

Philadelphia Gas Works Pension Plan - Funding

Actuarial Valuation Report for the Plan Year
July 1, 2015 – June 30, 2016



July 6, 2015

Philadelphia Gas Works
1800 N. Ninth Street
Philadelphia, PA 19122

We have been retained by Philadelphia Gas Works to perform the actuarial valuation of the Philadelphia Gas Works Pension Plan as of July 1, 2015. This report sets forth the contribution range for the Plan Year, running from July 1, 2015 through June 30, 2016. The valuation is based on data sent to us by Philadelphia Gas Works, the Plan as described in the official Plan document, the assets of the Plan as reported by Philadelphia Gas Works, and the stated actuarial assumptions.

The purposes of the actuarial valuation are:

1. To determine the financial condition of the Plan and the contribution requirements for the Plan year;
2. To provide information to be used in the preparation of any required governmental forms;
3. To provide information for use in satisfying the requirements of your auditors;
4. To provide actuarial certification of the adequacy and appropriateness of the cost method and assumptions used for your Plan; and
5. To provide comments on the developing experience under your Plan, the need for changes in the Plan or funding, and other areas of concern to you. In this respect, the actuarial valuation report becomes an essential source of information for discussions throughout the year on the Pension Plan.



In our opinion, this report is complete and accurate, and the actuarial assumptions and methods, in the aggregate, are reasonably related to the experience of the Plan and represent our best estimate of future Plan experience as it should be considered for proper funding of your pension obligations. It is also our opinion that each of the actuarial assumptions and methods utilized in this valuation are reasonable (taking into account the experience of the plan and reasonable expectations) or, in the aggregate, result in total contribution equivalents that would be determined if each assumption and method were reasonable.

Aon Hewitt is pleased to submit this report of the Pension Plan to you, and will also be pleased to discuss any aspects of the report with you after you have had a chance to review it.

Respectfully submitted,

A handwritten signature in black ink that reads "Thomas Vicente".

Thomas G. Vicente, FSA, EA
Partner

Enrollment #14-05034

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A. Comparative Summary of Principal Valuation Results

	Actuarial Valuation for Plan Year Beginning		<i>Percent Change</i>
	<u>July 1, 2015</u>	<u>September 1, 2014</u>	
1. <u>Participant Data</u>			
Active Participants	1,274	1,391	(8.4) %
Retired Participants	2,199	2,027	8.5 %
Vested Terminated Participants	327	316	3.5 %
Total	3,800	3,734	1.8 %
Total Payroll	95,186,942	105,635,842	(9.9) %
Average Pay	74,715	75,942	(1.6) %
Average Age	44.25	46.08	(4.0) %
Average Past Service	15.49	17.83	(13.1) %

During the period September 1, 2014 through June 30, 2015 PGW experienced significant changes in its workforce. During this time there were over 180 active pension plan participants who moved into retirement. This activity is more than double the number of retirements experienced by PGW in a normal year.

Over the period there were 90 new entrants to the plan, replacing a portion of the group that had retired or otherwise terminated. As a result of the pension choice election available to new employees, not all new hires go into the pension plan. Accordingly, there is some attrition in the pension plan participation levels. This will result in a gradual decline in the number of covered active employees and the covered payroll levels.

A. Comparative Summary of Principal Valuation Results (cont.)

	Actuarial Valuation for Plan Year Beginning		Percent Change
	<u>July 1, 2015</u>	<u>September 1, 2014</u>	
1. <u>Contribution Range</u>			
Normal Cost (<i>Exhibit D</i>)	\$ 7,858,658	\$ 8,572,809	(8.3) %
Indicated Midyear -			
10 Year Contribution (<i>Exhibit E</i>)	\$ 35,239,600	\$ 27,395,002	28.6 %
20 Year Contribution (<i>Exhibit E</i>)	\$ 26,475,652	\$ 21,525,928	23.0 %
30 Year Contribution (<i>Exhibit E</i>)	\$ 24,019,697	N/A	N/A
20 Year Contribution as Percentage of Compensation	\$ 27.81%	\$ 20.38%	36.7 %

The Normal Cost above represents the cost of benefits being earned by additional years of service with PGW. This figure has declined since the previous year as a result in the reduction in the number of active employees.

The contribution levels are the sum of the Normal Cost and a level dollar amortization of the unfunded actuarial liability. The contribution amounts have increased over the prior period (20 year basis) for several reasons:

- a) Demographic losses: The changes in the plan census differed from that set by the plan assumptions. For this year, that is largely attributable to the number of retirees who left and commenced benefits earlier than had been expected under the ongoing assumptions. In total this deviation from the expected raised plan liabilities by about 1%. This increased the contribution level by \$1,007,000 (1% of pay)
- b) Discount rate change: The discount rate was changed to 7.65% for the 2015 valuation from the 7.95% rate used the prior year. This increased the measurement of plan liabilities by about 3%. The contribution increased by \$1,875,000 (2% of pay) as a result of this change.
- c) Investment returns: The investment return for the period ending June 30, 2015 was approximately \$15,200,000. Based on the 7.95% assumption in place on September 1, 2014, a return of \$33,700,000 would have been expected over this period. This creates an actuarial loss due to investment returns that increases the annual contribution by \$\$1,917,000 (2% of pay).
- d) Mortality table changes: In late 2014 the Society of Actuaries published a new mortality table and a new scale for projections of future mortality improvements. The new tables recognize longer life spans for workers and retirees. This leads to an increase in the measurement of plan liabilities. Using the new table increased plan liabilities by about \$22,000,000 (3%). This added approximately \$2,106,000 to the contribution schedule (2% of pay).

A. Comparative Summary of Principal Valuation Results (cont.)

	Actuarial Valuation for Plan Year Beginning		Percent Change
	<u>July 1, 2015</u>	<u>September 1, 2014</u>	
1. <u>Liabilities</u>			
Unfunded Accrued Actuarial Liability (Exhibit E)	\$ 191,416,633	\$ 129,043,741	48.3 %
Present Value of Accumulated Vested Benefits (Exhibit F)	\$ 630,269,500	\$ 558,054,974	12.9 %
Present Value of Accumulated Plan Benefits (Exhibit F)	\$ 659,922,176	\$ 591,107,159	11.6 %
2. <u>Development of Actuarial Liability</u>			
(1) Liability at September 1, 2014		\$ 643,988,054	
(2a) Normal Cost	\$ 7,376,714		
(2b) Interest Cost	\$ 41,636,583		
(2c) Expected Benefit Payments	\$ (38,253,019)		
(2d) Total Increase/(Decrease)	10,760,278		
(3) Expected Liability at 6/30/2015		\$ 654,748,332	
(3a) Demographic (Gain)/Loss	\$ 10,227,225		
(3b) Death Benefit (Gain)/Loss	\$ 73,055		
(3c) Discount Rate (Gain)/Loss	\$ 19,598,406		
(3d) Mortality (Gain)/Loss	\$ 22,006,750		
(3e) Total (Gain)/Loss	51,955,436		
(4) Actual Liability at July 1, 2015		\$ 706,703,768	

A. Comparative Summary of Principal Valuation Results (cont.)

	Actuarial Valuation for Plan Year Beginning		<u>Percent Change</u>
	<u>July 1, 2015</u>	<u>September 1, 2014</u>	
1. <u>Assets</u>			
Actuarial Asset Value (<i>Exhibit C</i>)	\$ 515,287,136	\$ 514,944,313	0.1%

Plan assets are invested in a mix of stocks and bonds held by the Sinking Fund Commission. The long term asset allocation strategy is an equity allocation of 65% of the portfolio and a fixed income allocation of 35% of the portfolio. The investment return for the period from September 1, 2014 through June 30, 2015 was approximately 2.95%. This represented an under performance of plan investments versus the actuarial assumption of 7.95% for the period (changing to 7.65% beginning July 1, 2015), but not necessarily an underperformance versus independent investment benchmarks. Review of performance against those benchmarks is outside the scope of this report.

