Aon Risk Solutions
Global Risk Consulting
Actuarial and Analytics

Commonwealth of Massachusetts

Actuarial Estimate of Outstanding Liability

As of June 30, 2015

FINAL REPORT

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One Federal Street
Boston, MA 02110
tel:617.457.7648 • fax: 847.953.0953 • www.aon.com

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

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I. Introduction

Purpose

Aon Global Risk Consulting ("AGRC") has conducted an actuarial review of the GAAP outstanding loss reserves of the Commonwealth of Massachusetts' ("Commonwealth") self-insured Workers Compensation program.

Scope

The specific scope of this study is to prepare an independent estimate of the required workers compensation reserves as of June 30, 2015, separately for seven clusters of agencies:

a) The Department of Developmental Services ("DDS")[1]
b) The Department of Mental Health ("DMH")
c) The Department of Corrections ("DOC")
d) UMass – Amherst
e) UMass – Medical School
f) All Other Colleges and Universities
g) All Other Departments

For the "All Other Colleges and Universities" cluster, we have provided estimates of each educational institution's obligations.

In addition, we have provided estimates of the outstanding liability contained within the "All Other Departments" cluster that is associated with agencies that during fiscal year 2010 ceased to be the liability of the Commonwealth and instead became the liability of the Massachusetts Department of Transportation (MassDOT).

We have provided a range of reserves that can be used to test the reasonableness of the carried reserves established by the Commonwealth. Estimates have been prepared on both a discounted and undiscounted basis, utilizing rates of discount equal to 4% and 6%.

Our estimates do not include any provision for allocated loss adjustment expenses (ALAE) that may be incurred in the processing and settlement of claims, other than rehabilitation/investigation payments included with medical losses as described in the Data section (Section V) of this report.

* * * * * *

Vahan A. Mahdasian ACAS, MAAA is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial report contained herein.

[1] Formerly known as The Department of Mental Retardation ("DMR")

We performed this analysis using generally accepted actuarial principles and in accordance with all relevant Actuarial Standards of Practice.

Please contact us if you have any questions regarding this report.

Respectfully submitted,

Aon Global Risk Consulting

Vahan A. Mahdasian, ACAS, MAAA
Director & Actuary
+1.617.457.7648
vahan.mahdasian@aon.com

Neil J. Fenton
Senior Actuarial Analyst
+1.617.457.768
neil.fenton@aon.com

II. Conditions and Limitations

Inherent Uncertainty

Actuarial calculations produce estimates of inherently uncertain future contingent events. We believe that the estimates provided represent reasonable provisions based on the appropriate application of actuarial techniques to the available data. However, there is no guarantee that actual future payments will not differ from estimates included herein.

Extraordinary Future Emergence

Our projections make no provision for the extraordinary future emergence of losses or types of losses not sufficiently represented in the historical data or which are not yet quantifiable.

Data Reliance

In conducting this analysis, we relied upon the provided data without audit or independent verification; however, we reviewed it for reasonableness and consistency. Any inaccuracies in quantitative data or qualitative representations could have a significant effect on the results of our review and analysis.

Discounting

The uncertainty inherent in the discounted unpaid loss estimates is greater than that of the undiscounted unpaid loss estimates. This is because undiscounted liabilities normally contemplate an implicit risk margin for the uncertainty in the loss estimation process (e.g., under-estimating). Discounting takes away this implicit risk margin and would subject the unpaid loss estimates to additional risks such as yields on the investment portfolio and the timing risk. Future loss payments could occur more or less rapidly than expected due to random variation and the timing of claim payments. We made no adjustment to account for these risks. The interest rate used to discount the unpaid losses was provided by the Commonwealth of Massachusetts. We express no opinion and have not independently evaluated the appropriateness of the interest rate.

Use and Distribution

Use of this report is limited to the Commonwealth of Massachusetts for the specific purpose described in the Introduction section. Other uses are prohibited without an executed release with Aon.

Distribution by the Commonwealth of Massachusetts is unrestricted. We recognize that this report may be distributed to others and we request that Aon be notified of further distribution of this report. The report should only be distributed in its entirety including all supporting exhibits.

III. Executive Summary

Summary of Results

As stated in the "Introduction" and detailed in the "Program Description" section of this report, this analysis considers those liabilities within the "All Other Departments" cluster that are attributed to the agencies of the newly created MassDOT; excluding the former Massachusetts Turnpike Authority (MTA).

Consistent with the methodology and presentation in the prior report issued in 2014, the liability amounts in the summary tables below are provided both **Gross** (including) and **Net** (excluding) of those liabilities associated with the MassDOT (excluding MTA).

