The Town of Middletown Postretirement Benefits Plan

Actuarial Valuation Report for Fiscal Year Ending June 30, 2018

Information Required Under Governmental Accounting Standards Board Statements No. 74 & 75

January 10, 2019

BUCK

200 Berwyn Park
Suite 110
Berwyn, PA 19312

January 10, 2019

Mr. Marc W. Tanguay
Finance Director
Town Hall
Town of Middletown
350 East Main Road
Middletown, Rhode Island 02842

GASB 74 & 75 Actuarial Valuation of the Town of Middletown's Postretirement Benefits Plan (the "Plan") for Fiscal Year Ending June 30, 2018

Dear Marc:

Buck was retained by the Town of Middletown ("Middletown") to complete this actuarial valuation report which provides information for Middletown's Postretirement Benefits Plan (the "Plan") for the fiscal year ending June 30, 2018. The purposes of the valuation are to measure the fiduciary net position of the Plan, to measure the accounting amounts required for the costs to maintain the Plan for Middletown and to provide reporting and disclosure information for financial statements of the Plan and of Middletown, as well as for governmental agencies and other interested parties. This valuation report contains information that is required for compliance with the Governmental Accounting Standards Board's Statement 74, Financial Reporting for Postemployment Benefit Plans Other than Pension Plans ("GASB 74") and Statement 75, Accounting and Financial Reporting for Postemployment Benefits Other than Pensions ("GASB 75").

Purpose of This Report

GASB 74 replaces Statement No. 43, Financial Reporting for Postemployment Benefit Plans Other than Pension Plans, and No. 57, OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans, paragraphs 7 and 8. GASB 74 is effective for fiscal years beginning after June 15, 2016. Similarly, GASB 75 replaces Statement No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions, and Statement No. 57, OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans and is effective for fiscal years beginning after June 15, 2017. Middletown has elected to adopt GASB 74 for the fiscal year ending June 30, 2017 and GASB 75 for the fiscal year ending June 30, 2018.

Middletown may use this report as a source of information for its financial statements and for the recommended Actuarially Determined Contribution (“ADC”). Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. This report should not be provided except in its entirety.

Because of the risk of misinterpretation of actuarial results, you should ask Buck to review any statement you wish to make on the results contained in this report. Buck will accept no liability for any such statements made without prior review by Buck.

Future actuarial measurements may differ significantly from current measurements due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions, changes in assumptions, changes expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period), and changes in plan provisions, applicable law or regulations. Retiree group benefit models necessarily rely on the use of approximations and estimates and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. An analysis of the potential range of such future differences other than the required disclosures related to the sensitivity to discount rate and healthcare cost trend rate assumptions is beyond the scope of this report.

Data, Assumptions, Methods and Plan Provisions

This valuation was performed using employee census data, premiums and enrollment data, asset information, and plan provisions provided by Middletown personnel. Although we did not audit the data, we reviewed the data for reasonableness and consistency with the prior year’s information. A detailed review of the data and its sources beyond that necessary to develop the analysis was not performed and is beyond the scope of the analysis. The results of the valuation are dependent on the accuracy of the data.

The entry age normal liabilities presented herein were determined as of June 30, 2018 using data as of that date provided by Middletown. The total OPEB liability as of June 30, 2017, and June 30, 2018, was determined using census data provided by Middletown as of each respective date.

The assumptions, methods, and plan provisions used were the same as those described in the Middletown Postretirement Benefits Plan GASB 74 Valuation Report as of June 30, 2017 dated May 2018, except for the following:

- The per capita cost assumptions were updated to reflect premiums effective July 1, 2018 and updated enrollment.
- The impact of the Cadillac tax was re-measured and updated to reflect the Tax Cuts and Jobs Act passed in December 2017 which changed the inflation rate measure for purposes of determining the limits for the tax to use chained CPI, as well as the Budget Continuing Resolution which deferred the application of the Cadillac tax from 2020 to 2022.
- Programming refinements were made to better reflect certain plan provisions.

The Net OPEB Obligation and the Annual Required Contribution as defined in GASB 45 are no longer determined, since they are no longer required to be disclosed on the Annual Financial Statement. Instead, the annual OPEB expense recognized on the statement of activities (income statement) is based on the net OPEB liability change between reporting dates. Some changes will be recognized immediately, others amortized over several years, in accordance with the requirements of GASB 75.

The impact of health care reform under the Affordable Care Act ("ACA") has been evaluated and reflected in determining the liabilities and costs for the Plan. Please see Appendix D for a discussion of Health Care Reform (HCR) related provisions.

Key Results

Middletown's total OPEB liability of $28,238,723 was measured as of June 30, 2018 reflecting valuation results as of that date. The total OPEB liability of $32,070,969 as of June 30, 2017 was based on valuation results as of that date. The total OPEB liability decreased from June 30, 2017 to June 30, 2018 due to the updated per capita cost assumptions (which were lower than expected) and the programming refinements mentioned above.

The ADC is decreasing from $2,415,706 for the fiscal year ending June 30, 2018, to $2,011,938 for the fiscal year beginning June 30, 2019.

Actuarial Certification

The assumptions used for financial accounting purposes were selected by the plan sponsor with our advice. In our opinion, the actuarial assumptions used are appropriate for purposes of the valuation and are reasonably related to the experience of the Plan and to reasonable long-term expectations. The cost results and actuarial exhibits presented in this report were determined on a consistent and objective basis in accordance with applicable Actuarial Standards of Practice and generally accepted actuarial procedures. To the best of our knowledge, the information fairly presents the actuarial position of Middletown's Postretirement Benefits Plan in accordance with the requirements of GASB Statement No. 74 and 75 as of June 30, 2018.

It is important to note that the measurement of postretirement medical obligations is extremely sensitive to the assumptions chosen. The results presented above and in more detail in the next sections are based upon one set of reasonable assumptions. Other sets of equally reasonable assumptions can yield materially lesser or greater obligations.

