Actuarial Valuation Report

for

Lenawee County Board of Commissioners Retirement Income Plan

as of

January 1, 2016

Contract Number: PF 473

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Actuarial Certification

I have reviewed the calculations performed for this report. They are based on the participant data provided by Lenawee County Board of Commissioners, the plan provisions summarized herein, and asset information provided by MassMutual. While I have not independently audited the participant data I have checked it for reasonableness and believe it is consistent and comparable with data used in prior valuations.

Each prescribed assumption was applied in accordance with applicable law and regulations. Each other actuarial assumption is reasonable, in my opinion, taking into account the experience of the plan and reasonable expectations. All calculations were performed using generally accepted actuarial principles and procedures. To the best of my knowledge, the results presented in this report are complete and accurate and are consistent with all applicable laws.

I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Richard A. Erickson

	May 3, 2016
Richard A. Erickson, ASA, MAAA, MSPA, QKA, RFC®	Date
Enrolled Actuary No. 11-05483	

Executive Summary

This Actuarial Valuation Report is submitted in conjunction with the January 1, 2016 plan anniversary and reflects the funded position of the plan as of that point in time. This Executive Summary and the pages that follow provide details regarding the determination of your contribution requirement.

Analysis and Commentary

The Employer's cost for the 2016 Plan Year is $1,516,950, or about 28.6% of salaries of employees under normal retirement age. This recognizes the 10% employee contribution for all Groups. The cost for the 2015 Plan Year was $1,129,803, or about 19.4% of salaries of employees under normal retirement age.

2015 was not a good year for Plan assets. Assets returned approximately -1.6% on a market-value basis. Because assets are smoothed for funding purposes, not all of this was immediately recognized so the return on an actuarial-value basis was approximately 2.9%. (See page 9 of this Report.) The expected return on assets is 7.9%. If assets had earned the expected rate of return in 2015, the market value on January 1, 2016 would have been about $71,017,000 rather than the actual value of $64,667,288. If not for this asset loss, the Employer's cost for 2016 would have been $1,173,000, or about 22.1% salaries under normal retirement age.

The Plan's Actuarial Value of Assets covers approximately 76% (down from 77% last year) of the Plan's Present Value of Future Benefits and approximately 84% (down from 87% last year) of the Plan's Present Value of Accrued Benefits. Using the Plan's Market Value of Assets rather than Actuarial Value of Assets, these percentages are approximately 78% and 86%, respectively.

If you have any questions or would like any additional information, please do not hesitate to call.

Respectfully submitted,

Richard A. Erickson

May 3, 2016

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Date

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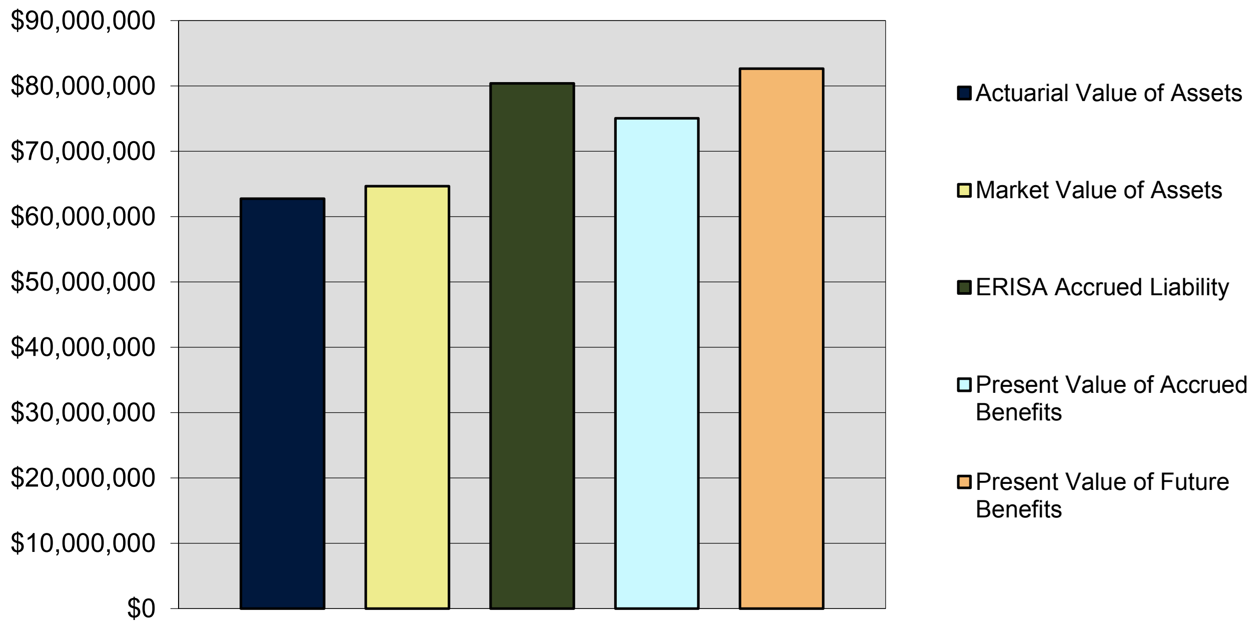
Measures of Plan Liability and Assets

