Gabriel Roeder Smith & Company
Consultants & Actuaries

OAKLAND COUNTY EMPLOYEES' RETIREMENT SYSTEM

SEVENTIETH ANNUAL ACTUARIAL VALUATION REPORT

SEPTEMBER 30, 2014

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April 23, 2015

The Retirement Commission
Oakland County Employees' Retirement System
Waterford, Michigan

Dear Commission Members:

Submitted in this report are the results of the seventieth annual actuarial valuation of the liabilities, funded position and contribution requirements associated with benefits provided by the Oakland County Employees' Retirement System. The purpose of the valuation was to measure the System's funding progress and determine the employer contribution for the 2015-2016 fiscal year. This report should not be relied upon for any other purpose. This report may be provided to parties other than the Retirement Commission only in its entirety and only with the permission of the Retirement Commission.

The date of the valuation was September 30, 2014. Sections A-E of this report include the results of an actuarial valuation of the System using the current asset valuation method (in effect since the 2010 valuation of the System). The Appendix of this report includes select valuation results using the market value of assets as of September 30, 2014.

The valuation was based upon information, furnished by your secretary, concerning Retirement System benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. Data was checked for internal and year to year consistency, but was not otherwise 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.

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, MAAA

James D. Anderson
James D. Anderson, FSA, EA, MAAA

LMG/JDA:sc:dj

SECTION A
EXECUTIVE SUMMARY

1. September 30, 2014 Valuation Results

On March 20, 2015, a draft report containing the results of the 2014 actuarial valuation of the System were provided to the Retirement Board. These results are shown in Sections A-E of this report. In response to the Board's request, the Appendix of this report includes select valuation results based on an alternate value of assets. Specifically, the market value of assets as of September 30, 2014. We understand that this change is being considered for the 2014 actuarial valuation only and not for future valuations of the System.

2. Contribution Comparison

The computed County contributions based on valuation assets (shown on page C-4) are as follows:

Division	Computed Employer Contributions
General County	$ 0
Command Officers	763,532
Road Deputies	858,441
Corrections Deputies	1,707,132
Total	$ 3,329,105

County contributions for the prior year (fiscal year beginning October 1, 2014) were $4,554,832. As of September 30, 2014, the General division has an $11.9 million dollar surplus resulting in a theoretical, negative employer contribution for this division. Although the theoretical contribution for this group is negative, a $0 contribution is recommended since the System cannot refund contributions back to the employer.

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.

There were no benefit or assumption changes made in connection with this valuation of the System. The change in contribution rates from the prior year is due to System experience.

4. Plan Experience

During the year ended September 30, 2014, the return on pension fund assets was higher than long term expectations. The market value smoothing techniques used in this valuation of the System recognize both past and present investment experience. As a result, the recognized investment return for the year was 9.49%. While the favorable investment experience affected all employment groups, the Corrections Deputies group had unfavorable experience due to higher than expected liabilities for new retirees from County employment. As a result, the County contributions for this group are generally consistent with the prior year's valuation results. Additional information on the investment experience for the year is shown on pages C-3 and C-4.

5. Reserve Transfers

For all employment divisions, the computed liability for members who have already retired and their beneficiaries is larger than the reported balance of the retiree reserve account. Transfers will be necessary to balance the retiree reserve with the retiree liabilities as shown in the table below. In addition, a transfer of $3,289,570 from the General County pension reserve to the Sheriff Deputies pension reserve is needed to ensure that assets allocated to each employment group in connection with the change in asset valuation method are sufficient to cover 100% of unfunded liabilities.

	General County	Command Officers	Sheriff Deputies*	Total
Retiree Liability	$438,721,264	$35,814,330	$79,645,184	$554,180,778
Retiree Reserve	386,749,158	32,605,663	68,457,705	487,812,526
Difference	$ 51,972,106	$ 3,208,667	$ 11,187,479	$ 66,368,252

* *Road patrol and corrections divisions are combined.*

We recommend that the Retirement Commission authorize the transfers described above.

