# Actuarial Valuation Report for Lenawee County Board of Commissioners Retirement Income Plan as of January 1, 2006

PF 473

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# **Executive Summary**

The Employer's cost for the Plan Year beginning January 1, 2006, is \$1,783,375. This is about 10.8% of salaries. The cost for the 2005 Plan Year was \$1,805,708 or about 11% of salaries. In the absence of significant plan or demographic changes or significant actuarial gains and losses you can expect the 2007 cost to be 11% to 12% of salaries.

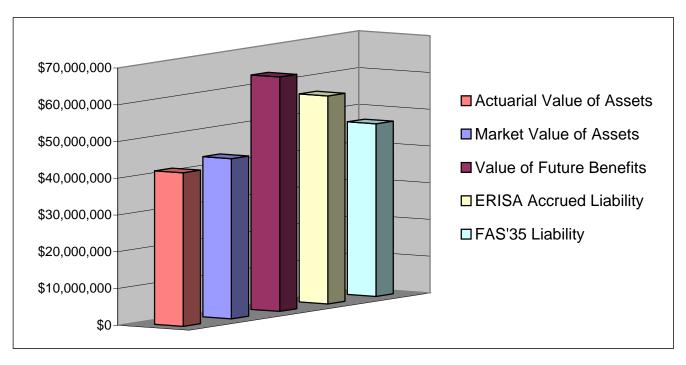
The Plan's Actuarial Value of Assets covers approximately 65% of the Plan's Present Value of Future Benefits and approximately 89% of the Plan's Present Value of Accrued Benefits (FAS'35 liability.) Using market value of assets these funded percentages are about 68% and 93%, respectively.

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

Respectfully submitted,

Daniel Mangan, CLU, FLMI Actuarial Analyst 1-(800)-349-8844, Ext. 43579 Richard A. Erickson, ASA, MAAA, MSPA, QKA Actuary 1-(800)-349-8844, Ext. 43601 There are many measures of Plan liabilities. Four measures that typically are used in the valuation of an ongoing pension plan are shown below and described on the next page. There are other measures of Plan liabilities that are not relevant to the actuarial valuation of an ongoing plan, such as measures of liabilities for plan sponsor accounting purposes, Pension Benefit Guaranty Corporation purposes, or determining plan sufficiency at termination.

	Value of Future	ERISA Accrued	FAS'35
	<b>Benefits</b>	<u>Liability</u>	<u>Liability</u>
Active:	\$ 44,808,519	\$ 37,617,364	\$ 27,989,781
Inactive:	2,183,206	2,183,206	2,183,206
Retired:	16,816,685	16,816,685	16,816,685
Total:	\$ 63,808,410	\$ 56,617,255	\$ 46,989,672
	alue of Assets:	\$ 41,790,792	
Market V	alue of Assets:	\$ 43,615,070	



## **Liability Measurement Assumptions**

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 assumption** and the **mortality assumption**.

The **interest assumption** determines the time-value of money. In other words, it determines how much money 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.

#### 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.

#### FASB No. 35 Liability

FASB No. 35 Liability is a measure of accrued benefit liability. How is this different from the ERISA Accrued Liability discussed above? As discussed above, the ERISA Accrued Liability takes into account the benefit projected to retirement. The accrued benefit liability only takes into account the benefit actually accrued. In other words, the benefit it takes into account is the benefit that would be payable if the participant terminated immediately, as opposed to working until retirement. The interest and the mortality assumptions are the same as those used for the Value of Future Benefits and the ERISA Accrued Liability.

The following employer contributions have been made since 1/1/2005.

			Prior Year's
		For Plan	Interest (1)
<b>Date</b>	<u>Amount</u>	<b>Year</b>	<b>Credited</b>
1/3/2005	\$ 12,961	2004	-
1/4/2005	166,905	2004	-
1/3/2005	565,915	2005	45,025
3/31/2005	146,251	2005	8,847
4/5/2005	11,445	2005	680
5/23/2005	508,061	2005	24,832
5/31/2005	69,616	2005	3,281
7/5/2005	486,206	2005	19,182
7/7/2005	166,385	2005	6,491
9/28/2005	667,311	2005	13,895
9/30/2005	22,258	2005	454
1/4/2006	166,850	2005	
Tota	1 \$ 2,990,164		\$ 122,687

<sup>(1)</sup> This is interest credited to the contribution(s) in the Funding Standard Account at the valuation interest rate. It is not the actual earnings on the contribution(s).

