Oakland County Retirees' Health Care Trust

Actuarial Valuation Report

September 30, 2018

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March 18, 2019

The Oakland County VEBA Board
Waterford, Michigan

Dear Board Members:

Submitted in this report are the results of the annual actuarial valuation of the liabilities, funded position and contribution requirements associated with the Oakland County Retiree's Health Care Trust with benefits provided through a VEBA. The purpose of the valuation was to measure the VEBA's funding progress and determine the employer contribution for the 2019-2020 fiscal year. This report should not be relied upon for any other purpose. This report may be provided to parties other than the VEBA Board only in its entirety and only with the permission of the VEBA Board. GRS is not responsible for unauthorized use of this report.

The date of the valuation was September 30, 2018. An Executive Summary is included as Section A. Valuation results are contained in Section B.

The valuation was based upon the actuarial assumptions and methods adopted by the Board, information, furnished by the Plan, concerning VEBA benefits, financial transactions, individual members, terminated members, retirees and beneficiaries. Data was checked for internal and year-to-year consistency, but was not audited by us. As a result, we are unable to assume responsibility for the accuracy or completeness of the data provided.

Future actuarial measurements may differ significantly from those presented in this report due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements.

This report was prepared by actuaries with substantial experience in valuing public employee retirement systems. To the best of our knowledge, this report is complete and accurate and the valuation was conducted in accordance with standards of practice prescribed by the Actuarial Standards Board in compliance with the applicable state statutes. Louise M. Gates and James D. Anderson are independent of the plan sponsor and are Members of the American Academy of Actuaries (MAAA) who meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

Respectfully submitted,

Louise Gates

Louise M. Gates, ASA, FCA, MAAA

James D. Anderson

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

1. Computed Employer Contributions - Fiscal Year Beginning October 1, 2019

The computed employer contributions for each employment division are shown in the chart below.

Division	Computed Employer Contributions
General	$ 0
Command Officers	0
Road Deputies	0
Corrections Deputies	0
Total	$ 0

As of the valuation date, the Plan has a funding surplus which was used as a credit against County normal cost contributions, resulting in zero dollar employer contributions for all of the employment groups. It is important to note, that once the funding surplus is depleted, County contributions will increase to normal cost contributions plus any payments needed to finance unfunded actuarial accrued liabilities.

2. Contribution Comparison

The total recommended contribution in the September 30, 2017 valuation was $0 and is $0 again this year. The 2018 actuarial valuation is used to determine employer contributions for the County's 2019-2020 fiscal year.

3. Reasons for Change

There are three general reasons why contribution rates change from one valuation to the next. The first is a change in the benefits or eligibility conditions of the plan. The second is a change in the valuation assumptions used to predict future occurrences. The third is the difference during the year between the plan's actual experience and what the assumptions predicted.

No benefit changes were reported to the actuary in connection with this valuation of the VEBA. A change was made to the medical inflation assumption used in the valuation of the Plan to better reflect the anticipated future experience of the VEBA. These assumptions are shown in Section F of this report.

4. Plan Experience

For the year ended September 30, 2018, the experience of the VEBA was, overall favorable. During the year, the investment return on trust assets was lower than long term expectations. However, the market smoothing techniques used in this valuation of the VEBA recognize both past and present investment experience. As a result, the recognized rate of return was 7.4%. Additional information regarding Plan investments is shown in Section E of this report. For current benefit recipients over age 65, VEBA claims costs during the 2017-2018 plan year were lower than projected by actuarial assumptions. This was offset in part by higher than projected per capita costs for current benefit recipients under age 65.

5. Funding Position

The Plan's funding percent based on the actuarial value of Plan assets was 143% as of September 30, 2018. If the market value of Plan assets were used to determine the plan's funding percent, the result would be a funding percent of 145% as of the same date.

Unless otherwise indicated, a funding status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. It is important to note that the funding status measurement presented in this report is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation and the need for or amount of future employer contributions.

6. Asset Transfers

Asset transfers totaling approximately $1.1 million were made between valuation groups in connection with reported transfers between employment divisions. These asset transfers were made to equitably distribute both assets and plan liabilities in connection with movement between groups.

