Montana State Fund

Review of Rates Effective July 1, 2013
&
Review of Claim Liability as of June 30, 2013

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Date: November 20, 2013

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November 20, 2013

Ms. Tori Hunthausen
Legislative Auditor
1301 E. 6th Avenue
Helena, Montana 59601
State Capitol Building RM 160

Dear Ms. Hunthausen:

We are pleased to submit to you twenty-five (25) bound copies of our final report on the Review of Rates Effectively July 1, 2013 and the Review of Claim Liability as of June 30, 2013 for the Montana State Fund.

We greatly appreciate the cooperation and courtesy extended to us during the course of this engagement. Please do not hesitate to contact us at (305) 273-1589 if you have any question about the report.

Thank you very much for the opportunity to work with you.

Sincerely,

Bob Ingco, FCAS, MAAA, CPCU, ARM
President

TABLE OF CONTENTS

Review of Rates Effective July 1, 2013
Review of Claim Liability as of June 30, 2013

PURPOSE

The Legislative Audit Division ("LAD") has engaged the services of AMI Risk Consultants, Inc. ("AMI") to perform the following:

- Determine if the rates established by the Montana State Fund ("MSF") for workers' compensation insurance are excessive, inadequate, or unfairly discriminatory;
- Evaluate the adequacy of amounts reserved by MSF at June 30, 2013 and the reasonableness of procedures used in the claim reservation process; and
- Recommend areas where MSF should modify its procedures for estimating claims liability and its rate making procedures to ensure rates are not excessive, inadequate, or unfairly discriminatory.

SCOPE

AMI's contract with the LAD requires that this report address the following:

A. For MSF rates effective July 1, 2013

1. Include appropriate analysis of the data used in the rate setting process.
2. Include appropriate analysis of the methods for setting the overall rate level and the rates by class.
3. Comment and conclude on the reasonableness of the rate setting methodology, formulas and procedures.
4. Conclude as to whether the rates effective July 1, 2013 are excessive, inadequate or unfairly discriminatory.

B. For MSF loss and loss adjustment expense ("LAE") reserves as of June 30, 2013

1. Evaluate and comment on the data, formulas and methodology used by MSF's contract actuary in their estimates of MSF's loss and LAE liabilities.
2. Assess, comment and conclude on the reasonableness of the loss and LAE reserves established by MSF.

C. Information provided by MSF to their contract actuary

1. Review the procedures used by MSF's contract actuary to assess the consistency and reasonableness of the information obtained from MSF.
2. Determine the reliance placed on the information.
3. Comment and conclude on the adequacy of the procedures used by MSF's contract actuary to assess the consistency and reasonableness of information obtained from MSF.

D. Ranking of data elements

1. Review the data elements used by MSF's contract actuary in the rate setting process and the estimation of claims liability respective to each fiscal year reviewed.
2. Rank the data elements used by the actuary in terms of risk that erroneous data could materially affect the rates and estimated claims liability.

MSF COMMENTS AND RESPONSE	MSF and their contract actuary, Towers Watson ("TW"), had an opportunity to comment and respond to the conclusions presented in this report. Their response is attached to the final version of this report.

SUMMARY OF CONCLUSIONS

MSF Rates Effective July 1, 2013

In our opinion, the rates effective July 1, 2013 are not excessive, inadequate, or unfairly discriminatory. See Section A1 to A4.

MSF Loss and LAE Reserves as of June 30, 2013

Our opinion is that MSF's recorded loss and LAE reserves for the New Fund at June 30, 2013 are reasonable. However, our estimated loss and LAE reserves at June 30, 2013 for the Old Fund are above TW's high range of estimate. See Sections B1 to B2.

Data Testing Procedures

Our opinion is that the procedures used by TW to test the data used in both ratemaking and reserving are adequate. We do not have any further testing to suggest.

See Sections C1 to C3.

Ranking of Data Elements

It is our opinion that the rates and estimated reserves are most sensitive to errors in historical paid and reported loss triangles together with information on MSF internal operations.

See Sections D1 to D2.

SOURCES OF INFORMATION

AMI received the following documents from MSF:

Rates

- TW's Rate Level Analysis for the July 1, 2013 to June 30, 2014 Exposure Period (including Appendices)
- TW's Loss Cost Multiplier Analysis for the July 1, 2013 to June 30, 2014 Underwriting Year
- TW's Multivariate Model and Tier Structure Validation (2011) and the 2012 Update
- Tiered Rating Plan Board Packet
- Loss Cost Exceptions Board Packet
- Slide of Proposed Loss Cost Multipliers
- TW Certification of Loss Cost Exceptions
- TW Certification of Tier Rating
- Screenshots of MSF's class rating model
- Internal Notes on MSF Special Classifications
- Internal Notes on Selected Deviations
- Terrorism Load from NCCI Filing
- Historical MSF equity-to-premium and investment yields

Reserves

- TW's Indicated Unpaid Loss and LAE Amounts as of June 30, 2013 -New Fund and Old Fund – (including Appendices.
- MSF FY 2013 Statutory Balance Sheet (draft)
- MSF FY 2013 Statutory Income Statement (draft)
- Reconciliation of TW Indicated Reserves at June 30, 2013 to MSF Carried Reserves
- TW's September 3, 2013 letter to Mr. Laurence Hubbard addressing Anticipated Reinsurance Recoveries as of June 30, 2013.

In addition we met with officers and staff of MSF in Helena and they provided background information and perspective for our consideration.

ACKNOWLEDGMENT OF QUALIFICATIONS

Aguedo M. (Bob) Ingco is a consulting actuary and President of AMI Risk Consultants, Inc. He is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries. Mr. Ingco meets the qualification standards of the American Academy of Actuaries to provide the opinions contained in this report.

BACKGROUND **Rates**

Effective July 1, 2013 MSF implemented an **-6.0% reduction** to the Fund's overall rate level. The components of the change were:

- NCCI loss cost adoption
- Change in Loss Cost Multipliers (LCM's) by rating Tier
- Deviations from NCCI loss costs for selected classes
- Change in loss costs for non-NCCI classes.

Depending on the investment yield MSF earns over the lifetime of the FY 2014 policy liabilities, TW estimates that the policies, at this rate level, will make the following contribution to equity:

TW Estimated Contribution to Equity Selected Rate Change of -6% % of FY 2014 Manual Premium	
Investment Yield	Contribution to Equity
0.00%	-7.8%
2.25%	1.3%
2.50%	2.1%
2.75%	2.9%
3.00%	3.6%

BACKGROUND (CONTINUED)

Rates (continued)

Historical Investment Yield

MSF's investment yield in recent years has been as follows:

MSF Investment Yield By Fiscal Year*				
2009	2010	2011	2012	2013
4.68%	4.21%	3.80%	3.70%	3.45%

*Recent bond purchases yielding considerably less. Effective duration as of 5/31/13 was 3.7 years for the bond portfolio.

Target Equity

MSF's target equity is a **reserve to equity ratio between 2.0 and 2.5**. In recent years the ratio realized has been:

MSF Reserves to Equity Ratio By Fiscal Year				
2009	2010	2011	2012	2013
4.05	3.47	2.95	2.80	2.43

BACKGROUND (CONTINUED)

Reserves

At June 30, 2013 MSF recorded a loss and LAE liability of **$902.9 million** which was **$70.5 million** higher than TW's central estimate for the New Fund. Of the **$70.5 million** difference, **$4.3 million** are for liabilities not explicitly contemplated in TW's estimates (Other States Coverage and Employers Liability).

MSF Recorded Reserves – New Fund Compared to TW Central Estimate At June 30, 2013 ($millions)		
TW Central Estimate	MSF Recorded	Difference
$832.4	**$902.9**	**$70.5**

TW estimated a loss and LAE liability of $51.0 million for MSF's Old Fund. MSF does not record reserves for the Old Fund. The Old Fund reserve estimate was provided to assist the Old Fund's controlling authority.

State of Montana Recorded Reserves – Old Fund Compared to TW Central Estimate At June 30, 2013 ($millions)		
TW Central Estimate	State of Montana Recorded	Difference
$51.0	**$51.0**	**$0**

BACKGROUND (CONTINUED)

Reserves (continued)

Adverse Development – TW Central Estimates - New Fund

The history of TW Central Estimates shows a pattern of chronic adverse development, as estimates of "ultimate loss" are repeatedly restated at higher and higher levels. This is more evident in the older accident years than the recent ones, as seen in the table below.

TW Central Estimates of Ultimate Loss -New Fund
Annual Loss Reserve Reviews
Adverse (Favorable) Development Over the Past Five Years
(2008 – 2013)
($000's)

Development Period	Older Accident Years 90/91 – 02/03	Newer Accident Years 03/04 – 12/13	Total
2008 to 2009	$13,323	$5,624	$18,947
2009 to 2010	7,482	6,323	13,805
2010 to 2011	4,345	(2,085)	2,260
2011 to 2012	4,150	(2,180)	1,970
2012 to 2013	7,170	(4,150)	3,020
5-Yr Total	**$36,470**	**$3,532**	**$40,002**

REVIEW OF RATES EFFECTIVE JULY 1, 2013

A1: Analysis of Data Used in Rate Setting

Data Used for the Overall Rate Level Analysis

TW used a combination of loss, expense, premium, exposure and economic data in their estimation of MSF's projected contribution to equity for different rate level change scenarios. Most of the data was supplied by MSF including the economic data such as medical CPI, unemployment and employment rates, and average weekly wages. Data was tested for consistency in order to validate the assumptions of the different actuarial methodologies used. (Those tests will be detailed in section C1 of this report).

Data Used for the Tier Rating

To update MSF's tier structure in response to the changes in NCCI experience modification factors, TW performed a multivariate analysis in predicting loss ratios using individual policyholder claims and exposure data with account size, experience modification factor, hazard grade, historical frequency, and claim-free tenure as independent variables. Before running the model, TW performed several diagnostic and data reasonableness checks, as described in section C1.

Data Used for the NCCI Class Deviations and Special Classifications

MSF uses average manual premiums and pure premium indications for each class together with a credibility model to flag NCCI classes that merit further review and to derive rates for special classes not included in the NCCI class plan.

REVIEW OF RATES EFFECTIVE JULY 1, 2013 (continued)

A2: Analysis of Methods for Setting Overall Rate Level and Rates by Class

Overall Rate Level

The projected contribution to equity is determined using premium and loss data for accident years 1999/2000 to 2011/2012. Manual premiums are developed to ultimate and adjusted to the 2013/2014 manual rate level. Losses are likewise developed to ultimate and adjusted to current mix of business and 2013/2014 benefit level. Ultimate on-level losses are further adjusted for loss ratio trend and are loaded for Employers' Liability and reduced by a ceded percentage. A set of low, central, and high indications is derived separately for medical and indemnity and are then summed to a combined indication for each accident year.

The ALAE and Other Expense (General Underwriting and Production Expense) loadings are calculated using historical paid-to-paid ratios by fiscal year. The ULAE loading is computed using the Johnson method. Both loss adjustment expense loadings are partially adjusted to reflect the effects of HB 334.

Losses and LAE are then discounted using a selected payment pattern and discount rates 0.00%, 2.25%, 2.50%, 2.75%, and 3.00%.

The following loadings provided by MSF are also incorporated into the analysis:

- 5.0% adverse deviation (% of loss)
- 0.8% terrorism load (% of loss)
- 0.6% terrorism load (% of earned premium)
- 6.4% commissions (% of earned premium)
- 2.4% expense constant revenues (% of standard premium)
- 2.4% variable reinsurance costs (% of standard premium)
- 0.3% fixed reinsurance costs (% of earned premium)
- 8.8% pricing programs off-balance (% of manual premium)

An outline of our analysis regarding the different methods used in projecting the ultimate losses by accident year is in Appendix A.

TW uses generally accepted actuarial methods throughout the rate setting practice. In addition, they used regression analysis to determine the trend factors for claim count, severity, and loss ratio trends based on economic variables.

REVIEW OF RATES EFFECTIVE JULY 1, 2013 (continued)

A2: Analysis of Methods for Setting Overall Rate Level and Rates by Class (continued)

Tier Rating

TW utilized a multivariate model to estimate loss ratios using account size, experience modification factor, hazard grade, historical frequency, and claim-free tenure as independent variables. This is a standard method used for classification ratemaking. A review is performed regularly to monitor the reasonableness of the TW rate tier relativities when compared to actual experience.

NCCI Class Deviations and Special Classifications

Every year MSF undergoes an underwriting review of the classes with MSF experience significantly different from NCCI indications.

Expected combined ratios are computed using the policy premium database, limited losses, 2013/2014 rate tier parameters and applicable net underwriting debits/credits, expenses, and other provisions. These expected combined ratios are examined to determine if the expected profitability for each tier is roughly equivalent. If material differences exist, further review will be done with regards to the tier assignment criteria or the tier relativities in addition to possible underwriting reviews.

MSF also has special classifications that are not recognized by NCCI but are implemented to meet the needs of the MSF's book of business. Indicated rates for these special classes are determined as part of the classification review process.

REVIEW OF RATES EFFECTIVE JULY 1, 2013 (continued)

A3: Reasonableness of Rate Setting Approach

In this section we will comment upon TW's indications, including the approach applied and the actuarial selections made. In addition we show the results of our own calculations.

Comments on Overall Rate Level Approach

The TW approach to determining the projected equity contribution recognizes the appropriate, standard ratemaking elements. Our opinion of the various selections and calculations made by TW are discussed below.

Selection of Ultimate Losses

Our opinion is that TW's selections of ultimate losses are somewhat on the low side of the indications. Please see section B2 of this report for detailed discussion. In their overall rate level calculations, TW includes a load for adverse deviation of ultimate losses. This is somewhat unusual. In our calculations we elected to remove the adverse deviation load and instead select ultimate losses nearer the midpoint of the Tower Watson indications.

Adjustments for HB 334

Both the LAE loading and medical payment pattern were adjusted for the impact of HB 334. The adjustment of the LAE factors, however, is a partial reflection of the estimated full impact of the benefit change. In our opinion, a partial adjustment is reasonable since the actual impact of the HB 334 will not be known for several years and may be modified as its provisions are tested in the courts.

REVIEW OF RATES EFFECTIVE JULY 1, 2013 (continued)

A3: Reasonableness of Rate Setting Approach (continued)

Calculation of Rates on a Direct Basis

Our own rate level calculations below are performed on a direct basis. We did not reduce the indicated loss ratio by the ceded portion, and we excluded any reinsurance costs. In our opinion, this is a more appropriate approach to determining the cost of risk transfer between the MSF and the insured.

Comparison of Assumptions and Projected Equity Contribution (as % of Premium)

Component	TW	AMI
Ultimate Loss Ratio	60.3	63.2
Ceded Losses	0.5	0.0
Adverse Deviation	5.0	0.0
Variable Reinsurance Costs	2.4	0.0
Fixed Reinsurance Costs	0.3	0.0
Rate Change	-6.0	-6.0
Investment Yield	***Projected Equity Contribution***	
0.00%	-7.8	-6.0
2.25%	1.3	2.9
2.50%	2.1	3.7
2.75%	2.9	4.5
3.00%	3.6	5.1

Our projected equity contributions are slightly higher for each investment yield scenario.

Comments on Tier Rating Approach, Class Deviations, and Special Classifications

The methods used by TW in determining the indicated rates by class recognize the appropriate, standard ratemaking elements. In our opinion, their approach appropriately takes into account the changing claims conditions but still allows for rate stability.

REVIEW OF RATES EFFECTIVE JULY 1, 2013 (continued)

A4: Conclusion Regarding Rates Effective July 1, 2013

In our opinion, the rates effective July 1, 2013 are not excessive, inadequate, or unfairly discriminatory.

Overall Rate Level

Since the MSF's target reserve-to-equity ratio has been achieved in the 2013 fiscal year, a rate level that is at or near break-even is appropriate. Our calculated projected equity contribution shows a break-even point at an investment yield between 0.00% and 2.25%, which is a reasonable estimate of the investment yield that could be expected for new policy money in the current investment environment.

Tier Rating Approach, Class Deviations, and Special Classifications

We believe the procedures and methodology used by TW and MSF in class ratemaking and tiering are reasonable. Their methods highlight both statistical considerations and expert opinion in determining the appropriateness of class rates and tier definitions.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013

B1: Data and Methods Used by MSF's Contract Actuary

An outline of the data and methods used by TW in estimating loss and LAE reserves is attached to this report as **Appendix A**. An overview and discussion follow below.

Data Used by MSF's Contract Actuary

Similar to the overall rate level analysis, TW used a combination of loss, premium, exposure and economic data, mostly supplied by MSF, in their estimation of MSF's estimated loss and LAE reserves. The same consistency tests are done as described in section C1.

For the Old Fund, open claims data for Fatal, Permanent Total, and Permanent Partial injuries was used for the Sherman-Diss approach together with assumed medical inflation rates, claimant birth dates, and SSA life tables.

Methods Used by MSF's Contract Actuary

TW applied a variety of methods to estimate MSF's loss reserves. Some are methods frequently used in practice, such as:

- Loss Development Approach – projects cumulative paid losses by accident year to ultimate using selected factors based on historical payment patterns.
- Bornhuetter-Ferguson Approach – estimates ultimate losses by accident year using actual paid and expected unpaid losses.
- Berquist-Sherman Approach – projects adjusted cumulative reported losses by accident year to ultimate using selected factors.

Others are more unusual:

- Frequency-Severity Index Approach – estimates ultimate losses by accident year using a base 2013/2014 level ultimate losses and estimated trend factors.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B1: Data and Methods Used by MSF's Contract Actuary (continued)

- Adjusted Case Reserve Approach – estimates ultimate losses by accident year using case reserves augmented by estimates of unreported claims, future reopenings, change in disability type, medical inflation/cost of living adjustments and future development potential (Old Fund only).
- Sherman-Diss Method (Old Fund only) – projects medical and indemnity payments for open claims using a heuristic trended mortality model.

To estimate the ALAE loading, TW used a single paid-to-paid method. To estimate ULAE loading, TW used the Johnson Method which is based on relative ULAE costs per claim activity.

Adjustments and Accommodations for Changing Conditions

The MSF data underlying the loss reserve estimates have been impacted by changes in benefit structures, faster closure rates, reduced temporary total disability durations, increased lump sum payments, inconsistent case reserving, shifts in the business mix, and varying loss ratio trends.

TW made a number of adjustments and accommodations for these changing conditions impacting the data. These include the following:

- Selecting loss development factors for groups of accident periods, grouping the accident periods with common statutory benefits;
- Accelerating selected development patterns to reflect faster closure rates and improvements in claims processing;
- Computing indicated ultimates after adjusting for lump sum settlements and excess medical payments;
- Using Berquist-Sherman approach to adjust for the varying case reserve levels in the reported loss triangles; and
- Using the Frequency-Severity Index method to reflect changes in the business mix and loss ratio trends.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B1: Data and Methods Used by MSF's Contract Actuary (continued)

Key Selections

There are a number of points in the loss reserve calculations where selections are made based on actuarial judgment. One of the key assumptions that impacts the majority of the methods applied is the selection of paid loss development factors.

As a check on the reasonableness of TW's paid loss development factor selections, we made our own selections and compared the resulting factors and indicated ultimate losses.

We estimated loss development factors separately for indemnity and medical using the approach outlined in a 2003 paper by David Clark entitled "LDF Curve-Fitting and Stochastic Reserving: A Maximum Likelihood Approach." This method aims to estimate a "growth curve" from the loss triangle. The growth curve can be interpreted as the payment pattern as a percentage of ultimate or the inverse of the cumulative development factors.

Because of the inconsistency in case reserves and the heterogeneity of payment rates in the data, we took the approach similar to TW in which we:

- did not use the incurred loss development triangle; and
- segmented the analysis of the paid loss development triangle by accident year groups.

For each accident year group, we estimated the growth curve as a mixture of the Loglogistic and Weibull distributions where we gave greater weight to the more recent accident years. Because of the greater uncertainty in extrapolating the curve past the available development in the data, we truncated the model at 600 months, i.e., the estimated tail factor at 600 months was set to 1.000. This cut-off point appears reasonable in light of the indicated development patterns.

B1: Data and Methods Used by MSF's Contract Actuary (continued)

Key Selections (continued)

The estimated factors from the model were then credibility-weighted with the indicated volume-weighted average age-to-age factors in the triangle. The credibility weights were based on the square-root rule with higher credibility assigned to earlier development periods. The results were then smoothened to determine our selected paid loss development factors. However unlike TW, we did not accelerate the payment patterns. Comparisons of AMI and TW development factors are shown in the next section.

B2: Reasonableness of MSF's Loss and LAE Reserves

Opinion on TW's Loss and LAE Estimates

In our opinion the data and methods applied by TW are reasonable. TW made every effort to account for changing conditions, both internal and external to MSF, in their choice and application of data. Furthermore their selection of loss development factors and other selected values required by the various methods appear reasonable.

However, we do disagree with the following:

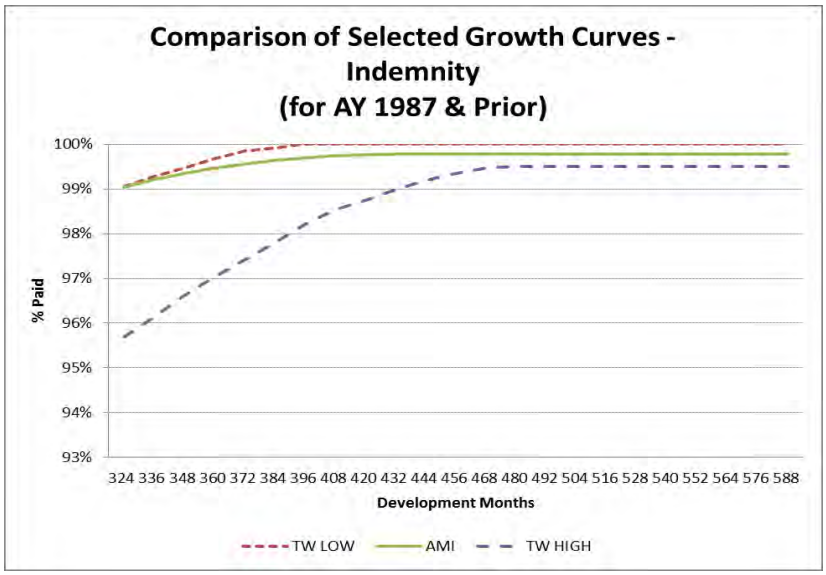
- TW's final ***selection of ultimate losses*** based on the range of indications produced by the array of methods applied appears low.
- TW's ***selections of ALAE and ULAE factors*** aren't adjusted for the impact of H.B. 334 for accident years 2011/2012 and later.

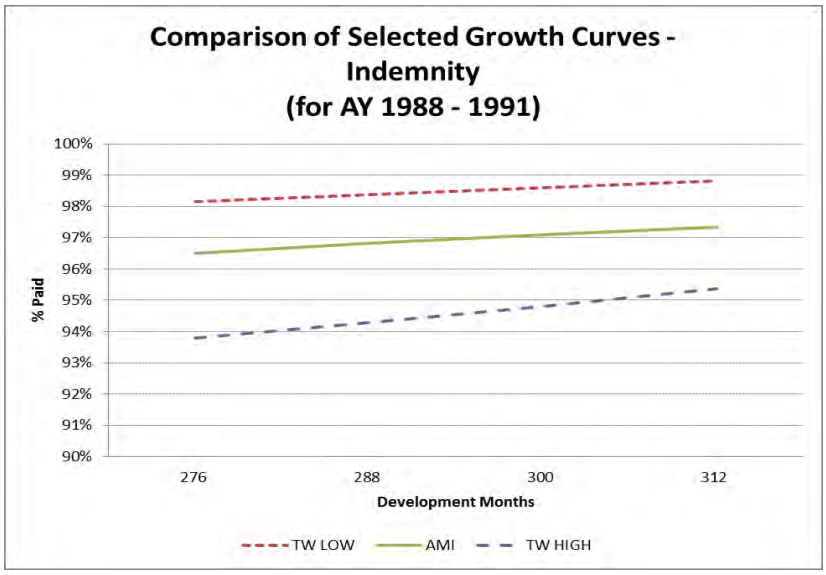
No two actuaries will make exactly the same selections of factors or estimates when faced with similar indications. However, ***it is our opinion*** that in light of the persistent adverse development of past estimates, a selection of ultimate losses closer to the midpoint of the various indications would be prudent. Furthermore, a small adjustment of ALAE and ULAE factors for the impact of H.B. 334 seems appropriate and would be consistent with the ratemaking treatment of LAE.

