Annual Report

of the

Michigan Catastrophic Claims Association

to the

Senate Insurance and Banking Committee

and

House Insurance Committee

For the Year Ended December 31, 2018

Issued September 1, 2019

MCCA Executive Summary

The premium paid to the Michigan Catastrophic Claims Association ("MCCA") by member insurance companies increased to $192.00 per insured vehicle effective July 1, 2018 to June 30, 2019. This represents an increase of $22.00 (13%) over the 2017-2018 MCCA charge of $170.00 and is primarily due to higher than expected claim costs. The $192.00 is comprised of a pure premium and expenses (expected cost per vehicle) of $161.00, and deficit recoupment of $31.00. The MCCA premium charge is determined each year following its annual actuarial evaluation. The MCCA reimburses auto insurance companies for Personal Injury Protection (PIP) benefits paid in excess of a set amount per claim, which increased to $555,000 on July 1, 2017.

As of December 31, 2018, the MCCA had $20.0 billion of assets and $23.9 billion of liabilities resulting in a deficit of $3.9 billion and percentage of liabilities funded of 84%. The deficit increased by $1.6 billion from the December 31, 2017 deficit of $2.3 billion. The primary reasons for the increase were an unexpected increase in reserve estimates and less than expected investment performance. In projecting claim payments for long-term claims in which medical benefits are unlimited, there is considerable uncertainty due to the difficulty in predicting (a) life expectancies, (b) medical cost inflation, (c) investment returns, and (d) claim frequency.

From inception of the MCCA on July 1, 1978 to December 31, 2018, of the 40,715 claims reported to the MCCA, 17,751 are open and 22,964 are closed. For all open and closed claims, payment has been made on 17,081 claims (42%). Inception to date, $17.2 billion has been paid on claims. Payments for the twelve months ended December 31, 2018 were $1.2 billion, which represents an average of $100.0 million paid per month. Approximately 76% of the $1.2 billion in payments are comprised of the following five payment categories: (1) residential care: 21%, (2) attendant care – agency: 18%, (3) attendant care – family: 18%, (4) prescriptions: 10%, and (5) hospitalization: 9%. Please refer to Appendices C and D for additional information on claim payments and injury trends.

Retention Level Increase 2019 - 2021

Public Act 3 of 2001 provides for a biennial adjustment of the member insurance company retention level. For a motor vehicle policy issued or renewed during the period July 1, 2019 to June 30, 2021 the member insurance company retention level is $580,000. The prior retention level was $555,000 for the period July 1, 2017 to June 30, 2019.

Premium Audit Program

The MCCA conducts a Premium Audit Program for all member companies. The objective of this program is to enhance the reliability of the premium data submitted by members and to identify members that may have incorrectly reported data in their Annual Assessment Report. In addition, the MCCA conducts special audits where circumstances warrant a deeper inquiry. Follow-up audits will be based upon results reported by members or other risk factors identified by the MCCA.

The Agreed-Upon Procedures Audit is performed on a triennial basis by members. All member companies selected for 2018 were required to submit their results by November 15, 2018.

Annual Independent Financial Audit

Plante & Moran, PLLC conducted an audit of the MCCA's statutory statements of admitted assets, liabilities, and accumulated deficit, and the related statutory statements of operations and accumulated deficit, and cash flows as of June 30, 2018. Plante & Moran has issued an unmodified opinion and indicated the statutory financial statements prepared by the MCCA present fairly, in all material respects, the financial position of the MCCA as of June 30, 2018 and the results of its operations, changes in capital and surplus, and its cash flows for the year then ended based on statutory accounting practices. Plante & Moran found no exceptions or audit adjustments. The audited statements are in agreement with the MCCA's Annual Statement for the year ended June 30, 2018 that was filed with the Michigan Department of Insurance and Financial Services (DIFS).

Annual Financial Reporting Model Regulation Compliance

Resources Global Professionals (RGP) conducted an Annual Financial Reporting Model Regulation ("AFRMR") compliance audit as of June 30, 2018. No deficiencies or weaknesses were noted in the testing that included 34 key financial controls and a general review of IT controls. On an annual basis, the MCCA files a report of internal controls of financial reporting with DIFS.

MCCA Membership System (MMS)

All claim and assessment transactions are processed through the MCCA Membership System (MMS), a web-based paperless claims and assessment system. The MCCA continues to support and enhance the software components of MMS. Other related activities include: (1) cyber security: (a) annual security risk assessment, and (b) semi-annual penetration and web application security tests, (2) annual disaster recovery test, and (3) employee security awareness program.

Organizational History

The MCCA was established by Public Act 136 of 1978, which amended the no-fault law by adding Section 3104 effective July 1, 1978. The Legislature created the MCCA because insurance companies had difficulty obtaining reinsurance for Michigan's automobile no-fault policies, which provided for unlimited lifetime medical benefits for people who are catastrophically injured in auto accidents.

The MCCA is a private, non-profit, unincorporated association of which every insurer that sells automobile or motorcycle coverage in Michigan is required to be a member.

The MCCA is funded by an annual premium assessment to its member insurance companies based on the number of policies covering automobiles and motorcycles written in Michigan. The MCCA is required to assess an amount each year that is sufficient to cover the lifetime claims of all persons catastrophically injured in that year and in addition, may adjust future assessments for excesses or deficiencies in prior assessments.

Organizational Structure

The MCCA is governed by a Board of Directors, which consists of five member companies appointed by the Director of the Department of Insurance and Financial Services (DIFS). The Director, or his/her representative, serves as an ex-officio member of the Board. The Board is responsible for the administration of the Plan of Operation and the management of the affairs and operations of the MCCA consistent with the Plan and the Michigan Insurance Code, including section 3104 of the No-Fault Insurance Act (the "Act").

MCCA staff manage the day-to-day operations of the MCCA including general administration, claim administration, accounting, legal, and information systems.

The MCCA contracts for the following services:

- Actuarial
- Auditing
- Legal
- Investment consulting and management
- Payroll
- Information system support

The following standing committees provide assistance in the operation of the MCCA:

Actuarial Committee
Provides actuarial analysis and other analytical support for premium calculation and reserving estimates.