7. Other

As of September 30, 2018, there is a funding surplus that is sufficient to eliminate the employer normal cost contribution resulting in a $0 employer contribution for fiscal year 2020. Given the practice of using any funding surplus to make recommended County contributions, and the volatility of medical and prescription drug benefit costs the funding surplus may eventually be depleted. Once the surplus is depleted, County contributions to the Plan will once again be needed. These contributions will be at least equal to the employer's normal cost payment which is currently about $9.0 million.

8. New State Law

The Michigan Public Act 202 of 2017 has created new reporting and other requirements for local units of Government. Recently the Department of Treasury (DOT) issued guidance on uniform actuarial assumptions needed in connection with the Act. The actuarial assumptions currently being used in the annual valuations of the VEBA differ from those prescribed by the DOT for reporting purposes under the Act. In the absence of any changes in actuarial assumptions, a separate valuation of the VEBA using DOT compliant assumptions will be needed.

SECTION B

VALUATION RESULTS

Financial Objective

The financial objective of the Retirees' Health Care Plan is to establish and receive contributions, which will permit the accumulation of assets to pay for the retirement benefit promises.

Your annual retiree health benefit valuations determine how well the objective is being met.

Contributions

The retiree health benefits are supported by contributions from the County and by the investment income earned on accumulated fund assets. The County provides an actuarially determined contribution needed to meet the financial objective.

The County's contributions cover both (i) normal cost, and (ii) the financing of the unfunded accrued liability over a period of future years. The normal cost is the portion of health benefit costs allocated to the current year by the valuation method described in Section F. The unfunded accrued liability is the portion of costs not covered by present fund assets and future normal costs. The contribution requirements for retiree health benefits are presented on page B-2.

Employer Contributions to Provide Benefits for the Fiscal Year Beginning October 1, 2019

Contributions for	General Members	Command Officers	Road Deputies	Corrections Deputies	Total
Normal cost of benefits	$ 5,090,927	$ 701,295	$ 2,033,885	$ 1,134,459	$ 8,960,566
Unfunded accrued liability (UAL)	(41,864,957)	(2,153,123)	(7,538,524)	(5,933,545)	(57,490,149)
Employer contribution $	0	0	0	0	0

The unfunded accrued liabilities for the employment divisions shown above were amortized as a level dollar amount over a period of 10 years. The chart above shows the resulting UAL amortization payments (credits) and normal cost contributions. The following page shows the UAL by employment division as of September 30, 2018.

Determination of the Plan's Unfunded Accrued Liability as of September 30, 2018

	General Members	Command Officers	Road Deputies	Corrections Deputies	Total
A. Accrued Liability					
1. For retirees and beneficiaries	$ 382,025,236	$30,411,083	$ 49,397,046	$ 44,575,121	$ 506,408,486
2. For vested terminated members	47,912,639	1,349,820	4,969,415	2,223,777	56,455,651
3. For present active members					
a. Value of expected future benefit payments	250,779,631	31,060,170	70,980,805	39,738,283	392,558,889
b. Value of future normal costs	36,104,111	4,341,099	15,129,828	8,047,957	63,622,995
c. Active member liability: (a) - (b)	214,675,520	26,719,071	55,850,977	31,690,326	328,935,894
4. Total	644,613,395	58,479,974	110,217,438	78,489,224	891,800,031
B. Valuation Assets	925,347,927	72,918,203	160,768,641	118,277,897	1,277,312,668
C. Unfunded Accrued Liability: (A.4) – (B)	(280,734,532)	(14,438,229)	(50,551,203)	(39,788,673)	(385,512,637)

Retiree Premium Rate Development

Background

The initial per capita health care premiums are an important part of a retiree health valuation. We understand that currently, eligible County retirees (and eligible spouses) receive benefits from a number of health care plans, including the self-insured BCBS and ASR plans for Non-Medicare retirees, a self-insured medical plan through NGS for retirees on Medicare, a self-insured drug plan through Navitus and the fully-insured Health Alliance Plan (HAP). Dental benefits provided by Delta Dental are also self-insured.

Rate Development

For the self-insured medical plans, initial per capita costs were developed separately for pre-65 and post-65 retirees using medical claims experience from October 2015 to September 2018 from BCBS, ASR, and NGS in conjunction with exposure data for the retired members of the health care program. These medical claims were projected on an incurred claim basis, adjusted for plan design changes, large claims and loaded for administrative expenses.