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

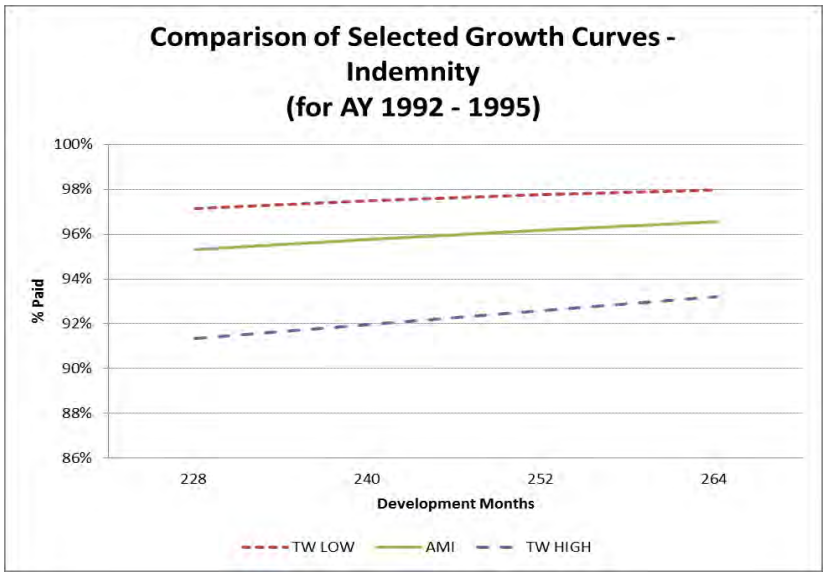
Comparison of TW and AMI Selections – Loss Development Factors

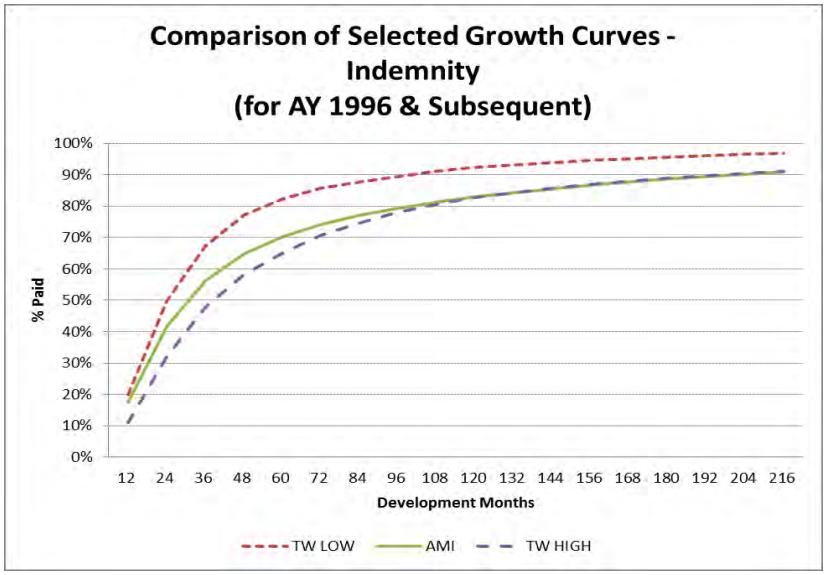
A comparison of our estimated Indemnity growth curves (1 divided by the selected cumulative factors) with TW's low and high factors are shown below:





B2: Reasonableness of MSF's Loss and LAE Reserves (continued)



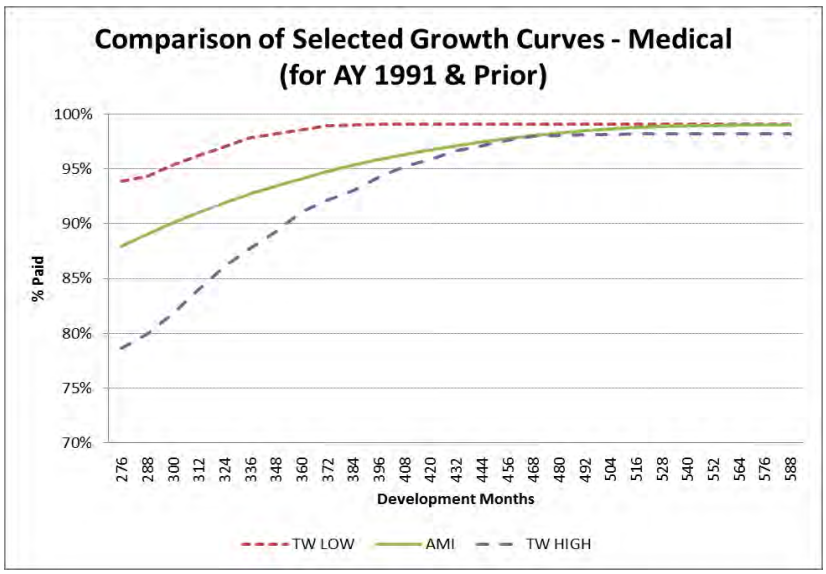


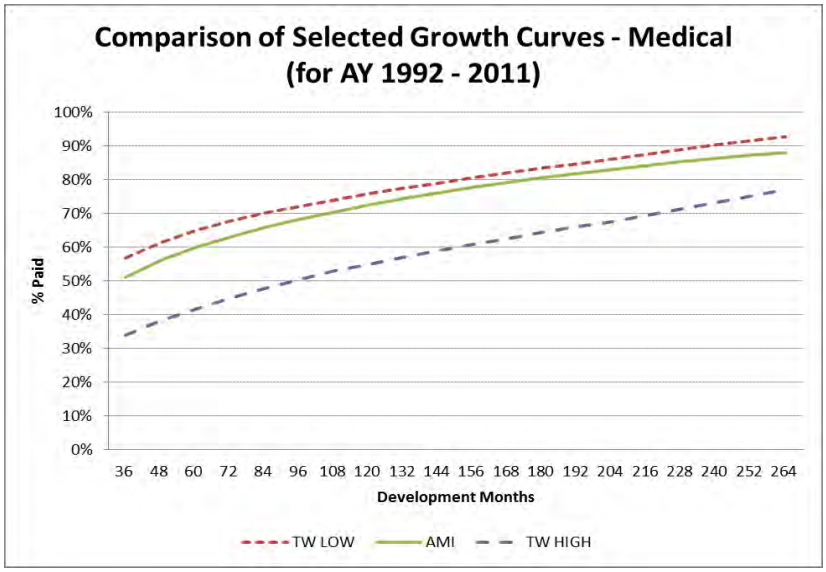
As can be seen, our estimated indemnity paid loss development factors are within TW's range.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

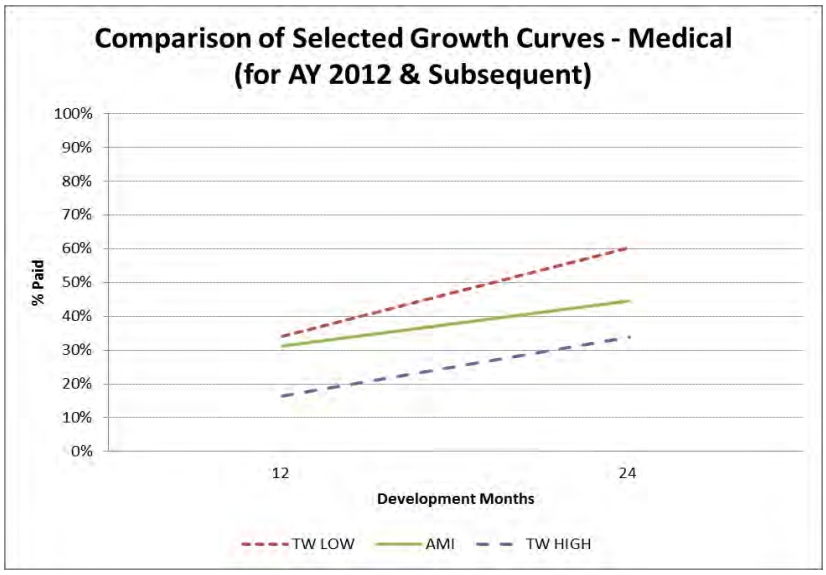
As for Medical, the comparisons are shown below:





REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)



Our estimated medical paid loss development factors are also within TW's range.

Thus, it is our opinion that the development factors selected by TW are reasonable.

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Comparison of TW and AMI Selections – New Fund Ultimate Losses - Medical

The range of indicated New Fund ultimate Medical losses produced by TW's using the various methods are shown below, ranked from low to high:

TW Ultimate Loss Indications -New Fund Ranked from Low to High ($millions)	
Method	Medical
Paid Development – Low Factors	$1,393
Paid Dev. – Adjusted for Excess Settlements	1,626
Bornhuetter-Ferguson – Prior Ultimates	1,627
Bornhuetter-Ferguson – Freq-Sev Index	1,640
Frequency-Severity Index	1,653
Paid Development – Low/Hi Mixed Factors	1,688
Adjusted Case Reserves	1,775
Paid Development – High Factors	1,994
Berquist-Sherman*	2,565
Selected Central Estimate	
TW	**$1,625**
AMI	**$1,675**

*Berquist-Sherman for latest two years assumed to be the average of all other methods.

As shown above our selected ultimate loss for New Fund Medical is ***$50 million above TW***, and nearer to the middle of the range of Medical indications.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Comparison of TW and AMI Selections – New Fund Ultimate Losses - Indemnity

The range of indicated New Fund ultimate Indemnity losses produced by TW's using the various methods are shown below, ranked from low to high:

TW
Ultimate Loss Indications (New Fund)
Ranked from Low to High
($millions)

Method	Indemnity
Paid Development – Low Factors	$992
Reported Development	1,011
Adjusted Case Reserves*	1,013
Bornhuetter-Ferguson – Prior Ultimates	1,054
Bornhuetter-Ferguson – Freq-Sev Index	1,057
Born.-Ferg.– Freq-Sev Index – Excl. Lump Sum	1,058
Paid Dev. – Adj. for Excess Lump Sum	1,058
Frequency-Severity Index	1,067
Paid Development – Low/Hi Mixed Factors	1,104
Paid Development – High Factors	1,148
Selected Central Estimate	
TW	**$1,050**
AMI	**$1,063**

*Adjusted case reserve indication for latest year assumed to be the average of all other methods.

As shown above our selected ultimate loss for New Fund Indemnity is ***$13 million above TW***, and nearer to the average of the Indemnity indications.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Comparison of TW and AMI Selections – New Fund LAE Factors

AMI selected slightly higher factors for ALAE and ULAE as the weighted average of unadjusted (for HB 334) factors and adjusted factors with our selected loss reserves by accident year. Adjusted factors were assumed to be appropriate for accident years 2011/2012 and later.

Comparison of LAE Factor Selections (New Fund) Loss Reserves				
	AMI Pre-HB 334	AMI Post HB 334	AMI Wtd Average	TW
ALAE	3.4%	3.9%	3.5%	3.4%
ULAE	11.0%	13.9%	11.6%	11.0%

AMI's post- HB 334 factors are consistent with TW's selections for ratemaking.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Opinion on MSF's Recorded Loss and LAE Reserves – New Fund

Based on our selections of ultimate losses and LAE factors as described above, our estimate of MSF's net loss and LAE reserves at June 30, 2013 is ***$913 million*** as derived below:

AMI Estimated Loss and LAE Reserves (New Fund) Central Estimate @6/30/13	
Component	$Millions
(1) AMI Selected Ultimate Loss	$2,738
(2) Paid Losses	1,913
(3) Gross Loss Reserve (1) – (2)	825
(4) ALAE Reserve at 3.5%	29
(5) ULAE Reserve at 11.6%	95
(6) MSF Estimated Ceded Reserve	36
(7) Net Loss and LAE Reserve*	**$913**

*(7) = (3) + (4) + (5) – (6).

At June 30, 2013 MSF recorded net loss and LAE reserves of ***$902.9 Million, or 1.1% below AMI's central estimate.***

We note that TW's range of reasonable loss estimates extends from 2.8% below to 3.9% above their central estimate.

Our opinion, therefore, is that MSF's recorded reserves fall within a reasonable range of our central estimate, and ***we conclude that recorded reserves are reasonable.***

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Comparison of TW and AMI Selections – Old Fund Ultimate Losses - Medical

The range of indicated Old Fund ultimate Medical losses produced by TW's using the various methods are shown below, ranked from low to high:

TW Ultimate Loss Indications (Old Fund) Ranked from Low to High ($millions)	
Method	Medical
Paid Development – Low Factors	$428
Paid Development – High Factors	473
Adjusted Case Reserves	479
Sherman-Diss*	602
Berquist-Sherman**	623
Selected Central Estimate	
TW	**$450**
AMI	**$521**

*Sherman-Diss for 1977/1978 & prior assumed to be the average of all other methods.
**Berquist-Sherman for 1973/1974 & prior assumed to be the average of all other methods.

As shown above our selected ultimate loss for Old Fund Medical is ***$71 million above TW***, and nearer to the average of the Medical indications.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Comparison of TW and AMI Selections – Old Fund Ultimate Losses - Indemnity

The range of indicated Old Fund ultimate Indemnity losses produced by TW's using the various methods are shown below, ranked from low to high:

TW Ultimate Loss Indications (Old Fund) Ranked from Low to High ($millions)	
Method	Indemnity
Paid Development – Low Factors	$779
Sherman-Diss*	793
Reported Development	798
Adjusted Case Reserves*	798
Paid Development – High Factors	801
Selected Central Estimate	
TW	**$785**
AMI	**$794**

*Sherman-Diss for 1977/1978 & prior assumed to be the average of all other methods.

As shown above our selected ultimate loss for Old Fund Indemnity is ***$9 million above TW***, and nearer to the average of the Indemnity indications.

REVIEW OF LOSS AND LAE RESERVES AS OF JUNE 30, 2013 (continued)

B2: Reasonableness of MSF's Loss and LAE Reserves (continued)

Opinion on TW's Selected Loss and LAE Reserves – Old Fund

Based on our selections of ultimate losses as described above, our estimate of the Old Fund's net loss and LAE reserves at June 30, 2013 is ***$143 million*** as derived below:

AMI Estimated Loss and LAE Reserves (Old Fund) Central Estimate @6/30/13	
Component	$Millions
(1) AMI Selected Ultimate Loss	$1,315
(2) Paid Losses	1,191
(3) Gross Loss Reserve (1) – (2)	124
(4) ALAE Reserve at 3.4%	4.2
(5) ULAE Reserve at 9.5%	11.7
(6) DLI Assessments at 3.0%	3.7
(7) Net Loss and LAE Reserve*	**$143**

*(7) = (3) + (4) + (5) + (6).

At June 30, 2013 TW's estimated Old Fund net loss and LAE reserves are ***$51.0 Million, or 64.4% below AMI's central estimate. Consequently, our estimated central estimate is above TW's range.***

REVIEW OF INFORMATION PROVIDED BY MSF TO CONTRACT ACTUARY

C1: Procedures Used by Contract Actuary to Test Data

The methodology used by TW in their rate level and reserve reviews rely on certain assumptions. For the conclusions to be reliable, these assumptions need to be validated for the data at hand.

Overall Rate Level and Reserve Analysis

TW prepared several diagnostic exhibits in section C of their Appendix separately for Medical and Indemnity. A list of these exhibits is shown below:

1. Ratio Incremental Paid to Open (Lag 1) – displays the changes in closure rates
2. Average Case Outstanding – shows the changing case reserve adequacy over time
3. Paid to Reported Ratio – used to identify changes in payment rates and/or case reserve adequacy
4. Ratio Closed Count to Ultimate Count – shows changes in the settlement rate of claims
5. Estimated IBNR Count
6. Open and Estimated IBNR Count
7. Paid Loss Incremental – identifies changes in payment rates, specifically trends in lump sum and excess payments
8. Reported Loss Incremental – shows the changing case reserve adequacy over time
9. Outstanding Losses
10. Closed Claim Count
11. Open Claim Count
12. Paid Losses / Ultimate Losses – shows payment rates across time
13. Average Outstanding Loss including IBNR – shows changes in reserve adequacy
14. IBNR Counts / Ultimate Counts – shows changes in claim settlement rates
15. Ratio of Paid Loss to Adjusted Reported Loss - identifies changes in payment rates and/or case reserve adequacy

REVIEW OF INFORMATION PROVIDED BY MSF TO CONTRACT ACTUARY (continued)

C1: Procedures Used by Contract Actuary to Test Data (continued)

Class Ratemaking

TW used individual policyholder exposure and claims database for accident years 2007 through 2011 in their multivariate models. Several data checks and verification were done to minimize the distortion in the results as well as to identify certain data elements that warranted further review, such as negative or blank cell entries. Other measures undertaken are listed below:

- Reconciling control totals with other databases;
- Performing univariate distribution analysis for each variable and by policy or claims year; and
- Matching premium and loss records by policy.

C2: Reliance Placed on Various Data Items

Aside from historical loss triangles, premiums, and exposure data, considerable reliance is placed by TW on certain data items that were provided directly by MSF which include most economic data and loss/expense loadings.

C3: Adequacy of Procedures Used by Contract Actuary to Test Data

Our opinion is that the procedures used by TW to test the data used in both ratemaking and reserving are adequate. We do not have any further testing to suggest.

RANKING OF DATA ELEMENTS

D1: Review of Data Elements

The following data elements were used by TW in their rate level and reserve analysis, as provided by MSF:

1. Historical paid and reported losses – used as a base to project losses to ultimate value by accident year. Used also in calculating the appropriate payment pattern for discounting purposes.
2. Historical closed, reported, and open claim counts – used in several diagnostic exhibits, Berquist-Sherman method, and Frequency-Severity Index method.
3. Historical premium, payroll, and expense data – used in computing the selected loss ratio and projected equity contributions
4. Rate change history – adjusts historical premiums to current rate level
5. Statutory benefit changes – adjusts historical loss data to current benefit level
6. Historical exposure, premium, and loss data for new and departed business – adjusts historical data to current mix of business
7. Internal MSF analyses on several court cases – used to identify its effect on Old Fund' claim payout patterns
8. Information on MSF operations – gives insights on any adjustments or considerations that should be taken throughout the analysis, as what TW did:
    a. Selecting different loss development factors for accident year groups to reflect changes in statutory benefit changes
    b. Acceleration of development patterns due to faster closure rates and improved claim operations
    c. Adjustment of estimates to reflect the impact of excess lump sum and settlements
    d. Use of more sophisticated methods to reflect the implementation of Claim Center in 2006
9. Economic statistics and forecasts – used regression analysis to predict trends
10. Individual policyholder exposure and claims database for accident years 2007 through 2011 – used for multivariate modeling of tier rate relativities
11. Impact on MSF's book of business of: July 1, 2012 NCCI loss costs, MSF proposed deviations and MSF special classes; current MSF rates; and proposed MSF rating programs – used to calculate the LCM multipliers

RANKING OF DATA ELEMENTS (continued)

D2: Ranking of Data Elements

In this section we will rank the data elements used for each analysis in terms of risk that erroneous data could materially affect the results.

Ranking of Data Elements Used in Ratemaking

It is our opinion that the following items greatly affects the rate level sensitivities to errors and thus are given high ranking:

1. Historical paid and reported losses – historical loss information is the starting point for any ratemaking analysis since the rates are mostly composed of the loss provision. TW relied more on the paid development triangles due to the inconsistent case reserving present in the reported triangles. If the historical losses are distorted and not accounted for, loss projections would also be greatly distorted. It's not just the current year's data that is at issue but the whole history itself. This potential distortion would be further compounded since the payment patterns used in determining the discount factors are also calculated from the historical paid triangles.
2. Information on MSF operations – changes in the claims environment can invalidate the assumptions of most actuarial methods. However, TW took every effort to take into account these changes by making several selections and actuarial methods as described in the previous section. If these were not done, material distortions could result in the projections.

A vital step in any ratemaking analysis is the ability to combine historical experience in determining projected indications. However, adjustments need to be done in order to combine data that are on-level with the projection period. The following data items were used by TW to calculate these on-level factors and are given slightly lesser rankings than the first two items.

3. Historical closed, reported, and open claim counts
4. Historical premium, payroll, and expense data
5. Rate change history
6. Statutory benefit changes
7. Historical exposure, premium, and loss data for new and departed business
8. Economic statistics and forecasts

RANKING OF DATA ELEMENTS (continued)

D2: Ranking of Data Elements (continued)

After the overall rate level has been determined, the class rates have to be brought on-level as well. TW calculated rate relativities using a multivariate model to accomplish this. However, these rate relativities rely on the assumption that the overall rate level is accurate, thus are given lesser rankings than the previous items.

9. Individual policyholder exposure and claims database for accident years 2007 through 2011
10. Impact on MSF's book of business of: July 1, 2012 NCCI loss costs, MSF proposed deviations and MSF special classes; current MSF rates; and proposed MSF rating programs

Ranking of Data Elements Used in Reserving

It is our opinion that the following items greatly affects the reserve estimate sensitivities to errors and thus are given high ranking:

1. Historical paid and reported losses – as in the case for ratemaking, the reserving process starts off with the projection of loss amounts to ultimate. Thus, the same distortions and inconsistencies could affect the results if not properly accounted for.
2. Information on MSF operations – as also the case in ratemaking, changes in the claims environment can invalidate the assumptions of most actuarial methods. Similarly, TW accounted for these changes in their analyses.
3. Internal MSF analyses on several court cases – large claims tend to develop differently than the other claims and could materially affect the development in future periods. TW took this into consideration by reviewing these cases with MSF.

RANKING OF DATA ELEMENTS (continued)

D2: Ranking of Data Elements (continued)

A common approach in reserving is to estimate ultimate losses by accident year. In some cases, it is also desirable to have single estimate based on the combined experience for a more credible estimate. However, adjustments need to be done in order to combine data that are on-level with a common projection period. The following data items were used by TW to calculate these on-level factors and are given slightly lesser rankings than the first three items.

4. Historical closed, reported, and open claim counts
5. Historical premium, payroll, and expense data
6. Rate change and statutory benefit change history
7. Historical exposure, premium, and loss data for new and departed business
8. Economic statistics and forecast

ATTACHED EXHIBITS

The following exhibits are attached to this report:

- Summary Exhibit
  - Page 1 shows our projected equity contribution at an effective rate change of -6.0% as compared to TW
  - Page 2 shows our estimated reserves as compared to TW
- Exhibit I – AMI Projected Contribution to Equity
- Exhibit II – AMI Selected Ultimate Losses
  - Page 1 shows our selected ultimate losses by accident year for the New Fund
  - Page 2 shows our selected ultimate losses by accident year for the Old Fund
- Exhibit III – AMI Selected Paid Loss Development Factors (Medical)
  - Page 1 shows a comparison of our selected paid loss development patterns with TW
  - Page 2 shows the fitted development factors using the Clark LDF approach
  - Page 3 shows the selected credibility-weighted factors
  - Page 4 shows the historical cumulative paid triangles for Medical
- Exhibit IV – AMI Selected Paid Loss Development Factors (Indemnity)
  - Page 1 shows a comparison of our selected paid loss development patterns with TW
  - Page 2 shows the fitted development factors using the Clark LDF approach
  - Page 3 shows the selected credibility-weighted factors
  - Page 4 shows the historical cumulative paid triangles for Indemnity

Attached as Appendix A is an outline of our analysis regarding the different methods used by TW in projecting the ultimate losses by accident year.

MONTANA STATE FUND
RATE LEVEL ACTUARIAL REVIEW
FOR THE EXPOSURE PERIOD JULY 1, 2013 TO JUNE 30, 2014
COMPARISON OF ASSUMPTIONS AND PROJECTED EQUITY CONTRIBUTIONS
WORKERS' COMPENSATION

	TOWERS WATSON		AMI		Difference
1. SELECTED ULTIMATE LOSS RATIO	**60.3%**		**63.2%**		**-2.97%**
2. EMPLOYERS' LIABILITY	**0.25%**		**0.25%**		**-**
3. CEDED LOSSES	**0.50%**		**0.00%**		**0.50%**
4. LOSS LOADINGS	**5.8%**		**0.8%**		**5.00%**
4a. Adverse Deviation	5.0%		0.0%		**5.00%**
4b. Terrorism	0.8%		0.8%		**-**
5. EXPENSE PROVISIONS					
5a. Loss Adjustment Expenses	17.8%		17.8%		**-**
5b. Commissions	6.4%		6.4%		**-**
5c. Other Expenses	13.0%		13.0%		**-**
5d. Revenue Generated by Expense Constant	2.4%		2.4%		**-**
5e. Variable Reinsurance Costs	2.4%		0.0%		**2.40%**
5f. Fixed Reinsurance Costs	0.3%		0.0%		**0.30%**
6. RATE INCREASE	**-6.0%**		**-6.0%**		**-**
7. PRICING PROGRAMS	**8.8%**		**8.8%**		**-**
8. TERRORISM LOAD	**0.6%**		**0.6%**		**-**
10. INVESTMENT YIELD	**11a. INDICATED CONTRIBUTION TO EQUITY**	**12a. DISCOUNT FACTOR**	**11b. INDICATED CONTRIBUTION TO EQUITY**	**12b. DISCOUNT FACTOR**	
0.00%	**-7.8%**	1.000	**-6.0%**	1.000	**-1.81%**
2.25%	**1.3%**	0.895	**2.9%**	0.895	**-1.63%**
2.50%	**2.1%**	0.886	**3.7%**	0.886	**-1.59%**
2.75%	**2.9%**	0.877	**4.5%**	0.877	**-1.56%**
3.00%	**3.6%**	0.869	**5.1%**	0.869	**-1.54%**

Notes:
Towers Watson column per Towers Watson 7/1/2013 Rate Level Analysis report.
AMI column per Exhibit I.
Difference = Towers Watson - AMI.

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
AS OF JUNE 30, 2013
COMPARISON OF ESTIMATED LOSS & LAE RESERVES
WORKERS' COMPENSATION
($Amounts in Millions)

LOSSES EXCLUDING LAE

COVERAGE	TOWERS WATSON LOW	TOWERS WATSON CENTRAL	TOWERS WATSON HIGH	AMI CENTRAL
	(1)	(2)	(3)	(4)
OLD FUND	**$40.0**	**$44.0**	**$86.4**	**$123.6**
MEDICAL	$30.4	$33.4	$73.6	$104.4
INDEMNITY	$9.6	$10.6	$12.8	$19.3
NEW FUND	**$686.9**	**$762.3**	**$867.1**	**$824.6**
MEDICAL	$530.0	$588.9	$677.2	$638.5
INDEMNITY	$156.9	$173.4	$189.8	$186.0
TOTAL	**$726.9**	**$806.3**	**$953.5**	**$948.2**

LOSSES & LAE (NET OF CEDED)

COVERAGE	TOWERS WATSON LOW	TOWERS WATSON CENTRAL	TOWERS WATSON HIGH	AMI CENTRAL
	(5)	(6)	(7)	(8)
OLD FUND	**$46.4**	**$51.0**	**$100.1**	**$143.3**
NEW FUND	**$746.1**	**$832.3**	**$952.2**	**$913.3**
TOTAL	**$792.5**	**$883.4**	**$1,052.4**	**$1,056.5**

LOSSES & LAE (NET OF CEDED)

	NEW FUND LOW	NEW FUND CENTRAL	NEW FUND HIGH
	(9)	(10)	(11)
RECORDED		$902.9	
TOWERS WATSON	746.1	832.3	952.2
DIFFERENCE	156.8	70.6	(49.3)
AMI		913.3	
DIFFERENCE		(10.4)	

Notes:
(1), (2), (3), (5), (6), & (7) - Per Towers Watson 6/30/2013 Reserve Review report.
(4) - Per Exhibit II, Page 1, Columns (4) & (8) less the cumulative paid losses @6/30/2013.
For Old Fund, (8) = (4) × (1 + ALAE loading of 3.4%, ULAE loading of 9.5%, and DLI assessments of 3.0%).
For New Fund, (8) = (4) × (1 + ALAE loading of 3.5%, ULAE loading of 11.6%).
(9), (10), & (11) - per (5), (6), (7), & (8) for New Fund. Recorded per MONTANA STATE FUND.