A summary table of the composition of the "All Other Departments" cluster with respect to the MassDOT (excluding MTA) and Non-MassDOT agencies is also provided.

Total Gross Reserves

Based on our review, which utilized loss and exposure data valued as of June 30, 2015, we estimate that the range of reasonable undiscounted **gross** (inclusive of MassDOT liability, excluding MTA) loss reserves for the Commonwealth's aggregate workers compensation program to be: **$314.6M to $397.2M.**

We also calculated reasonable ranges on a present value basis, using interest rates of 4% and 6% and the Commonwealth's historical payment patterns. We estimate the range of reasonable **gross** reserves to be as follows:

Discounted at 4%: **$233.7 to $298.2M** | Discounted at 6%: **$207.8M to $266.1M**

The following table shows **gross** reserves for each cluster identified in the Scope section:

Cluster	Cluster	Report Section	Undiscounted	Discounted at 4%	Discounted at 6%
DDS	1	2	$25.1 - 32.0M	$20.3 - 26.1M	$18.6 - 24.1M
DMH	2	3	$22.9 - 28.7M	$17.4 - 22.2M	$15.7 - 20.1M
DOC	3	4	$48.8 - 66.7M	$36.6 - 50.1M	$32.6 - 44.7M
UMass - Amherst	4	5	$5.7 - 9.1M	$4.6 - 7.4M	$4.2 - 6.8M
UMass - Medical	4	6	$2.9 - 4.8M	$2.4 - 4.0M	$2.2 - 3.7M
Other Colleges & Universities	4	7	$17.1 - 22.0M	$13.8 - 17.9M	$12.6 - 16.3M
All Other Dept's (incl. MassDOT, excl. MTA)	5	8	$192.2 - 233.9M	$138.7 - 170.5M	$121.8 - 150.4M
Total			$314.6 - 397.2M	$233.7 - 298.2M	$207.8 - 266.1M

Total Net Reserves

Based on our review, which utilized loss and exposure data valued as of June 30, 2015, we estimate that the range of reasonable undiscounted **net** (excluding MassDOT and MTA liability) loss reserves for the Commonwealth's aggregate workers compensation program to be: **$300.1M to $379.4M.**

We also calculated reasonable ranges on a present value basis, using interest rates of 4% and 6% and the Commonwealth's historical payment patterns. We estimate the range of reasonable **net** reserves to be as follows:

Discounted at 4%: **$223.2M to $285.2M** | Discounted at 6%: **$198.6M to $254.7M**

The following shows **net** reserves for each cluster identified in the Scope section:

Cluster	Cluster	Report Section	Undiscounted	Discounted at 4%	Discounted at 6%
DDS	1	2	$25.1 - 32.0M	$20.3 - 26.1M	$18.6 - 24.1M
DMH	2	3	$22.9 - 28.7M	$17.4 - 22.2M	$15.7 - 20.1M
DOC	3	4	$48.8 - 66.7M	$36.6 - 50.1M	$32.6 - 44.7M
UMass - Amherst	4	5	$5.7 - 9.1M	$4.6 - 7.4M	$4.2 - 6.8M
UMass - Medical	4	6	$2.9 - 4.8M	$2.4 - 4.0M	$2.2 - 3.7M
Other Colleges & Universities	4	7	$17.1 - 22.0M	$13.8 - 17.9M	$12.6 - 16.3M
All Other Dept's (excl. MassDOT & MTA)	5	8	$177.7 - 216.1M	$128.2 - 157.5M	$112.6 - 138.9M
Total			$300.1 - 379.4M	$223.2 - 285.2M	$198.6 - 254.7M

All Other Departments – Decomposition of Departmental Liability

The total gross reserve of the All Other Departments cluster contains both MassDOT (excluding MTA) and Non-MassDOT liabilities. As shown in the table below, approximately 7.6% of the gross reserve for All Other Departments is attributed to MassDOT (excluding MTA) agencies.

The following shows the range of reasonable reserves at various discount rates for the cluster segments.

All Other Departments	Cluster	% of Cluster	Undiscounted	Discounted at 4%	Discounted at 6%
MassDOT Agencies (excl. MTA)	5	7.6%	$14.5 - 17.8M	$10.5 - 13.0M	$9.2 - 11.4M
Non-MassDOT Agencies	5	92.4%	$177.7 - 216.1M	$128.2 - 157.5M	$112.6 - 138.9M
Total			$192.2 - 233.9M	$138.7 - 170.5M	$121.8 - 150.4M

Fiscal Year 2015 Loss Rates

The cost of the workers compensation program as measured by the estimated FY2015 loss rates (losses per $100 payroll) varied significantly by cluster.