For the self-insured drug plans, initial per capita costs were developed using drug claims experience from October 2015 to September 2018 from Navitus in conjunction with exposure data for the retired members of the health care program. These drug claims were projected on an incurred claim basis, adjusted for plan design changes and administrative expenses.

The initial medical and drug premium rates used in the valuation are a weighted average cost of the three-year experience period to smooth out any large year to year fluctuations.

Since participation in the fully-insured HAP plan is minimal in relation to the other coverage (less than 1% of participation), the HAP plan was not used in the development of the rates.

For employees hired after 1/1/1997, BCBS PPO2, ASR PPO1, and ASR PPO3 are the only medical plans available to non-Medicare retirees. The prescription drug plan is the same as the plan offered to current retirees. We have developed separate premium rates for these future retirees in order to reflect the non-Medicare medical benefit differences.

Age graded and sex distinct premiums are utilized by this valuation. The initial costs developed are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. This process more accurately reflects health care costs in the retired population over the projection period.

Based on the guidance provided by GASB on issues related to Medicare Part D payments to State and Local Governments effective as of June 30, 2006, an employer should apply the measurement requirements of GASB Statement No. 45 to determine the actuarial accrued liabilities, the annual required contribution of the employer, and the annual OPEB cost without reduction for Retiree Drug Subsidy (RDS) payments. Therefore the impact of the RDS that is part of the Medicare Prescription Drug Improvement and Modernization Act of 2003 is not reflected in the liabilities shown in this report.

Retiree Premium Rate Development

The tables below show the resulting combined medical and prescription drug one-person monthly premiums at select ages. The premium (or per capita costs) rates shown below were used in this valuation of the Plan and reflect the use of age grading.

Current Retirees

Premiums For Retirees Not Yet Eligible For Medicare		
Age	**Males**	**Females**
50	$650.08	$800.83
55	855.43	934.00
60	1,104.83	1,087.88

Premiums For Retirees Receiving Medicare		
Age	**Males**	**Females**
70	$538.54	$521.12
75	578.40	564.39
80	607.20	596.59

Future Retirees

Premiums For Retirees Not Yet Eligible For Medicare		
Age	**Males**	**Females**
50	$658.60	$811.33
55	866.65	946.25
60	1,119.32	1,102.15

Premiums For Retirees Receiving Medicare		
Age	**Males**	**Females**
70	$538.54	$521.12
75	578.40	564.39
80	607.20	596.59

The dental and vision premium rates used in this valuation of the Plan were not "age graded" since these claims do not vary significantly by age. The monthly one and two-person dental premiums used in this valuation are $38.15 and $69.74, respectively. The monthly one and two-person vision premiums used in this valuation are $1.87 and $3.09.

James E. Pranschke is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to certify the per capita retiree health care rates shown above.

James E. Pranschke

James E. Pranschke, FSA, MAAA

Development of the 2017/2018 Experience Gain (Loss)

Actual experience will never (except by coincidence) exactly match assumed experience. It is hoped that gains and losses will cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) is shown below.

		2018
(1)	UAAL* at start of year	$(360,162,144)
(2)	Normal cost for year	9,088,220
(3)	Actual contributions #	3,465,258
(4)	Net interest accrual on (1), (2) and (3)	(25,907,923)
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	(380,447,105)
(6)	Change from benefit revisions	0
(7)	Change from revised assumptions	
(8)	Other changes	0
(9)	Expected UAAL after changes: (5) + (6) + (7) + (8)	(380,447,105)
(10)	Actual UAAL at end of year	(385,512,637)
(11)	Gain (Loss): (9) - (10)	5,065,532
(12)	Gain (Loss) as percent of actuarial accrued liabilities at start of year	0.6%

* *Unfunded actuarial accrued liabilities*
\# *Includes the Medicare part D subsidy*

SECTION C

CASH FLOW PROJECTIONS

Cash Flow Projections

Background

Until a retirement program reaches a mature state, the number of members receiving benefits will continue to increase, with commensurate increases in the amount of benefit disbursements. When the retirement benefits being paid are health benefits, health costs can be expected to increase as the result of health care cost increases, changes in utilization and Medicare cost shifting. When these reasons for increased disbursements apply, it is reasonable to expect that the amount of the fund's annual disbursements will increase for many years to come.

