

**MACOMB COUNTY EMPLOYEES RETIREMENT SYSTEM**  
**SIXTY-SIXTH ANNUAL ACTUARIAL VALUATION**  
**DECEMBER 31, 2011**

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September 7, 2012

The Retirement Commission  
Macomb County Employees Retirement System  
Mount Clemens, Michigan

**Re: Macomb County Employees Retirement System Actuarial Valuation as of December 31, 2011**

Ladies and Gentlemen:


The results of the December 31, 2011 annual actuarial valuation of the Macomb County Employees Retirement System are presented in this report. The purpose of the valuation is to measure the System's funding progress, to determine the employer contribution rate for the fiscal year ending December 31, 2013, and to provide actuarial information for Governmental Accounting Standards Board (GASB) Statements. This report should not be relied upon for any other purpose. This report may be provided to parties other than the System only in its entirety and only with the permission of the Commission.

The valuation was based upon information furnished by the County, concerning Retirement System benefits, financial transactions, plan provisions, active 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 information provided.

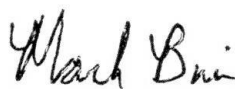
Future actuarial measurements may differ significantly from those presented in this report due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of this assignment,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

To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the Macomb County Employees Retirement System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. The undersigned are independent of the plan sponsor and are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



Louise Gates, ASA, MAAA  
Actuary



Mark Buis, FSA, MAAA  
Actuary



Francois Pieterse, ASA, MAAA  
Actuary

LG/MB:mrh

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## **SECTION A**

### **EXECUTIVE SUMMARY**

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## EXECUTIVE SUMMARY

### 1. Required Employer Contributions - Fiscal Year Beginning January 1, 2013

The computed employer contributions are as follows:

Division	Computed Employer Contributions*	
	% of Payroll	\$ Based on Projected Payroll
General County	13.22%	\$ 11,135,212
Sheriff's Department	17.83	5,185,564
Road Commission	21.46	2,842,305
Martha T. Berry MCF	10.56	769,661

\* Contribution rates are calculated as a percentage of the payroll of all active members (including those in the DROP). Dollar contributions are based on projected valuation payroll.

Additional detail on these contributions is shown on page B-2.

### 2. Contribution Rate Comparison

Division	Valuation as of December 31	
	2010	2011
General County	10.57%	13.22%
Sheriff's Department	14.99	17.83
Road Commission	17.95	21.46
Martha T. Berry MCF	9.03	10.56

### **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 effect of differences during the year between the Plan's actual experience and what the assumptions predicted.

There were no benefit changes reflected in this valuation of the Retirement System. Changes in retirement and DROP eligibility effective in calendar year 2012 will be reflected in next year's valuation of the System. In addition, there were no changes in the assumptions or methods used in the actuarial valuation of the System. The changes in contribution amounts over the prior year are due to Retirement System experience.

### **4. 2011 System Experience**

One way the System's experience affects costs is the effect it has on the unfunded accrued liability. This is referred to as the experience gain or loss for the year. The gain (loss) determination is shown in Section B of this report.

During calendar year 2011, the return on fund assets was lower than long term assumptions (7.5% per year). The market smoothing techniques used in this valuation of the System recognize past and present investment experience. The recognized rate of investment return was 0.15% net of expenses. This adverse experience was partially offset by lower than assumed pay increases during 2011.

### **5. Year 2011 Funding Position**

As of December 31, 2011, the Retirement System (as a whole) no longer has a funding surplus. The change in funding position over the prior year is due primarily to the unfavorable investment experience during calendar year 2011. This year valuation assets represent 97% of accrued liabilities; last year the ratio was 103%.

## 6. Looking Ahead

As of December 31, 2011 the funding value of assets was 112% of market value. This means that meeting the actuarial investment return assumption in the next few years will require average future market returns that significantly exceed the 7.5% investment return assumption.

To gauge the magnitude of the possible employer contribution required in the short term if experience gains do not occur, it is instructive to look at the contribution rate that would have resulted if the valuation was based on the market value of assets. If the December 31, 2011 valuation results were based on market value of assets instead of the smoothed funding value, the funded percent of the plan would be 86% (instead of 97%), and the employer contribution requirement would be \$26.0 million (instead of 19.9 million). In the absence of significant experience gains, employer contribution requirement can be expected to head in that direction.

## 7. Retiree Reserve Balance

The retiree accrued liabilities for all divisions are larger than the assets allocated to the retiree reserve balances as of December 31, 2011. The Liabilities and reserves are shown below:

	<u>General County</u>	<u>Sheriff's Department</u>	<u>Road Commission</u>	<u>Martha T. Berry MCF</u>
Retiree Liability	\$342,213,960	\$116,658,120	\$77,264,379	\$23,889,764
Retiree Reserve	<u>331,480,823</u>	<u>106,647,888</u>	<u>70,705,151</u>	<u>22,119,541</u>
Unfunded Liability	\$ 10,733,137	\$ 10,010,232	\$ 6,559,228	\$ 1,770,223

As of the valuation date, there is a shortfall in the retiree reserve for all groups. We recommend that the indicated assets be transferred from the Retirement System employer reserve to fully fund the retiree accrued liability.

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**SECTION B**

**VALUATION RESULTS AND  
COMPARATIVE INFORMATION**

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## **FINANCIAL OBJECTIVE**

The financial objective of the Retirement System is to establish and receive contributions, expressed as a percentage of active member payroll, which will follow the expected pattern from year-to-year and will not have to be increased substantially for future generations of taxpayers. Your annual actuarial valuations determine how well the objective is being met.

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

## **CONTRIBUTION RATES**

The Retirement System is supported by contributions from the employers and active members and by the investment income earned on System assets. Most General members and Martha T. Berry MCF members hired before January 1, 2002 contribute 3.5% of their pay (RN's and LPN's contribute 2.5% of their pay) and all General members and Martha T. Berry MCF members hired on or after January 1, 2002 contribute 2.5% of their pay. All Road Commission members contribute 3.5% of their pay. The Sheriff's Department members contribute 4.0% of their pay. The employer provides an actuarially determined contribution, the remainder needed to meet the financial objective.

Member and employer 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 System costs allocated to the current year by the valuation method described in Section D. The unfunded accrued liability is the portion of system costs not covered by present system assets and future normal costs.

The contribution requirements for the fiscal year beginning January 1, 2013 are presented on pages B-2 and B-3.

**CONTRIBUTIONS TO PROVIDE BENEFITS  
MEMBER PORTION AND EMPLOYER PORTION  
FOR THE FISCAL YEAR BEGINNING JANUARY 1, 2013**

Contribution for	% of Active Member Payroll*			
	General County	Sheriff's Department	Road Commission	Martha T. Berry MCF
Normal Cost:				
Age and service	12.76 %	19.47 %	15.56 %	13.38 %
Disability	0.79	0.95	1.16	0.76
Death-in-service	0.45	0.43	0.55	0.42
Total	<u>14.00</u>	<u>20.85</u>	<u>17.27</u>	<u>14.56</u>
Administrative expenses	0.10	0.10	0.10	0.10
Member contributions:				
Total**	2.01	3.63	3.50	2.48
Future refunds	<u>0.23</u>	<u>0.11</u>	<u>0.15</u>	<u>0.23</u>
Available	1.78	3.52	3.35	2.25
Employer normal cost	<u>12.32</u>	<u>17.43</u>	<u>14.02</u>	<u>12.41</u>
UAAL as a Level Percent of Payroll	<u>0.90</u>	<u>0.40</u>	<u>7.44</u>	<u>(1.85)</u>
Total Computed Employer Rate	<u><u>13.22</u></u> %	<u><u>17.83</u></u> %	<u><u>21.46</u></u> %	<u><u>10.56</u></u> %

\* Including payroll of members currently in the DROP.

\*\* Weighted average.

For each division, the unfunded actuarial accrued liabilities (UAAL) or excess assets were amortized as a level percent of payroll over a period of 20 years.

Procedures for determining dollar contribution amounts are shown on the following page.

## CONVERTING CONTRIBUTION RATES TO DOLLAR AMOUNTS

For any period of time, the percent-of-payroll contribution rates need to be converted to dollar amounts. We recommend one of the following procedures.

- (1) Contribute dollar amounts for a period which are equal to the employer's percent-of-payroll contribution requirement multiplied by the covered active member payroll for the period (including the payroll of the members in the DROP). Adjustments should be made as necessary to exclude items of pay that are not covered compensation for Retirement System benefits and to include non-payroll payments that are covered compensation.
- (2) **Contribute \$11,135,212 for the General County, \$5,185,564 for the Sheriff's Department, \$2,842,305 for the Road Commission and \$769,661 for Martha T. Berry MCF.** These amounts are based on the payroll information adjusted to reflect assumed payroll increases between the valuation date and the beginning of the fiscal year for which the contributions are being determined.

## TIMING OF CONTRIBUTION PAYMENTS

The contributions in this report anticipate regular payments throughout the year. Examples would be at each payroll date or in 12 monthly installments. **If the employer contribution pattern is significantly different, an adjustment to the costs may be appropriate.** For example, a lump sum contribution at the beginning of the year is available for investment throughout the year and, therefore, ought to be somewhat smaller than 12 monthly payments. Similarly, a lump sum contribution at the end of the year will not generate any investment income that year and so must be greater than 12 monthly payments.