Overall, the combination of plan investment returns and employer and employee contributions to the plan were approximately equal to the benefit and expense payouts from the plan, resulting in a small increase in plan asset levels (0.1%).

B. Discussion

Since the last actuarial valuation performed as of September 1, 2014, the demographics of the plan participants has changed as follows:

- The number of plan participants has increased 1.8%
- Total payroll has decreased 9.9%
- Average pay has decreased 1.6%
- Average age of active plan participants decreased 4.0%

The potential sale of PGW to a private sector entity is at least partially responsible for the uptick in the number of employees opting to retire during the past year. This one year experience is believed to be attributable largely to those outside influences and is not expected to be repeated in future years. The additional retirement levels create an actuarial loss because of the actuarial subsidies the plan provides when employees elect to retire on an earlier basis. This is partially offset by the loss of pension growth these employees would have received had they continued to work at PGW.

The restating of the assumptions around the discount rate and longevity tables also created an increase in plan liabilities that translates to an increase in the contribution rate (on a 20 year amortization basis). This year a contribution schedule using a 30 year amortization of the unfunded liability was added to the range of potential contribution levels. The 30 year amortization base established this year will not be reset in future years but will continue to be amortized on a "closed" basis. To the extent future experience differs from expected experience, new amortization bases attributable to that year's difference would be established and amortized over its own 30 year schedule. Ultimately, this could result in the "30 Year Contribution" being larger than the "20 Year Contribution". The timing of such a switch would depend on the level and direction of any experience mismatches to assumptions.

All three contribution schedules are expected to gradually improve the funded status of the plan.

In the future, it is uncertain as to whether there will be changes in the discount rate level. This rate is set based on prevailing capital market expectations and asset allocation policy. To provide a measure of sensitivity to future discount rate changes below are the estimated changes in the 20 year contribution rate for a range of discount rates:

Discount rate	8.65%	6.65%
Impact on contribution (\$)	\$6,600,000	(\$6,000,000)
Impact on contribution (%)	7% of pay	(6%) of pay

C. Financial Summary

Assets as of September 1, 2014 \$ 514,944,313

Receipts

Employer Contribution	24,619,352	
Employee Contribution	345,857	
Investment return *	15,171,532	
Total Receipts		\$ 40,136,741

Disbursements

Refund of Contributions	27,995	
Benefit Payments	39,619,352	
Administrative Expenses	146,571	
Total Disbursements		\$ 39,793,918

Assets as of July 1, 2015 \$ 515,287,136

Asset Information as of July 1, 2015

<u>Asset Allocations</u>	<u>Current Allocation</u>	<u>Target Allocation</u>
Equity	67.89%	65.00%
Total Fixed Income	31.54%	35.00%
Other	0.57%	0.00%

<u>Annual Rate of Return</u>	<u>Market Value</u>	<u>Assumed Rate</u>
Rate	2.95%	7.65%

**Net of any additional fund expenses not included in Administrative Expenses under Disbursements*

1. Asset information as reported by the City of Philadelphia.

D. Summary of Valuation Results

	<u>Retired</u>	<u>Vested Terminated</u>	<u>Active</u>	<u>Total</u>
1 Number of Participants Included in the Valuation	2,199	327	1,274	3,800
2 Projected Annual Benefits	\$ 50,186,483	\$ 3,747,358	\$ 128,005,183	\$ 181,939,024
3 Present Value of Projected Benefits as of July 1, 2015	\$ 502,054,773	\$ 14,399,979	\$ 276,488,270	\$ 792,943,022
4 Present Value of Future Normal Costs	\$ _____ -	\$ _____ -	\$ 86,239,253	\$ 86,239,253
5 Accrued Actuarial Liability as of July 1, 2015: (3)-(4)	\$ 502,054,773	\$ 14,399,979	\$ 190,249,017	\$ 706,703,769
6 Actuarial Asset Value				\$ 515,287,136
7 Unfunded Accrued Actuarial Liability: (5)-(6)				\$ 191,416,633
8 Normal Cost Payable on July 1, 2015				\$ 8,355,250
9 Expected Employee Contributions				\$ 496,592
9 Net Employer Normal Cost (8)-(9)				\$ 7,858,658

E. Contribution Levels

Ten Year Amortization

1.	Contribution for Normal Cost					\$ 7,858,658
2.	Amortization Schedule					
	<u>Effective Date</u>	<u>Amortization Period</u>	<u>Initial Amount</u>	<u>Unfunded Accrued Actuarial Liability</u>	<u>Annual Payment</u>	
	7/1/2015	10	\$191,416,633	\$ 191,416,633	\$ 26,082,686	\$ 26,082,686
3.	Contributions July 1, 2015: (1) + (2)					\$ 33,941,344
4.	Contributions Mid-year (3) x 1.03825					\$ 35,239,600
5.	Contributions June 30, 2016: (3) x 1.0765					\$ 36,537,857

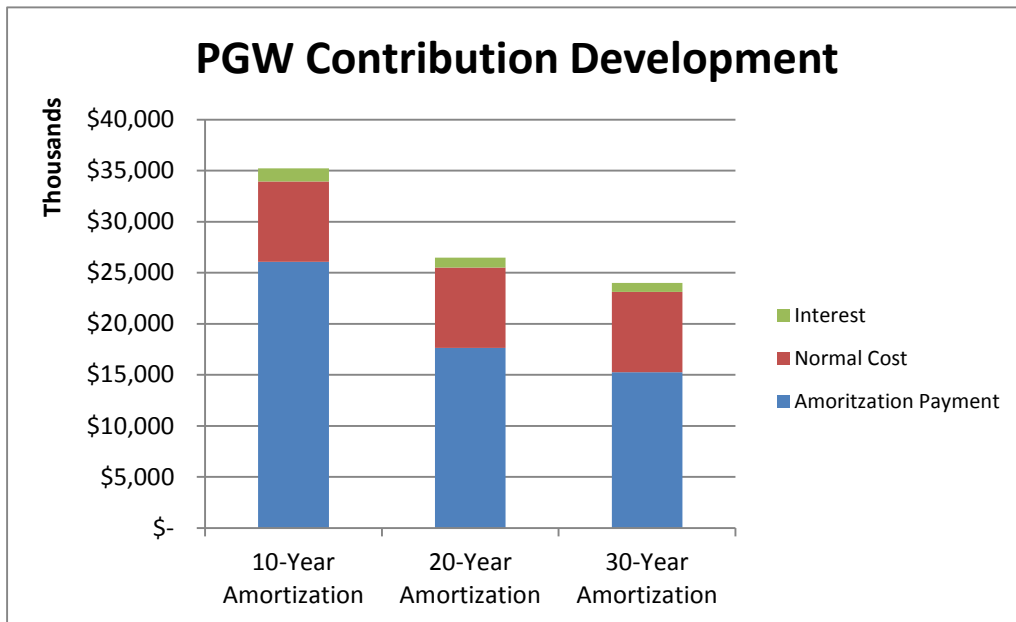
Twenty Year Amortization

1.	Contribution for Normal Cost					\$ 7,858,658
2.	Amortization Schedule					
	<u>Effective Date</u>	<u>Amortization Period</u>	<u>Initial Amount</u>	<u>Unfunded Accrued Actuarial Liability</u>	<u>Annual Payment</u>	
	7/1/2015	20	\$191,416,633	\$ 191,416,633	\$ 17,641,609	\$ 17,641,609
3.	Contributions July 1, 2015: (1) + (2)					\$ 25,500,267
4.	Contributions Mid-year (3) x 1.03825					\$ 26,475,652
5.	Contributions June 30, 2016: (3) x 1.0765					\$ 27,451,037