	ERISA Accrued Liabilities	Present Value of Accrued Benefits	Present Value of Future Benefits
Active	$ 30,899,439	$ 25,526,685	$ 33,164,655
Terminated Vested	3,438,669	3,438,669	3,438,669
Retired	43,151,133	43,151,133	43,151,133
Disabled Receiving Benefits	863,898	863,898	863,898
Opt-Out Employees	2,040,820	2,040,820	2,040,820
Total	$ 80,393,959	$ 75,021,205	$ 82,659,175

Actuarial Value of Assets:	$	62,759,864
Market Value of Assets:	$	64,667,288



Measures of Plan Liability and Assets

Liability Measurement

Before comparing and contrasting different measures of Plan liability, it is first necessary to briefly discuss how liability is measured. In order to measure any pension plan liability, assumptions must be made pertaining to what may happen in the future. Two important assumptions are the interest rate and the mortality assumptions.

The interest assumption determines the time-value of money. In other words, it determines how much is needed today to grow to a given amount at some time in the future. A pension plan's liability consists of promises to pay benefits at some time in the future, so a measure of that liability is how much money is needed today to provide for those promised benefits in the future.

The mortality assumption predicts how long a participant will live. Since retirement benefits are generally paid for the participant's life, the mortality assumption predicts how long retirement benefits will be paid.

For some purposes, the value of annuities that have been purchased for non-highly compensated employees must be included in the liability measurement.

Asset Measurement

Actuarial Value of Assets is the asset value used in the determination of the plan's contribution requirements, maximum tax-deductible limits and the plan's funded status. It is either equal to the Market Value of Assets or an average of market values. Please see the Funding Methods section of this Report for a description of the method used to determine the Actuarial Value of Assets.

Either value includes contributions that have been made after the valuation date for the prior Plan Year.

Present Value of Future Benefits

This is the liability associated with the promise to pay the benefits that participants will be entitled to assuming they work until retirement. Of the four measures of liability discussed here, this is typically the largest because it is based on projected benefits. In other words, it includes not only benefits that have been accrued to date, but also benefits that are expected to be earned in the future. The interest and mortality assumptions are chosen by the plan actuary. The interest assumption is a reasonable long-term expectation of future asset returns given how plan assets are invested, and the mortality assumption is based on a standard, current mortality table.

ERISA Accrued Liability

This measure of liability is closely related to the Value of Future Benefits. Briefly, it is the portion of the Value of Future Benefits that the Actuarial Cost Method attributes to past service. In other words, it is the portion of the Value of Future Benefits that is deemed to be accrued. The actuarial assumptions used here are the same as those used in the Present Value of Future Benefits. Of the four liability measurements discussed here, this is probably the most difficult to understand. It is common to compare it to saving money to buy a home in cash. How much cash you'll need is analogous to the Present Value of Future Benefits. How far along you are in your schedule to accumulate the necessary cash is analogous to the ERISA Accrued Liability.