Audit Committee
Provides oversight of the financial and regulatory reporting process of the MCCA.

Claim Committee
Reviews claims procedures and practices of both the MCCA and member companies and conducts semi-annual claim audits for claim handling practices and reserve appropriateness.

Communication Committee
Oversees the MCCA's communications with its members and third parties, and makes recommendations to the Board relating to such communications.

Information Technology Committee
Assesses the MCCA's technology strategy and makes recommendations regarding technology investments.

Investment Committee
Recommends to the Board an investment policy for the MCCA and oversees the investments of the MCCA.

Personnel Committee
Makes recommendations to the Board relating to staffing, compensation, and employment policies of the MCCA.

Reporting Requirements

Annual Statement
The MCCA's annual financial statement is prepared on the basis of statutory accounting practices as prescribed or permitted by the State of Michigan DIFS. The MCCA is subject to all the reporting, loss reserve, and investment requirements of the Director of DIFS, to the same extent as would a member company of the MCCA. The MCCA's fiscal year is on a June 30 basis. In conjunction with the annual statement filing, the MCCA's consulting actuary prepares a statement of actuarial opinion that is filed with DIFS. The opining actuary is required to comply with all applicable actuarial standards of practice. The annual statement is available on the MCCA public website (www.michigancatastrophic.com)

Independent Financial Audit
An annual audit of the MCCA's financial statements is conducted by an independent public accounting firm. Most recently, Plante & Moran, PLLC performed this audit. The independent auditor reports are available on the MCCA public website (www.michigancatastrophic.com).

Evaluation of Internal Controls
An annual financial reporting model regulation compliance audit is conducted by an independent public accounting firm. Most recently, RGP performed this audit.

Department of Insurance and Financial Services (DIFS) Oversight
Pursuant to Section 3104(23) of the Michigan Insurance Code, the Director of DIFS or an authorized representative of the Director may visit the MCCA at any time and examine any and all the MCCA's affairs. In addition, DIFS periodically reviews the financial condition of the MCCA. The most recent financial examination by DIFS was for the period of July 1, 2010 to June 30, 2015. There were no findings or recommendations resulting from the examination. The examination also included an independent actuarial analysis, which was consistent with the results of the MCCA's opining actuary. The report of the examination and accompanying statement of actuarial opinion is available on the MCCA public website (www.michigancatastrophic.com).

REFERENCE MATERIAL AVAILABLE ON THE MCCA PUBLIC WEBSITE

The following documents are available on the MCCA's website (www.michigancatastrophic.com):

- Background Information
- Financial Information
    - Annual Statement (3 years)
    - Report of independent auditors (3 years)
    - Department of Insurance and Financial Services (DIFS) Report of Examination of the MCCA
    - Assessment History
- Consumer Information
    - Claim Statistics
        - Injury Type Summary
        - Summary of Payments by Cost Category
        - Motorcycle Statistics
    - Frequently Asked Questions

MCCA Board of Directors and Standing Committees

Board of Directors

Auto Club Insurance Association
Auto-Owners Insurance Company
Citizens Insurance Company of America
Pioneer State Mutual Insurance Company
State Farm Mutual Automobile Insurance Company
Director of the Department of Insurance and Financial Services (Ex-Officio Member)

Insurance Companies Serving on Standing Committees

Allstate Insurance Company
Amerisure Companies
Auto Club Insurance Association
Auto-Owners Insurance Company
Citizens Insurance Company of America
Farm Bureau Insurance Group
Frankenmuth Mutual Insurance Company
Grange Insurance Company
Hastings Mutual Insurance Company
Nationwide Insurance Company

Pioneer State Mutual Insurance Company
Progressive Insurance Company
State Farm Mutual Automobile Insurance Company
West Bend Mutual Insurance Company
Wolverine Mutual Insurance Company

An evaluation of the accuracy of the association's actuarial assumptions over the preceding 5 years.

There are many ways to evaluate the accuracy of the actuarial assumptions over the preceding five years. Here, we present the following schedules.

Table I displays the changes in surplus in the five fiscal years ending June 30, 2018 because of differences in actual versus expected claim emergence, after controlling for changes in investment returns, economic assumptions, and other changes to the actuarial model. This isolates how accurately the actuarial assumptions estimated the loss emergence over a one-year time horizon at each preceding evaluation. The first two years in this time frame, fiscal years 2013/14 and 2014/15, experienced favorable changes, followed by adverse development during fiscal years 2015/16 through 2017/18.

Table I – Unexpected Development

	Fiscal Year Ending June 30,				
	2018	2017	2016	2015	2014
Change in Surplus Due to Unexpected Development	(313,806,761)	(944,563,312)	(1,024,034,307)	942,863,436	256,323,631

One can also evaluate the expected versus actual claimant death and claim closures over the five years spanning June 30, 2013 to June 30, 2018. On average, actual claim closures (including deaths) were greater than anticipated in the actuarial closure models, while claimant mortality was lower than expected. Table II displays these amounts.

Table II – Closure and Mortality Rates

	Fiscal Year Ending June 30,				
	2018	2017	2016	2015	2014
Expected Claimant Deaths	313.9	296.9	271.1	260.1	243.2
Actual Claimant Deaths	292	300	255	235	228
Expected Claim Closures	1,495.5	1,360.2	1,271.1	1,239.8	1,164.7
Actual Claim Closures	1,613	1,472	1,236	1,184	1,042

Table III displays the historical pure premium estimates underlying past assessments as well as the corresponding estimated pure premiums for the most recent five complete assessment years as of June 30, 2018. Differences in these estimates represent the differences in actual emergence for these periods compared to the forward-looking projections. The inherent year-to-year variation in actual results is illustrated by the fact that certain years have emerged favorably (2013/14, 2014/15), while others have developed adversely (2015/16, 2016/17, & 2017/18).