# Determination of Actuarial (Gain) or Loss for 2005 Plan Year

A.	Ex	pected Unfunded Actuarial Accrued Liability	
	1.	Unfunded Actuarial Accrued Liability as of 1/1/2005	\$14,913,624
	2.	Normal Cost as of 1/1/2005	1,599,804
	3.	Interest at 8 %	1,321,074
	4.	2005 contributions plus interest at 8 %	(2,932,985)
	5.	Expected Unfunded Actuarial Accrued Liability as of 1/1/2006	\$14,901,517
В.	Ac	tual Unfunded Actuarial Accrued Liability	
	1.	Actuarial Accrued Liability as of 1/1/2006	\$56,617,255
	2.	Actuarial Value of Assets as of 1/1/2006	(41,790,792)
	3.	Actual Unfunded Actuarial Accrued Liability as of 1/1/2006	\$14,826,463
		(not less than zero)	
C.	Ch	anges 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	\$0
D.	Ac	tuarial (Gain)/Loss	
	B(.	3) - C(4) - A(5)	(\$75,054)

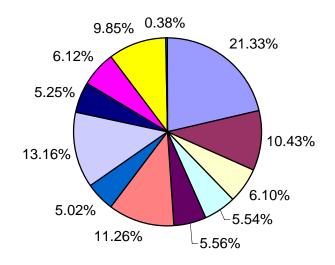
#### Contribution Breakdown for the 2006 Plan Year

Below is a breakdown of the 2006 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 un-funded 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	02	03	04	05	06	61	07	08	
	Sheriff-	Sheriff-	Nurses-	G.E.L.C.	County	Steelworkers	Drain	<b>Medical Care</b>	<b>Medical Care</b>	Total of
	Command	<b>Deputy</b>	MNA Union	<u>Union</u>	Non-Union	<u>Union</u>	Commission	<b>Facility-Union</b>	Facility-Non-Union	All Groups
<b>Active Employees</b>	16	79	6	67	177	11	11	134	60	561
Average Age	43.68	40.51	50.98	44.54	49.59	43.16	45.07	34.39	46.47	43.37
<b>Annual Salary (excluding</b>										
employees over NRA)	\$887,191	\$3,354,009	\$239,177	\$1,807,476	\$4,903,744	\$274,818	\$403,460	\$2,680,042	\$2,044,022	\$16,593,939
Actuarial Accrued Liability										
(Active Employees)	\$4,019,119	\$6,747,652	\$400,320	\$4,270,647	\$17,966,598	\$281,701	\$744,177	\$762,324	\$2,424,826	\$37,617,364
<b>Allocated Actuarial Value Plan</b>										
Assets (Active Employees)	2,435,028	4,088,140	242,538	2,587,419	10,885,264	170,672	<u>450,868</u>	461,863	<u>1,469,108</u>	22,790,901
<b>Unfunded Actuarial Accrued</b>										
<b>Liability (Active Employees)</b>	\$1,584,091	\$2,659,512	\$157,782	\$1,683,228	\$7,081,334	\$111,029	\$293,309	\$300,461	\$955,718	\$14,826,463
Entry Age Normal Cost	\$46,771	\$231,678	\$19,151	\$112,811	\$312,712	\$21,910	\$25,082	\$63,843	\$157,620	\$991,578
Amortization Payment (20 yrs)	149,392	250,812	14,880	158,741	667,824	10,471	<u>27,661</u>	<u>28,336</u>	90,131	1,398,248
Total Annual Cost	\$196,163	\$482,490	\$34,031	\$271,552	\$980,536	\$32,381	\$52,743	\$92,179	\$247,751	\$2,389,826
Estimated Employee Contrib.	44,360	167,700	10,763	81,336	220,668	12,367	18,156	0	51,101	606,451
( % salary )	(5.00%)	(5.00%)	(4.50%)	(4.50%)	(4.50%)	(4.50%)	(4.50%)	(0.00%)	(2.50%)	(3.65%)
<b>Employer Annual Cost</b>	\$151,803	\$314,790	\$23,268	\$190,216	\$759,868	\$20,014	\$34,587	\$92,179	\$196,650	\$1,783,375
( % salary )	(17.11%)	(9.39%)	(9.73%)	(10.52%)	(15.50%)	(7.28%)	(8.57%)	(3.44%)	(9.62%)	(10.75%)