6. Other Asset Transfers

Assets equal to Retirement System liabilities were transferred between the Sheriff's Department divisions in connection with individuals who transferred from the Road Deputies division to the Command and Corrections Deputies divisions. The asset transfers were made to maintain an equitable allocation of liabilities and assets between the Sheriff's Department divisions.

7. Other

The Actuarial Standards of Practice with regard to the mortality assumption have recently been revised. ASOP No. 35 Disclosure Section 4.1.1 now states *"The disclosure of the mortality assumption should contain sufficient detail to permit another qualified actuary to understand the provision made for future mortality improvement. If the actuary assumes zero mortality improvement after the measurement date, the actuary should state that no provision was made for future mortality improvement."* Currently, it appears that there is no margin for future mortality improvement in the mortality assumption used for the annual valuation of the System.

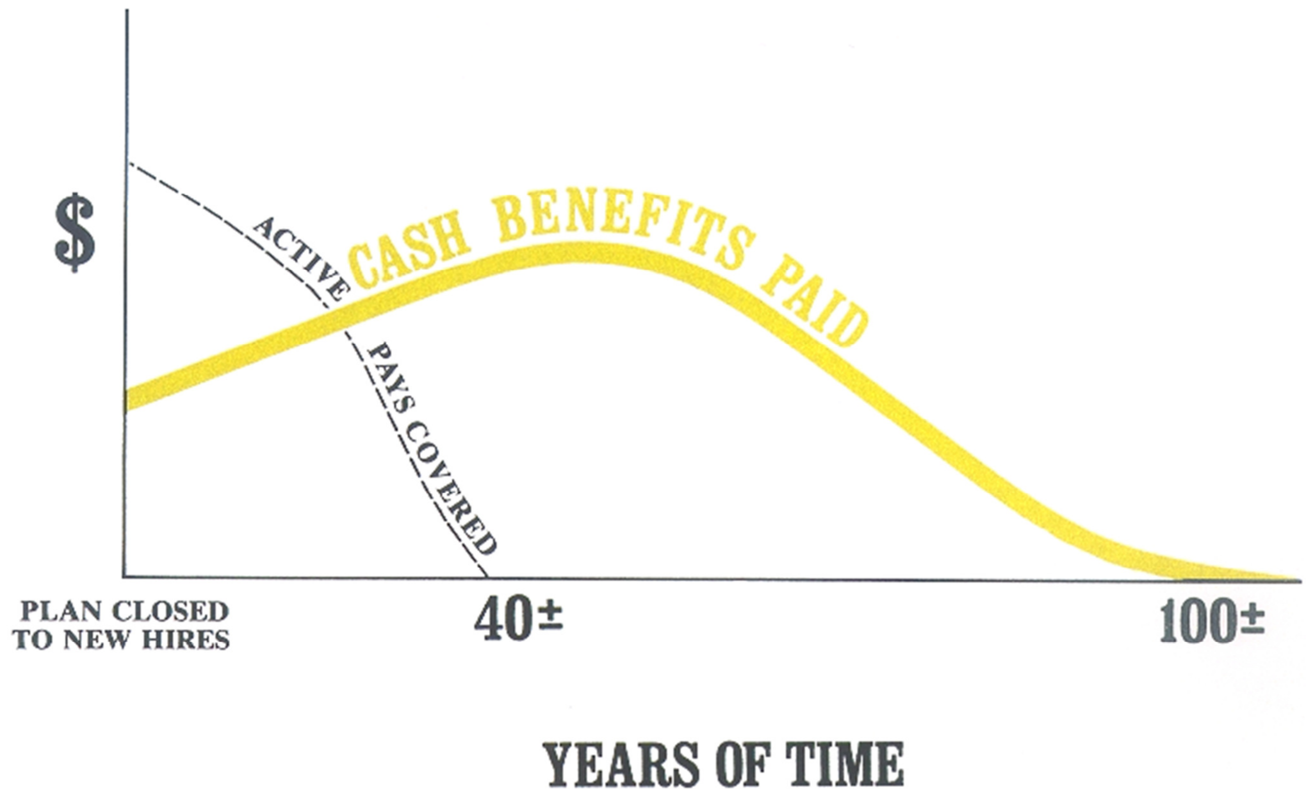
We recommend an assumption study to review the appropriate margin (if any) to be added to the current mortality assumption and the contribution method used in future valuations of the System.