Table III – Pure Premium and Fund Deficiency Rates

MCCA Assessment Year	Assessment	MCCA Attachment Point	Estimates Behind Corresponding Assessment: Pure Premium	Estimates Behind Corresponding Assessment: Fund Deficiency per Car	Estimated 6/30/2018 Analysis: Pure Premium	Estimated 6/30/2018 Analysis: Fund Deficiency per Car
2013/14	186.00	530,000	156.44	300.77	130.81	544.21
2014/15	186.00	530,000	155.90	161.94	139.69	424.21
2015/16	150.00	545,000	145.10	44.05	158.08	349.98
2016/17	160.00	545,000	140.26	195.38	169.25	447.71
2017/18	170.00	555,000	143.33	268.41	164.27	420.32

Table IV displays the historical investment returns realized on the MCCA assets as well as the 1-year projected returns produced at the analysis immediately preceding each period during calendar periods 2014 through 2018. Actual returns were, on average, less than those projected. We note the significant variability in the year-to-year investment returns, consistent with the inherent variability of market returns for risky assets. The 5-year time horizon presented here is unlikely a suitable length of time to be able to assess the reasonableness of projected investment returns.

Table IV – MCCA Investment Returns

	Historical MCCA Returns				Projected MCCA Returns			
Year Ending 12/31/	CPI (U) All Items	Total Return on Bonds	Total Return on Equity	Portfolio with 32.5% Equity 67.5% Bonds	CPI (U) All Items	Total Return on Bonds	Total Return on Equity	Portfolio with 32.5% Equity 67.5% Bonds
2014	0.76%	5.57%	7.31%	6.14%	2.11%	3.08%	9.18%	5.06%
2015	0.73%	-0.15%	-2.14%	-0.80%	1.63%	3.29%	8.52%	4.99%
2016	2.07%	4.67%	10.46%	6.55%	1.33%	2.87%	7.53%	4.38%
2017	2.11%	4.89%	21.65%	10.34%	2.40%	3.07%	8.75%	4.92%
2018	1.91%	-1.17%	-8.48%	-3.55%	2.20%	3.31%	8.58%	5.02%

MCCA – Annual Consumer Statement

Sec. 3104 (25): By September 1 of each year, the association shall prepare , submit to the committees of the senate and house of representatives with jurisdiction over insurance matters, and post on the association website an annual consumer statement, written in a manner intended for the general public. The statement must include all the following:

(a) The number of claims opened during the preceding 12 months, the amounted expended on the claims, and the future anticipated cost of the claims.

Calendar Year	Newly Reported Claims	Total Loss Paid on New Claims	Discounted Reserves on New Claims as of 12/31/2018	Undiscounted Reserves on New Claims as of 12/31/2018
2018	2,308	$12,019,027	$637,399,967	$1,827,343,961

(b) For each of the preceding 10 years, the total number of open claims, the amounted expended on the claims, and the future anticipated cost of the claims.

Accident Year	Open Claims as of 12/31/2018	Loss Paid on Open Claims as of 12/31/2018	Discounted Reserves on Open Claims as of 12/31/2018	Undiscounted Reserves on Open Claims as of 12/31/2018
2018	743	3,363,965	335,490,912	1,060,864,253
2017	1,198	56,428,814	597,094,875	1,626,539,134
2016	1,308	117,702,627	736,810,894	2,152,539,597
2015	1,075	167,791,561	560,095,902	1,607,459,297
2014	765	159,953,087	451,646,393	1,325,975,864
2013	744	244,442,079	599,049,420	1,827,256,410
2012	706	303,003,980	652,657,923	2,073,574,507
2011	599	281,245,026	559,182,687	1,921,585,843
2010	618	322,715,526	529,901,145	1,769,339,319
2009	564	320,052,368	468,930,974	1,455,205,973
Totals:	**8,320**	**$1,976,699,034**	**$5,490,861,125**	**$16,820,340,197**

(c) <u>For each of the preceding 10 years, the total number of claims closed, and the amounted expended *on the claims.*</u>

Accident Year	Closed Claims as of 12/31/2018	Loss Paid on Closed Claims as of 12/31/2018
2018	36	$0
2017	98	$2,594,775
2016	272	$6,210,280
2015	340	$18,746,379
2014	417	$25,143,532
2013	509	$39,701,765
2012	572	$42,510,953
2011	659	$73,164,320
2010	780	$79,172,359
2009	762	$80,580,208
Totals:	**4,445**	**$367,824,570**

(d) <u>*For each of the preceding 10 years, the ratio of claims opened to claims closed.*</u>

Accident Year	Open Claims as of 12/31/2018	Closed Claims as of 12/31/2018	Open/Closed Ratio
2018	743	36	20.64
2017	1,198	98	12.22
2016	1,308	272	4.81
2015	1,075	340	3.16
2014	765	417	1.83
2013	744	509	1.46
2012	706	572	1.23
2011	599	659	0.91
2010	618	780	0.79
2009	564	762	0.74
Totals:	**8,320**	**4,445**	**1.87**

(e) For each of the preceding 10 years, the average length of open claims.

Accident Year	Open Claims as of 12/31/2018	Average Years as of 12/31/2018
2018	743	0.58
2017	1,198	1.50
2016	1,308	2.47
2015	1,075	3.47
2014	765	4.46
2013	744	5.47
2012	706	6.48
2011	599	7.48
2010	618	8.50
2009	564	9.49
Totals:	**8,320**	**4.99**

(f) A statement of the current financial condition of the association and the reasons for any deficit or surplus in collected assessments compared to losses.

The most recent audited financial statement of the MCCA is as of June 30, 2018. At that time, total liabilities recorded were $23,473,241,073 (Annual Statement Page 3, line 28, column 1). The corresponding amount of admitted assets recorded were $20,555,020,095 (Annual Statement Page 2, line 28, column 3). The difference between these items, known as statutory surplus, is $(2,918,220,978) (Annual Statement Page 3, line 37, column 1). Because liabilities are greater than assets, the statutory surplus is negative, meaning that the MCCA is operating with a deficit. This means that the value of the admitted assets is insufficient to fund the expected present value of the liabilities.

Table I below shows a recap of the change in the MCCA surplus (deficit) over the prior five fiscal years ending June 30, 2018.

