

Gladwin County Road Commission

Retiree Health Care Plan Alternative Measurement Method Valuation Report

As of December 31, 2014



SMITH & KLACZKIEWICZ, PC
CERTIFIED PUBLIC ACCOUNTANTS

Gladwin County Road Commission

Retiree Health Care Plan

Alternative Measurement Method Valuation Report

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A VETERAN OWNED BUSINESS

May 26, 2016

Members of the Board of County Road Commissioners
County of Gladwin, Michigan
Gladwin, Michigan

Submitted in this report are the results of a valuation of benefit values associated with the employer financed retiree health benefits provided by the *Gladwin County Road Commission*, using the *Alternative Measurement Method*. The date of the valuation was December 31, 2014 and provides a calculation of the actuarial accrued liability as of that date and the annual required contribution amounts for the fiscal years ending December 31, 2015 and 2016.

The calculations were prepared for purposes of complying with the requirements of Governmental Accounting Standards Board (GASB) Statements No. 43 and No. 45. The calculations reported herein have been made on a basis consistent with our understanding of these accounting standards. Determination of the liability associated with the benefits described in this report for purposes other than satisfying the Road Commission's financial reporting requirements may produce significantly different results.

The valuation was based upon information furnished by the *Gladwin County Road Commission* concerning retiree health benefits, individual members and financial data. The data was read for internal consistency, but was not otherwise audited.

To the best of our knowledge, this report is complete and accurate.

Sincerely,

Smith + Klaczkiwicz PC

Saginaw, Michigan

Gladwin County Road Commission
Retiree Health Care Plan
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Plan Description

The Road Commission provides healthcare and prescription drug benefits to all full-time employees hired prior to August 19, 2009 upon retirement in accordance with labor contracts. Employees hired after August 19, 2009 who retire for any reason, will not be eligible for health insurance, dental insurance, vision insurance, life insurance, or the hearing aid rider. These employees will be required to contribute a minimum of one percent (1%) of their pay through payroll deduction to a Healthcare Savings Program (HSCP) through MERS. The Road Commission will also contribute a maximum amount equal to one percent (1%) of an employee's pay to an employee's HCSP.

As of December 31, 2014, 25 retirees, including 21 Medicare qualified retirees, are eligible. The Road Commission includes retirees and their spouses in its insured healthcare plan. Previous eligible employees who retired on or before October 31, 2005 are not required to contribute to their healthcare plan, in accordance with labor contracts. Previous eligible employees who retired after October 31, 2005 are required to contribute monthly to their healthcare plans in the same amounts as required for active employees, in accordance with labor contracts. The monthly contribution amounts for eligible retirees and active employees vary based on the single, two-person, and family coverage, and will also vary each year based on the cost of healthcare.

Effective July 1, 2012, the employer's contribution towards healthcare cannot exceed those amounts permitted by Public Act 152 (PA 152) of 2011; Publicly Funded Health Insurance Contribution Act, with maximum amounts revised July 1st of each year. Eligible retirees and active employees are required to contribute monthly towards healthcare costs that exceed employer amounts allowed under PA 152.

Funding Policy

The contribution requirements of plan members and the Road Commission are established by labor contracts and may be amended by the Board of County Road Commissioners through labor negotiations. The required contribution is based on projected pay-as-you-go financing requirements, with an additional amount to prefund benefits as determined by the Board of County Road Commissioners. During the year, the Road Commission contributed \$233,515 to the plan in the form of premiums and \$25,000 as an additional amount to prefund benefits.

Funded Status and Funding Progress

The funded status of the plan as of December 31, 2014 (the most recent valuation date) was as follows:

Actuarial accrued liability (AAL)	\$ 6,758,168
Actuarial value of plan assets	<u>84,369</u>
Unfunded actuarial accrued liability (UAAL)	<u>\$ 6,673,799</u>
Funded ratio	1.25%
Annual covered payroll	\$ 1,411,512
UAAL as a percentage of covered payroll	473%

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Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectation and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

Actuarial Methods and Assumptions

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations. The following simplifying assumptions were made:

Retirement age for active employees

Based on the historical average retirement age for the covered group, active plan members were assumed to retire at various ages ranging from age 55 to 65. These assumptions are consistent with the first subsequent year in which the member would qualify for benefits. Employees of the Road Commission are eligible to participate in the Retiree Health Care Plan upon retirement at age 55 with 30 years of service, age 60 with 25 years of service or age 62 with any years of service.

Marital status

Marital status of members at the calculation date was assumed to continue throughout retirement.