8. System Funded Percent

The actuarial value of assets (funding value), was used to determine both the funded status and the required employer contribution (shown in Sections A-D of this report), is based on a 5-year smoothed value of assets. This reduces the volatility of the valuation results. The resulting System funded percent is 99.89% as of September 30, 2014.

As of September 30, 2014, the actuarial value of assets was 94% of the market value of assets. If the September 30, 2014 valuation results were based on the market value of assets instead of the actuarial value of assets, the funded percent of the System would be 106% (instead of 99.8%).

A CLOSED PENSION PLAN



A plan becomes closed when no new hires are admitted to active membership. The persons covered by the plan at the time of closing continue their normal activities and continue to be covered by the plan, until the last survivor dies.

CASH BENEFITS LINE. After a pension plan becomes closed, the usual pattern is for cash benefits to continue to increase for decades of time. Eventually the cash benefits will peak, and then gradually decrease over more decades of time, ultimately to zero. The last cash benefit is likely to occur a century after the time the plan is closed.

The precise amounts of cash benefits cannot be known now, and must be estimated by assumptions of future experiences in a variety of financial risk areas.

SECTION B
VALUATION RESULTS

CONTRIBUTIONS TO PROVIDE BENEFITS FOR THE FISCAL YEAR BEGINNING OCTOBER 1, 2015

	% of Member Payroll			
Contributions for	**General County**	**Command Officers**	**Road Deputies**	**Corrections Deputies**
A. Normal cost of benefits	(12.00) %	62.09 %	36.40 %	103.13 %
B. Member contributions	0.69	5.00	5.00	5.00
C. Employer normal cost (A - B)	(12.69)	57.09	31.40	98.13

The contribution rates shown in parenthesis represent negative numbers. Since the Retirement System cannot contribute back to the County, the recommended employer rate for the General division is 0% of General division covered payroll.

Member Contribution rates shown above are based on a weighted average of rates for contributing and non-contributing members as described in detail in Section C of this report.

The Retirement Commission confirms that the Oakland County Employees' Retirement System provides for payment of the required employer contribution as described in Section 20m of Michigan Act No. 728.

A procedure for determining dollar contribution amounts is described on the following page.

DETERMINATION OF EMPLOYER CONTRIBUTION RATES
AS OF SEPTEMBER 30, 2014

	General County	Command Officers	Road Deputies	Corrections Deputies	Total
A. Present Value of Future Benefit Payments					
1. For retirees and beneficiaries					
a. Pension and death benefits	$438,721,264	$35,814,330	$38,980,646	$40,664,538	$554,180,778
b. Reserves	none	none	none	none	none
c. Total	438,721,264	35,814,330	38,980,646	40,664,538	554,180,778
2. For inactive members	8,818,924	240,982	113,847	1,006,543	10,180,296
3. For present active members	119,072,517	15,766,984	25,369,367	18,307,378	178,516,246
4. Total	566,612,705	51,822,296	64,463,860	59,978,459	742,877,320
B. Valuation Assets	577,856,187	48,433,977	60,424,960	52,516,352	739,231,476
C. Unfunded Present Value of Future Benefits					
1. Total: (A.4) - (B)	(11,243,482)	3,388,319	4,038,900	7,462,107	3,645,844
2. Present value of future member contributions	647,536	272,864	554,740	361,779	1,836,919
3. Present value of Employer obligation (1)- (2)	(11,891,018)	3,115,455	3,484,160	7,100,328	1,808,925
D. Present Value of Future Pays	93,736,348	5,457,282	11,094,807	7,235,586	117,524,023
E. Employer Contribution:					
1. For System benefits: (C.3) / (D)	(12.69) %	57.09 %	31.40 %	98.13 %	
2. For System expenses	0.00	0.00	0.00	0.00	
3. Total	(12.69)	57.09	31.40	98.13	