This report represents a statement of actuarial opinion by the undersigned actuaries. Scott Young and Prakash Sankaran are both Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. They have met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice and they are available to answer questions about these results.

Sincerely,

Scott Young

Scott Young, FSA, EA, MAAA
Director, Health
Buck
Scott.Young@Buck.com

Prakash Sankaran, FSA, MAAA
Senior Consultant, Wealth
Buck
Prakash.Sankaran@Buck.com

Contents

GASB 74 & 75 Information

Method Used to Value Investments

Investments are reported at market value.

Plan Administration

Middletown administers the Plan, a single-employer defined benefit Postretirement Benefits Plan. The Plan covers eligible retirees and disabled employees of the Middletown Town and Schools, as well as their spouses and survivors. Middletown officially set up an OPEB trust fund in June 2011 through its trustee, Citizens Bank. The trust fund is segregated and dedicated to providing OPEB benefits.

Plan Membership

Membership Status as of June 30, 2018	Count
Inactive plan members or beneficiaries currently receiving benefits	227
Inactive plan members entitled to but not yet receiving benefits	0
Active plan members	351
Total Participants	578

Net OPEB Liability

Components of the Net OPEB Liability		
Total OPEB Liability	$	28,238,723
Plan Fiduciary Net Position		9,741,824
Net OPEB Liability	$	18,496,899
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability		34.50%

Actuarial Assumptions

Please see Appendix A of this report for a description of actuarial assumptions.

Benefits Provided

Please see Appendix B of this report for a summary of the plan provisions.

Funded Status and Contributions

In recent years, Middletown has contributed at least the actuarially determined contribution (“ADC”). For the fiscal year ending June 30, 2018, Middletown contributed $3,550,098. For purposes of this analysis, we have assumed Middletown will contribute the ADC for fiscal years ending 2019 and after.

The plan is funded by Middletown contributions and some current retiree contributions. Current retiree contributions are described in Appendix B.

Rate of Return

For the fiscal year ending June 30, 2018, the annual money-weighted rate of return on investments, net of investment expense, was 6.52%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

As part of our valuation work, we projected benefit payouts and the fiduciary net position of the plan for as long as benefits were expected to be paid to current active and inactive plan participants and their dependents. The amounts were compared for each year in the projection period. For each future period, the plan fiduciary net position is projected to be greater than the benefits to be made in that period. Thus, the valuation discount rate used in these calculations is the long term expected rate of return of the plan's assets.

Schedule of Required Supplementary Information

The following schedule outlines the required information pertaining to the Total OPEB Liability, the Plan Fiduciary Net Position and the Net OPEB Liability for the fiscal years ending June 30, 2017 and June 30, 2018:

Schedule of Changes in Net OPEB Liability and Related Ratios	FYE 2017	FYE 2018
Total OPEB Liability		
Service Cost	$ 506,972	$ 478,012
Interest	2,296,966	2,380,004
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	-	(3,021,201)
Changes of Assumptions	-	(2,007,827)
Net Benefit Payments	(1,674,163)	(1,661,234)
Net Change in Total OPEB Liability	$ 1,129,775	$ (3,832,246)
Total OPEB Liability at Beginning of Year	$ 30,941,194	$ 32,070,969
Total OPEB Liability at End of Year (a)	$ 32,070,969	$ 28,238,723
Plan Fiduciary Net Position		
Contributions - Employer	$ 2,846,481	$ 3,550,098
Contributions - Employees	-	21,358
Net Investment Income	726,504	520,405
Benefit Payments	(1,674,163)	(1,661,234)
Administrative Expenses	(32,580)	(28,500)
Other	-	-
Net Change in Plan Fiduciary Net Position	$ 1,866,242	$ 2,402,127
Plan Fiduciary Net Position Beginning of Year	$ 5,473,455	$ 7,339,697
Plan Fiduciary Net Position End of Year (b)	$ 7,339,697	$ 9,741,824
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	22.89%	34.50%
Net OPEB Liability End of Year ((a) - (b))	$ 24,731,272	$ 18,496,899
Covered Employee Payroll	$ 22,684,805	$ 25,008,014
Net OPEB Liability as a Percentage of Covered Employee Payroll	109.02%	73.96%

The below table outlines the changes in the Net OPEB Liability for the fiscal year ending June 30, 2018:

Change in Net OPEB Liability	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
Net OPEB Liability at Beginning of Year	$32,070,969	$7,339,697	$24,731,272
Service Cost	$478,012		$478,012
Interest	2,380,004		2,380,004
Changes of Benefit Terms	-		-
Differences Between Expected and Actual Experience	(3,021,201)		(3,021,201)
Changes of Assumptions	(2,007,827)		(2,007,827)
Contributions - Employer		3,550,098	(3,550,098)
Contributions - Employees		21,358	(21,358)
Net Investment Income		520,405	(520,405)
Benefit Payments	(1,661,234)	(1,661,234)	-
Administrative Expense	-	(28,500)	28,500
Net Changes	$ (3,832,246)	$ 2,402,127	$ (6,234,373)
Net OPEB Liability at End of Year	$28,238,723	$9,741,824	$18,496,899

The below table outlines the components of the total OPEB expense for the fiscal year ending June 30, 2018:

Components of OPEB Expense for the Fiscal Year Ended June 30, 2018	
Service Cost	$ 478,012
Interest on the Total OPEB Liability and Net Cash Flow	2,380,004
Projected Earnings on OPEB Plan Investments	(619,766)
Current Period Effect of Benefit Changes	-
Current Period Difference Between Expected and Actual Experience	(411,608)
Current Period Effect of Changes in Assumptions	(273,546)
Current Period Difference Between Projected and Actual Investment Earnings	19,872
Member Contributions	(21,358)
Administrative Expenses	28,500
Current Period Recognition of Prior Years' Deferred Outflows of Resources	-
Current Period Recognition of Prior Years' Deferred Inflows of Resources	-
Total OPEB Expense	$ 1,580,110

The following tables depict the sensitivity of the Net OPEB Liability due to changes in both the discount rate and the healthcare cost trend rate which are required under GASB No. 75.