E. Contribution Levels (cont.)

Thirty Year Amortization

1.	Contribution for Normal Cost					\$ 7,858,658
2.	Amortization Schedule					
	<u>Effective Date</u>	<u>Amortization Period</u>	<u>Initial Amount</u>	<u>Unfunded Accrued Actuarial Liability</u>	<u>Annual Payment</u>	
	7/1/2015	30	\$191,416,633	\$ 191,416,633	\$ 15,276,133	\$ 15,276,133
3.	Contributions July 1, 2015: (1) + (2)					\$ 23,134,791
4.	Contributions Mid-year (3) x 1.03825					\$ 24,019,697
5.	Contributions June 30, 2016: (3) x 1.0765					\$ 24,904,603



F. Actuarial Present Value of Accumulated Benefits Determined

Accounting Standards Codification Topic 960

	<u>July 1, 2015</u>	<u>September 1, 2014</u>
1. Actuarial Present Value of Accumulated Vested Benefits		
Participants currently receiving		
a. benefits	\$ 502,054,773	\$ 405,070,484
b. Vested terminated participants	\$ 14,399,979	\$ 12,230,532
c. Active Participants	<u>\$ 113,814,748</u>	<u>\$ 140,753,958</u>
d. Total	\$ 630,269,500	\$ 558,054,974
2. Actuarial Present Value of Accumulated Non-Vested Benefits	\$ 29,652,676	\$ 33,052,185
3. Total Actuarial Present Value of Accumulated Plan Benefits: (1d) + (2)	\$ 659,922,176	\$ 591,107,159
4. Net Assets Available for Benefits (Actuarial Value, Exhibit C)	\$ 515,287,136	\$ 514,944,313
5. Excess (deficiency) of Net Assets Available for Benefits over (under) Actuarial Present Value of Accumulated Plan Benefits: (4) - (3)	\$ (144,635,040)	\$ (76,162,846)
6. Active Participant Count		
a. 100% Vested	1,003	1,140
b. Partially Vested	0	0
c. Non-Vested	271	251

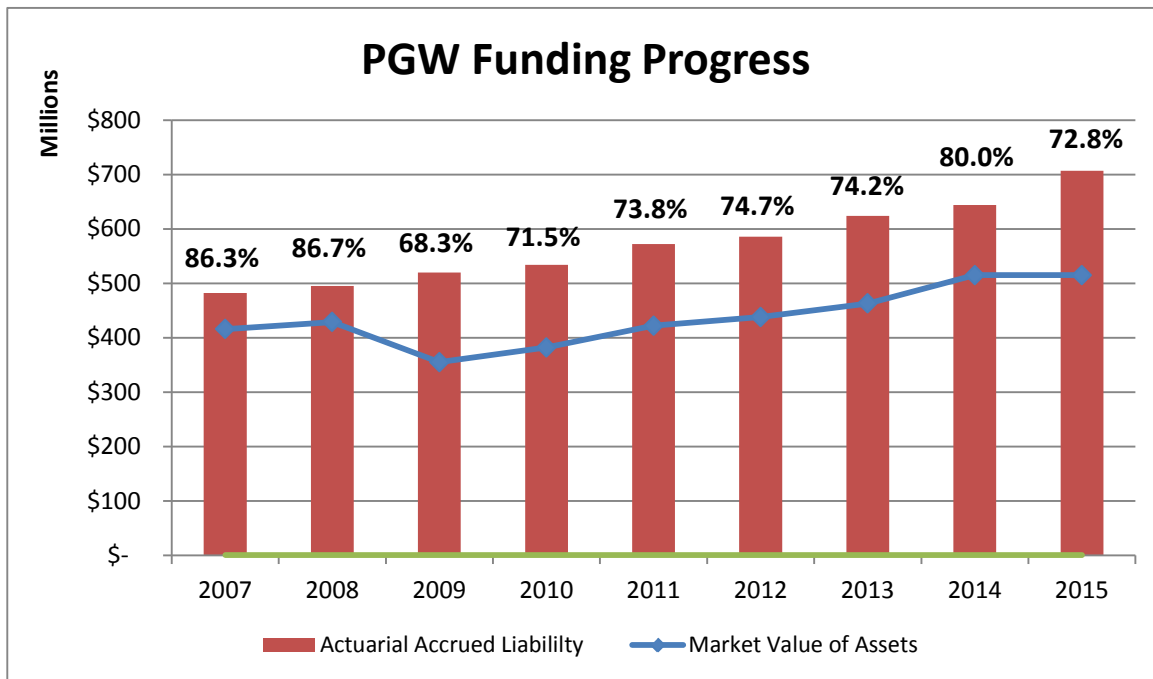
G. Estimated 10-Year Benefit Pay-Out Projections

Plan Year Beginning July 1	Expected Annual Benefit Pay-Out During Plan Year
2015	\$ 51,471,949
2016	\$ 52,269,604
2017	\$ 53,249,720
2018	\$ 54,448,703
2019	\$ 55,687,940
2020	\$ 57,036,667
2021	\$ 58,336,636
2022	\$ 59,677,138
2023	\$ 60,999,452
2024	\$ 62,240,313

Note: The above projected pay-outs recognized expected mortality, termination, and incidence of disability and assume all benefits will commence at Assumed Retirement Date. No assumption has been made regarding possible retirements prior to Assumed Retirement Date or anticipation of new entrants.

H. Schedule of Funding Progress

Actuarial Valuation Date	Market Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
9/1/2007	\$ 416,183	\$ 482,380	\$ 66,197	86.28%	\$ 102,958	64.30%
9/1/2008	429,170	495,155	65,985	86.67%	106,047	62.22%
9/1/2009	355,499	519,773	164,274	68.40%	108,474	151.44%
9/1/2010	381,975	533,630	151,655	71.58%	111,728	135.74%
9/1/2011	421,949	572,190	150,241	73.74%	103,737	144.83%
9/1/2012	437,780	585,632	147,852	74.75%	107,494	137.54%
9/1/2013	462,691	623,612	160,921	74.20%	103,530	155.43%
9/1/2014	514,944	643,988	129,044	79.96%	105,636	122.16%
7/1/2015	515,287	706,704	191,417	72.91%	95,187	201.10%



Notes:

Covered payroll was assumed to increase by 3% in years when the full valuation was not done.

Asset Values estimated for years when this full valuation was not done.