**DETERMINATION OF UNFUNDED ACCRUED LIABILITY  
AS OF DECEMBER 31, 2011**

	General County	Sheriff's Department	Road Commission	Martha T. Berry MCF
<b>A. Accrued Liability</b>				
1. For retirees and beneficiaries*				
a. Benefit payments	\$342,213,960	\$ 116,658,120	\$77,264,379	\$23,889,764
b. Reserves	0	0	0	0
c. Total	<u>342,213,960</u>	<u>116,658,120</u>	<u>77,264,379</u>	<u>23,889,764</u>
2. For vested terminated members	10,862,101	875,363	878,443	908,150
3. For present active members				
a. Value of expected future benefit payments	237,458,910	141,577,467	62,080,765	19,447,516
b. Value of future normal costs	<u>88,857,496</u>	<u>54,738,922</u>	<u>25,799,319</u>	<u>10,395,255</u>
c. Active member liability: (a) - (b)	<u>148,601,414</u>	<u>86,838,545</u>	<u>36,281,446</u>	<u>9,052,261</u>
4. Total	<u>501,677,475</u>	<u>204,372,028</u>	<u>114,424,268</u>	<u>33,850,175</u>
<b>B. Valuation Assets</b>	<u>490,384,847</u>	<u>202,641,613</u>	<u>99,811,546</u>	<u>35,854,436</u>
<b>C. Unfunded Accrued Liability (Overfunding):</b>				
(A.4) - (B)	<u><u>11,292,628</u></u>	<u><u>1,730,415</u></u>	<u><u>14,612,722</u></u>	<u><u>(2,004,261)</u></u>
<b>D. Funding %</b>	<u><u>97.7%</u></u>	<u><u>99.2%</u></u>	<u><u>87.2%</u></u>	<u><u>105.9%</u></u>

\* Includes liabilities for individuals in the DROP.

**DEVELOPMENT OF EXPERIENCE GAIN (LOSS)  
YEAR ENDED DECEMBER 31, 2011**

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.

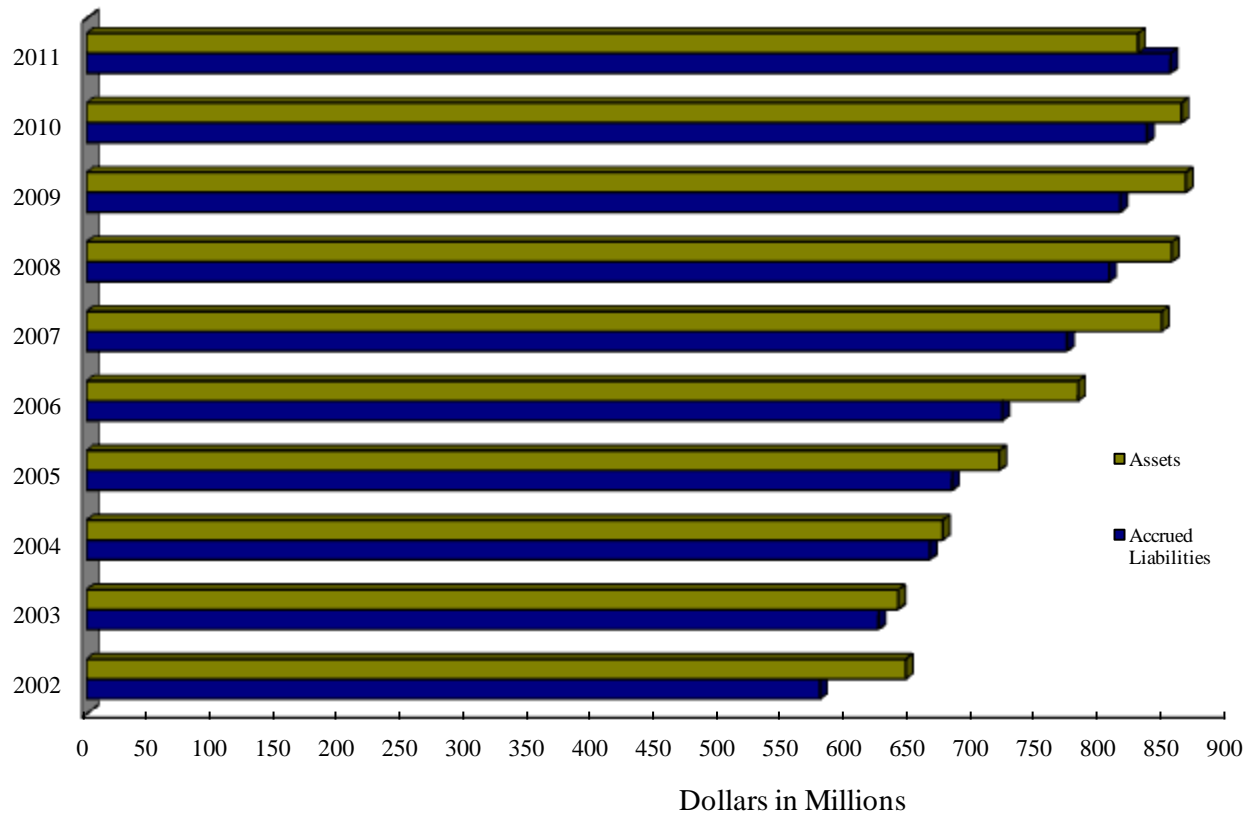
	<b>Year Ending December 31, 2011</b>
	<b>Total County</b>
(1) UAAL at start of year	\$(25,747,666)
(2) Normal cost from last year	20,641,609
(3) Actual contributions	19,786,212
(4) Interest accrual	(1,899,383)
(5) Expected UAAL before changes:	0
(1)+(2)-(3)+(4)	(26,791,652)
(6) Change from benefit provisions	0
(7) Change in assumptions or methods	0
(8) Expected UAAL after changes:	
(5)+(6)+(7)	(26,791,652)
(9) Actual UAAL at end-of-year	25,631,504
(10) Gain (loss): (8)-(9)	(52,423,156)
(11) Gain (loss) as percent of actuarial accrued liabilities at start of year	(6.3)%

The following table shows the gain (loss) for each of the four divisions:

	<b>General County</b>	<b>Sheriff's Department</b>	<b>Road Commission</b>	<b>Martha T. Berry MCF</b>
Investment gain (loss)	\$(36,867,814)	\$(15,059,730)	\$(7,514,329)	\$(2,697,249)
Remaining gain (loss)	5,974,378	2,235,781	638,319	867,488
Gain (loss) from all causes	(30,893,436)	(12,823,949)	(6,876,010)	(1,829,761)

## ASSETS & ACCRUED LIABILITIES FOR ALL SYSTEM MEMBERS

Valuation Year



2002 assets equaled 112% of accrued liabilities.

2011 assets equaled 97% of accrued liabilities.

**COMPUTED EMPLOYER CONTRIBUTIONS  
COMPARATIVE STATEMENT  
GENERAL COUNTY**

Valuation Date December 31	Active Members				Retirees & Beneficiaries*		Employer Contributions as Payroll Percents
	No.	Valuation Payroll			No.	Monthly Benefits	
		Total**	Average	% Increase			
1993 #	1,868	\$56,937,402	\$30,480	2.2 %	686	\$ 386,952	10.18 %
1994 #@	1,880	58,337,999	31,031	1.8	720	420,173	8.16
1995 #	1,890	61,805,904	32,702	5.4	747	452,003	7.82
1996 #	1,918	65,074,258	33,928	3.7	785	497,829	8.14
1997	1,957	68,048,675	34,772	2.5	827	554,274	6.53
1998	2,000	70,559,895	35,280	1.5	860	608,308	3.83
1999	2,027	75,078,616	37,039	5.0	861	641,816	0.63
2000 #	2,043	74,236,121	36,337	(1.9)	889	719,105	2.19
2001 #	1,866	72,321,085	38,757	6.7	911	763,689	1.11
2002 @	2,080	83,635,826	40,210	3.7	954	835,286	4.26
2003 @	2,131	87,545,515	41,082	2.2	1,072	1,080,329	9.01
2004 #	2,158	92,266,683	42,756	4.1	1,169	1,269,485	14.57
2004 #!	2,158	92,266,683	42,756	4.1	1,169	1,269,485	12.19
2005 @	2,118	91,068,299	42,997	0.6	1,294	1,587,496	11.8
2006	1,956	85,539,496	43,732	1.7	1,486	1,973,938	11.58
2007 #	1,825	83,093,296	45,531	4.1	1,652	2,262,129	11.19
2008 #@	1,546	71,003,823	45,927	0.9	1,575	2,242,888	8.55
2009 #	1,497	67,006,513	44,761	(2.5)	1,620	2,331,449	9.00
2010	1,452	64,855,997	44,667	(0.2)	1,687	2,442,026	10.57
2011	1,422	64,566,970	45,406	1.7	1,755	2,554,204	13.22

# Benefit changes included in this valuation.

@ Actuarial assumptions or methods revised.

\* Retiree information includes members electing DROP beginning in 2004.