Mortality

Life expectancies were based on mortality tables from the United States Social Security Administration. The 2011 Period Life Table for males and females was used.

Turnover

Non-group-specific age-based turnover data from GASB Statement 45 were used as the basis for assigning active members a probability of remaining employed until the assumed retirement age and for developing an expected future working lifetime assumption for purposes of allocating to periods the present value of total benefits to be paid.

Healthcare cost trend rate

The expected rate of increase in healthcare insurance premiums was based on projections of the Office of the Actuary at the Centers for Medicare & Medicaid Services. A rate of 3.1% initially, with gradual increases and decreases through 2021, leveling to an ultimate rate of 4.7% after six (6) years was used.

Healthcare premiums

Health insurance premiums for employees and retirees that were paid in 2014 were used as the basis for calculation of the present value of total benefits to be paid.

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Inflation rate

The expected long-term inflation assumption of 2.8% was based on projected changes in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) in The 2014 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds for an intermediate growth scenario.

Payroll growth rate

The expected long-term payroll growth rate was assumed to equal the rate of inflation.

Determination of Unfunded Actuarial Accrued Liability

Following is a summary of the results of the valuation of benefit values associated with the employer financed retiree health benefits provided by the *Gladwin County Road Commission*, using the *Alternative Measurement Method*:

Normal Cost Component:

Normal cost	\$ 137,815
Interest	<u>6,202</u>
Total normal cost	<u>144,017</u>

Amortization Component:

Actuarial accrued liability (AAL)	6,758,168
Less: assets held for benefits	<u>(84,369)</u>
Unfunded AAL	6,673,799
Present value factor	<u>23.8893</u>
Amortization payment	279,364
Interest	<u>12,571</u>
Total amortization payment	<u>291,935</u>

Annual required contribution (ARC) \$ 435,952

Illustration 1

Projection of Future Benefit Payments and Calculation of Present Value of Total Future Benefits to be Paid

Gladwin County Road Commission

Date of Calculation: 1/1/2015
 ARC for FYE: 12/31/2015

Member	Status	Entry Age	Assumed Retirement Age	Current Age	Remaining Life Expectancy	Projected Future Benefit Payments for the Year Ending June 30,														
						2015	2016	2017	2018	2019	2020	2021	2022	2023						
Steven S. Badger	Active (M)	34	60	53	27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,403	\$ 20,315
John Bair	Active (M)	33	60	44	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terry L. Border	Active (M)	32	60	53	27	-	-	-	-	-	-	-	-	-	-	-	-	19,403	20,315	
Jeffrey R. Brushaber	Active (M)	32	60	51	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Troy W. Donn	Active (M)	31	60	51	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Martin J. Govitz	Active (M)	34	60	51	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
David A. Greaves	Active (M)	24	55	50	30	-	-	-	-	-	-	-	17,700	18,532	19,403	19,403	20,315	-	-	
Patrick E. Illig	Active (M)	39	62	61	21	-	15,381	15,888	16,333	12,663	13,195	13,815	14,464	14,464	15,144	-	-	-	-	-
Robert J. Meixner	Active (M)	40	62	53	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brad Pretzlaff	Active (M)	42	62	48	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas E. Ritchie	Active (M)	31	60	56	25	-	-	-	-	-	16,987	17,700	18,532	19,403	20,315	-	-	-	-	-
Franklin A. Scherzer	Active (M)	42	62	52	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mitchel Spencer	Active (M)	31	65	55	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jeffrey J. Swinson	Active (M)	22	55	51	29	-	-	-	-	-	16,987	17,700	18,532	19,403	20,315	-	-	-	-	-
Martin J. Willford	Active (M)	34	60	49	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
James M. Wyniemo	Active (M)	34	60	47	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
James J. Zelt	Active (M)	34	60	47	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Daniel L. Kish	Retired (M)	30	60	73	12	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Glenn Berry	Retired (M "D")	30	60	84	0	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Stanley Buzzell	Retired (M)	36	61	61	21	15,035	15,381	15,888	16,333	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Walter Connor	Retired (M)	29	61	87	5	11,208	11,466	11,844	12,176	12,663	6,597	6,908	7,232	-	-	-	-	-	-	-
William O Oard	Retired (M)	37	62	62	20	15,035	15,381	15,888	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Gerald Scoby	Retired (M)	28	61	88	5	11,208	11,466	11,844	12,176	12,663	-	-	-	-	-	-	-	-	-	-
Vern Gilman	Retired (M)	25	55	73	12	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Pamela J. Weaver	Retired (M)	38	60	63	22	15,035	15,381	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Donald E. Simpkins	Retired (M)	32	60	78	9	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Donald Sherlock	Retired (M)	20	55	72	13	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Kenneth Benchley	Retired (M)	27	57	68	16	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Thomas Heatherington	Retired (M)	20	56	71	13	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Marvin Messer	Retired (M)	28	58	75	11	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Dale M. Wyse	Retired (M)	40	57	70	14	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Richard Gravelle	Retired (M)	28	58	68	16	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Dennis W. Cantrell	Retired (M)	27	57	67	16	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Vern L. Corlew	Retired (M)	22	55	63	19	15,035	15,381	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Daniel F. Provost	Retired (M)	30	60	68	16	11,208	11,466	11,844	12,176	12,663	13,195	13,815	14,464	15,144	-	-	-	-	-	-
Calvin R. Clore	Active (single)	50	65	62	20	-	-	-	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Douglas J. Hannah	Active (single)	38	65	53	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Michael J. Nelson	Active (single)	31	65	49	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
James M. Bushong	Active (single)	41	65	55	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Julie Senkler	Retired (single)	35	60	65	20	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Sherwood B. Hillman	Retired (single)	26	56	69	15	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Carolyn Smith	Retired (single)	35	60	66	19	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Virginia Berg	Retired (single)	40	65	82	8	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	-	-	-	-	-	-	-
Kenneth Ellis	Retired (single)	20	55	77	10	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Basil Bullard	Retired (single)	40	65	76	10	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Darlene Conner	Retired (single)	40	65	79	10	5,604	5,733	5,922	6,088	6,332	6,597	6,908	7,232	7,572	-	-	-	-	-	-
Current-age Total Benefits to Be Paid						\$ 250,676	\$ 271,827	\$ 272,700	\$ 282,274	\$ 318,896	\$ 330,190	\$ 345,716	\$ 400,759	\$ 404,455						
Current-age Interest-discounted Present Value of Total Benefits to Be Paid						\$ 250,676	\$ 260,122	\$ 249,720	\$ 247,356	\$ 267,414	\$ 264,961	\$ 265,474	\$ 294,489	\$ 284,407						