We have projected the fund's disbursements over the next 10 years. The projections are based upon the valuation assumptions shown in Section F. The following schedule projects the anticipated benefit payments of the Trust. These benefit payments include vision, dental, medical and prescription drug benefits as well as Medicare Part B premium payments.

10-Year Closed Group Projection of Benefit Disbursements
Plan Total (All Divisions Combined)

(Dollar Amounts Shown in Millions)

Year Ending Sept. 30	Retiree Health Payments on Behalf of Present			
	Retirees	Employees	Inactives	Total
2019	$37.1	$ 1.3	$0.4	$38.8
2020	38.4	4.0	0.9	43.3
2021	39.5	6.5	1.5	47.5
2022	40.4	9.2	2.0	51.6
2023	41.4	12.0	2.5	55.9
2024	42.1	15.0	2.9	60.0
2025	42.7	18.1	3.3	64.1
2026	43.2	21.3	3.7	68.2
2027	43.3	24.4	4.0	71.7
2028	43.2	27.4	4.2	74.8

SECTION D

SUPPLEMENTARY INFORMATION

Schedule of Funding Progress

(amounts in millions)

Valuation Date September 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Valuation Payroll (c)	UAAL as a % of Payroll ((b-a)/c)
2014	$1,076.9	$885.5	$(191.4)	121.6%	$146.5	0.0%
2015	1,118.3	898.3	(220.0)	124.5	144.7	0.0
2016	1,164.6	944.1	(220.5)	123.4	141.5	0.0
2017	1,222.1	861.9	(360.2)	141.8	135.6	0.0
2018	1,277.3	891.8	(385.5)	143.2	131.9	0.0

Schedule of Employer Contributions

Valuation Year Ended September 30	Fiscal Year Ended September 30	Required Employer Contributions	Computed Employer Contributions	Percentage Contributed
2013	2015	$818,930	$818,930	100.0%
2014	2016	800,184	800,184	100.0
2015	2017	0	0	100.0
2016	2018	0	0	100.0
2017	2019	0		
2018	2020	0		

Summary of Assumptions and Methods

The following assumptions and methods were used in the September 30, 2018 actuarial valuation of the Retiree Health Care Plan:

Valuation Date	September 30, 2018
Actuarial Cost Method	Entry-Age
Amortization Method	Level dollar, open
Remaining Amortization Period	10 years
Asset Valuation Method	5-year smoothed market
Premium Rate Development Method	Please refer to pages B-4 – B-5
Actuarial Assumptions	
Annual rate of return (discount rate)	7.25% per year
Rates of inflation for medical and other benefits	Please refer to page F-6

SECTION E

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

Brief Summary of Health Benefit Provisions
(September 30, 2018)

Eligibility	Amount
Employed Until Retirement	
Hired before 9/21/85 and having 8 or more years of service, or hired between 9/20/85 and 1/1/95 and had 15 or more years of service - retired employee or survivor under the Retirement System or the defined contribution plan.	Until age 65 - the same health benefits as are in effect for County employees. Beginning at age 65 - Medicare supplementary coverage. If hired before 1/1/89 there is reimbursement for Medicare Part B premiums. Family coverage provided if needed.
Retired employee or survivor of deceased employee, hired between 9/20/85 and 1/1/95 and had 8 to 14 years of service.	Same as above, for retired member only.

For members hired during 1995 and later, refer to "Accumulation of Health Care Points" below.

Eligibility	Amount
Employment Ended Before Retirement	
Hired between 9/20/85 and 1/1/95 and 15 to 19 years of service.	Same as above, for retired employee only.
Hired before 9/21/85 and 8 or more years of service or hired between 9/20/85 and 1/1/95 with 20 or more years of service.	Same as above, with family coverage if needed.