As shown in the table below, overall rates increased by 3.1% when compared to the prior year

Cluster	Payroll (000)	Average Ult Loss	Average FY15 Loss Rate	Prior Loss Rate	% Change
DDS	316,552	4,915,500	1.553	1.613	-3.7%
DMH	213,700	5,525,500	2.586	2.191	18.0%
DOC	402,750	11,518,375	2.860	2.722	5.1%
UMass - Amherst	539,631	2,273,500	0.421	0.329	28.2%
UMass - Medical	370,543	747,000	0.202	0.255	-20.8%
Other Colleges & Univ's	1,404,093	5,440,550	0.387	0.396	-2.1%
All Other Dept's (excl. MTA)	3,511,622	39,340,539	1.120	1.103	1.6%
Total	6,758,892	69,760,964	1.032	1.001	3.1%

All Other Departments – Fiscal Year 2015 Loss Rates

In the table below, we have estimated, the composition of the All Other Departments FY2015 loss rate as a function of both the MassDOT (excluding MTA) and Non-MassDOT departments experience and exposure:

All Other Dept's (excl. MTA)	Payroll (000)	Average Ult Loss	Average FY15 Loss Rate	Prior Loss Rate	% Change
MassDOT (excl. MTA)	248,813	2,582,423	1.038	1.140	-9.0%
Non-MassDOT	3,262,809	36,758,116	1.127	1.100	2.4%
Total	3,511,622	39,340,539	1.120	1.103	1.6%

It is important to note that the loss rates estimated via the decomposition methodology are inherently volatile due to their derivation being reliant on a variety of assumptions and estimations which are themselves also volatile.

UMass Reserves

To facilitate the use of this report by the University of Massachusetts ("UMass"), we present an aggregate estimate of the liabilities for each UMass segment. These include UMass Amherst and UMass Medical School (shown separately in table above) as well as UMass Lowell, Boston, and Dartmouth (included as part of the "Other Colleges and & Universities" cluster above).

A reasonable range of reserves for the aggregate UMass program is estimated at **$14.2M to $21.1M**.

Discounted at 4%: **$11.5M to $17.2M** | Discounted at 6%: **$10.6M to $15.9M**

The following shows the range of reasonable reserves at various discount rates for each UMass segment.

Cluster	Undiscounted	Discounted at 4%	Discounted at 6%
UMass - Amherst	$5.7 - 9.1M	$4.6 - 7.4M	$4.2 - 6.8M
UMass - Medical	$2.9 - 4.8M	$2.4 - 4.0M	$2.2 - 3.7M
UMass - Dartmouth	$1.7 - 2.1M	$1.3 - 1.7M	$1.2 - 1.6M
University of Lowell	$1.9 - 2.5M	$1.5 - 2.0M	$1.4 - 1.8M
UMass - Boston	$2.0 - 2.6M	$1.6 - 2.1M	$1.5 - 1.9M
Total UMass	$14.2 - 21.1M	$11.5 - 17.2M	$10.6 - 15.9M

Other Colleges and Universities Reserve

We have allocated the aggregate reserve estimate for All Other Colleges and Universities to the individual institutions within the cluster. Estimates for each institution are shown on Summary Exhibit 7.

Short Term Reserve Percentages

We have determined the percentage of the reserve estimates that can be considered short-term, meaning the percentage of projected payments of the total reserves expected to be made over the next twelve month period. The calculation of these percentages is shown on Exhibit 1 Page 16 of Sections 1-8.

IV. Program Description

The Commonwealth has provided workers compensation coverage to its employees on a self-insured basis since the early 1920's ("the Program"). The Program covers all workers, except those employed by the Commonwealth's various public authorities and the State Police.

The Commonwealth retains responsibility for all claims and does not purchase per claim or aggregate reinsurance.

Pursuant to legislation effective July 1, 1997, the Program is administered by the Commonwealth's Human Resources Division ("HRD"); prior to that date, certain workers compensation administration responsibilities had been under the supervision of the Public Employee Retirement Administration Commission ("PERAC"). HRD is responsible for making fair and timely payments of indemnity and medical benefits to injured employees, maintaining the claim and financial records of the Program and for negotiating appropriate settlements for all Program claims.

