



**Grand Traverse County
Board of Commissioners
Equalization Meeting**

Tuesday, April 9, 2019 @ 8:00 a.m.

Commission Chambers, 2nd Floor
Governmental Center, 400 Boardman,
Traverse City, MI 49684

The Board of the Commissioners Equalization Meeting has been set for the date, time and location noted above. The purpose of the meeting is identified in the Agenda below.

If you are planning to attend and you have a disability requiring any special assistance at the meeting, please notify the County Clerk immediately at 922-4760.

AGENDA

1. Call to Order (Pledge, Roll Call)
2. First Public Comment

Any person shall be permitted to address a meeting of the Board of Commissioners which is required to be open to the public under the provisions of the Michigan Open Meetings Act. Public Comment shall be carried out in accordance with the following Board Rules and Procedures:

Any person wishing to address the Board shall state his or her name and address. Persons may address the Board on matters or issues which are relevant and germane to County government as determined by the Chairperson.

No person shall be allowed to speak more than once on the same matter, excluding time needed to answer Commissioners' questions, if any. The Chairperson shall control the amount of time each person shall be allowed to speak, which shall not exceed three (3) minutes. The Chairperson may, at his or her discretion, allow an additional opportunity or time to speak if determined germane and necessary to the discussion.

Public comment will be solicited during the two public comment periods noted in Rule 5.4, Order of Business. However, public comment may be received during the meeting when a specific agenda topic is scheduled for discussion by the Board. Prior to the first public comment, the Chairperson will indicate the topics on the agenda for which public comment will be accepted. Members of the public wishing to comment should raise their hand or pass a note to the clerk in order to be recognized, and shall not address the board until called upon by the chairperson. Please be respectful and refrain from personal or political attacks.

3. Equalization:
 - a) Presentation and Adoption of Annual Report as required by MCL 211.34 3

4.	Municipal Employees Retirement System (MERS) Information:	
a.	Statement of Fiduciary position as of 12-31-18	29
b.	February 2019 MERS Report	31
c.	Update from MERS	52
d.	2019 Carve out of Construction Code	56
5.	Second Public Comment (Refer to Rules under Public Comment/Input above.)	
6.	Adjournment	



Action Request

Meeting Date:	April 9th, 2019		
Department:	Equalization	Submitted By:	Jim Baker
Contact E-Mail:	jbaker@grandtraverse.org	Contact Telephone:	922-4773
Agenda Item Title:	2019 Equalization		
Estimated Time:	20 <small>(in minutes)</small>	Laptop Presentation:	<input type="radio"/> Yes <input checked="" type="radio"/> No

Summary of Request:

The Equalization Report is presented in compliance with MCL Section 209.5(1): Act 44 of Michigan Compiled laws of 1911 and MCL Section 211.34: Act 206 of Michigan Compiled laws of 1893. Upon its adoption, determination of equal and uniform assessments at true cash value for all real and personal property in Grand Traverse County will be realized.

Equalization has completed studies in each assessing Jurisdiction and measured the level of assessment in each property classification against true cash value determinations. The market adjustments necessary to assess at the statutorily required 50% of true cash value have been applied and appropriately documented on required forms I-4022 submitted to Equalization by each taxing jurisdiction. The indicated adjustments to assessed value have been compiled by Equalization in each Jurisdiction on required forms I-4023 resulting in a computed and recommended factor of 1.00000 in each class of real and personal property in each assessing jurisdiction in Grand Traverse County. The resulting recommended County Equalized Valuations are contained in the submitted report for your review and approval.

I recommend approval of this report. Upon approval I will file the required Statement of Acreage and Valuation (I-4024) for the year 2018 and Analyses for Equalized Valuation (I-4023s) to the Michigan State Tax Commission.

Suggested Motion:

Shall the Grand Traverse County Board of Commissioners approve the Equalization Report as submitted?

Financial Information:

Total Cost:		General Fund Cost:		Included in budget:	<input type="radio"/> Yes <input checked="" type="radio"/> No
-------------	--	--------------------	--	---------------------	---

If not included in budget, recommended funding source:

This section for Finance Director, Human Resources Director, Civil Counsel, and Administration USE ONLY:

Reviews:	Signature	Date
Finance Director		
Human Resources Director		
Civil Counsel		
Administration:	<input type="checkbox"/> Recommended	Date:
<u>Miscellaneous:</u>		

Attachments:

Attachment Titles:
2019 Equalization Report



2019

Grand Traverse County Equalization Report





GRAND TRAVERSE COUNTY EQUALIZATION DEPARTMENT

400 BOARDMAN AVENUE STE 103

TRAVERSE CITY, MI 49684-2577

Phone: 231.922.4772

Fax: 231.922.4447

www.co.grand-traverse.mi.us

April 9th, 2019

Honorable Board of Commissioners
Grand Traverse County
Governmental Center
400 Boardman Ave
Traverse City, MI 49684

Ladies and Gentlemen:

The Grand Traverse County Equalization Department has prepared this equalization report as authorized by the County Board of Commissioners. I recommend that the Grand Traverse County Board of Commissioners adopt the proposed County equalized values in this report.

This report is a result of an equalization study in every class of real property and of the total personal property in all fourteen (14) assessing units of Grand Traverse County.

This report does not embrace any property taxed under P.A. 77 of 1951; P.A. 68 of 1963; P.A. 199 of 1974; P.A. 385 of 1994; P.A. 224 of 1995; P.A. 147 of 1992 or Section 5 of Article IX of the Constitution of the State of Michigan.

All County equalized values are subject to review and change by the Michigan State Tax Commission until the fourth Monday in May, when the final order is issued.

The resolution adopting the 2019 Grand Traverse County Equalization Report is located on the pages following.

Respectfully submitted,

James D. Baker, MMAO
Director
Grand Traverse County Equalization Department

Acknowledgements

In facilitating the completion of a project of this nature and magnitude, the support of a number of organizations and individuals was absolutely necessary and I am grateful to all the participants.

The burden of maintaining a county-wide property information network while meeting impending statutory deadlines was carried out extraordinarily well by the staff of the Grand Traverse County Equalization Department. I would like to thank the Grand Traverse County Board of Commissioners for providing the Department with the resources to accomplish these duties. I would also like to express my gratitude to the Assessors of the city, townships and villages of Grand Traverse County for their prompt assistance in the assembling and reporting of data for this analysis.

Foreword

The State Constitution commands the legislature to establish a system of property taxation and of equalization of assessments. The rationale underlying this approach is that the cost of municipal services, such as police, fire protection and education should be borne through taxation imposed upon the general public. That taxation is required to be uniform and fair to all taxpayers; County Equalization is required to ensure that.

GRAND TRAVERSE COUNTY EQUALIZATION DEPARTMENT

REPORTS TO BOARD OF COMMISSIONERS

Rob Hentschel – Chair
Ron Clous – Vice-Chair

Betsy Coffia
Bryce Hundley
Brad Jewett
Addison “Sonny” Wheelock, Jr.
Gordie LaPointe

MANAGEMENT TEAM

Administrator Nate Alger
Deputy Administrator Christopher Forsyth

DEPARTMENT OF EQUALIZATION

James D. Baker – Director, MMAO (4)
Chris Fieldhouse – Deputy Director, MAAO (3)
Joel Bremer - Appraiser II, MAAO (3)
Michael Barres - Appraiser I, MCAO

Susan Karakos – Senior Appraiser, MAAO (3)
Russ Casselman – Appraiser II, MCAO

Mike Steffes - GIS Analyst
Joshua Green - GIS Technician

SUPERVISORS, ASSESSORS, PRESIDENTS, & MANAGERS

GRAND TRAVERSE COUNTY 2019

<u>LOCAL UNIT</u>	<u>SUPERVISOR</u>	<u>ASSESSOR</u>
Acme Township (01)	Jay B. Zollinger	Dawn Kuhns
Blair Township (02)	Nicole Blonshine	Wendy Witkop
East Bay Township (03)	Beth Friend	James D. Baker
Fife Lake Township (04)	Linda Forwerck	Dawn Kuhns
Garfield Charter Township (05)	Chuck Korn	Amy DeHaan
Grant Township (06)	Douglas E. Moyer	Michelle Englebrecht
Green Lake Township (07)	Marvin D. Radtke, Jr.	William Muha
Long Lake Township (08)	Karen J. Rosa	Angela Friske
Mayfield Township (09)	John E. Ockert	David Brown
Paradise Township (10)	Rob Lajko	Dawn Kuhns
Peninsula Township (11)	Rob Manigold	Sally Akerley
Union Township (12)	Doug Mansfield	Debra Johnson
Whitewater Township (13)	Ron Popp	Dawn Kuhns
 <u>PRESIDENT</u>		
Fife Lake Village (41)	David C. McGough	Dawn Kuhns
Kingsley Village (42)	Rodney Bogart	Dawn Kuhns
 <u>MANAGER</u>		
City of Traverse City (51)	Marty Colburn	Polly Cairns

2019 GRAND TRAVERSE COUNTY - ALL AD VALOREM PROPERTY

TOWNSHIPS & CITY	Parcel Count 2018	Parcel Count 2019	Parcel Count % Change	CEV 2018	CEV 2019	County Equalized % Change	TAXABLE 2018	TAXABLE 2019	Taxable % Change
Acme	3,483	3,483	0.00%	\$410,212,800	\$446,292,400	8.80%	\$344,194,667	\$357,338,487	3.82%
Blair	4,634	4,710	1.64%	\$339,784,300	\$372,424,822	9.61%	\$282,860,283	\$300,985,745	6.41%
East Bay	8,158	8,164	0.07%	\$693,918,400	\$749,360,200	7.99%	\$567,969,301	\$595,253,194	4.80%
Fife Lake	1,297	1,306	0.69%	\$71,037,000	\$78,676,800	10.75%	\$54,223,538	\$57,073,555	5.26%
Garfield	8,130	8,172	0.52%	\$1,061,119,400	\$1,166,514,900	9.93%	\$903,500,416	\$940,990,494	4.15%
Grant	1,095	1,094	-0.09%	\$76,112,400	\$79,825,500	4.88%	\$55,488,817	\$57,221,719	3.12%
Green Lake	4,032	4,027	-0.12%	\$343,142,700	\$368,367,800	7.35%	\$286,961,218	\$301,749,838	5.15%
Long Lake	5,048	5,106	1.15%	\$627,336,200	\$667,581,500	6.42%	\$505,964,089	\$534,793,702	5.70%
Mayfield	1,111	1,130	1.71%	\$77,028,772	\$82,680,063	7.34%	\$59,481,457	\$62,865,469	5.69%
Paradise	2,582	2,586	0.15%	\$157,475,500	\$173,573,500	10.22%	\$129,856,563	\$137,162,171	5.63%
Peninsula	4,230	4,260	0.71%	\$923,545,600	\$985,987,200	6.76%	\$702,028,945	\$734,906,373	4.68%
Union	448	449	0.22%	\$29,288,400	\$34,254,800	16.96%	\$25,449,481	\$26,896,257	5.68%
Whitewater	2,003	2,001	-0.10%	\$264,785,100	\$280,777,600	6.04%	\$202,853,018	\$211,520,556	4.27%
Traverse City	8,881	8,958	0.87%	\$1,249,892,256	\$1,352,003,383	8.17%	\$985,966,549	\$1,049,897,161	6.48%
TOTALS	55,132	55,446	0.57%	\$6,324,678,828	\$6,838,320,468	8.12%	\$5,106,798,342	\$5,368,654,721	5.128%

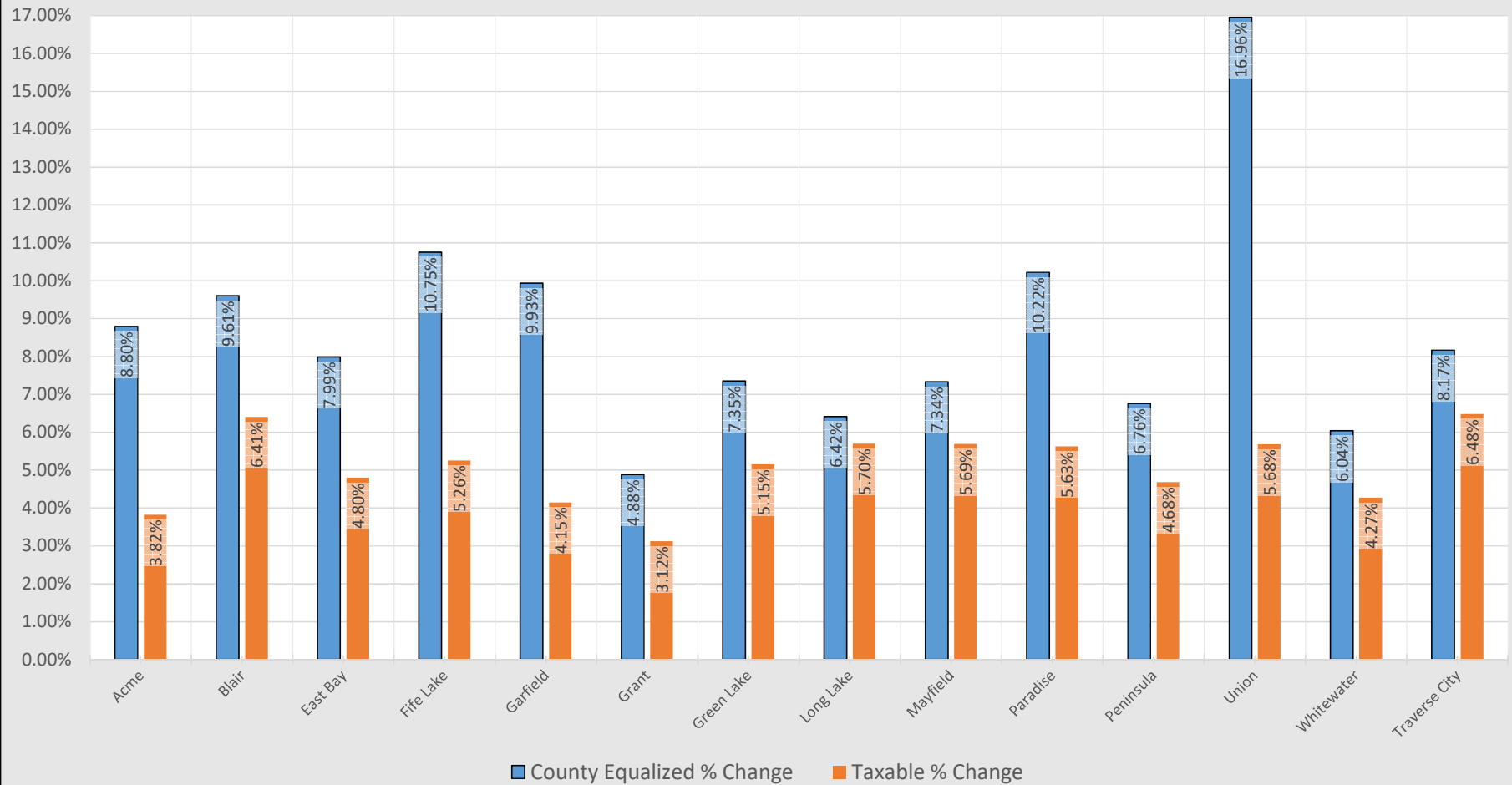
2019 GRAND TRAVERSE COUNTY - REAL PROPERTY

