment when the Plan was in critical status.

Default Option	Unavailable
First Alternative Option	Unavailable
Second Alternative Option	Normal Retirement benefit amount

For benefits accrued before January 1, 2014:

Amount based on the participant’s Home Local Schedule (Rehabilitation Plan Schedule) when the Plan was in critical status.

Default Schedule/ Persons for Whom	Unavailable
First Alternative Schedule	Unavailable
Second Alternative Schedule	Normal Retirement benefit amount
NIC	Unavailable

Full Disability

- *Age Requirement:* Under age 55
- *Service Requirement:* 10 years of Credited Service, including at least five years of Future Service Credit

	• Active Service Requirement: Worked at least 435 hours in the 24-month period immediately preceding the date of disablement • *Other Requirement:* Approved for disability benefit with the Social Security Administration or Railroad Retirement Board • *Amount:* Early Retirement benefit amount, payable beginning in the seventh month of disability • Charge for Coverage: None *The Disability Benefit is not payable for participants categorized as Persons for Whom when the Plan was in critical status unless all eligibility conditions had been satisfied before January 1, 2010.*
Vesting	• *Age Requirement:* None • *Service Requirement:* Five years of Vesting Service • *Amount:* Normal Retirement benefit amount, based on plan in effect when last active • *Normal Retirement Age:* 65
Spouse's Pre-Retirement Death Benefit	• *Eligibility Requirement: Has attained Vested Status* • *Amount:* 50% of the monthly benefit the participant would have received had he/she terminated employment on his/her date of death and survived to his/her Early Retirement Date (or any later date elected by the spouse), retired and elected to receive benefits in the Normal Form of payment. • *When Paid:* Immediately if participant's death occurred after attainment of his/her earliest retirement age, otherwise month in which the participant would have attained his/her earliest retirement age. If surviving spouse elects to receive payments before the month in which participant would have attained his/her earliest retirement age, the monthly benefit will be the actuarial equivalent of the amount described above.
Pre-Retirement Lump-sum Death Benefit	• *Eligibility:* Date of death after December 31, 2007; has attained Vested Status; no portion of the benefit assigned to an Alternative Payee under a QDRO; and worked at least 435 hours within 24-month period preceding death • *Amount:* $5,000
Post-Retirement Death Benefit	*50% Joint and Survivor:* If married, pension benefits are paid in the form of a 50% joint and survivor annuity unless the participant and spouse reject this form. If not rejected, the benefit amount otherwise payable is reduced to reflect the joint and survivor coverage. If not rejected, the spouse predeceases the employee, and the employee retired on March 1, 1999 or later, the employee's benefit amount will subsequently be increased to the unreduced amount payable ("pop-up" feature) had the joint and survivor coverage been rejected. If rejected, or if not married, benefits are payable for the life of the employee, or in any other available optional form elected by the employee in an actuarially equivalent amount. The "pop-up" feature is only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. It is only

	applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option. *60-Month Certain:* If the member has completed at least 15 years of Pension Credits before retirement and died within 5 years after retirement (if married, and taking joint and survivor pension, the spouse also died prior to receiving an amount equal to 60 times the amount of the pension the participant had been entitled), the pension benefit will continue to be paid to the participant's designated beneficiary until a total of 60 months payments had been made. The 60-month certain is only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. It is only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.
Forms of Payment	The normal forms of payment are: • Single life annuity for single participants, and • 50% joint and survivor annuity with a "pop-up" feature for married participants (if applicable) The available optional forms of payment are: • Single life annuity with 60-month certain (if applicable) • 50% joint and survivor annuity with a "pop-up" feature and 60-month certain (if applicable) • 75% joint and survivor annuity with a "pop-up" feature (if applicable) • 100% joint and survivor annuity with and without a "pop-up" feature (if applicable) The ”pop-up" feature and 60-month certain are only applicable to pre-2014 benefits if the participant's Home Local Schedule/Rehabilitation Plan Schedule as of December 31, 2013 was the First Alternative Schedule or Second Alternative Schedule. They are only applicable to post-2013 benefits attributable to Contribution Hours worked under a collective bargaining agreement satisfying the required contribution rate increases under the Rehabilitation Plan First Alternative Schedule/Funding Improvement Plan First Alternative Option or Rehabilitation Plan Second Alternative Schedule/Funding Improvement Plan Second Alternative Option.
Participation	After completion of 870 hours during a calendar year
Past Service Credit	Service granted on the basis of days worked or amount earned in covered employment in calendar years prior to a participant's Contribution Date. For employers with a Contribution Date on or after January 1, 2000, the employer's initial contribution rate must be at least $0.50 per hour.

Future Service Credit	Service granted on the basis of hours of work in a calendar year after a Participant's Contribution Date in accordance with the following schedule:

Months of Future Service Credit	Hours of Work in Covered Employment During Calendar Year
0	Less than 100
1	100 - 199
2	200 - 299
3	300 - 399
4	400 - 499
5	500 - 599
6	600 - 699
7	700 - 799
8	800 - 899
9	900 - 999
10	1,000 - 1,099
11	1,100 - 1,199
12	1,200 & Over

Pension Credit	Sum of the Past Service Credit and Future Service Credit (excluding service lost under the Plan's break in service rules)
Vesting Service	870 or more hours of work within a Plan year earns one year of Vesting Service
Contribution Rate	Varies from $0.05 to $17.18 per hour as of the valuation date. The average rate is $5.09 per hour as of January 1, 2017. 2.5% of employer contributions are allocated to 401(h) Medical Accounts but are subject to pension benefit accruals.
Required Contribution Increases	Prior year and future contribution rate increases required under the Funding Improvement Plan Options are described below. *First Alternative Option:* 7.0% for 2016 and 2017 Plan Years *Second Alternative Option:* 3.5% for 2016 and 2017 Plan Years The increases effective after the valuation date are recognized in a future valuation as adopted in each contract.

Cost of Living Adjustment (COLA)	- *Eligibility:* Pensioners and beneficiaries whose benefits are based on contribution rates that were increased by the Required Pension Fund Increase and who separated and retired from Covered Employment on or after January 1, 1991 and before December 1, 2001. No payment is made after January 1, 2008 unless the annual supplement had been in effect 60 months before that date (i.e., the benefit must have been payable on the participant's Allocation Date for 2002 – October 31, 2002). - *Amount:* An annual supplement equal to 2% of the participant's total monthly payments for the 12 months immediately preceding the Allocation Date, multiplied by the number of whole years preceding the Allocation Date that the participant or beneficiary has received benefits, up to a maximum of 15 years. If the participant had elected a level income option, the 2% factor is applied to the benefit prior to the adjustment for the form of payment. *Effective July 1, 1995, no NPF COLA Benefit is payable with respect to any benefits accrued after June 30, 1995.* *A participant who was retired and received an annual supplemental increase under the NPF COLA Benefit for the 2002 Allocation Date will continue to receive the benefit, but it will not exceed the supplement that was paid for the 2002 Allocation Date (i.e., it remains fixed at that amount)*
Changes in Plan Provisions	Contribution rates increased in accordance with the Funding Improvement Plan. Since benefit accruals are tied directly to contribution rates, the contribution rate increases are treated as a Plan change. The average contribution rate increased from $4.85 per hour as of January 1, 2016 to $5.09 per hour as of January 1, 2017.

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