

Charter Township of Independence
Other Post-Employment Benefits

Actuarial Valuation
as of December 31, 2015

Submitted by:
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Executive Center 1
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October, 2016

October 13, 2016

Ms. Wendy Hillman, Finance Director
Charter Township of Independence
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Ms. Thomas:

This Report presents the December 31, 2015 actuarial valuation results for the Charter Township of Independence (the "Township") Other Post-Employment Benefit Plan (the "Plan"). The purposes of this report are to:

- (1) Determine the Township's December 31, 2015 actuarial OPEB obligation;
- (2) Determine the Township's OPEB accrual for Governmental Accounting Standards Board (GASB) Statements 43 and 45, and establish the basis for GASB 74 implementation.
- (3) Provide information that may be helpful in future planning for Plan.

A summary of the major results is shown in the Executive Summary, while the Principal Valuation Results section provides more detail. The Accounting Information section summarizes GASB Other Post-Employment Benefits accounting treatment including the Annual Required Contribution and Net OPEB Obligation/(Asset). Information on Plan provisions and retiree participation was provided by the Township.

The actuarial costs and liabilities shown herein are based on the data and Plan provisions provided by the Township, as summarized in the Demographic Information and Plan Provisions Sections, respectively, and the funding method and actuarial assumptions outlined in the Methods and Assumptions Section of this report.

To the best of our knowledge, this report is complete and accurate and conforms to generally accepted actuarial principles and methodology. This report is intended for the sole use of the addressee. It is intended only to supply sufficient information for the Township to comply with the stated purposes of the report, and may not be appropriate for other business purposes.

The first undersigned is a member of the American Academy of Actuaries, and is qualified to render the actuarial opinions herein.

Respectfully submitted,



Gregory M Stump, FSA, EA, MAAA, FCA
Chief Actuary & Vice President



Marshal Banks
Senior Consultant

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EXECUTIVE SUMMARY

The Township provides healthcare insurance benefits to retirees and their dependents. A portion of the cost is paid by the Township for retirees who qualify based on years of service at retirement, and the terms of their respective collective bargaining agreements.

The following table summarizes the valuation results. These results have been calculated based on assumptions relating to demographic and healthcare experience, as well as return on invested assets.

The following is a comparative summary of the key valuation results.

	December 31, 2014	December 31, 2015
Present Value of Projected Benefits (PVPB)	\$ 10,318,596	\$ 8,795,198
Actuarial Accrued Liability (AAL)	9,566,925	8,196,399
Actuarial Value of Assets (AVA)	5,168,411	5,146,315
Unfunded Actuarial Accrued Liability (UAAL)	4,398,514	3,050,084
Annual Required Contribution (ARC)	539,715	402,566
Funding Ratio (AVA/AAL)	54.0%	62.8%

There have been several changes since the December 31, 2014 valuation, impacting the figures above. The net impact of the following was a decrease in plan cost. This was primarily the result of recent changes made to plan provisions. More information on these changes can be found in the Plan Provisions section of this Report.

PRINCIPAL VALUATION RESULTS

This section presents detailed valuation results for the Township's OPEB.

- The Present Value of Projected Benefits (PVPB) is the total present value of all expected future benefits to be paid to current participants, based on a set of actuarial assumptions. The PVPB is a measure of total liability or obligation, including benefits to be accrued in the future. Essentially, the PVPB is the value (on the valuation date) of the benefits promised to current and future retirees. The Plan's total PVPB (at December 31, 2015) is approximately \$8.8 million.
- The Actuarial Accrued Liability (AAL) is the obligation for benefits earned through the valuation date, based on certain actuarial methods and assumptions. The Plan's total AAL (at December 31, 2015) is approximately \$8.2 million.
- The Normal Cost (at December 31, 2015) is the value of benefits expected to be earned during the year by active employees, again based on certain actuarial methods and assumptions. The total Normal Cost is \$79,891.

The AAL and Normal Cost shown below were developed using the Entry Age actuarial cost method and a discount rate of 7.50%.