Accumulation of Health Care Points

For General members hired on and after 1/1/95 (5/27/95 for Command Officers and Sheriff's Deputies), the portion of the health care costs paid by the Trust will be based on years of service at retirement. If a member has less than 15 years of service, there is no County paid retiree health coverage. If a member has 15 years of service at retirement, 60% of the health care premium will be paid by the Health Care Trust. The percent increases 4% per year of service over 15 with a 100% maximum coverage after 25 years of service. Note, new employees are required to join the County's retiree health savings plan effective 1/1/06 for General Non-Union employees, 3/5/09 for Sheriff Command Officers, 1/1/10 for Sheriff Corrections Deputies, and 2/9/12 for Sheriff Road Patrol Deputies. Closure effective dates vary for General Union members.

Death After Retirement

Benefits may be payable to the spouse at time of retirement under the conditions described above.

Dental and Vision Coverage

Retirees and eligible family members based upon their eligibility for health benefits.

General Division members hired after 2006, Command Officers hired after 3/5/2009, Corrections Deputies hired after 2009 and Road Patrol Deputies hired after 2/9/2012 must join the defined contribution health plan.

Retirees and Beneficiary Benefit Recipients
As of September 30, 2018
Tabulated by Attained Age

Attained Age*	Number of Contracts #	Liability^
Under 40	4	$668
40 - 44	4	1,077
45 - 49	18	7,824
50 - 54	43	18,321
55 - 59	157	52,410
60 - 64	413	107,619
65 - 69	523	120,183
70 - 74	519	102,334
75 - 79	337	50,652
80 - 84	252	28,606
85 - 89	149	12,378
90 & Up	93	4,336
Total	**2,512**	**$506,408**

^ *Amounts shown have been rounded to the nearest thousand and include liabilities associated with all Plan benefits.*

* *Age of contract holder*

Medical and prescription drug contract counts are shown

Inactive Members as of September 30, 2018
Tabulated by Attained Age

Inactive members reported in connection with the September 30, 2018 valuation totaled 228. An inactive member is a person who has left County employment with entitlement to retiree health coverage at a future date. The schedule shows the inactive members by age.

Attained Age	Number*
35 - 39	3
40 - 44	23
45 - 49	46
50 - 54	62
55 - 59	79
60 - 64	10
65 - 69	5
70 - 74	0
Total	**228**

** Includes 30 individuals reported in connection with this valuation without entitlement to retiree health benefits.*

Active Members Reported for Valuation
Comparative Schedule

Date	Active Members				Total	Valuation	Average		
	General	Road Deputies	Corrections Deputies	Command Officers		Payroll	Age	Service	Pay
12/31/1994	2,701	567	@	@	3,268	$ 118,366,427	41.7	10.9	$36,220
12/31/1995	2,935	594	@	@	3,529	133,105,986	41.6	10.6	37,718
12/31/1996	2,753	584	@	@	3,337	133,923,317	42.7	11.8	40,133
9/30/1997	3,024	556	@	85	3,665	147,575,221	42.1	11.0	40,266
9/30/1998	3,137	528	@	86	3,751	156,867,328	42.5	11.2	41,820
9/30/1999	2,935	629	@	89	3,554	153,188,662	42.4	11.6	43,103
9/30/2000	2,836	685	@	90	3,611	166,503,751	42.5	11.7	46,110
9/30/2001	2,935	691	@	92	3,718	172,693,445	42.6	11.7	46,448
9/30/2002	2,981	705	@	101	3,787	183,705,032	42.9	12.0	48,509
9/30/2003	2,837	715	@	94	3,646	181,772,063	42.7	11.6	49,855
9/30/2004	2,903	724	@	101	3,728	192,689,384	43.1	11.9	51,687
9/30/2005	2,918	736	@	102	3,756	201,187,290	43.4	12.2	53,564
9/30/2006	2,819	732	@	103	3,654	201,019,205	44.2	13.0	55,013
9/30/2007	2,654	743	@	104	3,501	200,409,433	44.8	13.8	57,243
9/30/2008	2,401	731	@	102	3,234	186,274,882	45.0	14.1	57,599
9/30/2009	2,292	708	@	101	3,101	180,539,069	45.9	15.1	58,220
9/30/2010	2,185	681	@	95	2,961	175,316,170	46.7	16.0	59,208
9/30/2011	2,027	375	329	97	2,828	173,903,452	47.1	16.2	61,493
9/30/2012	1,898	376	292	98	2,664	162,819,440	47.9	17.0	61,118
9/30/2013	1,806	372	263	98	2,539	154,128,944	48.4	17.6	60,705
9/30/2014	1,651	355	219	97	2,322	146,473,723	48.9	18.4	63,081
9/30/2015	1,548	335	195	99	2,177	144,715,626	49.5	19.0	66,475
9/30/2016	1,450	314	179	107	2,050	141,464,508	50.1	19.6	69,007
9/30/2017	1,345	291	158	105	1,899	135,578,345	50.6	20.2	71,395
9/30/2018	1,247	276	148	104	1,775	131,945,254	51.0	20.8	74,335

