Montana State Hail Insurance Program

Actuarial Analysis
Crop Year 2012

Taylor-Walker & Associates, Inc.
Actuarial Consulting Group

November 29, 2012

Mr. G. Lee Boyer, Rural Development Bureau Chief
Montana State Hail Insurance Program
Department of Agriculture
P.O. Box 200201
Helena, MT 59620-0201

Dear Mr. Boyer:

Montana State Hail Insurance Program

Per contractual agreement, we completed our 2012 actuarial analysis for the Montana State Hail Insurance Program. Enclosed is our final report and supporting exhibits.

We have enjoyed working with you on this assignment. We appreciate the assistance of your staff in providing the necessary data and information. Please feel free to contact us if you have any questions or comments regarding our study.

Sincerely,

TAYLOR-WALKER & ASSOCIATES, INC.

R. Glenn Taylor, ACAS, MAAA
President

RGT/ssg

Enclosures

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MONTANA STATE HAIL INSURANCE PROGRAM

ACTUARIAL ANALYSIS

Introduction

The Montana State Hail Insurance Program (Program) contracted with Taylor-Walker & Associates, Inc. to estimate the required Program reserves in accordance with statutory provisions. The scope of our assignment involved the evaluation of current Program reserves relative to the statutory requirement that reserves be sufficient to absorb reasonably anticipated catastrophic losses. In addition, we have provided the Board with information regarding the 2012 crop year surplus/deficit and information regarding premium rate adequacy and related diagnostics.

Assumptions

The following assumptions are important to the proper understanding of our reserve analysis:

- Montana statute requires that the actuarial valuation include a "determination of the amount of reserve necessary to absorb all reasonably anticipated catastrophic losses". We interpret this provision to relate to annual catastrophic losses, and not to consecutive year catastrophic losses, nor to losses resulting from a single catastrophic storm.

- We note that the statute refers to reasonably anticipated catastrophic losses and not necessarily to worst-case catastrophic losses.

- For some expense categories, paid expenses are assumed to reasonably reflect incurred expenses.

- State and county assessments are estimated as the prescribed percentages applied to premiums rather than actual paid assessments.

- We assumed that all delinquent premiums would be available to cover any catastrophic claims.

In addition, there are several assumptions that are important to the proper understanding of our premium rate analysis. The assumptions are as follows:

- We assumed that observed historical loss ratio trends, including claim frequency and severity trends, are not indicative of expected future trends in claims experience. Rather, we have used the Program's long-term

average loss ratio, adjusted for historical rate changes, to represent the expected future loss ratio.

- We assumed that underwriting expenses are relatively fixed and that LAE is variable with respect to losses.

- We assumed that investment income attributable to current reserves applies to the benefit of current policyholders.

Summary and Recommendations

We based our analyses on Program historical data and on current crop year results. The projections are evaluated as of October 31, 2012. Findings and recommendations regarding reserves are summarized as follows:

- The 2012 crop year losses and expenses were $2,021,198 less than premiums.

- Net assets (including premiums receivable) available to cover future catastrophic losses are $11,729,168.

- Assuming 2.0 million acres to be insured during the 2013 crop year at a risk level of $45.70 per acre, and assuming a 5% load to losses to cover loss adjustment expenses (LAE), we estimate that current net assets represent a 99.988% confidence level of being sufficient to cover potential deviations from expected 2013 claims experience. Based on these findings, it is our opinion that the current reserves are actuarially sound.

- It is our opinion that a refund of up to 50% of 2012 premiums does not materially affect the soundness of the current reserves to cover future catastrophic losses. A refund amount in this range would not subject the remaining reserves to material additional risk and yet would provide an incentive to current insureds to remain with the Program.

- We recommend that the possibility of future increased risk, due both to increased number of insured acres and also to possible future coverage increases, be considered in establishing reasonable reserve levels.

Our findings and recommendations regarding premium rate adequacy are as follows:

- Current premium rates are projected to produce a 22.4% underwriting profit and a 23.5% operating profit for the 2013 crop year. Of course, the potential variation from the expected results is significant on a year-to-year basis.

- The Program loss ratio over the past 20 years has trended downward at a rate of –1.6% annually, although the trend appears to be due more to random fluctuation than to any measurable factors, as the indicated trend considering only the most recent 10 years is upward. The claim frequency component has trended downward at an annual rate of –4% while the claim severity component has trended upward at +8%. The increases in coverage levels implemented a few years ago are contributing to the upward trend in claim severity.

- We recommend that the projected need for future premium rate increases continue to be monitored.

Reserve Analysis

Exhibit 1, Sheet 1 details our calculation of the current crop year surplus. Crop year 2012 incurred losses are approximately $4.37 million, and estimated annual incurred expenses are approximately $0.76 million. The crop year premiums of approximately $7.15 million exceed total losses and expenses for this crop year by approximately $2 million. Estimated crop year expenses are derived from actual paid administrative expenses from November 1, 2011 through October 31, 2012 of approximately $341,000, estimated incurred indirect assessments of approximately $167,000, and estimated incurred state and county assessments of approximately $250,000. We assumed that these 12-month expense figures adequately approximate crop year 2012 incurred expenses.