Economic Assumptions	
	For FYE 12/31
Premium Increases	Rate
	2015 3.10%
	2016 2.30%
	2017 3.30%
	2018 2.80%
	2019 4.00%
	2020 4.20%
	2021 4.70%
Discount Rate	4.50%
Investment Rate of Return	4.50%
Average Salary Increase	2.80%

and later

Insurance Premiums - Employer Portion	
	Annual
Pre-Age 65 (Not Medicare Eligible)	
Single	6,525
Married (Employee and Spouse under 65)	14,262
Ages 65 and Older (Medicare Eligible)	
Single	5,316
Married (Employee and Spouse age 65 or older)	10,632
Married (Employee or Spouse age 65 or older)	10,632

	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
\$	21,270	\$ 22,269	\$ 23,316	\$ 18,198	\$ 19,054	\$ 19,949	\$ 20,887	\$ 21,869	\$ 22,896	\$ 23,973	\$ 25,099	\$ 26,279	\$ 27,514	\$ 28,807	\$ 30,161	\$ 31,579	\$ 33,063	\$ 34,617
-	-	-	-	-	-	-	-	29,335	30,714	32,157	33,669	35,251	27,514	28,807	30,161	31,579	33,063	34,617
21,270	22,269	23,316	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
21,270	22,269	23,316	24,412	25,559	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
21,270	22,269	23,316	24,412	25,559	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
21,270	22,269	23,316	24,412	25,559	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
21,270	22,269	23,316	24,412	25,559	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
15,856	16,601	17,381	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
21,270	22,269	23,316	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
-	-	-	-	-	26,760	28,018	29,335	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
15,856	16,601	17,381	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
-	22,269	23,316	24,412	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
-	16,601	17,381	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
21,270	22,269	23,316	24,412	25,559	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
-	-	23,316	24,412	25,559	26,760	28,018	21,869	22,896	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
-	-	-	-	25,559	26,760	28,018	29,335	30,714	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
-	-	-	-	25,559	26,760	28,018	29,335	30,714	23,973	25,099	26,279	27,514	28,807	30,161	31,579	33,063	34,617	34,617
15,856	16,601	17,381	9,099	9,527	9,975	-	-	-	-	-	-	-	-	-	-	-	-	-
7,928	8,301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	13,757	14,404	15,081	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	13,139	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15,856	16,601	17,381	9,099	9,527	9,975	10,443	10,934	11,448	11,986	12,550	13,139	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	21,869	22,896	23,973	25,099	26,279	27,514	-	-	-	-	-	-
7,928	8,301	8,691	9,099	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	9,527	9,975	10,443	-	-	-	-	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	13,139	13,757	14,404	15,081	15,789	16,531	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