@ *Included in the Road Deputies column.*

Summary of Reported Financial Information
Year Ended September 30, 2018
(Market Value)

Revenues and Disbursements

Revenues:		
a. Employer Contributions	$ 0	
b. Asset Transfer	0	
c. Investment Income	87,417,280	
d. Payments by Retirees	234,284	
e. Other #	3,465,258	
f. Total		$91,116,822
Disbursements:		
a. Benefits Paid	37,684,137	
b. Expenses	3,489,392	
c. Total		41,173,529
Reserve Increase:		
Total Revenues Minus Total Disbursements		$49,943,293

 # Includes Medicare Part B subsidy payment

Summary of Investments

Assets:	
a. Cash & Equivalents*	$ 42,921,938
b. Fixed Income	316,113,242
c. Equities	679,093,899
d. Real Estate	105,500,479
e. Other	151,893,794
Total	$ 1,295,523,352

* *Includes receivables and payables*

Development of Valuation Assets
as of September 30, 2018

		2017	2018	2019	2020	2021	2022
A.	Funding Value Beginning of Year	$1,164,565,485	$1,222,091,017				
B.	Market Value End of Year	1,245,580,059	1,295,523,352				
C.	Market Value Beginning of Year	1,139,804,203	1,245,580,059				
D.	Non-Investment Net Cash Flow	(28,400,877)	(33,984,595)				
	Member and employer contributions less benefit payments						
E.	Investment Income						
	E1. Market Total: B - C - D	134,176,733	83,927,888				
	E2. Assumed Rate (I)	7.25%	7.25%				
	E3. Amount for Immediate Recognition						
	I * (A + D / 2)	83,401,466	87,369,657				
	E4. Amount for Phased-In Recognition: E1-E3	50,775,267	(3,441,769)				
F.	Phased-In Recognition of Investment Income						
	F1. Current Year	10,155,053	(688,354)				
	F2. First Prior Year	2,894,183	10,155,053	($688,354)			
	F3. Second Prior Year	(15,289,425)	2,894,183	10,155,053	($688,354)		
	F4. Third Prior Year	4,765,132	(15,289,425)	2,894,183	10,155,053	($688,354)	
	F5. Fourth Prior Year	0	4,765,132	(15,289,425)	2,894,183	10,155,053	($688,354)
	F6. Total Recognized Investment Gain	2,524,943	1,836,589	(2,928,543)	12,360,882	9,466,699	(688,354)
G.	**Funding Value End of Year: A + D + E3 + F6**	**$1,222,091,017**	**$1,277,312,668**				
H.	Difference between Market & Funding Value	23,489,042	18,210,684				
I.	Recognized Rate of Return	7.5%	7.4%				
J.	Market Value Rate of Return	11.9%	6.8%				
K.	Ratio of Funding Value to Market Value	0.98	0.99				

SECTION F

VALUATION METHODS AND ASSUMPTIONS

Valuation Methods

The normal cost was computed as follows:

The series of contributions necessary to accumulate the present value at time of retirement of an employee's retired member health benefits was computed so that each contribution in the series, from entry age to retirement, was a constant percentage of the employee's year-by-year projected covered compensation. This is referred to as the individual entry age actuarial cost method.

The accrued liability was computed as follows:

Retirees and Beneficiaries: The discounted value of health benefits likely to be paid to retirees and beneficiaries was computed using the investment return, health cost increase and mortality assumptions.

Active and Inactive Employees: The discounted value of health benefits likely to be paid for active and inactive employees after their retirement was computed using the assumptions outlined on the following pages and was reduced by the value of normal costs to be paid for service after the valuation date.