I. Calculation of Annual Pension Cost

I. Calculation of Annual Pension Cost (10 Year Open Amortization)

Actuarial Valuation Date	Unfunded Actuarial Accrued Liability	Amortization Payment	Normal Cost	Employee Contribution	Mid-year Contribution
9/1/2007	66,197	\$ 9,216	\$ 8,085	\$ -	\$ 18,015
9/1/2008	65,985	9,212	8,125	-	18,052
9/1/2009	164,274	22,872	8,292	-	32,450
9/1/2010	151,655	22,660	8,333	-	32,271
9/1/2011	150,241	21,379	8,171	-	30,769
9/1/2012	147,852	21,312	8,782	137	31,193
9/1/2013	160,921	22,166	8,533	207	31,704
9/1/2014	129,044	17,775	8,852	279	27,395
7/1/2015	191,417	26,803	7,859	497	35,240

I-2. Calculation of Annual Pension Cost (20 Year Open Amortization)

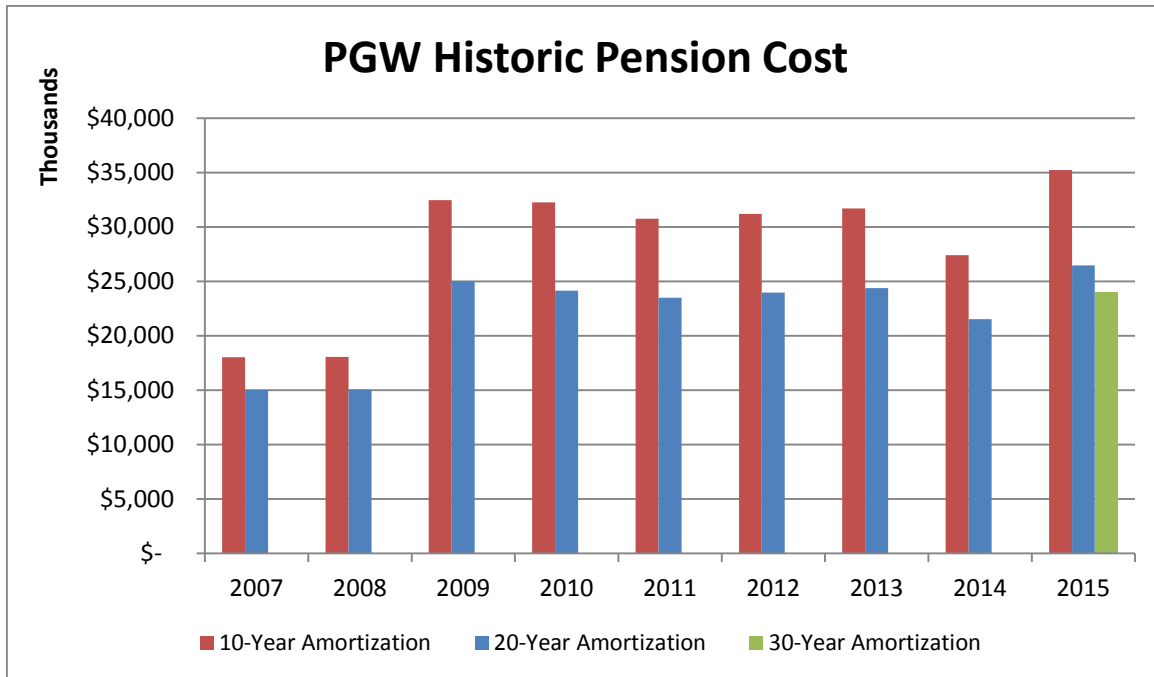
Actuarial Valuation Date	Unfunded Actuarial Accrued Liability	Amortization Payment	Normal Cost	Employee Contribution	Mid-year Contribution
9/1/2007	66,197	\$ 6,345	\$ 8,085	\$ -	\$ 15,025
9/1/2008	65,985	6,342	8,125	-	15,064
9/1/2009	164,274	15,745	8,292	-	25,029
9/1/2010	151,655	14,851	8,333	-	24,140
9/1/2011	150,241	14,400	8,171	-	23,502
9/1/2012	147,852	14,357	8,782	137	23,951
9/1/2013	160,921	15,127	8,533	207	24,385
9/1/2014	129,044	12,130	8,852	279	21,526
7/1/2015	191,417	17,642	7,859	497	26,476

Employee contributions estimated based on census data.

I. Calculation of Annual Pension Cost (cont.)

I-3. Calculation of Annual Pension Cost (30 Year Closed Amortization)

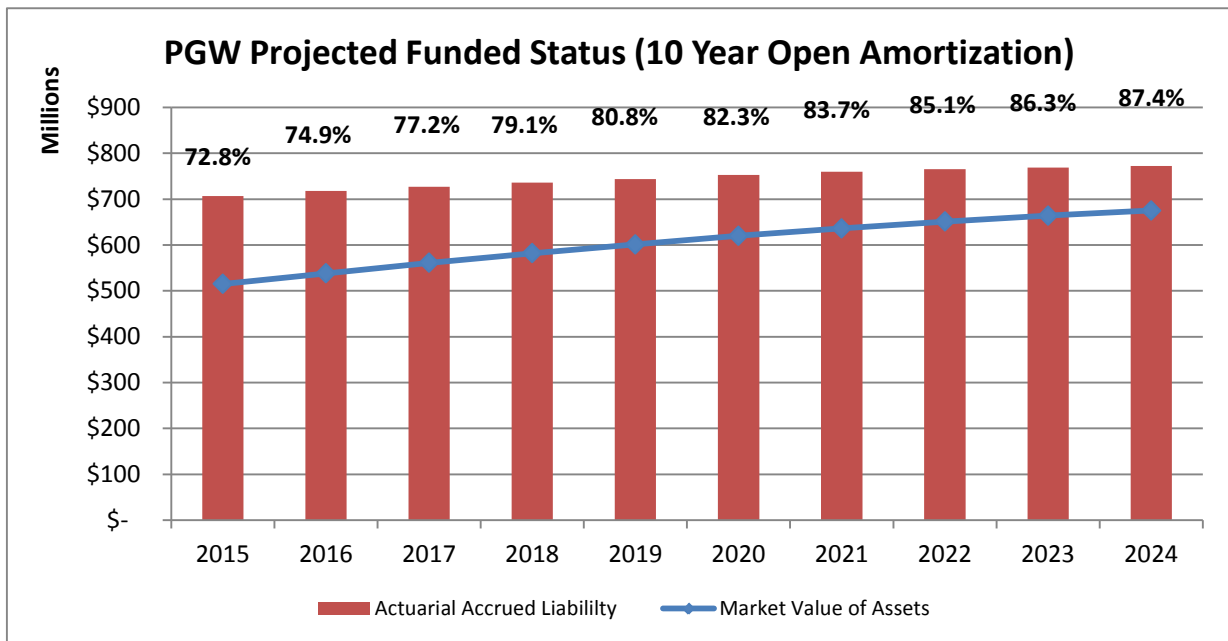
Actuarial Valuation Date	Unfunded Actuarial Accrued Liability	Amortization Payment	Normal Cost	Employee Contribution	Mid-year Contribution
9/1/2007	66,197	\$ 6,345	\$ 8,085	\$ -	N/A
9/1/2008	65,985	6,342	8,125	-	N/A
9/1/2009	164,274	15,745	8,292	-	N/A
9/1/2010	151,655	14,851	8,333	-	N/A
9/1/2011	150,241	14,400	8,171	-	N/A
9/1/2012	147,852	14,357	8,782	137	N/A
9/1/2013	160,921	15,127	8,533	207	N/A
9/1/2014	129,044	12,130	8,852	279	N/A
7/1/2015	191,417	15,276	7,859	497	24,020