MONTANA STATE FUND
RATE LEVEL ACTUARIAL REVIEW
FOR THE EXPOSURE PERIOD JULY 1, 2013 TO JUNE 30, 2014
CALCULATION OF PROJECTED EQUITY CONTRIBUTION
WORKERS' COMPENSATION

ACCIDENT YEAR*	ULTIMATE LOSS RATIO
	(1)
2007	0.578
2008	0.597
2009	0.571
2010	0.567
2011	0.604
2012	0.650

2. SELECTED ULTIMATE LOSS RATIO	**63.2%**
3. EMPLOYERS' LIABILITY	**0.25%**
4. CEDED LOSSES	**0.00%**
5. LOSS LOADINGS	**0.8%**
5a. Adverse Deviation	0.0%
5b. Terrorism	0.8%
6. EXPENSE PROVISIONS	
6a. Loss Adjustment Expenses	17.8%
6b. Commissions	6.4%
6c. Other Expenses	13.0%
6d. Revenue Generated by Expense Constant	2.4%
6e. Variable Reinsurance Costs	0.0%
6f. Fixed Reinsurance Costs	0.0%
7. RATE INCREASE	**-6.0%**
8. PRICING PROGRAMS	**8.8%**
9. TERRORISM LOAD	**0.6%**

10. INVESTMENT YIELD	11. INDICATED CONTRIBUTION TO EQUITY	12. DISCOUNT FACTOR
0.00%	**-6.0%**	1.000
2.25%	**2.9%**	0.895
2.50%	**3.7%**	0.886
2.75%	**4.5%**	0.877
3.00%	**5.1%**	0.869

Notes:
(1) - Towers Watson's current mix on-level loss ratio trended to 2013/2014 multiplied by the ratio AMI's selected ultimates per Exhibit II, Page 1, Columns (4) + (8) and Towers Watson's selected ultimates.
(2) - Per AMI selection, based on (1).
(3), (5b), (6a) (6b), (6c), (6d), (7), (8), (9), & (10) - Per MONTANA STATE FUND.
(4) = 0.0%; (5a) = 0.0%; (6e) = 0.0%; & (6f) = 0.0%.
(11) - 1.0 - (6b) - {[(2) + (3) - (4)] × [1 + (5)] × [1 + (6a)] × (12) + (6c)} / {[[1 + (7)] × [1 - (8)] + (6d)] × [1 - (6e)] - (6f) + (9)}.
(12) - Per Towers Watson 7/1/2013 Rate Level Analysis report.
* All Accident Years are 12-month periods ending 6/30 of the stated year.

RATE LEVEL ACTUARIAL REVIEW

FOR THE EXPOSURE PERIOD JULY 1, 2013 TO JUNE 30, 2014
COMPARISON OF ULTIMATE LOSSES
FOR THE PERIOD JULY 1, 2013 TO JUNE 30, 2014
WORKERS' COMPENSATION
NEW FUND
(AMTS IN $000's)

MEDICALBENEFITS

ACCIDENT YEAR*	TOWERS WATSON AVERAGE INDICATIONS			AMI SELECTED CENTRAL
	ALL METHODS	EXCLUDING BERQUIST-SHERMAN	EXCLUDING HIGH & LOW	
	(1)	(2)	(3)	(4)
1991	$61,329	$57,763	$58,917	$57,763
1992	59,580	56,618	57,442	56,618
1993	64,360	60,278	61,270	60,278
1994	59,768	56,668	57,646	56,668
1995	52,973	50,510	51,360	50,510
1996	47,777	45,576	46,284	45,576
1997	45,147	42,900	43,609	42,900
1998	49,282	46,024	46,973	46,024
1999	56,778	52,849	53,985	52,849
2000	52,812	49,870	50,918	49,870
2001	68,043	63,889	65,160	63,889
2002	69,726	65,136	66,547	65,136
2003	88,079	82,390	84,239	82,390
2004	86,251	81,526	83,474	81,526
2005	99,312	92,911	95,222	92,911
2006	110,646	104,494	106,987	104,494
2007	116,047	109,006	111,894	109,006
2008	123,026	114,715	117,764	114,715
2009	104,094	96,564	99,380	96,564
2010	96,481	90,638	93,398	90,638
2011	103,820	96,035	98,983	96,035
2012	79,842	79,842	78,060	79,842
2013	78,302	78,302	76,378	78,302
TOTAL	**$1,773,473**	**$1,674,503**	**$1,705,891**	**$1,674,503**

INDEMNITY BENEFITS

ACCIDENT YEAR*	TOWERS WATSON AVERAGE INDICATIONS			AMI SELECTED CENTRAL
	ALL METHODS	EXCLUDING BERQUIST-SHERMAN	EXCLUDING HIGH & LOW	
	(5)	(6)	(7)	(8)
1991	$67,131	N/A	$67,012	$67,131
1992	67,231	N/A	67,238	67,231
1993	61,593	N/A	61,536	61,593
1994	56,117	N/A	55,811	56,117
1995	48,044	N/A	47,754	48,044
1996	36,739	N/A	36,615	36,739
1997	29,689	N/A	29,572	29,689
1998	30,470	N/A	30,339	30,470
1999	33,381	N/A	33,219	33,381
2000	32,601	N/A	32,445	32,601
2001	38,765	N/A	38,801	38,765
2002	39,163	N/A	38,962	39,163
2003	47,844	N/A	47,551	47,844
2004	46,127	N/A	45,839	46,127
2005	48,803	N/A	48,452	48,803
2006	56,726	N/A	56,260	56,726
2007	57,632	N/A	57,238	57,632
2008	55,967	N/A	55,474	55,967
2009	49,677	N/A	48,994	49,677
2010	39,567	N/A	39,145	39,567
2011	43,192	N/A	42,577	43,192
2012	39,653	N/A	38,342	39,653
2013	37,309	N/A	35,448	37,309
TOTAL	**$1,063,420**	**N/A**	**$1,054,627**	**$1,063,420**

Notes:
(1), (2), (3), (5), (6), & (7) - Per Towers Watson 6/30/2013 Reserve Review report.
(4) - selected based on (1), (2) & (3); (8) - selected based on (5), (6), & (7).
* All Accident Years are 12-month periods ending 6/30 of the stated year.

RATE LEVEL ACTUARIAL REVIEW
FOR THE EXPOSURE PERIOD JULY 1, 2013 TO JUNE 30, 2014
COMPARISON OF ULTIMATE LOSSES
FOR THE PERIOD JULY 1, 2013 TO JUNE 30, 2014
WORKERS' COMPENSATION
OLD FUND
(AMTS IN $000's)

MEDICALBENEFITS

	TOWERS WATSON AVERAGE INDICATIONS			
ACCIDENT YEAR*	ALL METHODS	EXCLUDING BERQUIST-SHERMAN	EXCLUDING BERQUIST-SHERMAN & SHERMAN-DISS	AMI SELECTED CENTRAL
	(1)	(2)	(3)	(4)
1964 & Prior	$971	$971	$971	$971
1965	961	961	961	961
1966	1,285	1,285	1,285	1,285
1967	1,245	1,245	1,245	1,245
1968	1,386	1,386	1,386	1,386
1969	1,425	1,425	1,425	1,425
1970	1,648	1,648	1,648	1,648
1971	2,561	2,561	2,561	2,561
1972	1,912	1,912	1,912	1,912
1973	2,061	2,061	2,061	2,061
1974	5,998	5,998	5,998	5,998
1975	5,776	5,629	5,581	5,776
1976	6,131	6,049	6,021	6,131
1977	13,379	12,923	12,771	13,379
1978	9,154	8,947	8,879	9,154
1979	11,914	11,616	11,200	11,914
1980	15,940	15,534	15,141	15,940
1981	20,320	19,830	19,103	20,320
1982	22,535	21,926	20,731	22,535
1983	30,394	29,098	26,340	30,394
1984	41,480	39,158	35,456	41,480
1985	38,227	36,420	34,682	38,227
1986	47,917	45,586	41,966	47,917
1987	55,312	51,638	47,035	55,312
1988	58,486	54,689	50,857	58,486
1989	51,527	48,538	44,370	51,527
1990	71,219	66,727	58,867	71,219
TOTAL	**$521,165**	**$495,763**	**$460,452**	**$521,165**

INDEMNITY BENEFITS

	TOWERS WATSON AVERAGE INDICATIONS			AMI
ACCIDENT YEAR*	ALL METHODS	EXCLUDING SHERMAN-DISS	PLDA-LOW & SHERMAN-DISS	SELECTED CENTRAL
	(5)	(6)	(7)	(8)
1964 & Prior	$112	$112	$112	$112
1965	2,289	2,289	2,287	2,289
1966	3,157	$3,157	3,154	3,157
1967	3,094	$3,094	3,091	3,094
1968	3,593	$3,593	3,589	3,593
1969	3,869	$3,869	3,865	3,869
1970	4,262	$4,262	4,257	4,262
1971	4,382	$4,382	4,377	4,382
1972	4,659	$4,659	4,644	4,659
1973	4,709	$4,709	4,703	4,709
1974	8,746	$8,746	8,661	8,746
1975	10,022	$10,022	9,902	10,022
1976	9,276	$9,276	9,251	9,276
1977	13,166	$13,166	12,965	13,166
1978	18,396	$18,396	18,271	18,396
1979	21,522	$21,493	21,412	21,522
1980	31,264	$31,166	31,010	31,264
1981	35,859	$35,828	35,444	35,859
1982	45,005	$44,892	44,518	45,005
1983	52,245	$52,102	51,712	52,245
1984	72,482	$72,418	71,680	72,482
1985	79,484	$79,476	78,746	79,484
1986	84,968	$85,023	84,076	84,968
1987	86,776	$86,873	85,930	86,776
1988	63,003	$63,129	62,429	63,003
1989	61,264	$61,427	60,661	61,264
1990	66,306	$66,503	65,649	66,306
TOTAL	**$793,908**	**$794,060**	**$786,395**	**$793,908**

Notes:
(1), (2), (3), (5), (6), & (7) - Per Towers Watson 6/30/2013 Reserve Review report.
(4) - selected based on (1), (2) & (3); (8) - selected based on (5), (6), & (7).
* All Accident Years are 12-month periods ending 6/30 of the stated year.

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
COMPARISON OF LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

	ACCIDENT YEARS 1991 & PRIOR*			ACCIDENT YEARS 1992 - 2011*			ACCIDENT YEARS 2012 & SUBSEQUENT*		
DEVELOPMENT MONTH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12	3.918	6.525	7.878	3.632	3.897	7.329	2.941	3.196	6.050
24	2.100	3.573	3.652	2.041	2.301	3.616	1.659	2.239	2.962
36	1.771	2.788	2.846	1.763	1.957	2.940	1.433	1.949	2.406
48	1.627	2.388	2.469	1.629	1.783	2.613	1.325	1.781	2.136
60	1.549	2.135	2.221	1.543	1.670	2.399	1.255	1.667	1.961
72	1.490	1.960	2.074	1.477	1.586	2.223	1.219	1.584	1.841
84	1.446	1.826	1.957	1.428	1.520	2.093	1.191	1.519	1.751
96	1.405	1.721	1.892	1.388	1.467	1.987	1.173	1.467	1.684
108	1.370	1.636	1.835	1.351	1.419	1.890	1.155	1.424	1.621
120	1.340	1.563	1.783	1.320	1.380	1.821	1.140	1.387	1.576
132	1.310	1.502	1.737	1.291	1.343	1.754	1.127	1.356	1.535
144	1.282	1.451	1.688	1.265	1.313	1.697	1.116	1.328	1.500
156	1.259	1.401	1.645	1.242	1.287	1.645	1.105	1.303	1.467
168	1.235	1.359	1.602	1.218	1.263	1.599	1.094	1.281	1.438
180	1.212	1.321	1.560	1.199	1.241	1.554	1.085	1.262	1.408
192	1.190	1.288	1.517	1.181	1.221	1.516	1.076	1.244	1.383
204	1.170	1.259	1.479	1.163	1.204	1.479	1.067	1.227	1.360
216	1.147	1.232	1.440	1.143	1.187	1.438	1.057	1.212	1.332
228	1.127	1.209	1.401	1.123	1.172	1.401	1.046	1.198	1.307
240	1.110	1.188	1.365	1.107	1.158	1.365	1.038	1.186	1.282
252	1.094	1.169	1.331	1.093	1.147	1.331	1.031	1.174	1.257
264	1.079	1.152	1.300	1.078	1.137	1.300	1.023	1.162	1.235
276	1.066	1.137	1.272	1.064	1.128	1.272	1.016	1.152	1.216
288	1.061	1.123	1.251	1.059	1.119	1.251	1.015	1.142	1.199
300	1.049	1.110	1.223	1.048	1.111	1.223	1.010	1.133	1.178
312	1.039	1.099	1.191	1.038	1.104	1.191	1.006	1.124	1.154
324	1.030	1.088	1.162	1.030	1.097	1.162	1.003	1.116	1.131
336	1.022	1.079	1.140	1.021	1.090	1.140	0.999	1.108	1.114
348	1.018	1.070	1.120	1.018	1.084	1.120	0.998	1.101	1.099
360	1.015	1.062	1.098	1.014	1.078	1.098	0.998	1.094	1.081
372	1.011	1.055	1.086	1.011	1.072	1.086	0.997	1.087	1.071
384	1.010	1.049	1.075	1.010	1.067	1.075	0.998	1.081	1.062
396	1.010	1.043	1.061	1.010	1.062	1.061	0.999	1.075	1.051
408	1.009	1.038	1.051	1.009	1.057	1.051	1.001	1.069	1.042
420	1.009	1.034	1.043	1.009	1.052	1.043	1.002	1.063	1.035
432	1.009	1.029	1.034	1.009	1.048	1.034	1.003	1.058	1.028
444	1.009	1.026	1.030	1.009	1.043	1.030	1.003	1.053	1.024
456	1.009	1.023	1.024	1.009	1.039	1.024	1.004	1.048	1.019
468	1.009	1.020	1.021	1.009	1.035	1.021	1.005	1.043	1.016
480	1.009	1.018	1.020	1.009	1.031	1.020	1.005	1.038	1.015
492	1.009	1.016	1.019	1.009	1.028	1.019	1.005	1.034	1.015
504	1.009	1.014	1.019	1.009	1.024	1.019	1.005	1.030	1.015
516	1.009	1.013	1.018	1.009	1.021	1.018	1.005	1.025	1.014
528	1.009	1.012	1.018	1.009	1.018	1.018	1.005	1.021	1.014
540	1.009	1.011	1.018	1.009	1.014	1.018	1.005	1.018	1.014
552	1.009	1.010	1.018	1.009	1.011	1.018	1.005	1.014	1.014
564	1.009	1.010	1.018	1.009	1.008	1.018	1.005	1.010	1.014
576	1.009	1.010	1.018	1.009	1.005	1.018	1.005	1.007	1.014
588	1.009	1.010	1.018	1.009	1.003	1.018	1.005	1.003	1.014

Notes:
(1), (3), (4), (6), (7), & (9) - Per Towers Watson 6/30/2013 Reserve Review report.
(2), (5), & (8) - Per Column (6) of Exhibit III, Pages 3A, 3B, & 3C respectively.
* All Accident Years are 12-month periods ending 6/30 of the stated year.

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

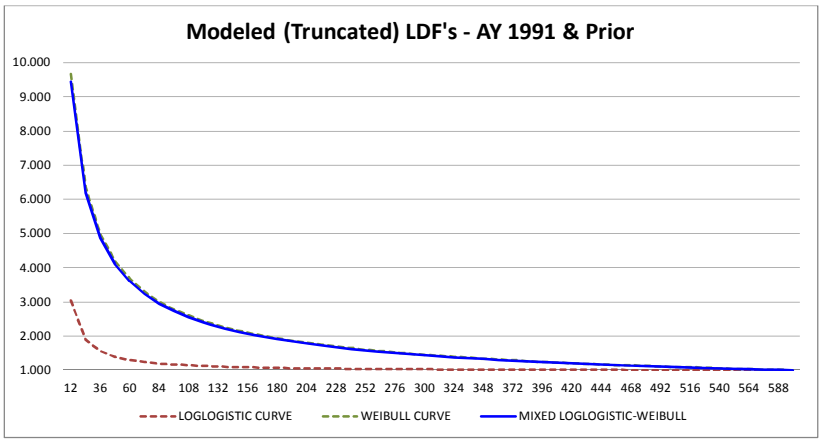
ACCIDENT YEARS 1991 & PRIOR*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	3.113	3.044	34.764	9.669	31.394	9.452
24	1.946	1.903	22.846	6.354	20.621	6.209
36	1.592	1.556	17.904	4.980	16.167	4.867
48	1.424	1.392	15.076	4.193	13.622	4.101
60	1.327	1.298	13.203	3.672	11.939	3.594
72	1.265	1.237	11.853	3.297	10.726	3.229
84	1.222	1.194	10.825	3.011	9.803	2.951
96	1.190	1.163	10.010	2.784	9.071	2.731
108	1.166	1.140	9.345	2.599	8.474	2.551
120	1.147	1.121	8.790	2.445	7.976	2.401
132	1.131	1.106	8.317	2.313	7.552	2.274
144	1.119	1.094	7.910	2.200	7.187	2.164
156	1.108	1.084	7.554	2.101	6.868	2.068
168	1.099	1.075	7.240	2.014	6.586	1.983
180	1.092	1.067	6.960	1.936	6.336	1.908
192	1.085	1.061	6.709	1.866	6.111	1.840
204	1.079	1.055	6.482	1.803	5.907	1.779
216	1.074	1.050	6.276	1.746	5.722	1.723
228	1.070	1.046	6.088	1.693	5.553	1.672
240	1.066	1.042	5.915	1.645	5.398	1.625
252	1.062	1.038	5.755	1.601	5.255	1.582
264	1.059	1.035	5.607	1.560	5.123	1.542
276	1.056	1.032	5.470	1.521	5.000	1.505
288	1.053	1.030	5.342	1.486	4.886	1.471
300	1.051	1.027	5.223	1.453	4.778	1.439
312	1.048	1.025	5.111	1.421	4.678	1.408
324	1.046	1.023	5.005	1.392	4.584	1.380
336	1.044	1.021	4.906	1.365	4.495	1.353
348	1.043	1.020	4.813	1.339	4.411	1.328
360	1.041	1.018	4.724	1.314	4.332	1.304
372	1.039	1.016	4.641	1.291	4.257	1.282
384	1.038	1.015	4.561	1.269	4.186	1.260
396	1.037	1.014	4.485	1.248	4.118	1.240
408	1.035	1.013	4.414	1.228	4.054	1.221
420	1.034	1.011	4.345	1.209	3.992	1.202
432	1.033	1.010	4.279	1.190	3.934	1.184
444	1.032	1.009	4.217	1.173	3.878	1.168
456	1.031	1.008	4.157	1.156	3.824	1.151
468	1.030	1.007	4.100	1.140	3.773	1.136
480	1.029	1.007	4.045	1.125	3.724	1.121
492	1.029	1.006	3.992	1.110	3.676	1.107
504	1.028	1.005	3.941	1.096	3.631	1.093
516	1.027	1.004	3.892	1.083	3.587	1.080
528	1.026	1.004	3.845	1.069	3.545	1.067
540	1.026	1.003	3.800	1.057	3.504	1.055
552	1.025	1.002	3.756	1.045	3.465	1.043
564	1.024	1.002	3.714	1.033	3.427	1.032
576	1.024	1.001	3.673	1.022	3.391	1.021
588	1.023	1.001	3.633	1.011	3.356	1.010
600	1.023	1.000	3.595	1.000	3.321	1.000

Assumptions:

Loglogistic	
Scale	22.9
Shape	1.16
Weibull	
Scale	3694.1
Shape	0.62
Weight to Loglogistic	0.106
Weight to Weibull	0.894
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

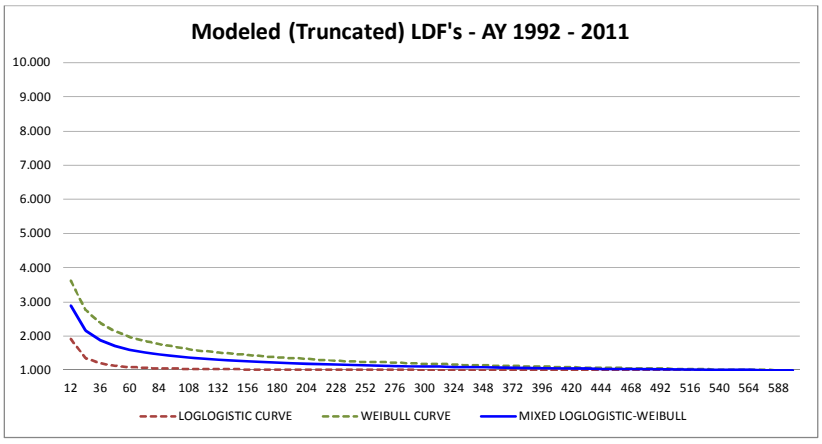
ACCIDENT YEARS 1992 - 2011*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	1.930	1.921	5.153	3.615	3.491	2.889
24	1.361	1.355	3.940	2.764	2.610	2.160
36	1.208	1.202	3.386	2.375	2.263	1.872
48	1.140	1.135	3.050	2.139	2.065	1.709
60	1.103	1.099	2.818	1.977	1.934	1.600
72	1.081	1.076	2.644	1.855	1.838	1.521
84	1.065	1.061	2.509	1.760	1.765	1.460
96	1.055	1.050	2.399	1.683	1.706	1.412
108	1.046	1.042	2.308	1.619	1.657	1.371
120	1.040	1.036	2.230	1.564	1.616	1.338
132	1.035	1.031	2.163	1.517	1.581	1.309
144	1.031	1.027	2.104	1.476	1.551	1.284
156	1.028	1.024	2.053	1.440	1.524	1.261
168	1.025	1.021	2.006	1.407	1.500	1.242
180	1.023	1.019	1.965	1.378	1.479	1.224
192	1.021	1.017	1.927	1.352	1.460	1.208
204	1.019	1.015	1.892	1.328	1.442	1.194
216	1.018	1.013	1.861	1.305	1.426	1.180
228	1.017	1.012	1.832	1.285	1.412	1.168
240	1.016	1.011	1.805	1.266	1.398	1.157
252	1.015	1.010	1.780	1.249	1.385	1.146
264	1.014	1.009	1.757	1.232	1.374	1.137
276	1.013	1.008	1.735	1.217	1.363	1.128
288	1.012	1.008	1.715	1.203	1.353	1.119
300	1.012	1.007	1.696	1.190	1.343	1.111
312	1.011	1.006	1.678	1.177	1.334	1.104
324	1.010	1.006	1.661	1.165	1.325	1.097
336	1.010	1.005	1.645	1.154	1.317	1.090
348	1.009	1.005	1.630	1.143	1.310	1.084
360	1.009	1.004	1.615	1.133	1.303	1.078
372	1.009	1.004	1.601	1.123	1.296	1.072
384	1.008	1.004	1.588	1.114	1.289	1.067
396	1.008	1.003	1.576	1.105	1.283	1.062
408	1.008	1.003	1.564	1.097	1.277	1.057
420	1.007	1.003	1.552	1.089	1.271	1.052
432	1.007	1.003	1.542	1.081	1.266	1.048
444	1.007	1.002	1.531	1.074	1.261	1.043
456	1.007	1.002	1.521	1.067	1.256	1.039
468	1.006	1.002	1.511	1.060	1.251	1.035
480	1.006	1.002	1.502	1.054	1.246	1.031
492	1.006	1.001	1.493	1.047	1.242	1.028
504	1.006	1.001	1.485	1.041	1.238	1.024
516	1.005	1.001	1.476	1.036	1.234	1.021
528	1.005	1.001	1.468	1.030	1.230	1.018
540	1.005	1.001	1.461	1.025	1.226	1.014
552	1.005	1.001	1.453	1.019	1.222	1.011
564	1.005	1.000	1.446	1.014	1.218	1.008
576	1.005	1.000	1.439	1.009	1.215	1.005
588	1.005	1.000	1.432	1.005	1.212	1.003
600	1.004	1.000	1.426	1.000	1.208	1.000

Assumptions:

Loglogistic	
Scale	11.4
Shape	1.36
Weibull	
Scale	390.0
Shape	0.44
Weight to Loglogistic	0.516
Weight to Weibull	0.484
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