Valuation Assets: Valuation assets are equal to the reported market value of assets at the valuation date with investment gains and losses spread over a period of 5 years (with 20% recognition in each year).

Financing of Unfunded Actuarial Accrued Liabilities: The Unfunded Accrued Liabilities (UAL) for all groups were amortized by the level (principal & interest combined) dollar payment method.

Actuarial Assumptions Used for the Valuation

Investment Return (net of expenses): 7.25% per year compounded annually. This assumption is used to equate the value of payments due at different points in time. The investment return assumption was first used for the September 30, 2016 valuation.

Net Market Value Rates of Investment Return: during the last 5 plan years shown below:

	For the Year Ending September 30th				
	2018	**2017**	**2016**	**2015**	**2014**
Rate of Investment Return	6.83%	11.92%	9.20%	0.30%	9.86%

Pay Projections: These assumptions are used to project current pays to those upon which future contributions will be based. The merit and longevity assumptions were first used for the September 30, 2010 valuation.

	Annual Rate of Pay Increase for Sample Ages						
	General Members				Sheriff's Department		
Sample Ages	Base* (Economic)	Merit & Longevity	Total	Years of Service	Base* (Economic)	Merit & Longevity	Total
20	3.25%	4.00%	7.25%	1 to 7	3.25%	6.00%	9.25%
25	3.25	3.00	6.25	8 to 15	3.25	3.00	6.25
30	3.25	2.00	5.25	thereafter	3.25	0.00	3.25
35	3.25	2.00	5.25				
40	3.25	1.00	4.25				
45	3.25	1.00	4.25				
50	3.25	0.50	3.75				
55	3.25	0.50	3.75				
60	3.25	0.25	3.50				

* *First used for the September 30, 2016 valuation of the Plan.*

Mortality: The RP-2014 Healthy Annuitant Mortality Table (unadjusted) projected to 2021 using a static projection based on the 2-dimensional MP-2014 improvement scales. This table was first used for the September 30, 2016 valuation. Sample values follow:

Sample Ages	Future Life Expectancy (Years) Men	Future Life Expectancy (Years) Women
50	33.50	36.20
55	29.15	31.69
60	24.96	27.26
65	20.91	22.97
70	17.05	18.88
75	13.44	15.06
80	10.17	11.58

This assumption is used to measure the probabilities of employees dying before retirement and the probabilities of health coverage being provided year by year after retirement. The membership size in this group is not sufficiently large to determine if there is a margin for mortality improvement. However, based upon our experience with a broad cross section of public sector plans similar in nature to this plan, it is our opinion that there is a provision for future mortality improvement in the current mortality assumption.

Medical Coverage was assumed to be available for all employees on attainment of age 65, or immediately if retired for disability.

Other: Terminated vested members of the Plan with incomplete data were assumed to elect two person health coverage upon retirement. Liabilities were loaded by two percent for the expected future impact of the "Cadillac Plan" status as defined by the Patient Protection and Affordable Care Act.

For retiree members of the plan who were reported as receiving two person coverage but without beneficiary information we assumed that male retirees had a spouse beneficiary 3 years younger. Female retirees were assumed to have a spouse 3 years older.

Medicare Part B Premiums used in this valuation were provided by the Retiree Health Plan for current benefit recipients. For future benefit recipients, the premium used in this valuation was $135.50 per month during calendar year 2019.

Rates of Separation from Active Membership: The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	% of Active Members Separating within Next Year					
		General-DB	Command-DB	Sheriffs-DB	General-DC	Command-DC	Sheriffs-DC
ALL	0					9.00 %	8.00 %
	1					6.00	5.50
	2					5.00	4.50
	3					5.00	4.50
	4					5.00	4.50
	5 & Over						
20		5.00 %	4.00 %	4.00 %	7.00 %	5.00 %	4.00 %
25		5.00	4.00	4.00	7.00	5.00	4.00
30		4.00	3.40	3.40	6.00	3.70	3.40
35		4.00	2.50	2.50	4.40	2.40	2.50
40		3.00	1.80	1.80	3.40	1.70	1.80
45		3.00	1.30	1.30	3.00	1.30	1.30
50		2.00	0.80	0.80	3.00	1.20	0.80
55		1.00	0.40	0.40	3.00	1.20	0.40
60		0.50	0.10	0.10	3.00	1.20	0.10
65		0.50	-	-	3.00	1.20	-

The rates were first used for the September 30, 2010 valuation.

