June 25, 2016

County of Jackson
120 W. Michigan Ave.
Jackson, Michigan 49201

Attention: Mr. James Latham, Finance Officer

This report contains the results of an actuarial valuation of the liabilities associated with retiree health benefits provided by Jackson County Proper (General/Sheriffs) and Road Division, together with computed contributions to systematically finance these benefits.

The date of the valuation was January 1, 2016.

The purpose of the actuarial valuation is to:

- Compute the liabilities associated with post-retirement health benefits likely to be paid on behalf of current active employees and retirees, and

- Compute a pre-funding contribution rate for the County to finance the post-retirement health benefits as they accrue.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. Data concerning active employees, retirees and assets was provided by County. This data has been reviewed for reasonableness, but no attempt has been made to audit such information. The valuation was based on the benefit provisions as submitted by the County. This report was prepared under the direction of a member of the American Academy of Actuaries who meets the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Denise M. Jones	Sandra W. Rodwan
Senior Consultant	Member, American Academy of Actuaries

Jackson County
Post-Employment Health Benefits

County Proper and Road Divisions

Actuarial Valuation as of January 1, 2016

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RODWAN consulting company

Section One:

Valuation Summary

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Purpose of Valuation – Jackson County General and Sheriffs and Road Division

The purpose of this actuarial valuation of post-retirement health benefits as of January 1, 2016 is to:

- Compute the liabilities associated with post-retirement health benefits likely to be paid on behalf of current active and retired participants,
- Compute a pre-funding contribution rate to finance the benefits as they accrue.

Assumptions Used in the Valuation

The liabilities and pre-funding contributions are very sensitive to the long-term assumptions used in making the valuation. The assumptions used in making this valuation, summarized in Section Four, are only one reasonable set out of a large number of possibilities. To the extent that actual experience differs from the long-term assumptions, the liabilities and contribution will be greater or less than those indicated in this report. The assumptions having the greatest impact are the rate of medical care inflation and the investment return rate. We have assumed an 8% annual rate for medical care inflation in the first year, graded down to 4% over the next 8 years. The assumed investment return rate was 3%. Please refer to Comments 2 and 3 on pages 4 and 5. Liabilities and computed contributions can change significantly in future years depending upon the actual and assumed rates of medical care inflation, benefit provisions and demographics of the participant group.

Actuarial Accrued Liabilities

Actuarial accrued liabilities as of January 1, 2016, were computed to be $117,277,316 for the General County Proper and Road Divisions. Of this amount, $41,042,371 was attributable to current active employees and $76,234,945 to current retirees.

Funding Value of Assets

There were no assets reported as of January 1, 2016.

Computed Contribution Rate

The total annual contribution computed to pre-fund post-retirement health benefits was computed to be $8,792,893. There are two components of the contribution, the normal cost and an amortization payment for unfunded actuarial accrued liability. The normal cost contribution was computed to be $2,897,487. The amortization payment was computed to be $5,895,406. The amortization period used was 30 years. The 30 year period is the maximum permitted for reporting purposes under Statements 43 and 45 of the Governmental Accounting Standards Board.

Participants

Active Employees	559
Retired participants	545

Section Two:

Actuarial Calculations – Funding

Actuarial Accrued Liabilities

The actuarial accrued liability as of January 1, 2016 was computed to be $117,277,316.

Active participants	$41,042,371
Retired participants	76,234,945
Total Actuarial Accrued Liability	117,277,316
Funding Value of Assets	0
Unfunded Actuarial Accrued Liability	$117,277,316

Computed Contribution – Annual Required Contribution

The computed contribution consists of two components: normal cost and amortization of unfunded actuarial accrued liability. Normal cost was computed from date of hire to date of termination. The normal cost can be considered to be the ongoing cost.

The portion of the total present value of future benefits allocated to service already rendered is the actuarial accrued liability. We have amortized the unfunded actuarial accrued liability for active employees over 30 years.