Closed Group Cash Flow Projection
(Dollar Amounts in Thousands)

Year Ending	Expected Benefits for Current Actives	Retirees	Inactives	Total
9/30/2015	$ 1,371	$50,399	$ 67	$51,837
9/30/2016	3,848	50,257	215	54,320
9/30/2017	5,998	50,035	390	56,423
9/30/2018	8,021	49,723	447	58,191
9/30/2019	9,915	49,354	540	59,809
9/30/2020	11,662	48,911	610	61,183
9/30/2021	13,207	48,378	680	62,265
9/30/2022	14,604	47,766	766	63,136
9/30/2023	15,815	47,073	809	63,697
9/30/2024	16,806	46,301	869	63,976

The projection was based on the assumptions and methods used in this report.

SECTION C

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

BRIEF SUMMARY OF BENEFIT PROVISIONS
SEPTEMBER 30, 2014

Eligibility	Amount
REGULAR RETIREMENT	
Sheriff's Deputies: 25 years of service regardless of age, or age 60 with 8 years of service.	2.2% of final average compensation (FAC) times the first 14 years of service plus 2.5% of FAC for each additional year.
Command Officers: 25 years of service regardless of age, or age 60 with 8 years of service.	Total service times 2.5% of FAC.
All Others: Age 55 with 25 years of service, or age 60 with 8 years.	Total service times 2.0% of FAC for Plan A members (2.2% for years in excess of 14 for contributing members). Total service times 1.8% of FAC for Plan B members (1.98% for years in excess of 14 for contributing members). Maximum County Portion is 75% of FAC. Type of final average compensation - Highest 5 consecutive years out of the last 10. Some lump sums are included. Sheriff's Deputies hired after 12/31/92, Command Officers entering BU after 5/31/94 and BU48 nurses hired after 12/31/92 overtime pay is excluded from FAC.
DEFERRED RETIREMENT	
8 years of service - benefit begins at age 60. 25 years of service - benefit at age 55.	Computed as a regular retirement but based upon service and final average compensation at termination date.
NON-DUTY DEATH-IN-SERVICE	
10 years of service.	Computed as a regular retirement but actuarially reduced in accordance with a 100% joint and survivor election (50% joint and survivor benefit if less than 15 years of service and under age 60).
DUTY DEATH-IN-SERVICE	
No age or service requirements.	Upon termination of Worker's Compensation, a benefit equal to the Worker's Compensation benefit is payable to the spouse, children under age 18 and dependent parents.

BRIEF SUMMARY OF BENEFIT PROVISIONS
SEPTEMBER 30, 2014

Eligibility	Amount
NON-DUTY DISABILITY	
10 years of service.	Computed as a regular retirement.
DUTY DISABILITY	
No age or service requirements.	Computed as a regular retirement with additional service credited until attainment of age 60. Retirement benefits are offset by Worker's Compensation payments.
COST-OF-LIVING ADJUSTMENTS	
	Annual increase based upon change in CPI, not in excess of 1-1/2% of base benefit. Additional one-time increases granted January 1, 1976, 1979, 1981, 1982, July 1, 1984, January 1, 1986, 1987, 1988 and October 1, 1997. A special one-time payment was made to retirees during 1990.
MEMBER CONTRIBUTIONS	
Sheriff's Deputies.	3% of annual earnings for the first 14 years of service and 5% thereafter.
Command Officers.	5% of annual earnings.
All Others.	1% of annual earnings for years after 14 years of service for members electing the 2.2% or 1.98% benefit.