We display in Exhibit 1, Sheet 2 the total reserves available to pay catastrophic losses as of October 31, 2012. The total reserve fund balance is the sum of actual cash balance, interest receivable, travel advance, long term securities, assets invested in the Short Term Investment Pool, premiums receivable, prepaid expenses, all net of liabilities.

Exhibit 1, Sheet 3 displays the estimated distribution of 2013 crop year losses and LAE assuming 2.0 million acres insured at an average risk level per acre of $45.70, and assuming an LAE load of 5%. This distribution is based on 96 years of actual historical Program losses adjusted to the projected 2013 level and

adjusted for a 5% LAE load, and a fitted distribution to the adjusted data. The historical Program data used in our calculations are displayed in the Appendix accompanying this report. The projected 2.0 million acres was conservatively selected based on observed historical patterns. The $45.70 risk figure was selected based on actual figures of between $44 and $46 for the past three years, and the fact that no further coverage increases are contemplated for 2013.

Exhibit 1, Sheet 4 displays the confidence levels of current reserve funds with and without refunds ranging from 10% to 50%, to cover catastrophic claims. The fitted claims distribution indicates that current reserves are at a 99.99% confidence level. This sheet also shows that refunds of 10% to 50% do not materially affect the confidence level of remaining reserve funds available to cover a catastrophic year.

Premium Rate Analysis

The premium rate analysis is documented in Exhibit 2. Exhibit 2, Sheet 1 summarizes our findings, indicating that the current rate level is expected to produce a 22.4% underwriting profit and a 23.5% operating profit for the 2013 crop year. The projected loss ratio is selected as the weighted average 20-year on-level loss ratio. On-level loss ratios were determined from historical loss ratios by adjusting premiums to the current rate level. The projected expense ratio is based on a review of the historical data shown on Exhibit 2, Sheet 2. Projected investment income is based on a 1.0% annual rate of return applied to invested assets of $8.6 million. For simplicity, we assumed that premiums generated from 2013 crop year activity will not generate any investment income.

Exhibit 2, Sheet 2 displays historical underwriting expense ratios and our selected ratio for the 2013 crop year. We note that the 2005 through 2008 expense ratios are lower than for prior years. This appears to be due to the significant increase in premium volume during these years. We also observe that expenses do not vary directly with premiums. We judgmentally selected a 2012 expense ratio of 10.5% based on various averages of actual historical ratios.

Exhibit 2, Sheet 3 shows the 20-year historical claims experience. On-level loss ratios are displayed. Also, on-level loss ratios were fitted to exponential curves to indicate the historical annual trend in loss ratios. Exhibit 2, Sheet 4 displays the frequency and severity components of the loss ratio and their respective trends. Exhibit 2, Sheet 5 displays, graphically, actual and fitted claim frequencies, claim severities, and on-level loss ratios. Loss ratios appear to be trending on average at –1.6% annually, although the trend appears to be due more to random fluctuation than to any measurable factors. The claim frequency component is trending downward while the claim severity component is trending

upward. The increases in coverage levels implemented a few years ago are contributing to this upward trend in claim severity.

Conclusion

We are available to discuss any questions or items regarding this report.

Exhibit 1, Sheet 1
Montana State Crop Hail Insurance Program
Calculation of the 2012 Crop Year Surplus/Deficit

		Dollars	Percent of Premiums
(1)	2012 Year Premiums:	$7,145,383	100.0%
(2)	2012 Year Paid Losses:	$4,366,501	61.1%
(3)	2012 Year Administrative Expenses:	$757,684	10.6%
(4)	2012 Year Total Costs:	$5,124,185	71.7%
(5)	2012 Year Underwriting Surplus/(Deficit):	$2,021,198	28.3%

Notes:

(3)	Paid administrative expenses, 11/1/11 - 10/31/12	$340,504
	Estimated incurred indirect administrative assessments	$167,091
	Estimated incurred state and county assessments (3.5% of premiums)	$250,088
	Total	$757,684

(4) = (2) + (3)
(5) = (1) - (4) Does not include investment income generated during the year.

Exhibit 1, Sheet 2
Montana State Crop Hail Insurance Program
Calculation of Current Reserve Fund
(As of 10/31/12)

Assets:

(1)	Cash Balance:	$44,801
(2)	Interest Receivable:	$0
(3)	Travel Advance & Prepaid Expenses:	$0
(4)	Long Term Securities:	$0
(5)	Short Term Investment Pool:	$8,605,219
(6)	Outstanding Premiums:	$3,363,473
(7)	Total Assets Available (Sum of (1) thru (6)):	$12,013,494