! Amortization period revised.

\*\* Excludes pay for DROP members.

**COMPUTED EMPLOYER CONTRIBUTIONS  
COMPARATIVE STATEMENT  
SHERIFF'S DEPARTMENT**

Valuation Date December 31,	Active Members				Retirees & Beneficiaries*		Employer Contributions as Payroll Percents
	No.	Valuation Payroll			No.	Monthly Benefits	
		Total**	Average	% Increase			
1993 #	320	\$ 14,521,765	\$45,381	2.5 %	96	\$ 136,541	18.70 %
1994 #@	323	14,883,102	46,078	1.5	122	213,243	20.22
1995 #	331	15,453,538	46,687	1.3	128	221,291	18.88
1996 #	338	16,640,938	49,234	5.5	131	233,601	19.24
1997	352	16,866,535	47,916	2.7	132	248,363	15.99
1998	366	18,086,823	49,418	3.1	137	264,882	11.43
1999	372	18,956,773	50,959	3.1	147	298,021	6.66
2000 #	370	20,109,034	54,349	6.7	155	330,752	5.61
2001	362	21,502,952	59,400	9.3	163	352,542	5.47
2002 @	406	23,293,023	57,372	3.4	188	452,403	13.36
2003 #@	415	24,523,879	59,094	3.0	197	494,509	16.27
2004 #	415	25,627,831	61,754	4.5	209	560,910	20.69
2004 #!	415	25,627,831	61,754	4.5	209	560,910	19.80
2005 @	438	28,029,893	63,995	3.6	220	606,501	17.56
2006	432	27,984,382	64,779	1.2	230	640,989	14.67
2007 #	426	28,981,620	68,032	5.0	237	672,103	14.15
2008	422	29,124,791	69,016	1.4	241	688,074	15.29
2009	419	28,638,488	68,350	(1.0)	248	713,854	15.66
2010	401	25,952,721	64,720	(5.3)	261	765,134	14.99
2011	390	25,162,695	64,520	(0.3)	277	834,884	17.83

# Benefit changes included in this valuation.

\* Retiree information includes members electing DROP beginning in 2004.

@ Actuarial assumptions or methods changed.

! Amortization period revised.

\*\* Excludes pay for members electing DROP.



**COMPUTED EMPLOYER CONTRIBUTIONS  
COMPARATIVE STATEMENT  
ROAD COMMISSION**

Valuation Date December 31,	Active Members			Retirees & Beneficiaries		Employer Contributions as Payroll Percents	
	No.	Valuation Payroll		No.	Monthly Benefits		
		Total**	Average	% Increase			
1993 #	267	\$ 10,159,296	\$38,050	12.7 %	204	\$ 171,708	19.84 %
1994 #@	274	10,433,561	38,079	0.1	210	191,006	21.27
1995 #	273	10,833,071	39,682	4.2	224	230,000	20.99
1996	269	10,857,267	40,362	1.7	232	251,122	18.16
1997	266	11,170,663	41,995	4.0	243	277,451	15.28
1998	278	12,148,390	43,699	4.1	247	290,618	11.7
1999	259	11,546,310	44,580	2.0	248	303,008	7.01
2000 #	247	10,939,384	44,289	(0.7)	249	320,776	3.24
2001	287	13,155,595	45,838	3.5	252	332,187	6.98
2002 @	309	14,370,596	46,507	1.5	256	359,156	10.4
2003 @	315	15,166,250	48,147	3.5	265	393,485	14.92
2004 #	315	16,363,729	51,948	7.9	262	400,588	19.16
2004 #!	315	16,363,729	51,948	7.9	262	400,588	17.92
2005 @	295	15,788,396	53,520	3.0	265	423,833	16.08
2006	293	15,297,108	52,209	(2.5)	272	445,916	13.65
2007 #	263	14,621,336	55,594	6.5	295	511,909	13.09
2008 @	254	14,449,299	56,887	2.3	297	520,317	11.68
2009 #	245	14,421,101	58,862	3.5	302	537,968	15.09
2010	230	13,144,747	57,151	(2.9)	313	568,943	17.95
2011	216	12,613,964	58,398	2.2	325	610,220	21.46

# Benefit changes included in this valuation.  
 @ Actuarial assumptions or methods changed.  
 ! Amortization period revised.  
 \*\* Excludes pay for DROP members.

**COMPUTED EMPLOYER CONTRIBUTIONS  
COMPARATIVE STATEMENT  
MARTHA T. BERRY MCF**

Valuation Date December 31,	Active Members			Retirees & Beneficiaries		Employer Contributions as Payroll Percents	
	No.	Valuation Payroll		No.	Monthly Benefits		
		Total**	Average	% Increase			
2008 #@	174	\$ 7,244,761	\$41,637	-	167	\$ 162,643	9.20
2009 #	164	6,456,836	39,371	(5.4) %	171	172,128	8.19
2010	174	6,841,775	39,321	(0.1)	178	177,819	9.03
2011	170	6,556,551	38,568	(1.9)	185	188,173	10.56

# Benefit changes included in this valuation.

@ Actuarial assumptions or methods changed.

\*\* Excludes pay for DROP members.

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**SECTION C**

**SUMMARY OF BENEFIT PROVISIONS AND  
VALUATION DATA**

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**BRIEF SUMMARY OF BENEFIT PROVISIONS  
(DECEMBER 31, 2011)**

**Eligibility**

**Amount**

**REGULAR RETIREMENT**

**GENERAL COUNTY, MARTHA T. BERRY**

**Hired before January 1, 2002:**

General County (including County Commissioners holding office prior to January 1, 2011) and Martha T. Berry MCF (non-RN's and LPN's): Age 55 with 25 or more years of service or age 60 with 8 or more years of service. A member may retire if the sum of age and service equals 70, minimum age 50.

2.4% for the first 26 years of service and 1% thereafter. Maximum employer financed pension is 65% of FAC/66% for UAW Senior Citizen Services. 4 year FAC.

Martha T. Berry MCF (RN's and LPN's): Age 55 with 25 years of service or age 60 with 8 or more years of service.

Total service multiplied by 2.20% of FAC. Maximum employer financed pension is 66% of FAC. 5 year FAC.

**Hired on or after January 1, 2002:**

General County and Martha T. Berry: Age 55 with 25 or more years of service or age 60 with 8 or more years of service.

Total service multiplied by 2.20% of FAC. Maximum employer financed pension is 66% of FAC. 5 year FAC.

**SHERIFF'S DEPARTMENT**

25 or more years of service regardless of age, or age 60 with 8 or more years of service (age 60 with 15 or more years of service for those hired into the POLC unit, effective December 4, 2009).

Deputies - 2.64% of FAC for 25 years of service and nothing thereafter.

All others - FAC multiplied by the sum of 2.4% for the first 26 years of service and 1% for each additional year.

Maximum employer financed pension is 66% (65% for Command and Inspectors) of FAC. 3 year FAC.

**ROAD COMMISSION**

Age 55 with 25 or more years of service or age 60 with 8 or more years of service.

FAC multiplied by 2.4% for the first 26 years of service and 1% for each year of service thereafter. Maximum employer financed pension is 65% of FAC. 3 year FAC.

AdTech (AFSCME) members retiring before November 1, 2011(October 2, 2011) can retire with 70 points and minimum age 50. AdTech (AFSCME) members retiring after November 1, 2011(October 2, 2011) can retire with 70 points and minimum age 55. AdTech (AFSCME) employees hired after ratification can retire after age 55 with 25 years of service, or age 65 with 8 years of service.

## **DEFERRED RETIREMENT**

8 or more years of service. Benefit begins at regular retirement age. Computed as a regular retirement but based upon service and final average compensation at termination.

General County

If employee terminated after 2003 eligible to commence benefits with 75 point rule.

If employee terminated after 2004, eligible to commence benefits with 70 point rule.

## **NON-DUTY DEATH IN SERVICE**

10 or more years of service.

Computed as a regular retirement but actuarially reduced in accordance with a 100% joint and survivor election.

## **DUTY DEATH IN SERVICE**

No age or service requirements.  
Must be in receipt of worker's compensation.

Refund of accumulated contributions. Upon termination of worker's compensation payments the same amount is paid to the spouse and to unmarried children under 18.

## **NON-DUTY DISABILITY**

10 or more years of service.

Computed as a regular retirement with a minimum benefit of \$400 per month.

## **DUTY DISABILITY**

No age or service requirements.  
Must be in receipt of worker's compensation.

Computed as a regular retirement with a minimum benefit of \$400 per month. During the worker's compensation period the County financed portion cannot exceed the difference between 65% of final average compensation and worker's compensation payments.