Effective November 1, 2009 a new entity, the Massachusetts Department of Transportation (MassDOT) was created. As part of the creation, various agencies ceased to be considered part of the Commonwealth and became part of the MassDOT. The agencies, previously part of the Commonwealth, that now comprise the MassDOT are the Old Mass Highway Department (MHD), Registry of Motor Vehicle (RMV), The Office of Transportation (TRP); The Mass Aeronautics Commission (MAC); Tobin Bridge (TOBIN) and a small operation of the Department of Conservation and Recreation (DCR).

Per discussions with the Commonwealth, it is our understanding that the MassDOT would assume the total historical liability of each of those departments; MHD, RMV, TRP, MAC, TOBIN and DCR.

V. Data

Loss

Claim payments for the 12 month period ending June 30, 2015 were provided by the Commonwealth. Payments were provided by department and agency and were split into four categories: compensation, medical, lump sum, and rehabilitation/investigations. For our review, we analyzed compensation (Indemnity) and lump sum payments separately. Medical and rehabilitation/ investigation payments were combined and analyzed as "Medical" losses.

Our estimates do not include any provision for allocated loss adjustment expenses (ALAE) that may be incurred in the processing and settlement of claims, other than rehabilitation/investigation payments included with medical losses noted above. Also, the estimates do not consider unallocated loss adjustment expenses (ULAE), such as fees of adjusters and settling agents, etc.

The 12 month incremental payments provided by the Commonwealth were added to the cumulative claim payments from the prior analysis (at June 30, 2014) to derive cumulative paid figures as of June 30, 2015 found in this report.

Exposure

Exposure information for FY2015, in the form of payroll was provided by the Commonwealth and fully consistent with the "object code" classification which was revised as part of the FY2010 study.

We relied on loss and exposure data provided by responsible officers or employees of the Commonwealth. We also relied on data found in the prior analysis and thereby also those sources described in it; utilizing last year's triangles and updating them with data provided by the HRD. We also relied on payroll data provided by the Office of the Comptroller. As mentioned previously, any inaccuracies in quantitative data or qualitative representations could have a significant effect on the results of our analysis.

Industry Data

Loss development factors were derived from the Commonwealth's own triangles and industry data provided by:

- The National Council on Compensation Insurance (NCCI)
- The Workers Compensation Rating and Inspection Bureau of Massachusetts (WCRIBMA)

Trend factors used to adjust for changes in historical wage and benefit levels are based on data from these sources as well.

VI. Actuarial Analysis

Overview

Performing an actuarial analysis involves developing a qualitative understanding of the risk and applying actuarial techniques and methods to available data. These methods attempt to project unpaid losses to ultimate settlement value. Each method requires certain underlying assumptions and varies in its responsiveness to loss data. As a result, not all methods are appropriate for use in all circumstances. For each unique situation, actuaries assess the strengths and weaknesses inherent in the results of each method in producing reasonable estimates of ultimate loss.

The following methods were employed in developing the recommendations contained in this report.

Methods/Models of Estimating Unpaid Loss Estimates

Paid Loss Development Method

This method is based on the assumption that losses from a group of claims are paid in a sufficiently consistent pattern such that past experience can be used to predict future development. The term loss development is used to describe changes that take place in the value of a group of claims over time. In order to reflect loss development arithmetically, incremental loss development factors are calculated by dividing losses at a given evaluation date by the immediately preceding evaluation date. A multiplicative process is then used to calculate a cumulative loss development factor that represents the development to ultimate for a given age of maturity.

This method can be applied using either cumulative paid losses or incurred losses (cumulative paid losses plus case reserves). For a given group of claims, cumulative losses are multiplied by the appropriate cumulative loss development factor to estimate ultimate losses. For the Commonwealth, we relied on the Paid Loss Development Method only, as the Commonwealth does not currently establish case reserves.

This method relies heavily on data as of the most recent evaluation date and assumes past patterns are predictive of future development. If the program has inadequate history to develop predictive loss development patterns, other sources of loss development information may be considered.

In addition to the cumulative loss development factors, we apply an additional factor to bring losses from their current paid status to a projected ultimate basis. This factor is called an “Additional Tail Consideration” factor.

The “Additional Tail Factor” consideration is based on our observation that for certain clusters, some of the older policy periods showed more open claims and higher development than other periods. We also evaluated the average age of the paid claimants for each cluster and year, and noticed that in certain years payments were being made to relatively young claimants. We judgmentally added a tail factor selection to account for these observations

Paid Bornhuetter-Ferguson (BF) Method

This method offers a blend of stability and responsiveness by estimating ultimate losses using a percentage of the expected loss results and current loss data. It calculates future loss development based on expected loss estimates and the cumulative loss development factors described in the Loss Development Method.