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate	1% Decrease	Current Discount Rate	1% Increase
Net OPEB Liability	$ 21,349,841	$ 18,496,899	$ 16,048,584

Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate	1% Decrease	Current Trend Rate	1% Increase
Net OPEB Liability	$ 15,760,317	$ 18,496,899	$ 21,939,292

The following table outlines the employer contributions for the fiscal years ending June 30, 2017 and June 30, 2018. The actual contribution was provided by Middletown.

Schedule of Employer Contributions		FYE 2017		FYE 2018
Actuarially Determined Contribution	$	2,174,483	$	2,415,706
Contributions Related to the Actuarially Determined Contribution		2,846,481		3,550,098
Contribution Deficiency (Excess)	$	(671,998)	$	(1,134,392)
Covered Employee Payroll	$	22,684,805	$	25,008,014
Contribution as a Percentage of Covered Employee Payroll		12.55%		14.20%

Following are the details of the recognized and deferred inflows and outflows of resources.

Deferred Outflows/Inflows of Resources		
Deferred Outflows of Resources as of June 30, 2018		
Difference Between Expected and Actual Experience	$	-
Changes in Benefit Terms		-
Changes in Assumptions		-
Difference Between Projected and Actual Investment Earnings		99,361
Total Deferred Outflows as of June 30, 2018	$	99,361
Deferred Inflows of Resources as of June 30, 2018		
Difference Between Expected and Actual Experience	$	(3,021,201)
Changes in Benefit Terms		-
Changes in Assumptions		(2,007,827)
Difference Between Projected and Actual Investment Earnings		-
Total Deferred Inflows as of June 30, 2018	$	(5,029,028)

Summary of Deferred Outflows/Inflows of Resources

Deferred Outflows

Fiscal Year Established	Description	Initial Amount	Outstanding Balance as of June 30, 2018	Amortization Amount	Years Remaining as of June 30, 2018
2018	Difference Between Projected and Actual Investment Earnings	99,361	79,489	19,872	4.00

Deferred Inflows

Fiscal Year Established	Description	Initial Amount	Outstanding Balance as of June 30, 2018	Amortization Amount	Years Remaining as of June 30, 2018
2018	Difference Between Expected and Actual Experience	(3,021,201)	(2,609,593)	(411,608)	6.34
2018	Change of Assumptions	(2,007,827)	(1,734,281)	(273,546)	6.34

Future Years' Recognition of Deferred Outflows/Inflows

Fiscal Year	Fiscal 2018 Deferred Outflows	Fiscal 2018 Deferred Inflows	Total
2019	$19,872	($685,154)	($665,282)
2020	19,872	(685,154)	(665,282)
2021	19,872	(685,154)	(665,282)
2022	19,872	(685,154)	(665,282)
2023	0	(685,154)	(685,154)
2024	0	(685,154)	(685,154)
2025	0	(232,950)	(232,950)
2026	0	0	0

Funding Analysis (ADC Determination) for FYE 2019

Funding Results Comparison*

The below table outlines the components for determined the Actuarially Determined Contribution (ADC) for the fiscal years beginning June 30, 2017 and June 30, 2018:

Actuarially Determined Contribution	FYE 2018	FYE 2019
a) Actuarial Value of Assets	$ 7,339,697	$ 9,741,824
b) Actuarial Accrued Liability		
Active Participants	8,468,504	8,736,982
Retired Participants	24,234,756	20,216,564
Total AAL	$ 32,703,260	$ 28,953,546
c) Unfunded Actuarial Accrued Liability "UAAL" [b - a]	25,363,563	19,211,722
d) Funded ratio [a / b]	22.44%	33.65%
e) Annual covered payroll	22,684,805	25,008,014
f) UAL as percentage of covered payroll	111.81%	76.82%
g) Normal Cost for fiscal year beginning on valuation date (with interest)	582,250	571,537
h) Amortization of UAAL for fiscal year beginning on valuation date	1,705,541	1,339,908
i) Interest to end of fiscal year	127,915	100,493
j) Actuarially Determined Contribution ("ADC")**		
for fiscal year beginning on valuation date [g + h + i]	$ 2,415,706	$ 2,011,938
k) Expected benefit payments for fiscal year beginning on valuation date	$ 1,622,829	$ 1,946,383

*The results above are not appropriate under the GASB 75 Accounting Standard and should not be reflected in the Town's financials.
**ADC was titled as Annual Required Contribution "ARC" in previous reports.

Splits by Department

The below table outlines results presented above split by town department

Number of Employees	Fire	Police	Public Works	Town Hall	Clerical & Custodial	Teachers & Administration	Total
Actives	29	39	16	33	34	200	351
Retirees and Spouses	79	95	4	-	5	44	227
Total	108	134	20	33	39	244	578

June 30, 2018 Actuarially Accrued Liability @ 7.5%	Fire	Police	Public Works	Town Hall	Clerical & Custodial	Teachers & Administration	Total
Actives	$ 1,465,436	$ 2,118,078	$ 269,039	$ 243,816	$ 501,852	$ 4,138,761	$ 8,736,982
Retirees and Spouses	11,212,012	7,787,215	29,305	-	135,652	1,052,380	20,216,564
Total	$ 12,677,448	$ 9,905,293	$ 298,344	$ 243,816	$ 637,504	$ 5,191,141	$ 28,953,546
Plan Assets*	$ 4,265,504	$ 3,332,774	$ 100,382	$ 82,035	$ 214,497	$ 1,746,632	$ 9,741,824
Unfunded Actuarially Accrued Liability (UAAL)	$ 8,411,944	$ 6,572,519	$ 197,962	$ 161,781	$ 423,007	$ 3,444,509	$ 19,211,722