	December 31, 2014	December 31, 2015
Actuarial Accrued Liability (AAL)		
Actives	\$ 4,555,415	\$ 3,344,455
Retirees	5,011,510	4,851,944
Total	\$ 9,566,925	\$8,196,399
Plan Assets	5,168,411	\$5,146,315
Unfunded AAL	4,398,514	3,050,084
Normal Cost	\$ 98,156	\$79,891

ACCOUNTING INFORMATION

The following shows the Township's Annual Required Contribution (ARC), Annual OPEB Cost (AOC), and Net OPEB Obligation.

Annual Required Contribution (ARC) and Annual OPEB Cost (AOC)

The method for determining the Township's OPEB cost includes both the value of benefits deemed to be earned during the year (Normal Cost) and an amortization of the Unfunded Actuarial Accrued Liability (UAAL). Accordingly, the following table shows the Township's ARC based on a closed-period amortization of the UAAL, with 22 years remaining as of December 31, 2015¹.

	As of December 31, 2014	As of December 31, 2015
Normal Cost	\$ 98,156	\$ 79,891
UAAL Amortization	403,904	294,590
Total Cost, beginning of year	502,060	374,480
Adjustment for contribution timing (end of year)	37,655	28,086
Total Cost, end of year	\$ 539,715	\$ 402,566

The following illustrates the Township's Annual OPEB Cost, which is equal to the ARC plus adjustments due to the prior year's Net OPEB Obligation/(Asset).

	Fiscal Year 2016
ARC	\$ 402,566
Interest on Net OPEB Obligation/(Asset) (NOO/A)	(30,047)
Adjustment to ARC	36,789
Annual OPEB Cost (AOC)	\$ 409,308

¹ Amortization is computed separately for each unit, as shown in the Appendix.

Schedule of Employer Contributions

Fiscal Year Ending	Annual Required Contribution (ARC)	Amount Contributed	Percent Contributed
12/31/2011	\$ 584,077	\$ 357,916	63%
12/31/2012	448,749	673,124	150%
12/31/2013	448,749	610,299	136%
12/31/2014	448,749	456,893	102%
12/31/2015	539,715	569,565	104%
12/31/2016	402,566	To Be Determined	
12/31/2017	402,566		

Schedule of Funding Progress

Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (b - a) / (c)
12/31/2008	\$ 1,906,147	\$ 7,536,207	\$ 5,630,060	25.3%	\$5,478,060	96%
12/31/2011	3,601,908	7,307,273	3,705,365	49.3%	4,659,233	103%
12/31/2014	5,168,411	9,566,925	4,398,514	54.0%	4,112,265	107%
12/31/2015	5,146,315	8,196,399	3,050,084	62.8%	3,271,959	93%

PAYOUT PROJECTION

Annual benefit payments expected, based on current population and assumptions detailed in the Methods and Assumptions section. Payments include the Township's share of the retiree premiums as well as the amount of any implicit subsidy for pre-Medicare retirees.

Year	Expected Benefits
2016	\$425,646
2017	461,892
2018	499,127
2019	531,121
2020	560,178
2021	621,197
2022	606,238
2023	530,033
2024	592,005
2025	582,689

PLAN ASSET INFORMATION

**Reconciliation of Market Value of Assets
Year Ended December 31, 2015**

Net Assets as of January 1, 2015*	\$5,818,275
Contributions:	
Employer	\$385,400
<u>Contributions to Trust Fund</u>	<u>\$188,040</u>
Total	\$573,440
Investment Income	(80,950)
Deductions:	
Total Premiums Paid	381,525
<u>Administrative Costs (Admin fee less "Asset Tier Discount")</u>	<u>15,028</u>
Total	396,553
Change in Net Position	95,937
Net Assets as of December 31, 2015, prior to Payable adjustment	\$5,914,212
Payable Amount for Library Transfer	(\$767,897)
Net Assets available for benefits as of December 31, 2015	\$5,146,315

* does not reflect adjustment for Library transfer as of 12/31/2014 as shown in actuarial report.