Present Value of Accrued Benefit

This liability measure is based on accrued benefits. It does not take into account future salary and service increases. The interest assumption is generally the expected long-term return on the plan's assets.

Contribution History

The following contributions have been made since January 1, 2015

Date		Amount	For Plan Year	Plan Year's Interest Credited [3]
01/05/15 [1]	$	371,495	2014	$ 0
04/02/15 [1]		314,240	2015	18,636
06/24/15 [1]		316,529	2015	13,085
09/29/15 [1]		372,783	2015	7,584
01/06/16 [1]		370,843	2015	0
01/20/15 [2]		204,923	2014	0
04/01/15 [2]		172,182	2015	10,248
06/26/15 [2]		171,535	2015	7,017
10/01/15 [2]		197,664	2015	3,936
01/06/16 [2]		191,863	2015	0
Total	$	2,684,057		$ 60,507

[1] *Employer Contribution*

[2] *Employee Contribution*

[3] *This is interest credited to the contribution(s) at the valuation interest rate. It is not the actual earnings on the contributions.*

Determination of Actuarial (Gain) or Loss for the 2016 Plan Year

A. Expected Unfunded Actuarial Accrued Liability

1. Unfunded Actuarial Accrued Liability as of January 1, 2015	$	16,144,207
2. Normal Cost as of January 1, 2015		1,712,084
3. Interest at 7.9 %		1,410,647
4. 2015 contributions plus interest at 7.9 %		2,168,146
5. Expected Unfunded Actuarial Accrued Liability as of January 1, 2016 (1) + (2) +(3) - (4); but not less than zero	$	17,098,792

B. Actual Unfunded Actuarial Accrued Liability

1. Actuarial Accrued Liability as of January 1, 2016	$	80,393,959
2. Actuarial Value of Assets as of January 1, 2016		62,759,864
3. Actual Unfunded Actuarial Accrued Liability as of January 1, 2016 (1) - (2); but not less than zero	$	17,634,095

C. Changes in Unfunded Actuarial Accrued Liability

1. Increase/(Decrease) due to Plan Amendment(s)	$	0
2. Increase/(Decrease) due to Assumption Change(s)		0
3. Increase/(Decrease) due to Funding Method Change		0
4. Total Changes: (1) + (2) + (3)	$	0