TOWNSHIPS & CITY	Parcel Count 2018	Parcel Count 2019	Parcel Count % Change	CEV 2018	CEV 2019	County Equalized % Change	TAXABLE 2018	TAXABLE 2019	Taxable % Change
Acme	3,320	3,323	0.09%	\$388,555,700	\$424,603,400	9.28%	\$322,537,567	\$335,649,487	4.07%
Blair	4,266	4,324	1.36%	\$321,423,700	\$353,681,674	10.04%	\$265,210,875	\$282,830,591	6.64%
East Bay	7,595	7,619	0.32%	\$671,229,300	\$727,103,100	8.32%	\$545,280,201	\$572,996,094	5.08%
Fife Lake	1,248	1,258	0.80%	\$68,905,300	\$76,518,900	11.05%	\$52,091,838	\$54,915,655	5.42%
Garfield	6,662	6,686	0.36%	\$978,464,700	\$1,082,821,900	10.67%	\$820,845,716	\$857,297,494	4.44%
Grant	1,039	1,040	0.10%	\$70,043,000	\$73,980,000	5.62%	\$49,420,117	\$51,376,219	3.96%
Green Lake	3,833	3,839	0.16%	\$333,789,400	\$358,091,800	7.28%	\$277,607,918	\$291,473,838	4.99%
Long Lake	4,884	4,910	0.53%	\$619,187,900	\$658,305,100	6.32%	\$497,815,789	\$525,518,202	5.56%
Mayfield	1,045	1,058	1.24%	\$73,137,072	\$78,663,363	7.56%	\$55,599,657	\$58,858,669	5.86%
Paradise	2,493	2,498	0.20%	\$150,767,700	\$166,376,000	10.35%	\$123,153,963	\$129,969,191	5.53%
Peninsula	4,108	4,138	0.73%	\$914,736,700	\$976,787,000	6.78%	\$693,220,045	\$725,706,173	4.69%
Union	408	409	0.25%	\$27,390,100	\$32,340,000	18.07%	\$23,561,036	\$24,990,497	6.07%
Whitewater	1,909	1,913	0.21%	\$256,226,100	\$272,367,600	6.30%	\$194,294,018	\$203,110,556	4.54%
Traverse City	7,081	7,196	1.62%	\$1,194,374,800	\$1,295,051,200	8.43%	\$930,449,093	\$992,944,978	6.72%
TOTALS	49,891	50,211	0.64%	\$6,068,231,472	\$6,576,691,037	8.38%	\$4,851,087,833	\$5,107,637,644	5.29%

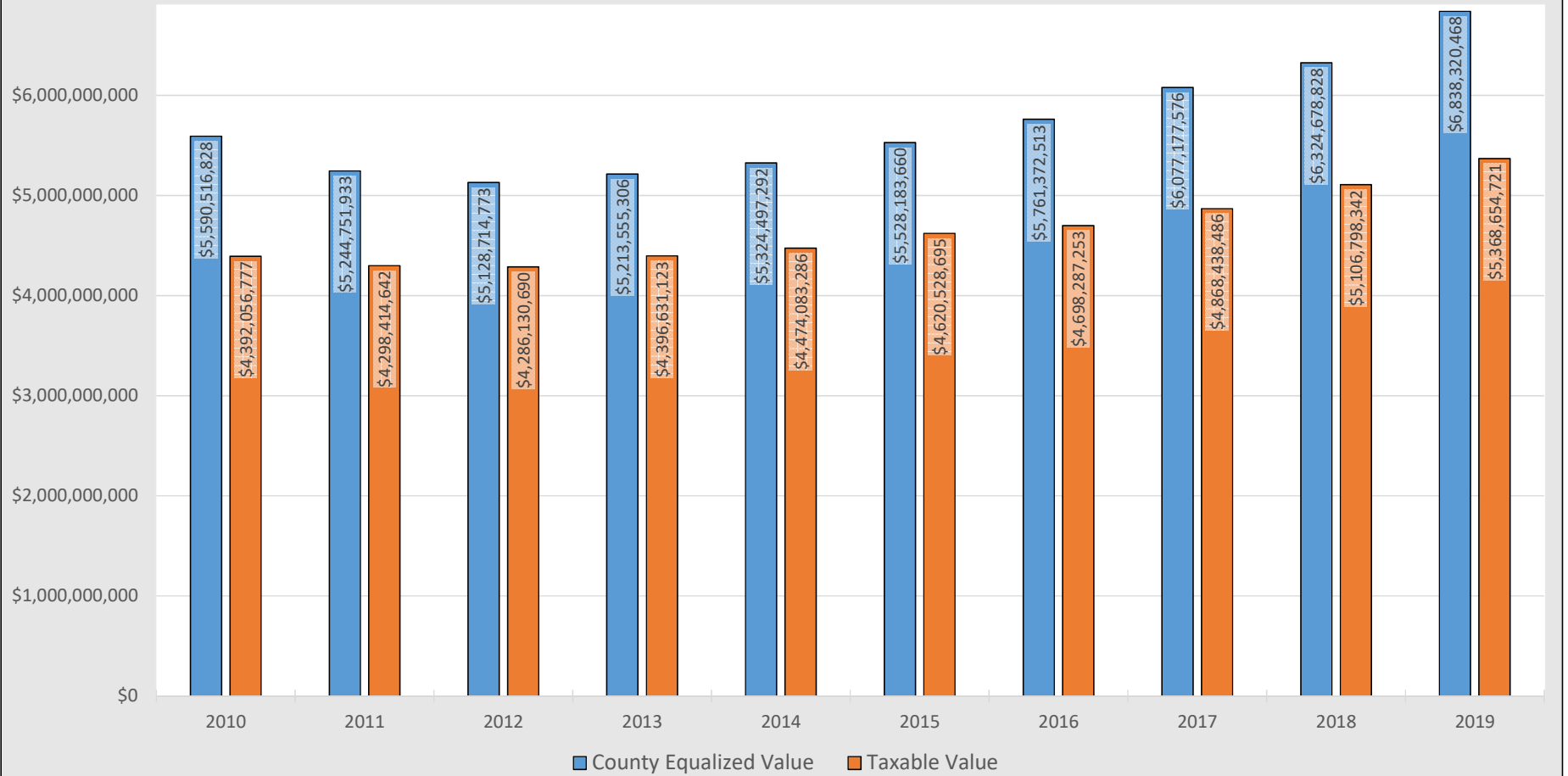
2019 GRAND TRAVERSE COUNTY - PERSONAL PROPERTY

TOWNSHIPS & CITY	Parcel Count 2018	Parcel Count 2019	Parcel Count % Change	CEV 2018	CEV 2019	County Equalized % Change	TAXABLE 2018	TAXABLE 2019	Taxable % Change
Acme	163	160	-1.84%	\$21,657,100	\$21,689,000	0.15%	\$21,657,100	\$21,689,000	0.15%
Blair	368	386	4.89%	\$18,360,600	\$18,743,148	2.08%	\$17,649,408	\$18,155,154	2.87%
East Bay	563	545	-3.20%	\$22,689,100	\$22,257,100	-1.90%	\$22,689,100	\$22,257,100	-1.90%
Fife Lake	49	48	-2.04%	\$2,131,700	\$2,157,900	1.23%	\$2,131,700	\$2,157,900	1.23%
Garfield	1,468	1,486	1.23%	\$82,654,700	\$83,693,000	1.26%	\$82,654,700	\$83,693,000	1.26%
Grant	56	54	-3.57%	\$6,069,400	\$5,845,500	-3.69%	\$6,068,700	\$5,845,500	-3.68%
Green Lake	199	188	-5.53%	\$9,353,300	\$10,276,000	9.86%	\$9,353,300	\$10,276,000	9.86%
Long Lake	164	196	19.51%	\$8,148,300	\$9,276,400	13.84%	\$8,148,300	\$9,275,500	13.83%
Mayfield	66	72	9.09%	\$3,891,700	\$4,016,700	3.21%	\$3,881,800	\$4,006,800	3.22%
Paradise	89	88	-1.12%	\$6,707,800	\$7,197,500	7.30%	\$6,702,600	\$7,192,980	7.32%
Peninsula	122	122	0.00%	\$8,808,900	\$9,200,200	4.44%	\$8,808,900	\$9,200,200	4.44%
Union	40	40	0.00%	\$1,898,300	\$1,914,800	0.87%	\$1,888,445	\$1,905,760	0.92%
Whitewater	94	88	-6.38%	\$8,559,000	\$8,410,000	-1.74%	\$8,559,000	\$8,410,000	-1.74%
Traverse City	1,800	1,762	-2.11%	\$55,517,456	\$56,952,183	2.58%	\$55,517,456	\$56,952,183	2.58%
TOTALS	5,241	5,235	-0.11%	\$256,447,356	\$261,629,431	2.02%	\$255,710,509	\$261,017,077	2.08%