Table I – MCCA Surplus (Deficit) Recap

		Fiscal Year Ending June 30,				
		2018	2017	2016	2015	2014
1	Prior Year Ending Surplus (Deficit)	(2,633,572,752)	(1,741,430,161)	(690,932,040)	(410,531,574)	(1,872,321,532)
2	Net Income	(319,702,667)	(703,087,281)	(1,330,721,894)	728,667,422	526,133,382
3	Net Unrealized Capital Gains and Losses	34,354,720	(190,164,360)	282,801,424	(1,007,215,120)	935,701,264
4	Change in Non-Admitted Assets	798,052	694,386	(347,956)	(1,852,768)	(44,688)
5	Aggregate write-ins for gains and losses to surplus	(98,331)	414,664	(2,229,695)	-	-
6	Change in Surplus (Deficit) (Sum(2)-(5))	(284,648,226)	(892,142,591)	(1,050,498,121)	(280,400,466)	1,461,789,958
7	Current Year Ending Surplus (Deficit) (1)+(6)	(2,918,220,978)	(2,633,572,752)	(1,741,430,161)	(690,932,040)	(410,531,574)

As shown in the above table (Line 7), the MCCA has carried a deficit ranging from approximately $411 million for the year ending June 30, 2014, to approximately $2,918 million for the year ending June 30, 2018. The annual changes in that deficit have been quite volatile (line 6), ranging from a decrease of the deficit of approximately $1,461 million to an increase in the deficit of $1,050 million in 2016. By far, the largest contributor to the change in deficit are lines 2 and 3 in the table, net income and net unrealized gains and losses. Net Income can be broken down into the following components in Table II below:

Table II – Components of Net Income (Loss)

		Fiscal Year Ending June 30,				
		2018	2017	2016	2015	2014
1	Underwriting Income (Loss)	(1,208,617,028)	(2,020,767,612)	(1,682,540,346)	(672,155,767)	(252,347,423)
2	Net Investment Income Earned	548,445,480	360,490,754	351,613,055	376,827,867	352,682,829
3	Net Realized Capital Gains and Losses	341,986,032	957,882,482	1,302,672	1,021,591,114	426,138,456
4	Miscellaneous Income	2,332	3,512	2,657	2,866,870	2,749
5	Federal and Foreign Taxes Incurred	1,519,483	696,417	1,099,932	462,662	343,229
6	Net Income (Loss) (Sum (1) to (4) less (5))	(319,702,667)	(703,087,281)	(1,330,721,894)	728,667,422	526,133,382

Table II shows that net income is dominated by three components, Underwriting Income, Net Investment Income Earned, and Net Realized Capital Gains and Losses. Underwriting Income is consistently negative, and Net Investment Income Earned is consistently positive, both of which are expected. Net Realized Capital Gains and Losses can be either positive or negative, depending on the vagaries of the investment market, in part on the timing of when investments are sold, and also whether a particular category of investment is carried at market value. In statutory accounting, net unrealized capital gains and losses are not counted as income, but do flow directly to the capital and surplus account. If we add net investment income earned, net realized capital gains and losses, and net unrealized capital gains we will get the contribution of the investment portfolio to the change in surplus line. Over the past five years (2014-2018), the investment portfolio has contributed a positive $4,794 million to the MCCA capital and surplus account. Over the same period, underwriting income has contributed a negative $5,836 million.

Because the MCCA has a permitted practice from Michigan DIFS to carry its liabilities on a discounted to present value basis without a risk margin, and also assesses its members using discounted to present value estimates, negative net underwriting income is expected. By discounting, essentially, all future investment earnings are capitalized and reflected in the discounted present value of liabilities. If the MCCA carried neither a deficit nor a surplus, the implication would be that the current value of assets plus all future expected investment returns on those assets would be just sufficient to fund the expected value of the liabilities as those liabilities came due for payment. Because the MCCA has a deficit, calculated as the difference between admitted assets and discounted liabilities, the deficit amount can be thought of as the amount of funds required as of the statement date that if invested along with current assets would be just sufficient to fund the expected value of liabilities as they came due.

The MCCA does not, however, attempt to fund its deficits by an assessment over a single year. Such a policy would create high volatility in the assessment amount and would be disruptive to the marketplace. Instead, if the MCCA expects that a deficit will persist, it will assess its members a deficit recoupment provision in addition to assessment for expected losses on newly written policies. This deficit recoupment provision is normally amortized over a number of years. Michigan Public Act 21, for example, codifies this practice and specifies an amortization period of 15 years.

(g) <u>A statement of the assumptions, methodology, and data used to make revenue projections. As used in this subdivision, "revenue" means return on investments.</u>

Investment assumptions are generated through a combination of future inflation estimates and future real-return estimates by asset class that are combined to produce future nominal investment returns by asset class. Those nominal asset class rates are weighted together using the MCCA portfolio weights by asset class to produce the overall average.

The methodology and assumptions are as follows:

1. Inflation – Congressional Budget Office (CBO) estimates are used for the first five years, blending linearly over the next five years to an estimate produced by an autoregressive model (AR1) based on annual CPI changes from 1980 through the most recent year-end. By the tenth year, the autoregressive model has reached its steady-state value and that value is continued into the future indefinitely.
2. Treasury Bills (T-Bills) – An autoregressive model (AR1) is used on the historic real-returns from 1926 through the most recent year-end. Future projections are based on this model until it reaches its steady-state value.
3. Treasury Bonds (T-Bonds) – A regression of real T-Bond returns against the real T-Bill return from 1926 to the most recent year-end is used. Separate regressions are performed for Intermediate T-Bonds and Long-term T-Bonds. Projections are produced from the T-Bill projections and the regression coefficients.
4. Long term Corporate Bonds – A regression of real long-term corporate bonds against the real T-Bill return from 1926 to the most recent year-end is used. Projections are produced from the T-Bill projections and the regression coefficients.
5. Intermediate Corporate Bonds – Based on a risk-premium adjustment to the real Intermediate T-Bond projection.
6. Intermediate Treasury Inflation Protected Securities (TIPS) – Based on the real Intermediate T-Bond projection less an inflation risk-premium.
7. Bank Loans – Based on historical average real returns of both the CSFB Leveraged Loan Index and the S&P/LSTA Bank Loan Index.
8. Equities – US Large Cap projections are based on the geometric average real return of the Large Cap Equities from 1926 through the most recent year-end, excluding the amount contributed by

the Price-Earnings ratio expansion over the same period. US Mid Cap, US Small Cap, International, Emerging Markets and Private Equity projected returns are based on a risk-premium approach to the US Large Cap projection. The risk-premiums are based on current Betas for the asset classes, the Capital Asset Pricing Model (CAPM) model, and the risk-premium of the Large Cap returns over the Long-term T-Bond returns.