FYE 2019 Actuarially Determined Contribution @ 7.5%	Fire	Police	Public Works	Town Hall	Clerical & Custodial	Teachers & Administration	Total
Normal Cost	$ 130,951	$ 254,339	$ 12,920	$ 4,306	$ 8,100	$ 160,921	$ 571,537
Amortization of UAAL	586,685	458,396	13,807	11,283	29,502	240,235	1,339,908
Interest	44,001	34,380	1,036	846	2,213	18,017	100,493
Total	$ 761,637	$ 747,115	$ 27,763	$ 16,435	$ 39,815	$ 419,173	$ 2,011,938
Expected Pay-as-you-go Costs	$ 902,607	$ 648,747	$ 12,275	$ 437	$ 64,287	$ 318,030	$ 1,946,383

Appendix A: Actuarial Assumptions and Methods

Actuarial Methods

Valuation Date

June 30, 2018.

Measurement Date

June 30, 2018

Actuarial Cost Method

GASB 74 & 75: Entry Age Normal, Level Percent of Salary. Service Costs are attributed through all assumed ages of exit from active service.

Actuarially Determined Contribution: Projected Unit Credit. Service Costs are attributed through all ages until the participant becomes eligible for benefits.

Asset Valuation

Market Value.

Funding Method

In the past, Middletown has made contributions based on the ADC, contributing at least the ADC in recent years.

The ADC is equal to the sum of the normal cost plus an amortization of the Unfunded Actuarial Accrued Liability (UAAL). The amortization period used in calculating the ADC was established effective July 1, 2007, reflecting a 30-year period and an amortization payment that increases by 4.0% per year. As of July 1, 2018, there are 19 years remaining in the amortization period, which was reflected in the ADC calculated for fiscal year ending June 30, 2019.

While the Unfunded Actuarial Accrued Liability ("UAAL") is not sufficient to cover the estimated cost of settling the plan's benefit obligations, it is appropriate to calculate the ADC for the purpose of prefunding the benefit.

Unless otherwise specified, the funding valuation relies upon the same assumptions as are used in the GASB 74 & 75 valuations.

Miscellaneous

The valuation was prepared on an on-going plan basis. This assumption does not necessarily imply that an obligation to continue the plan actually exists.

Economic Assumptions

Discount Rate

7.50% per year, net of investment expenses; based on a projection of Middletown's future benefit payments compared to its fiduciary net position. Based on Middletown's current funding policy, Middletown is expected to cover the projected benefit payments through the projection period so the long-term asset rate of return can be used as the interest rate under GASB 74 & 75.

Long Term Expected Rate of Return

7.50% per annum, net of investment expenses and including inflation.

Municipal Bond 20-year Index Rate

For the measurement date of June 30, 2018, 2.98%, which is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of June 29, 2018. The rate used for the previous measurement date of June 30, 2017 is 3.13%, which is based on the S&P Municipal Bond 20 Year High Grade Rate Index as of June 30, 2017.

Future Salary Increases

Compensation was assumed to increase at 5%. This is consistent with the rate used for the valuation of Middletown's pension plan.

Consumer Price Index

3.00%.

Benefit Related Assumptions

Assumed Trend

The combined effect of price inflation and utilization on gross eligible medical and prescription drug charges is according to the table below. The initial trend rate was developed using Buck's National Health Care Trend Survey. The survey gathers information of trend expectations for the coming year from various insurers and pharmacy benefit managers. These trends are broken out by drug and medical, as well as type of coverage (e.g. PPO, HMO, POS). We selected plans that most closely match Middletown's benefits to set the initial trend. The ultimate trend is developed based on a building block approach which considers CPI, GDP, and Technology growth. The healthcare cost trend rates are shown below:

FYE	Pre-Medicare	Post-Medicare / Part B
2019	7.93%	6.40%
2020	7.60%	6.24%
2021	7.28%	6.09%
2022	6.95%	5.93%
2023	6.62%	5.78%
2024	6.30%	5.62%
2025	5.98%	5.47%
2026	5.65%	5.31%
2027	5.33%	5.15%
2028+	5.00%	5.00%

Dental costs are assumed to increase by 5.00% each year.

Retiree contribution trend: Same as medical trend.

Individual Initial Premium Thresholds are assumed to continue to grow by 2.00% each year.

Rebates are assumed to remain flat.

Health Care Claim Cost

We understand that Middletown accesses health benefits through the Rhode Island Interlocal Risk Management Trust. However, we assumed that the provided rates are based solely on Middletown's population. For valuation purposes, the cost of coverage for non-Medicare plans was based on the stated premium for individual coverage adjusted for the age of the participant, based on the actual age distribution of pre-65 active employees and retirees with medical coverage. The cost of coverage for Medicare plans was based on the stated premium adjusted for the age of the participant, based on the actual age distribution of post-65 active employees and retirees with medical coverage.

The age adjustments were made using the Age Related Morbidity discussed later in this section. Age Related Morbidity is not applied to dental rates.

Spouses are assumed to cost the same as a retiree with the same age and sex.

Employee cost sharing is based on current individual and family rates.

Dental Plan Costs

Dental plan costs are based on the provided individual premium. The premium is assumed to be self-supporting, with costs that do not vary by age.

Spouses are assumed to cost the same as the retiree.

Medicare Part B Premium

Premium amount for fiscal year ending 2019 is assumed to be $134.75 per month; this is the average of the Medicare Part B premiums in effect for most Medicare beneficiaries in 2018 and 2019[1].

Child Coverage

Dependent children are assumed to be covered for as long as the spouse is covered and under age 65. The cost for dependent children is assumed to be 20% of the cost of the spouse.

Employee Contributions

Fire employees' contributions to the trust are not directly reflected in the valuation. The Actuarial Determined Contribution amount is assumed to reflect overall contribution amounts for the fiscal year, with Middletown's required Normal Cost contribution to be directly reduced by any contributions made by the employees.