D. Actuarial (Gain) or Loss

B(3) - C(4) - A(5)	535,303

Contribution Breakdown for the 2016 Plan Year

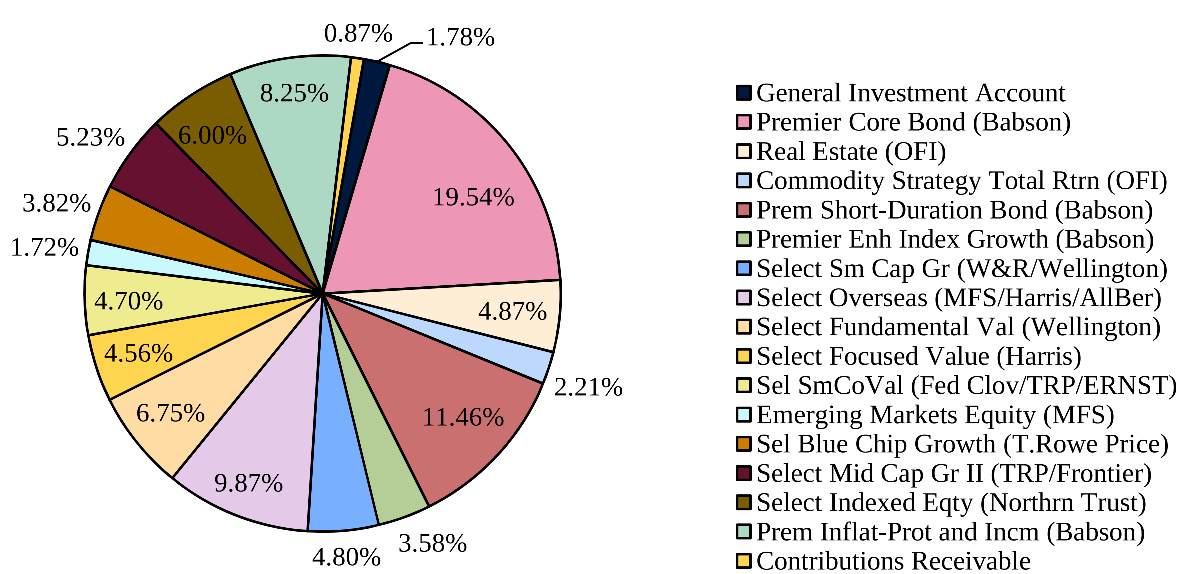
Below is a breakdown of the 2016 plan year contribution. To perform the breakdown, we first subtracted the actuarial accrued liability of the plan's inactive participants from the plan assets, and then allocated the remaining assets among the groups based on the actuarial accrued liability of the active participants. The unfunded actuarial accrued liability of each group was then amortized over a 20-year period. The resulting amortization payment was then added to the Normal Cost of each group to produce the recommended annual cost. Finally, the amount of anticipated employee contributions was subtracted from the total cost, to arrive at the annual contribution due from Lenawee County for each employee group.

	01 Sheriff-Command	02 Sheriff-Deputy	04 G.E.L.C. Union	05 County Non-Union	06 Steelworkers Union	61 Drain Commission	Total of All Groups
Active Employees	12	40	26	66	5	4	153
Average Age	45.86	48.90	51.52	54.88	57.90	53.91	51.48
Annual Salary (excluding employees over NRA)	$812,370	$1,881,456	$711,293	$1,588,557	$132,880	$180,121	$5,306,677
Actuarial Accrued Liability (Active Employees)	$3,275,651	$8,464,748	$4,114,145	$13,919,354	$548,543	$576,998	$30,899,439
Allocated Actuarial Value Plan Assets (Active Employees)	1,406,260	3,633,975	1,766,231	5,975,675	235,493	247,709	13,265,344
Unfunded Actuarial Accrued Liability (Active Employees)	$1,869,391	$4,830,773	$2,347,914	$7,943,679	$313,050	$329,289	$17,634,095
Entry Age Normal Cost	$53,812	$164,633	$45,408	$100,621	$15,111	$15,830	$395,415
Amortization Payment (20 yrs)	175,150	452,613	219,985	744,272	29,331	30,852	1,652,203
Total Annual Cost	$228,962	$617,246	$265,393	$844,893	$44,442	$46,682	$2,047,618
Estimated Employee Contrib.	81,237	188,146	71,129	158,856	13,288	18,012	530,668
(% salary)	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)	(10.00%)
Employer Annual Cost	**$147,725**	**$429,100**	**$194,264**	**$686,037**	**$31,154**	**$28,670**	**$1,516,950**
(% salary)	(18.18%)	(22.81%)	(27.31%)	(43.19%)	(23.45%)	(15.92%)	(28.59%)