The B-F Method can be applied using either cumulative paid or incurred losses. Again, for the Commonwealth, we relied on the Paid B-F Method only as the Commonwealth does not currently establish case reserves.

In determining future loss development, the percent of expected losses remaining to be paid is based on the appropriate loss development factor. This percentage is multiplied by expected losses to determine expected future development. This estimate of future loss development is added to losses at the current evaluation date to project ultimate losses.

To determine the expected losses, we determine an initial expected pure premium (or an "a priori" loss rate) based upon (1) a review of the Commonwealth's historic pure premiums (losses divided by payroll) as well as (2) consideration of the selected rate the trend and benefit level adjustments removed ("de-trended"). By considering both metrics, we attempt to balance stability and responsiveness in the selection of the initial expected pure premium.

Lump Sum Methodology

Lump sum indemnity payments are analyzed separately from all other indemnity payments. We relied on two methods to develop lump sum payments to ultimate levels. The first is a standard paid loss development method, where current lump sum payments are multiplied by a cumulative lump sum development factor to arrive at the estimate of ultimate lump sum losses.

The second method uses ultimate indemnity losses excluding lump sums as a base for estimating remaining outstanding lump sum payments. Outstanding lump sums payments are estimated by multiplying base ultimates by cumulative incremental lump sums as a percent of ultimate losses excluding lump sums ratio. The outstanding lump sum payments are added to payments to date to arrive at the estimate of ultimate lump sum losses. An estimate of ultimate lump sums is selected based on a review of both methods.

7/1/81-82 and Prior Periods Methodology

In order to estimate liabilities relating to periods 7/1/81-82 and prior, we again relied on two methods. The first uses an average payment trend to estimate the reserves needed for prior periods. This estimate is added to payments to date to arrive at the estimate of ultimate loss. The average payment trend is derived from the Commonwealth's history of incremental payments and is credibility weighted with the total Commonwealth payment trend (derived from all Commonwealth data combined).

The second method multiplies average incremental payments over the last three fiscal years by a selected number of survival years in order to estimate the needed reserve. The needed reserve is added to payments to date to arrive at an estimate of the ultimate loss. An estimate of ultimate loss is selected based on a review of both methods

Selection of Ultimate Losses and Reasonable Reserve Estimates

Our estimates of ultimate losses by year were judgmentally selected based on the methods described above. Generally, we selected the lower and higher of the Paid Loss Development and Paid Bornhuetter-Ferguson methods as the "Low End" and "High End" selections by year. In certain cases, we judgmentally increased the high end of the range if we felt there was not enough "differential" in the two methodologies.

Similar to the prior analysis, we assume that any payment made during fiscal year 2015 implies an "open" claim and will remain open during fiscal year 2015. As a rule, if no payments were made for two years in a row, we project minimal reserves for that year, assuming the claims in that year are closed

Allocation Methodology for Massachusetts Colleges and Universities

The allocation of reserves to each college and university is based on a credibility weighting of expected loss experience based on exposure (payroll) and actual loss experience. The credibility weight is based on the formula P/ (P+K) where P is average payroll for the entity over the past five years and K is 20,000,000 for entities with a low coefficient of variation (CV) and 50,000,000 for entities with a high coefficient of variation (> 1.00).

The expected loss experience is the 5 year average payroll for each entity multiplied by the overall indemnity and medical loss rates for the entire Other Colleges and Universities group. The actual loss experience used in the allocation is a 5-year average ultimate loss for each entity. The ultimate loss for each entity is calculated by applying the paid loss development method to each entity's loss experience.

The outstanding losses estimated for Other Colleges and Universities is then allocated to each entity based on its percentage share of the ultimate credibility weighted losses.

Composition Analysis Methodology for Cluster 5 - All Other Departments

The decomposition of the All Other Departments cluster into the liability associated with MassDOT (excl. MTA) and Non-MassDOT agencies is based on a blended consideration of three different methods. Each method, estimates a percentage share of the total liability for each fiscal year that is associated with the agencies of the MassDOT (excl. MTA) agencies. Each of the three methods described below are applied to both the Medical and Indemnity analyses independently:

Method 1: The number of loss payments made to claimants of the MassDOT (excl. MTA) agencies during the fiscal year as a proportion of the total number of claim payments made during the fiscal year to the All Other Departments in Cluster 5

Method 2: The value of loss payments made to claimants of the MassDOT (excl. MTA) during the fiscal year as a proportion of the total value of claim payments made during the fiscal year to All Other Departments in Cluster 5.