Plan Election

Retirees are assumed to remain in their chosen plan for the duration of their coverage or until age 65. Upon turning 65, we assume the retiree will be eligible for Medicare, with the exception of a couple groups as noted in the Plan Provisions.

For future Fire retirees, we assumed 100% would participate in the Healthmate PPO plan, which is reasonable based on current retiree elections.

Administrative Expenses

It is our understanding that all administrative costs are reflected in the premiums provided.

Age Related Morbidity

Per capita costs are adjusted to reflect expected cost differences due to age and gender. Age morbidity factors for pre-Medicare morbidity were developed from "Health Care Costs—From Birth to Death" sponsored by the Society of Actuaries and prepared by Dale H. Yamamoto (May 2013)[2]. Table 4 from Mr. Yamamoto's study formed the basis of Medicare morbidity factors that are gender distinct and assumed a cost allocation of 60% for pharmacy, 20% for inpatient, 10% for outpatient, and 10% for professional services. Adjustments were made to Table 4 factors for inpatient costs at age 70 and below to smooth out what appears to be a spike in utilization for Medicare retirees gaining healthcare for the first time through

---

[1] Other Medicare beneficiaries who will pay a higher Medicare Part B premium include those who do not have their Medicare Part B premium deducted from their Social Security checks, those who have taxable income of $85,000 or more ($170,000 or more if filing jointly with spouse) and new enrollees.

[2] https://www.soa.org/resources/research-reports/2013/research-health-care-birth-death/

Medicare. While such retirees were included in the study, their specific experience is not applicable for a valuation of an employer retiree medical plan where participants had group active coverage before retirement. Morbidity factors at sample ages are shown below:

Age	Male	Female
50	0.4602	0.5723
55	0.6038	0.6667
60	0.7779	0.7776
65	1.0000	0.9107
70	1.0894	1.0178
75	1.1700	1.1024
80	1.2283	1.1652
85	1.2372	1.2087
90	1.2143	1.2208

Morbidity is not applied to dental rates.

Demographic Assumptions

Participation Rates

Future retirees eligible for subsidized retiree coverage are assumed to elect medical (and dental, if applicable) coverage at retirement at the following percentages.

Group	Rate
Fire	Varies[2]
Police	100%
Public Works	80%
Town Hall	80%
Clerical	90%
Custodial	90%
Teachers[1]	90%
Administration[1]	90%

[1] The remaining 10% of Teachers and Administration are assumed to elect the $2,500 buyback option.

[2] The participation rate for Fire varies by year, based on the projected employee cost sharing percentages. Since future Fire retirees contribute 50% of the excess over the premium threshold, their employee cost sharing percentage is expected to increase each year. As a result, our assumed participation assumption decreases each year; sample rates are shown in the below table.

FYE	Rate
2019	97%
2024	93%
2029	91%
2034	90%
2039	88%
2044	87%

The various participation assumptions described above were derived using actuarial judgment based on observations of participation levels given contribution levels over a variety of plans.

Marital Status

80% of employees are assumed to have a covered spouse at retirement, except as noted. Teachers and Administrators are not assumed to cover their spouses as retirees must pay 100% of the stated premium for dependent coverage. Wives are assumed to be three years younger than their husbands. These assumptions were developed using actuarial judgment based on observations of dependent coverage over a variety of plans.

Mortality Rates

The mortality rates assumed for Fire, Police, Public Works, Town Hall, Clerical and Custodial are as follows.

- Pre-Retirement: 75% of the RP-2000 Combined tables with white-collar adjustment, no projection
- Post-Retirement: 115% / 95% (Males / Females) of RP-2000 Combined Healthy table with white-collar adjustment, projected with Scale AA from 2000

The mortality rates assumed for Teachers and Administration are as follows.

- Pre-Retirement: 50% of the RP-2000 Combined tables with white-collar adjustment, no projection
- Post-Retirement: 97% / 92% (Males / Females) of rates contained in a Gabriel Roeder Smith & Company ("GRS") Table based on male or female teacher experience, respectively, projected with Scale AA from 2000

These rates are consistent with the 2014 ERSRI Experience Study. For pre-retirement mortality, we believe it is reasonable to not apply an explicit mortality improvement scale to the base tables, since doing so would not have a significant effect on the valuation results.

Withdrawal Rates

All employees are assumed to withdraw from active service based on the MERS General Employees' rate tables published in the 2014 ERSRI Experience Study.

Disability Rates

All employees are assumed to become disabled from active service based on the MERS General Employees' rate tables published in the 2014 ERSRI Experience Study.

Retirement Rates

The retirement rates assumed for Public Works, Town Hall, Clerical and Custodial are as follows.

- Employees are assumed to retire at a flat rate of 25% each year once eligible for an unreduced ERSRI pension benefit as determined by the earlier of (a) 65 & 30, (b) 64 & 31, (c) 63 & 32, (d) 62 & 33, or (e) the employee's RIRSA date.
- The 25% becomes 50% in the first year of eligibility if eligibility for an unreduced pension benefit occurs at age 65 or at 25 years of service.
- In some cases, the first eligibility date was furnished by ERSRI. In other cases, the RIRSA date was calculated by Buck based on the employee's RIRSA retirement schedule (1-4 for General

employees). Employees who are Middletown pension plan participants are also assumed to follow the same decrement schedule as outlined in the 2015 Pension Settlement Agreement; the RIRSA date for these employees was calculated by Buck for the purpose of assigning retirement decrement rates consistent with the Town pension plan.

- Retirement rates are assumed to apply when the employee becomes eligible for both retiree medical coverage and for an unreduced pension. Otherwise, withdrawal rates are assumed to apply.

The retirement rates assumed for Police and Fire are as follows.

- Employees participating in the Town pension plan are assumed to retire using the following decrement rates, consistent with Middletown's pension valuation.