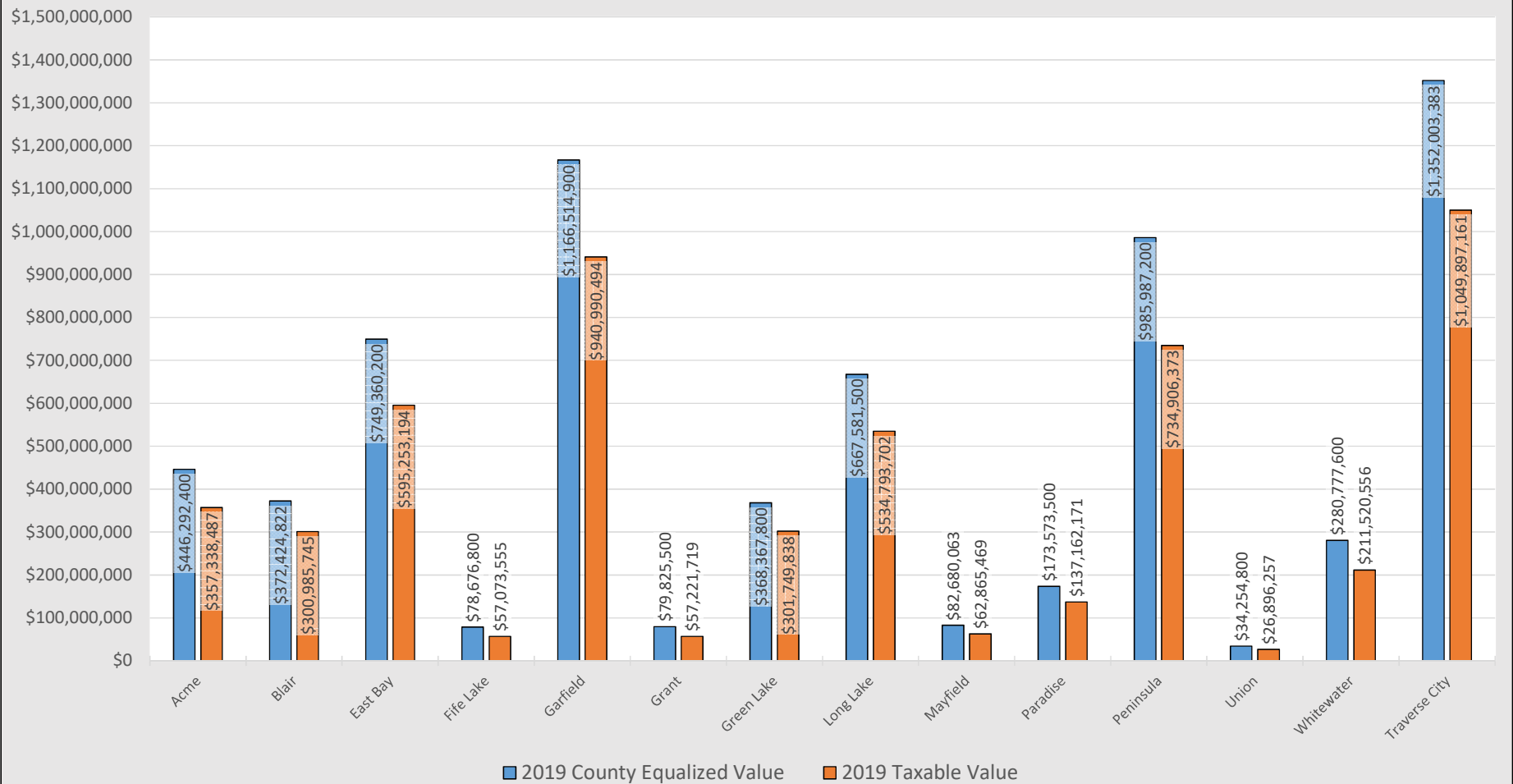
2019 COUNTY EQUALIZED & TAXABLE VALUE
ONE YEAR CHANGE PERCENTAGES BY UNIT



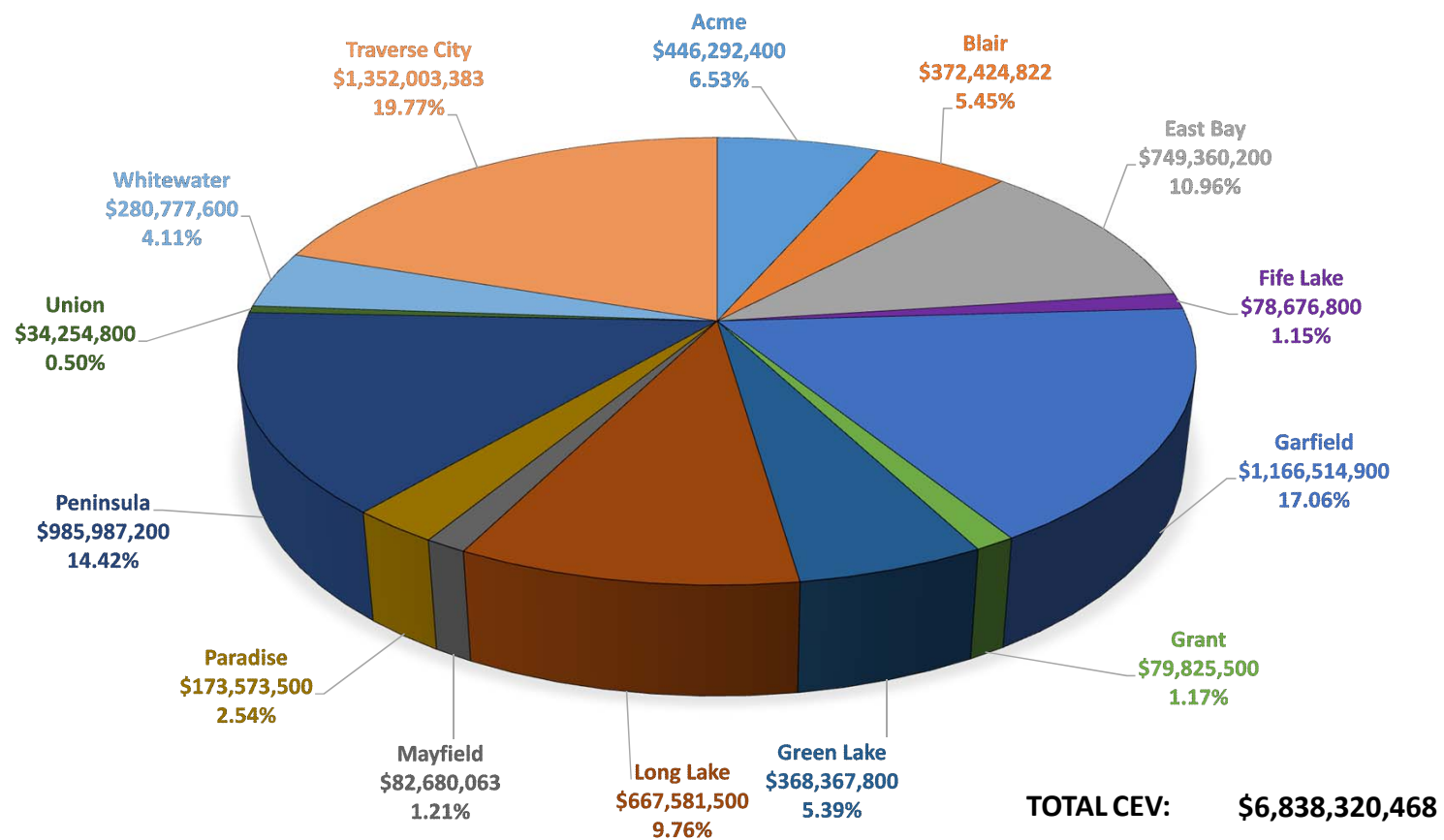
10 - YEAR
GRAND TRAVERSE COUNTY
COUNTY EQUALIZED & TAXABLE VALUES



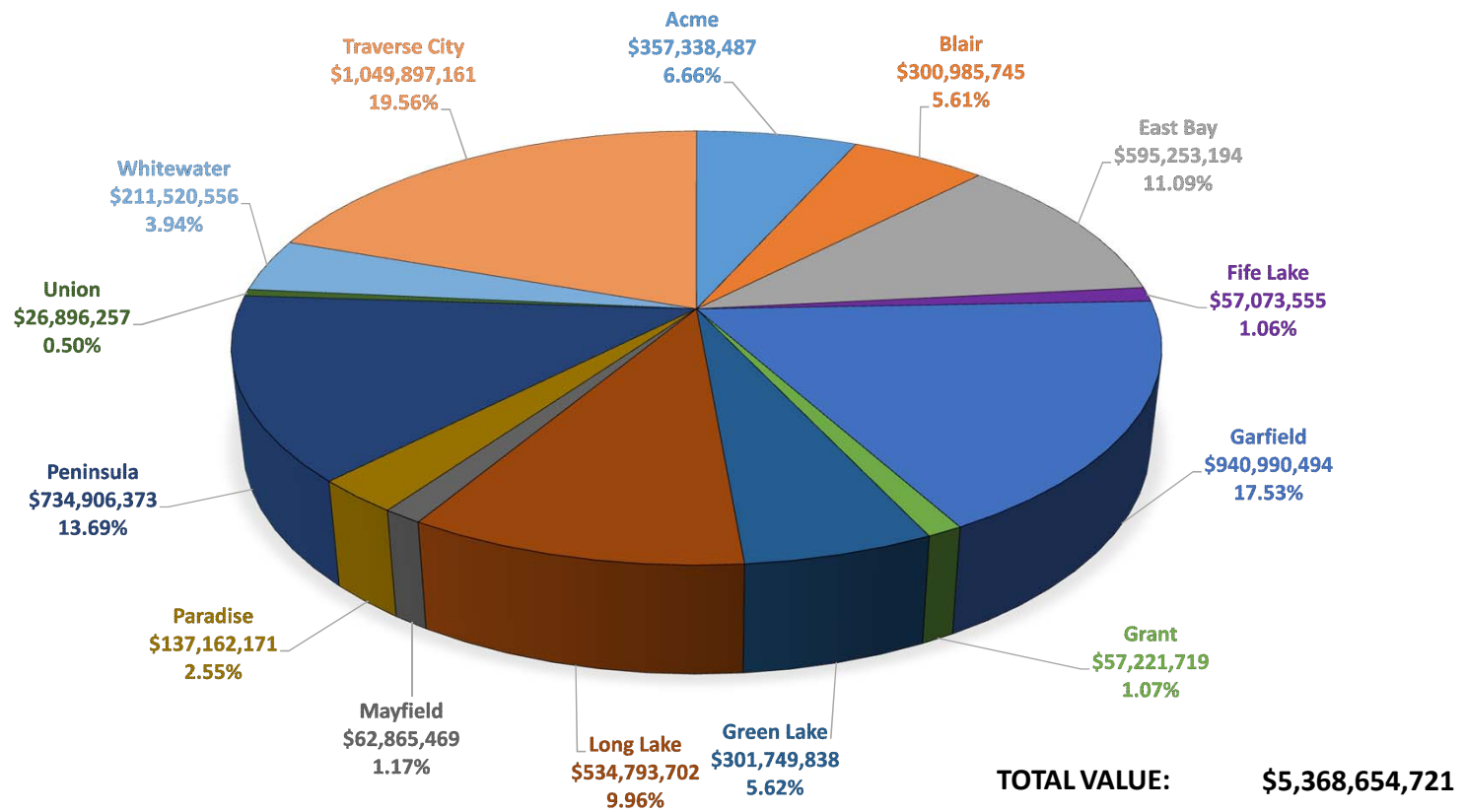
2019 COUNTY EQUALIZED & TAXABLE VALUES BY UNIT



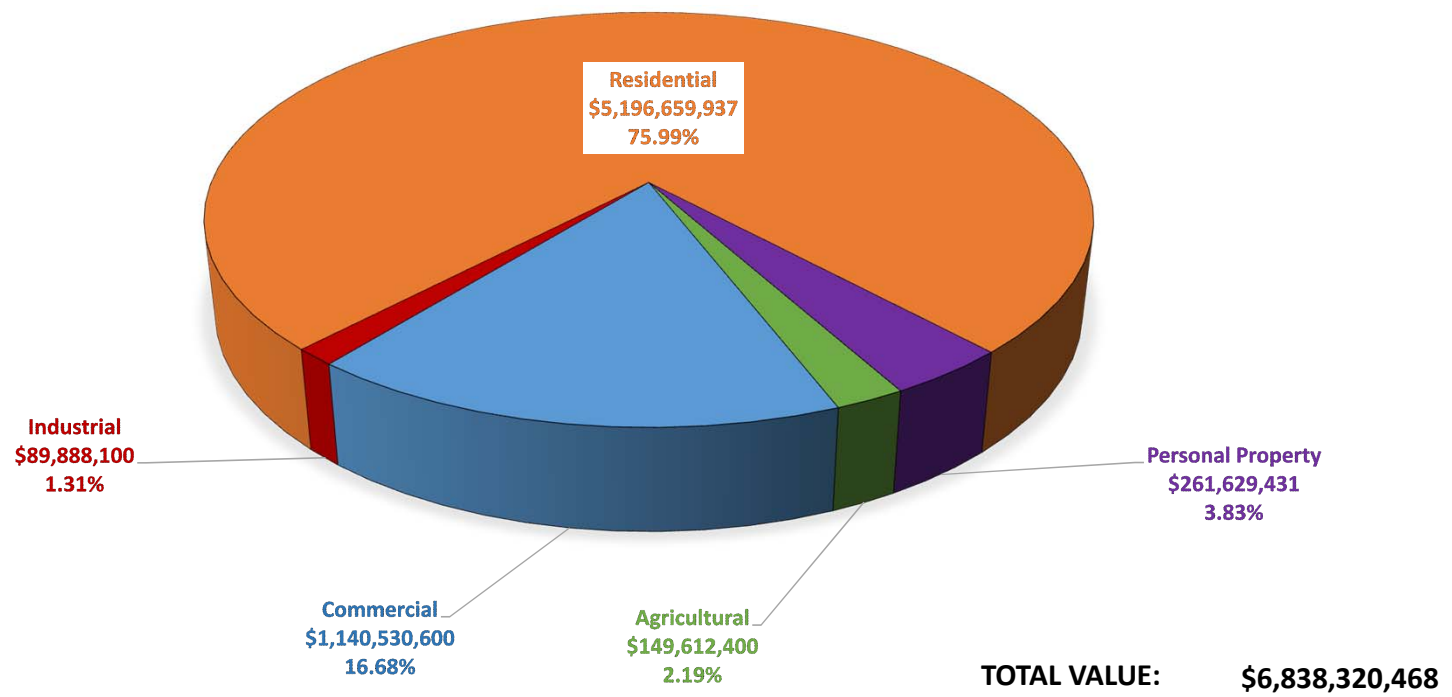
**FRACTIONAL UNIT
2019 COUNTY EQUALIZED VALUES**



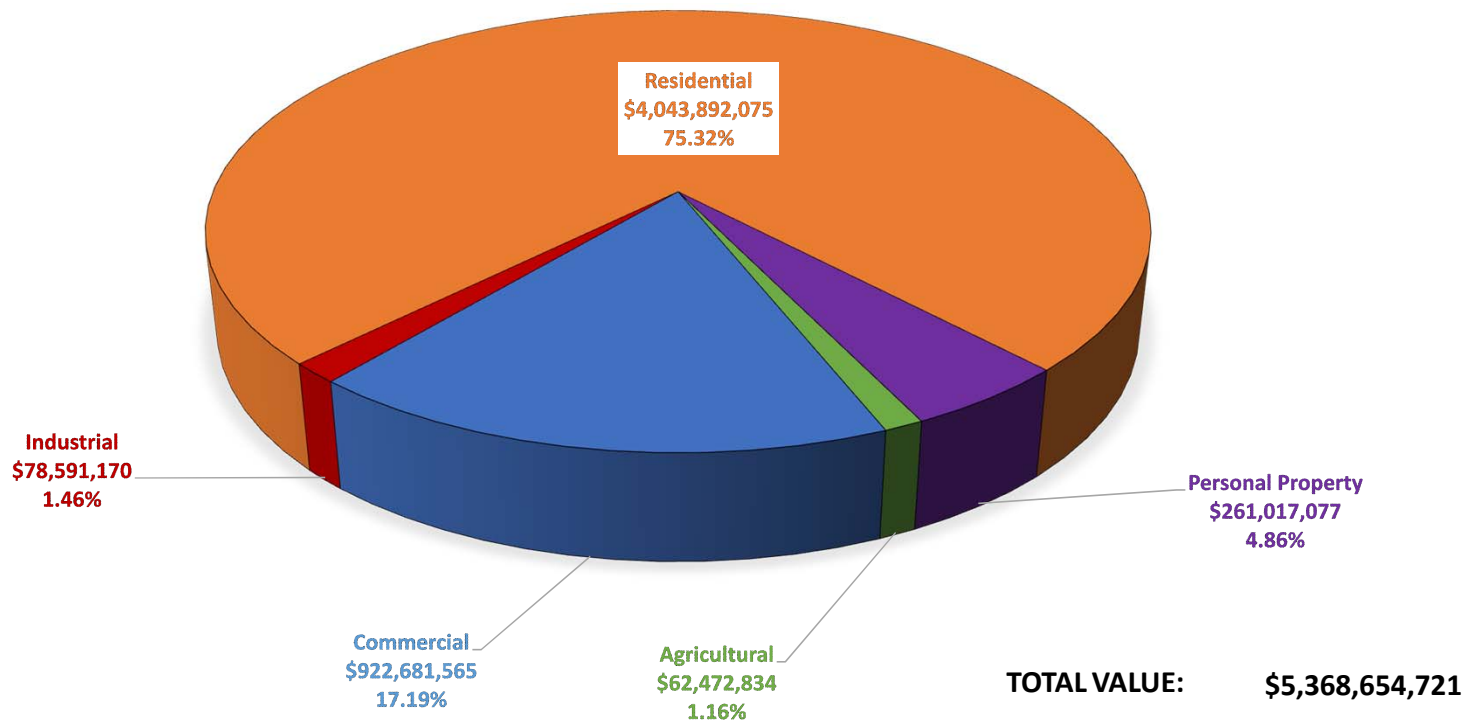
**FRACTIONAL UNIT
2019 COUNTY TAXABLE VALUES**



**GRAND TRAVERSE COUNTY
2019 COUNTY EQUALIZED VALUES
BY CLASSIFICATION**



**GRAND TRAVERSE COUNTY
2019 TAXABLE VALUES
BY CLASSIFICATION**



County: 28- GRAND TRAVERSE

Governmental Unit	----- Real -----							----- Personal -----							Grand Total
	Ag	Comm	Ind	Res	T-C	Dev	Total	Ag	Comm	Ind	Res	Util	Total	Exempt	
ACME TWP (01)	77	214	11	3021	0	0	3323	0	144	8	0	8	160	68	3551
BLAIR TWP (02)	41	340	16	3927	0	0	4324	0	348	6	0	32	386	42	4752
EAST BAY CHTR TWP (03)	27	189	41	7362	0	0	7619	0	490	20	0	35	545	147	8311
FIFE LAKE TWP (04)	28	45	2	1183	0	0	1258	0	37	3	0	8	48	72	1378
GARFIELD CHTR TWP (05)	0	1018	76	5592	0	0	6686	0	1431	50	0	5	1486	186	8358
GRANT TWP (06)	148	9	18	865	0	0	1040	0	22	0	0	32	54	23	1117
GREEN LAKE TWP (07)	0	161	12	3666	0	0	3839	0	171	8	0	9	188	93	4120
LONG LAKE TWP (08)	45	106	3	4756	0	0	4910	0	185	4	1	6	196	47	5153
MAYFIELD TWP (09)	154	28	4	872	0	0	1058	0	48	0	0	24	72	14	1144
PARADISE TWP (10)	78	90	7	2323	0	0	2498	0	67	1	0	20	88	87	2673
PENINSULA TWP (11)	227	77	3	3831	0	0	4138	0	118	0	2	2	122	127	4387
UNION TWP (12)	0	4	5	400	0	0	409	0	9	0	0	31	40	43	492
WHITEWATER TWP (13)	76	41	8	1788	0	0	1913	0	50	6	0	32	88	94	2095
TRAVERSE CITY (51)	0	1053	45	6098	0	0	7196	0	1715	43	0	4	1762	384	9342
Totals	901	3375	251	45684	0	0	50211	0	4835	149	3	248	5235	1427	56873

Assessment Unit	Assessed Real	Ratio	Equalized Real	Factor	Assessed Personal	Ratio	Equalized Personal	Assessed Total	Equalized Total	% County Total
-- 01 ACME TWP (01) --										
Agricultural	12,158,700	50.96	12,158,700	1.000000						
Commercial	59,531,200	51.39	59,531,200	1.000000						
Industrial	3,122,200	53.45	3,122,200	1.000000						
Residential	349,791,300	49.01	349,791,300	1.000000						
Timber-Cutover	0	1.00	0	1.000000						
Developmental	0	1.00	0	1.000000						
Totals	424,603,400		424,603,400		21,689,000	45.70	21,689,000	446,292,400	446,292,400	6.53
-- 02 BLAIR TWP (02) --										
Agricultural	5,608,300	49.99	5,608,300	1.000000						
Commercial	67,420,200	49.74	67,420,200	1.000000						
Industrial	3,118,400	49.91	3,118,400	1.000000						
Residential	277,534,774	49.95	277,534,774	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	353,681,674		353,681,674		18,743,148	50.00	18,743,148	372,424,822	372,424,822	5.45
-- 03 EAST BAY CHTR TWP (03) --										
Agricultural	4,628,000	49.89	4,628,000	1.000000						
Commercial	77,260,000	49.97	77,260,000	1.000000						
Industrial	11,559,500	49.50	11,559,500	1.000000						
Residential	633,655,600	49.32	633,655,600	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	727,103,100		727,103,100		22,257,100	50.00	22,257,100	749,360,200	749,360,200	10.96
-- 04 FIFE LAKE TWP (04) --										
Agricultural	3,157,700	51.33	3,157,700	1.000000						
Commercial	4,270,800	49.38	4,270,800	1.000000						
Industrial	605,800	53.10	605,800	1.000000						
Residential	68,484,600	53.39	68,484,600	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	76,518,900		76,518,900		2,157,900	50.00	2,157,900	78,676,800	78,676,800	1.15

Assessment Unit	Assessed Real	Ratio	Equalized Real	Factor	Assessed Personal	Ratio	Equalized Personal	Assessed Total	Equalized Total	% County Total
-- 05 GARFIELD CHTR TWP (05) --										
Agricultural	0	50.00	0	1.000000						
Commercial	429,412,400	49.76	429,412,400	1.000000						
Industrial	30,717,600	49.72	30,717,600	1.000000						
Residential	622,691,900	49.65	622,691,900	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	1,082,821,900		1,082,821,900		83,693,000	50.00	83,693,000	1,166,514,900	1,166,514,900	17.06
-- 06 GRANT TWP (06) --										
Agricultural	15,033,800	49.92	15,033,800	1.000000						
Commercial	732,700	49.30	732,700	1.000000						
Industrial	556,700	49.94	556,700	1.000000						
Residential	57,656,800	49.66	57,656,800	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	73,980,000		73,980,000		5,845,500	50.00	5,845,500	79,825,500	79,825,500	1.17
-- 07 GREEN LAKE TWP (07) --										
Agricultural	0	50.00	0	1.000000						
Commercial	16,723,800	49.64	16,723,800	1.000000						
Industrial	3,818,400	49.82	3,818,400	1.000000						
Residential	337,549,600	49.50	337,549,600	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	358,091,800		358,091,800		10,276,000	50.00	10,276,000	368,367,800	368,367,800	5.39
-- 08 LONG LAKE TWP (08) --										
Agricultural	7,139,700	49.76	7,139,700	1.000000						
Commercial	15,678,400	49.14	15,678,400	1.000000						
Industrial	992,500	49.69	992,500	1.000000						
Residential	634,494,500	49.87	634,494,500	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	658,305,100		658,305,100		9,276,400	50.00	9,276,400	667,581,500	667,581,500	9.76