Allocation among groups is shown in the Appendix herein.

DEMOGRAPHIC SUMMARY

The following Table summarizes active and retiree demographic information.

	Number of Participants, 12/31/2014				Number of Participants, 12/31/2015			
	AFSME	Fire	All Others	Total	AFSME	Fire	All Others	Total
Active Employees	26	23	14	63	20	28	6	54
Retirees	3	12	17	32	8	11	19	38
Total	29	35	31	95	28	39	25	92

	12/31/2014				12/31/2015			
	AFSME	Fire	All Others	Total	AFSME	Fire	All Others	Total
Average Age								
Active	50.5	46.0	52.5	49.3	50.5	43.0	51.6	46.7
Retired	68.1	64.1	71.6	68.4	70.2	60.7	70.6	67.8
Average Service (for active)	16.5	17.1	15.3	16.5	18.7	13.3	16.8	15.6

SUMMARY OF PLAN PROVISIONS

PLAN PARTICIPANTS

Employees of the Charter Township of Independence are eligible to receive retiree health care benefits.

NORMAL RETIREMENT BENEFITS

Normal retirement eligibility conditions for retiree health care benefits are as follows:

EARLY RETIREMENT BENEFITS

Members retiring from MERS under early retirement conditions are not eligible for retiree health care.

DEFERRED RETIREMENT BENEFITS

There are no deferred retirement eligibility conditions for retiree health care benefits.

DUTY DEATH-IN-SERVICE RETIREMENT BENEFITS

Duty Death retirement eligibility conditions for retiree health care benefits are addressed only for the Fire Fighters in the Union and are as follows:

Health Care Benefit Eligibility Conditions

IAFF employees only, without any age or years of service conditions.

Health Care Benefit Provided by Plan

Spouse and all dependents: Township pays 100% of base coverage for a period of five (5) years after the date of death, except that coverage shall no longer apply if the spouse remarries or becomes eligible for insurance from another source.

NON-DUTY DEATH-IN-SERVICE RETIREMENT BENEFITS

Non-Duty Death retiree healthcare benefits are not offered.

DUTY DISABLED RETIREMENT BENEFITS

Duty Disability retirement eligibility conditions for retiree health care benefits are addressed only for members of the Fire Fighters union and are as follows:

Health Care Benefit Eligibility Conditions

IAFF employees only, without any age or years of service conditions.

Health Care Benefit Provided by Plan

Spouse and all dependents: In the event of a line of duty disability, spouse and dependents shall have 100% of the employee, spouses, and dependents health insurance premiums paid. This

provision shall not apply if the employee begins working for another employer, and eligible through that employer for health care coverage.

NON-DUTY DISABILITY RETIREMENT BENEFITS

Non-Duty Disability retiree health care benefits are not offered.

NON-MEDICARE AND MEDICARE-ELIGIBLE PROVISIONS

Retirees are required to enroll in Medicare once eligible. Retiree pays Medicare Parts A and B premiums.

DENTAL, VISION AND LIFE INSURANCE

Retirees are not eligible for retiree dental, vision or life insurance through the Township.

RETIREE OPT-OUT PROVISION

Retirees choosing not to take health care through the Township are not eligible for compensation.

NON-UNION EMPLOYEES HIRED ON OR BEFORE JUNE 5, 2007

Health Care Benefit Eligibility Conditions and Benefits

Non-Union and AFSCME Employees Hired Prior to 6/5/2007, Retired Prior to 1/1/2016			
Age at Retirement	Years of Service	Retiree	Spouse
60+ (Non-Union Only)	15+	100%	50%
60+	25+	100%	100%
65+	20+	100%	100%

Non-Union and AFSCME Employees Hired Prior to 6/5/2007, Retired after to 1/1/2016*			
Age at Retirement	Years of Service	Retiree	Spouse
60+	15+	80%	70%
60+	25+	80%	80%
65+	20	80%	80%

*Employees retired on or after January 1, 2016 shall pay 20% of the premium cost to a max of \$250/month.