COUNTY CONTRIBUTIONS

Actuarially determined amounts which, together with member contributions, are sufficient to cover value of future benefits during the expected future working lifetimes of present members.

COVERAGE

The System was closed to new hires effective at various dates during 1994 and 1995.

REPORTED FINANCIAL INFORMATION AT MARKET VALUE
YEAR ENDED SEPTEMBER 30, 2014

Income and Disbursements

Market Value of Assets Beginning of Year:		$764,270,787
Revenues:		
a. Member contributions	$ 560,091	
b. Employer contributions	5,770,835	
c. Net investment income	70,247,939	
d. Total		76,578,865
Disbursements:		
a. Retirement incentive payments	-	
b. Pension benefits paid	49,993,923	
c. Administrative expenses	2,959,649	
d. Total		52,953,572
Market Value of Assets End of Year:		$787,896,080

Assets and Reserves as of September 30, 2014

Assets:		**Reserve Accounts:**	
a. Cash and Deposits	$ 22,605,621	a. Member contributions	$ 5,382,036
b. Accounts Receivable#	2,159,015	b. Reserve for benefits now being paid	487,812,526
c. Fixed Income	218,962,025	c. Reserve for future benefits	294,701,518
d. Domestic Equities	442,883,777		
e. International Equities	41,273,210		
f. Real Estate	50,334,422		
g. Other	10,289,245	Total	$787,896,080
h. Accounts Payable	(611,235)		
Total	$ 787,896,080		

Includes deferred charges.

DETERMINATION OF VALUATION ASSETS
SEPTEMBER 30, 2014

	2013	2014
A. Funding Value Beginning of Year	$717,654,902	$716,944,068
B. Market Value End of Year	764,270,787	787,896,080
C. Market Value Beginning of Year	720,791,939	764,270,787
D. Non-Investment Net Cash Flow	(41,292,856)	(43,662,997)
E. Investment Income		
E1. Market Total: B - C - D	84,771,704	67,288,290
E2. Assumed Rate (I)	7.25%	7.25%
E3. Amount for Immediate Recognition:		
7.25% x (A + D/2)	50,533,114	50,395,661
E4. Amount for Phased-In Recognition: E1-E3	34,238,590	16,892,629
F. Phased-In Recognition of Investment Income		
F1. Current Year: E4/5	6,847,718	3,378,526
F2. First Prior Year	11,325,085	6,847,718
F3. Second Prior Year	(8,042,818)	11,325,085
F4. Third Prior Year	2,046,233	(8,042,818)
F5. Fourth Prior Year	(22,127,310)	2,046,233
F6. Total Recognized Investment Gain/(Loss)	(9,951,092)	15,554,744
G. Funding Value End of Year: A + D + E3 + F6	**$716,944,068**	**$739,231,476**
H. Difference Between Market & Funding Value	47,326,719	48,664,604
I. Recognized Rate of Return	**5.82%**	**9.49%**
J. Market Value Rate of Return	**12.11%**	**9.06%**
K. Ratio of Funding Value to Market Value	**93.81%**	**93.82%**

RETIREES AND BENEFICIARIES, SEPTEMBER 30, 2014
TABULATED BY TYPE OF BENEFIT AND OPTION ELECTED

Benefit Option Elected	Type of Benefit			
	Age & Service*	Disability		Total
		Non-Duty	Duty	
Regular	715	4		719
A-100% J & S	371	11	2	384
B-50% J & S	115			115
C-10 Year Certain	94	4		98
D(1)-100% J & S with pop-up	230	2	1	233
D(2)-50% J & S with pop-up	168	1		169
E-Social Security Equated				
Survivor	257			257
Total	**1,950**	**22**	**3**	**1,975**

* *Includes alternate payees under EDRO, beneficiaries of deceased members, and 32 individuals with $0 pension benefits as of September 30, 2014, receiving retiree health benefits only.*

INACTIVE MEMBERS AS OF SEPTEMBER 30, 2014
TABULATED BY ATTAINED AGE

Inactive members as of September 30, 2014 totaled 113, involving estimated deferred annual retirement allowances of $1,227,003. An inactive member is a person who has left County employment with entitlement to a retirement allowance upon attaining age 55 or 60, depending upon years of credited service. The schedule below shows the inactive members by age.