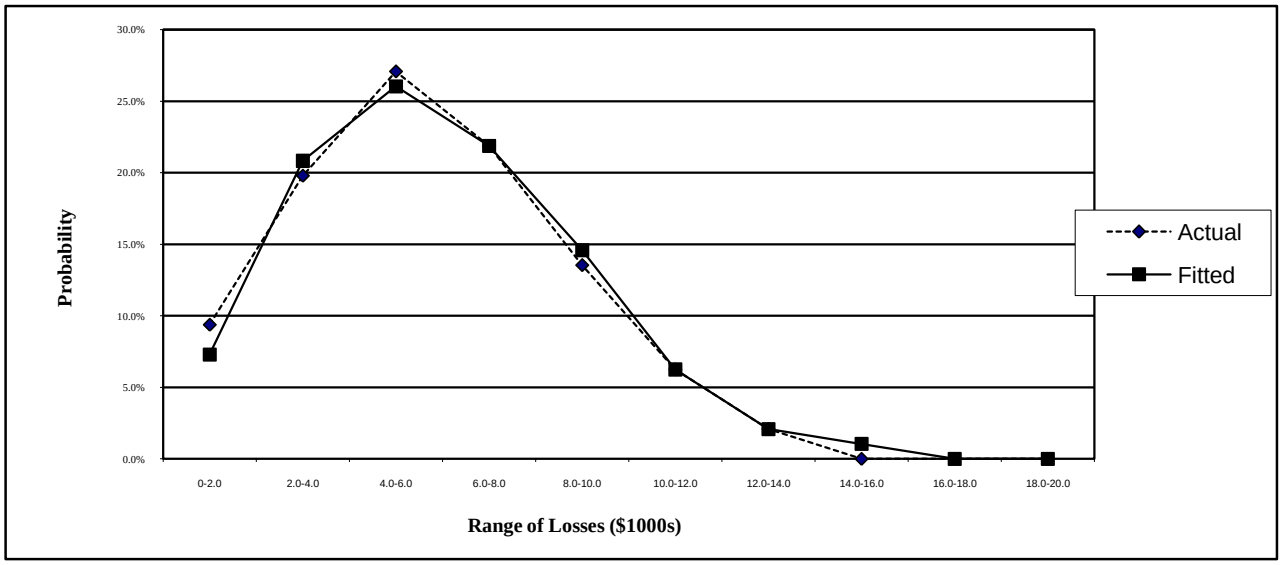
Liabilities:

(8)	Compensated Absences	$34,237
(9)	Payments to State/Counties	$250,088
(10)	Total Liabilities (Sum of (8) and (9)):	$284,325

Net Assets Available ((7) - (10)): $11,729,168

Exhibit 1, Sheet 3
Montana State Crop Hail Insurance Program
Probability Distribution of Incurred Losses in 2013

Range of Losses & LAE (in $Millions)	Actual # of Years In Range	Fitted # of Years In Range	Empirical Probability of Losses in Interval	Fitted Probability of Losses in Interval	Empirical Cumulative Probability Distribution	Fitted Cumulative Probability Distribution
0-2.0	9	7	9.4%	7.3%	9.4%	7.3%
2.0-4.0	19	20	19.8%	20.8%	29.2%	28.1%
4.0-6.0	26	25	27.1%	26.0%	56.3%	54.2%
6.0-8.0	21	21	21.9%	21.9%	78.1%	76.0%
8.0-10.0	13	14	13.5%	14.6%	91.7%	90.6%
10.0-12.0	6	6	6.3%	6.3%	97.9%	96.9%
12.0-14.0	2	2	2.1%	2.1%	100.0%	99.0%
14.0-16.0	0	1	0.0%	1.0%	100.0%	100.0%
16.0-18.0	0	0	0.0%	0.0%	100.0%	100.0%
18.0-20.0	0	0	0.0%	0.0%	100.0%	100.0%
Total	96	96	100.0%	100.0%		



Notes:
Distribution based on historical losses projected to 2013 level and including estimated loss adjustment expenses.
Average losses = $5.86 million.

Exhibit 1, Sheet 4
Montana State Crop Hail Insurance Program
Confidence Levels of Available Funds

	Refund Amount	Available Funds	Confidence Level
Current	$0	$11,729,168	99.988%
Less 10% refund	$714,538	$11,014,630	99.975%
Less 20% refund	$1,429,077	$10,300,092	99.950%
Less 30% refund	$2,143,615	$9,585,553	99.904%
Less 40% refund	$2,858,153	$8,871,015	99.821%
Less 50% refund	$3,572,691	$8,156,477	99.676%

Notes:
Current available funds from Exhibit 1, Sheet 2.
Confidence level represents the likelihood that the deviation in actual 2013 losses and LAE from expected amounts will be less than or equal to available funds.