Years of Service	Rate
< 20	0%
20	25%
21-24	50%
25+	100%

- In addition to the table above, 100% of employees are assumed to retire at age 58.
- Employees participating in the state pension plans are assumed to retire, become disabled, or withdraw from active service based on the MERS Police & Fire rate tables published in the 2014 ERSRI Experience Study.
- Retirement rates are assumed to apply when the employee becomes eligible for both retiree medical coverage and for an unreduced pension. Otherwise, withdrawal rates are assumed to apply.

The retirement rates assumed for Teachers and Administration are as follows.

- Employees are assumed to retire at a flat rate of 25% each year once eligible for an unreduced ERSRI pension benefit as determined by the earlier of (a) 65 & 30, (b) 64 & 31, (c) 63 & 32, (d) 62 & 33, or (e) the employee's RIRSA date.
- The 25% becomes 60% in the first year of eligibility if eligibility for an unreduced pension benefit occurs at age 65 or at 25 years of service.
- In some cases, the first eligibility date was furnished by ERSRI. In other cases, the RIRSA date was calculated by Buck based on the employee's RIRSA retirement schedule (1-4 for General employees).
- Retirement rates are assumed to apply when the employee becomes eligible for both retiree medical coverage and for an unreduced pension. Otherwise, withdrawal rates are assumed to apply.

Appendix B: Summary of Plan Provisions

Eligibility

The retirement eligibility criteria for retiree health benefits are shown in the following table. Note: The below eligibility criteria apply to most active employees. *Certain active employees are subject to different eligibility criteria; we did not consider such special cases in this valuation.*

Group	Criteria	Retirement Eligibility
Fire	n/a	Service = 20
Police	Hired before 7/1/2017	Service = 20
Police	Hired on/after 7/1/2017	Service = 25
Public Works	n/a	Age = 60 and Service = 10, or Service = 30
Town Hall	n/a	Service = 25
Clerical	n/a	Service = 15
Custodial	n/a	Service = 15
Teachers	n/a	Age = 55 and Service = 15
Administration	n/a	Age = 55 and Service = 15

Additionally, an employee is eligible for retiree health benefits if he/she becomes disabled after attaining 10 years of service.

Medical Benefits

Subsidized medical benefits offered to current and future retirees, including the benefit term, are shown in the following table. We did not include benefits in which the retiree and/or spouse is required to fully cover the cost of coverage. Note: Certain individuals are subject to different benefit terms; we did not consider such special cases in this valuation, except for one Public Works retiree receiving lifetime coverage.

Group	Criteria	Retiree Medical	Spouse Medical[2]
Fire	n/a	Lifetime	Lifetime
Police[1]	Hired before 7/1/2017	Lifetime	Lifetime
Police[1]	Hired on/after 7/1/2017	5 years	None
Public Works	n/a	Until age 70	None
Town Hall	n/a	Until age 65	Until age 65
Clerical	n/a	Earlier of 5 years or age 65	Earlier of 3 years or age 65
Custodial	n/a	Earlier of 3 years or age 65	Earlier of 1 years or age 65
Teachers[1]	n/a	Later of 10 years or age 65	None
Administration[1]	n/a	Later of 10 years or age 65	None

[1] If a retiree in one of these groups waives coverage, he/she is eligible to receive a fixed rebate of $2,500 per year. For Police, the rebate is paid for the retiree's lifetime; for Teachers and Administration, the rebate is paid for seven years for regular retirees and for ten years for disabled retirees. This rebate is not available for spouses.

[2] Spouse coverage ends when the member coverage ends, including the member turning age 65 for Town hall, Clerical or Custodial. Additionally, no subsidized coverage is available for surviving spouses.

Dental Benefits

Subsidized dental benefits are offered for retirees in the Clerical and Custodial groups only. The length of coverage for these dental benefits is the same as for medical benefits.

Part B Benefits

Retirees in the Fire group, who retired on/after July, 1 1997 but before July 1, 2007, are eligible for reimbursement of Part B premiums if enrolled in Medicare Part B coverage.

Premium Rates

The medical and dental premium rates for the plan year July 1, 2018 to June 30, 2019, applicable to Middletown's current and future retirees, are shown in the following table. For the non-Medicare plans, we also indicated the plan that the retirees will be enrolled in upon turning 65 years old. Future retirees are limited to select plans, as indicated in the Future Retirees column.

Group	Plan, Group #	Individual	Family	Plan once Age 65	Future Retirees
Non-Medicare Plans					
Fire	Classic, 0007	$ 727.27	$ 1,903.93	Plan 65 w/ MM, 0008	No
Fire	Classic, 0014	727.27	1,859.42	Classic, 0014	No
Fire	HDHP, 0001	477.40	1,250.27	Plan 65, 0008	Yes
Fire	Healthmate, 0003	646.96	1,695.03	Plan 65, 0008	No
Fire	Healthmate, 0006	552.91	1,448.03	Plan 65, 0008	Yes
Fire	Healthmate, 0007	660.36	1,730.29	Plan 65 w/ MM, 0008	No
Fire	Healthmate, 0014	660.36	1,730.29	Healthmate, 0014	No
Police	HDHP, 0004	543.79	1,425.66	Plan 65, 0010	Yes
Police	Healthmate, 0001	688.75	1,805.88	Plan 65, 0010	No
Police	Healthmate, 0011	666.33	1,746.94	Plan 65, 0010	No
Public Works	Healthmate, 0016	588.88	n/a	Plan 65, 0010	Yes
Town Hall	Healthmate, 0013	638.38	1,673.25	n/a	Yes
Clerical/Custodial	Dental, 0012	33.81	100.20	n/a	Yes
Clerical/Custodial	Healthmate, 0011	656.93	1,721.22	n/a	Yes
Teachers	Classic, 0008	705.61	n/a	Plan 65 w/ MM, 0003	No
Teachers	Healthmate, 0008	589.33	n/a	Plan 65 w/ MM, 0003	Yes
Administration	Healthmate, 0010	656.93	n/a	Plan 65 w/ MM, 0003	Yes
Medicare Plans					
Fire	BlueChip, 0008	308.00	n/a	n/a	Yes
Fire	Plan 65 w/ MM, 0008	495.89	n/a	n/a	No
Police	Plan 65, 0010	174.53	n/a	n/a	Yes
Public Works	Plan 65, 0010	174.53	n/a	n/a	Yes
Teachers/Admin	Plan 65 w/ MM, 0003	481.95	n/a	n/a	Yes

Retiree Contribution Percentages

The retiree contribution percentages, applicable to Middletown's current and future retirees, are shown in the following table. These percentages generally apply to the premium rates. Note: Certain individuals are subject to different retiree contribution percentages; we did not consider such special cases in this valuation.