15,856	16,601	17,381	18,198	19,054	19,949	20,887	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
7,928	8,301	8,691	9,099	9,527	9,975	10,443	10,934	11,448	11,986	12,550	13,139	13,757	14,404	15,081	15,789	16,531	17,308	17,308
-	-	-	9,099	9,527	9,975	10,443	10,934	11,448	11,986	12,550	13,139	13,757	14,404	15,081	15,789	16,531	17,308	17,308
-	8,301	8,691	9,099	9,527	9,975	10,443	10,934	11,448	11,986	12,550	13,139	13,757	14,404	15,081	15,789	-	-	-
7,928	8,301	8,691	9,099	9,527	9,975	10,443	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
7,928	8,301	8,691	9,099	9,527	9,975	-	-	-	-	-	-	-	-	-	-	-	-	-
7,928	8,301	8,691	9,099	9,527	9,975	10,443	10,934	11,448	11,986	12,550	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7,928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\$	495,208	\$ 540,745	\$ 572,093	\$ 571,240	\$ 614,133	\$ 632,531	\$ 623,799	\$ 620,321	\$ 641,646	\$ 655,449	\$ 636,050	\$ 600,246	\$ 564,037	\$ 547,336	\$ 573,062	\$ 584,209	\$ 598,891	\$ 609,732
\$	333,228	\$ 348,201	\$ 352,523	\$ 336,840	\$ 346,538	\$ 341,550	\$ 322,330	\$ 306,730	\$ 303,612	\$ 296,788	\$ 275,602	\$ 248,888	\$ 223,803	\$ 207,824	\$ 208,222	\$ 203,131	\$ 199,269	\$ 194,140

							Current Age	Current Age
							Interest-Discounted	Present Value of
							Total Benefits	Total Benefits
2059	2060	2061	2062	2063	2064	2065	to Be Paid	to Be Paid
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 636,727	\$ 261,795
-	-	-	-	-	-	-	689,270	217,762
-	-	-	-	-	-	-	547,479	240,477
-	-	-	-	-	-	-	622,951	246,732
-	-	-	-	-	-	-	557,575	230,759
-	-	-	-	-	-	-	600,151	241,398
-	-	-	-	-	-	-	749,450	315,424
-	-	-	-	-	-	-	457,795	247,821
-	-	-	-	-	-	-	597,009	234,481
-	-	-	-	-	-	-	643,232	215,251
-	-	-	-	-	-	-	690,250	292,339
-	-	-	-	-	-	-	576,203	224,230
39,564	41,423	43,370	45,409	47,543	49,777	-	1,455,252	384,601
-	-	-	-	-	-	-	764,754	325,587
-	-	-	-	-	-	-	688,254	247,729
-	-	-	-	-	-	-	672,217	232,551
-	-	-	-	-	-	-	600,551	216,517
-	-	-	-	-	-	-	194,414	138,743
-	-	-	-	-	-	-	74,217	56,531
-	-	-	-	-	-	-	423,202	246,418
-	-	-	-	-	-	-	80,094	67,203
-	-	-	-	-	-	-	362,663	222,017
-	-	-	-	-	-	-	59,357	51,976
-	-	-	-	-	-	-	264,914	169,874
-	-	-	-	-	-	-	399,273	234,134
-	-	-	-	-	-	-	149,994	113,100
-	-	-	-	-	-	-	213,956	149,041
-	-	-	-	-	-	-	290,819	185,258
-	-	-	-	-	-	-	213,956	149,041
-	-	-	-	-	-	-	185,724	133,618
-	-	-	-	-	-	-	359,102	206,371
-	-	-	-	-	-	-	278,269	180,054
-	-	-	-	-	-	-	278,269	180,054
-	-	-	-	-	-	-	359,827	218,494
-	-	-	-	-	-	-	290,819	185,258
-	-	-	-	-	-	-	151,611	87,205
-	-	-	-	-	-	-	191,971	78,056
-	-	-	-	-	-	-	209,888	73,341
-	-	-	-	-	-	-	175,124	77,759
-	-	-	-	-	-	-	168,870	103,007
-	-	-	-	-	-	-	111,509	77,089
-	-	-	-	-	-	-	156,320	97,803
-	-	-	-	-	-	-	50,416	41,216
-	-	-	-	-	-	-	65,916	51,416
-	-	-	-	-	-	-	65,916	51,416
-	-	-	-	-	-	-	65,916	51,416
\$ 39,564	\$ 41,423	\$ 43,370	\$ 45,409	\$ 47,543	\$ 49,777	\$ -	\$ 17,441,446	\$ 8,052,363
\$ 5,704	\$ 5,715	\$ 5,726	\$ 5,737	\$ 5,748	\$ 5,759	\$ -		