Exhibit 2, Sheet 1
Montana State Crop Hail Insurance Program
Analysis of Rate Adequacy

		Percent of Premiums
(1)	Projected 2013 Loss Ratio:	67.1%
(2)	Projected 2013 Expense Ratio:	10.5%
(3)	Combined 2013 Loss & Expense Ratio:	77.6%
(4)	Indicated 2013 Underwriting Margin:	22.4%
(5)	Projected 2013 Investment Income:	1.1%
(6)	Indicated 2013 Operating Margin:	23.5%

Notes:
(1) See Exhibit 2, Sheet 3
(2) See Exhibit 2, Sheet 2
(3) = (1) + (2)
(4) = 100% - (3)
(5) = 1% of ($8.6 million / $7.9 million).
Assumes invested assets stay level during 2013 at $8.6 million.
(6) = (4) + (5)

Exhibit 2, Sheet 2
Montana State Crop Hail Insurance Program
Expense Ratio Analysis

Crop Year	Underwriting Expenses	Premiums	Ratio
2003	$438,917	$4,000,547	11.0%
2004	$444,344	$4,003,240	11.1%
2005	$512,150	$5,845,572	8.8%
2006	$500,623	$5,175,482	9.7%
2007	$639,700	$7,925,390	8.1%
2008	$685,779	$7,405,099	9.3%
2009	$661,775	$6,253,975	10.6%
2010	$783,292	$7,459,098	10.5%
2011	$705,815	$6,290,064	11.2%
2012	$757,684	$7,145,383	10.6%
Average			10.0%
3-Year Average			10.8%
Selected			10.5%

Notes:
Expenses include loss adjustment expenses.

Exhibit 2, Sheet 3
Montana State Crop Hail Insurance Program
Loss Ratio Analysis

Crop Year	(1) Losses	(2) Premiums	(3) Actual Loss Ratio	(4) On-Level Premiums	(5) On-Level Loss Ratio	(6) Exponential Fit to On-Level 1993-2012	(7) Exponential Fit to On-Level 2003-2012
1993	$ 1,975,595	$ 1,996,387	99.0%	$ 2,030,044	97.3%	76.9%	
1994	$ 733,022	$ 2,138,728	34.3%	$ 2,174,785	33.7%	75.7%	
1995	$ 3,140,158	$ 2,622,528	119.7%	$ 2,666,741	117.8%	74.5%	
1996	$ 1,863,815	$ 2,879,814	64.7%	$ 2,928,364	63.6%	73.3%	
1997	$ 1,557,198	$ 2,817,819	55.3%	$ 2,865,324	54.3%	72.1%	
1998	$ 1,893,114	$ 2,582,146	73.3%	$ 2,625,678	72.1%	71.0%	
1999	$ 2,256,636	$ 2,426,448	93.0%	$ 2,467,355	91.5%	69.9%	
2000	$ 2,928,557	$ 1,888,504	155.1%	$ 1,920,342	152.5%	68.7%	
2001	$ 2,168,046	$ 1,476,007	146.9%	$ 1,500,890	144.5%	67.7%	
2002	$ 1,439,433	$ 1,613,880	89.2%	$ 1,655,256	87.0%	66.6%	
2003	$ 1,361,700	$ 4,000,547	34.0%	$ 4,048,455	33.6%	65.5%	35.4%
2004	$ 1,879,295	$ 4,003,240	46.9%	$ 4,028,860	46.6%	64.5%	38.5%
2005	$ 2,539,537	$ 5,845,572	43.4%	$ 5,845,977	43.4%	63.5%	42.0%
2006	$ 1,142,454	$ 5,175,482	22.1%	$ 5,179,262	22.1%	62.4%	45.8%
2007	$ 6,719,017	$ 7,925,390	84.8%	$ 7,930,616	84.7%	61.5%	49.9%
2008	$ 3,702,885	$ 7,405,099	50.0%	$ 7,409,658	50.0%	60.5%	54.4%
2009	$ 3,812,759	$ 6,253,975	61.0%	$ 6,253,975	61.0%	59.5%	59.3%
2010	$ 7,013,070	$ 7,459,098	94.0%	$ 7,459,098	94.0%	58.6%	64.7%
2011	$ 4,174,093	$ 6,290,064	66.4%	$ 6,290,064	66.4%	57.6%	70.5%
2012	$ 4,366,501	$ 7,145,383	61.1%	$ 7,145,383	61.1%	56.7%	76.8%
Total/Trend	$56,666,886	$83,946,109	67.5%	$84,426,125	67.1%	-1.6%	9.0%