Plan Assets as of January 1, 2016

			Market Value
General Investment Account		$	1,149,416
Separate Investment Account E	— Premier Core Bond (Babson)		12,636,078
Separate Investment Account CB	— Real Estate (OFI)		3,146,533
Separate Investment Account CE	— Commodity Strategy Total Rtrn (OFI)		1,429,041
Separate Investment Account F	— Prem Short-Duration Bond (Babson)		7,411,703
Separate Investment Account NU	— Premier Enh Index Growth (Babson)		2,312,562
Separate Investment Account SC	— Select Sm Cap Gr (W&R/Wellington)		3,106,597
Separate Investment Account SH	— Select Overseas (MFS/Harris/AllBer)		6,381,226
Separate Investment Account SK	— Select Fundamental Val (Wellington)		4,365,670
Separate Investment Account SV	— Select Focused Value (Harris)		2,950,491
Separate Investment Account SY	— Sel SmCoVal (Fed Clov/TRP/ERNST)		3,036,361
Separate Investment Account UA	— Emerging Markets Equity (MFS)		1,113,712
Separate Investment Account W1	— Sel Blue Chip Growth (T.Rowe Price)		2,470,357
Separate Investment Account W9	— Select Mid Cap Gr II (TRP/Frontier)		3,380,146
Separate Investment Account X	— Select Indexed Eqty (Northrn Trust)		3,880,614
Separate Investment Account Y6	— Prem Inflat-Prot and Incm (Babson)		5,334,075
	Subtotal	$	64,104,582
	Contribution(s) Receivable		562,706
	Total	$	64,667,288

Market Value of Assets



Asset Reconciliation

Asset Reconciliation	Actuarial Value	Market Value
Assets as of January 1, 2015	$ 63,516,819	$ 67,728,016
Contributions	2,107,640	2,121,352
Investment Income	44,769	44,769
Appreciation/(Depreciation)	1,760,844	(1,119,346)
Benefit Payments	(4,625,758)	(4,625,758)
Expenses	(44,450)	(44,450)
Assets as of December 31, 2015	$ 62,759,864	$ 64,104,583 [1]
Rate of Return [2]	2.90%	-1.62%

[1] *Cash basis - does not include contribution(s) receivable.*

[2] *Estimated assuming mid-year cash flows.*

Participant Summary and Demographic Statistics

		2015		2016
Classification of Funded Participants as of January 1				
Actives Under Assumed Retirement Age		122		114
Actives Over Assumed Retirement Age		45		39
Terminated Vested		64		66
Retired		314		318
Disabled		5		6
Opt-out Active Employees		31		30
Total Participants		581		573
Total Annual Benefits as of January 1				
Actives Under Assumed Retirement Age				
Accrued Benefits	$	186,269	$	184,957
Projected Benefits to Assumed Retirement		417,635		364,016
Actives Over Assumed Retirement Age		104,066		95,719
Terminated Vested		38,661		44,291
Retired		364,002		377,242
Disabled and Receiving Benefits		6,397		8,099
Opt-out Active Employees		28,537		28,597
Total Accrued	$	727,932	$	738,905
Total Projected	$	959,298	$	917,964
Demographic Statistics as of January 1				
Active Participants				
Average Age		51.48		52.11
Average Compensation	$	47,197	$	45,853
Terminated Vested Participants				
Average Age		54.20		55.10
Retired				
Average Age		71.40		71.70
Disabled Participants				
Average Age		57.60		55.50
Opt-out Active Employees Participants				
Average Age		46.02		46.88

Actuarial Assumptions

Many of the factors affecting the funding cost and liability cost of the Plan are variables which cannot be predicted with certainty. The following actuarial assumptions have either been mandated by statute and regulation or selected to reasonably anticipate future experience with respect to these variables.

Funding and ASC 960 Liabilities

Interest:	7.90%
Preretirement Mortality:	RP-2014 Mortality Tables for Annuitants and Non-Annuitants, Fully Generational with Scale MP-2014
Postretirement Mortality:	RP-2014 Mortality Tables for Annuitants and Non-Annuitants, Fully Generational with Scale MP-2014
Assumed Retirement:	Plan Normal Retirement Age
Termination:	Termination Table T-5 from the Actuary's Handbook with a 5-year setback for females
Incidence of Disability:	1952 Disablity Table, Period 2, Benefit 5, with six month waiting period
Disabled Mortality:	RP-2000 Mortality Tables for Disabled Annuitants, Fully Generational with Scale AA
Salary Scale:	4.0%
Marriage:	It is assumed that 80% of participants are married and that a male is 3 years older than his female spouse.
Expenses:	Interest rate is assumed to be net of plan expenses.
Optional Forms:	Liabilities include no load to account for the value of optional annuity forms.