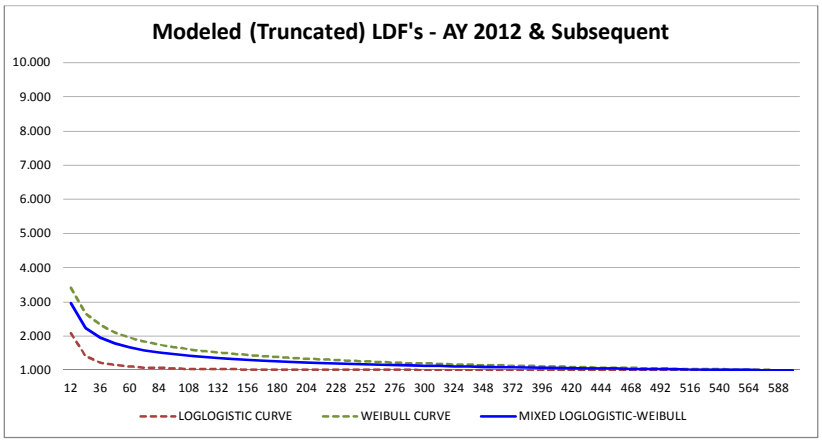
ACCIDENT YEARS 2012 & SUBSEQUENT*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	2.095	2.087	5.750	3.415	4.055	2.963
24	1.408	1.403	4.497	2.671	3.064	2.239
36	1.229	1.224	3.910	2.322	2.667	1.949
48	1.152	1.148	3.548	2.107	2.437	1.781
60	1.111	1.106	3.295	1.957	2.282	1.667
72	1.086	1.081	3.104	1.844	2.168	1.584
84	1.069	1.064	2.954	1.754	2.079	1.519
96	1.057	1.052	2.831	1.681	2.008	1.467
108	1.048	1.044	2.728	1.620	1.949	1.424
120	1.041	1.037	2.640	1.568	1.898	1.387
132	1.036	1.032	2.564	1.523	1.855	1.356
144	1.032	1.028	2.497	1.483	1.817	1.328
156	1.028	1.024	2.437	1.447	1.784	1.303
168	1.026	1.021	2.383	1.415	1.754	1.281
180	1.023	1.019	2.335	1.387	1.726	1.262
192	1.021	1.017	2.291	1.361	1.702	1.244
204	1.019	1.015	2.251	1.337	1.680	1.227
216	1.018	1.014	2.214	1.315	1.659	1.212
228	1.017	1.012	2.179	1.294	1.640	1.198
240	1.015	1.011	2.148	1.276	1.622	1.186
252	1.014	1.010	2.118	1.258	1.606	1.174
264	1.013	1.009	2.090	1.242	1.591	1.162
276	1.013	1.008	2.065	1.226	1.577	1.152
288	1.012	1.008	2.040	1.212	1.563	1.142
300	1.011	1.007	2.017	1.198	1.551	1.133
312	1.011	1.006	1.996	1.185	1.539	1.124
324	1.010	1.006	1.975	1.173	1.527	1.116
336	1.010	1.005	1.956	1.161	1.517	1.108
348	1.009	1.005	1.937	1.151	1.507	1.101
360	1.009	1.004	1.920	1.140	1.497	1.094
372	1.008	1.004	1.903	1.130	1.488	1.087
384	1.008	1.004	1.887	1.121	1.479	1.081
396	1.008	1.003	1.871	1.111	1.471	1.075
408	1.007	1.003	1.857	1.103	1.463	1.069
420	1.007	1.003	1.843	1.094	1.455	1.063
432	1.007	1.002	1.829	1.086	1.448	1.058
444	1.006	1.002	1.816	1.079	1.441	1.053
456	1.006	1.002	1.804	1.071	1.434	1.048
468	1.006	1.002	1.792	1.064	1.427	1.043
480	1.006	1.002	1.780	1.057	1.421	1.038
492	1.006	1.001	1.769	1.051	1.415	1.034
504	1.005	1.001	1.758	1.044	1.409	1.030
516	1.005	1.001	1.748	1.038	1.403	1.025
528	1.005	1.001	1.738	1.032	1.398	1.021
540	1.005	1.001	1.728	1.026	1.393	1.018
552	1.005	1.001	1.719	1.021	1.387	1.014
564	1.005	1.000	1.710	1.015	1.383	1.010
576	1.004	1.000	1.701	1.010	1.378	1.007
588	1.004	1.000	1.692	1.005	1.373	1.003
600	1.004	1.000	1.684	1.000	1.369	1.000

Assumptions:

Loglogistic	
Scale	12.8
Shape	1.42
Weibull	
Scale	780.0
Shape	0.40
Weight to Loglogistic	0.464
Weight to Weibull	0.536
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

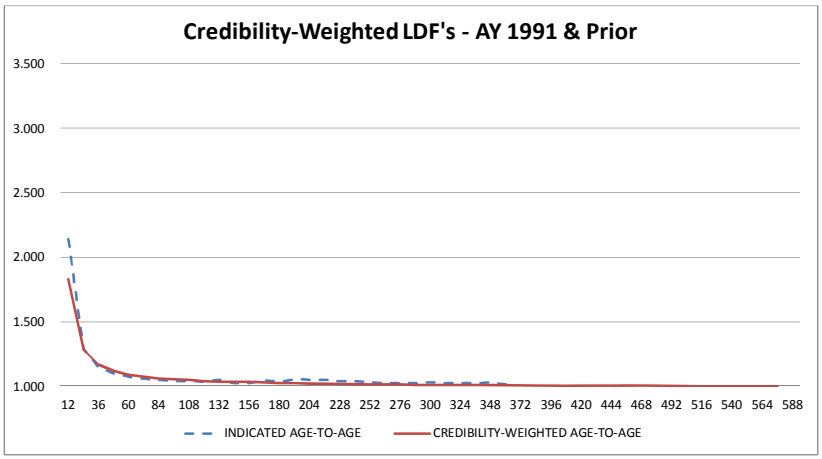
ACCIDENT YEARS 1991 & PRIOR*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	2.142	0.490	1.522	1.826	1.826	6.525
24 - 36	1.288	0.510	1.276	1.282	1.282	3.573
36 - 48	1.150	0.529	1.187	1.167	1.167	2.788
48 - 60	1.100	0.548	1.141	1.118	1.118	2.388
60 - 72	1.071	0.566	1.113	1.089	1.089	2.135
72 - 84	1.059	0.583	1.094	1.074	1.074	1.960
84 - 96	1.047	0.600	1.081	1.061	1.061	1.826
96 - 108	1.040	0.616	1.070	1.052	1.052	1.721
108 - 120	1.038	0.632	1.062	1.047	1.047	1.636
120 - 132	1.032	0.648	1.056	1.041	1.041	1.563
132 - 144	1.049	0.663	1.051	1.049	1.036	1.502
144 - 156	1.025	0.529	1.046	1.035	1.035	1.451
156 - 168	1.022	0.529	1.043	1.032	1.032	1.401
168 - 180	1.045	0.510	1.040	1.042	1.028	1.359
180 - 192	1.035	0.510	1.037	1.036	1.026	1.321
192 - 204	1.054	0.529	1.034	1.045	1.023	1.288
204 - 216	1.049	0.529	1.032	1.041	1.021	1.259
216 - 228	1.046	0.548	1.030	1.039	1.019	1.232
228 - 240	1.039	0.566	1.029	1.034	1.018	1.209
240 - 252	1.037	0.583	1.027	1.033	1.016	1.188
252 - 264	1.028	0.600	1.026	1.027	1.015	1.169
264 - 276	1.023	0.616	1.025	1.024	1.014	1.152
276 - 288	1.025	0.616	1.023	1.024	1.012	1.137
288 - 300	1.023	0.616	1.022	1.023	1.011	1.123
300 - 312	1.028	0.616	1.021	1.026	1.010	1.110
312 - 324	1.026	0.616	1.021	1.024	1.010	1.099
324 - 336	1.023	0.616	1.020	1.022	1.009	1.088
336 - 348	1.023	0.616	1.019	1.021	1.008	1.079
348 - 360	1.029	0.616	1.018	1.025	1.007	1.070
360 - 372	1.014	0.616	1.018	1.015	1.007	1.062
372 - 384		0.000	1.017	1.017	1.006	1.055
384 - 396		0.000	1.016	1.016	1.005	1.049
396 - 408		0.000	1.016	1.016	1.005	1.043
408 - 420		0.000	1.015	1.015	1.004	1.038
420 - 432		0.000	1.015	1.015	1.004	1.034
432 - 444		0.000	1.014	1.014	1.004	1.029
444 - 456		0.000	1.014	1.014	1.003	1.026
456 - 468		0.000	1.014	1.014	1.003	1.023
468 - 480		0.000	1.013	1.013	1.002	1.020
480 - 492		0.000	1.013	1.013	1.002	1.018
492 - 504		0.000	1.013	1.013	1.002	1.016
504 - 516		0.000	1.012	1.012	1.001	1.014
516 - 528		0.000	1.012	1.012	1.001	1.013
528 - 540		0.000	1.012	1.012	1.001	1.012
540 - 552		0.000	1.011	1.011	1.000	1.011
552 - 564		0.000	1.011	1.011	1.000	1.010
564 - 576		0.000	1.011	1.011	1.000	1.010
576 - 588		0.000	1.011	1.011	1.000	1.010
588 - ULT						1.010

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit III, Page 4.
(2) = min{√[# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit III, Page 2A, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit III, Page 2A, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

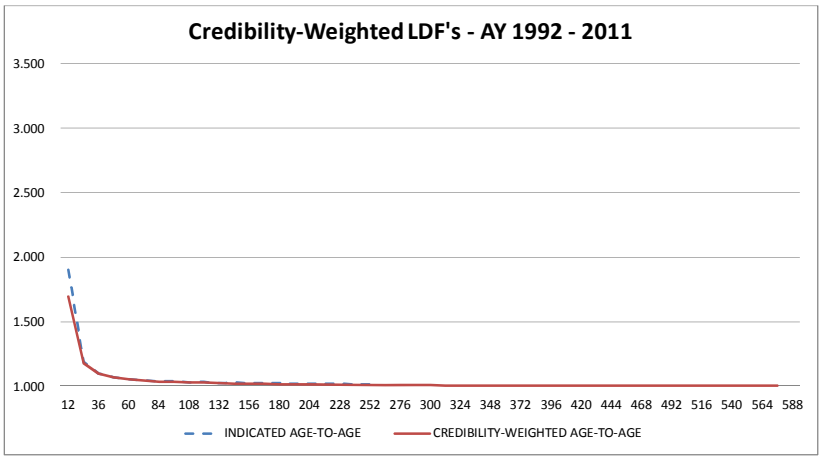
ACCIDENT YEARS 1992- 2011*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	1.900	0.632	1.337	1.693	1.693	3.897
24 - 36	1.188	0.632	1.154	1.176	1.176	2.301
36 - 48	1.099	0.616	1.096	1.098	1.098	1.957
48 - 60	1.067	0.600	1.068	1.067	1.067	1.783
60 - 72	1.054	0.583	1.052	1.053	1.053	1.670
72 - 84	1.044	0.566	1.042	1.043	1.043	1.586
84 - 96	1.038	0.548	1.034	1.036	1.036	1.520
96 - 108	1.038	0.529	1.029	1.034	1.034	1.467
108 - 120	1.031	0.510	1.025	1.028	1.028	1.419
120 - 132	1.034	0.490	1.022	1.028	1.028	1.380
132 - 144	1.026	0.469	1.020	1.022	1.022	1.343
144 - 156	1.031	0.447	1.018	1.024	1.020	1.313
156 - 168	1.024	0.424	1.016	1.019	1.019	1.287
168 - 180	1.022	0.400	1.014	1.017	1.017	1.263
180 - 192	1.021	0.374	1.013	1.016	1.016	1.241
192 - 204	1.019	0.346	1.012	1.015	1.015	1.221
204 - 216	1.021	0.316	1.011	1.014	1.014	1.204
216 - 228	1.020	0.283	1.010	1.013	1.013	1.187
228 - 240	1.017	0.245	1.010	1.011	1.011	1.172
240 - 252	1.012	0.200	1.009	1.010	1.010	1.158
252 - 264	1.014	0.141	1.009	1.009	1.009	1.147
264 - 276		0.000	1.008	1.008	1.008	1.137
276 - 288		0.000	1.008	1.008	1.008	1.128
288 - 300		0.000	1.007	1.007	1.007	1.119
300 - 312		0.000	1.007	1.007	1.007	1.111
312 - 324		0.000	1.006	1.006	1.006	1.104
324 - 336		0.000	1.006	1.006	1.006	1.097
336 - 348		0.000	1.006	1.006	1.006	1.090
348 - 360		0.000	1.006	1.006	1.006	1.084
360 - 372		0.000	1.005	1.005	1.005	1.078
372 - 384		0.000	1.005	1.005	1.005	1.072
384 - 396		0.000	1.005	1.005	1.005	1.067
396 - 408		0.000	1.005	1.005	1.005	1.062
408 - 420		0.000	1.004	1.004	1.004	1.057
420 - 432		0.000	1.004	1.004	1.004	1.052
432 - 444		0.000	1.004	1.004	1.004	1.048
444 - 456		0.000	1.004	1.004	1.004	1.043
456 - 468		0.000	1.004	1.004	1.004	1.039
468 - 480		0.000	1.004	1.004	1.004	1.035
480 - 492		0.000	1.004	1.004	1.004	1.031
492 - 504		0.000	1.003	1.003	1.003	1.028
504 - 516		0.000	1.003	1.003	1.003	1.024
516 - 528		0.000	1.003	1.003	1.003	1.021
528 - 540		0.000	1.003	1.003	1.003	1.018
540 - 552		0.000	1.003	1.003	1.003	1.014
552 - 564		0.000	1.003	1.003	1.003	1.011
564 - 576		0.000	1.003	1.003	1.003	1.008
576 - 588		0.000	1.003	1.003	1.003	1.005
588 - ULT						1.003

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit III, Page 4.
(2) = min{√[# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit III, Page 2B, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit III, Page 2B, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

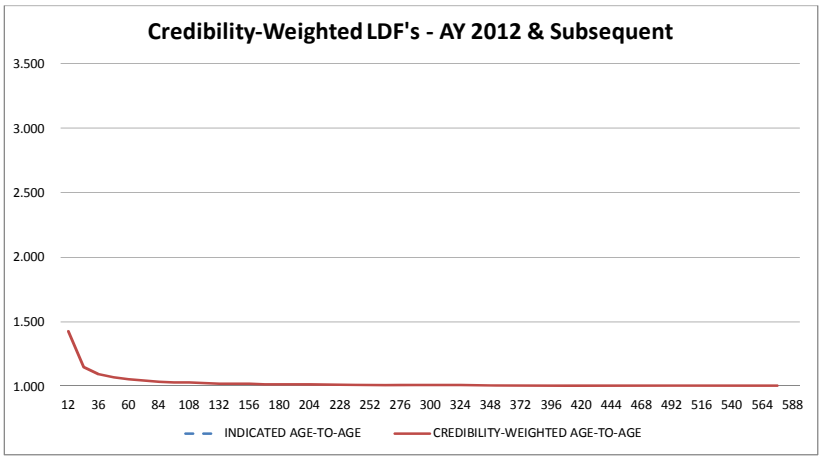
ACCIDENT YEARS 2012 & SUBSEQUENT*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	2.059	0.141	1.323	1.427	1.427	3.196
24 - 36		0.000	1.149	1.149	1.149	2.239
36 - 48		0.000	1.094	1.094	1.094	1.949
48 - 60		0.000	1.068	1.068	1.068	1.781
60 - 72		0.000	1.053	1.053	1.053	1.667
72 - 84		0.000	1.043	1.043	1.043	1.584
84 - 96		0.000	1.036	1.036	1.036	1.519
96 - 108		0.000	1.030	1.030	1.030	1.467
108 - 120		0.000	1.026	1.026	1.026	1.424
120 - 132		0.000	1.023	1.023	1.023	1.387
132 - 144		0.000	1.021	1.021	1.021	1.356
144 - 156		0.000	1.019	1.019	1.019	1.328
156 - 168		0.000	1.017	1.017	1.017	1.303
168 - 180		0.000	1.016	1.016	1.016	1.281
180 - 192		0.000	1.014	1.014	1.014	1.262
192 - 204		0.000	1.013	1.013	1.013	1.244
204 - 216		0.000	1.012	1.012	1.012	1.227
216 - 228		0.000	1.012	1.012	1.012	1.212
228 - 240		0.000	1.011	1.011	1.011	1.198
240 - 252		0.000	1.010	1.010	1.010	1.186
252 - 264		0.000	1.010	1.010	1.010	1.174
264 - 276		0.000	1.009	1.009	1.009	1.162
276 - 288		0.000	1.009	1.009	1.009	1.152
288 - 300		0.000	1.008	1.008	1.008	1.142
300 - 312		0.000	1.008	1.008	1.008	1.133
312 - 324		0.000	1.007	1.007	1.007	1.124
324 - 336		0.000	1.007	1.007	1.007	1.116
336 - 348		0.000	1.007	1.007	1.007	1.108
348 - 360		0.000	1.006	1.006	1.006	1.101
360 - 372		0.000	1.006	1.006	1.006	1.094
372 - 384		0.000	1.006	1.006	1.006	1.087
384 - 396		0.000	1.006	1.006	1.006	1.081
396 - 408		0.000	1.005	1.005	1.005	1.075
408 - 420		0.000	1.005	1.005	1.005	1.069
420 - 432		0.000	1.005	1.005	1.005	1.063
432 - 444		0.000	1.005	1.005	1.005	1.058
444 - 456		0.000	1.005	1.005	1.005	1.053
456 - 468		0.000	1.005	1.005	1.005	1.048
468 - 480		0.000	1.004	1.004	1.004	1.043
480 - 492		0.000	1.004	1.004	1.004	1.038
492 - 504		0.000	1.004	1.004	1.004	1.034
504 - 516		0.000	1.004	1.004	1.004	1.030
516 - 528		0.000	1.004	1.004	1.004	1.025
528 - 540		0.000	1.004	1.004	1.004	1.021
540 - 552		0.000	1.004	1.004	1.004	1.018
552 - 564		0.000	1.004	1.004	1.004	1.014
564 - 576		0.000	1.003	1.003	1.003	1.010
576 - 588		0.000	1.003	1.003	1.003	1.007
588 - ULT						1.003

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit III, Page 4.
(2) = min{√ [# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit III, Page 2C, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit III, Page 2C, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
AS OF JUNE 30, 2013
CALCULATION OF THE LOSS DEVELOPMENT FACTORS
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

UNLIMITED LOSSES

PAID LOSS DEVELOPMENT

Accident Years	DEVELOPMENT MONTHS 12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
1964																
1965																
1966																
1967																
1968																
1969												1,094				
1970											1,251	1,251				
1971										1,338	1,342	1,346				
1972									1,400	1,400	1,400	1,402				
1973								1,438	1,440	1,440	1,443	1,451				
1974							2,566	2,648	2,743	2,831	2,938	3,011				
1975						2,395	2,483	2,599	2,700	2,933	3,010	3,062				
1976					2,292	2,399	2,477	2,575	2,760	2,872	2,986	3,091				3,561
1977				2,753	2,949	3,127	3,218	3,427	3,595	3,714	3,785	6,241			6,517	
1978			3,212	3,479	3,631	3,793	3,951	4,140	4,282	4,431	5,655	9,564	10,347	10,015		
1979		3,221	3,755	4,124	4,401	4,643	4,815	5,046	5,265	6,711	6,922	7,053	7,227	7,309	7,495	7,808
1980	2,532	4,214	4,935	5,467	5,923	6,319	6,777	7,258	8,975	9,269	9,459	9,734	9,885	10,104	10,418	10,626
1981	2,668	4,775	5,663	6,352	7,130	7,722	8,200	10,301	10,757	11,258	11,693	12,064	12,448	12,713	13,023	13,299
1982	2,904	5,172	6,072	6,937	7,740	8,392	10,591	11,085	11,449	11,863	12,250	12,528	12,765	13,012	13,271	13,553
1983	3,288	6,306	7,732	9,023	10,050	12,924	13,767	14,496	14,992	15,427	15,752	16,037	16,356	16,787	17,231	17,693
1984	3,997	7,889	10,642	12,664	16,349	17,344	18,152	18,971	19,409	20,028	20,390	20,706	21,234	21,644	22,178	22,860
1985	3,924	9,670	13,347	17,964	19,546	20,649	21,422	22,006	22,615	23,170	23,684	24,260	24,711	25,053	25,438	25,909
1986	4,528	11,157	18,208	20,327	21,864	23,022	24,224	25,074	25,743	26,498	27,335	27,921	28,506	29,098	29,822	30,443
1987	5,437	15,751	19,680	21,938	23,465	24,595	25,668	26,445	27,149	27,986	28,591	29,213	29,908	30,605	31,290	31,956
1988	8,825	17,899	21,813	24,307	26,161	27,443	28,338	29,135	30,252	30,985	31,691	32,352	33,121	34,038	34,883	35,907
1989	9,704	18,465	22,359	24,911	26,364	27,320	28,042	28,740	29,289	29,802	30,310	31,000	31,493	32,104	32,820	33,457
1990	10,136	20,455	24,794	27,639	29,316	30,488	31,832	32,621	33,396	34,131	35,077	36,821	37,689	38,870	39,762	40,684
1991	9,970	20,495	25,138	27,573	29,732	31,222	32,264	33,465	34,607	35,774	36,719	37,724	38,975	40,094	41,305	42,456
1992	12,237	24,814	28,866	31,209	32,741	33,791	34,881	35,818	36,780	37,762	38,639	39,485	40,414	41,332	41,939	42,561
1993	11,499	22,931	27,053	29,596	31,127	32,644	33,900	35,016	36,034	37,098	38,164	39,428	40,722	42,094	43,259	44,121
1994	12,174	23,208	27,061	28,847	30,503	31,756	32,983	34,101	35,077	35,950	37,419	38,411	39,480	40,394	41,564	42,295
1995	11,625	20,585	23,700	25,856	27,200	28,404	29,431	30,481	31,521	32,594	33,593	34,582	35,257	35,959	36,678	37,633
1996	10,253	17,646	20,874	22,597	23,798	24,995	26,017	27,075	27,875	28,652	29,607	30,387	32,738	33,207	33,692	34,218
1997	8,155	16,219	18,962	20,675	22,061	23,503	24,414	25,473	26,611	27,905	28,472	28,989	30,001	30,799	31,276	31,899
1998	8,718	15,458	18,349	20,380	21,939	23,387	24,660	25,803	26,798	27,655	28,549	29,538	30,452	31,357	32,093	33,348
1999	9,073	16,982	20,368	23,173	24,915	26,839	28,242	30,210	31,508	32,724	33,659	34,592	35,454	36,411	37,456	
2000	8,719	16,436	19,608	22,058	24,032	25,566	27,069	28,435	29,783	30,636	32,926	33,622	34,349	34,905		
2001	9,389	19,623	25,319	29,137	31,741	33,851	35,728	37,441	39,379	40,747	42,231	43,146	44,295			
2002	11,134	22,844	29,283	32,230	34,099	35,618	37,337	38,818	40,370	41,467	42,739	43,674				
2003	13,976	28,680	34,720	38,648	41,663	44,118	46,655	48,377	50,309	52,163	53,812					
2004	15,883	31,393	37,678	41,068	43,627	45,288	47,340	48,702	50,448	51,447						
2005	17,919	35,050	41,051	45,075	48,117	51,495	53,380	54,657	56,810							
2006	20,507	39,809	46,292	50,687	54,339	57,636	60,618	62,714								
2007	23,542	42,290	49,526	54,653	57,780	60,305	62,196									
2008	21,837	41,965	50,312	54,763	59,541	63,210										
2009	20,597	36,595	43,146	47,108	49,819											
2010	18,409	34,353	40,885	45,169												
2011	20,339	36,588	42,782													
2012	17,903	36,869														
2013	18,700															