Selected Trend: NA

Projected 2013 Crop Year Loss Ratio: 67.1%

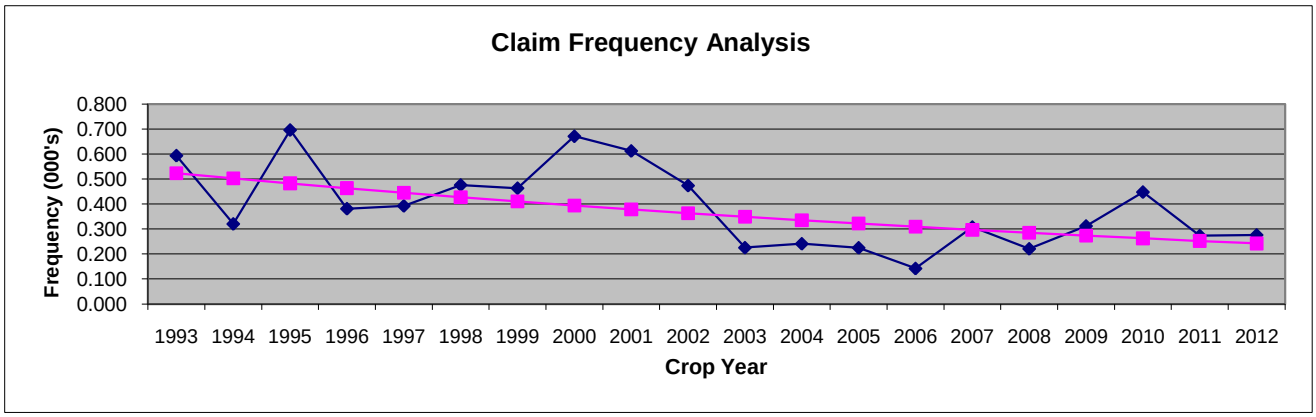
Notes:
(4) On-level premiums = historical premiums adjusted to 2012 rate level.
1.0169 Adjustment to 2001 and prior
1.0256 Adjustment to 2002
1.0120 Adjustment to 2003
1.0064 Adjustment to 2004
1.0001 Adjustment to 2005
1.0007 Adjustment to 2006
1.0007 Adjustment to 2007
1.0006 Adjustment to 2008
1.0000 Adjustment to 2009
1.0000 Adjustment to 2010
1.0000 Adjustment to 2011
(6), (7) Based on historical variability, 0% trend is selected.

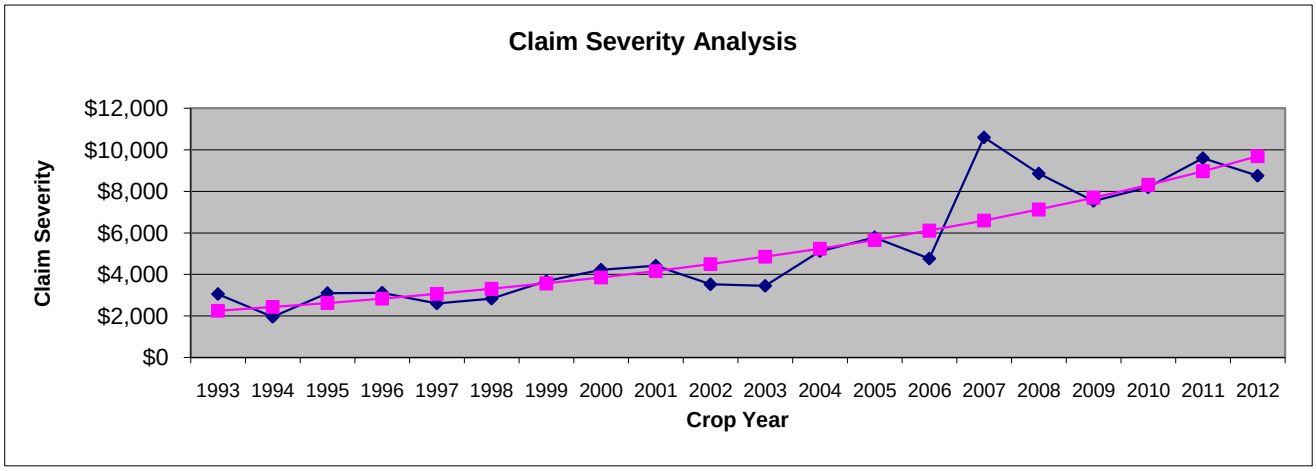
Exhibit 2, Sheet 4
Montana State Crop Hail Insurance Program
Analysis of Claim Frequency and Severity Trends