(h) <u>A statement of the assumptions, methodology, and data used to make cost projections.</u>

The MCCA is responsible for the cost of lifetime medical care for persons who are catastrophically injured in Michigan auto accidents. Once past the acute care phase immediately following injury, the costs of caring for a catastrophically injured claimant usually settle into regular recurring payments, which typically continue for the rest of the claimant's life. Pension plans face similar boundaries – regular payments continue until the death of the retiree. As a result of this similarity to pension plan obligations, the MCCA can be understood as a variation on a pension plan. The MCCA uses an actuarial pension model to estimate the net present value of the future expected payments, which is called the needed reserve. The needed reserve represents the funds the MCCA needs to have on hand and invested today in order to cover all future payments, even decades from now, on catastrophic injuries that have already occurred.

The MCCA is also like a pension plan in that the MCCA attempts to pre-fund the future costs of current accidents, rather than shifting costs to future generations in a pay as you go scheme such as Social Security.

One difference from a pension plan is that MCCA payments are more weighted to payments far into the future than pension plan payments, because MCCA payments escalate with medical inflation, while pensions are usually fixed. In addition, current MCCA claimants are a generation younger than typical retirees (average age of 51 as compared to 74), which means many more years of MCCA payments than is typical of a pension plan.

When the value of the assets (investments) is less than the needed reserve, the MCCA is said to have a deficit. A deficit emerges when past assessments turn out to be lower than costs. This is analogous to an under funded pension plan; cash is available to make payments for many years, but more funds will eventually need to be added in order to make all future payments in full.

Like a pension plan, mortality assumptions play a key role in calculating the MCCA needed reserve. The MCCA mortality tables are based on US life tables, with adjustments developed specifically from MCCA data. MCCA mortality assumptions vary by age, gender, time since accident, and injury severity characteristics. The MCCA's actuarial pension model, like all actuarial pension models, does not assume all claimants will live to a maximum age, such as 105, but instead applies a probability of death in each succeeding year. For the current claimants, the MCCA pension model produces an average life expectancy of an additional 27 years of life, or an average age at death of 78.

Investment return and inflation rate assumptions are the other key assumptions used in determining the needed reserves. Investment returns are based on the long-term (1926-2017) average observed real (net of inflation) rates of return by asset class. When weighted by the MCCA asset mix, this produces a weighted average real rate of return of 3.6% above general inflation. When combined with a long-term average general inflation rate of 2.7%, this produces an assumed nominal annual rate of return on investments of 6.4%.

Inflation rate assumptions are based on long-term average inflation rates by MCCA cost component. These inflation rates are tied to the same 2.7% long-term average general inflation rate assumption used in the investment return calculation. This produces assumed nominal annual rates of inflation ranging from 1.1% (vehicle purchases) to 6.5% (hospital costs).

Each year the MCCA assessment is required to cover the net present value of the lifetime costs to the MCCA for all the new catastrophic injuries that occur in that year. The current year assessment is unrelated to funding the costs of prior years. This is similar to a pension plan that adds a new group of participants; the benefits for the new participants need to be funded – and the funding for the new participants is independent of the needed funding for the existing participants. The one exception to this independence happens when the MCCA adds a fraction of the deficit to the current year assessment. The MCCA slowly recoups deficits, much as pension plans typically close funding gaps over many years.

(i) <u>A list of the associations assets, sorted by category or type, of asset, such as stocks, bonds, or mutual funds, and the expected return on each asset.</u>

MCCA ASSET BALANCES as of 6/30/19

			Actual Allocation	Expected Return*
CASH				
	Cash	210,485,226	1.0%	2.35%
BONDS				
	Intermediate Fixed Income	7,075,248,843	32.5%	2.60%
	Long Government/Credit	2,839,811,466	13.0%	2.65%
	Inflation Protected Securities	3,133,265,390	14.4%	3.40%
	High Yield Bank Loans	1,012,591,457	4.6%	5.90%
	TOTAL BONDS	14,060,917,157	64.6%	
STOCKS				
	Large Cap Equity	2,899,248,845	13.3%	7.20%
	Mid Cap Equity	511,938,895	2.4%	7.60%
	Small Cap Equity	758,429,641	3.5%	7.70%
	International Developed Markets	2,167,450,710	10.0%	7.90%
	Emerging Market Equity	398,754,277	1.8%	9.45%
	Private Equity	774,329,082	3.6%	9.20%
	TOTAL STOCKS	7,510,151,451	34.5%	
	TOTAL	21,781,553,834	100.0%	4.60%

*Cardinal Investment Advisors compound return forecast for the next 7-10 years

(j) The total amount of the association's discounted and undiscounted liabilities and a description and explanation of the liabilities, including an explanation of the association's definition of the terms discounted and undiscounted.

As of December 31, 2018, the association had $71.7 billion in undiscounted loss and loss adjustment expense liabilities and $23.4 billion in discounted loss and loss adjustment expense liabilities. The discounted liabilities are the present value of the undiscounted liabilities in order to reflect the time value of money.

(k) Measures taken by the association to contain costs.