Assessment Unit	Assessed Real	Ratio	Equalized Real	Factor	Assessed Personal	Ratio	Equalized Personal	Assessed Total	Equalized Total	% County Total
-- 09 MAYFIELD TWP (09) --										
Agricultural	17,430,300	49.91	17,430,300	1.000000						
Commercial	3,941,400	49.99	3,941,400	1.000000						
Industrial	100,600	49.80	100,600	1.000000						
Residential	57,191,063	49.90	57,191,063	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	78,663,363		78,663,363		4,016,700	50.00	4,016,700	82,680,063	82,680,063	1.21
-- 10 PARADISE TWP (10) --										
Agricultural	8,206,800	52.76	8,206,800	1.000000						
Commercial	8,885,700	47.04	8,885,700	1.000000						
Industrial	128,400	51.09	128,400	1.000000						
Residential	149,155,100	49.72	149,155,100	1.000000						
Timber-Cutover	0	1.00	0	1.000000						
Developmental	0	1.00	0	1.000000						
Totals	166,376,000		166,376,000		7,197,500	50.00	7,197,500	173,573,500	173,573,500	2.54
-- 11 PENINSULA TWP (11) --										
Agricultural	63,158,000	49.82	63,158,000	1.000000						
Commercial	20,344,400	49.99	20,344,400	1.000000						
Industrial	525,900	49.84	525,900	1.000000						
Residential	892,758,700	49.90	892,758,700	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	976,787,000		976,787,000		9,200,200	50.00	9,200,200	985,987,200	985,987,200	14.42
-- 12 UNION TWP (12) --										
Agricultural	0	50.00	0	1.000000						
Commercial	669,800	49.98	669,800	1.000000						
Industrial	51,300	49.81	51,300	1.000000						
Residential	31,618,900	49.76	31,618,900	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	32,340,000		32,340,000		1,914,800	50.00	1,914,800	34,254,800	34,254,800	0.50

Assessment Unit	Assessed Real	Ratio	Equalized Real	Factor	Assessed Personal	Ratio	Equalized Personal	Assessed Total	Equalized Total	% County Total
-- 13 WHITEWATER TWP (13) --										
Agricultural	13,091,100	54.38	13,091,100	1.000000						
Commercial	4,796,400	49.56	4,796,400	1.000000						
Industrial	2,500,500	54.30	2,500,500	1.000000						
Residential	251,979,600	50.89	251,979,600	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	272,367,600		272,367,600		8,410,000	50.00	8,410,000	280,777,600	280,777,600	4.11
-- 51 TRAVERSE CITY (51) --										
Agricultural	0	50.00	0	1.000000						
Commercial	430,863,400	49.88	430,863,400	1.000000						
Industrial	32,090,300	49.79	32,090,300	1.000000						
Residential	832,097,500	49.78	832,097,500	1.000000						
Timber-Cutover	0	50.00	0	1.000000						
Developmental	0	50.00	0	1.000000						
Totals	1,295,051,200		1,295,051,200		56,952,183	102.98	56,952,183	1,352,003,383	1,352,003,383	19.77

Grand Totals	Assessed Real	Equalized Real	% Real Total	Assessed Personal	Equalized Personal	Assessed % County	Equalized % County	Assessed Total	Equalized Total
Agricultural	149,612,400	149,612,400	2.27			2.19	2.19		
Commercial	1,140,530,600	1,140,530,600	17.34			16.68	16.68		
Industrial	89,888,100	89,888,100	1.37			1.31	1.31		
Residential	5,196,659,937	5,196,659,937	79.02			75.99	75.99		
Timber-Cutover	0	0	0.00			0.00	0.00		
Developmental	0	0	0.00			0.00	0.00		
Personal				261,629,431	261,629,431	3.83	3.83		
	6,576,691,037	6,576,691,037	100.00	261,629,431	261,629,431	100.00	100.00	6,838,320,468	6,838,320,468

Personal and Real Property - TOTALS

L-4024

Grand Traverse County

Statement of acreage and valuation in the year 2019 made in accordance with Sections 209.1 - 209.8 of the Michigan Compiled Laws.

	Number of Acres Assessed	Total Real Property Valuations		Personal Property Valuations		Total Real Plus Personal Property	
Township or City	(Col. 1) Acres Hundredths	(Col. 2) Assessed Valuations	(Col. 3) Equalized Valuations	(Col. 4) Assessed Valuations	(Col. 5) Equalized Valuations	(Col. 6) Assessed Valuations	(Col. 7) Equalized Valuations
Acme	13,261.37	424,603,400	424,603,400	21,689,000	21,689,000	446,292,400	446,292,400
Blair	22,746.58	353,681,674	353,681,674	18,743,148	18,743,148	372,424,822	372,424,822
East Bay	28,192.41	727,103,100	727,103,100	22,257,100	22,257,100	749,360,200	749,360,200
Fife Lake	22,539.35	76,518,900	76,518,900	2,157,900	2,157,900	78,676,800	78,676,800
Garfield	13,769.73	1,082,821,900	1,082,821,900	83,693,000	83,693,000	1,166,514,900	1,166,514,900
Grant	22,795.37	73,980,000	73,980,000	5,845,500	5,845,500	79,825,500	79,825,500
Green Lake	18,943.23	358,091,800	358,091,800	10,276,000	10,276,000	368,367,800	368,367,800
Long Lake	19,419.70	658,305,100	658,305,100	9,276,400	9,276,400	667,581,500	667,581,500
Mayfield	23,110.94	78,663,363	78,663,363	4,016,700	4,016,700	82,680,063	82,680,063
Paradise	30,965.18	166,376,000	166,376,000	7,197,500	7,197,500	173,573,500	173,573,500
Peninsula	17,157.17	976,787,000	976,787,000	9,200,200	9,200,200	985,987,200	985,987,200
Union	23,034.16	32,340,000	32,340,000	1,914,800	1,914,800	34,254,800	34,254,800
Whitewater	30,307.36	272,367,600	272,367,600	8,410,000	8,410,000	280,777,600	280,777,600
Traverse City	8,789.80	1,295,051,200	1,295,051,200	56,952,183	56,952,183	1,352,003,383	1,352,003,383
Totals for County	295,032.35	6,576,691,037	6,576,691,037	261,629,431	261,629,431	6,838,320,468	6,838,320,468

OFFICE OF THE COUNTY BOARD OF COMMISSIONERS OF GRAND TRAVERSE COUNTY

WE HEREBY CERTIFY that the foregoing is a true statement of the number of acres of land, the value of the real property and of the personal property, the aggregate valuation of the real property and personal property, the equalized and assessed valuations of real property classifications in each township and city in said county as equalized by the Board of Commissioners in April of the reporting year, at a meeting of said board held in pursuant to the provisions of sections 209.1 – 209.8, MCL. I further certify that said statement does not embrace any property taxed under P.A. 77 of 1951; P.A. 68 of 1963; P.A. 198 of 1974; P.A. 225 of 1978; P.A. 385 of 1984; P.A. 224 of 1985; P.A. 147 of 1992 or Section 5 of Article IX of the Constitution of the State.

Dated _____, 20____

Equalization Director

Clerk of the Board of Commissioners

Chairperson of Board of Commissioners

Equalized Valuations - REAL

L-4024

Grand Traverse County

Statement of acreage and valuation in the year 2019 made in accordance with Sections 209.1 - 209.8 of the Michigan Compiled Laws.

Real Property Equalized by County Board of Commissioners							
Township or City	(Col. 1) Agricultural	(Col. 2) Commercial	(Col. 3) Industrial	(Col. 4) Residential	(Col. 5) Timber-Cutover	(Col. 6) Developmental	(Col. 7) Total Real Property
Acme	12,158,700	59,531,200	3,122,200	349,791,300	0	0	424,603,400
Blair	5,608,300	67,420,200	3,118,400	277,534,774	0	0	353,681,674
East Bay	4,628,000	77,260,000	11,559,500	633,655,600	0	0	727,103,100
Fife Lake	3,157,700	4,270,800	605,800	68,484,600	0	0	76,518,900
Garfield	0	429,412,400	30,717,600	622,691,900	0	0	1,082,821,900
Grant	15,033,800	732,700	556,700	57,656,800	0	0	73,980,000
Green Lake	0	16,723,800	3,818,400	337,549,600	0	0	358,091,800
Long Lake	7,139,700	15,678,400	992,500	634,494,500	0	0	658,305,100
Mayfield	17,430,300	3,941,400	100,600	57,191,063	0	0	78,663,363
Paradise	8,206,800	8,885,700	128,400	149,155,100	0	0	166,376,000
Peninsula	63,158,000	20,344,400	525,900	892,758,700	0	0	976,787,000
Union	0	669,800	51,300	31,618,900	0	0	32,340,000
Whitewater	13,091,100	4,796,400	2,500,500	251,979,600	0	0	272,367,600
Traverse City	0	430,863,400	32,090,300	832,097,500	0	0	1,295,051,200
Total for County	149,612,400	1,140,530,600	89,888,100	5,196,659,937	0	0	6,576,691,037

OFFICE OF THE COUNTY BOARD OF COMMISSIONERS OF GRAND TRAVERSE COUNTY

WE HEREBY CERTIFY that the foregoing is a true statement of the number of acres of land, the value of the real property and of the personal property, the aggregate valuation of the real property and personal property, the equalized and assessed valuations of real property classifications in each township and city in said county as equalized by the Board of Commissioners in April of the reporting year, at a meeting of said board held in pursuant to the provisions of sections 209.1 – 209.8, MCL. I further certify that said statement does not embrace any property taxed under P.A. 77 of 1951; P.A. 68 of 1963; P.A. 198 of 1974; P.A. 225 of 1978; P.A. 385 of 1984; P.A. 224 of 1985; P.A. 147 of 1992 or Section 5 of Article IX of the Constitution of the State.

Dated _____, 20____

Equalization Director

Clerk of the Board of Commissioners

Chairperson of Board of Commissioners

Assessed Valuations - REAL

L-4024

Grand Traverse County

Statement of acreage and valuation in the year 2019 made in accordance with Sections 209.1 - 209.8 of the Michigan Compiled Laws.

Real Property Assessed Valuations Approved by Boards of Review							
Township or City	(Col. 1) Agricultural	(Col. 2) Commercial	(Col. 3) Industrial	(Col. 4) Residential	(Col. 5) Timber-Cutover	(Col. 6) Developmental	(Col. 7) Total Real Property
Acme	12,158,700	59,531,200	3,122,200	349,791,300	0	0	424,603,400
Blair	5,608,300	67,420,200	3,118,400	277,534,774	0	0	353,681,674
East Bay	4,628,000	77,260,000	11,559,500	633,655,600	0	0	727,103,100
Fife Lake	3,157,700	4,270,800	605,800	68,484,600	0	0	76,518,900
Garfield	0	429,412,400	30,717,600	622,691,900	0	0	1,082,821,900
Grant	15,033,800	732,700	556,700	57,656,800	0	0	73,980,000
Green Lake	0	16,723,800	3,818,400	337,549,600	0	0	358,091,800
Long Lake	7,139,700	15,678,400	992,500	634,494,500	0	0	658,305,100
Mayfield	17,430,300	3,941,400	100,600	57,191,063	0	0	78,663,363
Paradise	8,206,800	8,885,700	128,400	149,155,100	0	0	166,376,000
Peninsula	63,158,000	20,344,400	525,900	892,758,700	0	0	976,787,000
Union	0	669,800	51,300	31,618,900	0	0	32,340,000
Whitewater	13,091,100	4,796,400	2,500,500	251,979,600	0	0	272,367,600
Traverse City	0	430,863,400	32,090,300	832,097,500	0	0	1,295,051,200
Total for County	149,612,400	1,140,530,600	89,888,100	5,196,659,937	0	0	6,576,691,037

OFFICE OF THE COUNTY BOARD OF COMMISSIONERS OF GRAND TRAVERSE COUNTY

WE HEREBY CERTIFY that the foregoing is a true statement of the number of acres of land, the value of the real property and of the personal property, the aggregate valuation of the real property and personal property, the equalized and assessed valuations of real property classifications in each township and city in said county as equalized by the Board of Commissioners in April of the reporting year, at a meeting of said board held in pursuant to the provisions of sections 209.1 – 209.8, MCL. I further certify that said statement does not embrace any property taxed under P.A. 77 of 1951; P.A. 68 of 1963; P.A. 198 of 1974; P.A. 225 of 1978; P.A. 385 of 1984; P.A. 224 of 1985; P.A. 147 of 1992 or Section 5 of Article IX of the Constitution of the State.

Dated _____, 20____

Equalization Director

Clerk of the Board of Commissioners

Chairperson of Board of Commissioners

R E S O L U T I O N

XXX- 2019

Equalization Report 2019

WHEREAS, The Grand Traverse County Equalization Department has established the various True Cash Valuations of each of the various units of government of Grand Traverse County, and

WHEREAS, the assessment rolls of the various assessment jurisdictions have been created by the various unit assessors and reviewed by the various local Boards of Review throughout Grand Traverse County, and such assessment rolls submitted to your Equalization Department in a timely manner, and

WHEREAS, those assessment rolls have been audited and balanced by your Equalization Department in accordance with the laws of the State of Michigan and the guidelines of the State Tax Commission: the results of such being listed on the Equalization Report and on the prescribed Michigan Department of Treasury Form L-4024 (County Equalization Directors Report of County Equalization), and

WHEREAS, this Board of Commissioners feels that these valuations are in order,

NOW THEREFORE, BE IT RESOLVED, that the Grand Traverse County Board of Commissioners has adopted the 2019 equalized valuations for each of the various units of government recommended by the Grand Traverse County Equalization Director, as contained in this report, pursuant to Sec. 211.34 MCL 1948, as amended.

APPROVED: April 9, 2019



1134 Municipal Way
Lansing, MI 48917
(800) 767-6377

Dean Bott
Grand Traverse County
400 Boardman Ave
Traverse City, MI 49684

Statement of Fiduciary Net Position For the Year Ending 12/31/2018						
Customer Number: 280301						
Reserve for Employee Contributions						

Bargaining Unit	Balance as of 12/31/2017	Invoiced & Other Contributions	Transfers	EE Refunds	Interest on EE Balance	Balance as of 12/31/2018
28030101	\$598.07	\$3,155.93	\$843.70	\$0.00	\$15.73	\$4,613.43
28030102	\$101,919.90	\$4,878.45	\$0.00	\$0.00	\$2,680.48	\$109,478.83
28030110	\$9,813.43	\$9,810.15	\$0.00	\$0.00	\$258.10	\$19,881.68
28030111	\$5,918.00	\$6,052.54	\$43.94	\$0.00	\$155.64	\$12,170.12
28030112	\$2,565.16	\$2,624.59	\$406.39	\$0.00	\$67.46	\$5,663.60
28030114	\$865.48	\$7,590.68	\$0.00	\$0.00	\$22.76	\$8,478.92
28030115	\$14,288.81	\$3,595.03	\$0.00	\$0.00	\$375.80	\$18,259.64
28030116	\$9,736.17	\$1,253.02	(\$79.62)	\$0.00	\$254.33	\$11,163.90
28030118	\$14,584.13	\$14,592.61	\$213.84	\$0.00	\$383.57	\$29,774.15
28030120	\$5,127.68	\$0.00	\$0.00	\$0.00	\$134.86	\$5,262.54
28030123	\$32,438.09	\$0.00	\$0.00	\$0.00	\$853.13	\$33,291.22
28030184	\$944.33	\$8,018.01	(\$887.64)	\$0.00	\$24.84	\$8,099.54
28030186	\$3,177.24	\$3,391.06	(\$213.84)	\$0.00	\$83.56	\$6,438.02
Total	\$201,976.49	\$64,962.07	\$326.77	\$0.00	\$5,310.26	\$272,575.59

Reserve for Employer Contributions and Benefit Payments							
--	--	--	--	--	--	--	--