		Actuarial <u>Value</u>	Market <u>Value</u>
General Investment Account		\$9,302,801	\$9,302,801
Separate Investment Account (Money Market (Babson))	G	\$4,546,950	\$4,546,950
Separate Investment Account (Growth Equity (MFS))	L	\$2,568,394	\$2,659,959
Separate Investment Account (Mid Cap Growth (Navellier))	Q	\$2,184,219	\$2,418,028
Separate Investment Account (Sm Cap Growth (W&R Wellington))	SC	\$2,171,234	\$2,426,883
Separate Investment Account (Overseas (Am Century/Harris))	SH	\$4,774,583	\$4,910,273
Separate Investment Account (Focused Value (Harris Associates))	SV	\$2,070,440	\$2,187,521
Separate Investment Account (Value Equity (Fidelity))	SW	\$5,208,283	\$5,741,884
Separate Investment Account (Sm Co Value (Clover/T. Rowe Price))	SY	\$2,172,623	\$2,288,285
Separate Investment Account (Blue Chip Growth (Fidelity))	W1	\$2,571,255	\$2,667,566
Separate Investment Account (Indexed Equity)	X	\$4,053,160	\$4,298,069
Contributions Receivable		\$166,850	\$166,850
Total		\$41,790,792	\$43,615,070

## **Market Value of Assets**



- ■General Investment Account
- SIA G (Money Market (Babson))
- ☐ SIA L (Growth Equity (MFS))
- □ SIA Q (Mid Cap Growth (Navellier))
- SIA SC (Sm Cap Growth (W&R Wellington))
- SIA SH (Overseas (Am Century/Harris))
- SIA SV (Focused Value (Harris Associates))
- SIA SW (Value Equity (Fidelity))
- SIA SY (Sm Co Value (Clover/T. Rowe Price))
- SIA W1 (Blue Chip Growth (Fidelity))
- □ SIA X (Indexed Equity)
- Contributions Receivable

# Reconciliation of Actuarial Value of Plan Assets from 1/1/2005 to 12/31/2005

	Actuarial	Market
	<b>Value</b>	<b>Value</b>
Assets as of 1/1/2005	\$37,771,373	\$39,802,097
Contributions	2,810,297	2,823,313
Investment Income	573,176	573,176
Appreciation/(Depreciation)	2,497,351	2,111,039
Benefit payments	(1,794,558)	(1,794,558)
Expenses	(66,847)	(66,847)
Assets as of 1/1/2006	\$41,790,792	\$43,448,220 (2)
Rate of Return (1)	8.03%	6.66%

<sup>&</sup>lt;sup>(1)</sup> Calculated assuming all transacions occur midyear.

<sup>(2)</sup> Cash Basis. Does not include any contributions receivable.

# **Participant Summary**

	<u> 2005</u>	<u>2006</u>
Classification of Funded Participants		
Actives Under Retirement Age	546	523
Actives Over Retirement Age	41	38
Terminated Vested	105	106
Disabled Receiving Benefits	8	9
Retired	190	207
Total Participants	890	883
Monthly Funded Retirement Benefits		
Actives Under Retirement Age	\$305,726	\$320,751
Actives Over Retirement Age	74,498	73,280
Terminated Vested	36,907	39,995
Disabled Receiving Benefits	5,097	5,398
Retired	132,062	147,981
Total Accrued Benefits	\$554,290	\$587,405
Total Projected Benefits	\$1,658,903	\$1,704,115
Averages for Active Participants		
Average Eligibility Age	32.10	31.75
Average Attained Age	43.18	43.37
Average Compensation	\$30,506	\$32,236

# **Auditor's Information and FAS35 Reconciliation**

The following information is provided to assist your accountant with the reporting requirements of FAS35. The information reported here should not be used for any other purposes. Information reporting for other purposes, such as determining sufficiency in the event of a plan termination, may be significantly different.