The MCCA has a standing Claims Committee comprised of representatives of eleven member insurance companies representing nearly seventy-five percent of the Michigan no-fault insurance market. The Claims Committee is charged with conducting semi-annual claim audits and making recommendations on claim handling practices and procedures of the MCCA and its member insurance companies. The MCCA has established procedures by which its members must promptly report each claim that, on the basis of the injuries or damages sustained, may reasonably be anticipated to involve the MCCA if the member is ultimately held legally liable for the injuries or damages. Members must also report subsequent developments likely to materially affect the interest of the MCCA in a claim. These reporting requirements include prompt reporting of litigation and prompt reporting of certain proposed claim adjustment actions. Such actions include entering into a settlement agreement of a disputed claim, entering into a proposed attendant care rate agreement, paying a residential care facility rate, and agreeing to pay for a home or van modification or a nonemergency medical flight. The reporting requirements allow the MCCA to share its expertise regarding catastrophic claims with its members. The MCCA also conducts a yearly seminar for its members regarding best practices in handling catastrophic claims.

(l) A statement explaining what portion of the assessment to insureds as recognized in rates under subsection (20) is attributable to claims occurring in the previous 12 months, administrative costs, and the amount, if any, to adjust for past deficits.

The assessment paid by auto insurance companies to the MCCA amount to $220 per insured vehicle for the period July 1, 2019 to June 30, 2020. The assessment represents $177 to cover anticipated new claims and expenses, and $43 to partially address a $3.9 billion estimated deficit related to existing claims.

(m) A statement explaining any qualifications identified by the independent auditors in the most recent audit report prepared under section 21.

NONE

(n) A loss payment summary for each of the preceding 10 years by category.

See Appendix A

(o) For each of the preceding 10 years, an injury type summary, categorizing the injuries suffered by claimants the payment of whose claims are being reimbursed by the association, by brain injuries, injuries resulting in quadriplegia, injuries resulting in paraplegia, burn injuries, and other injuries.

See Appendix B

(p) A summary of investment returns over the preceding 10 years showing the investment balance, the investment gain, and the percentage return on the investment balance.

MCCA CALENDAR YEAR ASSET BALANCE RECONCILIATION

	Beginning Market Value	Net Inflows/ Outflows	Interest/ Dividends	Gains/Losses	Net Investment Return	Ending Market Value	Percentage Return*
2009	9,958,923,817	27,588,283	389,523,410	1,219,443,440	1,608,966,850	11,560,478,950	16.16%
2010	11,560,478,950	25,540,617	401,393,973	679,585,125	1,080,979,098	12,686,998,665	9.35%
2011	12,686,998,665	41,473,757	360,809,813	259,320,925	620,130,737	13,368,603,159	4.89%
2012	13,368,603,159	166,332,741	334,905,855	788,283,394	1,123,189,249	14,676,125,149	8.40%
2013	14,676,125,149	180,838,259	242,516,123	1,022,377,867	1,264,893,991	16,159,857,399	8.62%
2014	16,159,857,399	258,579,468	243,384,302	715,451,927	958,836,229	17,402,273,095	5.93%
2015	17,402,273,095	123,268,380	330,264,548	(416,287,970)	(86,023,423)	17,415,018,052	-0.49%
2016	17,415,018,052	(17,153,186)	335,569,991	747,093,315	1,082,663,306	18,505,028,173	6.22%
2017	18,505,028,173	(3,981,869)	365,875,902	1,493,978,124	1,859,854,026	20,390,900,329	10.05%
2018	20,390,900,329	109,226,477	399,012,531	(1,057,047,421)	(658,034,891)	19,897,091,915	-3.23%
June 2019 CYTD	19,897,091,915	(12,083,407)	233,800,279	1,653,545,046	1,887,345,325	21,781,553,834	9.49%

- Due to cash flow timing, numbers may not match exactly to the financial statement data.

(q) A summary of the mortality assumptions used in making cost projections.

The MCCA utilizes mortality tables in estimating its reserves and in projecting assessment rates. The current tables are based on a study completed in 2014 that relied on the actual mortality experience of MCCA claimants from inception through June 30, 2013. Impairment loads are calculated based on this experience and vary by injury type and severity, time elapsed since accident, age, and gender. These loads are combined with a base mortality table (the U.S. Lives 2008 table) to produce mortality tables that reflect the expected impaired mortality experience of the MCCA population of claimants. The mortality load varies substantially by injury type and severity, but averages just slightly over 100%, meaning that on-average, MCCA claimants experience approximately double the mortality as the population as a whole."

(r) A summary of any financial practices that differ from those found in the NAIC practices and procedures manual. The MCCA has received approval from the Department of Insurance and Financial Services for the following permitted practices, that differ from those found in the NAIC practices and procedures manual.

1. The MCCA is permitted to discount its unpaid loss and loss adjustment reserves on a non-tabular basis.
2. The MCCA may deviate from SSAP #65 guidance that states that with the exception of fixed and reasonably determinable payments, property and casualty reserves shall not be discounted.
3. The MCCA is not required to include a risk margin when determining loss and loss adjustment expense reserves.