LOSS DEVELOPMENT FACTORS

Accident Years	12 TO 24	24 TO 36	36 TO 48	48 TO 60	60 TO 72	72 TO 84	84 TO 96	96 TO 108	108 TO 120	120 TO 132	132 TO 144	144 TO 156	156 TO 168	168 TO 180	180 TO 192	192 TO 204
1964																
1965																
1966																
1967																
1968																
1969																
1970											1.000					
1971										1.003	1.003					
1972									1.000	1.000	1.001					
1973								1.001	1.000	1.002	1.006					
1974							1.032	1.036	1.032	1.038	1.025					
1975						1.037	1.047	1.039	1.086	1.026	1.017					
1976					1.047	1.033	1.040	1.072	1.041	1.040	1.035					
1977				1.071	1.060	1.029	1.065	1.049	1.033	1.019	1.649					
1978			1.083	1.044	1.045	1.042	1.048	1.034	1.035	1.276	1.691	1.082	0.968			
1979		1.166	1.098	1.067	1.055	1.037	1.048	1.043	1.275	1.031	1.019	1.025	1.011	1.025	1.042	1.029
1980	1.664	1.171	1.108	1.083	1.067	1.072	1.071	1.237	1.033	1.020	1.029	1.016	1.022	1.031	1.020	1.015
1981	1.790	1.186	1.122	1.122	1.083	1.062	1.256	1.044	1.047	1.039	1.032	1.032	1.021	1.024	1.021	1.020
1982	1.781	1.174	1.142	1.116	1.084	1.262	1.047	1.033	1.036	1.033	1.023	1.019	1.019	1.020	1.021	1.017
1983	1.918	1.226	1.167	1.114	1.286	1.065	1.053	1.034	1.029	1.021	1.018	1.020	1.026	1.026	1.027	1.023
1984	1.974	1.349	1.190	1.291	1.061	1.047	1.045	1.023	1.032	1.018	1.015	1.025	1.019	1.025	1.031	1.018
1985	2.464	1.380	1.346	1.088	1.056	1.037	1.027	1.028	1.025	1.022	1.024	1.019	1.014	1.015	1.019	1.018
1986	2.464	1.632	1.116	1.076	1.053	1.052	1.035	1.027	1.029	1.032	1.021	1.021	1.021	1.025	1.021	1.020
1987	2.897	1.249	1.115	1.070	1.048	1.044	1.030	1.027	1.031	1.022	1.022	1.024	1.023	1.022	1.021	1.027
1988	2.028	1.219	1.114	1.076	1.049	1.033	1.028	1.038	1.024	1.023	1.021	1.024	1.028	1.025	1.029	1.026
1989	1.903	1.211	1.114	1.058	1.036	1.026	1.025	1.019	1.018	1.017	1.023	1.016	1.019	1.022	1.019	1.023
1990	2.018	1.212	1.115	1.061	1.040	1.044	1.025	1.024	1.022	1.028	1.050	1.024	1.031	1.023	1.023	1.026
1991	2.056	1.227	1.097	1.078	1.050	1.033	1.037	1.034	1.034	1.026	1.027	1.033	1.029	1.030	1.028	1.022
1992	2.028	1.163	1.081	1.049	1.032	1.032	1.027	1.027	1.027	1.023	1.022	1.024	1.023	1.015	1.015	1.018
1993	1.994	1.180	1.094	1.052	1.049	1.038	1.033	1.029	1.030	1.029	1.033	1.033	1.034	1.028	1.020	1.024
1994	1.906	1.166	1.066	1.057	1.041	1.039	1.034	1.029	1.025	1.041	1.027	1.028	1.023	1.029	1.018	1.019
1995	1.771	1.151	1.091	1.052	1.044	1.036	1.036	1.034	1.034	1.031	1.029	1.020	1.020	1.020	1.026	1.016
1996	1.721	1.183	1.083	1.053	1.050	1.041	1.041	1.030	1.028	1.033	1.026	1.077	1.014	1.015	1.016	1.013
1997	1.989	1.169	1.090	1.067	1.065	1.039	1.043	1.045	1.049	1.020	1.018	1.035	1.027	1.015	1.020	1.023
1998	1.773	1.187	1.111	1.076	1.066	1.054	1.046	1.039	1.032	1.032	1.035	1.031	1.030	1.023	1.039	
1999	1.872	1.199	1.138	1.075	1.077	1.052	1.070	1.043	1.039	1.029	1.028	1.025	1.027	1.029		
2000	1.885	1.193	1.125	1.089	1.064	1.059	1.050	1.047	1.029	1.075	1.021	1.022	1.016			
2001	2.090	1.290	1.151	1.089	1.066	1.055	1.048	1.052	1.035	1.036	1.022	1.027				
2002	2.090	1.282	1.101	1.058	1.045	1.048	1.040	1.040	1.027	1.031	1.022					
2003	2.052	1.211	1.113	1.078	1.059	1.058	1.037	1.040	1.037	1.032						
2004	2.052	1.200	1.090	1.062	1.038	1.045	1.029	1.036	1.020							
2005	1.977	1.171	1.098	1.067	1.070	1.037	1.024	1.039								
2006	1.956	1.163	1.095	1.072	1.061	1.052	1.035									
2007	1.941	1.171	1.104	1.057	1.044	1.031										
2008	1.796	1.199	1.088	1.087	1.062											
2009	1.796	1.179	1.092	1.058												
2010	1.922	1.190	1.105													
2011	1.777	1.169														
2012	1.866															
AVERAGE	1.976	1.219	1.116	1.079	1.062	1.051	1.047	1.042	1.039	1.035	1.062	1.029	1.020	1.023	1.024	1.021
3 YR AVG.	1.855	1.179	1.095	1.067	1.056	1.040	1.029	1.038	1.028	1.033	1.022	1.025	1.024	1.030	1.025	1.017
EXCL HI LO	1.956	1.208	1.111	1.073	1.056	1.045	1.041	1.037	1.032	1.028	1.043	1.027	1.022	1.023	1.023	1.021
SELECTED 90/91 & PRIOR	**2.142**	**1.288**	**1.150**	**1.100**	**1.071**	**1.059**	**1.047**	**1.040**	**1.038**	**1.032**	**1.049**	**1.025**	**1.022**	**1.045**	**1.035**	**1.054**
SELECTED 91/92-10/11	**1.900**	**1.188**	**1.099**	**1.067**	**1.054**	**1.044**	**1.038**	**1.038**	**1.031**	**1.034**	**1.026**	**1.031**	**1.024**	**1.022**	**1.021**	**1.019**
SELECTED 11/12-SUB	**2.059**															

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
AS OF JUNE 30, 2013
CALCULATION OF THE LOSS DEVELOPMENT FACTORS
WORKERS' COMPENSATION - MEDICAL BENEFITS
($AMTS IN THOUSANDS)

UNLIMITED LOSSES

PAID LOSS DEVELOPMENT

Accident Years	DEVELOPMENT MONTHS 204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384
1964																
1965														939	939	
1966													1,135	1,137	1,149	
1967												1,231	1,231	1,231	1,231	
1968											1,348	1,349	1,348	1,350	1,350	
1969										1,405	1,406	1,406	1,407	1,407	1,407	
1970						1,269			1,581	1,582	1,589	1,591	1,592	1,596	1,604	
1971					1,418			1,826	1,828	1,844	1,855	1,856	1,874	1,897	1,937	
1972				1,418			1,873	1,873	1,877	1,878	1,880	1,880	1,884	1,884	1,884	
1973			1,516			1,984	1,986	1,986	1,986	1,991	1,992	1,997	1,997	1,997	2,006	
1974		3,419			4,181	4,341	4,420	4,537	4,593	4,687	4,694	4,792	4,907	5,009	5,046	
1975	3,475			4,297	4,342	4,407	4,454	4,509	4,561	4,522	4,579	4,686	4,722	4,804	4,841	
1976	3,753		4,498	4,572	4,681	4,750	4,850	4,935	4,949	5,054	5,187	5,361	5,424	5,537	5,593	
1977		5,362	5,437	5,528	5,676	5,920	6,072	6,128	6,493	6,841	7,107	7,539	8,102	9,354	10,017	
1978	6,990	7,072	7,205	7,305	7,342	7,426	7,544	7,603	7,741	7,938	8,007	8,067	8,109	8,158	8,205	
1979	8,032	8,421	8,537	8,646	8,766	8,889	9,011	9,079	9,447	9,620	9,826	9,942	10,030	10,123	10,250	
1980	10,785	10,925	11,334	11,612	11,831	12,004	12,229	12,551	12,827	13,002	13,327	13,451	13,528	13,623	13,738	
1981	13,566	13,756	13,993	14,250	14,568	14,896	15,142	15,478	15,819	16,270	16,780	17,001	17,210	17,476	17,591	
1982	13,779	14,018	15,113	15,407	15,797	16,194	16,369	16,709	16,952	17,300	17,860	18,181	18,583	19,073	19,336	
1983	18,102	18,677	19,274	19,812	20,334	20,653	20,980	21,493	21,854	22,259	22,625	23,125	23,451	23,754	24,039	
1984	23,265	23,851	24,367	24,862	25,422	26,151	26,905	27,327	27,926	28,862	29,513	30,248	31,052	31,779		
1985	26,386	26,846	27,516	28,190	28,618	28,945	29,347	29,869	30,385	30,793	31,127	31,574	31,933			
1986	31,048	31,638	32,413	33,043	33,588	34,144	34,726	35,862	36,350	36,827	37,566	38,115				
1987	32,809	33,663	34,309	35,355	36,131	36,932	37,943	38,733	39,521	40,585	41,576					
1988	36,824	37,714	38,677	39,545	40,385	41,234	42,048	42,669	43,339	45,033						
1989	34,223	34,958	35,591	36,385	37,006	37,566	38,243	38,690	39,164							
1990	41,725	42,897	45,140	46,362	47,391	48,503	49,450	50,647								
1991	43,398	44,487	45,774	46,827	48,469	49,216	49,895									
1992	43,331	44,187	45,152	45,873	46,536	47,190										
1993	45,175	46,312	47,310	48,390	48,817											
1994	43,105	43,900	44,500	44,998												
1995	38,234	38,797	39,672													
1996	34,678	35,541														
1997	32,634															
1998																
1999																
2000																
2001																
2002																
2003																
2004																
2005																
2006																
2007																
2008																
2009																
2010																
2011																
2012																
2013																

LOSS DEVELOPMENT FACTORS

Accident Years	192 TO 204	204 TO 216	216 TO 228	228 TO 240	240 TO 252	252 TO 264	264 TO 276	276 TO 288	288 TO 300	300 TO 312	312 TO 324	324 TO 336	336 TO 348	348 TO 360	360 TO 372	372 TO 384
1964																
1965														1.000		
1966													1.002	1.011		
1967												1.000	1.000	1.000		
1968											1.001	0.999	1.001	1.000		
1969										1.001	1.000	1.001	1.000	1.000		
1970									1.001	1.004	1.001	1.001	1.003	1.005		
1971								1.001	1.009	1.006	1.001	1.010	1.012	1.021		
1972							1.000	1.002	1.001	1.001	1.000	1.002	1.000	1.000		
1973						1.001	1.000	1.000	1.003	1.001	1.003	1.000	1.000	1.005		
1974					1.038	1.018	1.026	1.012	1.020	1.001	1.021	1.024	1.021	1.007		
1975				1.010	1.015	1.011	1.012	1.012	0.991	1.013	1.023	1.008	1.017	1.008		
1976			1.016	1.024	1.015	1.021	1.018	1.003	1.021	1.026	1.034	1.012	1.021	1.010		
1977		1.014	1.017	1.027	1.043	1.026	1.009	1.060	1.054	1.039	1.061	1.075	1.155	1.071		
1978	1.012	1.019	1.014	1.005	1.011	1.016	1.008	1.018	1.025	1.009	1.007	1.005	1.006	1.006		
1979	1.048	1.014	1.013	1.014	1.014	1.014	1.008	1.041	1.018	1.021	1.012	1.009	1.009	1.013		
1980	1.013	1.037	1.025	1.019	1.015	1.019	1.026	1.022	1.014	1.025	1.009	1.006	1.007	1.008		
1981	1.014	1.017	1.018	1.022	1.023	1.017	1.022	1.022	1.029	1.031	1.013	1.012	1.015	1.007		
1982	1.017	1.078	1.019	1.025	1.025	1.011	1.021	1.015	1.021	1.032	1.018	1.022	1.026	1.014		
1983	1.032	1.032	1.028	1.026	1.016	1.016	1.024	1.017	1.019	1.016	1.022	1.014	1.013	1.012		
1984	1.025	1.022	1.020	1.023	1.029	1.029	1.016	1.022	1.034	1.023	1.025	1.027	1.023			
1985	1.017	1.025	1.024	1.015	1.011	1.014	1.018	1.017	1.013	1.011	1.014	1.011				
1986	1.019	1.024	1.019	1.016	1.017	1.017	1.033	1.014	1.013	1.020	1.015					
1987	1.026	1.019	1.030	1.022	1.022	1.027	1.021	1.020	1.027	1.024						
1988	1.024	1.026	1.022	1.021	1.021	1.020	1.015	1.016	1.039							
1989	1.021	1.018	1.022	1.017	1.015	1.018	1.012	1.012								
1990	1.028	1.052	1.027	1.022	1.023	1.020	1.024									
1991	1.025	1.029	1.023	1.035	1.015	1.014										
1992	1.020	1.022	1.016	1.014	1.014											
1993	1.025	1.022	1.023	1.009												
1994	1.018	1.014	1.011													
1995	1.015	1.023														
1996	1.025															
1997																
1998																
1999																
2000																
2001																
2002																
2003																
2004																
2005																
2006																
2007																
2008																
2009																
2010																
2011																
2012																
AVERAGE	1.022	1.027	1.020	1.019	1.020	1.017	1.016	1.017	1.019	1.016	1.015	1.013	1.017	1.010		
3 YR AVG.	1.019	1.020	1.017	1.019	1.017	1.017	1.017	1.016	1.026	1.018	1.018	1.017	1.021	1.011		
EXCL HI LO	1.021	1.024	1.020	1.019	1.019	1.018	1.016	1.016	1.018	1.016	1.013	1.010	1.010	1.007		
SELECTED 90/91 & PRIOR	**1.054**	**1.049**	**1.046**	**1.039**	**1.037**	**1.028**	**1.023**	**1.025**	**1.023**	**1.028**	**1.026**	**1.023**	**1.023**	**1.029**		
SELECTED 91/92-10/11	**1.019**	**1.021**	**1.020**	**1.017**	**1.012**	**1.014**										
SELECTED 11/12-SUB																

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
COMPARISON OF LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

	ACCIDENT YEARS 1987 & PRIOR*			ACCIDENT YEARS 1988 - 1991*			ACCIDENT YEARS 1992 - 1995*			ACCIDENT YEARS 1996 & SUBSEQUENT*		
DEVELOPMENT MONTH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH	TOWERS WATSON CUMULATIVE LOW	AMI CREDIBILITY WEIGHTED CUMULATIVE	TOWERS WATSON CUMULATIVE HIGH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
12	8.473	9.236	17.511	7.391	7.143	13.722	5.634	5.302	8.988	5.049	5.713	8.975
24	3.136	3.481	5.373	2.679	2.640	4.182	2.132	2.211	2.920	2.014	2.402	3.122
36	1.996	2.246	2.980	1.736	1.802	2.432	1.513	1.676	1.970	1.487	1.783	2.097
48	1.547	1.777	2.175	1.399	1.503	1.793	1.332	1.476	1.658	1.296	1.544	1.723
60	1.336	1.540	1.798	1.272	1.364	1.545	1.247	1.368	1.491	1.215	1.426	1.539
72	1.223	1.394	1.593	1.211	1.283	1.425	1.198	1.297	1.389	1.168	1.348	1.414
84	1.161	1.300	1.459	1.176	1.232	1.351	1.165	1.247	1.321	1.140	1.299	1.338
96	1.138	1.247	1.358	1.137	1.195	1.293	1.137	1.208	1.280	1.118	1.260	1.281
108	1.122	1.202	1.294	1.114	1.167	1.248	1.111	1.177	1.246	1.098	1.231	1.240
120	1.110	1.163	1.254	1.095	1.145	1.214	1.093	1.151	1.215	1.083	1.206	1.209
132	1.101	1.132	1.224	1.082	1.128	1.195	1.081	1.131	1.194	1.072	1.186	1.186
144	1.092	1.105	1.200	1.072	1.114	1.176	1.070	1.114	1.174	1.064	1.169	1.167
156	1.083	1.088	1.181	1.064	1.101	1.160	1.061	1.100	1.158	1.058	1.154	1.151
168	1.073	1.076	1.166	1.056	1.091	1.146	1.054	1.088	1.144	1.051	1.140	1.137
180	1.063	1.065	1.152	1.049	1.081	1.132	1.048	1.078	1.131	1.045	1.129	1.124
192	1.054	1.056	1.138	1.043	1.073	1.123	1.043	1.070	1.122	1.040	1.118	1.115
204	1.045	1.049	1.124	1.038	1.066	1.113	1.038	1.062	1.113	1.036	1.109	1.106
216	1.038	1.042	1.112	1.033	1.059	1.104	1.033	1.055	1.103	1.032	1.101	1.096
228	1.033	1.036	1.101	1.029	1.054	1.095	1.029	1.049	1.095	1.028	1.093	1.088
240	1.029	1.031	1.092	1.025	1.048	1.088	1.026	1.044	1.088	1.025	1.086	1.082
252	1.025	1.027	1.084	1.023	1.044	1.080	1.023	1.040	1.080	1.022	1.080	1.075
264	1.022	1.023	1.076	1.020	1.040	1.073	1.021	1.036	1.073	1.020	1.074	1.068
276	1.019	1.019	1.069	1.019	1.036	1.066	1.019	1.032	1.066	1.018	1.068	1.062
288	1.017	1.016	1.063	1.016	1.033	1.061	1.017	1.029	1.061	1.016	1.063	1.056
300	1.014	1.014	1.057	1.014	1.030	1.055	1.015	1.026	1.055	1.014	1.059	1.051
312	1.012	1.012	1.051	1.012	1.027	1.049	1.012	1.023	1.049	1.012	1.055	1.045
324	1.010	1.010	1.045	1.010	1.025	1.043	1.010	1.021	1.043	1.010	1.051	1.040
336	1.007	1.008	1.040	1.007	1.022	1.037	1.008	1.019	1.037	1.007	1.047	1.035
348	1.005	1.007	1.035	1.005	1.020	1.032	1.005	1.017	1.032	1.005	1.043	1.030
360	1.003	1.005	1.031	1.003	1.018	1.028	1.003	1.015	1.028	1.003	1.040	1.026
372	1.002	1.004	1.027	1.002	1.017	1.024	1.002	1.014	1.024	1.002	1.037	1.022
384	1.001	1.004	1.023	1.001	1.015	1.020	1.001	1.012	1.020	1.001	1.034	1.019
396	1.000	1.003	1.018	1.000	1.014	1.015	1.000	1.011	1.015	1.000	1.031	1.015
408	1.000	1.003	1.015	1.000	1.012	1.012	1.000	1.010	1.012	1.000	1.028	1.011
420	1.000	1.002	1.013	1.000	1.011	1.010	1.000	1.009	1.010	1.000	1.026	1.009
432	1.000	1.002	1.010	1.000	1.010	1.007	1.000	1.008	1.007	1.000	1.024	1.007
444	1.000	1.002	1.008	1.000	1.009	1.005	1.000	1.007	1.005	1.000	1.021	1.005
456	1.000	1.002	1.007	1.000	1.008	1.004	1.000	1.006	1.004	1.000	1.019	1.003
468	1.000	1.002	1.005	1.000	1.007	1.002	1.000	1.005	1.002	1.000	1.017	1.002
480	1.000	1.002	1.005	1.000	1.006	1.002	1.000	1.004	1.002	1.000	1.015	1.002
492	1.000	1.002	1.005	1.000	1.005	1.002	1.000	1.004	1.002	1.000	1.013	1.002
504	1.000	1.002	1.005	1.000	1.004	1.002	1.000	1.003	1.002	1.000	1.012	1.002
516	1.000	1.002	1.005	1.000	1.004	1.002	1.000	1.003	1.002	1.000	1.010	1.002
528	1.000	1.002	1.005	1.000	1.003	1.002	1.000	1.002	1.002	1.000	1.008	1.002
540	1.000	1.002	1.005	1.000	1.003	1.002	1.000	1.002	1.002	1.000	1.007	1.002
552	1.000	1.002	1.005	1.000	1.002	1.002	1.000	1.001	1.002	1.000	1.005	1.002
564	1.000	1.002	1.005	1.000	1.002	1.002	1.000	1.001	1.002	1.000	1.004	1.002
576	1.000	1.002	1.005	1.000	1.001	1.002	1.000	1.001	1.002	1.000	1.003	1.002
588	1.000	1.002	1.005	1.000	1.001	1.002	1.000	1.000	1.002	1.000	1.001	1.002

Notes:
(1), (3), (4), (6), (7), (9), (10), & (12) - Per Towers Watson 6/30/2013 Reserve Review report.
(2), (5), (8), & (11) - Per Column (6) of Exhibit IV, Pages 3A, 3B, 3C, & 3D respectively.
* All Accident Years are 12-month periods ending 6/30 of the stated year.

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

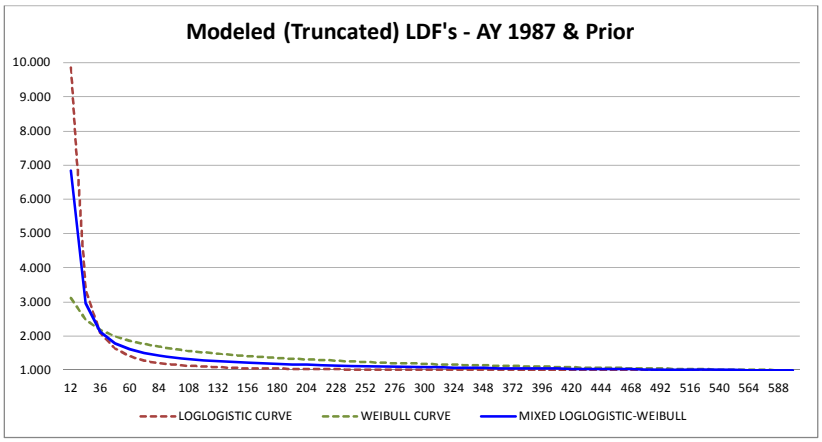
ACCIDENT YEARS 1987 & PRIOR*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	9.908	9.857	5.312	3.116	8.424	6.843
24	3.376	3.359	4.235	2.484	3.654	2.968
36	2.097	2.086	3.723	2.184	2.622	2.130
48	1.634	1.626	3.404	1.997	2.205	1.791
60	1.414	1.407	3.179	1.865	1.984	1.612
72	1.293	1.286	3.009	1.765	1.847	1.500
84	1.218	1.212	2.874	1.686	1.753	1.424
96	1.169	1.163	2.763	1.621	1.684	1.368
108	1.135	1.129	2.670	1.566	1.631	1.325
120	1.111	1.105	2.591	1.520	1.588	1.290
132	1.092	1.087	2.521	1.479	1.553	1.262
144	1.078	1.073	2.460	1.443	1.524	1.238
156	1.067	1.062	2.405	1.411	1.499	1.218
168	1.058	1.053	2.357	1.382	1.477	1.200
180	1.051	1.046	2.312	1.356	1.458	1.185
192	1.045	1.040	2.272	1.333	1.441	1.171
204	1.040	1.035	2.235	1.311	1.426	1.158
216	1.036	1.031	2.201	1.291	1.412	1.147
228	1.033	1.027	2.169	1.272	1.399	1.137
240	1.029	1.024	2.140	1.255	1.388	1.127
252	1.027	1.022	2.112	1.239	1.377	1.119
264	1.025	1.019	2.087	1.224	1.367	1.111
276	1.023	1.017	2.063	1.210	1.358	1.103
288	1.021	1.016	2.040	1.197	1.350	1.097
300	1.019	1.014	2.019	1.184	1.342	1.090
312	1.018	1.013	1.998	1.172	1.334	1.084
324	1.017	1.011	1.979	1.161	1.327	1.078
336	1.016	1.010	1.961	1.150	1.321	1.073
348	1.015	1.009	1.944	1.140	1.315	1.068
360	1.014	1.008	1.927	1.131	1.309	1.063
372	1.013	1.008	1.912	1.121	1.303	1.058
384	1.012	1.007	1.897	1.113	1.298	1.054
396	1.011	1.006	1.882	1.104	1.292	1.050
408	1.011	1.006	1.868	1.096	1.288	1.046
420	1.010	1.005	1.855	1.088	1.283	1.042
432	1.010	1.004	1.843	1.081	1.279	1.039
444	1.009	1.004	1.830	1.074	1.274	1.035
456	1.009	1.004	1.819	1.067	1.270	1.032
468	1.008	1.003	1.807	1.060	1.266	1.029
480	1.008	1.003	1.796	1.054	1.262	1.026
492	1.008	1.002	1.786	1.048	1.259	1.023
504	1.007	1.002	1.776	1.042	1.255	1.020
516	1.007	1.002	1.766	1.036	1.252	1.017
528	1.007	1.001	1.756	1.030	1.249	1.014
540	1.006	1.001	1.747	1.025	1.245	1.012
552	1.006	1.001	1.738	1.019	1.242	1.009
564	1.006	1.001	1.729	1.014	1.239	1.007
576	1.006	1.000	1.721	1.009	1.236	1.004
588	1.005	1.000	1.713	1.005	1.234	1.002
600	1.005	1.000	1.705	1.000	1.231	1.000

Assumptions:

Loglogistic	
Scale	37.8
Shape	1.91
Weibull	
Scale	839.8
Shape	0.37
Weight to Loglogistic	0.677
Weight to Weibull	0.323
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

