

Charter Township of Independence  
Other Post-Employment Benefits

Actuarial Valuation  
as of December 31, 2017

Submitted by:  
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May, 2018

May 11, 2018

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

This Report presents the December 31, 2017 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, 2017 actuarial cost, on a pre-funded basis;
- (2) Establish the basis for GASB 74/75 implementation; and
- (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 under GASB 74 and 75 is provided in a separate report. The Actuarially Determined Contribution and funding progress information is shown herein.

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,



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



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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.

	<b>December 31, 2015</b>	<b>December 31, 2017</b>
Present Value of Projected Benefits (PVPB)	\$ 8,795,198	\$ 8,115,230
Actuarial Accrued Liability (AAL)	8,179,924	7,382,080
Actuarial Value of Assets (AVA)	5,146,315	7,217,275
Unfunded Actuarial Accrued Liability (UAAL)	3,033,609	164,805
Funding Ratio (AVA/AAL)	62.9%	97.8%
Actuarially Determined Contribution (ADC)	\$400,440	\$206,826

The funding status has improved significantly since the last valuation, with a corresponding decrease in the actuarial cost. This is a result of favorable experience with healthcare costs as well as investment performance.

## 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 the value (on the valuation date) of the benefits promised to current and future retirees. The Plan's total PVPB (at December 31, 2017) is approximately \$8.1 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, 2017) is approximately \$7.4 million.
- The Normal Cost (at December 31, 2017) 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 \$83,281.

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, 2015	December 31, 2017
<b>Actuarial Accrued Liability (AAL)</b>		
Actives	\$ 3,327,980	\$ 3,326,193
Retirees	<u>4,851,944</u>	<u>4,055,887</u>
Total	\$8,179,924	\$7,382,080
<b>Plan Assets</b>	\$5,146,315	7,217,275
<b>Unfunded AAL</b>	3,033,609	164,805
<b>Normal Cost</b>	\$79,357	\$83,281

The actuarial cost by group and in total is shown in the Appendix, on page 19 herein.

### History of Funding Progress

Valuation Date	Plan Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio
12/31/2008	\$ 1,906,147	\$ 7,536,207	\$ 5,630,060	25.3%
12/31/2011	3,601,908	7,307,273	3,705,365	49.3%
12/31/2014	5,168,411	9,566,925	4,398,514	54.0%
12/31/2015	5,146,315	8,179,924	3,033,609	62.9%
12/31/2017	7,217,275	7,382,080	164,805	97.8%

## 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
2018	\$434,764
2019	462,010
2020	510,597
2021	509,139
2022	481,946
2023	542,744
2024	515,816
2025	455,149
2026	501,863
2027	564,237

## PLAN ASSET INFORMATION

**Reconciliation of Market Value of Assets  
Year Ended December 31, 2017**

Net Assets as of January 1, 2017	\$6,201,830
Contributions:	
Employee	17,772
<u>Employer</u>	<u>201,162</u>
Total	218,934
Investment Income	819,984
Deductions:	
Distributions	7,622
<u>Administrative Costs</u>	<u>15,851</u>
Total	23,473
Change in Net Position	1,015,445
<b>Net Assets as of December 31, 2017</b>	<b>\$7,217,275</b>

Allocation among groups is shown in the Appendix herein.



## DEMOGRAPHIC SUMMARY

The following Table summarizes active and retiree demographic information.

	Number of Participants, 12/31/2015				Number of Participants, 12/31/2017			
	AFSCME	IAFF	All Others	Total	AFSCME	IAFF	All Others	Total
Active Employees	20	28	6	54	19	27	6	52
Retirees	8	11	19	38	9	11	19	39
<b>Total</b>	<b>28</b>	<b>39</b>	<b>25</b>	<b>92</b>	<b>28</b>	<b>38</b>	<b>25</b>	<b>91</b>

	12/31/2015				12/31/2017			
	AFSCME	IAFF	All Others	Total	AFSCME	IAFF	All Others	Total
Average Age								
Active	50.5	43.0	51.6	46.7	52.9	44.5	49.7	48.1
Retired	70.2	60.7	70.6	67.8	70.9	60.7	74.3	69.7
Average Service (for active)	18.7	13.3	16.8	15.6	20.8	14.8	18.6	17.4

## SUMMARY OF PLAN PROVISIONS

## **PLAN PARTICIPANTS**

Certain 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 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: In the event of a line of duty death, spouse and dependents shall have 100% of the spouse's and dependent's health insurance premium paid. This provision shall not apply if the spouse remarries or becomes eligible for health 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

Non-Union and AFSCME retirees are required to enroll in Medicare once eligible. Retiree pays Medicare Parts A and B premiums.

### DENTAL, VISION AND LIFE INSURANCE

IAFF retirees shall receive the same dental and vision benefits as full-time employees. Non-Union and AFSCME retirees may enroll in dental and vision benefits through the Township but are responsible for 100% of the cost. Retirees are not eligible for term life insurance policy paid by the Township.

### RETIREE OPT-OUT PROVISION

Retirees who elect to waive medical benefits will be entitled to an annual taxable benefit in the amount of two-thousand dollars (\$2,000).