The annual dollar amount of contributions are as follows:

Normal Cost	$2,897,487
Unfunded Actuarial Accrued Liability	5,895,406
Total Computed Contribution Rate	$8,792,893

Comments

Comment 1: The GASB statements do not mandate that the plan sponsor pre-fund OPEB liabilities. However, if the plan sponsor's funding policy is to contribute less than the Annual Required Contribution (ARC), the GASB standards require that a lower assumed rate of investment return be used to compute the liabilities and Annual Required Contribution. This will increase the liabilities, ARC, and the OPEB obligation that must be reported in the financial statements. The OPEB obligation represents the cumulative difference between the annual OPEB cost and the employer's actual contribution.

For purposes of this valuation we have assumed a 3% rate of investment return based upon the assumption that the County will not contribute the actuarially determined annual required contribution.

Comment 2: Liabilities for health insurance premiums are highly dependent upon the underlying assumptions concerning medical care inflation and the discount rate. For the purposes of this valuation, we assumed an 8% annual medical care inflation rate graded down to 4% over a period of 8 years and 3% discount rate. Liabilities and computed contributions would be greater if a higher medical care inflation rate is assumed or a lower discount rate, and conversely.

To show the sensitivity of results to the medical care inflation we also performed the valuation assuming a discount rate of 5% rather than 3%. The results based on this alternate discount rate are shown below.

Actuarial Accrued Liabilities Based on Alternate 5% Discount Assumption

Active participants	$29,320,233
Retiree participants	60,119,141
Total Actuarial Accrued Liability	89,439,374
Funding Value of Assets	0
Unfunded Actuarial Accrued Liability	$89,439,374

Computed Contribution
Based on Alternate 5% Discount Assumption

Normal Cost	$1,731,204
Unfunded Actuarial Accrued Liability	5,677,379
Total Computed Contribution	$7,408,583

Comment 3: The unfunded actuarial accrued liabilities were amortized over the maximum 30 year period permitted for reporting purposes under the GASB standards. A shorter period would result in higher computed contribution rates.

Comment 4: In order for assets to be considered in determining the unfunded actuarial accrued liability, the assets must be a) irrevocably held in a trust or equivalent arrangement, b) dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan, and c) legally protected from creditors of the employer or plan.

Section Three:

Benefit Provisions

Benefit Provision Summary

Eligibility

Employees retiring with 15 or more years of service are eligible for retiree health benefits. Coverage for employees retiring with less than 15 years of service is funded by the County as follows:

Fourteen years	95%
Thirteen years	90%
Twelve years	85%
Eleven years	80%
Ten years	75%

Employees must be eligible to immediately begin drawing pension benefits upon termination of employment in order to be eligible for retiree health benefits.

Benefits

Upon termination of service, continued medical fringe benefits to the eligible retired participant and spouse. Premium co-pays by the retiree are required.

The benefits are payable for the life of the retired employee.

Spousal benefits are payable if the retired employee has at least 15 years of service and was hired before 1/1/2007. Surviving spouse benefits continue after the death of the retiree if the surviving spouse is receiving a pension as the designated beneficiary of the retiree who elected a joint and survivor optional form of payment. Employer-financed retiree spousal coverage is not available for employees hired on or after 1/1/2007.

Section Four:

Actuarial Assumptions And Methods

Actuarial Assumptions

Economic Assumptions

(i) Interest Rate	3.0% (net of expenses)
(ii) Inflation Rate	
Medical	8.0% graded down to 4% Over 8 years

Demographic Assumptions

(i) Mortality

RP2000 Projected to 2020
Using projection scale AA
(adjusted by 120% for males)

Sample Ages	Future Life Expectancy (Years)	
	Men	Women
50	31.26	34.63
55	26.57	29.88
60	22.06	25.31
65	17.84	21.02
70	14.01	17.06
75	10.51	13.47
80	7.50	10.23