Attained Age	No.	Estimated Deferred Allowance
35 - 39	1	$ 6,267
40 - 44	4	43,446
45 - 49	24	312,285
50 - 54	36	498,710
55 - 59	47	363,258
60+	1	3,037
Totals	**113**	**$1,227,003**

ACTIVE MEMBERS AS OF SEPTEMBER 30, 2014
BY AGE AND YEARS OF SERVICE

	Years of Service on Valuation Date							Totals	
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
40-44				4	15	2		21	$ 1,242,131
45-49				2	32	24		58	3,921,973
50-54				4	37	64	23	128	8,368,481
55-59				1	26	39	45	111	7,258,171
60				2	3	4	6	15	846,365
61					4	8	10	22	1,353,409
62					3	3	3	9	697,913
63					1		8	9	556,163
64					1	6	1	8	462,183
65					1	4	1	6	369,652
66					1	1	2	4	327,404
67					3			3	217,700
69					2	1	2	5	356,467
70+						1	3	4	293,148
Totals				**13**	**129**	**157**	**104**	**403**	**$26,271,160**

While not used in the financial computations, the following group averages are computed and shown because of their general interest. The chart shown above includes 300 General County division employees, 26 Command Officers, 45 Road Patrol Deputies, and 32 Corrections Officers.

Group Averages:

Age: 54.6 years
Service: 27.7 years
Annual Pay: $ 65,189

SECTION D

ACTUARIAL COST METHODS, ACTUARIAL ASSUMPTIONS AND GLOSSARY

VALUATION METHODS

The present value of future benefits was computed and financed for each category of plan participant as follows:

Retirees and Beneficiaries - The discounted value of benefits expected to be paid to retirees and beneficiaries was computed using the investment return, price inflation and mortality assumptions.

Active and Inactive Members - The discounted value of benefits expected to be paid to active and inactive members was computed using the assumptions outlined on the following pages.

The computed amount was reduced by valuation assets and the present value of future member contributions. The remainder was financed as a level percent of future payroll. This is referred to as the aggregate actuarial cost method.

Valuation Assets - The funding value of assets recognizes assumed investment income fully each year. Differences between actual and assumed investment income are phased-in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, funding value of assets will tend to be lower than market value. During periods when investment performance is less than the assumed rate, funding value of assets will tend to be greater than market value. The funding value of assets is unbiased with respect to market value. At any time it may be either greater or less than market value.

The asset smoothing period was changed from 3 to 5 years effective September 30, 2010. Prior unrecognized asset gains and losses were combined at that time and reflected in the valuation assets.

System assets are reported to the actuary in total. Reported investment income is allocated among the various employment divisions such that the rate of return for each division is the same as the rate of return for the entire System.

Actuarial Assumptions Used for the Valuation

Investment Return (net of expenses): 2.75% per year in excess of pay inflation. If pay inflation matches the assumption of 4.50%, this implies a 7.25% rate of return. The price inflation assumption is 3.5% per year.

This assumption is used to equate the value of payments due at different points in time and was first used for the September 30, 2007 valuation. Approximate rates of investment return, for the purpose of comparisons with assumed rates, are shown below.

	Year Ended September 30				
	2014	**2013**	**2012**	**2011**	**2010**
Rate of Investment Return	9.5%	5.8%	4.9%	3.4%	4.5%

The nominal rate of return was computed using the approximate formula i = I divided by 1/2 (A + B - I), where I is actual investment income net of expenses, A is the beginning of year asset value, and B is the end of year asset value.

These rates of return should not be used for measurement of an investment advisor's performance or for comparisons with other systems.

Pay Projections: These assumptions are used to project current pays to those upon which benefits will be based. The assumptions were first used for the September 30, 2007 valuation.