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

#### Health Care Benefit Eligibility Conditions and Township's Cost Share

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%	30%
60+	25+	80%	80%
65+	20	100% **	100% **

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

\*\* 100% of the base Medicare plan, retiree is responsible for the difference if they buy up to a higher plan

## **NON-UNION AND AFSCME EMPLOYEES HIRED AFTER JUNE 5, 2007**

No coverage is provided through this plan.

## **INDEPENDENCE PROFESSIONAL FIRE FIGHTERS ASSOCIATION HIRED ON OR BEFORE JANUARY 1, 2016**

### **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**

For employees hired prior to January 1, 2016, 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**

- 1) The plan was closed to new hires of the Township's Fire Department, effective January 1, 2016.
- 2) The Township moved its eligible retirees to a Group Supplemental plan.
- 3) The Township increased premium sharing for certain retirees based upon the retirement date.
- 4) The Township began paying an annual taxable benefit for those retirees who waive healthcare.

## **ACTUARIAL METHODS AND ASSUMPTIONS**

### **Methods and Assumptions**

<b>Amortization Period</b>	20 years remaining
<b>Amortization Method</b>	Level Dollar, closed period
<b>Actuarial Method</b>	Entry Age
<b>Normal Cost</b>	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 expected retirement.
<b>Actuarial Accrued Liability</b>	The Actuarial Present Value of Benefits allocated to all periods prior to the valuation year.
<b>Investment Return/ Discount Rate</b>	7.50%, net of investment expenses and including inflation, based on 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-2014 Employee (M/F), RP-2014 Healthy Annuitant (M/F) and RP-2014 Disabled Retiree (M/F) tables respectively, each with generational mortality improvements using Scale MP-2017.

**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:

<b>Year</b>	<b>Assumed Increase in Premiums and Claims</b>
2018	6.50%
2019	6.50%
2020	6.00%
2021	5.75%
2022	5.50%
2023	5.25%
2024	5.00%
2025	4.75%
2026+	4.50%

The rates above are based on a consolidated version of the Society of Actuaries' Getzen Model to develop healthcare trends. These rates have been updated since the last valuation.

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

<b>Age</b>	<b>Current Retirees</b>		<b>Future Retirees</b>	
	<b>Retiree</b>	<b>Spouse</b>	<b>Retiree</b>	<b>Spouse</b>
45	\$ 8,298	\$ 12,716	\$ 4,204	\$ 10,090
50	6,112	14,670	4,850	11,640
55	7,295	17,507	5,788	13,892
60	8,833	21,198	7,008	16,820
65	2,799	2,799	2,799	2,799
70	3,167	3,167	3,167	3,167
75	3,496	3,496	3,496	3,496
80	3,766	3,766	3,766	3,766
85+	3,958	3,958	3,958	3,958

These assumed claims have been developed using plan demographic and premium information, along with standard aging rates. The amounts above entail implicit rate subsidies for most retirees, because the expected claims are higher than the expected premiums. The liability for this subsidy is included within the valuation results. These amounts have been updated since the last valuation.

## **APPENDIX: Actuarial Liabilities and Costs by Employee Group**

**Actuarial Liability as of December 31, 2017**

	<b>Active Accrued Liability</b>	<b>Inactive Accrued Liability</b>	<b>Total Accrued Liability</b>	<b>Allocated Assets*</b>	<b>Unfunded Accrued Liability</b>	<b>Funding Ratio</b>
Fire	\$1,966,388	\$2,193,335	\$4,159,723	\$2,685,162	\$1,474,561	64.6%
General	627,866	1,130,935	1,758,801	2,418,641	(659,840)	137.5%
Library	0	40,464	40,464	55,134	(14,670)	136.3%
Police	9,366	0	9,366	104,504	(95,138)	1115.8%
Safety	86,471	0	86,471	132,872	(46,401)	153.7%
Sewer	373,078	420,454	793,532	942,222	(148,690)	118.7%
Water	263,024	270,699	533,723	878,740	(345,017)	164.6%
<b>Total</b>	<b>\$3,326,193</b>	<b>\$4,055,887</b>	<b>\$7,382,080</b>	<b>\$7,217,275</b>	<b>(\$164,805)</b>	<b>97.8%</b>

\* Provided by MERS

**Actuarially Determined Contribution (ADC)**

	<b>Normal Cost</b>	<b>Amortization~</b>	<b>Interest to End of Year</b>	<b>Actuarially Determined Contribution</b>
Fire	\$57,844	\$134,552	\$14,430	\$206,826
General	10,339	(10,339)	0	0
Library	0	0	0	0
Police	67	(67)	0	0
Safety	765	(765)	0	0
Sewer	6,738	(6,738)	0	0
Water	7,528	(7,528)	0	0
<b>Total</b>	<b>\$83,281</b>	<b>\$109,115</b>	<b>\$14,430</b>	<b>\$206,826</b>

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

## 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.

### Annually Determined Contribution (ADC)

The annual cost of the plan. The ADC is the Sum of the Normal cost and the amortization of the 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.

### 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.