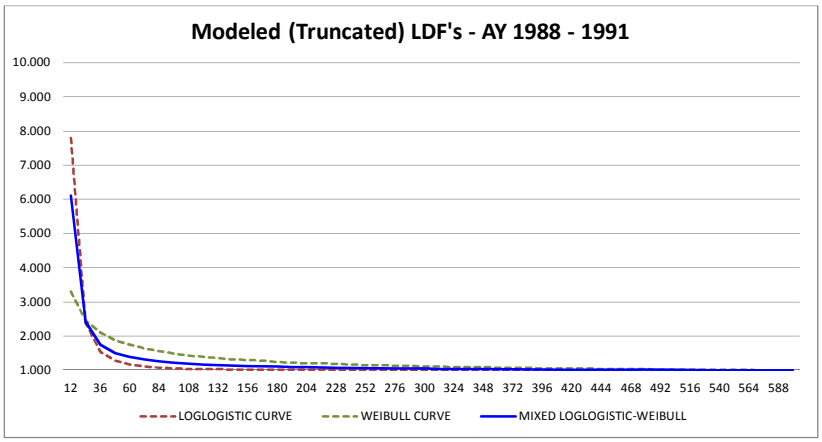
ACCIDENT YEARS 1988 - 1991*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	7.805	7.799	3.619	3.309	6.321	6.114
24	2.394	2.392	2.697	2.466	2.501	2.420
36	1.551	1.550	2.297	2.100	1.816	1.756
48	1.286	1.284	2.062	1.885	1.561	1.510
60	1.171	1.170	1.904	1.741	1.431	1.384
72	1.113	1.112	1.789	1.636	1.353	1.308
84	1.079	1.078	1.700	1.555	1.300	1.257
96	1.058	1.058	1.630	1.491	1.261	1.220
108	1.045	1.044	1.572	1.438	1.232	1.192
120	1.035	1.034	1.524	1.394	1.209	1.169
132	1.028	1.027	1.483	1.356	1.190	1.151
144	1.023	1.022	1.448	1.324	1.174	1.136
156	1.019	1.018	1.417	1.296	1.160	1.123
168	1.016	1.015	1.390	1.271	1.149	1.111
180	1.014	1.013	1.366	1.249	1.139	1.102
192	1.012	1.011	1.344	1.229	1.130	1.093
204	1.010	1.010	1.325	1.212	1.122	1.085
216	1.009	1.008	1.307	1.196	1.115	1.079
228	1.008	1.007	1.291	1.181	1.109	1.072
240	1.007	1.006	1.277	1.168	1.103	1.067
252	1.006	1.006	1.263	1.155	1.098	1.062
264	1.006	1.005	1.251	1.144	1.093	1.057
276	1.005	1.004	1.240	1.134	1.088	1.053
288	1.005	1.004	1.229	1.124	1.084	1.049
300	1.004	1.003	1.219	1.115	1.080	1.045
312	1.004	1.003	1.210	1.106	1.077	1.042
324	1.004	1.003	1.201	1.099	1.074	1.039
336	1.003	1.002	1.193	1.091	1.071	1.036
348	1.003	1.002	1.186	1.084	1.068	1.033
360	1.003	1.002	1.179	1.078	1.065	1.030
372	1.003	1.002	1.172	1.072	1.063	1.028
384	1.002	1.002	1.166	1.066	1.060	1.026
396	1.002	1.001	1.160	1.061	1.058	1.024
408	1.002	1.001	1.154	1.055	1.056	1.022
420	1.002	1.001	1.149	1.051	1.054	1.020
432	1.002	1.001	1.144	1.046	1.052	1.018
444	1.002	1.001	1.139	1.042	1.050	1.016
456	1.002	1.001	1.134	1.037	1.049	1.015
468	1.002	1.001	1.130	1.033	1.047	1.013
480	1.001	1.001	1.126	1.030	1.046	1.012
492	1.001	1.001	1.122	1.026	1.044	1.010
504	1.001	1.000	1.118	1.023	1.043	1.009
516	1.001	1.000	1.115	1.019	1.042	1.007
528	1.001	1.000	1.111	1.016	1.040	1.006
540	1.001	1.000	1.108	1.013	1.039	1.005
552	1.001	1.000	1.105	1.010	1.038	1.004
564	1.001	1.000	1.102	1.008	1.037	1.003
576	1.001	1.000	1.099	1.005	1.036	1.002
588	1.001	1.000	1.096	1.002	1.035	1.001
600	1.001	1.000	1.094	1.000	1.034	1.000

Assumptions:

Loglogistic	
Scale	27.8
Shape	2.29
Weibull	
Scale	105.8
Shape	0.52
Weight to Loglogistic	0.645
Weight to Weibull	0.355
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

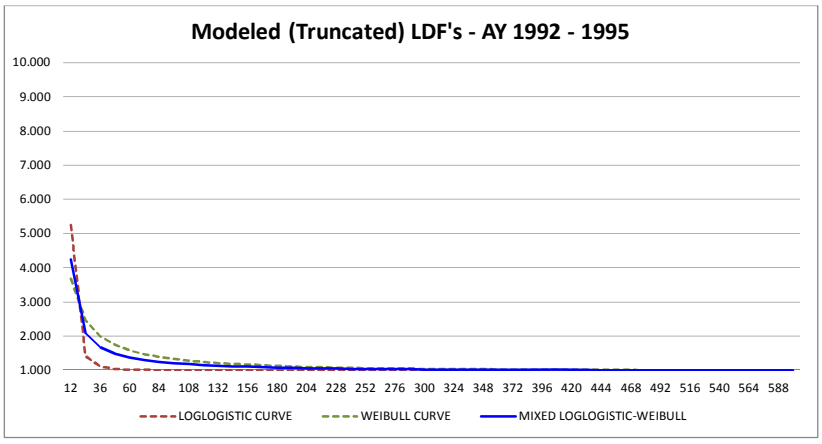
ACCIDENT YEARS 1992 - 1995*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	5.241	5.241	3.699	3.676	4.263	4.246
24	1.413	1.413	2.482	2.467	2.091	2.083
36	1.106	1.106	2.011	1.999	1.680	1.673
48	1.040	1.040	1.755	1.744	1.494	1.488
60	1.019	1.019	1.593	1.583	1.383	1.377
72	1.010	1.010	1.481	1.471	1.309	1.303
84	1.006	1.006	1.399	1.390	1.255	1.250
96	1.004	1.004	1.336	1.328	1.215	1.210
108	1.003	1.003	1.287	1.279	1.183	1.178
120	1.002	1.002	1.248	1.240	1.158	1.153
132	1.001	1.001	1.215	1.208	1.137	1.133
144	1.001	1.001	1.189	1.181	1.120	1.116
156	1.001	1.001	1.166	1.159	1.106	1.101
168	1.001	1.001	1.147	1.140	1.094	1.089
180	1.000	1.000	1.131	1.124	1.083	1.079
192	1.000	1.000	1.117	1.110	1.074	1.070
204	1.000	1.000	1.105	1.098	1.066	1.062
216	1.000	1.000	1.094	1.087	1.060	1.055
228	1.000	1.000	1.085	1.078	1.054	1.050
240	1.000	1.000	1.076	1.070	1.049	1.044
252	1.000	1.000	1.069	1.062	1.044	1.040
264	1.000	1.000	1.063	1.056	1.040	1.036
276	1.000	1.000	1.057	1.050	1.036	1.032
288	1.000	1.000	1.052	1.045	1.033	1.029
300	1.000	1.000	1.047	1.041	1.030	1.026
312	1.000	1.000	1.043	1.037	1.027	1.023
324	1.000	1.000	1.039	1.033	1.025	1.021
336	1.000	1.000	1.036	1.030	1.023	1.019
348	1.000	1.000	1.033	1.026	1.021	1.017
360	1.000	1.000	1.030	1.024	1.019	1.015
372	1.000	1.000	1.028	1.021	1.018	1.014
384	1.000	1.000	1.026	1.019	1.016	1.012
396	1.000	1.000	1.023	1.017	1.015	1.011
408	1.000	1.000	1.022	1.015	1.014	1.010
420	1.000	1.000	1.020	1.014	1.013	1.009
432	1.000	1.000	1.018	1.012	1.012	1.008
444	1.000	1.000	1.017	1.011	1.011	1.007
456	1.000	1.000	1.016	1.009	1.010	1.006
468	1.000	1.000	1.014	1.008	1.009	1.005
480	1.000	1.000	1.013	1.007	1.008	1.004
492	1.000	1.000	1.012	1.006	1.008	1.004
504	1.000	1.000	1.011	1.005	1.007	1.003
516	1.000	1.000	1.011	1.004	1.007	1.003
528	1.000	1.000	1.010	1.004	1.006	1.002
540	1.000	1.000	1.009	1.003	1.006	1.002
552	1.000	1.000	1.008	1.002	1.005	1.001
564	1.000	1.000	1.008	1.002	1.005	1.001
576	1.000	1.000	1.007	1.001	1.005	1.001
588	1.000	1.000	1.007	1.000	1.004	1.000
600	1.000	1.000	1.006	1.000	1.004	1.000

Assumptions:

Loglogistic	
Scale	18.4
Shape	3.36
Weibull	
Scale	61.0
Shape	0.71
Weight to Loglogistic	0.366
Weight to Weibull	0.634
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
ESTIMATION OF LOSS DEVELOPMENT FACTORS - CLARK LDF APPROACH
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

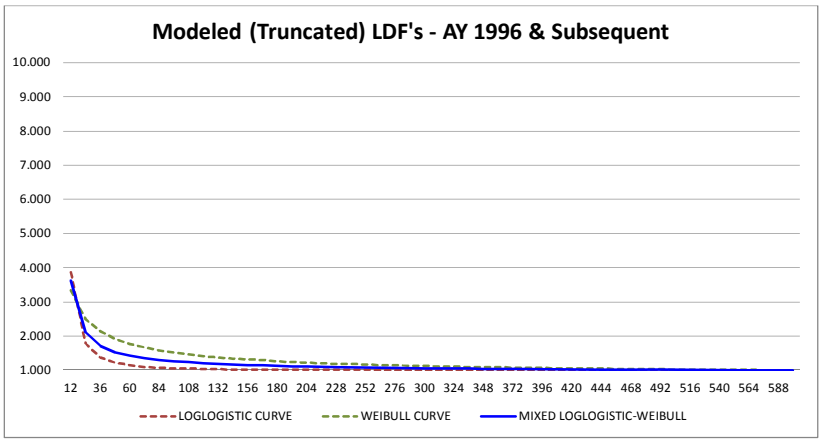
ACCIDENT YEARS 1996 & SUBSEQUENT*

	LOGLOGISTIC CURVE		WEIBULL CURVE		MIXED LOGLOGISTIC-WEIBULL	
DEVELOPMENT MONTH	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF	FITTED CUMULATIVE LDF	TRUNCATED CUMULATIVE LDF
	(1)	(2)	(3)	(4)	(5)	(6)
12	3.868	3.860	3.729	3.344	3.809	3.628
24	1.788	1.784	2.790	2.502	2.213	2.108
36	1.370	1.367	2.380	2.134	1.798	1.713
48	1.216	1.214	2.138	1.917	1.607	1.531
60	1.143	1.141	1.974	1.770	1.496	1.424
72	1.102	1.100	1.855	1.663	1.421	1.353
84	1.076	1.074	1.763	1.581	1.367	1.302
96	1.059	1.057	1.689	1.515	1.327	1.264
108	1.048	1.046	1.629	1.461	1.294	1.233
120	1.039	1.037	1.579	1.416	1.268	1.208
132	1.033	1.031	1.535	1.377	1.246	1.187
144	1.028	1.026	1.498	1.344	1.227	1.169
156	1.024	1.022	1.466	1.314	1.211	1.154
168	1.021	1.019	1.437	1.289	1.197	1.140
180	1.018	1.016	1.411	1.266	1.185	1.129
192	1.016	1.014	1.388	1.245	1.174	1.118
204	1.015	1.013	1.368	1.226	1.164	1.109
216	1.013	1.011	1.349	1.210	1.156	1.101
228	1.012	1.010	1.332	1.194	1.148	1.093
240	1.011	1.009	1.316	1.180	1.140	1.086
252	1.010	1.008	1.302	1.167	1.134	1.080
264	1.009	1.007	1.288	1.155	1.127	1.074
276	1.008	1.006	1.276	1.144	1.122	1.068
288	1.008	1.006	1.264	1.134	1.117	1.063
300	1.007	1.005	1.254	1.124	1.112	1.059
312	1.007	1.005	1.244	1.115	1.107	1.055
324	1.006	1.004	1.234	1.107	1.103	1.051
336	1.006	1.004	1.226	1.099	1.099	1.047
348	1.005	1.003	1.217	1.092	1.095	1.043
360	1.005	1.003	1.210	1.085	1.092	1.040
372	1.005	1.003	1.202	1.078	1.089	1.037
384	1.004	1.003	1.196	1.072	1.086	1.034
396	1.004	1.002	1.189	1.066	1.083	1.031
408	1.004	1.002	1.183	1.061	1.080	1.028
420	1.004	1.002	1.177	1.055	1.077	1.026
432	1.004	1.002	1.171	1.050	1.075	1.024
444	1.003	1.001	1.166	1.046	1.072	1.021
456	1.003	1.001	1.161	1.041	1.070	1.019
468	1.003	1.001	1.156	1.037	1.068	1.017
480	1.003	1.001	1.152	1.033	1.066	1.015
492	1.003	1.001	1.147	1.029	1.064	1.013
504	1.003	1.001	1.143	1.025	1.062	1.012
516	1.003	1.001	1.139	1.021	1.060	1.010
528	1.002	1.001	1.135	1.018	1.059	1.008
540	1.002	1.000	1.131	1.015	1.057	1.007
552	1.002	1.000	1.128	1.011	1.056	1.005
564	1.002	1.000	1.125	1.008	1.054	1.004
576	1.002	1.000	1.121	1.006	1.053	1.003
588	1.002	1.000	1.118	1.003	1.051	1.001
600	1.002	1.000	1.115	1.000	1.050	1.000

Assumptions:

Loglogistic	
Scale	21.1
Shape	1.86
Weibull	
Scale	119.1
Shape	0.51
Weight to Loglogistic	0.576
Weight to Weibull	0.424
LDF Truncated at Age	600

Notes:
(1) & (3) - Fitted LDF's using estimated loglogistic and weibull parameters respectively.
(2) = (1) / (1) at age 600; (4) = (3) / (3) at age 600.
(5) - Weighted average of (1) & (3); (6) - weighted average of (2) & (4). The weights are estimated using maximum likelihood.
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

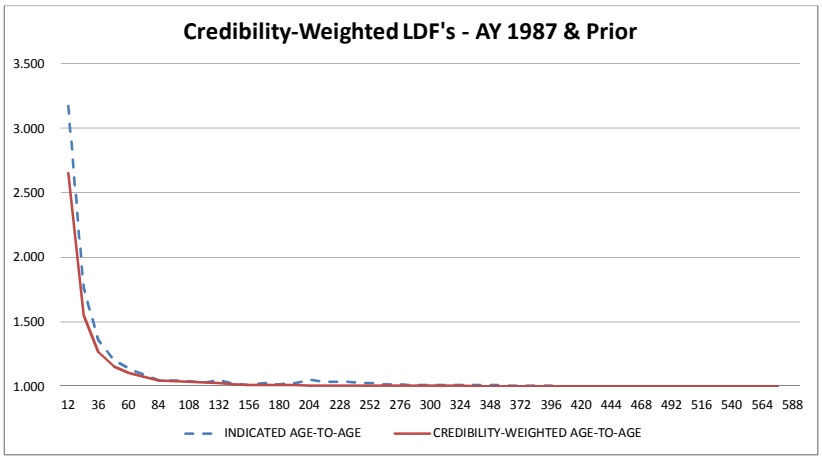
ACCIDENT YEARS 1987 & PRIOR*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	3.174	0.400	2.306	2.653	2.653	9.236
24 - 36	1.762	0.424	1.393	1.550	1.550	3.481
36 - 48	1.356	0.447	1.189	1.264	1.264	2.246
48 - 60	1.202	0.469	1.112	1.154	1.154	1.777
60 - 72	1.136	0.490	1.074	1.105	1.105	1.540
72 - 84	1.090	0.510	1.054	1.072	1.072	1.394
84 - 96	1.043	0.529	1.041	1.042	1.042	1.300
96 - 108	1.042	0.548	1.033	1.038	1.038	1.247
108 - 120	1.038	0.566	1.027	1.033	1.033	1.202
120 - 132	1.031	0.583	1.022	1.028	1.028	1.163
132 - 144	1.050	0.600	1.019	1.037	1.024	1.132
144 - 156	1.014	0.447	1.017	1.016	1.016	1.105
156 - 168	1.007	0.447	1.015	1.011	1.011	1.088
168 - 180	1.024	0.447	1.013	1.018	1.010	1.076
180 - 192	1.014	0.469	1.012	1.013	1.008	1.065
192 - 204	1.026	0.469	1.011	1.018	1.007	1.056
204 - 216	1.047	0.447	1.010	1.026	1.006	1.049
216 - 228	1.033	0.469	1.009	1.020	1.006	1.042
228 - 240	1.032	0.490	1.008	1.020	1.005	1.036
240 - 252	1.030	0.510	1.008	1.019	1.004	1.031
252 - 264	1.022	0.529	1.007	1.015	1.004	1.027
264 - 276	1.014	0.548	1.007	1.011	1.003	1.023
276 - 288	1.012	0.566	1.006	1.009	1.003	1.019
288 - 300	1.011	0.583	1.006	1.009	1.003	1.016
300 - 312	1.010	0.600	1.006	1.009	1.002	1.014
312 - 324	1.009	0.616	1.005	1.008	1.002	1.012
324 - 336	1.010	0.632	1.005	1.008	1.002	1.010
336 - 348	1.011	0.616	1.005	1.009	1.001	1.008
348 - 360	1.010	0.616	1.005	1.008	1.001	1.007
360 - 372	1.003	0.616	1.004	1.003	1.001	1.005
372 - 384	1.003	0.600	1.004	1.003	1.001	1.004
384 - 396	1.003	0.583	1.004	1.003	1.001	1.004
396 - 408	1.002	0.566	1.004	1.003	1.000	1.003
408 - 420	1.001	0.548	1.004	1.002	1.000	1.003
420 - 432	1.001	0.529	1.003	1.002	1.000	1.002
432 - 444	1.002	0.510	1.003	1.002	1.000	1.002
444 - 456	1.001	0.490	1.003	1.002	1.000	1.002
456 - 468	1.001	0.469	1.003	1.002	1.000	1.002
468 - 480	1.001	0.447	1.003	1.002	1.000	1.002
480 - 492	1.000	0.424	1.003	1.002	1.000	1.002
492 - 504	1.000	0.400	1.003	1.002	1.000	1.002
504 - 516	1.000	0.374	1.003	1.002	1.000	1.002
516 - 528	1.000	0.346	1.003	1.002	1.000	1.002
528 - 540	1.000	0.316	1.003	1.002	1.000	1.002
540 - 552	1.000	0.283	1.002	1.002	1.000	1.002
552 - 564	1.000	0.245	1.002	1.002	1.000	1.002
564 - 576	1.000	0.200	1.002	1.002	1.000	1.002
576 - 588	1.000	0.141	1.002	1.002	1.000	1.002
588 - ULT						1.002

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit IV, Page 4.
(2) = min{√[# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit IV, Page 2A, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit IV, Page 2A, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

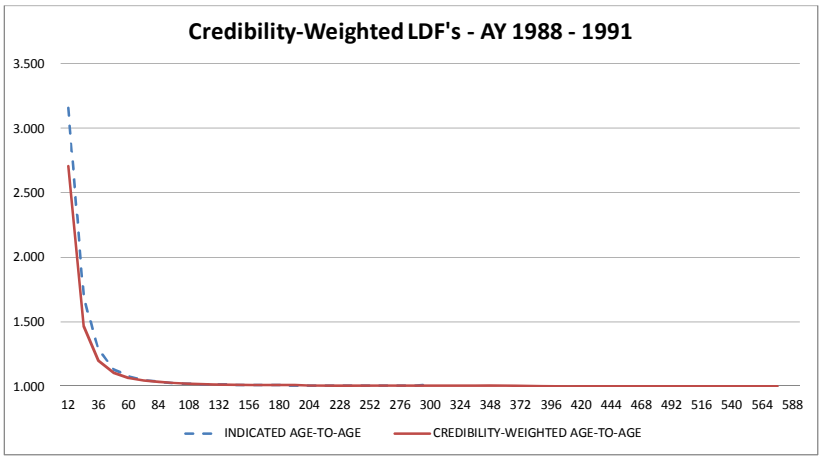
ACCIDENT YEARS 1988 - 1991*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	3.159	0.283	2.527	2.706	2.706	7.143
24 - 36	1.688	0.283	1.378	1.465	1.465	2.640
36 - 48	1.289	0.283	1.163	1.199	1.199	1.802
48 - 60	1.129	0.283	1.091	1.102	1.102	1.503
60 - 72	1.076	0.283	1.058	1.063	1.063	1.364
72 - 84	1.043	0.283	1.041	1.041	1.041	1.283
84 - 96	1.034	0.283	1.030	1.032	1.032	1.232
96 - 108	1.023	0.283	1.024	1.024	1.024	1.195
108 - 120	1.018	0.283	1.019	1.019	1.019	1.167
120 - 132	1.014	0.283	1.016	1.015	1.015	1.145
132 - 144	1.012	0.283	1.013	1.013	1.013	1.128
144 - 156	1.009	0.283	1.012	1.011	1.011	1.114
156 - 168	1.010	0.283	1.010	1.010	1.010	1.101
168 - 180	1.008	0.283	1.009	1.009	1.009	1.091
180 - 192	1.007	0.283	1.008	1.008	1.008	1.081
192 - 204	1.006	0.283	1.007	1.007	1.007	1.073
204 - 216	1.006	0.283	1.006	1.006	1.006	1.066
216 - 228	1.004	0.283	1.006	1.005	1.005	1.059
228 - 240	1.004	0.283	1.005	1.005	1.005	1.054
240 - 252	1.003	0.283	1.005	1.004	1.004	1.048
252 - 264	1.003	0.283	1.004	1.004	1.004	1.044
264 - 276	1.002	0.283	1.004	1.003	1.003	1.040
276 - 288	1.003	0.245	1.004	1.003	1.003	1.036
288 - 300	1.002	0.200	1.003	1.003	1.003	1.033
300 - 312	1.007	0.141	1.003	1.004	1.003	1.030
312 - 324		0.000	1.003	1.003	1.002	1.027
324 - 336		0.000	1.003	1.003	1.002	1.025
336 - 348		0.000	1.003	1.003	1.002	1.022
348 - 360		0.000	1.002	1.002	1.002	1.020
360 - 372		0.000	1.002	1.002	1.002	1.018
372 - 384		0.000	1.002	1.002	1.002	1.017
384 - 396		0.000	1.002	1.002	1.001	1.015
396 - 408		0.000	1.002	1.002	1.001	1.014
408 - 420		0.000	1.002	1.002	1.001	1.012
420 - 432		0.000	1.002	1.002	1.001	1.011
432 - 444		0.000	1.002	1.002	1.001	1.010
444 - 456		0.000	1.002	1.002	1.001	1.009
456 - 468		0.000	1.002	1.002	1.001	1.008
468 - 480		0.000	1.001	1.001	1.001	1.007
480 - 492		0.000	1.001	1.001	1.001	1.006
492 - 504		0.000	1.001	1.001	1.001	1.005
504 - 516		0.000	1.001	1.001	1.001	1.004
516 - 528		0.000	1.001	1.001	1.001	1.004
528 - 540		0.000	1.001	1.001	1.001	1.003
540 - 552		0.000	1.001	1.001	1.000	1.003
552 - 564		0.000	1.001	1.001	1.000	1.002
564 - 576		0.000	1.001	1.001	1.000	1.002
576 - 588		0.000	1.001	1.001	1.000	1.001
588 - ULT						1.001

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit IV, Page 4.
(2) = min{√[# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit IV, Page 2B, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit IV, Page 2B, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

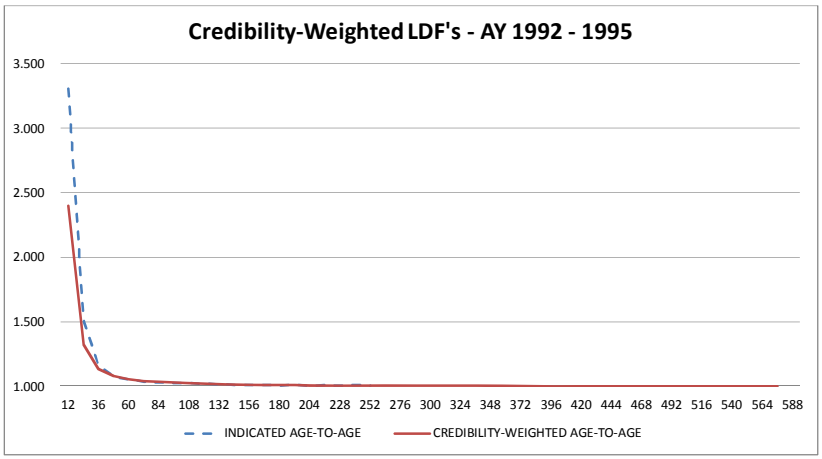
ACCIDENT YEARS 1992- 1995*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	3.309	0.283	2.038	2.398	2.398	5.302
24 - 36	1.510	0.283	1.245	1.320	1.320	2.211
36 - 48	1.162	0.283	1.125	1.135	1.135	1.676
48 - 60	1.074	0.283	1.080	1.078	1.078	1.476
60 - 72	1.051	0.283	1.057	1.055	1.055	1.368
72 - 84	1.034	0.283	1.043	1.040	1.040	1.297
84 - 96	1.028	0.283	1.033	1.032	1.032	1.247
96 - 108	1.026	0.283	1.027	1.027	1.027	1.208
108 - 120	1.023	0.283	1.022	1.022	1.022	1.177
120 - 132	1.017	0.283	1.018	1.018	1.018	1.151
132 - 144	1.016	0.283	1.015	1.015	1.015	1.131
144 - 156	1.011	0.283	1.013	1.013	1.013	1.114
156 - 168	1.010	0.283	1.011	1.011	1.011	1.100
168 - 180	1.009	0.283	1.010	1.009	1.009	1.088
180 - 192	1.006	0.283	1.008	1.008	1.008	1.078
192 - 204	1.007	0.283	1.007	1.007	1.007	1.070
204 - 216	1.006	0.283	1.006	1.006	1.006	1.062
216 - 228	1.007	0.283	1.006	1.006	1.006	1.055
228 - 240	1.004	0.245	1.005	1.005	1.005	1.049
240 - 252	1.007	0.200	1.004	1.005	1.004	1.044
252 - 264	1.005	0.141	1.004	1.004	1.004	1.040
264 - 276		0.000	1.004	1.004	1.004	1.036
276 - 288		0.000	1.003	1.003	1.003	1.032
288 - 300		0.000	1.003	1.003	1.003	1.029
300 - 312		0.000	1.003	1.003	1.003	1.026
312 - 324		0.000	1.002	1.002	1.002	1.023
324 - 336		0.000	1.002	1.002	1.002	1.021
336 - 348		0.000	1.002	1.002	1.002	1.019
348 - 360		0.000	1.002	1.002	1.002	1.017
360 - 372		0.000	1.002	1.002	1.002	1.015
372 - 384		0.000	1.001	1.001	1.001	1.014
384 - 396		0.000	1.001	1.001	1.001	1.012
396 - 408		0.000	1.001	1.001	1.001	1.011
408 - 420		0.000	1.001	1.001	1.001	1.010
420 - 432		0.000	1.001	1.001	1.001	1.009
432 - 444		0.000	1.001	1.001	1.001	1.008
444 - 456		0.000	1.001	1.001	1.001	1.007
456 - 468		0.000	1.001	1.001	1.001	1.006
468 - 480		0.000	1.001	1.001	1.001	1.005
480 - 492		0.000	1.001	1.001	1.001	1.004
492 - 504		0.000	1.001	1.001	1.001	1.004
504 - 516		0.000	1.001	1.001	1.001	1.003
516 - 528		0.000	1.000	1.000	1.000	1.003
528 - 540		0.000	1.000	1.000	1.000	1.002
540 - 552		0.000	1.000	1.000	1.000	1.002
552 - 564		0.000	1.000	1.000	1.000	1.001
564 - 576		0.000	1.000	1.000	1.000	1.001
576 - 588		0.000	1.000	1.000	1.000	1.001
588 - ULT						1.000