Method 3: The payroll of the MassDOT (excl. MTA) agencies during each of the past fiscal years as a proportion of the total payroll paid to All Other Departments in Cluster 5 over the past fiscal years. Where this historical payroll split was not available, an assumption was made based upon available information.

Actuarial Assumptions

Incurred But Not Reported (IBNR)

Generally, losses will increase over time for the following reasons:

1. It is impossible to estimate precisely the ultimate losses and allocated loss adjustment expenses for claims when they are initially reported.

2. It takes a period of time for some claims to be discovered, reported, and recorded. Unreported claims are referred to as “pure” IBNR claims. Claims that are reported but not yet recorded are referred to as “pipeline” IBNR claims.

3. Closed claims are sometimes reopened.

These three conditions result in the need for IBNR reserves.

Loss Trend

Loss trend is the change in claim frequency and cost levels from one time period to the next. Factors that affect the frequency and severity of claims are constantly changing over time. Examples of causes of these changes include inflation, societal attitudes toward legal action, and changes in laws. Actuaries use trend factors to adjust historical loss experience to comparable cost levels. Using workers compensation as an example, three elements of cost are combined within this single factor:

Increases in defined benefits for Workers Compensation: Benefits are established by legislative authority and typically reviewed annually by state legislatures. Many times, benefits are expanded by legislatures through changes such as broadening the definition of injury, decreasing waiting periods, increasing benefit duration, or increasing maximum benefit limits.

Increases in medical costs: This causes inflationary trend in the medical component of workers compensation losses.

Increase in wage costs: Wage inflation, although relatively small in some economic sectors, has occurred over the past several years as well.

Specifically, for this analysis, trend factors were obtained from the most recent rate filing published by the WCRIB of Massachusetts.

Exposure

Actuaries select an exposure base expected to vary directly with the incidence and/or severity of claims. The actuary must consider both the historical loss level and the corresponding exposures in evaluating claim liabilities and expected future costs.

As previously discussed, payroll exposure for FY1985 through FY2015 were provided by the Commonwealth. For the FY2015 non-MTA element of the MassDOT payroll in Cluster 5, it was necessary to estimate the MTA-only payroll based upon prior values as a FY2015 figure was not available. This figure was then subtracted from the total MassDOT payroll.

Time Value of Money

Due to the time lag between when claims are incurred, reported, and finally paid, a sound funding recommendation may consider the time value of money. Income will be earned on self-insurance fund assets until those assets are liquidated to pay losses. If this income is retained in the self-insurance fund, such investment income may be considered.

At the Commonwealth's direction, we used 4% and 6% rates to discount the estimated reserves. We have not formed any opinion regarding the reasonability of these rates. It is noted that discounting reserves introduces additional risk to the analysis since the timing of actual loss payments may differ from the estimated payment pattern, and since the realized investment yield may differ from that assumed.

Provision for Uncertainty

An actuarial projection may consider the degree of uncertainty inherent in its projection. An estimate stated at its ultimate value on a nominal basis may include an implicit provision for uncertainty due to the time value of money. If an estimate is stated at present value, it may be appropriate to include an explicit provision for uncertainty. Further, an explicit provision for uncertainty may be warranted when losses are subject to a high degree of variability.

For the Commonwealth, we have not explicitly used any provision for risk in our calculations. Instead, we have determined a "low" and "high" end range of reasonable reserves. It should be understood that the range does not represent all possible outcomes, but rather a range of reasonable estimates

VII. Arrangement of Exhibits

This report contains eight sections preceded by a set of summary exhibits. The summary exhibits include the following:

Summary Exhibit	Description
1	Summary of Reserve Estimates - Undiscounted
2	Summary of Reserve Estimates - Discounted at 4%
3	Summary of Reserve Estimates - Discounted at 6%
4	Summary of Change in Ultimate Loss
5	Summary of Estimates for 2014-15 Fiscal Year
6	Summary of Reserve Estimates by Cluster
7	Summary of Reserve Estimates by College
8	Summary of Ultimate Losses by Cluster
9	Calculation of Implied Development Factors
10	MA Colleges and Universities Allocation

The eight sections and their exhibits are organized as follows:

Section	Exhibit	Cluster
1	1	All Clusters Combined - Indemnity
1	2	All Clusters Combined - Medical
2	1	DDS - Indemnity
2	2	DDS - Medical
3	1	DMH - Indemnity
3	2	DMH - Medical
4	1	DOC - Indemnity
4	2	DOC - Medical
5	1	UMass Amherst - Indemnity
5	2	UMass Amherst - Medical
6	1	UMass Medical School - Indemnity
6	2	UMass Medical School - Medical
7	1	Other College and Universities - Indemnity
7	2	Other College and Universities - Medical
8	1	All Other - Indemnity
8	2	All Other - Medical

Within Sections 1 through 8, the worksheets are organized as follows:

Page	Description
1	Summary of Ultimate Losses
2	Paid Loss Development Method
3	Paid Bornhuetter-Ferguson Method
4	Calculation of Initial Expected Loss Rates
5	Calculation of 1982 and Prior Reserves Page 1
6	Calculation of 1982 and Prior Reserves Page 2
7	Paid Loss Triangle
8	Comparison of Ultimate Losses
9-12	Calculation of Ultimate Lump Sum Payments
13-15	Discounting Exhibits
16	Calculation of FY 2016 Payments

For the purpose of the allocation of liability to MassDOT (excl. MTA) , within Section 8 only, there are two additional worksheet pages:

Page	Description
MassDOT - FY2014	MassDOT (excl. MTA) Reserve Allocation as of 06/30/14
MassDOT - FY2015	MassDOT (excl. MTA) Reserve Allocation as of 06/30/15

VIII. Description of Exhibits

Summary Exhibits

Summary Exhibit 1 shows the undiscounted low and high reserve estimates by cluster for indemnity and medical separately.

Summary Exhibit 2 shows the low and high reserve estimates by cluster for indemnity and medical separately, discounted at 4%.

Summary Exhibit 3 shows the low and high reserve estimates by cluster for indemnity and medical separately, discounted at 6%.

Summary Exhibit 4 shows the change in ultimate loss from the prior report by cluster and for indemnity and medical separately. Changes in the ultimate loss for the current fiscal year are excluded.

Summary Exhibit 5 shows the low and high ultimate loss estimate for the current fiscal year. The estimates are shown by cluster and for indemnity and medical separately. The midpoint of the range of estimates is used to calculate the loss rate for each cluster.

Summary Exhibit 6 contains an additional summary of reserve estimates by cluster, showing both the discounted and undiscounted ranges of reserves.

Summary Exhibit 7 contains a summary of reserve estimates by college. High and low reserve estimates are shown undiscounted as well as at 4% and 6% discount rates.

Summary Exhibit 8 shows the selection of ultimate losses by accident year for all clusters. A calculation of the outstanding losses and loss rates is also shown by accident year.

Page 1 shows results for all clusters combined.

Pages 2 – 8 show results for each of the clusters specified in the Scope section.

Summary Exhibit 9 shows the calculation of the implied loss development factors underlying the results of our analysis by accident year. The selected ultimate loss for all clusters is divided by the paid losses to date for all clusters to derive the indicated LDF by accident year.

Summary Exhibit 10 Page 1 shows the results of the methodology used to allocate ultimate losses to each of the college and universities contained in the Other Colleges and Universities group. This methodology is discussed in the Overview section of this report.

Summary Exhibit 10 Page 2 shows the estimated loss costs for indemnity and medical combined for each college and university. The loss costs are calculated by dividing the sum of the estimated ultimate indemnity and medical losses on Page 4 by the payroll figures on Page 3.

Summary Exhibit 10 Page 3 shows the historical payrolls for each college and university.

Summary Exhibit 10 Page 4 shows the estimated ultimate indemnity and medical losses for each college and university. The estimated ultimate losses are calculated by multiplying the cumulative paid indemnity and medical losses on Page 5 by the Age-to-Ultimate LDF's shown on Page 4.

Summary Exhibit 10 Page 5 shows the historical cumulative indemnity and medical payments for each college and university.

Summary Exhibit 10 Page 6 shows the current fiscal year indemnity and medical payments for each college and university.

Pages in Exhibits 1 and 2 of Sections 1 through 8

Page 1 shows the selected ultimate losses by accident year. A high and low selection is made for each accident year based on a review of the actuarial methods presented. Outstanding losses based on the low and high estimates are also calculated. The outstanding loss estimate equals the selected ultimate loss minus paid losses to date.

Page 2 shows the application of the Paid Loss Development Method to the applicable data. The number of paid counts in the last 12 months, average outstanding claim amounts, and the average age for claimants that had an indemnity payment within the last calendar year are also shown.

Page 3 shows the application of the Paid Bornhuetter-Ferguson Method to the applicable data. The ultimate loss cost resulting from the method is also shown.