## **MEMBER CONTRIBUTIONS**

General County and Martha T. Berry MCF (non-RN's and LPN's) hired before January 1, 2002: - 3.5% of annual compensation

Martha T. Berry MCF (RN's and LPN's): - 2.5% of annual compensation

General County and Martha T. Berry MCF hired on or after January 1, 2002: - 2.5% of annual compensation

Sheriff's Department: - 4.0% of annual compensation

Road Commission: - 3.5% of annual compensation

## SUMMARY OF DROP PROVISIONS

The following employees of Macomb County may elect to participate in a DROP:

- 01 – POLC Command
- 02 – UAW 889 – Animal Shelter
- 03 – AFSCME Local 411
- 04 – MNA (RNs at Martha T. Berry)
- 05 – Service Employees International Union (LPNs at Martha T. Berry)
- 06 – Macomb County Environmental Health Association
- 07 – POAM (Deputies and Dispatchers)
- 08 – Teamsters (Court Reporters)
- 09 – International Union of Operating Engineers
- 10 – TPOAM (Circuit Court Officer/Prof. Assoc.)
- 11 – MNA, Unit I (Health Department)
- 12 – UAW, Local 412, Unit 49 (Information Technology)
- 13 – UAW, Local 889 (Specialized Offices)
- 14 – AFSCME 411 (Martha T. Berry)
- 15 – Building Trades Association
- 16 – UAW, Local 412, Unit 46 (Assistant Prosecutors)
- 18 – Teamsters Local 214 FOC/CIR CT
- 19 – UAW, Local 412, Unit 46 (Assistant Prosecutors)
- 20 – POLC (Captains, Jail Administrator/Chief of Staff)
- 21 – POAM (JJC)
- 22 – AFSCME Council 25 (District Court)
- 23 – UAW, Local 412, Unit 55 (Senior Citizens Legal Unit)
- 24 – UAW, Local 889
- 25 – UAW, Local 412, Unit 75 (Supervisors)
- 26 – Macomb County Professional Deputy Sheriff's Association (Corrections Officers)
- 27 – TPOAM (Macomb County Senior Service Employees Association)
- 28 – TPOAM (Macomb County Juvenile Court and Justice Center)
- 29 – AFSCME Local 6091 (Head Start Teachers)
- 30 – UAW, Local 412, Unit 95 (Assistant Corporation Counsel)
- 31 – Road Commission non-union
- 40 – Martha T. Berry non-union
- 41 – Martha T. Berry UAW Specialized Offices
- 42 – Martha T. Berry UAW Supervisors
- 43 – UAW, Local 889 (Probate Court/Corporation Counsel)
- 44 – UAW, MCCA Professionals

## SUMMARY OF DROP PROVISIONS

The provisions of the DROP are listed below:

- The DROP is a forward DROP.
- Members can DROP when they first become eligible for an unreduced benefit.
- Upon entering the DROP, 100% of the member's monthly retirement benefit will be credited to the DROP account.
- The DROP account will be credited with the same interest rate used to accumulate member contributions (currently 3.5%).
- The maximum DROP period is five years. Members may continue to work past the maximum DROP period but no additional retirement benefits will be credited to the member's DROP account. Interest on the DROP account will continue to accrue for members working past the maximum DROP period.
- Member contributions to the Retirement System will cease upon entering the DROP.
- Upon actual retirement, the member would receive a monthly annuity equal to the accrued benefit credited to the DROP account under any form of payment available from the plan, and the lump sum amount accumulated in the DROP account. Members elect their form of payment at time of DROP.
- The monthly annuity as of the DROP date is calculated based on service, final average compensation and benefit provisions as of the DROP date less the annuity withdrawal reduction, if applicable; this amount is not changed for any subsequent changes in pay or benefit provisions. The annuity withdrawal is paid at the time of DROP.
- For POLC (Union 1 & 20) and MCDPSA (Union 26), interest is earned on the DROP account balance at the end of each month, and shall be paid to the employee's DROP account no later than the last day of the following month.
- For POLC (Union 1), effective August 20, 2010, for new entries into DROP, upon reaching the five year maximum DROP participation period, the DROP participant shall terminate his/her employment.
- For POAM (Union 7), effective August 6, 2010, an employee of Macomb County who is a member of the POAM-Deputies and Dispatchers, may voluntarily elect to participate in the DROP, upon obtaining the minimum age and service requirements for a normal service retirement.

**REPORTED FINANCIAL INFORMATION  
YEAR ENDED DECEMBER 31, 2011  
(MARKET VALUE)**

**Revenues and Disbursements during 2011**

**Revenues:**

a. Member contributions	\$ 3,735,723	
b. Employer contributions	16,050,489	
c. Interest and dividends	8,181,201	
d. Investment gains (losses)	<u>(16,197,095)</u>	
e. Total		\$11,770,318

**Disbursements:**

a. Refunds of member contributions	12,362,351	
b. Benefits paid	42,702,795	
c. Investment expenses	2,861,431	
d. Administrative expenses	<u>193,451</u>	
e. Total		58,120,028

**Reserve Increase:**

Total revenues minus total disbursements		<u><u>(46,349,710)</u></u>
--	--	----------------------------

**Assets and Reserves as of December 31, 2011**

**Assets:**

a. Cash & receivables	\$ 38,501,018
b. Short-term investments	39,451
c. Government bonds	0
d. Corporate bonds	12,605,086
e. Stocks	604,711,122
f. Real estate	82,991,602
g. Limited partnerships	<u>0</u>

Total \$738,848,279

**Reserve Accounts:**

a. Member contributions	\$ 25,723,383
b. Reserve for benefits now being paid	530,953,403
c. Reserve for future benefits	177,741,564
d. Supplemental reserve	<u>4,429,929</u>

Total \$738,848,279



## DETERMINATION OF VALUATION ASSETS

Year Ended December 31:	2010	2011	2012	2013	2014	2015
A. Funding Value Beginning of Year	\$866,356,598	\$862,915,501				
B. Market Value End of Year	785,197,989	738,848,279				
C. Market Value Beginning of Year	725,223,381	785,197,989				
D. Non-Investment Net Cash Flow	(31,545,865)	(35,472,385)				
E. Investment Income						
E1. Market Total: B - C - D	91,520,473	(10,877,325)				
E2. Amount for Immediate Recognition (7.5%)	63,793,775	63,388,448				
E3. Amount for Phased-In Recognition: E1-E2	27,726,698	(74,265,773)				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.2 x E3	5,545,340	(14,853,155)				
F2. First Prior Year	8,020,345	5,545,340	\$ (14,853,155)			
F3. Second Prior Year	(63,108,255)	8,020,345	5,545,340	\$ (14,853,155)		
F4. Third Prior Year	2,256,603	(63,108,255)	8,020,345	5,545,340	\$ (14,853,155)	
F5. Fourth Prior Year	11,596,960	2,256,603	(63,108,255)	8,020,347	5,545,338	\$ (14,853,153)
G. Total	(35,689,007)	(62,139,122)	(64,395,725)	(1,287,468)	(9,307,817)	(14,853,153)
H. Funding Value End of Year: A + D + E2 + G	862,915,501	828,692,442				
I. Difference between Market & Funding Value	(77,717,512)	(89,844,163)	(25,448,438)	(24,160,970)	(14,853,153)	0
J. Recognized Rate of Return - Funding Value Basis	3.30%	0.15%				
K. Recognized Rate of Return - Market Value Basis	12.90%	(1.42%)				

**RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
COMPARATIVE STATEMENT**

Year Ended December 31	Added to Rolls*#		Removed from Rolls		Rolls End of Year		% Increase in Annual Pensions	Average Pension	Present Value of Pensions
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions			
1992	83	\$ 1,237,409	18	\$ 56,553	945	\$ 7,351,074	19.1%	\$ 7,779	\$ 81,694,273
1993	76	1,156,543	35	165,207	986	8,342,410	13.5	8,461	93,777,780
1994	105	1,765,220	38	214,407	1,052	9,893,223	18.6	9,404	102,320,216
1995	85	1,198,103	37	251,793	1,100	10,839,533	9.6	9,854	111,649,206
1996	85	1,206,860	37	255,781	1,148	11,790,612	8.8	10,271	125,424,807
1997	92	1,381,389	38	210,946	1,202	12,961,055	9.9	10,783	137,436,352
1998	87	1,320,780	45	316,133	1,244	13,965,702	7.8	11,226	147,517,689
1999	70	1,235,117	58	286,683	1,256	14,914,136	6.8	11,874	156,999,665
2000	99	1,939,366	62	405,901	1,293	16,447,601	10.3	12,720	175,045,484
2001	81	1,366,678	48	433,272	1,326	17,381,007	5.7	13,108	184,227,153
2002	133	2,859,450	61	478,315	1,398	19,762,142	13.7	14,136	212,414,152
2003	192	4,493,238	56	635,506	1,534	23,619,878	19.5	15,398	256,882,027
2004	159	3,633,350	53	481,426	1,640	26,771,802	13.3	16,324	291,780,728
2005	191	5,077,365	52	435,209	1,779	31,413,958	17.3	17,658	345,568,514
2006	258	5,814,886	49	498,726	1,988	36,730,118	16.9	18,476	406,950,639
2007	258	5,353,201	62	729,628	2,184	41,353,691	12.6	18,935	461,361,122
2008	143	2,522,444	47	509,064	2,280	43,367,071	4.9	19,021	489,123,875
2009	133	3,513,555	72	1,815,834	2,341	45,064,792	3.9	19,250	512,641,054
2010	135	2,780,334	37	398,052	2,439	47,447,074	5.3	19,453	536,040,285
2011	158	3,423,043	55	620,343	2,542	50,249,774	5.9	19,768	560,026,223

\* Includes post-retirement increases and beneficiaries of deceased retirees.