	Annual Rate of Pay Increase for Sample Ages						
	General County Members				Sheriff's Department		
Sample Ages	Base (Economic)	Merit & Longevity	Total	Years of Service	Base (Economic)	Merit & Longevity	Total
20	4.50%	4.00%	8.50%	1 to 7	4.50%	6.00%	10.50%
25	4.50	3.00	7.50	8 to 15	4.50	3.00	7.50
30	4.50	2.00	6.50	thereafter	4.50	0.00	4.50
35	4.50	2.00	6.50				
40	4.50	1.00	5.50				
45	4.50	1.00	5.50				
50	4.50	0.50	5.00				
55	4.50	0.50	5.00				
60	4.50	0.25	4.75				

Lump Sum Payments: Lump sum payments for unused sick leave and vacation were assumed to increase final average compensation for the present members by 1%.

Mortality: The 1994 Group Annuity Mortality Table, with ages unadjusted for males and set back 1 year for females. This table was first used for the September 30, 2007 valuation. Sample values follow:

Sample Ages	Actuarial Present Value of $1 Monthly for Life		Future Life Expectancy (Years)	
	Men	**Women**	**Men**	**Women**
50	$144.28	$152.22	30.69	35.84
55	135.55	145.53	26.15	31.11
60	124.83	136.84	21.83	26.49
65	112.49	126.32	17.84	22.11
70	99.13	114.28	14.29	18.08
75	84.57	100.02	11.12	14.31
80	69.37	84.15	8.37	10.93

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. The membership size in this group is not sufficiently large to determine if there is a margin for mortality improvements. 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 no provision for future mortality improvement in the current mortality assumption.

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	Percent of Active Members Separating within Next Year	
	General	Sheriffs
20	5.00%	4.00%
25	5.00	4.00
30	4.00	3.40
35	4.00	2.50
40	3.00	1.80
45	3.00	1.30
50	2.00	0.80
55	1.00	0.40
60	0.50	0.10
65	0.50	0.00

The rates were first used for the September 30, 2007 valuation.

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

Sample Ages	Percent Becoming Disabled within Next Year	
	General	Sheriffs
20	0.02%	0.14%
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 County		**Sheriff's Department**			
Ages	**%**	**Ages**	**%**	**Service**	**%**
55	20%	60	20%	25	40%
56	15	61	40	26	35
57	15	62	70	27	35
58	15	63	50	28	35
59	15	64	50	29	35
60	20	65	100	30	40
61	15			31	40
62	25			32	50
63	15			33	70
64	15			34	70
65	35			35	100
66	40				
67	50				
68	70				
69	80				
70	100				

A member was assumed to be eligible for retirement after attaining age 55 with 25 or more years of service (after 25 years of service regardless of age for Deputies and Command Officers), or age 60 with 8 or more years of service.

The rates were first used for the September 30, 2007 valuation.

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 Equivalent - Benefits whose actuarial present values are equal.

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.

GLOSSARY

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.

Plan Termination Liability - The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for the future service and salary. The termination liability will generally be less than the liabilities computed on a "going-concern" basis and is not normally determined in a routine actuarial valuation.

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.

SECTION E

OTHER FINANCIAL DISCLOSURES

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Liability (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) – (a)] / (c)
9/30/2005	$709,058,495	$658,515,200	$ (50,543,295)	107.7 %	$58,521,380	- -
9/30/2006	746,695,624	668,999,513	(77,696,111)	111.6	57,453,054	- -
9/30/2007#	799,307,403	652,118,082	(147,189,321)	122.6	55,704,389	- -
9/30/2008@	791,541,576	675,166,642	(116,374,934)	117.2	46,690,015	- -
9/30/2009	750,432,703	683,077,469	(67,355,234)	109.9	44,884,070	- -
09/30/2010#	745,094,735	692,409,285	(52,685,450)	107.6	42,686,155	- -
09/30/2011	727,690,746	712,159,061	(15,531,685)	102.2	38,275,780	- -
09/30/2012	717,654,902	713,972,065	(3,682,837)	100.5	33,706,963	- -
9/30/2013	716,944,068	719,348,810	2,404,742	99.7	29,498,703	8.15 %
9/30/2014	739,231,476	726,487,842	(12,743,634)	101.8	26,271,160	- -