Bargaining Unit	Balance as of 12/31/2017	Invoiced & Other Contributions	Transfers & Fees	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2018
28030101	\$5,581,364.33	\$444,420.01	(\$843.70)	(\$1,028,448.70)	(\$200,484.34)	(\$10,698.18)	\$4,785,309.42
28030102	\$4,531,570.20	\$586,260.00	\$0.00	(\$880,951.38)	(\$177,465.05)	(\$9,246.08)	\$4,050,167.69
28030110	\$3,517,416.36	\$303,612.00	\$0.00	(\$635,147.56)	(\$128,753.85)	(\$6,836.02)	\$3,050,290.93
28030111	\$2,044,464.85	\$99,947.99	(\$43.94)	(\$375,556.98)	(\$71,213.37)	(\$3,829.11)	\$1,693,769.44
28030112	\$1,428,264.85	\$66,888.00	(\$406.39)	(\$174,362.76)	(\$53,086.95)	(\$2,753.25)	\$1,264,543.50
28030113	\$6,534,397.50	\$432,204.00	\$0.00	(\$597,946.70)	(\$255,437.40)	(\$12,978.08)	\$6,100,239.32
28030114	\$3,329,227.12	\$150,852.00	\$0.00	(\$397,850.91)	(\$123,603.48)	(\$6,414.12)	\$2,952,210.61
28030115	\$2,268,741.19	\$205,450.05	\$0.00	(\$387,276.91)	(\$84,803.10)	(\$4,460.26)	\$1,997,650.97
28030116	\$947,408.87	\$67,200.00	\$79.62	(\$140,120.52)	(\$35,728.58)	(\$1,858.59)	\$836,980.80
28030117	\$679,372.66	\$91,776.00	\$0.00	(\$110,273.64)	(\$26,639.88)	(\$1,384.27)	\$632,850.87
28030118	\$6,840,309.29	\$618,408.00	(\$213.84)	(\$1,156,031.90)	(\$254,013.33)	(\$13,376.52)	\$6,035,081.70

Reserve for Employer Contributions and Benefit Payments							
Bargaining Unit	Balance as of 12/31/2017	Invoiced & Other Contributions	Transfers & Fees	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2018
28030120	\$3,854,958.69	\$491,940.00	\$0.00	(\$678,715.09)	(\$148,017.07)	(\$7,757.29)	\$3,512,409.24
28030121	\$357,378.59	\$26,364.00	\$0.00	(\$37,229.52)	(\$13,904.32)	(\$710.18)	\$331,898.57
28030123	\$3,582,770.10	\$291,132.00	\$0.00	(\$292,470.82)	(\$146,072.77)	(\$7,312.88)	\$3,428,045.63
28030181	\$846,489.01	\$0.00	\$0.00	(\$52,207.76)	(\$31,676.95)	(\$1,612.99)	\$760,991.31
28030182	\$79,038.49	\$0.00	\$0.00	\$0.00	(\$3,156.78)	(\$154.85)	\$75,726.86
28030183	\$687,149.74	\$0.00	\$0.00	(\$48,992.90)	(\$25,444.23)	(\$1,303.60)	\$611,409.01
28030184	\$990,976.37	\$89,880.00	\$887.64	(\$64,403.24)	(\$41,268.01)	(\$2,053.51)	\$974,019.25
28030185	\$131,202.19	\$6,252.00	\$0.00	(\$21,540.31)	(\$4,635.85)	(\$249.39)	\$111,028.64
28030186	\$1,015,224.36	\$82,044.00	\$213.84	(\$121,567.60)	(\$39,530.58)	(\$2,037.52)	\$934,346.50
280301S1	\$252,985.75	\$1,845,296.00	\$0.00	\$0.00	(\$91,337.38)	(\$3,678.98)	\$2,003,265.39
Total	\$49,500,710.51	\$5,899,926.05	(\$326.77)	(\$7,201,095.20)	(\$1,956,273.27)	(\$100,705.67)	\$46,142,235.65

Combined Reserves							
	Balance as of 12/31/2017	Invoiced & Other Contributions	Transfers	Benefits Paid	Net Investment Income	Admin Expenses	Balance as of 12/31/2018
Total	\$49,702,687.00	\$5,964,888.12	\$0.00	(\$7,201,095.20)	(\$1,950,963.01)	(\$100,705.67)	\$46,414,811.24

Outstanding Accounts Receivable at 12/31/2018: \$5,235.94

Municipal Employees' Retirement System of Michigan

Grand Traverse Co (2803) – All Divisions
Ad Hoc Projection Scenarios



February 14, 2019

In care of:
Municipal Employees' Retirement
System of Michigan
1134 Municipal Way
Lansing, Michigan 48917

The purpose of this report is to show the financial implications to the employer of different plan funding projection studies for Grand Traverse Co (2803) – All Divisions. The report consists of separate sections that correspond to the different plan scenarios being studied.

- An executive summary that describes the scenarios and provides a brief explanation of the results.
- Exhibits showing the long term contribution impact of the alternate scenario.
- Graphs showing the projected funded ratio and employer contribution under both the current and alternate scenario.
- An illustration of benefit payments

This report was prepared at the request of MERS on behalf of the municipality and is intended for use by the municipality and those designated or approved by the municipality. **The report may be provided to parties other than the municipality only in its entirety.** GRS is not responsible for unauthorized use of this report.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The valuation was based upon information furnished by MERS staff, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the municipality and MERS staff.

The Plan Document Article VI sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. This report was prepared using certain assumptions approved by the Board. The MERS Board adopted the actuarial assumptions based on the recommendations of the prior actuary. A description of these assumptions and methods can be found as follows:

- Plan Document, v03152018,
- Actuarial Policy, DOC 8062 (2018-05-01), and
- 2017 Appendix to the Annual Actuarial Valuation Report.

The Board is currently reviewing the Plan's economic assumptions and has a review of the demographic assumptions scheduled during 2019-2020. Changes resulting from these studies will have an impact on the level of calculated employer contributions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the municipality as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

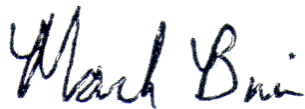
David T. Kausch and Mark Buis are Members of the American Academy of Actuaries (MAAA) and meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Sincerely,



David T. Kausch, FSA, FCA, EA, MAAA



Mark Buis, FSA, FCA, EA, MAAA

Table of Contents

Title	Pages
Executive Summary	1
Long Term Impact – Scenario 1	5
Long Term Impact – Scenario 2	7
Long Term Impact – Scenario 3	9
Long Term Impact – Scenario 4	11
Illustration of Benefit Payments	13
Important Comments	15

EXECUTIVE SUMMARY

Executive Summary

The purpose of this report is to show the financial implications to the employer of plan funding projection study for Grand Traverse Co (2803) – All Divisions. The following table summarizes each scenario modeled.

Scenario	Division	Description
Modified Baseline	All Divisions	<p>Current Defined Benefit (DB) provisions Division Status and Link Status: Closed, Linked</p> <p>Current DB provisions include updates to the 2017 Benefit Provisions (Table 2) for division 84, noted as follows: Benefit Multiplier: Bridged Benefit: 2.50% Multiplier (80% max) Frozen FAC; to 1.25% multiplier Bridged Benefit Date: 12/1/2017 COLA for Future Retirees: 2.50% (Non-compound) before 12/1/2017, 0.00% after 12/1/2017 Employee Contributions: 6% Other: Base wages</p>
1	All Divisions	<ul style="list-style-type: none"> • Provisions as modeled under the Modified Baseline • Assumed Long-Term Rate of Investment Return: 6.75% • Employer Contribution Amount: \$5.9M • Alternate Treatment of Surplus Assets
2	All Divisions	<ul style="list-style-type: none"> • Provisions as modeled under the Modified Baseline • Assumed Long-Term Rate of Investment Return: 6.75% • Employer Contribution Amount: \$6.5M • Alternate Treatment of Surplus Assets
3	All Divisions	<ul style="list-style-type: none"> • Provisions as modeled under the Modified Baseline • Assumed Long-Term Rate of Investment Return: 5.75% • Employer Contribution Amount: \$5.9M • Alternate Treatment of Surplus Assets
4	All Divisions	<ul style="list-style-type: none"> • Provisions as modeled under the Modified Baseline • Assumed Long-Term Rate of Investment Return: 5.75% • Employer Contribution Amount: \$7.0M • Alternate Treatment of Surplus Assets

Throughout the report the descriptions are understood to be as follows:

- **Modified Baseline:** This is the current DB plan after reflecting changes to the benefit provisions during the 2017 and 2018 calendar years. All other assumptions and methods reflect what was in use for the preparation of the December 31, 2017 annual valuation. In particular:
 - The modified baseline includes an assumed long-term rate of investment return of 7.75%,
 - The modified baseline reflects the continuation of extension of amortization period for the remaining Initial UAL (established as of 12/31/2015), and
 - The modified baseline assumes Surplus assets grow with interest and are not used to lower future employer contributions. The modified baseline projection includes the Surplus assets in this fashion because the use of these assets is discretionary by the employer and it is unknown when and how the employer will use the surplus assets. Once the employer uses the Surplus assets, any future employer contributions are expected to be lower than those shown in the projection.
- **Scenarios 1 - 4:** Each scenario reflects:
 - The provisions (as modeled under the Modified Baseline),
 - An alternate assumed long-term rate of investment return (as denoted in the chart above)
 - This return is used for projecting future market returns and also discounting valuation liabilities.
 - An alternate employer contribution amount, and
 - The employer contribution is assumed level in each of the 14 years remaining (2019 through 2032) on the Initial UAL (as denoted in the chart above), unless the calculated employer contribution is in excess of the level amount.
 - Following the expiration of the Initial UAL period, the calculated employer contribution is assumed to be made to the plan.
 - An alternate treatment of Surplus Assets.
 - In the event the level contribution exceeds the calculated employer contribution, the excess is contributed to an unassociated surplus division. In the event the minimum contributions exceed the proposed level dollar contribution, required contributions are drawn from the surplus division until the surplus balance is zero. If surplus assets are drawn down to \$0, the calculated employer contribution is assumed to be made directly.

The results of our calculations are shown in the following sections:

- The long term impact sections include projections to illustrate the potential financial impact of each option. Included in these sections are comparisons under the modified baseline and each alternate scenario as follows:
 - Tabular displays of the projected Actuarial Accrued Liability (AAL), Valuation Assets (VA), and Funded Ratio.
 - Graphical displays of the projected funded ratio.
 - Tabular and Graphical displays of the projected pattern of contributions.
- **Illustration of Benefit Payments** – At the request of MERS and the employer an exhibit including projected benefits, on a calendar year basis, has been added to the report. The projected benefits are based upon the Modified Baseline scenario.

Comments regarding the calculations:

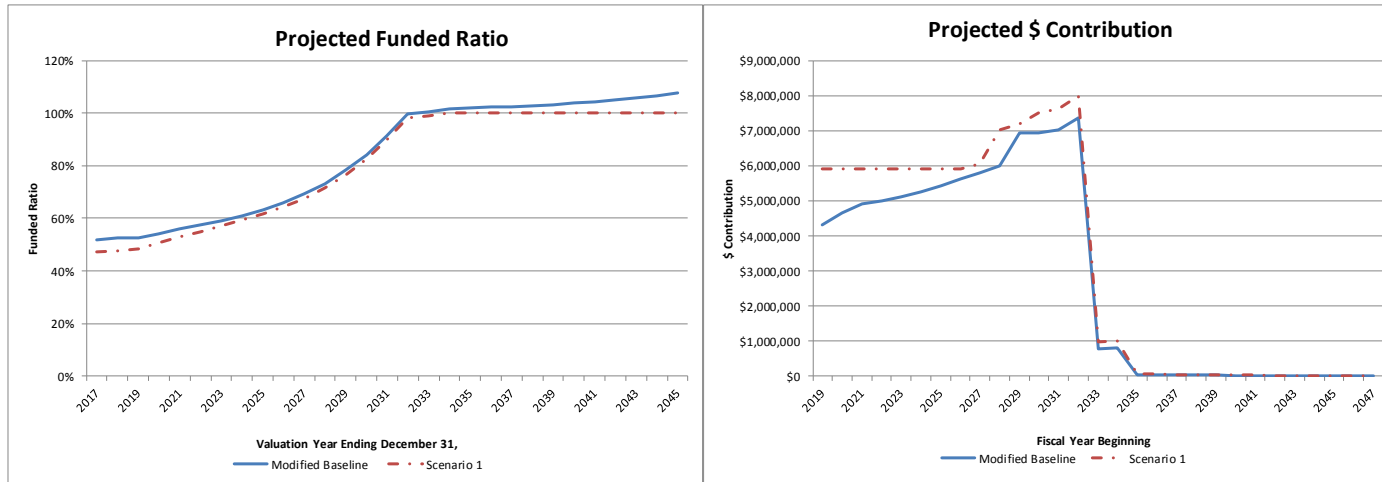
- There has been a change in actuary and actuarial software since the December 31, 2017 valuation. As a normal part of any actuarial transition, modeling the current benefits in new actuarial software may result in a change in value when compared to the published 2017 annual valuation. In order to isolate the impact of the proposed change, both the current and the proposed benefits columns were prepared in the new actuarial software.
- The proposed scenarios illustrated in this report are valued as if they occur on the valuation date, December 31, 2017. The results should not be used for short-term budgeting purposes. These projections illustrate the long term pattern of employer contributions for the purpose of comparing the financial implications of each plan design. A projection is not a prediction. Future costs will be determined by future actuarial valuations and may change based upon actual experience.
- In the modified baseline, layers (existing and future) will follow the schedule for Closed (not linked divisions) as outlined in the Actuarial Policy, unless the division received an amortization extension. In this instance the period for remaining initial UAL will decrease by one year each valuation until paid-off. In each scenario 1—4, all amortizations are reset to the remaining initial liability for purposes of illustration only.
- In each scenario 1 – 4:
 - Assets in the surplus division deplete in each scenario. The depletion date varies depending on the scenario:

Scenario	Depletion Year
1	2027
2	Never
3	2020
4	2031

- After the surplus is depleted, employer contributions increase to the required amount.

LONG TERM IMPACT – SCENARIO 1

Grand Traverse Co (2803) – All Divisions
Projections of Employer Contributions and Funded Ratios
Long Term Rate of Investment Return 6.75% Annual Contributions \$5.9 Million



Valuation Year Ending December 31,	Modified Baseline			Scenario 1			Fiscal Year Beginning January 1,	Modified Baseline	Scenario 1			Difference in Total Employer Contribution
	Actuarial Accrued Liability	Valuation Assets	Funded Ratio	Actuarial Accrued Liability	Valuation Assets	Funded Ratio		Total Employer Contribution	Employer Required Contribution	Surplus Division Contribution	Total Employer Contribution	
2017	\$96,800,000	\$50,300,000	52%	\$106,700,000	\$50,300,000	47%	2019	\$4,310,000	\$5,310,000	\$590,000	\$5,900,000	\$1,590,000
2018	97,100,000	51,200,000	53%	106,900,000	50,800,000	47%	2020	4,650,000	5,460,000	440,000	5,900,000	1,250,000
2019	97,300,000	51,100,000	52%	107,000,000	51,700,000	48%	2021	4,920,000	5,750,000	150,000	5,900,000	980,000
2020	97,400,000	52,700,000	54%	106,800,000	54,100,000	51%	2022	5,000,000	5,860,000	40,000	5,900,000	900,000
2021	97,200,000	54,400,000	56%	106,400,000	56,400,000	53%	2023	5,100,000	5,980,000	-80,000	5,900,000	800,000
2022	96,800,000	55,600,000	57%	105,700,000	58,200,000	55%	2024	5,260,000	6,170,000	-270,000	5,900,000	640,000
2023	96,100,000	56,800,000	59%	104,900,000	59,900,000	57%	2025	5,440,000	6,370,000	-470,000	5,900,000	460,000
2024	95,300,000	58,100,000	61%	103,700,000	61,500,000	59%	2026	5,610,000	6,580,000	-680,000	5,900,000	290,000
2025	94,200,000	59,700,000	63%	102,400,000	63,200,000	62%	2027	5,800,000	6,790,000	-730,000	6,060,000	260,000
2026	92,900,000	61,400,000	66%	100,800,000	64,800,000	64%	2028	6,000,000	7,010,000	0	7,010,000	1,010,000
2027	91,400,000	63,300,000	69%	99,000,000	66,600,000	67%	2029	6,940,000	7,190,000	0	7,190,000	250,000

Notes:

- (1) The results shown above are based on the December 31, 2017 assumptions without any phase-in.
- (2) A projection is not a prediction. Future costs will be determined by future valuations and may change based on actual experience.