NON-UNION EMPLOYEES HIRED AFTER JUNE 5, 2007

No coverage is provided through this plan.

AFSCME UNION EMPLOYEES HIRED ON OR BEFORE JUNE 5, 2007

Health Care Benefit Eligibility Conditions

Same as Non-Union

Health Care Benefit Provided by Plan Member and Spouse

Same as Non-Union

AFSCME UNION EMPLOYEES HIRED AFTER JUNE 5, 2007

No coverage is provided through this plan.

INDEPENDENCE PROFESSIONAL FIRE FIGHTERS ASSOCIATION

Health Care Benefit Eligibility Conditions

At age 55 with 20 years of service

Health Care Benefit Provided by Plan

Employees who retire on or before January 31, 2016 shall have their full health care insurance premiums paid by the Township.

Employees who retire on or after February 1, 2016 shall pay any amount of the annual premium over the established hard-cap, for provided health insurance, regardless of the plan, up to a maximum \$250 per month.

Employee Contributions

The Township will deduct an amount equal to one percent (1%) from the base wage of the full driver engineer base wage, from all employees, which shall be used to offset the cost of health insurance premiums for retiree's spouse and dependents.

CHANGES IN PLAN PROVISIONS

There have been several changes in Plan provisions since the prior valuation, including the following:

1. The eligibility and benefits payable to the Non-Union and AFSCME changed for the current retirees and employees retiring after 1/1/2016.
2. The benefits payable to the Firefighters retiring after 2/1/2016 changed.

ACTUARIAL METHODS AND ASSUMPTIONS

Methods and Assumptions

Valuation Methodology and Terminology	GASB Statement 45 accounting methodology to determine the post-retirement medical benefit obligations.
Amortization Period	22 years remaining
Amortization Method	Level Dollar, closed period
Actuarial Method	Entry Age
Normal Cost	Determined for each active employee as the Actuarial Present Value of benefits allocated to the valuation year. The benefit attributed to the valuation year is that incremental portion of the total projected benefit earned during the year in accordance with the plan's benefit formula. This allocation is based on each individual's service between date of hire and date of full benefit eligibility.
Actuarial Accrued Liability	The Actuarial Present Value of Benefits allocated to all periods prior to the valuation year.
Investment Return/ Discount Rate	7.50%, net of investment expenses and including inflation, based on presumed full pre-funding of benefits

Basis for Demographic Assumptions

In general, the demographic assumptions shown below are based on the most recent valuation of the Municipal Employees' Retirement System (MERS). Several adjustments were made based on Township experience and plan eligibility.

Mortality:

Mortality rates are assumed to be in accordance with the Retired Pensioners (RP) 2000 Combined Healthy tables, projected to 2026 using Scale BB.

Disability:

Age	Disability Rate
25	0.0002
35	0.0006
45	0.0011
55	0.0060
60	0.0060

The rates above apply to Fire members only. No disabilities are assumed for other members.

Retirement:

Age	Retirement Rate
55-59	.20
60-64	.32
65-69	.50
70+	1.00

Termination:

Years of Service	Termination Rate
0	0.200
1	0.170
2	0.140
3	0.110
4	0.090
5	0.065
10	0.026
14	0.024
15+	0.024

Assumed Participation Rates:

All eligible members are assumed to participate in post-employment healthcare coverage through the Plan, and 70% are assumed to elect spousal coverage. For those without active coverage, 50% are assumed to elect coverage upon retirement.

Healthcare Assumptions

Assumed trend rates for future healthcare costs are as follows:

Year	Assumed Increase in Premiums and Claims
2016	6.50%
2017	6.25%
2018	6.00%
2019	5.75%
2020	5.25%
2021	5.00%
2022+	4.50%

Expected Annual Claims (initial year, before trend is applied), representative amounts:

Age	Current Retirees		Future Retirees	
	Retiree	Spouse	Retiree	Spouse
45	\$ 7,769	\$ 10,875	\$ 5,141	\$ 7,196
50	9,228	12,916	6,106	8,546
55	10,963	15,340	7,252	10,150
60	13,174	18,440	8,717	12,202
65+	3,641	3,641	3,641	3,641

These assumed claims have been developed using plan demographic and premium information, along with standard aging rates.