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit IV, Page 4.
(2) = min{√[# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit IV, Page 2C, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit IV, Page 2C, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
SELECTION OF CREDIBILITY-WEIGHTED LOSS DEVELOPMENT FACTORS
AS OF JUNE 30, 2013
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

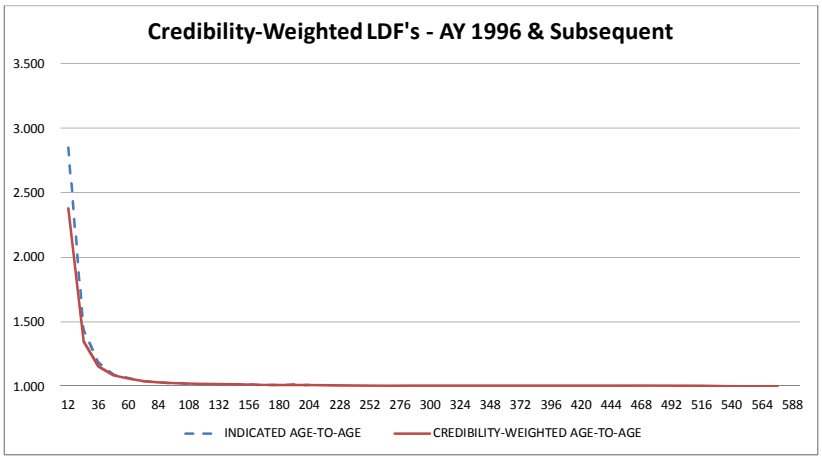
ACCIDENT YEARS 1996 & SUBSEQUENT*

DEVELOPMENT PERIOD	SELECTED INDICATED AGE-TO-AGE LDF	CREDIBILITY WEIGHT	TRUNCATED MIXED LOGLOGISTIC-WEIBULL AGE-TO-AGE LDF	CREDIBILITY-WEIGHTED LDF'S		
				INITIAL AGE-TO-AGE	ADJUSTED AGE-TO-AGE	ADJUSTED CUMULATIVE
	(1)	(2)	(3)	(4)	(5)	(6)
12 - 24	2.849	0.583	1.721	2.379	2.379	5.713
24 - 36	1.436	0.566	1.231	1.347	1.347	2.402
36 - 48	1.185	0.548	1.119	1.155	1.155	1.783
48 - 60	1.090	0.529	1.075	1.083	1.083	1.544
60 - 72	1.063	0.510	1.052	1.058	1.058	1.426
72 - 84	1.037	0.490	1.039	1.038	1.038	1.348
84 - 96	1.030	0.469	1.031	1.031	1.031	1.299
96 - 108	1.023	0.447	1.025	1.024	1.024	1.260
108 - 120	1.020	0.424	1.021	1.020	1.020	1.231
120 - 132	1.015	0.400	1.018	1.017	1.017	1.206
132 - 144	1.013	0.374	1.015	1.014	1.014	1.186
144 - 156	1.013	0.346	1.013	1.013	1.013	1.169
156 - 168	1.013	0.316	1.012	1.012	1.012	1.154
168 - 180	1.010	0.283	1.010	1.010	1.010	1.140
180 - 192	1.009	0.245	1.009	1.009	1.009	1.129
192 - 204	1.013	0.200	1.008	1.009	1.008	1.118
204 - 216	1.010	0.141	1.008	1.008	1.008	1.109
216 - 228		0.000	1.007	1.007	1.007	1.101
228 - 240		0.000	1.006	1.006	1.006	1.093
240 - 252		0.000	1.006	1.006	1.006	1.086
252 - 264		0.000	1.005	1.005	1.005	1.080
264 - 276		0.000	1.005	1.005	1.005	1.074
276 - 288		0.000	1.005	1.005	1.005	1.068
288 - 300		0.000	1.004	1.004	1.004	1.063
300 - 312		0.000	1.004	1.004	1.004	1.059
312 - 324		0.000	1.004	1.004	1.004	1.055
324 - 336		0.000	1.004	1.004	1.004	1.051
336 - 348		0.000	1.003	1.003	1.003	1.047
348 - 360		0.000	1.003	1.003	1.003	1.043
360 - 372		0.000	1.003	1.003	1.003	1.040
372 - 384		0.000	1.003	1.003	1.003	1.037
384 - 396		0.000	1.003	1.003	1.003	1.034
396 - 408		0.000	1.003	1.003	1.003	1.031
408 - 420		0.000	1.002	1.002	1.002	1.028
420 - 432		0.000	1.002	1.002	1.002	1.026
432 - 444		0.000	1.002	1.002	1.002	1.024
444 - 456		0.000	1.002	1.002	1.002	1.021
456 - 468		0.000	1.002	1.002	1.002	1.019
468 - 480		0.000	1.002	1.002	1.002	1.017
480 - 492		0.000	1.002	1.002	1.002	1.015
492 - 504		0.000	1.002	1.002	1.002	1.013
504 - 516		0.000	1.002	1.002	1.002	1.012
516 - 528		0.000	1.002	1.002	1.002	1.010
528 - 540		0.000	1.002	1.002	1.002	1.008
540 - 552		0.000	1.001	1.001	1.001	1.007
552 - 564		0.000	1.001	1.001	1.001	1.005
564 - 576		0.000	1.001	1.001	1.001	1.004
576 - 588		0.000	1.001	1.001	1.001	1.003
588 - ULT						1.001

Assumptions:

Full-credibility 50

Notes:
(1) - Per selected indicated age-to-age factors in Exhibit IV, Page 4.
(2) = min{√[# of AY's used in (1) / 50] ,1.0}. Full-credibility standard per AMI judgment.
(3) - Age-to-age factors using Exhibit IV, Page 2D, Column (6).
(4) = (2) × (1) + [1.0 - (2)] × (3).
(5) - (4) judgmentally smoothened
(6) - Upward product of (5). Tail factor per Exhibit IV, Page 2D, Column (6).
* All Accident Years are 12-month periods ending 6/30 of the stated year.



MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
AS OF JUNE 30, 2013
CALCULATION OF THE LOSS DEVELOPMENT FACTORS
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

UNLIMITED LOSSES

PAID LOSS DEVELOPMENT

Accident Years	DEVELOPMENT MONTHS 12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192
1964																
1965																
1966																
1967																
1968																
1969												3,855				
1970											4,215	4,241				
1971										4,203	4,238	4,253				
1972									4,433	4,480	4,516	4,543				
1973								4,480	4,523	4,558	4,586	4,622				
1974							6,141	6,523	6,669	6,776	7,085	7,314				
1975						6,631	6,882	7,098	7,389	7,966	8,123	8,271				
1976					6,554	6,966	7,123	7,259	7,758	7,884	8,000	8,156				8,666
1977				7,801	8,523	8,978	9,449	10,330	10,684	10,844	11,063	12,079			12,445	11,485
1978			8,973	10,539	11,689	12,453	13,110	13,621	14,009	14,391	7,529	20,500	21,255	20,992	15,795	11,880
1979		7,869	11,404	13,475	14,784	15,538	16,301	16,947	17,369	8,631	18,432	18,854	19,075	19,310	19,550	19,702
1980	3,430	8,883	13,594	16,806	18,650	20,533	21,646	22,430	13,503	24,231	24,894	25,571	26,396	26,916	27,266	27,553
1981	3,739	9,454	14,518	18,097	20,396	22,733	24,553	17,701	27,533	28,392	29,483	30,324	30,909	31,468	31,855	32,262
1982	3,888	10,483	16,322	21,652	24,926	27,462	30,586	32,524	33,982	35,752	36,702	37,628	38,183	38,675	39,258	39,129
1983	4,075	11,096	19,205	25,192	29,259	33,446	36,591	39,332	41,685	42,931	43,972	44,758	45,549	46,100	46,194	46,636
1984	4,934	16,786	27,915	36,799	44,709	49,956	53,647	57,894	60,123	61,804	63,011	63,951	65,229	64,568	65,350	65,874
1985	5,718	17,356	30,852	42,831	51,526	57,216	63,167	65,878	67,758	69,402	70,381	71,708	71,541	72,200	73,004	73,552
1986	6,022	19,406	35,666	47,953	56,664	65,614	69,348	72,798	74,669	75,906	77,125	76,978	77,946	78,601	79,109	79,484
1987	6,311	19,660	34,731	48,001	59,963	67,456	72,169	74,629	76,404	78,294	78,246	78,892	79,742	80,404	80,900	81,433
1988	5,738	16,169	25,099	35,129	41,356	46,515	49,357	51,849	53,666	54,867	55,729	56,454	57,025	57,715	58,412	58,998
1989	5,880	17,105	29,804	39,607	45,371	48,577	51,260	53,111	53,836	54,814	55,570	55,974	56,452	56,998	57,466	57,882
1990	6,165	20,362	36,389	45,861	50,620	53,948	56,097	57,556	59,032	59,828	60,574	61,442	61,985	62,473	62,714	62,965
1991	6,613	23,442	38,803	47,053	51,944	54,637	55,786	57,264	58,327	59,392	60,243	60,956	61,555	62,162	62,740	63,126
1992	7,962	25,621	39,926	46,827	50,452	52,525	54,315	55,819	57,029	58,514	59,255	60,203	60,989	61,378	61,830	62,363
1993	6,758	23,291	35,662	42,036	44,920	47,229	48,771	49,935	51,523	52,416	53,492	54,541	55,374	56,387	56,920	57,258
1994	6,460	22,674	33,985	38,640	41,539	43,881	45,114	46,497	47,757	48,935	50,115	50,636	50,990	51,412	52,042	52,231
1995	6,339	19,461	27,901	32,303	34,772	36,875	38,405	39,576	40,514	41,535	42,032	42,730	43,138	43,499	43,754	44,052
1996	5,437	14,929	21,016	24,224	25,840	27,101	28,196	29,766	30,441	31,241	31,722	32,259	32,833	33,172	33,452	33,868
1997	4,115	11,513	15,924	18,224	20,026	21,876	23,001	23,648	24,332	25,011	25,369	25,794	26,275	26,901	27,054	27,249
1998	3,833	10,761	16,490	19,529	21,293	22,829	23,946	24,747	25,697	26,280	26,558	27,044	27,375	27,566	28,062	28,248
1999	4,084	11,911	17,549	20,857	23,104	25,138	26,417	27,613	28,400	29,144	29,612	29,927	30,130	30,603	30,862	
2000	4,423	12,269	17,156	20,510	22,895	25,006	26,085	27,093	27,802	28,346	28,996	29,168	29,550	29,782		
2001	4,404	12,521	18,979	24,545	28,086	30,415	31,868	32,786	33,703	34,446	34,884	35,315	35,706			
2002	4,771	14,201	21,392	25,806	28,882	30,796	32,174	33,286	33,864	34,389	34,970	35,270				
2003	5,695	18,309	26,821	32,165	35,016	37,743	39,437	40,192	40,863	41,471	42,089					
2004	6,367	18,304	27,276	32,057	34,859	36,675	37,796	38,655	39,572	40,073						
2005	7,192	20,822	29,178	35,098	37,527	39,546	40,438	41,173	41,636							
2006	8,488	23,070	33,903	39,357	42,929	45,077	46,031	47,188								
2007	7,860	22,962	33,053	40,584	43,863	45,762	46,807									
2008	7,806	22,817	33,335	37,966	40,577	42,376										
2009	7,466	21,242	28,098	33,272	35,826											
2010	5,957	16,330	22,657	25,627												
2011	6,475	17,662	24,323													
2012	5,902	16,060														
2013	6,059															

LOSS DEVELOPMENT FACTORS

Accident Years	12 TO 24	24 TO 36	36 TO 48	48 TO 60	60 TO 72	72 TO 84	84 TO 96	96 TO 108	108 TO 120	120 TO 132	132 TO 144	144 TO 156	156 TO 168	168 TO 180	180 TO 192	192 TO 204
1964																
1965																
1966																
1967																
1968																
1969																
1970											1.006					
1971										1.008	1.004					
1972									1.011	1.008	1.006					
1973								1.010	1.008	1.006	1.008					
1974							1.062	1.022	1.016	1.046	1.032					
1975						1.038	1.031	1.041	1.078	1.020	1.018					
1976					1.063	1.023	1.019	1.069	1.016	1.015	1.020					
1977				1.093	1.053	1.052	1.093	1.034	1.015	1.020	1.092				0.923	
1978			1.175	1.109	1.065	1.053	1.039	1.028	1.027	0.523	2.723	1.037	0.988	0.752	0.752	
1979		1.449	1.182	1.097	1.051	1.049	1.040	1.025	0.497	2.136	1.023	1.012	1.012	1.012	1.008	1.006
1980	2.590	1.530	1.236	1.110	1.101	1.054	1.036	0.602	1.794	1.027	1.027	1.032	1.020	1.013	1.011	1.013
1981	2.528	1.536	1.247	1.127	1.115	1.080	0.721	1.555	1.031	1.038	1.029	1.019	1.018	1.012	1.013	0.990
1982	2.696	1.557	1.327	1.151	1.102	1.114	1.063	1.045	1.052	1.027	1.025	1.015	1.013	1.015	0.997	1.010
1983	2.723	1.731	1.312	1.161	1.143	1.094	1.075	1.060	1.030	1.024	1.018	1.018	1.012	1.002	1.010	1.011
1984	3.402	1.663	1.318	1.215	1.117	1.074	1.079	1.039	1.028	1.020	1.015	1.020	0.990	1.012	1.008	1.007
1985	3.035	1.778	1.388	1.203	1.110	1.104	1.043	1.029	1.024	1.014	1.019	0.998	1.009	1.011	1.008	1.006
1986	3.223	1.838	1.345	1.182	1.158	1.057	1.050	1.026	1.017	1.016	0.998	1.013	1.008	1.006	1.005	1.006
1987	3.115	1.767	1.382	1.249	1.125	1.070	1.034	1.024	1.025	0.999	1.008	1.011	1.008	1.006	1.007	1.008
1988	2.818	1.552	1.400	1.177	1.125	1.061	1.050	1.035	1.022	1.016	1.013	1.010	1.012	1.012	1.010	1.006
1989	2.909	1.742	1.329	1.146	1.071	1.055	1.036	1.014	1.018	1.014	1.007	1.009	1.010	1.008	1.007	1.006
1990	3.303	1.787	1.260	1.104	1.066	1.040	1.026	1.026	1.013	1.012	1.014	1.009	1.008	1.004	1.004	1.009
1991	3.545	1.655	1.213	1.104	1.052	1.021	1.026	1.019	1.018	1.014	1.012	1.010	1.010	1.009	1.006	1.005
1992	3.218	1.558	1.173	1.077	1.041	1.034	1.028	1.022	1.026	1.013	1.016	1.013	1.006	1.007	1.009	1.007
1993	3.446	1.531	1.179	1.069	1.051	1.033	1.024	1.032	1.017	1.021	1.020	1.015	1.018	1.009	1.006	1.006
1994	3.510	1.499	1.137	1.075	1.056	1.028	1.031	1.027	1.025	1.024	1.010	1.007	1.008	1.012	1.004	1.003
1995	3.070	1.434	1.158	1.076	1.060	1.041	1.030	1.024	1.025	1.012	1.017	1.010	1.008	1.006	1.007	1.014
1996	2.746	1.408	1.153	1.067	1.049	1.040	1.056	1.023	1.026	1.015	1.017	1.018	1.010	1.008	1.012	1.010
1997	2.798	1.383	1.144	1.099	1.092	1.051	1.028	1.029	1.028	1.014	1.017	1.019	1.024	1.006	1.007	1.017
1998	2.807	1.532	1.184	1.090	1.072	1.049	1.033	1.038	1.023	1.011	1.018	1.012	1.007	1.018	1.007	
1999	2.917	1.473	1.189	1.108	1.088	1.051	1.045	1.029	1.026	1.016	1.011	1.007	1.016	1.008		
2000	2.774	1.398	1.196	1.116	1.092	1.043	1.039	1.026	1.020	1.023	1.006	1.013	1.008			
2001	2.843	1.516	1.293	1.144	1.083	1.048	1.029	1.028	1.022	1.013	1.012	1.011				
2002	2.843	1.506	1.206	1.119	1.066	1.045	1.035	1.017	1.016	1.017	1.009					
2003	2.977	1.465	1.199	1.089	1.078	1.045	1.019	1.017	1.015	1.015						
2004	3.215	1.490	1.175	1.087	1.052	1.031	1.023	1.024	1.013							
2005	2.875	1.401	1.203	1.069	1.054	1.023	1.018	1.011								
2006	2.895	1.470	1.161	1.091	1.050	1.021	1.025									
2007	2.718	1.439	1.228	1.081	1.043	1.023										
2008	2.921	1.461	1.139	1.069	1.044											
2009	2.921	1.323	1.184	1.077												
2010	2.923	1.387	1.131													
2011	2.845	1.377														
2012	2.741															
AVERAGE	2.966	1.534	1.229	1.116	1.078	1.050	1.030	1.032	1.031	1.036	1.069	1.014	1.010	0.998	0.992	1.007
3 YR AVG.	2.836	1.362	1.151	1.076	1.046	1.022	1.022	1.017	1.015	1.015	1.009	1.010	1.010	1.011	1.009	1.014
EXCL HI LO	2.962	1.531	1.226	1.113	1.077	1.049	1.038	1.029	1.024	1.017	1.018	1.014	1.010	1.009	1.003	1.008
SELECTED 86/87 & PRIOR	**3.174**	**1.762**	**1.356**	**1.202**	**1.136**	**1.090**	**1.043**	**1.042**	**1.038**	**1.031**	**1.050**	**1.014**	**1.007**	**1.024**	**1.014**	**1.026**
SELECTED 87/88-90/91	**3.159**	**1.688**	**1.289**	**1.129**	**1.076**	**1.043**	**1.034**	**1.023**	**1.018**	**1.014**	**1.012**	**1.009**	**1.010**	**1.008**	**1.007**	**1.006**
SELECTED 91/92-94/95	**3.309**	**1.510**	**1.162**	**1.074**	**1.051**	**1.034**	**1.028**	**1.026**	**1.023**	**1.017**	**1.016**	**1.011**	**1.010**	**1.009**	**1.006**	**1.007**
SELECTED 95/96-SUB	**2.849**	**1.436**	**1.185**	**1.090**	**1.063**	**1.037**	**1.030**	**1.023**	**1.020**	**1.015**	**1.013**	**1.013**	**1.013**	**1.010**	**1.009**	**1.013**

* All Accident Years are 12-month periods ending 6/30 of the stated year.

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
AS OF JUNE 30, 2013
CALCULATION OF THE LOSS DEVELOPMENT FACTORS
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

UNLIMITED LOSSES

PAID LOSS DEVELOPMENT

Accident Years	DEVELOPMENT MONTHS 204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384
1964																
1965														2,298	2,298	2,284
1966													3,168	3,168	3,168	3,168
1967												3,110	3,110	3,110	3,109	3,109
1968											3,611	3,611	3,611	3,611	3,611	3,585
1969										3,877	3,877	3,877	3,877	3,877	3,860	3,860
1970						4,279			4,259	4,261	4,263	4,265	4,267	4,252	4,252	4,252
1971					4,279			4,311	4,313	4,316	4,344	4,386	4,370	4,372	4,373	4,373
1972				4,600			4,629	4,631	4,633	4,620	4,622	4,602	4,604	4,606	4,608	4,610
1973			4,700			4,711	4,711	4,711	4,711	4,711	4,696	4,696	4,696	4,698	4,698	4,698
1974		7,844			7,986	8,075	8,217	8,233	8,311	8,333	8,198	8,248	8,283	8,318	8,348	8,375
1975	8,750			8,881	8,983	9,069	9,126	9,240	9,240	9,178	9,263	9,328	9,382	9,464	9,514	9,561
1976	5,070		8,740	8,801	8,878	8,914	8,958	8,999	8,905	8,987	9,031	9,069	9,089	9,109	9,127	9,146
1977		11,734	11,796	11,930	12,030	12,083	12,112	11,989	12,038	12,119	12,177	12,254	12,324	12,384	12,440	12,497
1978	16,303	16,494	16,672	16,816	16,939	17,049	17,159	17,279	17,409	17,597	17,680	17,760	17,829	17,892	17,951	18,011
1979	19,829	20,020	19,885	20,052	20,135	20,243	20,356	20,450	20,548	20,643	20,717	20,793	20,887	20,947	21,007	21,067
1980	27,900	27,701	27,934	28,094	28,301	28,525	28,695	29,074	29,220	29,372	29,496	29,786	29,893	29,998	30,100	30,190
1981	31,928	32,180	32,321	32,523	32,741	32,939	33,529	33,696	33,869	34,009	34,148	34,281	34,444	34,568	34,676	34,790
1982	39,522	39,885	40,238	40,507	41,071	41,405	41,646	41,876	42,095	42,330	42,562	42,776	42,983	43,204	43,377	43,546
1983	47,146	47,439	47,807	48,184	48,466	48,792	49,055	49,267	49,467	49,661	49,847	50,025	50,201	50,371	50,524	
1984	66,341	66,860	67,242	67,612	68,139	68,458	68,802	69,077	69,327	69,621	69,823	70,013	70,234	70,396		
1985	73,986	74,585	75,014	75,521	75,901	76,262	76,463	76,659	76,920	77,090	77,255	77,411	77,555			
1986	79,960	80,391	80,821	81,140	81,450	81,649	81,853	82,045	82,224	82,461	82,636	82,798				
1987	82,071	82,545	82,922	83,260	83,462	83,671	83,947	84,153	84,316	84,512	84,654					
1988	59,348	59,637	59,876	60,313	60,543	60,713	60,882	61,055	61,199	61,637						
1989	58,205	58,661	58,892	59,114	59,308	59,452	59,572	59,734	59,861							
1990	63,529	63,802	63,965	64,123	64,245	64,500	64,589	64,717								
1991	63,434	63,912	64,311	64,597	64,771	64,942	65,033									
1992	62,780	63,106	63,756	64,071	64,523	64,833										
1993	57,622	58,143	58,444	58,653	59,021											
1994	52,413	52,753	52,959	53,127												
1995	44,655	44,869	45,246													
1996	34,191	34,517														
1997	27,703															
1998																
1999																
2000																
2001																
2002																
2003																
2004																
2005																
2006																
2007																
2008																
2009																
2010																
2011																
2012																
2013																

LOSS DEVELOPMENT FACTORS

Accident Years	204 TO 216	216 TO 228	228 TO 240	240 TO 252	252 TO 264	264 TO 276	276 TO 288	288 TO 300	300 TO 312	312 TO 324	324 TO 336	336 TO 348	348 TO 360	360 TO 372	372 TO 384	384 TO 396
1964																
1965														1.000	0.994	1.006
1966													1.000	1.000	1.000	1.000
1967												1.000	1.000	1.000	1.000	0.993
1968											1.000	1.000	1.000	1.000	0.993	1.000
1969										1.000	1.000	1.000	1.000	0.996	1.000	1.000
1970									1.000	1.000	1.000	1.000	0.996	1.000	1.000	1.000
1971								1.000	1.001	1.006	1.010	0.996	1.000	1.000	1.000	1.000
1972							1.000	1.000	0.997	1.000	0.996	1.000	1.000	1.000	1.000	1.000
1973						1.000	1.000	1.000	1.000	0.997	1.000	1.000	1.000	1.000	1.000	1.000
1974					1.011	1.018	1.002	1.009	1.003	0.984	1.006	1.004	1.004	1.004	1.003	1.003
1975				1.011	1.010	1.006	1.012	1.000	0.993	1.009	1.007	1.006	1.009	1.005	1.005	1.004
1976			1.007	1.009	1.004	1.005	1.005	0.990	1.009	1.005	1.004	1.002	1.002	1.002	1.002	1.004
1977		1.005	1.011	1.008	1.004	1.002	0.990	1.004	1.007	1.005	1.006	1.006	1.005	1.005	1.005	1.005
1978	1.012	1.011	1.009	1.007	1.006	1.006	1.007	1.008	1.011	1.005	1.005	1.004	1.004	1.003	1.003	1.003
1979	1.010	0.993	1.008	1.004	1.005	1.006	1.005	1.005	1.005	1.004	1.004	1.005	1.003	1.003	1.003	1.002
1980	0.993	1.008	1.006	1.007	1.008	1.006	1.013	1.005	1.005	1.004	1.010	1.004	1.004	1.003	1.003	1.003
1981	1.008	1.004	1.006	1.007	1.006	1.018	1.005	1.005	1.004	1.004	1.004	1.005	1.004	1.003	1.003	1.003
1982	1.009	1.009	1.007	1.014	1.008	1.006	1.006	1.005	1.006	1.005	1.005	1.005	1.005	1.004	1.004	
1983	1.006	1.008	1.008	1.006	1.007	1.005	1.004	1.004	1.004	1.004	1.004	1.004	1.003	1.003		
1984	1.008	1.006	1.006	1.008	1.005	1.005	1.004	1.004	1.004	1.003	1.003	1.003	1.002			
1985	1.008	1.006	1.007	1.005	1.005	1.003	1.003	1.003	1.002	1.002	1.002	1.002				
1986	1.005	1.005	1.004	1.004	1.002	1.002	1.002	1.002	1.003	1.002	1.002					
1987	1.006	1.005	1.004	1.002	1.003	1.003	1.002	1.002	1.002	1.002						
1988	1.005	1.004	1.007	1.004	1.003	1.003	1.003	1.002	1.007							
1989	1.008	1.004	1.004	1.003	1.002	1.002	1.003	1.002								
1990	1.004	1.003	1.002	1.002	1.004	1.001	1.002									
1991	1.008	1.006	1.004	1.003	1.003	1.001										
1992	1.005	1.010	1.005	1.007	1.005											
1993	1.009	1.005	1.004	1.006												
1994	1.006	1.004	1.003													
1995	1.005	1.008														
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AVERAGE	1.007	1.005	1.006	1.006	1.005	1.005	1.004	1.003	1.003	1.002	1.004	1.002	1.002	1.002	1.001	1.002
3 YR AVG.	1.007	1.006	1.004	1.005	1.004	1.001	1.003	1.002	1.004	1.002	1.002	1.003	1.003	1.003	1.003	1.003
EXCL HI LO	1.007	1.006	1.006	1.006	1.005	1.005	1.004	1.003	1.003	1.003	1.004	1.003	1.002	1.002	1.001	1.002
SELECTED 86/87 & PRIOR	**1.047**	**1.033**	**1.032**	**1.030**	**1.022**	**1.014**	**1.012**	**1.011**	**1.010**	**1.009**	**1.010**	**1.011**	**1.010**	**1.003**	**1.003**	**1.003**
SELECTED 87/88-90/91	**1.006**	**1.004**	**1.004**	**1.003**	**1.003**	**1.002**	**1.003**	**1.002**	**1.007**							
SELECTED 91/92-94/95	**1.006**	**1.007**	**1.004**	**1.007**	**1.005**											
SELECTED 95/96-SUB	**1.010**															