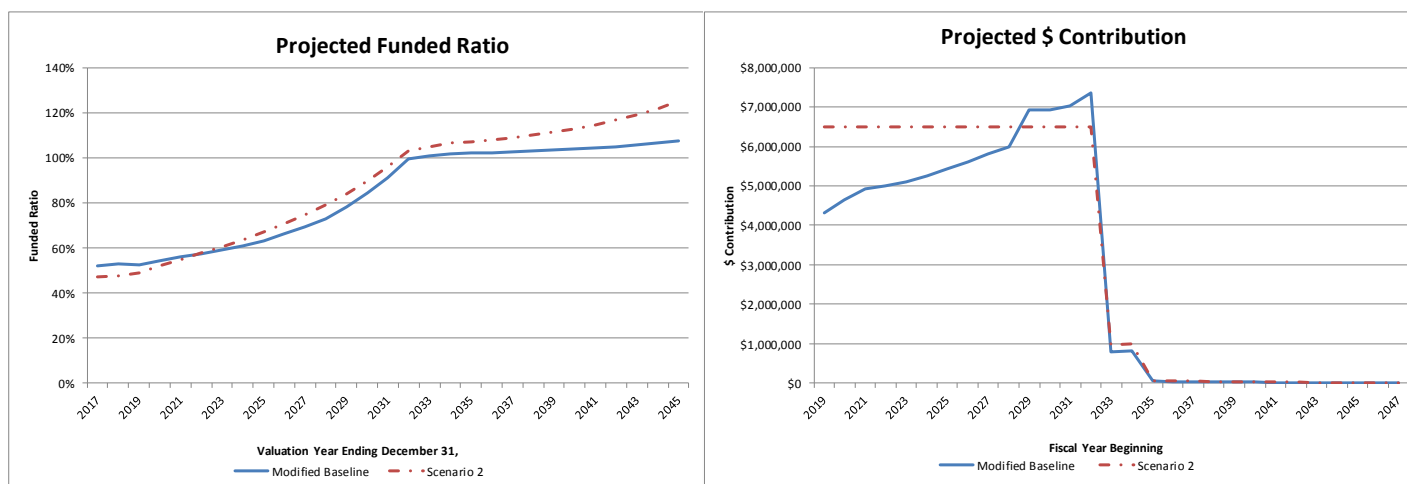
This report may be provided to parties other than the municipality only in its entirety.

LONG TERM IMPACT – SCENARIO 2

Grand Traverse Co (2803) – All Divisions

Projections of Employer Contributions and Funded Ratios

Long Term Rate of Investment Return 6.75% Annual Contributions \$6.5 Million



Valuation Year Ending December 31,	Modified Baseline			Scenario 2			Fiscal Year Beginning January 1,	Modified Baseline		Scenario 2			Difference in Total Employer Contribution
	Actuarial	Valuation Assets	Funded Ratio	Actuarial	Valuation Assets	Funded Ratio		Total	Employer	Surplus	Total		
	Accrued Liability			Accrued Liability				Employer Contribution	Required Contribution	Division Contribution	Employer Contribution		
2017	\$96,800,000	\$50,300,000	52%	\$106,700,000	\$50,300,000	47%	2019	\$4,310,000	\$5,310,000	\$1,190,000	\$6,500,000	\$2,190,000	
2018	97,100,000	51,200,000	53%	106,900,000	50,800,000	47%	2020	4,650,000	5,460,000	1,040,000	6,500,000	1,850,000	
2019	97,300,000	51,100,000	52%	107,000,000	52,300,000	49%	2021	4,920,000	5,750,000	750,000	6,500,000	1,580,000	
2020	97,400,000	52,700,000	54%	106,800,000	55,400,000	52%	2022	5,000,000	5,860,000	640,000	6,500,000	1,500,000	
2021	97,200,000	54,400,000	56%	106,400,000	58,400,000	55%	2023	5,100,000	5,980,000	520,000	6,500,000	1,400,000	
2022	96,800,000	55,600,000	57%	105,700,000	60,900,000	58%	2024	5,260,000	6,170,000	330,000	6,500,000	1,240,000	
2023	96,100,000	56,800,000	59%	104,900,000	63,400,000	60%	2025	5,440,000	6,370,000	130,000	6,500,000	1,060,000	
2024	95,300,000	58,100,000	61%	103,700,000	65,900,000	64%	2026	5,610,000	6,580,000	-80,000	6,500,000	890,000	
2025	94,200,000	59,700,000	63%	102,400,000	68,500,000	67%	2027	5,800,000	6,790,000	-290,000	6,500,000	700,000	
2026	92,900,000	61,400,000	66%	100,800,000	71,100,000	71%	2028	6,000,000	7,010,000	-510,000	6,500,000	500,000	
2027	91,400,000	63,300,000	69%	99,000,000	73,800,000	75%	2029	6,940,000	7,190,000	-690,000	6,500,000	-440,000	

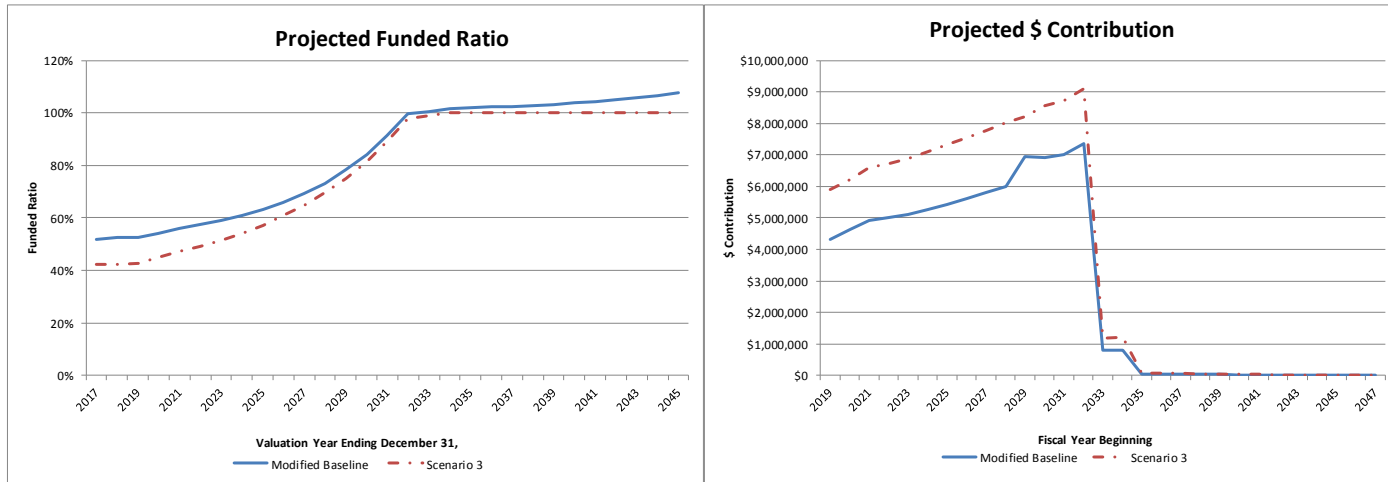
Notes:

- (1) The results shown above are based on the December 31, 2017 assumptions without any phase-in.
- (2) A projection is not a prediction. Future costs will be determined by future valuations and may change based on actual experience.

This report may be provided to parties other than the municipality only in its entirety.

LONG TERM IMPACT – SCENARIO 3

Grand Traverse Co (2803) – All Divisions
Projections of Employer Contributions and Funded Ratios
Long Term Rate of Investment Return 5.75% Annual Contributions \$5.9 Million



Valuation Year Ending December 31,	Modified Baseline			Scenario 3			Fiscal Year Beginning January 1,	Modified Baseline		Scenario 3		Difference in Total Employer Contribution
	Actuarial Accrued Liability	Valuation Assets	Funded Ratio	Actuarial Accrued Liability	Valuation Assets	Funded Ratio		Total Employer Contribution	Employer Required Contribution	Surplus Division Contribution	Total Employer Contribution	
2017	\$96,800,000	\$50,300,000	52%	\$118,500,000	\$50,300,000	42%	2019	\$4,310,000	\$6,090,000	-\$190,000	\$5,900,000	\$1,590,000
2018	97,100,000	51,200,000	53%	118,500,000	50,300,000	42%	2020	4,650,000	6,300,000	-90,000	6,210,000	1,560,000
2019	97,300,000	51,100,000	52%	118,300,000	50,700,000	43%	2021	4,920,000	6,600,000	0	6,600,000	1,680,000
2020	97,400,000	52,700,000	54%	117,900,000	52,900,000	45%	2022	5,000,000	6,730,000	0	6,730,000	1,730,000
2021	97,200,000	54,400,000	56%	117,200,000	55,300,000	47%	2023	5,100,000	6,880,000	0	6,880,000	1,780,000
2022	96,800,000	55,600,000	57%	116,300,000	57,300,000	49%	2024	5,260,000	7,100,000	0	7,100,000	1,840,000
2023	96,100,000	56,800,000	59%	115,100,000	59,400,000	52%	2025	5,440,000	7,320,000	0	7,320,000	1,880,000
2024	95,300,000	58,100,000	61%	113,600,000	61,600,000	54%	2026	5,610,000	7,540,000	0	7,540,000	1,930,000
2025	94,200,000	59,700,000	63%	112,000,000	64,100,000	57%	2027	5,800,000	7,780,000	0	7,780,000	1,980,000
2026	92,900,000	61,400,000	66%	110,000,000	66,900,000	61%	2028	6,000,000	8,030,000	0	8,030,000	2,030,000
2027	91,400,000	63,300,000	69%	107,800,000	70,000,000	65%	2029	6,940,000	8,230,000	0	8,230,000	1,290,000

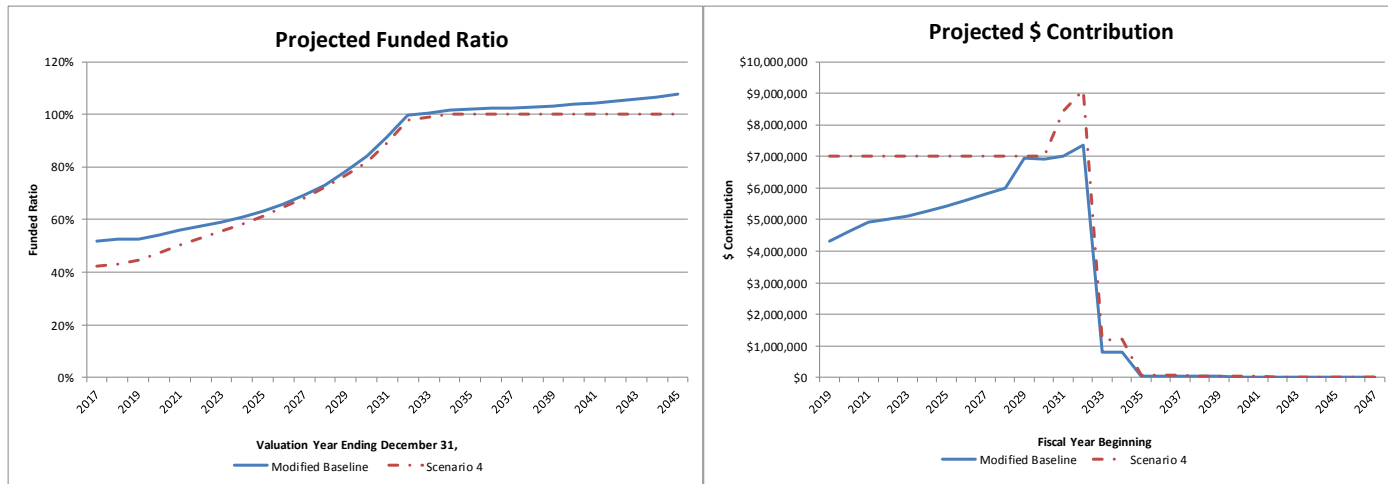
Notes:

- (1) The results shown above are based on the December 31, 2017 assumptions without any phase-in.
- (2) A projection is not a prediction. Future costs will be determined by future valuations and may change based on actual experience.

This report may be provided to parties other than the municipality only in its entirety.

LONG TERM IMPACT – SCENARIO 4

Grand Traverse Co (2803) – All Divisions
Projections of Employer Contributions and Funded Ratios
Long Term Rate of Investment Return 5.75% Annual Contributions \$7.0 Million



Valuation Year Ending December 31,	Modified Baseline			Scenario 4			Fiscal Year Beginning January 1,	Modified Baseline	Scenario 4			Difference in Total Employer Contribution
	Actuarial	Valuation Assets	Funded Ratio	Actuarial	Valuation Assets	Funded Ratio		Total	Employer	Surplus	Total	
	Accrued Liability			Accrued Liability				Employer Contribution	Required Contribution	Division Contribution	Employer Contribution	
2017	\$96,800,000	\$50,300,000	52%	\$118,500,000	\$50,300,000	42%	2019	\$4,310,000	\$6,090,000	\$910,000	\$7,000,000	\$2,690,000
2018	97,100,000	51,200,000	53%	118,500,000	51,200,000	43%	2020	4,650,000	6,300,000	700,000	7,000,000	2,350,000
2019	97,300,000	51,100,000	52%	118,300,000	52,800,000	45%	2021	4,920,000	6,600,000	400,000	7,000,000	2,080,000
2020	97,400,000	52,700,000	54%	117,900,000	55,900,000	47%	2022	5,000,000	6,730,000	270,000	7,000,000	2,000,000
2021	97,200,000	54,400,000	56%	117,200,000	58,900,000	50%	2023	5,100,000	6,880,000	120,000	7,000,000	1,900,000
2022	96,800,000	55,600,000	57%	116,300,000	61,400,000	53%	2024	5,260,000	7,100,000	-100,000	7,000,000	1,740,000
2023	96,100,000	56,800,000	59%	115,100,000	63,800,000	55%	2025	5,440,000	7,320,000	-320,000	7,000,000	1,560,000
2024	95,300,000	58,100,000	61%	113,600,000	66,200,000	58%	2026	5,610,000	7,540,000	-540,000	7,000,000	1,390,000
2025	94,200,000	59,700,000	63%	112,000,000	68,700,000	61%	2027	5,800,000	7,780,000	-780,000	7,000,000	1,200,000
2026	92,900,000	61,400,000	66%	110,000,000	71,200,000	65%	2028	6,000,000	8,030,000	-1,030,000	7,000,000	1,000,000
2027	91,400,000	63,300,000	69%	107,800,000	73,700,000	68%	2029	6,940,000	8,230,000	-1,230,000	7,000,000	60,000

Notes:

- (1) The results shown above are based on the December 31, 2017 assumptions without any phase-in.
- (2) A projection is not a prediction. Future costs will be determined by future valuations and may change based on actual experience.

This report may be provided to parties other than the municipality only in its entirety.

ILLUSTRATION OF BENEFIT PAYMENTS

Grand Traverse Co (2803) – All Divisions
Projected Benefit Payments - Based on Modified Baseline

Year Ending December 31,	Projected Benefit Payments
2018	\$7,226,408
2019	7,404,015
2020	7,549,682
2021	7,757,790
2022	7,940,216
2023	8,088,868
2024	8,249,666
2025	8,332,305
2026	8,470,641
2027	8,570,258
2028	8,670,612
2029	8,733,147
2030	8,761,600
2031	8,828,137
2032	8,849,028
2033	8,780,817
2034	8,692,254
2035	8,558,947
2036	8,431,781
2037	8,231,945
2038	8,046,122
2039	7,834,307
2040	7,573,056
2041	7,293,464
2042	6,999,288
2043	6,691,102
2044	6,359,533
2045	6,024,440
2046	5,684,042

IMPORTANT COMMENTS

Important Comments

1. The liabilities were calculated using the actuarial assumptions and methods adopted by the MERS Retirement Board and do not assume 100% retirement when first eligible. Actuarial assumptions and methods do not determine the cost of the benefits provided; they only impact the pattern of employer contributions. If future experience is unfavorable compared to the assumptions used, employer contribution rates will increase in future years, and vice versa. For example, if members retire when first eligible, the actual liabilities would be higher than calculated resulting in higher employer contributions.
2. The actuarial value of assets used to determine both the funded ratio and the required employer contribution is based on a smoothed value of assets. Only a portion of each year's investment market gain or loss is recognized in the current actuarial value of assets; the remaining portions of gains and losses will be reflected in future years' actuarial value of assets. This reduces the asset volatility impact on the determination of the required employer contribution and funded ratio. The smoothed actuarial rate of return for 2017 was 6.08%.