J. Schedule of Prospective Funded Status

J. Schedule of Prospective Funded Status (10 Year Open Amortization)

Actuarial Valuation Date	Market Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Mid-Year Contribution	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
7/1/2015	\$ 515,287	\$ 706,704	\$ 191,417	\$ 35,240	72.91%	\$ 95,187	201.10%
7/1/2016	538,369	717,666	179,297	33,469	75.02%	99,470	180.25%
7/1/2017	560,589	727,092	166,503	31,693	77.10%	103,946	160.18%
7/1/2018	581,706	735,975	154,268	29,839	79.04%	108,624	142.02%
7/1/2019	601,341	744,361	143,020	28,188	80.79%	113,512	126.00%
7/1/2020	619,551	752,606	133,055	26,588	82.32%	118,620	112.17%
7/1/2021	636,167	759,992	123,825	24,951	83.71%	123,958	99.89%
7/1/2022	651,101	765,489	114,388	23,289	85.06%	129,536	88.31%
7/1/2023	664,173	769,438	105,265	21,686	86.32%	135,365	77.76%
7/1/2024	675,322	772,467	97,146	19,869	87.42%	141,456	68.68%



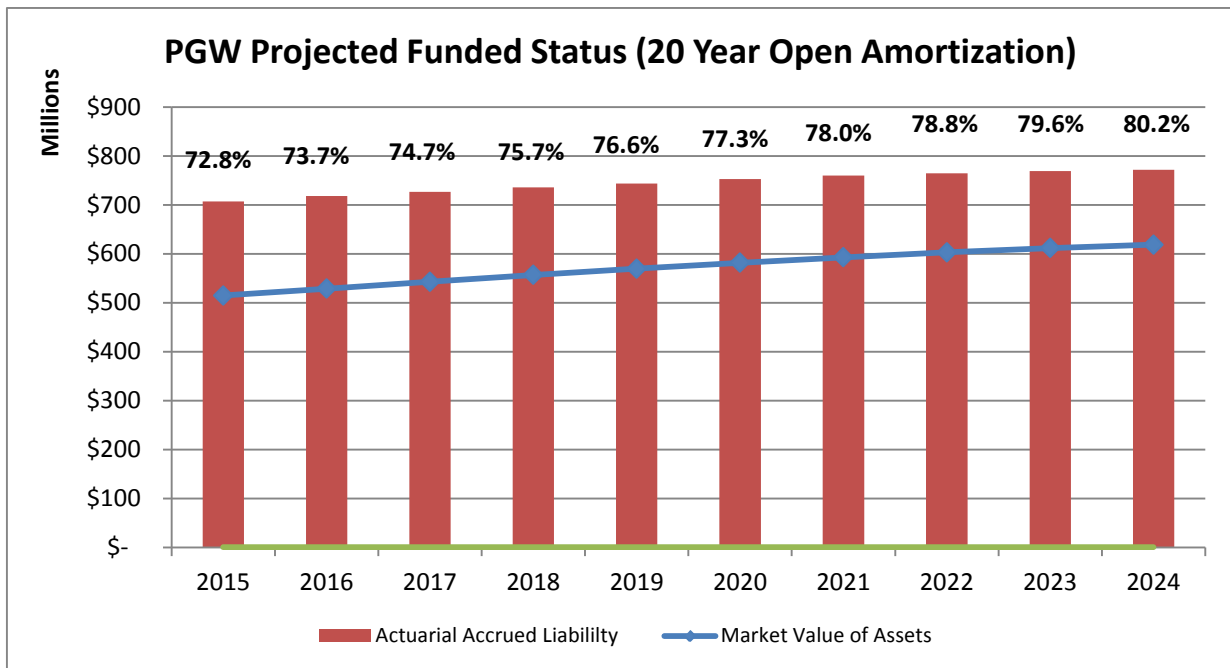
Investment returns assumed to be 7.65% per year.

Covered payroll projected to increase by 4.5% per year.

J. Schedule of Prospective Funded Status (cont.)

J-2. Schedule of Prospective Funded Status (20 Year Open Amortization)

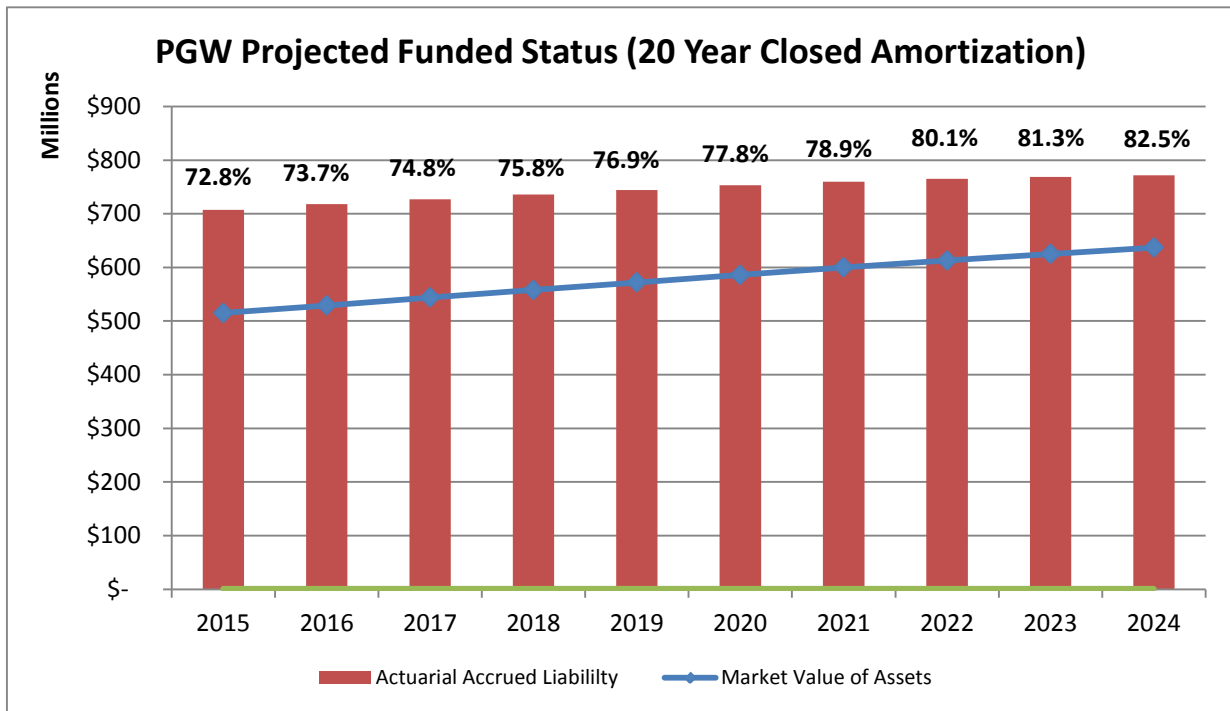
Actuarial Valuation Date	Market Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Mid-Year Contribution	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
7/1/2015	\$ 515,287	\$ 706,704	\$ 191,417	\$ 26,476	72.91%	\$ 95,187	201.10%
7/1/2016	529,269	717,666	188,396	26,131	73.75%	99,470	189.40%
7/1/2017	543,175	727,092	183,917	25,735	74.71%	103,946	176.94%
7/1/2018	556,774	735,975	179,200	25,162	75.65%	108,624	164.97%
7/1/2019	569,645	744,361	174,716	24,672	76.53%	113,512	153.92%
7/1/2020	581,781	752,606	170,826	24,111	77.30%	118,620	144.01%
7/1/2021	592,936	759,992	167,056	23,418	78.02%	123,958	134.77%
7/1/2022	602,971	765,489	162,518	22,657	78.77%	129,536	125.46%
7/1/2023	611,704	769,438	157,734	21,887	79.50%	135,365	116.52%
7/1/2024	619,048	772,467	153,419	20,807	80.14%	141,456	108.46%