\# *Assumption/method change.*
@ *Plan Provision changes.*

The aggregate actuarial cost method does not produce an actuarial accrued liability. The liability values shown above prior to 9/30/2007 are present values of future benefit payments (both accrued and future, net of future employee contributions). Effective with the 9/30/2007 valuation, the entry age actuarial cost method is used to develop the actuarial liability and the associated values shown above.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Actuarial Valuation Date	Fiscal Year Beginning	Annual Required Contribution**	Percentage Contributed
9/30/2005	10/1/2006		100.00 %
9/30/2006	10/1/2007		100.00
9/30/2007	10/1/2008		100.00
9/30/2008	10/1/2009		100.00
9/30/2009	10/1/2010		100.00
9/30/2010	10/1/2011	$ 3,279,107	100.00
9/30/2011	10/1/2012	5,400,095	100.00
9/30/2012	10/1/2013	5,770,835	100.00
9/30/2013	10/1/2014	4,554,832	
9/30/2014	10/1/2015		

** *Based on the actuarial value of assets adopted by the Retirement Board.*

APPENDIX 1

SELECT VALUATION RESULTS BASED ON AN ALTERNATE ASSET VALUATION METHOD

DETERMINATION OF EMPLOYER CONTRIBUTION RATES
BASED ON THE MARKET VALUE OF ASSETS AS OF SEPTEMBER 30, 2014

	General County	Command Officers	Road Deputies	Corrections Deputies	Total
A. Present Value of Future Benefit Payments					
1. For retirees and beneficiaries					
a. Pension and death benefits	$438,721,264	$35,814,330	$38,980,646	$40,664,538	$554,180,778
b. Reserves	none	none	none	none	none
c. Total	438,721,264	35,814,330	38,980,646	40,664,538	554,180,778
2. For inactive members	8,818,924	240,982	113,847	1,006,543	10,180,296
3. For present active members	119,072,517	15,766,984	25,369,367	18,307,378	178,516,246
4. Total	566,612,705	51,822,296	64,463,860	59,978,459	742,877,320
B. Valuation Assets *	612,820,848	51,549,432	63,909,120	59,616,680	787,896,080
C. Unfunded Present Value of Future Benefits					
1. Total: (A.4) - (B)	(46,208,143)	272,864	554,740	361,779	(45,018,760)
2. Present value of future member contributions	647,536	272,864	554,740	361,779	1,836,919
3. Present value of Employer obligation (1)- (2)	(46,855,679)	0	0	0	(46,855,679)
D. Present Value of Future Pays	93,736,348	5,457,282	11,094,807	7,235,586	117,524,023
E. Employer Contribution %:					
1. For System benefits: (C.3) / (D)	(49.99) %	0.00 %	0.00 %	0.00 %	
2. For System expenses	0.00	0.00	0.00	0.00	
3. Total	(49.99)	0.00	0.00	0.00	
4. Total Employer Contribution Dollars	$0	$0	$0	$0	

* *Valuation assets equal the market value of assets as of September 30, 2014. Assets were allocated among each division such that the rate of return for each group was equal to the total System return. Please refer to comments on pages A-1 through A-3 of this report.*

GRS
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April 23, 2015

Ms. Judy Fandale
Retirement System Secretary
Oakland County Employees'
Retirement System
2100 Pontiac Lake Road
Waterford, MI 48328-0440

Dear Judy:

Enclosed are 25 copies of the report of the seventieth annual actuarial valuation of the pension liabilities covering the Oakland County Employees' Retirement System.

Sincerely,

Louise Gates

Louise M. Gates

LMG:sc:dj
Enclosures