As of December 31, 2017, the actuarial value of assets is 101% of market value. This means that there is a net outstanding asset loss that is not yet recognized in the actuarial value of assets. Absent future asset gains offsetting, the net outstanding asset loss will be recognized in future actuarial valuations and is expected to decrease funded ratios and increase employer contribution requirements.

3. Unless otherwise indicated, a funded status measurement is based upon the actuarial accrued liability and the actuarial value of assets. The measurement is:
 - a. Inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
 - b. Inappropriate for assessing benefit security for the membership.
 - c. Dependent upon the actuarial cost method which, in combination with the amortization policy and asset valuation method, affects the timing and amounts of future contributions. The amounts of future contributions will differ from those assumed due to future actual experience differing from assumed.

A funded status measurement of 100% is not synonymous with no required future contributions. If the funded status were 100%, the Plan would still require future normal cost contributions (i.e., the cost of the active membership accruing an additional year of service credit).

4. The funded status shows the relationship of the assets to the amount needed to fund past service benefits, the actuarial accrued liability under valuation assumptions.
5. Contribution requirements take into consideration prior service with other MERS entities (for eligibility service only), reflected in the difference between benefit and vesting service. If members have service not reflected on the results page (e.g., prior MERS or Act 88 service), the unfunded liabilities and employer contributions may be understated.

Important Comments (Concluded)

6. The actuaries' understanding of the default invoicing procedure is that a percent of pay employer contribution is applied for open divisions and a dollar amount is applied for closed divisions.
7. The results of separate actuarial valuations generally cannot be added together to produce a correct estimate of the employer contributions. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions and assumptions used.
8. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.
9. The calculations are based upon assumptions regarding future events, which may or may not materialize and proposed plan provisions. The actual impact of the proposed plan change(s) will change over time as actual experience emerges. Contact your MERS representative at 800-767-MERS if you believe that:
 - a. The assumptions are unreasonable,
 - b. The plan provisions are missing or incorrectly described,
 - c. Conditions have changed since the calculations were made,
 - d. The information provided in this report is inaccurate or is in any way incomplete, or
 - e. You need further information to make an informed decision.
10. Unless otherwise noted, the following information, assumptions, and funding methods were used in the projections under the various options:
 - a. Demographic, financial information, and benefit provisions provided by MERS for the December 31, 2017 valuation.
 - b. The assumptions and methods used in the December 31, 2017 annual valuation.
 - c. All demographic assumptions will be met during the projection period.
 - d. If new hires are included in the valuation, the active population is assumed to remain stable during the projection period.
 - e. Demographic assumptions under the DC plan are unchanged from those of the DB plan, if applicable.
 - f. The Market Value of Assets will earn the assumed investment return each year during the projection period.
 - g. There will be no benefit changes during the projection period.
 - h. The employer contributions through December 31, 2018 are not affected, and are based on previous annual actuarial valuations.



Nathan Alger <nalger@grandtraverse.org>

Fwd: MERS CEO News - March 2019

4 messages

Dean Bott <dbott@grandtraverse.org>

Fri, Mar 8, 2019 at 5:44 PM

To: Nate Alger <nalger@grandtraverse.org>, Christopher Forsyth <cforsyth@grandtraverse.org>

You may have also received this information today but just in case you did not receive it I wanted you to have it.

----- Forwarded message -----

From: **Chris DeRose** <ChrisDeRose@mersofmich.com>

Date: Fri, Mar 8, 2019 at 4:15 PM

Subject: MERS CEO News - March 2019

To: Dean Bott <dbott@grandtraverse.org>

Having
trouble
viewing
this
email?
[View it in
your
browser.](#)



Updates from MERS

Dear Dean,

In today's ever-changing world, it is a fiscal best practice to review economic assumptions more frequently so Defined Benefit Plans can make incremental changes on an ongoing basis. At MERS, part of our fiduciary responsibility is providing this analysis.

As you know, required contributions in a Defined Benefit Plan are calculated by an accredited actuary using assumptions about future events. These assumptions fall into two broad categories; economic and demographic. As we've communicated previously (click [here](#) to see prior communications), MERS began to review our economic assumptions last year. We've heard your feedback that having advanced notification of these changes is important to you.



MERS CEO
Chris DeRose

At their meeting last week, the MERS Retirement Board, acting on the recommendations of our independent actuary, Gabriel Roeder & Smith, updated key economic assumptions (investment return and wage inflation assumptions). Public retirement systems, like MERS, follow a process for establishing economic assumptions that consider various financial, economic and market factors, and is based on a long-term view. When determining these assumptions, the actuary factors in future economic conditions based on current market data, expert opinions and investment consultant expectations. In addition, the actuaries must follow guidelines set forth by the Actuarial Standards Board in Actuarial Standards of Practice (ASOP).

Resources

- [MERS Administrative and Policy Change Log](#)

Investment Return Assumption

While MERS has historically met our assumed rate of return over the long-term (click [here](#) for additional information), expected future investment returns are forecasted to be considerably lower due to historically low interest rates and high equity market valuations. **Based on this expectation, MERS will be reducing our investment assumption from 7.75% to 7.35%.** This adjustment reflects a change in long-term trends, and will continue to be monitored closely.

Wage Inflation Assumption

Wage inflation is often confused with pay or salary increases. However, wage inflation is an assumption that considers large-scale economic factors and is made up of both price inflation (2.50%) and real wage growth (0.50%). In other words, wage inflation reflects overall payroll growth over the long-term. **MERS will be reducing our wage inflation assumption from 3.75% to 3.00%.**

When will you know the impact to your plan?

You will be provided information on these changes in your Annual Actuarial Valuation that will be delivered by the end of June 2019. It's important to note that these changes **won't impact required contributions until 2021. We are providing you this information now to help you plan ahead.** While assumption adjustments typically mean higher contributions, it also means you are adequately funding the benefits promised.

In addition, the review of our **demographic assumptions** will begin later this year. It is still a best practice to review these assumptions with a standard of five years of data in order to ensure the information is statistically sound. Based on industry trends, we are forecasting continued increases in participant longevity. Any changes to the demographic assumptions will be announced in 2020, with an impact to required contributions in 2022.

I understand these changes may affect your local unit of government financially, and I want you to know we are here to help. We have proven

strategies to address unfunded liability and a broad range of customizable plans that can meet your needs. In the coming months there will be additional information and resources shared with you. In the meantime, I encourage you to reach out to your Regional Manager with any questions at 800.767.MERS (6377).

Sincerely,



MERS CEO

Chris DeRose

ChrisDeRose@mersofmich.com

Like "MERS of Michigan" on Facebook for more retirement planning tips and resources.



You're receiving this newsletter because you're a member of MERS of Michigan.
This email was sent to dbott@grandtraverse.org.

Municipal Employees' Retirement System (MERS) of Michigan
[1134 Municipal Way](#)
Lansing MI 48917

www.mersofmich.com
PH: 800.767.MERS (6377)

[Forward this email to a friend.](#)

To help ensure that you continue to receive your MERS CEO Update emails, please add this email address to your address book, contacts or "Safe Senders" list.

The information contained in this message is being made available as a public service. The information is not intended to constitute legal or investment advice, or to replace official versions of that information. Benefit Estimates or Service Credit Purchase estimates requested through this message are not official descriptions of any benefits, and do not represent a promise by MERS to provide any benefit(s) to any person(s). No one can detrimentally rely upon the information provided in, or requested through this message. MERS reserves the right to correct any errors, and presents this information without warranties, express or implied, regarding the information's accuracy, timeliness or completeness. If you believe the information is inaccurate, out-of-date, or incomplete, or if you have problems accessing or reading the information, call MERS at 800.767.MERS (6377). Not interested in receiving MERS event emails anymore? [Unsubscribe Instantly](#). [Privacy Policy](#).

Nathan Alger <nalger@grandtraverse.org>
To: Dean Bott <dbott@grandtraverse.org>
Cc: Christopher Forsyth <cforsyth@grandtraverse.org>

Fri, Mar 8, 2019 at 9:45 PM

Nope. Odd that they only went to 7.35%. It makes me think they know something about this business that I don't. Unlikely with my vast experience in investments, etc....(A little levity) Or they are criminals. One or the other. No other options possible. At all. Period.

Have a good weekend.

Nate

[Quoted text hidden]

--

Nate Alger
Grand Traverse County Administrator
231-922-4780

Dean Bott <dbott@grandtraverse.org>
To: Nate Alger <nalger@grandtraverse.org>

Sat, Mar 9, 2019 at 9:59 AM

At least we know what they plan on doing. We should plan on staying ahead of our current amortization/funding plan as we have discussed.

[Quoted text hidden]

Christopher Forsyth <cforsyth@grandtraverse.org>
To: Nathan Alger <nalger@grandtraverse.org>
Cc: Dean Bott <dbott@grandtraverse.org>

Sat, Mar 9, 2019 at 10:31 AM

I am not surprised by this but expected MERS to wait until the 2020 experience study --which leads me to ask -- will MERS lower the rate again in 2020 as part of the study? The positive though is wage inflation assumption, which was lowered. We know a 7.35 rate impacts our liability but does a lower wage inflation assumption off set the lower rate?

[Quoted text hidden]

--

Christopher J. Forsyth
Deputy County Administrator
Grand Traverse County Administration
[400 Boardman Avenue](#)
[Traverse City, MI 49684](#)
Office: 231 922-4780
cforsyth@grandtraverse.org

The information contained in this communication is solely for the use of the intended recipient. If the reader of this message is not the intended recipient, the reader is notified that any use, dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately destroy it and notify the above by telephone at (231) 922-4780.

Municipal Employees' Retirement System of Michigan

Grand Traverse Co (2803) - Divisions 01, 18
Retirement Plan Options



February 6, 2019

In care of:
Municipal Employees' Retirement System of Michigan
1134 Municipal Way
Lansing, Michigan 48917

The purpose of this report is to show the financial implications to the employer of different retirement plan design options for Grand Traverse Co (2803) – Divisions 01, 18. The report consists of separate sections that correspond to the different plan options under consideration. Each section contains the following additional detail:

- An executive summary that describes the plan provisions and provides a brief explanation of the results.
- An exhibit showing the short-term impact of the proposed benefit change – that is, the net impact on the applicable fiscal year's contribution (this exhibit is only shown for supplemental valuations and supplemental valuations with bridge benefits).

This report was prepared at the request of MERS on behalf of the municipality and is intended for use by the municipality and those designated or approved by the municipality. **The report may be provided to parties other than the municipality only in its entirety.** GRS is not responsible for unauthorized use of this report.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The valuation was based upon information furnished by MERS staff, concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the municipality and MERS staff.

The Plan Document Article VI sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. This report was prepared using certain assumptions approved by the Board. The MERS Board adopted the actuarial assumptions based on the recommendations of the prior actuary. A description of these assumptions and methods can be found as follows:

- Plan Document, v03152018,
- Actuarial Policy, DOC 8062 (2018-05-01), and
- 2017 Appendix to the Annual Actuarial Valuation Report.

The Board is currently reviewing the Plan's economic assumptions and has a review of the demographic assumptions scheduled during 2019-2020. Changes resulting from these studies will have an impact on the level of calculated employer contributions.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the municipality as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

David T. Kausch and Shana M. Neeson are Members of the American Academy of Actuaries (MAAA) and meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Sincerely,



David T. Kausch, FSA, FCA, EA, MAAA



Shana M. Neeson, ASA, FCA, MAAA



Table of Contents

Title	Pages
Supplemental Valuation Results	1
Important Comments.....	6

Supplemental Valuation Results

Executive Summary

The purpose of this report is to show the impact on the liabilities and contributions of the proposed benefit changes for Grand Traverse Co (2803) – Divisions 01, 18. The following proposed benefit changes have been considered:

Division	Proposed Change in Benefit
Gnrl Tmstr (01)	Carve-Out
New	Carve-In (From 01)
Exempt (18)	Carve-Out
New	Carve-In (From 18)



There has been a change in actuary and actuarial software since the December 31, 2017 valuation. As a normal part of any actuarial transition, modeling the current benefits in new actuarial software may result in a change in value when compared to the published 2017 annual valuation. In order to isolate the impact of the proposed change, both the current and the proposed benefits columns were prepared in the new actuarial software.

The results of our calculations are shown as follows:

- The exhibits immediately following this page show the short-term impact of the proposed benefit change (i.e., the change in the Actuarial Accrued Liability [AAL] as of December 31, 2017 and the change in the employer contribution for the fiscal year beginning January 1, 2019).

Grand Traverse Co (2803) – Gnrl Tmstr (01)
Employer Computed Contributions
Based on the 12/31/2017 Annual Actuarial Valuation

	Before Carveout		After Carveout		Difference	
Benefits						
a) Benefit Multiplier	Bridged Benefit (See Below)		Bridged Benefit (See Below)			
b) Normal Retirement Age	60		60			
c) Vesting	6 years		6 years			
d) Early Retirement (Unreduced)	55/25		55/25			
e) Early Retirement (Unreduced)	-		-			
f) Early Retirement (Reduced)	50/25		50/25			
g) Early Retirement (Reduced)	55/15		55/15			
h) Final Average Compensation	3 years		3 years			
i) COLA for Future Retirees	Bridged Benefit (See Below)		Bridged Benefit (See Below)			
j) COLA for Current Retirees	-		-			
k) Normal Form of Payment	-		-			
l) Death and Disability (D-2)	-		-			
m) Member Contribution Rate	6.00%		6.00%			
n) Other	-		-			
Participant Summary						
a) Active	2		2		0	
b) Vested Former Members	9		7		(2)	
c) Retired	66		61		(5)	
d) Total	77		70		(7)	
e) Annual Payroll	\$88,650		\$88,650		\$0	
Results						
1. Determination of Unfunded Accrued Liabilities and Funded Percent						
a. Present Value of Future Benefits (Active) ¹	\$347,831		\$347,831		\$0	
b. Present Value of Future Normal Costs (Active) ²	32,009		32,009		0	
c. Accrued Liability ³						
i. Active Employees [1.a. - 1.b.]	\$315,822		\$315,822		\$0	
ii. Vested Former Employees	523,613		278,323		(245,290)	
iii. Retirees and Beneficiaries	10,144,968		9,335,815		(809,153)	
iv. Pending Refunds	0		0		0	
v. Total	\$10,984,403		\$9,929,960		(\$1,054,443)	
d. Actuarial Value of Assets	\$5,645,155		\$5,103,251		(\$541,904)	
e. Unfunded Accrued Liability (UAL) [1.c.v. - 1.d.]	\$5,339,248		\$4,826,709		(\$512,539)	
f. Division Percent Funded [1.d. / 1.c.v.]	51.4%		51.4%		0.0%	
2. Employer Contribution Development ⁴	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll
a. Total Normal Cost ⁵	\$6,120	7.00%	\$6,120	7.00%	\$0	0.00%
b. Employee Contribution Rate	5,244	6.00%	5,244	6.00%	0	0.00%
c. Employer Normal Cost [2.a - 2.b.]	876	1.00%	876	1.00%	0	0.00%
d. Amortization of UAL ⁶	462,228	-	417,864	-	(44,364)	-
e. Employer Contribution ⁷ [2.c. + 2.d., not less than 0]	\$463,104	-	\$418,740	-	(\$44,364)	-
Miscellaneous and Technical Assumptions						
1. Increase in Final Compensation	0.00 %		0.00 %			
2. Withdrawal Rate Scaling Factor	120 %		120 %			

¹ The total value, in today's dollars, of benefits expected to be earned by the current active population and paid in the future.

² The portion of the present value of future benefits for current active members, expected to be earned after the valuation date.

³ The portion of the present value of future benefits for current active members, earned through the valuation date.

⁴ Percentages of pay are not developed for a closed division.

⁵ The total normal cost is the ongoing cost of the plan under the applicable benefit structure.