CHANGES IN ACTUARIAL ASSUMPTIONS

There have been two changes in actuarial assumptions since the prior valuation:

1. Inclusion of future projected mortality improvements
2. Update of expected claims based on changes in plan structure and premiums

APPENDIX: Actuarial Liabilities and Costs by Employee Group

Actuarial Liability as of December 31, 2015

	Active Accrued Liability	Inactive Accrued Liability	Total Accrued Liability	Allocated Assets*	Unfunded Accrued Liability	Funding Ratio
Fire	\$1,890,260	\$2,979,042	\$4,869,302	\$1,636,908	\$3,232,394	33.6%
General	658,994	1,340,186	1,999,180	1,836,612	162,568	91.9%
Library	0	49,785	49,785	50,000	-215	100.4%
Police	0	0	0	83,816	-83,816	N/A
Safety	66,254	0	66,254	106,568	-40,314	160.8%
Sewer	362,579	430,564	793,142	736,163	56,979	92.8%
Water	366,369	52,366	418,735	696,248	-277,513	166.3%
Total	\$3,344,455	\$4,851,944	\$8,196,399	\$5,146,315	\$3,050,084	62.8%

* Provided by MERS, except for Library (adjustment for transfer is reflected above)

Annual Required Contribution (ARC) for Fiscal Years 2016 and 2017

	Normal Cost	Amortization~	Interest to End of Year	Annual Required Contribution
Fire	\$56,606	\$283,208	\$25,486	\$365,300
General	10,680	14,244	1,869	26,793
Library	0	0	0	0
Police	0	0	0	0
Safety	379	-379	0	0
Sewer	4,750	4,992	731	10,473
Water	7,476	-7,476	0	0
Total	\$79,891	\$294,590	\$28,086	\$402,566

~ Amortization may not be an amount that produces a negative ARC.

GLOSSARY OF ACTUARIAL TERMS

Actuarial Accrued Liability

A plan's actuarial accrued liability is the level of assets estimated by the system actuary to be needed as of the valuation date to

- Finance all previously earned benefits for actively employed members of the plan (and their beneficiaries, if applicable) for when they eventually retire, die or terminate with deferred vested benefits, and
- Finance all currently payable benefits of current pensioners and their beneficiaries (if applicable).

The Actuarial Accrued Liability is not a debt; instead, it is an asset target set by the actuarial cost method to produce an orderly accumulation of assets to pay for the plan's obligations.

Annual OPEB Cost (AOC)

The annual accrual amount required by GASB 45, which includes the Annual Required Contribution as well as adjustments if a Net OPEB Obligation/(Asset) exists.

Annual Required Contribution (ARC)

The annual cost of the plan, on an accounting basis. The ARC is the sum of the Normal Cost and the amortization of unfunded actuarial accrued liability.

Normal Cost

The Normal Cost is calculated as the annual amount necessary to fund each member's benefits from that member's Plan entry date to the end of his or her projected working life.

Net OPEB Obligation/(Asset)

The accumulated shortfall/(surplus) in actual contributions towards the ARC versus the Annual OPEB Cost.

Other Postemployment Benefits (OPEB)

Postemployment benefits other than pensions. OPEB generally takes the form of health insurance and dental, vision, prescription drugs or other healthcare benefits.

Unfunded Actuarial Accrued Liability

When the actuarial value of assets is below the Actuarial Accrued Liability, there is an Unfunded Actuarial Accrued Liability which must be paid off or amortized on a schedule. When the actuarial value of assets is in excess of the Actuarial Accrued Liability, this can lead to a reduction in future contributions on an amortization schedule.