Group	Criteria	Non-Medicare	Medicare
Fire	Retired < 2/1/2011	0%	0%
Fire	< 7/1/2014	20%	20%
Fire	>= 7/1/2014	50%[1]	20%
Police	Retired < 7/1/2014	0%	0%
Police	Retired >= 7/1/2014, Hired < 7/1/2017	2.5%	0%
Police	Retired >= 7/1/2014, Hired >= 7/1/2017	0%	0%
Public Works	n/a	35%	50%
Town hall	n/a	50%	n/a
Clerical	n/a	20%	n/a
Custodial	n/a	20%	n/a
Teachers/Admin[2]	Retired <= 9/1/2014	3%/20%/50%	3%/20%/50%
Teachers/Admin[2]	Retired < 7/1/2017	10%/20%/50%	10%/20%/50%
Teachers/Admin[2]	Retired < 9/1/2018	12%/20%/50%	12%/20%/50%
Teachers/Admin[2]	Retired >= 9/1/2018	20%/20%/50%	20%/20%/50%

[1] This contribution percentage applies to the excess of the premium above a cap. For FYE 2019, the cap is $5,344 for individual coverage and $13,992 for family coverage for the PPO plan and $5,451 and $14,272 for the HDHP plan. This cap is scheduled to increase at 2% per annum.

[2] x%/y%/z% means x% for first seven years, y% for next three years, z% afterwards.

Active Contributions

In addition to contributions during retirement, effective February 2011, all fire fighters are required to contribute 1.5% of their base pay to the OPEB trust.

Negotiations (Teachers and Administration)

The Teachers and Administration group has recently gone through negotiations for the contract period from September 1, 2018 through August 31, 2021. It is our understanding that the plan provisions for this group will be changing as follows:

- All teachers and administrators who notify of retirement after August 31, 2018 shall pay 20% of the cost of medical coverage.
- All teachers and administrators who notify of retirement after July 1, 2020 will have the following healthcare benefit based on their credited service as of July 1, 2020.

Years of Service as of July 1, 2020	Postretirement Healthcare Benefit Eligibility
19.5 YOS or more	10 years of benefits
9.5 – 19.5 YOS	9 years of benefits
3.5 – 9.5 YOS	8 years of benefits
Less than 3.5 YOS	A maximum of 5 years or until age 65, whichever comes first

- Individuals hired on or after July 1, 2020 shall receive a maximum of three years of benefits or until age 65, whichever comes first. This provision does not impact the results provided in this letter because it will only affect employees hired on or after that date.
- Any postretirement healthcare benefit applicable to spouses shall run concurrent with, and not exceed, the time of the retiree's benefit.
- These plan provision changes have not been reflected in this valuation, as they are not effective until after the measurement date.

Negotiations (Police)

The Police group has recently gone through negotiations for the contract period from July 1, 2018 through June 30, 2019. It is our understanding that the plan provisions for this group, specifically for individuals hired on or after July 1, 2017, will be changing as follows:

- Individuals will need to attain 25 years of service to meet eligibility for retiree benefits.
- Individuals will only be eligible for 5 years of subsidized retiree coverage.
- During these 5 years, Middletown will be paying for 100% of the costs.
- Spousal coverage will need to be purchased at the retiree's own expense.

These plan provision changes have no effect on the valuation results, as there are no active employees in the Police group who were hired on or after July 1, 2017.

Appendix C: Summary of Employee Data

Summary of Participant Data

Census data as of June 30, 2018.

Membership Status as of June 30, 2018	Count
Inactive plan members or beneficiaries currently receiving benefits	227
Inactive plan members entitled to but not yet receiving benefits	0
Active plan members	351
Total Participants	578

Number of Employees	Fire	Police	Public Works	Town Hall	Clerical & Custodial	Teachers & Administration	Total
Actives							
Count	29	39	16	33	34	200	351
Average Age	38.8	35.8	47.7	53.2	51.7	48.3	46.9
Average Service	9.6	8.5	16.8	14.2	17.0	15.6	14.4
Retirees							
Count	44	52	4	-	4	44	148
Average Age	66.0	64.1	72.7	-	62.2	65.9	65.4
Spouses							
Count	35	43	-	-	1	-	79
Average Age	61.9	60.2	-	-	62.2	-	61.0
Total							
Count	108	134	20	33	39	244	578

Appendix D: Health Care Reform

Health care delivery is going through a revolution due to the enactment of Health Care Reform. The Patient Protection and Affordable Care Act (PPACA), was signed March 23, 2010, with further changes enacted by the Health Care and Education Affordability Reconciliation Act (HCEARA), signed March 30, 2010. This valuation uses various assumptions that were modified based on considerations under Health Care Reform legislation. This Section discusses particular legislative changes that were reflected in our assumptions. We have not identified any other specific provision of Health Care Reform that would be expected to have a significant impact on the measured obligation. As additional guidance on the legislation is issued, we continue to monitor any potential impacts.

Employer Mandate

Health Care Reform includes various provisions mandating employer coverage for active employees, with penalties for non-compliance. Those provisions do not directly apply to the postemployment coverage included in this valuation.