J. Schedule of Prospective Funded Status (cont.)

J-3. Schedule of Prospective Funded Status (20 Year Closed Amortization)

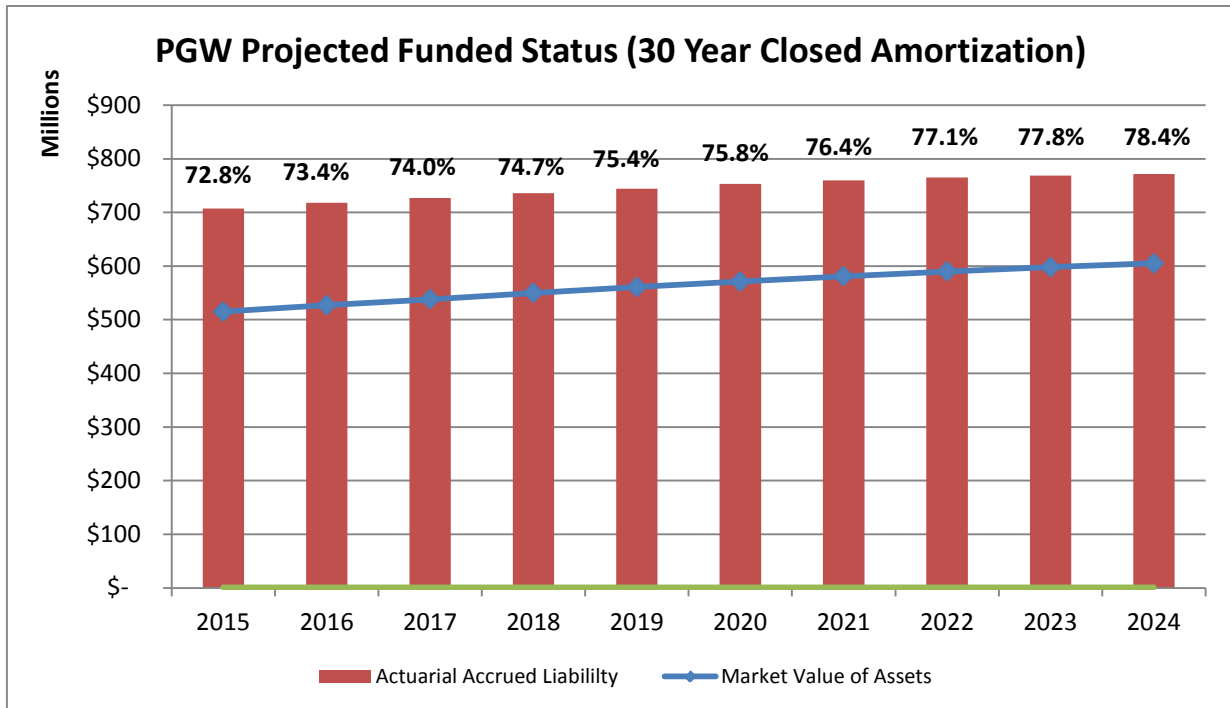
Actuarial Valuation Date	Market Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Mid-Year Contribution	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
7/1/2015	\$ 515,287	\$ 706,704	\$ 191,417	\$ 26,476	72.91%	\$ 95,187	201.10%
7/1/2016	529,269	717,666	188,396	26,551	73.75%	99,470	189.40%
7/1/2017	543,611	727,092	183,481	26,563	74.77%	103,946	176.52%
7/1/2018	558,103	735,975	177,871	26,384	75.83%	108,624	163.75%
7/1/2019	572,345	744,361	172,016	26,280	76.89%	113,512	151.54%
7/1/2020	586,356	752,606	166,250	26,099	77.91%	118,620	140.15%
7/1/2021	599,925	759,992	160,067	25,780	78.94%	123,958	129.13%
7/1/2022	612,948	765,489	152,542	25,364	80.07%	129,536	117.76%
7/1/2023	625,255	769,438	144,183	24,913	81.26%	135,365	106.51%
7/1/2024	636,777	772,467	135,691	24,148	82.43%	141,456	95.92%



J. Schedule of Prospective Funded Status (cont.)

J-4. Schedule of Prospective Funded Status (30 Year Closed Amortization)

Actuarial Valuation Date	Market Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Mid-Year Contribution	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
7/1/2015	\$ 515,287	\$ 706,704	\$ 191,417	\$ 24,020	72.91%	\$ 95,187	201.10%
7/1/2016	526,719	717,666	190,946	24,075	73.39%	99,470	191.96%
7/1/2017	538,295	727,092	188,797	24,092	74.03%	103,946	181.63%
7/1/2018	549,816	735,975	186,159	23,923	74.71%	108,624	171.38%
7/1/2019	560,868	744,361	183,493	23,828	75.35%	113,512	161.65%
7/1/2020	571,455	752,606	181,151	23,645	75.93%	118,620	152.72%
7/1/2021	581,337	759,992	178,655	23,323	76.49%	123,958	144.13%
7/1/2022	590,386	765,489	175,103	22,929	77.13%	129,536	135.18%
7/1/2023	598,439	769,438	170,999	22,517	77.78%	135,365	126.32%
7/1/2024	605,422	772,467	167,045	21,780	78.38%	141,456	118.09%



K. Distribution of Inactive Participants by Age and Years of Retirement

1. Retirees

Years of Retirement as of July 1, 2015									
Age	0-4	5-9	10-14	15-19	20-24	25+	Total	Annual Benefits	
								Total	Average
15-44	2	-	-	-	-	-	2	\$ 28,597	\$ 14,299
45-49	6	-	-	-	-	-	6	138,187	23,031
50-54	68	15	4	-	-	1	88	2,785,962	31,659
55-59	256	66	13	4	1	2	342	10,465,968	30,602
60-64	179	123	88	16	5	-	411	11,229,882	27,323
65-69	77	115	111	30	34	4	371	9,175,199	24,731
70-74	33	35	47	35	78	1	229	4,815,679	21,029
75-79	27	8	24	36	96	10	201	4,090,861	20,353
80-84	24	18	19	21	75	58	215	3,488,009	16,223
85-89	23	19	14	20	27	100	203	2,702,453	13,313
90+	9	12	13	9	7	81	131	1,265,686	9,662
Total	704	411	333	171	323	257	2199	\$ 50,186,483	\$ 22,822
<i>Average Age: 70.62 Average Retirement Years: 11.83</i>									