Appendix A

Category	Loss Paid 2018	Loss Paid 2017	Loss Paid 2016	Loss Paid 2015	Loss Paid 2014	Loss Paid 2013	Loss Paid 2012	Loss Paid 2011	Loss Paid 2010	Loss Paid 2009
Attendant Care - Agency	215,054,933	218,617,255	203,770,624	199,499,837	181,176,507	170,033,476	157,248,145	152,277,235	100,361,664	65,732
Attendant Care - Family	214,438,939	213,898,515	208,785,262	212,453,736	210,519,676	206,058,508	206,258,099	203,788,313	132,191,886	77,941
Case Management	27,235,329	26,033,788	24,078,060	23,550,316	21,447,851	19,996,064	18,121,795	17,789,681	11,974,213	6,591
Doctors / Labs	93,720,969	92,338,578	82,162,913	80,813,643	75,060,123	68,412,871	60,747,915	59,732,218	40,429,020	57,462
Equipment	9,259,399	9,562,658	8,568,332	7,375,175	5,759,790	6,820,657	6,079,298	5,518,794	4,578,133	5,173
Home Purchase / Modifications	9,508,416	9,939,394	12,619,741	10,260,950	8,361,065	10,419,458	11,015,600	11,271,383	8,764,041	2,808
Hospitialization	108,881,977	116,227,013	107,902,209	92,466,368	93,004,926	102,697,535	84,877,711	91,430,399	63,272,144	75,508
Other	13,826,797	14,827,330	13,281,629	14,589,754	13,779,035	15,853,789	17,791,367	18,224,245	14,988,678	(1,959)
Paycode Unknown	280	109	0	288	0	358,612	580,860	1,373,646	282,053,638	817,323,123
Prescriptions / Supplies	122,225,369	122,015,510	116,674,854	111,626,874	103,699,078	92,736,578	83,725,262	82,070,821	50,766,781	(67,606)
Prosthesis	10,430,231	8,229,824	6,947,505	7,135,625	6,999,690	5,184,033	4,978,730	4,243,604	3,061,240	0
Rehabilitation Services	106,829,136	101,191,643	90,479,692	86,387,283	78,085,633	74,508,509	67,432,439	65,892,895	48,879,790	22,160
Replacement / Essential Services	1,595,409	1,511,947	1,278,828	1,700,830	1,879,158	1,694,377	1,787,309	1,876,923	1,412,504	0
Residential Care	254,172,422	244,803,270	232,689,629	225,878,688	214,376,532	206,726,182	195,999,514	181,828,668	117,038,028	227,630
Transportation	27,380,715	27,014,079	25,678,528	26,365,627	24,880,161	25,830,178	23,406,720	22,785,257	14,402,025	5,057
Vehicle Purchase / Modifications	2,858,979	2,324,191	2,887,148	2,525,278	3,087,343	6,211,097	7,744,808	6,477,709	5,247,162	(3,651)
Wage Loss / Survivor's Loss	6,967,077	6,165,087	5,045,513	4,357,290	5,003,355	4,001,785	4,059,069	5,386,144	3,400,299	(55,864)
Totals:	**$1,224,386,378**	**$1,214,700,190**	**$1,142,850,467**	**$1,106,987,562**	**$1,047,119,922**	**$1,017,543,708**	**$951,854,641**	**$931,967,936**	**$902,821,244**	**$817,740,106**

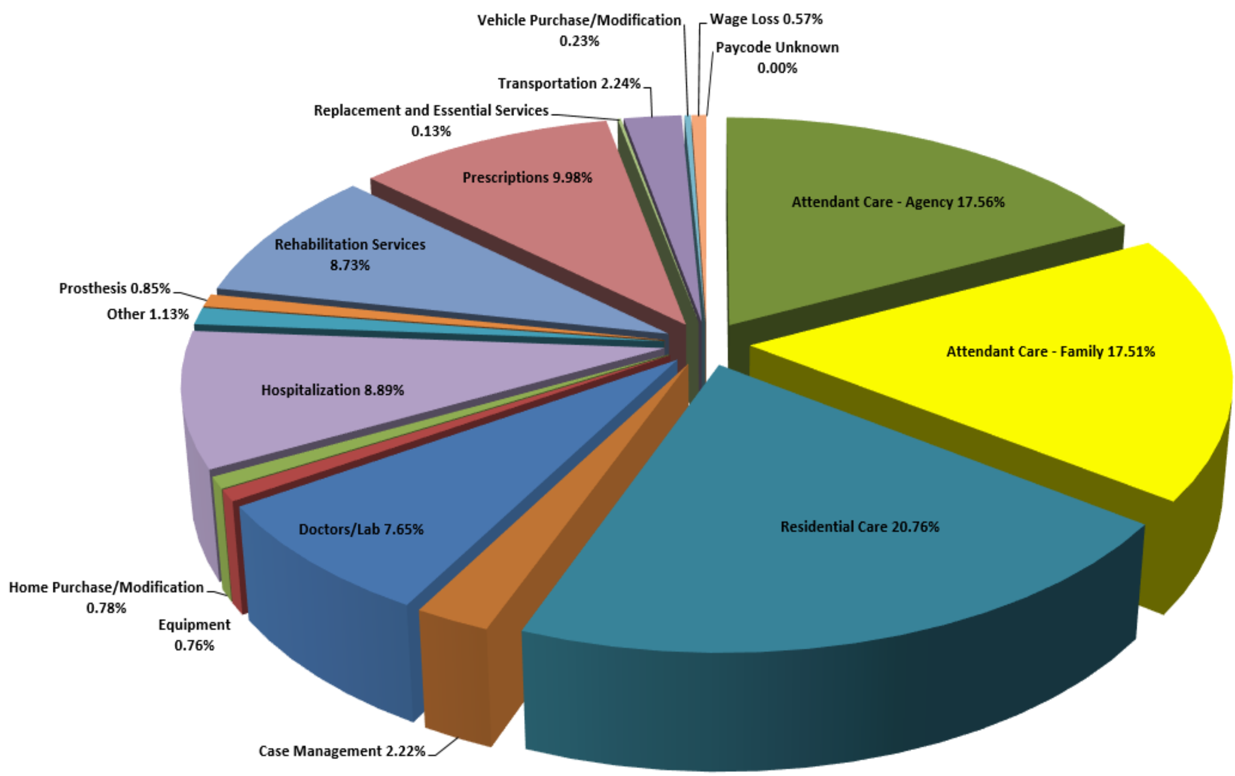
Appendix B

Payment History by Injury

Injury Code	Loss Paid 2018	Loss Paid 2017	Loss Paid 2016	Loss Paid 2015	Loss Paid 2014	Loss Paid 2013	Loss Paid 2012	Loss Paid 2011	Loss Paid 2010	Loss Paid 2009
BRAIN	735,803,290	721,475,363	698,455,019	662,832,911	630,848,220	614,199,427	586,210,492	568,153,164	536,954,228	485,431,823
BURN	3,283,672	2,440,946	1,325,937	1,350,083	3,622,552	1,203,404	593,219	688,845	856,736	1,274,353
MISCELLANEOUS	218,377,850	219,563,443	188,631,909	181,635,524	175,004,723	151,754,865	138,271,859	143,802,598	148,831,011	123,695,318
PARAPLEGIC	83,988,292	87,170,125	75,669,426	76,061,083	68,054,212	68,629,272	66,969,862	68,779,705	62,454,297	62,182,716
QUADRIPLEGIC	182,759,987	183,913,243	178,577,375	184,820,547	169,370,823	181,958,295	159,719,122	150,367,035	153,548,995	145,155,897
UNKNOWN	173,286	137,070	190,801	287,414	219,393	(201,555)	90,088	176,589	175,977	0
Totals:	**$1,224,386,378**	**$1,214,700,190**	**$1,142,850,467**	**$1,106,987,562**	**$1,047,119,922**	**$1,017,543,708**	**$951,854,641**	**$931,967,936**	**$902,821,244**	**$817,740,106**