# Includes alternate payees under EDROs and members electing DROP beginning in 2004.

**RETIREES AND BENEFICIARIES DECEMBER 31, 2011  
TABULATED BY ATTAINED AGE**

**GENERAL COUNTY**

Age	Age and Service		Death-in-Service Survivor		Disability		Totals	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
Under 20	1	\$ 6,649					1	\$ 6,649
20 - 24					2	\$ 19,025	2	19,025
25 - 29	5	75,881			1	9,710	6	85,591
30 - 34					1	7,884	1	7,884
35 - 39	2	11,539					2	11,539
40 - 44	5	25,818			2	21,232	7	47,050
45 - 49	6	57,134			7	99,359	13	156,493
50 - 54	125	3,394,068	3	\$ 43,635	5	114,746	133	3,552,449
55 - 59	252	5,887,839	2	44,408	6	81,144	260	6,013,391
60 - 64	375	7,682,144	4	61,988	9	84,752	388	7,828,884
65 - 69	296	5,223,524	4	50,128	9	130,602	309	5,404,254
70-74	192	3,088,771	2	41,903	10	87,007	204	3,217,681
75-79	140	1,573,367	1	12,472	9	87,102	150	1,672,941
80-84	132	1,546,992	5	40,661	4	24,315	141	1,611,968
85-89	93	768,189	3	14,766	2	7,490	98	790,445
90+	37	218,320			3	5,888	40	224,208
<b>Totals</b>	<b>1,661</b>	<b>\$29,560,235</b>	<b>24</b>	<b>\$309,961</b>	<b>70</b>	<b>\$780,256</b>	<b>1,755</b>	<b>\$30,650,452</b>

**RETIREES AND BENEFICIARIES DECEMBER 31, 2011  
TABULATED BY ATTAINED AGE**

**SHERIFF'S DEPARTMENT**

Age	Age and Service		Death-in-Service Survivor		Disability		Totals	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
30 - 34	1	\$ 39,059			1	\$ 7,538	2	\$ 46,597
35 - 39								
40 - 44					1	21,135	1	21,135
45 - 49	15	670,748			4	82,628	19	753,376
50 - 54	44	2,202,031	1	\$ 27,328	3	64,126	48	2,293,485
55 - 59	54	2,497,324			6	159,609	60	2,656,933
60 - 64	28	1,129,431	1	34,242	5	106,465	34	1,270,138
65 - 69	38	1,353,140			3	45,186	41	1,398,326
70 - 74	27	870,433			1	15,031	28	885,464
75 - 79	18	365,133			1	8,119	19	373,252
80 - 84	10	152,045			2	20,965	12	173,010
85 - 89	11	123,379					11	123,379
90+	2	23,510					2	23,510
<b>Totals</b>	<b>248</b>	<b>\$9,426,233</b>	<b>2</b>	<b>\$61,570</b>	<b>27</b>	<b>\$530,802</b>	<b>277</b>	<b>\$10,018,605</b>

**RETIREES AND BENEFICIARIES DECEMBER 31, 2011  
TABULATED BY ATTAINED AGE**

**ROAD COMMISSION**

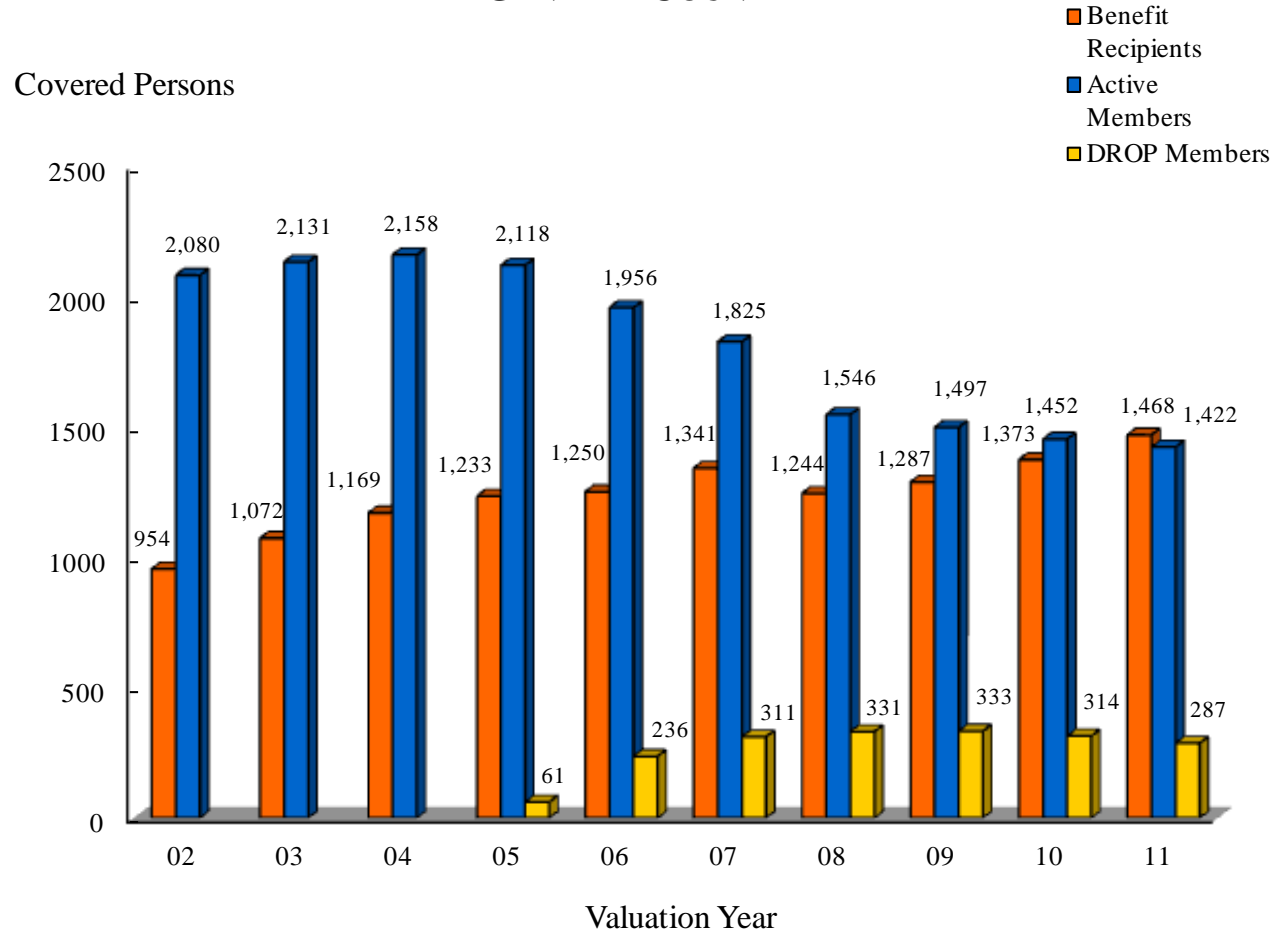
Age	Age and Service		Death-in-Service Survivor		Disability		Totals	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
Under 20	1	\$ 7,080			2	\$ 14,373	3	\$ 21,453
20 - 24								
25 - 29					1	7,187	1	7,187
30 - 34					1	2,396	1	2,396
35 - 39					1	2,396	1	2,396
40 - 44					2	13,523	2	13,523
45 - 49	11	301,377			1	16,768	12	318,145
50 - 54	27	932,662	1	\$ 23,419	1	23,440	29	979,521
55 - 59	48	1,515,976	1	30,240	5	59,928	54	1,606,144
60 - 64	52	1,452,411			3	30,494	55	1,482,905
65 - 69	20	549,198			2	27,194	22	576,392
70 - 74	34	761,038	1	31,504	3	25,320	38	817,862
75 - 79	35	683,343	1	21,015	3	17,787	39	722,145
80 - 84	27	428,466	1	5,197	5	41,068	33	474,731
85 - 89	16	175,932			1	11,089	17	187,021
90+	17	104,464	1	6,355			18	110,819
<b>Totals</b>	<b>288</b>	<b>\$6,911,947</b>	<b>6</b>	<b>\$117,730</b>	<b>31</b>	<b>\$292,963</b>	<b>325</b>	<b>\$7,322,640</b>