Reporting Date	January 1, 2006
Present Value of Accumulated Plan Benefits	
For Retired Participants and Beneficiaries receiving payments	\$16,816,685
For Terminated Vested Participants	2,183,206
For other vested Participants	26,895,365
Present Value of Vested Accumulated Plan Benefits	\$45,895,256
Present Value of Nonvested Accumulated Plan Benefits	1,094,416
Present Value of Accumulated Plan Benefits	\$46,989,672
Present Value of Accumulated Plan Benefits as of 1/1/2005	\$43,269,036
Increase Due to Benefit Accruals	1,655,644
Decrease Due to Disbursements	(1,794,558)
Increase Due to Passage of Time	3,522,192
Other (1)	337,358
Present Value of Accumulated Plan Benefits as of 1/1/2006 before changes	\$46,989,672
Effect of Interest Rate Change (2)	0
Effect of Other Assumption Change(s) (3)	0
Effect of Plan Change(s) (4)	0
Present Value of Accumulated Plan Benefits as of 1/1/2006 after changes	\$46,989,672
Total Market Value of Assets	\$43,615,070

The Present Value of Accumulated Plan Benefits is measured using the Unit Credit Actuarial Cost Method. The actuarial assumptions used are shown in the Actuarial Assumptions section of this Report, and the Plan provisions are summarized in the Plan Summary section of this Report.

<sup>(1)</sup> Effect of miscellaneous gains/losses and other demographic changes.

<sup>(2)</sup> None.

<sup>(3)</sup> None.

<sup>(4)</sup> *None*.

# **Actuarial Assumptions**

Many of the factors affecting the long term cost of the Plan are variables which cannot be predicted with certainty. The following actuarial assumptions have been selected to reasonably anticipate future experience with respect to these variables.

# **Preretirement Mortality**

Funding: 1983 GAM table for males

Age adjustments: 0 for males and -6 for females.

FAS35: 1983 GAM table for males

Age adjustments: 0 for males and -6 for females.

## **Postretirement Mortality**

Funding: 1983 GAM table for males

Age adjustments: 0 for males and -6 for females.

FAS35: 1983 GAM table for males

Age adjustments: 0 for males and -6 for females.

#### **Preretirement Interest**

Funding: 8.00% FAS35: 8.00%

#### Postretirement Interest

Funding: 8.00% FAS35: 8.00%

Assumed Retirement Age: Plan Normal Retirement Age

Termination of Employment: Termination Table T-5 from the Actuary's Handbook

Age adjustments: 0 for males and -5 for females.

#### **Funding Exclusion**

All plan participants are included in the funding calculations.

Salary Scale: 4.00% per year.

<u>Plan Expenses:</u> 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.

<u>Incidence of Disability</u>: 1952 Disability Table, Period 2, Benefit 5, with a 6 month waiting period.

### Survivor's Benefit:

It is assumed that 100% of participants will be married or otherwise survived by an eligible beneficiary. It is further assumed that the male spouse is 3 years older than the female.

#### **Actuarial Cost Method**

## Individual Entry Age Normal

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 is the Actuarial Gain or Loss.

#### **Actuarial Value of Assets**

For assets held in the General Investment Account, Active Life Fund, or Experience Account, the Actuarial Value is the value assigned by the Insurance Company.

For the assets 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 Account L, Q, SC, SH, SV, SW, SY, W1, and X

For the assets listed below, the Actuarial Value of Assets is equal to the Market Value.

Separate Investment Account G

# **Summary of Plan Provisions**

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 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.

**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.

#### **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.

# **Summary of Plan Provisions**

**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.

#### **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 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) - 2.00% 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 Date.

**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.

# **Summary of Plan Provisions**

**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)

<u>Pre-retirement:</u> 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.

<u>Post-Retirement:</u> 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 - 5.00% of pay.

Group 02: Sheriff Deputy - 5.00% of pay.

Group 03: Nurses M.N.A. Union - 4.50% of pay

Group 04: Government Employees' Labor Council (GELC) - 4.50% of pay

Group 05: Lenawee County Employees (Non-union) - 4.50% of pay.

Group 06: Steelworkers Union - 4.50% of pay.

Group 61: Drain Commission - 4.50% of pay.

Group 07: Medical Care Facility (Union) - none.

Group 08: Medical Care Facility (Non-union) - 2.50% of pay.