2. Vested Terminated

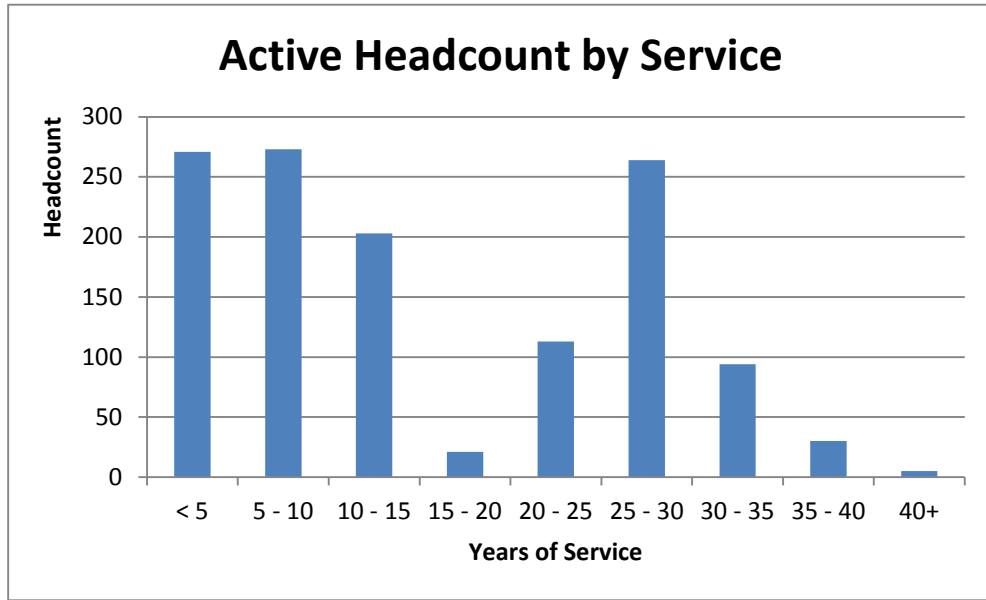
Age	Number	Annual Benefit	
		Total	Average
15-44	86	\$ 638,127	\$ 7,420
45-49	71	859,833	12,110
50-54	111	1,448,517	13,050
55-59	42	613,901	14,617
60-64	14	171,667	12,262
65+	3	15,313	5,104
Total	327	\$ 3,747,358	\$ 11,460

L. Distribution of Active Participants by Age and Service

(Showing Number of Employees and Average Earnings)

Completed Years of Service as of July 1, 2015													
Age	< 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total	Earnings	
												Total	Average
15-19	2 38769	- -	- -	- -	- -	- -	- -	- -	- -	- -	2 38769	77,539	38,769
20-24	19 35360	18 58878	3 72734	- -	- -	- -	- -	- -	- -	- -	40 48746	1,949,847	48,746
25-29	27 33521	74 61728	75 69742	- -	- -	- -	- -	- -	- -	- -	176 60816	10,703,568	60,816
30-34	16 40108	28 66503	72 69708	40 78063	- -	- -	- -	- -	- -	- -	156 68239	10,645,306	68,239
35-39	4 30248	16 68148	31 76858	38 78528	1 41913	- -	- -	- -	- -	- -	90 73555	6,619,940	73,555
40-44	9 37350	22 63723	28 71450	41 78033	- -	18 85611	2 84504	- -	- -	- -	120 72067	8,647,998	72,067
45-49	4 44605	8 64708	24 72793	32 77224	5 90778	32 83007	74 83001	9 92726	- -	- -	188 79792	15,000,968	79,792
50-54	3 41247	8 60063	20 69197	25 73177	5 99219	33 81569	112 85221	35 83649	4 97944	- -	245 81101	19,869,774	81,101
55-59	4 34758	4 53028	9 65648	16 70983	4 85172	22 83074	63 88467	46 87640	17 11423	1 99747	186 85199	15,846,968	85,199
60-64	1 28795	3 40517	8 73016	7 78123	3 174395	6 63555	13 76628	4 80405	8 99634	3 99717	56 82140	4,599,843	82,140
65-69	- -	1 34275	2 127328	3 68542	3 81240	2 73679	- -	- -	1 81041	1 75479	13 80166	1,042,152	80,166
70+	- -	- -	1 101820	1 81219	- -	- -	- -	- -	- -	- -	2 91520	183,039	91,520
Total	89 36217	182 62352	273 71478	203 76729	21 100079	113 81817	264 84945	94 86333	30 105470	5 94876	1274 74715	95,186,942	74,715
Average Age: 44.25											Average Service: 15.49		

L. Distribution of Active Participants by Age and Service Service (cont.)



<u>Service</u>	<u>Active Headcount</u>
< 5	271
5 - 10	273
10 - 15	203
15 - 20	21
20 - 25	113
25 - 30	264
30 - 35	94
35 - 40	30
40+	5
Total	1,274

M. Data Reconciliation

	Actives	Term Vested	Retiree*	Total
1. Participants as of 9/1/14	1,403	316	2,027	3,746
a. New Hires	90	0	0	90
b. Return from Retirement	0	0	0	0
c. Retirements	(183)	(8)	191	0
d. Surviving Spouses	0	0	0	0
e. Terminations	(18)	18	0	0
f. Nonvested Terminations	(14)	0	0	(14)
g. Deaths w/ Beneficiary	0	0	(26)	(26)
h. New Beneficiary	0	0	26	26
i. Deaths w/o Beneficiary	(4)	0	(46)	(50)
j. Data Corrections	0	1	0	1
k. New QDRO	<u>0</u>	<u>0</u>	<u>27</u>	<u>27</u>
l. Total Increase / (Decrease)	(129)	11	172	54
2. Actual Participants as of 6/30/15	1,274	327	2,199	3,800

**Includes Surviving Spouses and Alternate Payees*

N. Actuarial Methods and Assumptions

1. *Cost Methods*

The cost method used is the Projected Unit Credit Cost method. Each year the projected benefits of each participant are estimated and their present value determined. The normal cost for each active participant is determined by dividing this present value by service from entry into the plan to assumed retirement age. The total normal cost is equal to the sum of individual normal costs.

The accrued actuarial liability for each active participant is equal to the normal cost multiplied by service since entry to valuation date. The accrued actuarial liability for inactive participants is equal to the present value of their benefits. The total accrued actuarial liability is equal to the sum of the individual accrued actuarial liabilities.

The Unfunded Accrued Actuarial Liability as of any date is equal to the accrued actuarial liability less the actuarial value of assets as of such date.

Each year actuarial gains and losses occur since actual experience under the Plan will vary from the actuarial assumptions. All gains and losses will be amortized in future years.

2. *Asset Valuation Technique*

The Actuarial Asset Value is equal to the value of fund assets as reported by the City of Philadelphia with no adjustments.

3. Actuarial Assumptions

(Unless otherwise specified, the same assumptions have been used for the determination of the Contribution Range and Accumulated Plan Benefits)

- a. Mortality: Healthy Lives: RP-2014 mortality table generationally projected with Scale MP-2014:

**Percentage of Healthy Participants
Expected to Die in the Next Year**

<u>Age</u>	<u>Males</u>	<u>Females</u>	<u>Age</u>	<u>Males</u>	<u>Females</u>
20	.0563%	.0193%	45	.1219%	.0815%
25	.0615%	.0212%	50	.2087%	.1381%
30	.0601%	.0269%	55	.3412%	.2097%
35	.0668%	.0357%	60	.5652%	.3009%
40	.0803%	.0492%	65	.9734%	.8539%

Disabled Lives: Disabled mortality rates are used for anticipated future disablements and current disabled lives. Sample percentages are as follows:

**Percentage of Disabled Participants
Expected to Die in the Next Year**

<u>Age</u>	<u>Males</u>	<u>Females</u>	<u>Age</u>	<u>Males</u>	<u>Females</u>
20	2.4583%	0.9650%	45	4.3033%	2.3988%
25	2.7457%	1.1974%	50	4.8004%	2.7961%
30	3.0661%	1.4843%	55	5.3120%	3.2594%
35	3.4184%	1.7654%	60	5.8118%	3.7993%
40	3.8373%	2.0579%	65	6.3669%	4.4287%

- b. Interest: 7.65%, compounded annually.