Elimination of Annual or Lifetime Maximums

Health Care Reform provides that annual or lifetime maximums have to be eliminated for all “essential services”. We assume that current premium rates already reflect the required elimination of any historic maximums.

Minimum Loss Ratio

Health Care Reform includes a provision that provides that medical benefit costs paid under large group health insurance insured premiums must be at least 85% of the premiums. It is anticipated that this provision will not have any significant impact on benefits or premium levels.

Expansion of Child Coverage to Age 26

Health Care Reform mandates that coverage be offered to any child, dependent or not, through age 26, consistent with coverage for any other dependent. We have reflected the cost of child coverage by including a load for dependent children. Specifically, dependent children are assumed to be covered for as long as the spouse is covered and under age 65. The cost for dependent children is assumed to be 20% of the cost of the spouse.

High Cost Plan Excise Tax (“Cadillac Tax”)

Health Care Reform includes various revenue raisers. One of the more complex revenue raisers is the High Cost Plan Excise Tax, also known as the Cadillac Tax. While its stated intent is to tax only high cost plans that provide what might be considered “Cadillac” benefits, as legislated, it is likely to have much broader impact. The tax limits above which the benefits are taxed increase only at chained CPI[1] (assumed to be 2.70% or 90% of the 3.00% general inflation assumption used in this valuation), while we continue to assume that health care costs will increase faster, reflecting real growth in GDP and technology innovations. Given that assumption, any health benefit, no matter how frugal initially, will ultimately be assumed to cost more than the limit resulting in a tax.

We assume that the cost of any Cadillac tax is included in the form of higher premiums, and have estimated the impact by use of a higher “loaded” trend rate assumption. The impact of the Cadillac Tax is estimated to be about a 0.6% increase in liability. The implementation date of the Cadillac Tax has been delayed from 2018 to 2022[2] since its inception; this delay has been reflected in our estimated impact on liability.

Individual Mandate

The Tax Cuts and Jobs Act passed in December 2017 included the elimination of the individual mandate penalty and changed the inflation rate measure for purposes of determining the limits for the High Cost Excise Tax to use chained CPI. It is our understanding the law does not directly impact other provisions of the ACA. While the nullification of the ACA’s individual mandate penalty does not directly impact employer group health plans, it could contribute to the destabilization of the individual market and increase the number of uninsured. Such destabilization could translate to increased costs for employers. We have considered this when setting our healthcare cost trend assumptions and will continue to monitor this issue.

Other Revenue Raisers

The Health Care Reform includes a variety of other revenue raisers that involve additional costs on providers (such as medical device manufacturers) and insurers. We considered these factors when developing the trend assumptions.

Other

We have not identified any other specific provision of health care reform that would be expected to have a significant impact on the measured obligation. We will continue to monitor any potential impacts of future legislation regarding health care.

---

[1] The *Tax Cuts and Jobs Act*, passed on December 22, 2017, changed the index used to increase Cadillac tax limits from CPI to “Chained CPI”. The assumed 90% difference between these two indices is consistent with recent data provided by the Bureau of Labor and Statistics.

[2] On January 22, 2018, the *Budget Continuing Resolution* was signed. This resolution deferred the application of the Cadillac tax from 2020 to 2022.

Appendix E: Key Terms

Summary of Key Accounting Terms

Actuarially determined contribution

A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

Actuarial present value of projected benefit payments

Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.

Actuarial valuation

The determination, as of a point in time (the actuarial valuation date), of the service cost, total OPEB liability, and related actuarial present value of projected benefit payments for OPEB performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.

Actuarial valuation date

The date as of which an actuarial valuation is performed.

Ad hoc postemployment benefit changes

Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.

Automatic postemployment benefit changes

Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the OPEB plan) or to another variable (such as an increase in the consumer price index).

Covered-employee payroll

The payroll of employees that are provided with OPEB through the OPEB plan.

Discount rate

The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:

a) The actuarial present value of benefit payments projected to be made in future periods in which (1) the amount of the OPEB plan's fiduciary net position is projected (under the requirements of this Statement) to be greater than the benefit payments that are projected to be made in that period and (2) OPEB plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on OPEB plan investments

b) The actuarial present value of projected benefit payments not included in (a), calculated using a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher (or equivalent quality on another rating scale).

For defined benefit OPEB that is provided through an OPEB plan that is not administered through a trust that meets the criteria in paragraph 4 of this Statement, the discount rate is equal to the municipal bond rate.

Entry age actuarial cost method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the Actuarial accrued liability.

Healthcare cost trend rates

The rates of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Inactive employees

Individuals no longer employed by an employer in the OPEB plan, or the beneficiaries of those individuals. Inactive employees include individuals who have accumulated benefits under the terms of an OPEB plan but are not yet receiving benefit payments and individuals currently receiving benefits.

Measurement period

The period between the prior and the current measurement dates.

Net OPEB liability

The liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit OPEB plan that is administered through a trust that meets the criteria in paragraph 4 of the Statement.

Other postemployment benefits (OPEB)

Benefits (such as death benefits, life insurance, disability, and long-term care) that are paid in the period after employment and that are provided separately from a pension plan, as well as healthcare benefits paid in the period after employment, regardless of the manner in which they are provided. OPEB does not include termination benefits or termination payments for sick leave.

Projected benefit payments

All benefits (including refunds of employee contributions) estimated to be payable through the OPEB plan (including amounts to be paid by employers or non-employer contributing entities as the benefits come due) to current active and inactive employees as a result of their past service and their expected future service.

Real rate of return

The rate of return on an investment after adjustment to eliminate inflation.

Service costs

The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.

Total OPEB liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of this Statement. The total OPEB liability is the liability of employers and non-employer contributing entities to employees for benefits provided through a defined benefit OPEB plan that is not administered through a trust that meets the criteria in paragraph 4 of this Statement.