MONTANA STATE FUND
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES REVIEW
AS OF JUNE 30, 2013
CALCULATION OF THE LOSS DEVELOPMENT FACTORS
WORKERS' COMPENSATION - INDEMNITY BENEFITS
($AMTS IN THOUSANDS)

UNLIMITED LOSSES

PAID LOSS DEVELOPMENT

Accident Years	396	408	420	432	444	456	468	480	492	504	516	528	540	552	564	576	588
1964																	
1965	2,297	2,297	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284	2,284
1966	3,168	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	3,150	
1967	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087		
1968	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585	3,585			
1969	3,860	3,860	3,860	3,860	3,860	3,860	3,860	3,860	3,860	3,860	3,860	3,860	3,860				
1970	4,252	4,252	4,252	4,252	4,252	4,252	4,252	4,252	4,252	4,252	4,252	4,252					
1971	4,373	4,373	4,373	4,373	4,373	4,373	4,373	4,373	4,373	4,373	4,373						
1972	4,612	4,614	4,616	4,618	4,620	4,622	4,624	4,626	4,628	4,629							
1973	4,698	4,698	4,698	4,698	4,698	4,698	4,698	4,698	4,698								
1974	8,402	8,429	8,456	8,484	8,511	8,535	8,556	8,575									
1975	9,599	9,634	9,666	9,697	9,728	9,754	9,783										
1976	9,184	9,204	9,210	9,216	9,221	9,227											
1977	12,556	12,614	12,669	12,718	12,764												
1978	18,069	18,111	18,128	18,147													
1979	21,111	21,144	21,182														
1980	30,277	30,365															
1981	34,907																
1982																	
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LOSS DEVELOPMENT FACTORS

Accident Years	396 TO 408	408 TO 420	420 TO 432	432 TO 444	444 TO 456	456 TO 468	468 TO 480	480 TO 492	492 TO 504	504 TO 516	516 TO 528	528 TO 540	540 TO 552	552 TO 564	564 TO 576	576 TO 588	588 TO ULT
1964																	
1965	1.000	0.994	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1966	0.994	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
1967	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
1968	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1969	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
1970	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
1971	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
1972	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
1973	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
1974	1.003	1.003	1.003	1.003	1.003	1.002	1.002										
1975	1.004	1.003	1.003	1.003	1.003	1.003											
1976	1.002	1.001	1.001	1.001	1.001												
1977	1.005	1.004	1.004	1.004													
1978	1.002	1.001	1.001														
1979	1.002	1.002															
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AVERAGE	1.001	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
3 YR AVG.	1.002	1.002	1.002	1.003	1.002	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
EXCL HI LO	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
SELECTED 86/87 & PRIOR	**1.002**	**1.001**	**1.001**	**1.002**	**1.001**	**1.001**	**1.001**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	
SELECTED 87/88-90/91																	
SELECTED 91/92-94/95																	
SELECTED 95/96-SUB																	

OUTLINE OF RESERVING METHODS APPLIED BY MSF' CONTRACT ACTUARY

Reserving Method	Method Description	Data Used	Data Adjustments or Special Considerations	Comments
Paid Loss Development	Project cumulative paid losses by accident year to ultimate based on selected factors. Factors are selected based on payment pattern history of older accident years	1. Cumulative paid losses by accident year and development age, separately for Medical and Indemnity 2. Lump sum payments - Indemnity 3. Excess settlements - Medical	1. Selected loss development factors for groups of accident years to reflect benefit changes impacting claim closure rates 2. Adjusted selected loss development factors for 1990/91 forward by .5% for Medical to accelerate assumed payout due to internal operational changes at MSF 3. Adjusted selected loss development factors for Indemnity by .5 month to reflect shorter TTD claims and more lump sum payments 4. Selected four levels of development factors for each group of accident years: low, high, high thru age 24 years/low after, average of high and low 5. One Medical indication is adjusted by removing excess medical settlements. One Indemnity indication is adjusted by removing lump sum payments.	This is a standard method. There are 4 indications for Medical and 4 for Indemnity using this method and various factor selections. Tail factors at age 49 years are judgmental.
Berquist-Sherman	Project adjusted cumulative reported losses by accident year to ultimate based on selected factors. Reported losses were first adjusted on a consistent average case reserve per open claim basis. Factors are selected based on payment pattern history of older accident years	1. Cumulative reported losses by accident year and development age for Medical. 2. Cumulative medical claim counts by accident year and development age , separately for reported, closed, and open counts. 3. Long-term inflationary trend of 7.5% for Medical.	1. Omitted indications for 2011/2012 and 2012/2013 due to inconsistency in zero-loss claims recording.	This method produced very high indications and appears to be given little weight in the final selection of ultimate. This method applied for Medical. AMI excluded this method in selecting ultimate Medical losses.
Frequency-Severity Index	Selects 2013/2014 level ultimate losses based on trended ultimate loss picks from the Development and Berquist-Sherman methods. Trend indices are estimated separately for claim counts, claim severity, business mix, and benefit level by regressing them to independent variables listed in the next column. Selected 2013/2014 level ultimate losses are then detrended using the same indices to get the indicated ultimate losses for each accident year.	1. Ultimate losses by accident year and development age 2. Historical reported claim counts by accident year and development age. 3. Ultimate payroll by year 4. Projected Ultimate Manual Premium by year 5. Mix of business relativities to current level by accident year for loss ratios and severity separately for Medical and Indemnity. 6. Rate level history 7. Benefit level history 8. CPI - Medical 9. Unemployment rate history 10. Change in employment rate history 11. Average weekly wage history 12. Method requires losses, payroll and premium to segment between policies currently active vs. departed business.	Same as Paid Loss Development 1-4	Not a common method. Adjusts a preliminary estimate of ultimate loss for each accident year to 2013/2014 level based on histories of claim counts, claim severity, mix of business and benefit level. For Medical, selects a projected ultimate loss at 2013/2014 level. For Indemnity, different selections were made for 1996/1997 & Prior, 1997/1998 to 2002/2003, and 2003/2004 & Subsequent. Divides that one selection by the index for each accident year.

OUTLINE OF RESERVING METHODS APPLIED BY MSF' CONTRACT ACTUARY

Reserving Method	Method Description	Data Used	Data Adjustments or Special Considerations	Comments
Bornhuetter-Ferguson	Estimates ultimate losses by accident year using actual paid and expected unpaid losses. Estimated expected unpaid losses as a percentage of ultimate losses are selected based on payment pattern history of older accident years.	1. Paid losses by accident year and development age	Same as Paid Loss Development 1-4	This is a standard method. One estimate relies on prior selected ultimate for the initial ultimate. One Medical estimate relies on the Frequency/Severity Index ultimate for the initial ultimate. There are three initial ultimate assumptions for Indemnity. Loss development factors are the average of the low and high selections by accident year group, accelerated as described above in the Paid Loss Development section.
Adjusted Case Reserve	Estimates ultimate losses by accident year based on adjusted case reserves.	1. Case reserves and open claim counts, separately for TTD/Medical Only and All Other. 2. Reported claim counts by accident year and development age, separately for Medical and Indemnity. 3. Reported claim counts for TTD and Medical Only.	For the Old Fund, adjustments were made regarding the potential for future development, which was based on a July 21, 1998 Towers Watson report.	Assumes case reserves are reasonable except for unreported claims, future reopenings, change in disability type, medical inflation/cost of living adjustments and future development potential (Old Fund only). Assumes 7% medical inflation, 2% COLA. Inflation adjustment to Medical reserves significant: 25%-50% by accident year. Development of TTD and Medical Only claim counts judgmental based on MSF data provided to TW. Not sure what payment pattern used for inflation adjustment - average of high/low ?
Incurred Loss Development (Indemnity only)	Same as Paid Loss Development, but uses reported losses instead.	1. Cumulative reported losses by accident year and development age.	1. Selected loss development factors for groups of accident years to reflect benefit changes impacting claim closure rates	Not used for Medical because of inconsistent case reserving and volatility in losses.
Sherman-Diss Method (Old Fund only)	Projects medical and indemnity payments for open claims using a heuristic trended mortality model.	1. Paid losses and case reserves for open claims separately for Medical & Indemnity Fatal, Permanent Total, and Permanent Partial injuries. 2. Medical inflation rate. 3. Claimants' birth dates. 4. SSA Life Tables. 5. Fatal benefits and birth dates.	1. Paid loss development factors using the model were converted to a reported basis using ratios of reported-to-paid losses for open claims.	Sometimes used in WC reserving for old accident years. Medical indications use three medical inflation rates: 4%, 5%, and 6%.
ALAE - Paid to Paid	Selected ALAE ratio based on historical paid ALAE-to-paid loss ratios.	1. History of fiscal year paid ALAE and paid loss		More typical to develop ALAE, but not a major issue for WC.
ULAE - Johnson Method	Estimates ULAE based on relative ULAE costs per claim activity, i.e. reporting, maintenance, and closure.	1. Paid ULAE by fiscal year 2. History of open claims counts at beginning of each year 3. History of number of new claims opened during each fiscal year		Requires a trend factor assumption for ULAE per weighted open claim 4.6% was based on fitted ULAE per weighted open claim Select an amount for ULAE per wtd open claim and detrend to earlier accident years

MONTANA STATEFUND

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November 20, 2013

Tori Hunthausen
Legislative Audit Division
Post Office Box 201705
Helena, Montana 59620-1705

Dear Ms. Hunthausen:

Thank you for the opportunity to review and respond to the report presented by AMI Risk Consultants Inc. (AMI) on the adequacy and fairness of Montana State Fund (MSF) rates effective July 1, 2013 and the adequacy of MSF loss and loss adjustment reserves as of June 30, 2013.

We appreciate AMI's finding that MSF rates and reserves are reasonable and that MSF is likely to have adequate funding to meet its financial obligations to injured Montana employees for claims incurred on or after July 1, 1990. The AMI report also concludes that our consulting actuary's (Towers Watson or TW) analysis of rates and reserves is consistent with generally accepted actuarial principles.

The volatility in global financial markets, historically unprecedented low interest rates, and rising medical costs create challenging risks for the insurance industry, particularly in the workers compensation line. Prudently managing these risks requires a strong balance sheet, a conservatively invested, well diversified asset portfolio, and adequate rates. In addition to these challenges, Montana has recently enacted sweeping benefit reforms which have led to significant rate reductions. It will take up to a decade before we will be able to determine whether benefit costs will be reduced as much as estimated and whether the rate decrease implemented July 1, 2011 will prove in hindsight to be too high or too low. A substantial variance between these estimates and actual results could have significant consequences for MSF and Montana employers.

There is an inherent uncertainty in projecting the cost of incurred workers compensation claims which will not be ultimately resolved in full for several decades in the future. The development of new medical technologies and changing patterns of medical utilization are but two examples of factors which will significantly affect the eventual cost of these claims though these factors cannot be predicted with certainty. Actuarial analysis is an inexact science which relies on judgment informed by data.

An example of the uncertainty inherent in estimating claim costs is the $40.0 million in adverse development in Towers Watson central estimates for prior accident years from estimates as of 6/30/2009 through 6/30/2013. AMI observes that, "The history of TW Central Estimates shows a pattern of chronic adverse development, as estimates of "ultimate loss" are repeatedly restated at higher and higher levels." The $40.0 million in adverse development over these five years represents an average of $8 million per year and +0.35% annual change in ultimate loss estimates. MSF's strong financial position has allowed us to readily absorb these modest fluctuations in prior year loss estimates without creating undue rate volatility for our customers. By comparison we note $50.4 million in downward development in the central estimates of the LAD's consulting actuaries over this same time period.

There are risks in both underestimating as well as overestimating claim costs. If we significantly underestimate claim costs, we jeopardize the financial viability of MSF. If we overestimate claim costs, Montana's employers would pay unnecessarily excessive premiums, which are already very high relative to prevailing rate levels in other states. Our challenge is to find a reasonable balance between these two risks while maintaining a degree of stability in workers compensation rates for Montana employers. The key question is whether MSF rates and reserves are reasonable given the best available information and application of sound actuarial methodologies.

AMI's central estimate for MSF reserve liabilities differs from Towers Watson's central estimate. The difference reflects a 2.3% difference in estimated ultimate losses and is largely due to Towers Watson's fine-tuning the actuarial techniques in response to changes in statutory benefit structure, MSF operations and Towers Watson's judgments in weighting the various actuarial indications based on their knowledge of the Montana workers compensation system and MSF operations. We believe that the range selected by Towers Watson and the movement in their loss reserve estimates over time are reasonable and prudent given the need to balance the risks of inadequacy versus redundancy of loss reserves. We have asked Towers Watson to address the technical issues explaining the differences in the analyses. A copy of the Towers Watson response is attached and should be considered part of our formal response to the AMI report. AMI's analysis is a constructive comparison to Towers Watson's, quantifying the effect of the judgments made by Towers Watson in their analysis of reserve indications. We believe that Towers Watson's judgments are reasonable, appropriate, and backed by observable evidence. Nonetheless, the range of results in Towers Watson's and AMI's estimates underscores the variability inherent in workers compensation insurance reserving and the associated financial risks.

MSF proactively manages that risk by booking reserves on an undiscounted basis and by booking reserves higher than Towers Watson's actuarial central estimate by $54.2 million (as well as other conservative aspects of MSF financial reserves). The fact that MSF books its reserves on an undiscounted basis and above our consulting actuary's central estimate states MSF's financial position on a relatively conservative basis.

With regard to MSF rates effective July 1, 2013, the AMI analysis concludes that MSF rates are not inadequate, excessive, or unfairly discriminatory. AMI notes that inclusion of a contingency provision in MSF rates is "somewhat unusual". Section 39-71-2311, MCA requires that, when uncertain, the MSF shall use assumptions which result in predictions more likely rather than less likely to cover the cost of future claims. This contingency provision is in direct response to this statutory requirement and in our judgment is prudent and appropriate. MSF has the ability to return any amount of the contingency not needed to cover the cost of losses and expenses to Montana employers in the form of a dividend. However, MSF does not have the ability to retroactively charge customers additional amounts if rates prove to be inadequate. MSF's goal is to ensure a stable market for employers.

AMI also comments on the adequacy of loss and loss adjustment reserves for claims incurred prior to July 1, 1990 (the "Old Fund"). While the prior LAD consulting actuary concluded that Towers Watson's central estimate for the Old Fund in prior years was reasonable, AMI finds that Towers Watson's central estimate for the Old Fund as of 6/30/2013 falls below the range estimated by AMI. MSF acknowledges the extreme difficulty in estimating the outstanding liabilities for the Old Fund given the nature of the underlying claims, many of which involve lifetime medical treatment for continually evolving medical conditions. The case reserves on only seven claims account for half of the total estimated unpaid losses. Variances in expected mortality on just these seven claims alone can significantly swing the results. AMI's analysis underscores the relatively wide variance in expected results for a runoff portfolio of workers compensation claims with no supporting assets nor margin for worse than expected results.

Overall, we believe that AMI's analysis constructively adds to our understanding of the uncertainties inherent in setting workers compensation premium rates and reserves and of the relative merits of alternate actuarial assumptions and methods. We at the Montana State Fund work diligently to ensure a stable rate environment for Montana employers and that our financial obligations to injured Montana employees will be met.

Sincerely,

Laurence A. Hubbard
President/CEO

TOWERS WATSON

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November 18, 2013

Mr. Laurence Hubbard
President
Montana State Fund
855 Front Street
Helena, MT 59601

Dear Mr. Hubbard:

AMI Risk Consultants, Inc. Review of Montana State Fund's Loss Reserves and Rates

As you requested, we have reviewed the November 8, 2013 report (the AMI Report) prepared by Aguedo M. (Bob) Ingco of AMI Risk Consultants, Inc. (AMI) on the adequacy of Montana State Fund's (MSF's) rates effective July 1, 2013 and the adequacy of MSF's loss and loss adjustment expense (LAE) reserves as of June 30, 2013. This letter provides several comments, all of which presume that the reader has access to, and has read and understood, the AMI Report.

Much of the AMI analysis as documented in the AMI Report is based on AMI's review of various analyses and reports that have been prepared by Towers Watson (Towers Watson or we or our) for the management of MSF in the course of our ongoing engagement as consulting actuaries to management and the Board of MSF. In many cases, AMI derived its numerical results by judgmentally modifying a selected set of methodologies or parameters or judgments that had been made in the Towers Watson analyses, specifically Towers Watson's analysis of unpaid loss and loss adjustment expense as of June 30, 2013; and Towers Watson's analysis of rate level indications effective July 1, 2013 based on data as of December 31, 2012 (the Towers Watson Reports). Therefore, in this letter, we will also make reference to some of the Towers Watson Reports. We presume that the reader also has access to, and has read and understood, the Towers Watson Reports.

This letter, however, is based on our review of the written AMI Report.

Commentary – Overall Conclusions

Some of the specific numerical findings and conclusions in the AMI Report differ from the numerical findings and conclusions in the Towers Watson Reports. We will discuss some of those differences later in this letter.

We appreciate AMI's discussion of key issues relating to loss reserves and rates. This type of discussion can be useful to the understanding of what types of issues can affect the adequacy of loss reserves and of rates.

We concur with the conclusions in the AMI Report that:

- "Our opinion is that MSF's recorded loss and LAE reserves for the New Fund at June 30, 2013 are reasonable." (page 4 of the AMI Report).

We concur with AMI that MSF's provision for New Fund unpaid loss adjustment expense as of June 30, 2013 is reasonable.

- "In our opinion the data and methods applied by TW are reasonable. TW made every effort to account for changing conditions, both internal and external to MSF, in their choice and application of data. Furthermore, their selection of loss development factors and other selected values required by the various methods appear reasonable." (page 19 of the AMI Report).

  We further note that customizing the actuarial techniques and parameters to MSF's changing operating environment is an important element of the analysis due to the very significant changes – particularly in the statutory benefit structure, but also in MSF's operations – that have occurred over the years.

- "In our opinion, the rates effective July 1, 2013 are not excessive, inadequate, or unfairly discriminatory." (page 4 of the AMI Report)

- "We believe the procedures and methodology used by TW and MSF in class ratemaking and tiering are reasonable." (page 15 of the AMI Report)

  We concur with AMI that MSF's rates effective July 1, 2013 are not excessive, inadequate or unfairly discriminatory.

Commentary – Numerical Results

The AMI Report produces numerical indications for unpaid MSF losses at June 30, 2013 that are higher than the range suggested by the array of Towers Watson methodologies. After having had an opportunity to review the AMI Report, we have revisited our specific analyses and results. Based on our subsequent review, we have concluded that our original analyses, findings, and conclusions, as documented in the Towers Watson Reports, remain appropriate and reasonable. We would not alter our methodologies, assumptions, or selections based on our review of the AMI Report.

We would like to specifically address several important issues that relate to numerical differences between the results presented in the Towers Watson Reports and the results in the AMI Report.

Estimate of Unpaid Loss

In our analysis and projection of ultimate losses for each historical accident year, we reflect the changes in payment patterns that were and are expected, and that we have observed to result from several significant changes in the statutorily-defined structure of injured worker benefits. These restructurings had substantial effects on the Montana claims environment; the overall impact on indemnity losses is estimated to change as follows: July 1, 1987, a 32.6% benefit reduction, July 1, 1991, a 10.0% benefit reduction and July 1, 1995, a 27.4% benefit reduction; the overall impact on medical losses is estimated to be a 27.8% reduction effective July 1, 2011. We believe that historical data from periods prior to each of these significant benefit restructurings requires adjustment prior to using that historical data as a basis for anticipating the likely pattern with which recent years' claims will pay out. Towers Watson made explicit recognition of these environmental changes in our selection and projection of payout patterns for the more recent years. We continue to believe our resulting selection of development patterns, different for each set of years during which different benefit structures and benefit levels prevailed in Montana is appropriate.

AMI notes (page 9 of the AMI Report) that the TW history of actuarial central estimate of ultimate losses shows a chronic pattern of adverse development. The $40 million of adverse development represents only 0.35% of the corresponding ultimate losses. The actuarial process is dynamic and cyclical. MSF has also had periods of significant favorable development. As the loss experience emerges, the actuarial

models and results move in the direction of the new data. Therefore, changes in actuarial estimates are expected and will continue until all claims are closed and settled at final ultimate value.

AMI raises concerns (pages 13, 19 and 28 of the AMI Report) that our judgmental selection of ultimate losses is low relative to the indications. AMI's concern implicitly assumes that all the projections should get equal weight in the selection process. We disagree with that assumption, as the various actuarial methods have different strengths and weaknesses and thus suit different situations differently, and we are comfortable with our selection of ultimate losses.

AMI notes on page 14 that they feel it is more appropriate to calculate rates on a direct (gross of reinsurance) basis. We disagree with AMI. The Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Insurance Ratemaking and the American Academy of Actuaries Actuarial Standard of Practice #29, Expense Provisions in Property/Casualty Insurance Ratemaking both state that it is up to the actuary to reflect a provision for reinsurance. Further, if reinsurance costs increase, but that increase is not reflected in the rates, then the rates are inadequate. Conversely, if the reinsurance costs decrease, but the decrease is not reflected, then the rates are excessive.

When two actuaries use similar assumptions within each of the various actuarial methods, and thus arrive at similar results for each of the individual methods, the two actuaries may still arrive at different actuarial central estimates because of placing different judgmental weights on the results of those various different actuarial methods.

We recognize and respect AMI's exercise of independent actuarial judgment in its review, and we concur with AMI that two actuaries looking at the same methodologies and results may make different selections of their actuarial central estimates. We have no comment on AMI's selection of an actuarial central estimate from within a range of methodologies. However, we do believe that the methodologies themselves should reflect loss development parameters and selections appropriate to the Montana environment and MSF operations in which the claims will be handled and paid.

AMI notes (page 19 of the AMI Report) that TW should include an adjustment in loss adjustment reserves for the input of HB334. We believe that our application of the Johnson method takes into account the effects of HB334 as the loss experience emerges.

Sources of Uncertainty

The ultimate liability for claims is subject to the outcome of events yet to occur, e.g., the likelihood of claimants filing, inflation in medical costs, statutory changes, and the attitudes of claimants towards settlements of their claims. The three primary risks defined in Actuarial Standard of Practice No. 43 – Property/Casualty Unpaid Claim Estimates are:

- Model Risk – The risk that the methods are not appropriate to the circumstances or the models are not representative of the specified phenomenon.
- Parameter Risk – The risk that parameters used in the methods or models are not representative of future outcomes.
- Process Risk – The risk associated with the projection of future contingencies that are inherently variable, even when the parameters are known with certainty.

All of these risks are inherent in the loss reserving and rate setting process for MSF and as a result, there is a limitation upon the accuracy of loss projections for prior periods and rate indications for prospective periods. In our judgment, we have employed techniques and assumptions that are appropriate, and the conclusions presented in our reports are reasonable, given the information currently available. However, it should be recognized that future loss emergence will likely deviate, perhaps materially, from our estimates.

The table on page 9 of the AMI report shows Towers Watson's change in ultimate loss selections. The table illustrates the variability in conducting actuarial analyses of workers' compensation exposures.

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Reliances and Limitations; Distribution

In preparing this letter, we relied on data and information supplied by the MSF and AMI, without audit or verification. The information from MSF is the same information used in our reports, which contain a more extensive discussion of Reliances and Limitations that is equally applicable to this analysis.

This letter is intended for internal use by the MSF and its Board of Directors. Anyone receiving a copy of this letter should be made aware that Towers Watson is available to answer any questions that may arise with respect to these comments.

I, Russell Greig, am a member of the American Academy of Actuaries and meet its qualification standards to render the actuarial opinion contained herein.

We are available to continue the dialogue regarding MSF's loss reserves and rate indications.

Sincerely,

Russell Greig, FCAS, MAAA, CFA
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RG:mj