- c. Turnover: A scale varying by age and service with illustrative annual rates of turnover as follows:

Age	<u>Years of Service</u>					
	0	1	2	3	4	5
20	23.2%	17.4%	14.4%	11.6%	8.8%	5.8%
25	18.8%	14.0%	11.8%	9.4%	7.0%	4.6%
30	14.8%	11.0%	9.2%	7.4%	5.6%	3.6%
35	11.2%	8.4%	7.0%	5.6%	4.2%	2.8%
40	8.8%	6.6%	5.6%	4.4%	3.4%	2.2%
45	7.2%	5.4%	4.6%	3.6%	2.8%	1.8%
50	5.2%	3.8%	3.2%	2.6%	2.0%	1.2%
55	0	0	0	0	0	0

- d. Disability A scale varying by age with illustrative annual rates of disability as follows:

Percentage of Participants Expected to Become Disabled in the Next Year

<u>Age</u>	<u>Percentage</u>
30	0.0600%
35	0.0700
40	0.1100
45	0.2200
50	0.4600
55	1.0200
60	1.6200

- e. Salary Increase

Determination of Contribution Range Salaries are assumed to increase by an amount equal to 4.5% of the salary for the current year.

Accumulated Plan Benefits Past salaries are discounted at the same rate as described above. Future salaries are assumed to remain at the same level as on the valuation date.

f. Retirement Age Retirements are assumed to occur at the following ages:

<u>Age</u>	<u>Service</u> <u>< 30</u>	<u>Service</u> <u>> 30</u>	<u>Age</u>	<u>Service</u> <u>< 30</u>	<u>Service</u> <u>> 30</u>
55	10%	15%	63	25%	50%
56	10%	15%	64	25%	50%
57	10%	15%	65	50%	50%
58	10%	15%	66	50%	50%
59	10%	15%	67	50%	50%
60	10%	15%	68	50%	50%
61	10%	30%	69	50%	50%
62	25%	50%	70+	100%	100%

g. Salary Current year salary is assumed to be the greater of the annualized 2015 Taxable Gross Wages based on actual wages through June 30, 2015 and the annual pay rate as provided by Philadelphia Gas Works.

4. *Change in Actuarial Assumptions*

The mortality table was changed from the RP-2000 IRS PPA @ 2014 Mortality Tables for Males and Females to the RP-2014 mortality table generationally projected with Scale MP-2014 to better reflect actual and future mortality experience.

The discount rate was changed from 7.95% to 7.65%.

O. Summary of the Principal Plan Provisions

Any ambiguities or questionable provisions of this summary should be resolved by reference to the official Plan Document. This summary is not intended to be a source document, but merely an instrument of convenience for the administration of the Plan.

1. **Effective Date:** March 24, 1967, most recently amended as of June 26, 2002.
2. **Eligibility:** Full-time employees hired prior to March 24, 1967 who will have completed 15 years of Credited Service at normal retirement occurring prior to January 1, 1979 or 5 years Credited Service at normal retirement occurring on or after January 1, 1979 became participants on March 24, 1967. Employees hired on or after March 24, 1967 will become participants on their date of employment. A full-time employee is one who works regularly for 20 or more hours each week. Employees hired on or after January 1 of the valuation year are excluded from the valuation.
3. **Contribution:** Philadelphia Gas Works pays the entire cost of the Plan for all employees hired prior to May 21, 2011. Union employees hired on or after May 21, 2011 and Non-Union employees hired on or after December 21, 2011 have the option to participate in the Philadelphia Gas Works Pension Plan and contribute 6% of applicable wages to the Plan, or they may elect to participate in the 401(a) Plan with Philadelphia Gas Works contributing 5.5% of applicable wages.
4. **Credited Service:** Years and months of service credited prior to March 24, 1967 and years and months of continuous service thereafter; continuous service is reduced for periods of approved unpaid leaves (except for military leave) in excess of one month. Layoff periods are also excluded and, if in excess of one year, when approved, the employee is considered terminated.
5. **Final Average Compensation:** Average of the five highest consecutive calendar years' earnings during the last 10 years of Credited Service. Compensation includes overtime, bonus, shift differential, and any other special compensation. Per the amendment approved on November 14, 1986, compensation includes amounts deferred under the PGW Employees' Deferred Compensation Plan.
6. **Retirement Dates**
 - a. **Normal Retirement:** First of the month next following attainment of age 65 and completion of 5 years of Credited Service.
 - b. **Early Retirement:** First of any month after attaining age 55 and completing 15 years of Credited Service, or after completing 30 years of credited service.
 - c. **Late Retirement:** First of any month after Normal Retirement up to age 70.
 - d. **Disability Retirement:** If permanently disabled and has attained age 45 and completed at least 15 years of Credited Service, provided age plus years of Credited Service equals at least 65. Or after completion of at least 20 years of Credited Service regardless of age, upon recommendation of the Medical Director of the Company.

7. Benefit Formula

- a. Normal Retirement: The monthly equivalent of the greater of (i) or (ii) below, payable for life.
 - i. 1.25% of the first \$6,600 of Final Average Earnings plus 1.75% of the excess of Final Average Earnings over \$6,600, times Credited Service; maximum of 60% of the highest annual earnings during any one of the last 10 years of Credited Service; applicable to all participants.
 - ii. 2% of total earnings received during period of Credited Service plus 22.5% of the first \$1,200 of such amount; applicable only to participants who were employees on or prior to March 24, 1967.
 - b. Early Retirement: Same as 7(a) above, based upon Final Average Earnings and Credited Service as of the early retirement date and reduced by the percentage described in 8 below depending upon Credited Service as of the early retirement date.
 - c. Late Retirement: Same as Normal Retirement Benefit based on Final Average Compensation and Credited Service as of Late Retirement Date.
 - d. Disability Retirement: Same as Normal Retirement Benefit, based on Final Average Compensation and Credited Service as of date of disability.
8. Benefits Upon Termination of Employment - Vesting: All participants who terminate after having completed at least 5 years of Credited Service are entitled to a benefit as described in 7(a) above, based upon Final Average Compensation and Credited Service as of the date of termination.

Early Commencement of Payments: A former participant who is entitled to a deferred benefit may elect to have his benefit commence on the first day of any month between his 55th and 65th birthdays. Such benefit will be reduced by 3% for each of the first 5 years and 5% for each of the next 5 years by which commencement of payments precedes age 65. If the participant has completed 25 years of Credited Service, his benefit will be unreduced for the first 3 years and reduced by 3% for each of the next 2 years and by 5% for the following 5 years by which commencement of payments precedes age 65.

If a participant has completed 30 or more years of credited service, payments are not reduced.

9. Death Benefits

- a. Before Retirement: Spouses of deceased active participants or of former participants are entitled to vested benefits, provided such participants died after having attained age 45 and completed at least 15 years of Credited Service and whose age plus years of Credited Service equals at least 65 years or who have completed at least 15 years of Credited Service regardless of age.

The benefit payable is an amount for the spouse's remaining lifetime equal to the amount the beneficiary of the participant would have received had the participant retired due to disability on the day preceding his death and elected the 100% Contingent Annuitant Option.

- b. After Retirement: None except as provided by election of an optional form.

10. Normal Form of Benefits: Life annuity

11. Optional Benefit Forms: 100%, 75%, or 50% Contingent Annuitant option, 75% or 50% Joint and Last Survivor option.