**RETIREES AND BENEFICIARIES DECEMBER 31, 2011  
TABULATED BY ATTAINED AGE**

**MARTHA T. BERRY MCF**

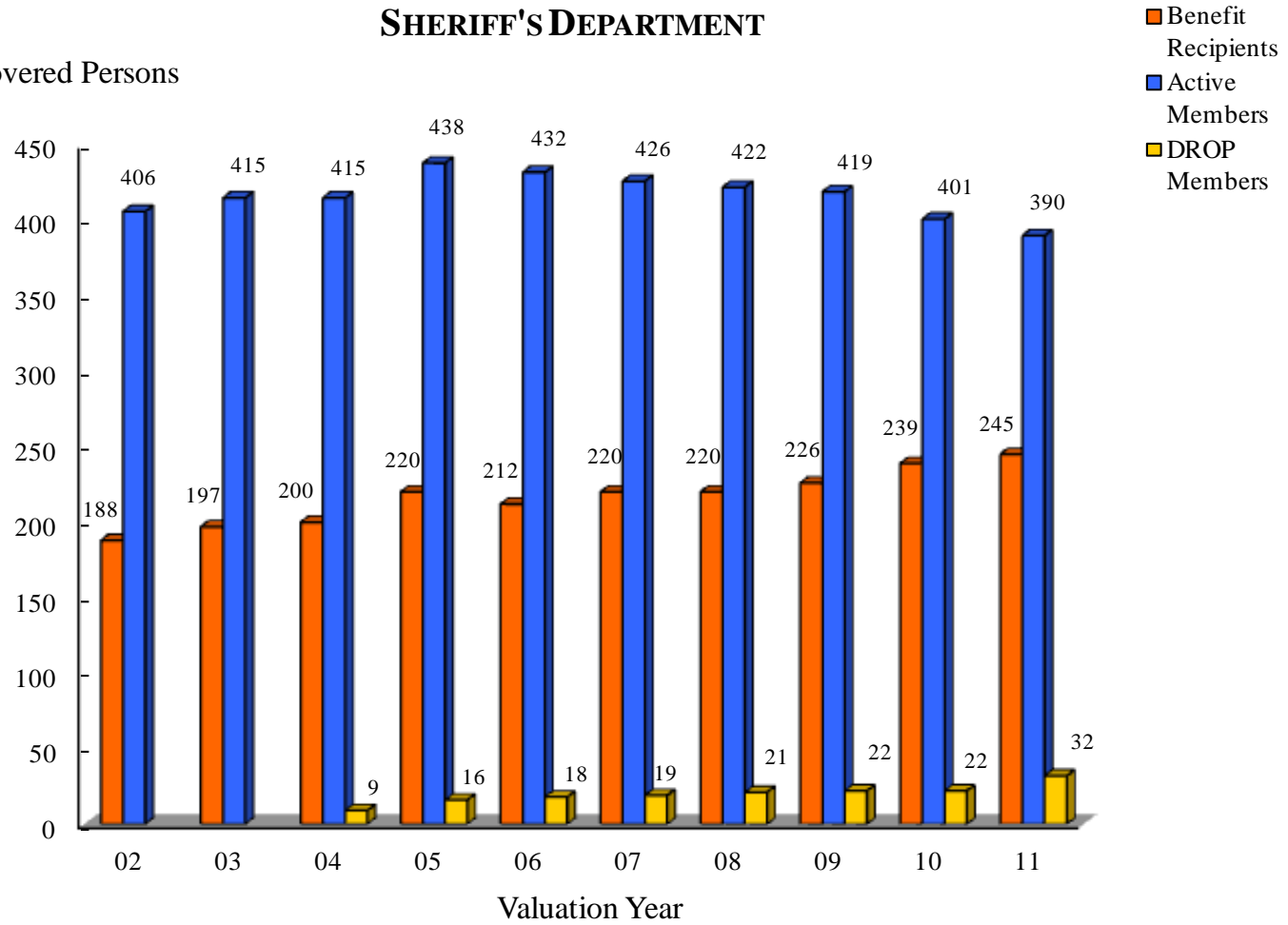
Age	Age and Service		Death-in-Service Survivor		Disability		Totals	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
35 - 39	1	\$ 11,296					1	\$ 11,296
40 - 44			1	\$ 10,350			1	10,350
45 - 49					5	\$ 68,868	5	68,868
50 - 54	12	290,186			1	19,472	13	309,658
55 - 59	15	355,943			2	29,073	17	385,016
60 - 64	36	490,460			1	12,702	37	503,162
65 - 69	25	314,835			3	11,822	28	326,657
70 - 74	28	293,422			3	17,283	31	310,705
75 - 79	13	119,145	1	6,388	2	15,681	16	141,214
80 - 84	15	115,949			4	14,211	19	130,160
85 - 89	12	44,672					12	44,672
90 +	5	16,319					5	16,319
<b>Totals</b>	<b>162</b>	<b>\$2,052,227</b>	<b>2</b>	<b>\$16,738</b>	<b>21</b>	<b>\$189,112</b>	<b>185</b>	<b>\$2,258,077</b>