Actuarial Cost and Asset Valuation Methods

Actuarial Cost Method

<u>Individual Entry Age Normal</u>

The Normal Cost is the level dollar premium necessary to fund the benefit projected to assumed retirement date over the working lifetime of each participants. The Accrued Liability is the excess of the present value as of the valuation date of the benefit projected to assumed retirement age over the present value of future Normal Costs. Or, equivalently, the accumulated value of all past Normal Costs. The benefit projected to assumed retirement date uses projected service, compensation if applicable, and any other components that would be used in the calculation of the benefit. The difference between the Accrued Liability and the Actuarial Value of Assets is the Unfunded Actuarial Accrued Liability. Each year the difference between the expected Unfunded Actuarial Accrued Liability (based on actuarial assumptions being realized exactly) and the actual Unfunded Actuarial Accrued Liability is the Actuarial Gain or Loss.

Asset Valuation Method

For assets held in the General Investment Account, the Actuarial Value is assigned by the Insurance Company.

For assets held in the Separate Accounts listed below, the Actuarial Value is equal to the prior year's Actuarial Value plus the net deposit and investment income, minus withdrawals, plus (or minus) 50% of the unrecognized appreciation (or depreciation) during the year. The Actuarial Value is not greater than 120% of the Market Value, or less than 80% of the Market Value.

Separate Investment Accounts E, CB, CE, NU, SC, SH, SK, SV, SY, UA, W1, W9, X and Y6

For assets held in the Separate Account listed below, the Actuarial Value is equal to the market value.

Separate Investment Account F

The provisions shown here are only summaries. In the interest of space and simplicity, many of them have been abbreviated, simplified, or paraphrased. In matters of Plan interpretation or application, the actual Plan Document should be consulted.

Plan: Lenawee County Board of Commissioners Retirement Income Plan

Employer Identification Number / Plan Number: 38-6005798 / 001

Effective Date: January 1, 1976

Plan Year: Calendar Year

Employer: Lenawee County Board of Commissioners

Employee: Any person who is employed by the Employer. An individual who performs services for the Employer pursuant to an agreement between the Employer and an employee leasing organization shall not be considered to be an Employee.

Participation: Each person employed by the County in a position normally requiring 1,000 hours or more per year is eligible to join the plan on date of hire. Except that Participation has been frozen for the following Groups:

Group 01: Sheriff Command (Police Officers Labor Council) - *Employees hired after January 1, 2006*
Group 02: Sheriff Deputy (Police Officers Association of Michigan) - *Employees hired after September 1, 2005*
Group 03: Nurses M.N.A. Union - *Employees hired after January 31, 2002*
Group 04: Government Employees' Labor Council - *Employees hired after May 1, 2003, except that for District Court Employees, after March 1, 2004*

Group 05: Lenawee County Employees (Non-union) - *Employees hired after January 1, 2001*

Group 06: Steelworkers Union - *Employees hired after August 1, 2002*
Group 61: Drain Commission - *Employees hired after January 1, 2002*
Group 08: Medical Care Facility (Non-union) - *Employees hired after January 1, 2008*

Service: The period of an Employee's employment with the Employer, as determined by the Employer from its personnel records.