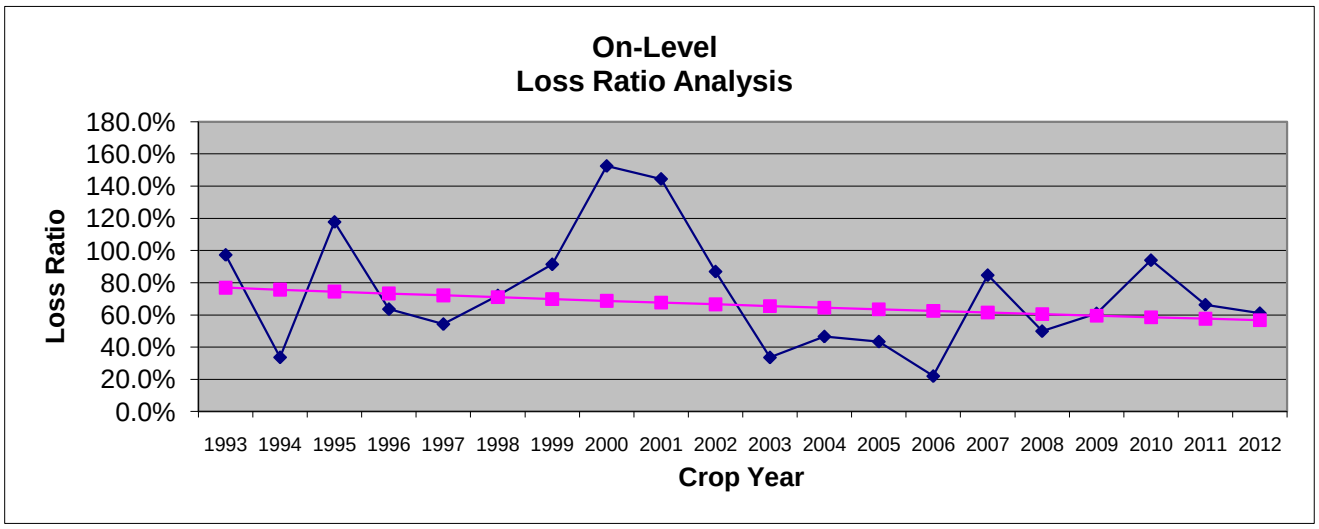
	(1)	(2)	(3)	(4)	(5)	(6)
	Claim Frequency			Claim Severity		
Crop Year	Actual	Exponential Fit to 1993-2012	Exponential Fit to 2003-2012	Actual	Exponential Fit to 1993-2012	Exponential Fit to 2003-2012
1993	0.594	0.523		$3,053	$2,249	
1994	0.321	0.503		$1,955	$2,428	
1995	0.696	0.483		$3,097	$2,623	
1996	0.381	0.463		$3,117	$2,832	
1997	0.393	0.445		$2,600	$3,059	
1998	0.476	0.427		$2,834	$3,303	
1999	0.463	0.410		$3,675	$3,567	
2000	0.671	0.394		$4,226	$3,852	
2001	0.613	0.378		$4,416	$4,160	
2002	0.474	0.363		$3,519	$4,493	
2003	0.226	0.349	0.206	$3,447	$4,852	$4,479
2004	0.241	0.335	0.216	$5,121	$5,240	$4,927
2005	0.225	0.322	0.227	$5,785	$5,659	$5,420
2006	0.142	0.309	0.239	$4,760	$6,111	$5,961
2007	0.308	0.297	0.251	$10,598	$6,600	$6,557
2008	0.221	0.285	0.263	$8,859	$7,127	$7,212
2009	0.312	0.274	0.277	$7,535	$7,697	$7,933
2010	0.448	0.263	0.291	$8,193	$8,312	$8,726
2011	0.274	0.252	0.306	$9,596	$8,977	$9,598
2012	0.276	0.242	0.321	$8,751	$9,694	$10,558
Averages						
1993-2012	0.388			$5,257		
2003-2012	0.267			$7,264		
2008-2012	0.306			$8,587		
Indicated Trend		-4.0%	5.1%		8.0%	10.0%

Notes:
(1) 1000*Number of Claims/Insured Acres
(4) Losses/Number of Claims

Exhibit 2, Sheet 5
Montana State Crop Hail Insurance Program
Analysis of Claim Frequency and Severity Trends