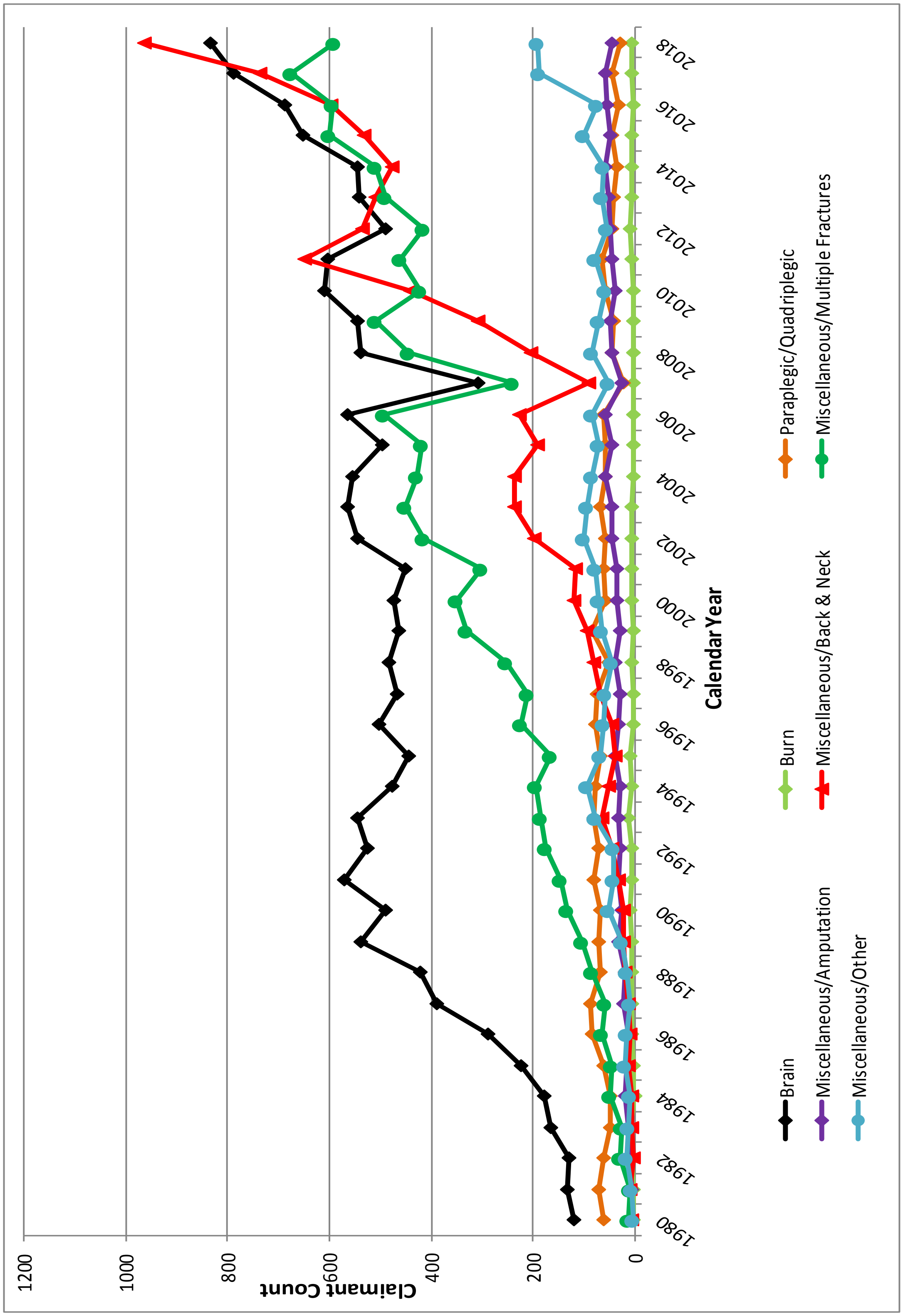
Appendix C

MICHIGAN CATASTROPHIC CLAIMS ASSOCIATION
MCCA Loss Payment Summary by Category
01/01/2018 to 12/31/2018



Payment Category	Total Paid	%	
Residential Care	254,172,422	20.76%	
Attendant Care - Agency	215,054,933	17.56%	55.84%
Attendant Care - Family	214,438,939	17.51%	
Prescriptions	122,225,369	9.98%	
Hospitalization	108,881,977	8.89%	
Rehabilitation Services	106,829,136	8.73%	
Doctors/Lab	93,720,969	7.65%	
Transportation	27,380,715	2.24%	
Case Management	27,235,329	2.22%	
Other	13,826,797	1.13%	
Prosthesis	10,430,231	0.85%	
Home Purchase/Modification	9,508,416	0.78%	
Equipment	9,259,399	0.76%	
Wage Loss	6,967,077	0.57%	
Vehicle Purchase/Modification	2,858,979	0.23%	
Replacement and Essential Services	1,595,409	0.13%	
Paycode Unknown	280	0.00%	
Total Loss Paid:	**$1,224,386,378**	**100.00%**	

Appendix D


MICHIGAN CATASTROPHIC CLAIMS ASSOCIATION
Reported Claimants Requiring Lifetime Care by Injury and Calendar Years
As of 12/31/2018
Claimant Count
0
200
400
600
800
1000
1200
Calendar Year
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Brain
Miscellaneous/Amputation
Miscellaneous/Other
Burn
Miscellaneous/Back & Neck
Paraplegic/Quadriplegic
Miscellaneous/Multiple Fractures