(ii) Disability

Sample	Percent Becoming Disabled At Indicated Age	
Ages	Roads	General County
20	0.08%	0.08%
25	0.12	0.08
30	0.15	0.08
35	0.21	0.08
40	0.31	0.20
45	1.50	0.26
50	1.85	0.49
55	1.41	0.89
60	2.28	1.41

(ii) **Termination of Employment** Service related rates for first 5 years of employment. Age related rates after first 5 years of employment

	% of Active Members Separating Within Year		
Sample Ages	**Years of Service**	**Roads**	**General County**
ALL	0	20.00%	40.00%
	1	15.00	25.00
	2	10.00	15.00
	3	8.00	10.00
	4	7.00	7.00
25	5 & Over	3.50	6.00
30		2.90	5.10
35		1.50	2.70
40		0.06	1.60
45		0.50	1.10
50		0.50	1.00
55		0.50	1.00
60		0.50	1.00
65		0.50	1.00

(iii) Retirement Rates Age-related rates

Percent Retiring – Age Related Rates

Retirement Age	General County	Roads
57		40%
58		40
59		40
60	25%	40
61	14	40
62	30	40
63	35	40
64	35	40
65	45	100
66	45	
67	45	
68	50	
69	60	
70	100	

Actuarial Method Used for the Valuation

Normal Cost. Normal cost and the allocation of actuarial present values between service rendered before and after the valuation date were determined using an individual entry age actuarial cost method having the following characteristic:

- The annual normal costs for each individual active participant, payable from date of hire to date of retirement, are sufficient to accumulate the value of the participant's benefit at the time of retirement;

Financing of Unfunded Actuarial Accrued Liability. Unfunded actuarial accrued liability was amortized as level dollars over 30 years.

Section Five:

Valuation Data

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Benefit Data Submitted

Claims information and illustrative premium rates were submitted by the County. For pre 65 retirees, illustrative monthly premiums averaged $623.40 for single and $1,371.82 for 2 persons. Post 65 premiums were $343 per month per person.

Valuation Assets

None

Participant Summary

General County Retirees and Survivors
December 31, 2015

Attained Age	Totals
45-49	13
50-54	20
55-59	46
60-64	79
65-69	94
70-74	70
75-79	38
80-84	30
85-89	25
90-94	9
95-99	2
Totals	**426**

Roads Retirees and Survivors
December 31, 2015

Attained Age	Totals
45-49	1
50-54	1
55-59	7
60-64	23
65-69	25
70-74	27
75-79	18
80-84	7
85-89	7
90-94	3
Totals	**119**

General Active Members - December 31, 2015
Age and Service Distribution

Attained	Service								Total
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**Over 30**	**No.**	**Payroll**
20-24	7							7	$211,808
25-29	38	10	1					49	1,792,299
30-34	25	13	4					42	1,650,423
35-39	15	17	17	12	1			62	2,818,035
40-44	18	15	22	23	5			83	4,004,617
45-49	11	16	17	18	12	3		77	3,468,448
50-54	19	16	15	14	9	2	1	76	3,199,832
55-59	11	16	10	19	6	3	3	68	3,084,207
60-64	9	4	8	5	2	2	1	31	1,490,958
65-69	3	1	4	1				9	354,964
70-74		1						1	56,795
75-79		1						1	15,169
Totals	**156**	**110**	**98**	**92**	**35**	**10**	**5**	**506**	**$22,147,555**

Roads Active Members - December 31, 2015
Age and Service Distribution

Attained Age	Service 0-4	5-9	10-14	15-19	20-24	25-29	Over 30	No.	Total Payroll
20-24	1							1	$38,584
25-29	3							3	109,366
30-34	3							3	122,168
35-39	1	1		1				3	119,080
40-44	2		1	2	1			6	252,978
45-49	3		1	2	2			8	384,541
50-54			1	4	1			6	247,146
55-59			4	4	3	1	4	16	699,673
60-64		2	3			2		7	329,637
Totals	**13**	**3**	**10**	**13**	**7**	**3**	**4**	**53**	$2,303,173