Rates of Disability: These rates represent the probabilities of active members becoming disabled.

Sample Ages	Percent Becoming Disabled within Next Year	
	General	Sheriffs
25	0.02%	0.15%
30	0.04	0.18
35	0.06	0.23
40	0.16	0.30
45	0.19	0.51
50	0.31	1.00
55	0.71	1.55

These rates were first used for the December 31, 1992 valuation.

Rates of Retirement: These rates are used to measure the probabilities of an eligible member retiring during the next year.

Percent of Active Members Retiring within One Year								
	General-DB	General-DC	Sheriff's Department - DB				Sheriff's Department - DC	
Ages	%	%	Ages	%	Service	%	Ages	%
55	20%	25%			25	40%	45	40%
56	15	20			26	35	46	40
57	15	15			27	35	47	40
58	15	20			28	35	48	40
59	15	20			29	35	49	40
60	20	20	60	20%	30	40	50	30
61	15	15	61	40	31	40	51	20
62	25	30	62	70	32	50	52	20
63	15	20	63	50	33	70	53	20
64	15	20	64	50	34	70	54	20
65	35	40	65	100	35	100	55	20
66	40	45					56	20
67	50	35					57	20
68	70	40					58	20
69	80	45					59	20
70	100	100					60	20
							61	40
							62	70
							63	50
							64	50
							65	100

Eligibility for retirement is shown in Section E of this report. These rates were first used for the September 30, 2010 valuation.

Marital Status at Retirement: 85% of men and 70% of women were assumed to be married at retirement. This assumption is used for current active participants to predict the extent of premiums for single persons and for couples.

Health Care Cost Increase Assumptions - are shown below:

Year Beginning Sept. 30	Future Health Cost Increases Medical and Prescription Drugs — Valuation Assumption
2019	8.00%
2020	7.50%
2021	7.00%
2022	6.50%
2023	6.00%
2024	5.50%
2025	5.00%
2026	4.50%
2027	4.00%
2028	3.50%
2029	3.50%
2030 & After	3.50%

Rates of Inflation for Medicare Part B and Dental/Vision Benefits

Year Beginning Dec. 31	Future Health Cost Increases — Medicare Part B
2019	8.00%
2020	7.50
2021	7.00
2022	6.50
2023	6.00
2024	5.50
2025	5.00
2026	4.50
2027	4.00
2028	3.50
2029	3.50
2030 & after	3.50

Year Beginning Sept. 30	Future Health Cost Increases — Dental & Vision
2019	3.50%
2020	3.50
2021	3.50
2022	3.50
2023	3.50
2024	3.50
2025	3.50
2026	3.50
2027	3.50
2028	3.50
2029	3.50
2030 & after	3.50

Glossary

Actuarial Accrued Liability - The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability." Under the actuarial cost method used the "AAL" differs somewhat from the value of future payments based on benefits earned as of the valuation date.

Accrued Service - The service credited under the plan, which was rendered before the date of the actuarial valuation.

Actuarial Assumptions - Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Decrement assumptions (rates of mortality, separation and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate appropriate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method - A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Present Value - The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization - Paying off an interest-bearing liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment.

Experience Gain (Loss) - A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost - The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." An amortization payment toward the unfunded actuarial accrued liability is in addition to the normal cost.

Glossary

Reserve Account - An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability - The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets - The value of current plan assets recognized for valuation purposes.

GRS Retirement Consulting

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March 18, 2019

Oakland County VEBA Board
2100 Pontiac Lake Rd.
Waterford, MI 48328-0440

Dear Board Members:

I am enclosing 1 copy of the September 30, 2018 actuarial valuation of the Oakland County Retirees' Health Care Trust. We look forward to meeting with you to review the report. If you have any questions, please do not hesitate to contact me.

Respectfully submitted,

Louise Gates

Louise M. Gates

Enclosure

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723