Year	(1) Number of Policies	(2) Risk	(3) Premiums	(4) Losses	(5) Acres Insured	(6) Number of Losses	(7) Loss Ratio (4)/(3)	(8) Refund Amount	(9) Refund % (8)/(3)	(10) Risk Per Acre, (2)/(5)	(11) Losses Per Acre (4)/(5)
1917		3,178,402	106,181	61,604	270,787		58.0%		0%	11.74	0.23
1918		8,092,204	404,976	393,798	385,503		97.2%		0%	20.99	1.02
1919		939,441	58,789	55,055	78,452		93.6%		0%	11.97	0.70
1920	2,383	3,216,346	299,731	254,570	270,148	638	84.9%		0%	11.91	0.94
1921	1,204	1,494,479	140,682	152,494	124,977	356	108.4%		0%	11.96	1.22
1922	1,261	1,460,030	136,705	106,119	129,650	376	77.6%		0%	11.26	0.82
1923	1,412	1,240,673	109,470	132,145	126,771	592	120.7%		0%	9.79	1.04
1924	1,025	895,430	74,167	35,058	108,334	215	47.3%		0%	8.27	0.32
1925	1,169	1,158,759	75,637	16,499	115,406	84	21.8%		0%	10.04	0.14
1926	1,136	1,188,748	82,314	25,449	118,889	147	30.9%		0%	10.00	0.21
1927	1,800	1,802,267	149,576	119,464	218,000	484	79.9%		0%	8.27	0.55
1928	1,935	2,008,592	149,847	141,011	248,000	422	94.1%		0%	8.10	0.57
1929	1,649	1,993,974	132,986	27,529	242,854	95	20.7%		0%	8.21	0.11
1930	1,562	2,001,047	145,700	93,315	257,955	249	64.0%		0%	7.76	0.36
1931	234	279,806	22,055	21,871	38,013	48	99.2%		0%	7.36	0.58
1932	1,082	1,072,450	84,511	128,808	162,579	368	152.4%		0%	6.60	0.79
1933	764	630,897	49,487	36,858	109,888	147	74.5%		0%	5.74	0.34
1934	598	532,161	40,569	24,334	74,974	50	60.0%		0%	7.10	0.32
1935	1,545	1,449,100	116,159	145,614	214,595	454	125.4%		0%	6.75	0.68
1936	421	391,122	26,859	600	59,159	7	2.2%		0%	6.61	0.01
1937	530	462,706	35,273	17,791	67,909	66	50.4%		0%	6.81	0.26
1938	2,670	2,505,423	193,007	126,130	357,007	524	65.3%		0%	7.02	0.35
1939	1,195	1,062,243	83,157	42,302	152,321	210	50.9%		0%	6.97	0.28
1940	1,040	919,895	71,454	95,485	136,899	341	133.6%		0%	6.72	0.70
1941	1,971	2,054,557	163,601	145,400	293,999	562	88.9%		0%	6.99	0.49
1942	2,149	2,492,670	197,984	178,911	322,032	533	90.4%		0%	7.74	0.56
1943	3,060	3,594,542	295,494	371,954	453,797	910	125.9%		0%	7.92	0.82
1944	2,294	3,588,231	311,808	360,336	435,126	721	115.6%		0%	8.25	0.83
1945	2,626	4,571,798	392,132	301,263	541,998	389	76.8%		0%	8.44	0.56
1946	2,614	4,268,566	382,318	355,964	510,017	679	93.1%		0%	8.37	0.70
1947	3,197	6,061,199	553,792	406,858	701,012	904	73.5%		0%	8.65	0.58
1948	3,225	6,643,254	584,610	523,894	739,227	696	89.6%		0%	8.99	0.71
1949	1,729	3,365,953	295,622	162,995	376,638	210	55.1%		0%	8.94	0.43
1950	3,093	5,993,270	543,083	134,628	671,340	261	24.8%		0%	8.93	0.20
1951	2,514	5,634,090	494,297	326,566	627,684	424	66.1%		0%	8.98	0.52
1952	1,518	3,500,317	290,960	100,336	375,541	136	34.5%		0%	9.32	0.27
1953	2,961	7,870,126	686,343	421,477	755,928	555	61.4%		0%	10.41	0.56
1954	2,324	5,773,906	503,792	448,221	547,034	657	89.0%		0%	10.55	0.82
1955	2,305	5,428,902	466,206	198,727	513,811	310	42.6%		0%	10.57	0.39
1956	1,247	3,249,738	211,302	217,277	304,109	261	102.8%		0%	10.69	0.71
1957	1,911	4,787,076	406,325	331,432	454,322	427	81.6%	40,633	10%	10.54	0.73
1958	2,083	5,548,902	440,413	143,541	513,192	240	32.6%	132,124	30%	10.81	0.28
1959	2,536	7,135,784	562,468	217,108	656,835	222	38.6%	195,632	35%	10.86	0.33
1960	2,844	8,160,074	652,107	452,654	755,324	515	69.4%	163,027	25%	10.80	0.60
1961	2,009	6,035,661	461,264	570,984	552,735	392	123.8%		0%	10.92	1.03
1962	3,198	8,593,193	690,445	958,755	795,527	965	138.9%		0%	10.80	1.21
1963	2,536	7,346,940	602,966	938,726	674,907	1,055	155.7%		0%	10.89	1.39
1964	2,609	7,460,765	641,786	728,386	690,631	716	113.5%		0%	10.80	1.05
1965	2,323	7,060,927	620,242	550,486	649,124	568	88.8%		0%	10.88	0.85
1966	2,081	6,281,261	554,123	322,877	571,810	316	58.3%	166,236	30%	10.98	0.56
1967	2,234	7,598,010	668,603	140,144	688,976	153	21.0%	267,441	40%	11.03	0.20
1968	2,587	8,987,833	780,046	390,771	805,950	478	50.1%	294,000	38%	11.15	0.48
1969	2,911	9,300,924	826,680	541,089	849,007	483	65.5%	295,813	36%	10.96	0.64
1970	2,657	8,422,974	748,659	296,767	767,967	467	39.6%	434,038	58%	10.97	0.39
1971	3,077	11,498,341	1,009,743	566,388	1,051,764	418	56.1%	312,826	31%	10.93	0.54
1972	2,585	10,177,714	908,297	380,439	939,416	471	41.9%	526,812	58%	10.83	0.40
1973	2,651	11,571,965	1,042,876	142,525	1,066,169	182	13.7%	855,164	82%	10.85	0.13
1974	3,051	15,006,883	1,310,919	804,895	1,348,014	578	61.4%	380,166	29%	11.13	0.60
1975	3,313	16,296,098	1,408,277	1,274,333	1,461,941	938	90.5%		0%	11.15	0.87
1976	2,882	14,842,443	1,299,993	1,116,489	1,333,668	831	85.9%		0%	11.13	0.84
1977	2,146	10,692,679	949,468	335,896	970,757	299	35.4%		0%	11.01	0.35
1978	2,625	17,059,114	1,512,391	1,626,810	1,039,998	912	107.6%		0%	16.40	1.56
1979	1,846	13,567,843	1,189,607	431,771	821,521	245	36.3%	175,546	15%	16.52	0.53
1980	1,326	15,133,911	1,209,283	1,590,523	662,326	439	131.5%		0%	22.85	2.40
1981	2,002	23,542,542	1,987,230	1,978,486	1,043,662	743	99.6%		0%	22.56	1.90
1982	2,138	25,299,339	2,179,350	1,230,694	1,120,740	523	56.5%	1,101,051	51%	22.57	1.10