⁶ Refer to the valuation Appendix, on the MERS website, for a description of the amortization policy.

⁷ Note that the results shown are based on the December 31, 2017 assumptions without any phase-in.

Bridged Benefit Description:

Benefit Multiplier To Bridge Date:	2.50% Multiplier (80% max)
Benefit Multiplier On/After Bridge Date:	1.25% Multiplier (no max)
Bridge Date:	November 30, 2017
FAC Type:	Frozen FAC
Bridge Benefit Max:	80% of FAC at Termination of Employment
COLA for Future Retirees To Bridge Date:	2.50% (Non-compound)
COLA for Future Retirees On/After Bridge Date:	0.00%
COLA Bridge Date:	December 1, 2017

This report may be provided to parties other than the municipality only in its entirety.

Grand Traverse Co (2803) – New from 01
Employer Computed Contributions
Based on the 12/31/2017 Annual Actuarial Valuation

Benefits	Before Carveout		After Carveout		Difference	
a) Benefit Multiplier	-		Bridged Benefit (See Below)		Bridged Benefit (See Below)	
b) Normal Retirement Age	-		60		60	
c) Vesting	-		6 years		6 years	
d) Early Retirement (Unreduced)	-		55/25		55/25	
e) Early Retirement (Unreduced)	-		-		-	
f) Early Retirement (Reduced)	-		50/25		50/25	
g) Early Retirement (Reduced)	-		55/15		55/15	
h) Final Average Compensation	-		3 years		3 years	
i) COLA for Future Retirees	-		Bridged Benefit (See Below)		Bridged Benefit (See Below)	
j) COLA for Current Retirees	-		-		-	
k) Normal Form of Payment	-		-		-	
l) Death and Disability (D-2)	-		-		-	
m) Member Contribution Rate	-		6.00%		6.00%	
n) Other	-		-		-	
Participant Summary						
a) Active	0		0		0	
b) Vested Former Members	0		2		2	
c) Retired	0		5		5	
d) Total	0		7		7	
e) Annual Payroll	\$0		\$0		\$0	
Results						
1. Determination of Unfunded Accrued Liabilities and Funded Percent						
a. Present Value of Future Benefits (Active) ¹	\$0		\$0		\$0	
b. Present Value of Future Normal Costs (Active) ²	0		0		0	
c. Accrued Liability ³						
i. Active Employees [1.a. - 1.b.]	\$0		\$0		\$0	
ii. Vested Former Employees	0		245,290		245,290	
iii. Retirees and Beneficiaries	0		809,153		809,153	
iv. Pending Refunds	0		0		0	
v. Total	\$0		\$1,054,443		\$1,054,443	
d. Actuarial Value of Assets	\$0		\$541,904		\$541,904	
e. Unfunded Accrued Liability (UAL) [1.c.v. - 1.d.]	\$0		\$512,539		\$512,539	
f. Division Percent Funded [1.d. / 1.c.v.]	0.0%		51.4%		51.4%	
2. Employer Contribution Development ⁴						
	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll
a. Total Normal Cost ⁵	\$0	0.00%	\$0	0.00%	\$0	0.00%
b. Employee Contribution Rate	0	0.00%	0	0.00%	0	0.00%
c. Employer Normal Cost [2.a - 2.b.]	0	0.00%	0	0.00%	0	0.00%
d. Amortization of UAL ⁶	0	0.00%	44,364	-	44,364	-
e. Employer Contribution ⁷ [2.c. + 2.d., not less than 0]	\$0	-	\$44,364	-	\$44,364	-
Miscellaneous and Technical Assumptions						
1. Increase in Final Compensation	0.00 %		0.00 %		120 %	
2. Withdrawal Rate Scaling Factor	0 %		120 %			

¹ The total value, in today's dollars, of benefits expected to be earned by the current active population and paid in the future.

² The portion of the present value of future benefits for current active members, expected to be earned after the valuation date.

³ The portion of the present value of future benefits for current active members, earned through the valuation date.

⁴ Percentages of pay are not developed for a closed division.

⁵ The total normal cost is the ongoing cost of the plan under the applicable benefit structure.

⁶ Refer to the valuation Appendix, on the MERS website, for a description of the amortization policy.

⁷ Note that the results shown are based on the December 31, 2017 assumptions without any phase-in.

Bridged Benefit Description:

Benefit Multiplier To Bridge Date:	2.50% Multiplier (80% max)
Benefit Multiplier On/After Bridge Date:	1.25% Multiplier (no max)
Bridge Date:	November 30, 2017
FAC Type:	Frozen FAC
Bridge Benefit Max:	80% of FAC at Termination of Employment
COLA for Future Retirees To Bridge Date:	2.50% (Non-compound)
COLA for Future Retirees On/After Bridge Date:	0.00%
COLA Bridge Date:	December 1, 2017

This report may be provided to parties other than the municipality only in its entirety.

Grand Traverse Co (2803) – Exempt (18)
Employer Computed Contributions
Based on the 12/31/2017 Annual Actuarial Valuation

Benefits	Before Carveout		After Carveout		Difference	
a) Benefit Multiplier	Bridged Benefit (See Below)		Bridged Benefit (See Below)			
b) Normal Retirement Age	60		60			
c) Vesting	8 years		8 years			
d) Early Retirement (Unreduced)	55/25		55/25			
e) Early Retirement (Unreduced)	-		-			
f) Early Retirement (Reduced)	50/25		50/25			
g) Early Retirement (Reduced)	55/15		55/15			
h) Final Average Compensation	3 years		3 years			
i) COLA for Future Retirees	2.50% (Non-compound)		2.50% (Non-compound)			
j) COLA for Current Retirees	-		-			
k) Normal Form of Payment	-		-			
l) Death and Disability (D-2)	-		-			
m) Member Contribution Rate	6.00%		6.00%			
n) Other	-		-			
Participant Summary						
a) Active	4		3		(1)	
b) Vested Former Members	1		1		0	
c) Retired	33		32		(1)	
d) Total	38		36		(2)	
e) Annual Payroll	\$250,136		\$171,661		(\$78,475)	
Results						
1. Determination of Unfunded Accrued Liabilities and Funded Percent						
a. Present Value of Future Benefits (Active) ¹	\$1,351,300		\$1,005,913		(\$345,387)	
b. Present Value of Future Normal Costs (Active) ²	80,670		58,386		(22,284)	
c. Accrued Liability ³						
i. Active Employees [1.a. - 1.b.]	\$1,270,630		\$947,527		(\$323,103)	
ii. Vested Former Employees	221,082		221,082		0	
iii. Retirees and Beneficiaries	13,329,217		13,092,637		(236,580)	
iv. Pending Refunds	0		0		0	
v. Total	\$14,820,929		\$14,261,246		(\$559,683)	
d. Actuarial Value of Assets	\$6,932,497		\$6,670,705		(\$261,792)	
e. Unfunded Accrued Liability (UAL) [1.c.v. - 1.d.]	\$7,888,432		\$7,590,541		(\$297,891)	
f. Division Percent Funded [1.d. / 1.c.v.]	46.8%		46.8%		0.0%	
2. Employer Contribution Development ⁴	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll
a. Total Normal Cost ⁵	\$16,728	7.54%	\$11,676	7.17%	(\$5,052)	(0.37%)
b. Employee Contribution Rate	13.308	6.00%	9.768	6.00%	(3,540)	0.00%
c. Employer Normal Cost [2.a - 2.b.]	3,420	1.54%	1,908	1.17%	(1,512)	(0.37%)
d. Amortization of UAL ⁶	685,848	-	659,952	-	(25,896)	-
e. Employer Contribution ⁷ [2.c. + 2.d., not less than 0]	\$689,268	-	\$661,860	-	(\$27,408)	-
Miscellaneous and Technical Assumptions						
1. Increase in Final Compensation	2.00 %		2.00 %			
2. Withdrawal Rate Scaling Factor	120 %		120 %			

¹ The total value, in today's dollars, of benefits expected to be earned by the current active population and paid in the future.

² The portion of the present value of future benefits for current active members, expected to be earned after the valuation date.

³ The portion of the present value of future benefits for current active members, earned through the valuation date.

⁴ Percentages of pay are not developed for a closed division.

⁵ The total normal cost is the ongoing cost of the plan under the applicable benefit structure.

⁶ Refer to the valuation Appendix, on the MERS website, for a description of the amortization policy.

⁷ Note that the results shown are based on the December 31, 2017 assumptions without any phase-in.

Bridged Benefit Description:

Benefit Multiplier To Bridge Date:	2.50% Multiplier (80% max)
Benefit Multiplier On/After Bridge Date:	1.25% Multiplier (no max)
Bridge Date:	December 30, 2016
FAC Type:	Frozen FAC
Bridge Benefit Max:	80% of FAC at Termination of Employment

This report may be provided to parties other than the municipality only in its entirety.

Grand Traverse Co (2803) – New from 18
Employer Computed Contributions
Based on the 12/31/2017 Annual Actuarial Valuation

Benefits		Before Carveout	After Carveout	Difference
a)	Benefit Multiplier	-	Bridged Benefit (See Below)	Bridged Benefit (See Below)
b)	Normal Retirement Age	-	60	60
c)	Vesting	-	8 years	8 years
d)	Early Retirement (Unreduced)	-	55/25	55/25
e)	Early Retirement (Unreduced)	-	-	-
f)	Early Retirement (Reduced)	-	50/25	50/25
g)	Early Retirement (Reduced)	-	55/15	55/15
h)	Final Average Compensation	-	3 years	3 years
i)	COLA for Future Retirees	-	2.50% (Non-compound)	2.50% (Non-compound)
j)	COLA for Current Retirees	-	-	-
k)	Normal Form of Payment	-	-	-
l)	Death and Disability (D-2)	-	-	-
m)	Member Contribution Rate	-	6.00%	6.00%
n)	Other	-	-	-
Participant Summary				
a)	Active	0	1	1
b)	Vested Former Members	0	0	0
c)	Retired	0	1	1
d)	Total	0	2	2
e)	Annual Payroll	\$0	\$78,475	\$78,475
Results				
1. Determination of Unfunded Accrued Liabilities and Funded Percent				
a.	Present Value of Future Benefits (Active) ¹	\$0	\$345,387	\$345,387
b.	Present Value of Future Normal Costs (Active) ²	0	22,284	22,284
c.	Accrued Liability ³			
i.	Active Employees [1.a. - 1.b.]	\$0	\$323,103	\$323,103
ii.	Vested Former Employees	0	0	0
iii.	Retirees and Beneficiaries	0	236,579	236,579
iv.	Pending Refunds	0	0	0
v.	Total	\$0	\$559,682	\$559,682
d.	Actuarial Value of Assets	\$0	\$261,792	\$261,792
e.	Unfunded Accrued Liability (UAL) [1.c.v. - 1.d.]	\$0	\$297,890	\$297,890
f.	Division Percent Funded [1.d. / 1.c.v.]	0.0%	46.8%	46.8%
2. Employer Contribution Development ⁴				
	As an Annual \$	As a % of payroll	As an Annual \$	As a % of payroll
a.	Total Normal Cost ⁵	\$0	\$4,980	\$4,980
b.	Employee Contribution Rate	0.00%	8.44%	8.44%
c.	Employer Normal Cost [2.a - 2.b.]	0	3,540	3,540
d.	Amortization of UAL ⁶	0.00%	6.00%	6.00%
e.	Employer Contribution ⁷ [2.c. + 2.d., not less than 0]	0	1,440	1,440
		0.00%	2.44%	2.44%
		0	25,884	25,884
		0	-	-
		\$0	\$27,324	\$27,324
		-	-	-
Miscellaneous and Technical Assumptions				
1.	Increase in Final Compensation	0.00 %	2.00 %	2.00 %
2.	Withdrawal Rate Scaling Factor	0 %	120 %	120 %

¹ The total value, in today's dollars, of benefits expected to be earned by the current active population and paid in the future.

² The portion of the present value of future benefits for current active members, expected to be earned after the valuation date.

³ The portion of the present value of future benefits for current active members, earned through the valuation date.

⁴ Percentages of pay are not developed for a closed division.

⁵ The total normal cost is the ongoing cost of the plan under the applicable benefit structure.

⁶ Refer to the valuation Appendix, on the MERS website, for a description of the amortization policy.

⁷ Note that the results shown are based on the December 31, 2017 assumptions without any phase-in.

Bridged Benefit Description:

Benefit Multiplier To Bridge Date:	2.50% Multiplier (80% max)
Benefit Multiplier On/After Bridge Date:	1.25% Multiplier (no max)
Bridge Date:	December 30, 2016
FAC Type:	Frozen FAC
Bridge Benefit Max:	80% of FAC at Termination of Employment

This report may be provided to parties other than the municipality only in its entirety.

Important Comments

Important Comments

1. The liabilities were calculated using the actuarial assumptions and methods adopted by the MERS Retirement Board and do not assume 100% retirement when first eligible. Actuarial assumptions and methods do not determine the cost of the benefits provided; they only impact the pattern of employer contributions. If future experience is unfavorable compared to the assumptions used, employer contribution rates will increase in future years, and vice versa. For example, if members retire when first eligible, the actual liabilities would be higher than calculated resulting in higher employer contributions.
2. The actuarial value of assets used to determine both the funded ratio and the required employer contribution is based on a smoothed value of assets. Only a portion of each year's investment market gain or loss is recognized in the current actuarial value of assets; the remaining portions of gains and losses will be reflected in future years' actuarial value of assets. This reduces the asset volatility impact on the determined required employer contribution and funded ratio. The smoothed actuarial rate of return for 2017 was 6.08%.

As of December 31, 2017, the actuarial value of assets is 101% of market value. This means that there is a net outstanding asset loss that is not yet recognized in the actuarial value of assets. Absent future asset gains offsetting the net outstanding asset loss, the net outstanding asset loss will be recognized in future actuarial valuations and is expected to decrease funded ratios and increase employer contribution requirements.

3. Unless otherwise indicated, a funded status measurement is based upon the actuarial accrued liability and the actuarial value of assets. The measurement is:
 - a. Inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
 - b. Inappropriate for assessing benefit security for the membership.
 - c. Dependent upon the actuarial cost method which, in combination with the amortization policy and asset valuation method, affects the timing and amounts of future contributions. The amounts of future contributions will differ from those assumed due to future actual experience differing from assumed.

A funded status measurement of 100% is not synonymous with no required future contributions. If the funded status were 100%, the Plan would still require future normal cost contributions (i.e., the cost of the active membership accruing an additional year of service credit).

4. This report describes the financial effect of the proposed benefit plan. No statement contained within is a recommendation in favor of or in opposition to the proposed benefit plan.
5. The funded status shows the relationship of the assets to the amount needed to fund past service benefits, the actuarial accrued liability, under valuation assumptions.

Important Comments (Continued)

6. Contribution requirements take into consideration prior service with other MERS entities (for eligibility service only), reflected in the difference between benefit and vesting service. If members have service not reflected on the results page (e.g., prior MERS or Act 88 service), the unfunded liabilities and employer contributions may be understated.
7. The actuaries' understanding of the default invoicing procedure is that a percent of pay employer contribution is applied for open divisions and a dollar amount is applied for closed divisions.
8. Employer contributions are based on a percentage of members' reported pay for open divisions. If actual reported payroll is substantially lower than the payroll used in this report, the actuaries recommend a minimum contribution of the dollar developed in the "Results," item 2.e.
9. The results do not show the potential impact on other post-employment benefits (such as retiree health care insurance) or ancillary benefits (such as life insurance).
10. The results of separate actuarial valuations generally cannot be added together to produce a correct estimate of the employer contributions. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions and assumptions used.
11. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of this supplemental actuarial valuation does not include an analysis of the potential range of such future measurements.
12. The calculations are based upon assumptions regarding future events, which may or may not materialize and proposed plan provisions. The actual impact of the proposed plan change(s) will change over time as actual experience emerges. Contact your MERS representative at 800-767-MERS if you believe that:
 - a. The assumptions are unreasonable,
 - b. The plan provisions are missing or incorrectly described,
 - c. Conditions have changed since the calculations were made,
 - d. The information provided in this report is inaccurate or is in any way incomplete, or
 - e. You need further information to make an informed decision.