## ACTIVE MEMBERS, DROP MEMBERS & BENEFIT RECIPIENTS GENERAL COUNTY



## ACTIVE MEMBERS, DROP MEMBERS & BENEFIT RECIPIENTS SHERIFF'S DEPARTMENT

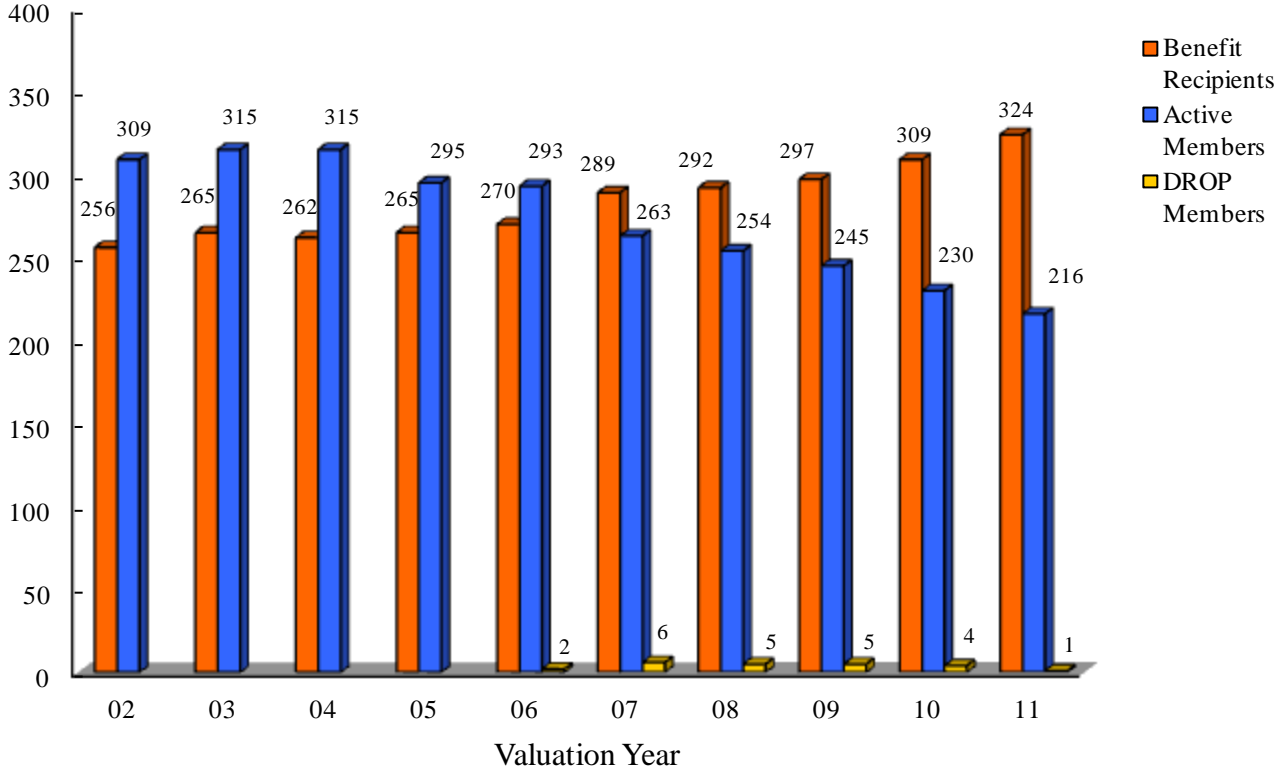
Covered Persons





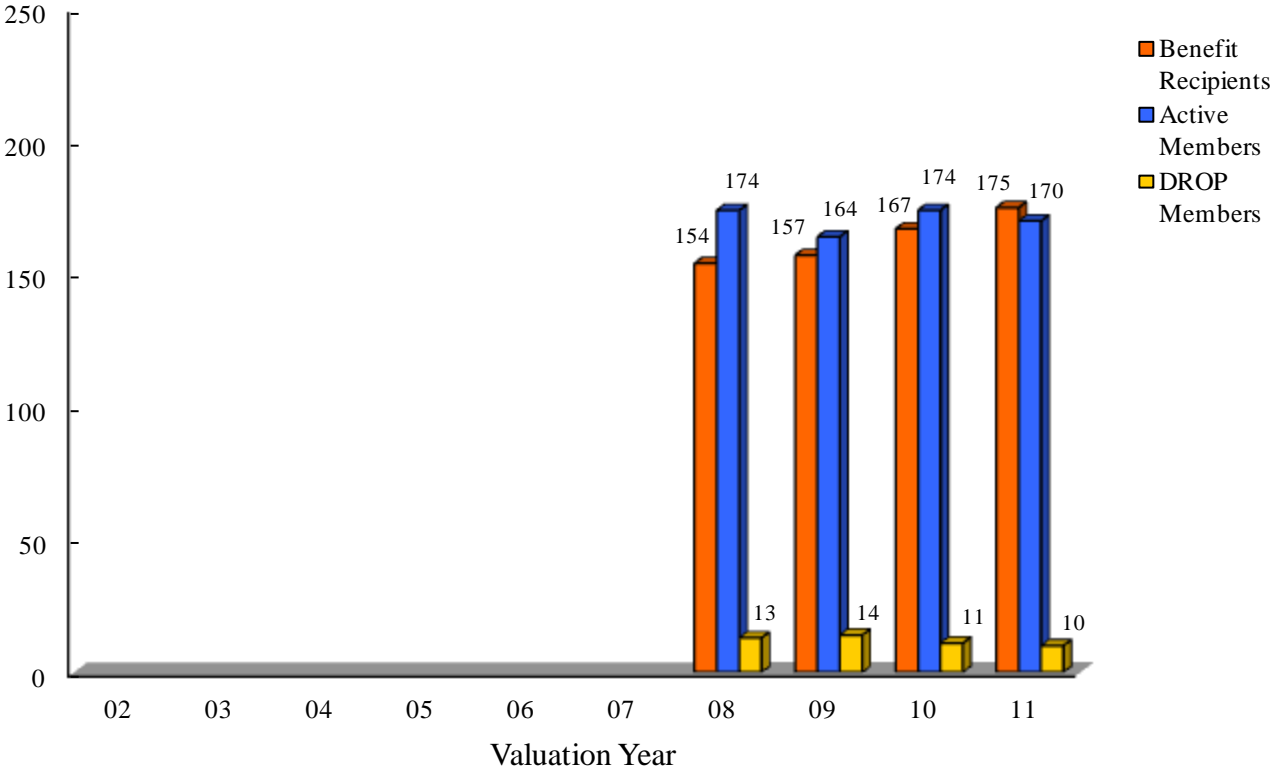
**ACTIVE MEMBERS, DROP MEMBERS & BENEFIT RECIPIENTS  
ROAD COMMISSION**

Covered Persons



**ACTIVE MEMBERS, DROP MEMBERS & BENEFIT RECIPIENTS  
MARTHA T. BERRY MCF**

Covered Persons



*Inactive members* included in the valuation totaled December 31, 2011 involving estimated deferred annual retirement allowances of \$December 31, 2011. An inactive member is a person who has left covered employment after completing 8 or more years of service, but has not yet applied for a retirement allowance, and who has not withdrawn his accumulated contributions from the Employees' Savings Fund. Included in this group are 9 employees who are covered under the Reciprocal Retirement Act.

**Inactive Members December 31, 2011  
Tabulated by Valuation Divisions**

<b>Valuation Divisions</b>	<b>Number</b>	<b>Estimated Deferred</b>
General County	163	\$1,604,853
Sheriff's Department	13	171,070
Road Commission	13	152,756
Martha T. Berry MCF	12	135,987
Totals	201	\$2,064,666

**GENERAL COUNTY ACTIVE MEMBERS DECEMBER 31, 2011  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service on Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll*
20-24	5							5	\$ 114,391
25-29	34	11						45	1,668,669
30-34	55	63	11					129	5,529,865
35-39	46	75	67	8				196	8,995,742
40-44	39	78	65	32	10			224	10,516,649
45-49	46	79	60	43	42	21		291	13,582,839
50-54	31	74	67	37	20	9	2	240	11,087,610
55-59	17	73	54	14	5	3		166	7,349,124
60	6	13	7	1		1		28	1,286,795
61	2	8	9	3	1			23	933,285
62	2	5		1				8	440,700
63	1	10	4	3	3	1		22	1,091,274
64	2	4	3					9	466,622
65	3	3	2					8	273,614
66		6	2	1				9	400,226
67	1	1	1	1				4	150,969
69	1	1		1				3	151,817
71	1	2			1			4	240,953
72		2		1				3	120,751
73	1	1						2	74,311
74	1			1				2	76,003
79			1					1	14,761
<b>Totals</b>	<b>294</b>	<b>509</b>	<b>353</b>	<b>147</b>	<b>82</b>	<b>35</b>	<b>2</b>	<b>1,422</b>	<b>\$64,566,970</b>

\* Valuation Payroll excludes pay for members electing the DROP.

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 46.2 years  
Service: 10.0 years  
Annual Pay: \$45,406

**SHERIFF'S DEPARTMENT ACTIVE MEMBERS DECEMBER 31, 2011  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service on Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll*
20-24	4							4	\$ 132,692
25-29	16	15						31	1,646,178
30-34	5	31	10					46	2,822,690
35-39	8	24	44	13				89	5,734,866
40-44	4	17	22	33	10			86	5,683,520
45-49	3	12	11	14	43	4		87	5,873,864
50-54		9	3	2	16	1		31	2,186,017
55-59		2		4	10			16	1,082,868
<b>Totals</b>	<b>40</b>	<b>110</b>	<b>90</b>	<b>66</b>	<b>79</b>	<b>5</b>	<b>0</b>	<b>390</b>	<b>\$25,162,695</b>

\* Valuation Payroll excludes pay for members electing the DROP.

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 40.8 years

Service: 13.2 years

Annual Pay: \$64,520

**ROAD COMMISSION ACTIVE MEMBERS DECEMBER 31, 2011  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service on Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll*
25-29	2	4	1					7	\$ 359,336
30-34	1	14	12					27	1,429,414
35-39	2	9	14	5				30	1,694,203
40-44		7	14	18	7	2		48	2,909,001
45-49		8	11	14	18	3		54	3,310,538
50-54	2	4	8	9	3	2		28	1,636,992
55-59	1	4	5	7				17	992,449
60			1					1	49,844
61			1					1	44,427
63		1		1				2	146,579
72					1			1	41,181
<b>Totals</b>	<b>8</b>	<b>51</b>	<b>67</b>	<b>54</b>	<b>29</b>	<b>7</b>	<b>0</b>	<b>216</b>	<b>\$12,613,964</b>

\* Valuation Payroll excludes pay for members electing the DROP.

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.8 years

Service: 14.1 years

Annual Pay: \$58,398

**MARTHA T. BERRY MCF ACTIVE MEMBERS DECEMBER 31, 2011**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service on Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll*
20-24	4							4	\$ 131,033
25-29	7							7	245,788
30-34	17	5						22	765,257
35-39	15	5						20	742,826
40-44	20	10	3	6	2			41	1,625,768
45-49	7	6	3	6	3	1		26	965,023
50-54	6	5	4	2				17	593,306
55-59	6	16	2	1			1	26	1,143,609
60	2							2	59,027
61		1						1	43,941
64		1						1	38,638
66	1				1			2	159,923
68		1						1	42,412
<b>Totals</b>	<b>85</b>	<b>50</b>	<b>12</b>	<b>15</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>170</b>	<b>\$6,556,551</b>

\* Valuation Payroll excludes pay for members electing the DROP.

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 44.0 years

Service: 6.7 years

Annual Pay: \$38,568

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## **SECTION D**

# **ACTUARIAL COST METHODS AND ACTUARIAL ASSUMPTIONS**

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## VALUATION METHODS

**Actuarial Cost Method:** Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an individual entry-age actuarial cost method having the following characteristics:

- (i) the annual normal costs for each individual active member, payable from the date of hire to the date of retirement, are sufficient to accumulate to the value of the member's benefits.
- (ii) each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

**Amortization of Unfunded Actuarial Valuation Method:** Unfunded actuarial accrued liabilities or asset surpluses were amortized by level percent-of-payroll contributions (principal and interest combined) over 20 years. These periods are re-established with each annual actuarial valuation. The amortization method was first adopted for the December 31, 2005 actuarial valuation. Active member payroll was assumed to increase 5.0% for the purpose of determining the level-percent contributions.

**Asset Valuation Method:** The actuarial value equals:

- (a) Actuarial value of assets from the previous valuation, plus
- (b) employer and member contributions since the last valuation, minus
- (c) benefit payments and refunds since the last valuation, plus
- (d) estimated investment income at the assumed investment return, plus
- (e) portion of gain (loss) recognized in the current valuation.

For the above purpose, gain (loss) is defined as the excess during the period of the investment return on the market value of assets over the expected investment income. Twenty percent of the difference is recognized over a 5 year period in the actuarial value of assets.

This method was first adopted for the December 31, 2005 actuarial valuation.

## ACTUARIAL ASSUMPTIONS USED FOR THE VALUATION

**Investment Return** (net of investment expenses).

2.5% per year in excess of pay inflation (real rate of return). If pay inflation matches the assumption of 5.0%, this implies a 7.5% rate of return.

This assumption is used to equate the value of payments due at different points in time and was first used for the December 31, 1993 valuation. Approximate rates of investment return, for the purpose of comparisons with assumed rates, are shown below. Actual increases in average active member pay are also shown for comparative purposes.

	Year Ended December 31					5 Year Average*
	2011	2010	2009	2008	2007	
Rate of Investment Return	0.1 %	3.3 %	3.5 %	2.5 %	10.2 %	3.9 %
Increase in Average Pay	<u>0.9</u>	<u>(2.1)</u>	<u>(1.4)</u>	<u>0.9</u>	<u>4.9</u>	<u>0.6</u>
Real Rate of Return	(0.8)	5.4	4.9	1.6	5.3	3.3

\* *Compound rate of increase.*

*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 comparison 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 December 31, 2005 valuation.