Montana State Crop Hail Insurance Program
Historical Data

Year	(1) Number of Policies	(2) Risk	(3) Premiums	(4) Losses	(5) Acres Insured	(6) Number of Losses	(7) Loss Ratio (4)/(3)	(8) Refund Amount	(9) Refund % (8)/(3)	(10) Risk Per Acre, (2)/(5)	(11) Losses Per Acre (4)/(5)
1983	2,251	25,146,238	2,178,891	1,794,862	1,112,673	585	82.4%	433,334	20%	22.60	1.61
1984	2,273	27,055,207	2,370,027	369,708	1,206,834	197	15.6%	2,131,011	90%	22.42	0.31
1985	2,029	24,457,536	2,152,897	1,499,182	1,092,158	538	69.6%	638,505	30%	22.39	1.37
1986	2,861	34,180,835	2,968,198	1,134,795	1,563,961	453	38.2%	1,768,113	60%	21.86	0.73
1987	3,038	34,991,738	3,018,007	713,650	1,595,773	362	23.6%	2,111,046	70%	21.93	0.45
1988	2,244	24,692,265	2,137,452	1,541,108	1,116,578	400	72.1%	637,028	30%	22.11	1.38
1989	3,266	42,724,810	3,661,612	1,446,960	1,946,706	488	39.5%	1,088,829	30%	21.95	0.74
1990	2,827	36,885,205	3,161,800	3,692,434	1,693,060	789	116.8%	0	0%	21.79	2.18
1991	2,293	25,078,472	2,134,804	2,740,660	1,160,056	681	128.4%	0	0%	21.62	2.36
1992	1,669	18,958,636	1,623,514	956,514	869,116	306	58.9%	0	0%	21.81	1.10
1993	1,989	23,560,144	1,996,387	1,975,595	1,089,459	647	99.0%	0	0%	21.63	1.81
1994	1,968	25,274,158	2,138,728	733,022	1,169,751	375	34.3%	429,135	20%	21.61	0.63
1995	2,337	31,476,512	2,622,528	3,140,158	1,456,469	1,014	119.7%	0	0%	21.61	2.16
1996	2,407	34,536,852	2,879,814	1,863,815	1,567,757	598	64.7%	347,765	12%	22.03	1.19
1997	2,272	33,551,599	2,817,819	1,557,198	1,525,269	599	55.3%	841,643	30%	22.00	1.02
1998	2,217	30,421,758	2,582,146	1,893,114	1,402,778	668	73.3%	513,756	20%	21.69	1.35
1999	1,998	28,754,279	2,426,448	2,256,636	1,324,798	614	93.0%	0	0%	21.70	1.70
2000	1,628	22,344,773	1,888,504	2,928,557	1,032,353	693	155.1%	0	0%	21.64	2.84
2001	1,269	17,510,769	1,476,007	2,168,046	801,563	491	146.9%	0	0%	21.85	2.70
2002	1,232	19,015,148	1,613,880	1,439,433	863,153	409	89.2%	0	0%	22.03	1.67
2003	2,395	46,764,162	4,000,547	1,361,700	1,751,570	395	34.0%	395,350	10%	26.70	0.78
2004	2,026	47,203,746	4,003,240	1,879,295	1,521,701	367	46.9%	786,648	20%	31.02	1.23
2005	2,440	68,141,418	5,845,572	2,539,537	1,950,693	439	43.4%	1,724,531	30%	34.93	1.30
2006	2,107	59,918,927	5,175,482	1,142,454	1,686,482	240	22.1%	2,568,768	50%	35.53	0.68
2007	2,556	91,278,055	7,925,390	6,719,017	2,058,886	634	84.8%	788,538	10%	44.33	3.26
2008	2,269	84,935,978	7,405,099	3,702,885	1,890,709	418	50.0%	2,929,163	40%	44.92	1.96
2009	1,996	71,616,272	6,253,975	3,812,759	1,620,543	506	61.0%	1,860,834	30%	44.19	2.35
2010	2,178	85,842,424	7,459,098	7,013,070	1,910,623	856	94.0%	743,180	10%	44.93	3.67
2011	1,943	72,428,597	6,290,064	4,174,093	1,589,112	435	66.4%	1,560,426	25%	45.58	2.63
2012	1,925	82,433,752	7,145,383	4,366,501	1,805,947	499	61.1%	0	0%	45.65	2.42
Totals:	195,506	1,672,656,773	143,179,510	97,528,439	77,901,177	43,353	68.1%	29,638,109	21%	21.47	1.25