Illustration 2a
Calculation of the ARC Using the Entry Age Cost Method
with Level Percentage of Payroll Normal Costs
and the UAAL Amortized as a Level Percentage of Payroll

Gladwin County Road Commission

Member	Status	Entry Age	Current Age	Assumed Retirement Age	Years of Present Service (a)	Current Age Interest-Discount	Probability of Remaining Employed from Current Age (c)	Probability of Remaining Employed from Entry Age (d)	Current Age Interest-Discount Present Value of Total Benefits to Be Paid (e) = (b) x (c)	Probability-Adjusted Present Value of Total Benefits to Be Paid = [(b) / (1 + discount rate ^(b)) x (d)] (f)	Year from Entry Age to Normal Cost at Current Age (g)	Normal Cost at Current Age (h) = (f) / (g)	Year from Current Age to Retirement (i)	Normal Cost of Future Normal Cost (k) = (i) x (j)	AAL (e) - (k)
						Total Benefits to Be Paid (b)	Retirement Age (c)	Retirement Age (d)	Total Benefits to Be Paid (e) = (b) x (c)	Total Benefits to Be Paid = [(b) / (1 + discount rate ^(b)) x (d)] (f)	Normal Cost at Current Age (h) = (f) / (g)	Normal Cost of Future Normal Cost (k) = (i) x (j)	AAL (e) - (k)		
Steven S. Badger	Active (M)	34	53	60	19	\$ 261,795	1.000	0.7030	\$ 261,795	\$ 79,746	19	\$ 4,283	8	\$ 61,060	\$ 200,735
John Bair	Active (M)	33	44	60	21	217,762	0.912	0.6770	198,599	90,843	19	4,879	15	98,885	99,714
Terry L. Border	Active (M)	32	53	60	11	240,477	1.000	0.6500	240,477	62,022	19	3,331	8	50,186	190,291
Jeffrey R. Brushaber	Active (M)	32	51	60	19	246,732	1.000	0.6500	246,732	69,491	19	3,732	10	64,000	182,732
Troy W. Donn	Active (M)	31	51	60	20	230,759	1.000	0.6220	230,759	59,515	19	3,196	10	56,339	174,420
Martin J. Govitz	Active (M)	34	51	60	17	241,398	1.000	0.7030	241,398	80,299	19	4,313	10	69,987	171,411
David A. Greaves	Active (M)	24	50	55	26	315,424	1.000	0.4100	315,424	41,177	17	2,395	11	53,935	261,489
Patrick E. Illig	Active (M)	39	61	62	22	247,821	1.000	0.8210	247,821	77,254	17	4,494	1	8,251	239,570
Robert J. Meixner	Active (M)	40	53	62	13	234,481	1.000	0.8410	234,481	111,274	16	6,761	8	81,670	152,811
Brad Pretzlaff	Active (M)	42	48	62	6	215,251	0.972	0.8790	209,224	145,290	16	9,246	13	137,620	71,604
Douglas E. Ritchie	Active (M)	31	56	60	25	292,339	1.000	0.6220	292,339	60,502	19	3,249	6	37,333	255,006
Franklin A. Scherzer	Active (M)	42	52	62	10	224,230	1.000	0.8790	224,230	126,917	16	8,076	9	98,986	125,244
Michel Spencer	Active (M)	31	55	65	24	384,601	1.000	0.6220	384,601	83,178	19	4,467	7	57,787	326,814
Jeffrey J. Swinson	Active (M)	22	51	55	29	325,587	1.000	0.3490	325,587	31,704	16	1,926	10	43,533	282,054
Martin J. Willford	Active (M)	34	49	60	15	247,729	0.986	0.7030	244,261	89,989	19	4,833	12	86,321	157,940
James M. Wyniemko	Active (M)	34	47	60	13	232,551	0.958	0.7030	222,784	92,249	19	4,954	13	89,468	133,316
James J. Zelt	Active (M)	34	47	60	13	216,517	0.958	0.7030	207,423	85,889	19	4,613	13	83,301	124,122
Daniel L. Kish	Retired (M)	30	73	60	43	138,743	1.000	0.5930	138,743	12,396					138,743