Vesting Service: All years of Service with the Employer from Date of Employment

Benefit Service: All years of Service with the Employer from Date of Employment

Average Monthly Earnings:

Group 01: Sheriff Command and Group 02: Sheriff Deputy - The average of Monthly Earnings in the period of 48 consecutive months with respect to which such sum is the greatest

All Other Groups - The average of Monthly Earnings in the period of 60 consecutive months with respect to which such sum is the greatest

Normal Retirement Date:

Group 01: Sheriff Command and Group 02: Sheriff Deputy - First day of the month coincident with otherwise next following the earlier of 1) age 55 and 25 years of service, and 2) age 65 and 8 years of service

Group 04: Government Employees' Labor Council (GELC), Group 05: Lenawee County Employees (Non-union), Group 06: Steelworkers Union, Group 03: Nurses M.N.A. Union, and Group 61: Drain Commission Employees - the earlier of 1) date age and years of service equal 85, and 2) age 62 and 8 years of service

All other Groups - Age 65 and 8 years of service

Early Retirement Date: Any Participant who has attained age 55 and completed 10 years of Benefit Service may elect early retirement on the first day of any calendar month following the termination of Service.

Disability Retirement Date: Any Participant who has completed 10 years of Benefit Service may elect disability retirement on the first day of any calendar month following the determination of total and permanent disability.

Normal Retirement Benefit:

Group 01: Sheriff Command - 2.50% of average monthly earnings times all years of benefit service. The maximum monthly benefit is 80% of average monthly earnings.

Group 02: Sheriff Deputy - 2.50% of average monthly earnings times all years of benefit service. The maximum monthly benefit is 80% of average monthly earnings.

Group 03: Nurses M.N.A. Union - 2.00% of average monthly earnings times all years of benefit service.

Group 04: Government Employees' Labor Council - 2.00% of average monthly earnings times all years of benefit service.

Group 05: Lenawee County Employees (Non-union) - 2.00% of average monthly earnings times all years of benefit service.

Group 06: Steelworkers Union - 2.00% of average monthly earnings times all years of benefit service.

Group 61: Drain Commission - 2.00% of average monthly earnings times all years of benefit service.

Group 07: Medical Care Facility (Union) - 1.00% of average monthly earnings times all years of benefit service.

Group 08: Medical Care Facility (Non-union) – 2.50% of average monthly earnings times all years of benefit service.

Termination Benefit: A Participant who has at least eight years of Vesting Service has a nonforfeitable right to 100% of his or her Accrued Benefit. Benefit is payable at Normal Retirement

Early Retirement Benefit: The accrued benefit reduced 1/15 for the first five years, and 1/30 for the next five years for each year the Retirement Date precedes the Normal Retirement Date.

Disability Retirement Benefit: The accrued benefit reduced by any amounts payable under any worker's compensation or salary continuance program.

Normal Form: Single: Modified Cash Refund; Married: Qualified 50% Joint and Survivor Annuity

Optional Forms: Joint and Survivor Annuity, Life Annuity with 60 or 120 monthly payments guaranteed, Life Annuity

Death Benefits:

For all employees except Group 7: Medical Care Facility (Union)

Pre-retirement: If the Participant is not vested, no death benefits are payable. If the participant is vested, then the death benefit is 50% of the amount that would have been payable to the Participant under the 50% Joint and Survivor option.

Post-Retirement: None except as provided by the annuity form elected.

Employee Contributions: (picked up by the Employer under IRC §414(h)(2))

Group 01: Sheriff Command - 10.00% of pay

Group 02: Sheriff Deputy - 10.00% of pay

Group 03: Nurses M.N.A. Union - 10.00% of pay

Group 04: Government Employees' Labor Council (GELC) - 10.00% of pay

Group 05: Lenawee County Employees (Non-union) – 10.00% of pay

Group 06: Steelworkers Union - 10.00% of pay

Group 61: Drain Commission - 10.00% of pay

Spin-off of Medical Care Facility employees: Effective January 1, 2008, all non-retired employees of the Lenawee Medical Care Facility (Formerly Group 7 and Group 8 of this plan) were transferred to successor plans.

Opt-out Elections: Active participants in groups 03, 04, 05, 06, and 61 may elect to opt-out of participation in this plan for purposes of benefit accruals only. Vesting service and service for purposes of the Rule of 85 Retirement Age will continue to be credited. Each year the election period will run from November 15th to December 15th, and such election will take effect the following January 1st. At that time, the participant will commence participation in the County's Defined Contribution Plan.