Years of Service	Base (Economic)	Annual Rate of Pay Increase*							
		Merit and Longevity				Total			
		General County	Sheriff's Department	Road Commission	Martha T. Berry MCF	General County	Sheriff's Department	Road Commission	Martha T. Berry MCF
1	5.0%	3.0 %	7.0 %	6.0 %	3.0 %	8.0%	12.0%	11.0%	8.0%
2	5.0	3.0	7.0	6.0	3.0	8.0	12.0	11.0	8.0
3	5.0	3.0	7.0	6.0	3.0	8.0	12.0	11.0	8.0
4	5.0	3.0	4.0	6.0	3.0	8.0	9.0	11.0	8.0
5	5.0	3.0	4.0	6.0	3.0	8.0	9.0	11.0	8.0
6	5.0	3.0	4.0	6.0	3.0	8.0	9.0	11.0	8.0
7	5.0	1.0	4.0	2.0	1.0	6.0	9.0	7.0	6.0
8	5.0	1.0	1.0	2.0	1.0	6.0	6.0	7.0	6.0
9	5.0	1.0	1.0	2.0	1.0	6.0	6.0	7.0	6.0
10	5.0	1.0	1.0	2.0	1.0	6.0	6.0	7.0	6.0
11+	5.0	1.0	1.0	1.0	1.0	6.0	6.0	6.0	6.0

*The mortality table (a risk assumption)* used was the RP 2000 Mortality Table, adjusted for projected mortality improvements to 2015 with no setbacks for males or females. This table was first used for the December 31, 2005 valuation. Sample values follow:

Sample Ages	Single Life Retirement Values			
	Values at Retirement of \$1 Monthly for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$144.50	\$146.68	32.29	34.38
55	136.81	139.67	27.59	29.64
60	126.95	130.80	23.05	25.08
65	115.04	120.11	18.79	20.80
70	101.33	107.82	14.89	16.86
75	85.49	93.96	11.34	13.29
80	68.54	78.58	8.25	10.09

This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each pension payment being made after retirement.

The table above was set forward 4 years for males and females for the purpose of valuing disabled lives.

*Rates of disability* were as follows:

Sample Ages	% of Active Members Becoming Disabled within Next Year
25	0.09 %
30	0.11
35	0.15
40	0.22
45	0.36
50	0.61
55	1.01
60	1.66

*The rates of retirement (a risk assumption)* used to measure the probability of eligible members retiring during the next year were as follows:

<b>Retirement Ages</b>	<b>General County</b>	<b>Sheriff's Department</b>	<b>Road Commission</b>	<b>Martha T. Berry MCF</b>	<b>Retirement Service</b>	<b>Sheriff's Department</b>
50	15 %			15 %	25	50 %
51	15			15	26	40
52	15			15	27	40
53	15			15	28	40
54	15			15	29	40
55	15		25 %	15	30	40
56	15		25	15	31	35
57	15		25	15	32	25
58	15		25	15	33	25
59	25		25	25	34	25
60	25	25 %	25	25	35 & Up	100
61	25	25	30	25		
62	25	25	30	25		
63	25	25	30	25		
64	25	25	30	25		
65	25	100	100	25		
66	25			25		
67	25			25		
68	25			25		
69	25			25		
70 & Up	100			100		

These tables were first used for the December 31, 2005 valuation.

For all General County and Martha T. Berry MCF members hired on or after January 1, 2002 the following retirement probabilities will apply:

<b>Retirement Ages</b>	<b>General County</b>	<b>Martha T. Berry MCF</b>
55	10 %	10 %
56	10	10
57	10	10
58	10	10
59	20	20
60	20	20
61	20	20
62	25	25
63	25	25
64	25	25
65	25	25
66	25	25
67	25	25
68	25	25
69	25	25
70 & Up	100	100

*Rates of separation from active membership (a risk assumption)* were as follows: (rates do not apply to members eligible for regular retirement and do not include separation on account of death or disability). This assumption measures the probabilities of members remaining in employment.

**Sample Rates of Separation from Active Employment  
Before Retirement, Death or Disability**

Sample Ages	Years of Service	% of Active Members Separating within Next Year			
		General County	Sheriff's Department	Road Commission	Martha T. Berry MCF
ALL	0	12.00 %	4.00 %	6.50 %	12.00 %
	1	9.00	4.00	6.00	9.00
	2	8.00	3.00	5.50	8.00
	3	6.00	3.00	5.00	6.00
	4	6.00	3.00	4.50	6.00
25	5 & Over	5.80	1.60	2.50	5.80
30		5.30	1.10	2.00	5.30
35		4.30	1.00	2.00	4.30
40		3.30	0.75	1.50	3.30
45		2.30	0.50	1.00	2.30
50		1.80	0.25	0.50	1.80
55		1.75	0.25	0.50	1.75
60	1.50	0.25	0.50	1.50	

These tables were first used for the December 31, 2005 valuation.

*Effect of lump sum payments on FAC:* 4.5% for General County and Martha T. Berry MCF members.

11.0% for Command Officer and Inspectors hired before 12/1/96; 1% for other CBU members.

6.0% for Road Commission members.

*Administrative expense load:* 0.10% of payroll

## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

<b>Marriage Assumption:</b>	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
<b>Pay Increase Timing:</b>	Six months after the valuation date.
<b>Decrement Timing:</b>	Decrements of all other types are assumed to occur mid-year.
<b>Eligibility Testing:</b>	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
<b>Benefit Service:</b>	Exact fractional service is used to determine the amount of benefit payable.
<b>Decrement Relativity:</b>	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
<b>Decrement Operation:</b>	Disability and death-in-service decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
<b>Normal Form of Benefit:</b>	The assumed normal form of benefit is the straight life form.
<b>Incidence of Contributions:</b>	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

## 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”.

**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, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover 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 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 actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method”.

**Actuarial Equivalent** - A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

**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 and taking into account the probability of payment.

**Amortization** - Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

**Experience Gain (Loss)** - A measure of the difference between actual experience and that expected based upon 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”. Any payment toward the unfunded actuarial accrued liability is not part of 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 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. Generally based on book value plus a portion of unrealized appreciation or depreciation.

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**SECTION E**

**DISCLOSURE MATERIAL IN CONFORMANCE  
WITH STATEMENT NO. 25 OF THE  
GOVERNMENTAL ACCOUNTING STANDARDS  
BOARD**

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## SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a)/(b)	Covered Payroll** (c)	UAAL as a Percentage of Covered Payroll [(b) – (a)] / (c)
12/31/02 #	\$645,539,428	\$578,104,382	\$(67,435,046)	111.7 %	\$ 121,299,445	(55.6) %
12/31/03 #*	674,575,807	624,212,027	(50,363,780)	108.1	127,235,644	(39.6)
12/31/04 *	674,857,869	664,487,155	(10,370,714)	101.6	134,258,243	(7.7)
12/31/05 #	719,336,871	682,144,687	(37,192,184)	105.5	134,886,588	(27.6)
12/31/06	781,450,248	721,657,669	(59,792,579)	108.3	128,820,986	(46.4)
12/31/07	847,305,155	772,649,767	(74,655,387)	109.7	126,696,252	(58.9)
12/31/08 #*	855,265,571	785,688,661	(69,576,910)	108.9	121,822,674	(57.1)
12/31/09 *	866,356,598	814,563,728	(51,792,870)	106.4	116,522,938	(44.4)
12/31/10 *	862,915,501	837,167,835	(25,747,666)	103.1	110,795,240	(23.2)
12/31/11	828,692,442	854,323,946	25,631,504	97.0	108,900,180	23.5

\* Plan amended.

\*\* Excludes pay for members electing DROP.

# Certain assumptions or methods revised.

Actuarial Cost Method

Individual Entry Age Normal Cost

Asset Valuation Method

Market value with 5 year smoothing of gains and losses

Principal Actuarial Assumptions  
(last revised for the 12/93 special valuation):

- Net Investment Return 7.5%
- Projected Salary Increases 5.0% base pay increase plus merit and longevity  
(0% pay increase assumed for 2010 year)
- Cost-of-Living Adjustments None

This information is presented in draft form for review by the County's auditor. Please let us know if there are any changes so that we may maintain consistency with the County's financial statements.

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

<u>Valuation Year Ended December 31</u>	<u>Fiscal Year Ended December 31</u>	<u>Annual Required Contribution</u>
2002	2004	\$ 8,577,844
2003	2005	14,848,710
2004	2006	20,215,000
2005	2007	19,121,329
2006	2008	18,658,076
2007	2009	18,507,521
2008	2010	15,170,777
2009	2011	16,050,489
2010	2012	16,604,841
2011	2013	19,932,742

Actuarial Cost Method

Individual Entry Age Normal Cost

Amortization Method

Level percent of payroll over a 20 year open period

Asset Valuation Method

Market value with 5 year smoothing of gains and losses

Principal Actuarial Assumptions  
(last revised for the 12/93 special valuation):

- |                               |   |
|-------------------------------|---|
| - Net Investment Return*      | 7.5%  |
| - Projected Salary Increases* | 5.0% base pay increase plus merit and longevity |
| - Cost-of-Living Adjustments  | None  |

\* Includes pay inflation at 5.0%.