Glenn Berry	Retired (M "D")	30	84	60	54	56,531	1.000	0.5930	56,531	3,112					56,531
Stanley Buzzell	Retired (M)	36	61	61	25	246,418	1.000	0.7530	246,418	61,739					246,418
Walter Connor	Retired (M)	29	87	61	58	67,203	1.000	0.5640	67,203	2,951					67,203
William O Oard	Retired (M)	37	62	62	25	222,017	1.000	0.7770	222,017	57,398					222,017
Gerald Scooby	Retired (M)	28	88	61	60	51,976	1.000	0.5340	51,976	1,979					51,976
Vern Gilman	Retired (M)	25	73	55	48	169,874	1.000	0.4400	169,874	9,036					169,874
Pamela J. Weaver	Retired (M)	38	63	60	25	234,134	1.000	0.7990	234,134	62,245					234,134
Donald E. Simpkins	Retired (M)	32	78	60	46	113,100	1.000	0.6500	113,100	9,706					113,100
Donald Sherlock	Retired (M)	20	72	55	52	149,041	1.000	0.2960	149,041	4,473					149,041
Kenneth Benchley	Retired (M)	27	68	57	41	185,258	1.000	0.5030	185,258	15,331					185,258
Thomas Heatherington	Retired (M)	20	71	56	51	149,041	1.000	0.2960	149,041	4,674					149,041
Marvin Messer	Retired (M)	28	75	58	47	133,618	1.000	0.5340	133,618	9,014					133,618
Dale M. Wyse	Retired (M)	40	70	57	30	206,371	1.000	0.8410	206,371	46,340					206,371
Richard Gravelle	Retired (M)	28	68	58	40	180,054	1.000	0.5340	180,054	16,531					180,054
Dennis W. Cantrell	Retired (M)	27	67	57	40	180,054	1.000	0.5030	180,054	15,571					180,054
Vern L. Corlew	Retired (M)	22	63	55	41	218,494	1.000	0.3490	218,494	12,546					218,494
Daniel F. Provost	Retired (M)	30	68	60	38	185,258	1.000	0.5930	185,258	20,626					185,258
Calvin R. Clore	Active (single)	50	62	65	12	87,205	1.000	1.0000	87,205	51,422	11	4,682	-	-	87,205
Douglas J. Hannah	Active (single)	38	53	65	15	78,056	1.000	0.7990	78,056	32,226	17	1,875	8	23,933	54,123
Michael J. Nelson	Active (single)	31	49	65	18	73,341	0.986	0.6220	72,314	20,656	19	1,109	12	21,518	50,796
James M. Bushong	Active (single)	41	55	65	14	77,759	1.000	0.8600	77,759	36,109	16	2,194	7	21,536	56,223
Julie Senkler	Retired (single)	35	65	60	30	103,007	1.000	0.7290	103,007	20,050					103,007
Shenwood B. Hillman	Retired (single)	26	69	56	43	77,089	1.000	0.4720	77,089	5,482					77,089
Carolyn Smith	Retired (single)	35	66	60	31	97,803	1.000	0.7290	97,803	18,217					97,803
Virginia Berg	Retired (single)	40	82	65	42	41,216	1.000	0.8410	41,216	5,457					41,216
Kenneth Ellis	Retired (single)	20	77	55	57	51,416	1.000	0.2960	51,416	1,238					51,416
Basil Bullard	Retired (single)	40	76	65	36	51,416	1.000	0.8410	51,416	8,866					51,416
Darlene Conner	Retired (single)	40	79	65	39	51,416	1.000	0.8410	51,416	7,769					51,416
						<u>\$ 8,052,363</u>			<u>\$ 8,003,817</u>			<u>\$ 137,815</u>		<u>\$ 6,758,168</u>	

ARC Calculation	
Normal Cost Component	
Normal Cost	\$ 137,815
Interest	6,202
Total Normal Cost	<u>144,017</u>
Amortization Component	
AAL	6,758,168
Less: Assets	<u>84,369</u>
UAAL	6,673,799
Divided by PV factor	<u>23.8893</u>
Amortization payment	279,364
Interest	<u>12,571</u>
Total Amortization Payment	<u>291,935</u>
Annual Required Contribution	\$ 435,952