Page 4 calculates the initial expected loss rate, which is used as the a priori loss rate in the B-F method. Expected ultimate losses from the Paid Loss Development Method are divided by payroll for each accident year. The resulting loss rates are trended to the current cost and wage level and adjusted for historical changes in benefit levels. A current loss cost is then selected.

Page 5 shows the application of the methodology used to estimate ultimate losses for periods 7/1/1981-82 and prior. This methodology is described in the Actuarial Analysis section of this report.

Page 6 shows the derivation of the selected trend using the applicable data for each section. The selected trend is used in the methodology for estimating the 7/1/1981-82 and prior reserves.

Page 7 shows the paid loss development triangle and selected LDF's underlying the paid loss development and paid B-F methods.

Page 8 shows the comparison of the selected ultimate losses to the selection from the prior actuarial reserve review. The changes in ultimates are shown on an absolute and percentage change basis.

Page 9 calculates the estimated ultimate lump sum payments. Two methodologies are reviewed and an estimate of the ultimate lump sum payments by accident year is made. The two methods are described in the Actuarial Analysis section of this report. A comparison to the prior ultimate lump sum selection is also shown.

Pages 10 through 12 show various lump sum development triangles underlying the lump sum methodology on Page 9. Incremental lump sum payments (in 12 month intervals) are accumulated to derive a cumulative lump sum payment triangle (Page 10). Page 11 shows the incremental lump sum payments as a percent of ultimate indemnity loss excluding lump sum payments. Page 12 shows the selection of the LDF's for the cumulative lump sum payment triangle.

Page 13 calculates the discount factors based on the selected payout patterns from Page 7. Discount factors are calculated assuming 4% and 6% interest rates.

Pages 14 and 15 show the application of the discount factors from Page 13 to the outstanding losses from Page 1. Page 14 shows the discounted outstanding losses at 4%; Page 15 shows them at 6%.

Page 16 estimates the percentage of reserve estimates which can be considered short-term; i.e., projected payments associated with the reserves which will be made over the next calendar period

Additional MassDOT Pages in Exhibits 1 and 2 of Section 8 ONLY

Page MassDOT FY2014 shows the results of the methodology used to allocate outstanding reserve liability to the MassDOT (excl. MTA) and Non-MassDOT agencies. This methodology is discussed in the Overview section of this report. This page utilizes the results of the previous actuarial analysis performed in 2014 and based on loss data valued as of 6/30/14.

Page MassDOT FY2015 shows the results of the methodology used to allocate outstanding reserve liability to the MassDOT (excl. MTA) and Non-MassDOT agencies. This methodology is discussed in the Overview section of this report. This page utilizes the results of the current actuarial analysis, based on data valued as of 6/30/15.

IX. Exhibits

Commonwealth of Massachusetts
Workers Compensation
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- Exhibit 1 - Indemnity
- Exhibit 2 - Medical

Section 3 *Department of Mental Health - Cluster 2*
- Exhibit 1 - Indemnity
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Commonwealth of Massachusetts
Workers Compensation
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Summary of Reserve Estimates - Undiscounted

Cluster	Cluster #	Report Section	Loss Reserve Estimate Low End	Loss Reserve Estimate High End
Department of Developmental Services	1	Section 2		
Indemnity			22,281,767	27,425,343
Medical			2,787,293	4,553,763
Total			25,069,060	31,979,106
Department of Mental Health	2	Section 3		
Indemnity			19,611,213	24,849,810
Medical			3,250,778	3,878,484
Total			22,861,991	28,728,293
Department of Corrections	3	Section 4		
Indemnity			36,968,998	50,571,965
Medical			11,834,294	16,143,813
Total			48,803,292	66,715,778
UMass - Amherst	4	Section 5		
Indemnity			4,274,940	7,255,365
Medical			1,400,558	1,820,149
Total			5,675,498	9,075,513
UMass - Medical School	4	Section 6		
Indemnity			2,251,819	3,675,405
Medical			658,571	1,129,771
Total			2,910,390	4,805,177
Other Colleges & Universities	4	Section 7		
Indemnity			14,084,344	18,533,049
Medical			2,968,935	3,495,783
Total			17,053,280	22,028,832
All Others	5-17 & 95	Section 8		
Indemnity			164,920,864	199,671,807
Medical			27,307,397	34,201,332
Total			192,228,261	233,873,139
Grand Total		Section 1		
Indemnity			264,393,944	331,982,743
Medical			50,207,827	65,223,095
Total			314,601,771	397,205,838

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Summary of Reserve Estimates - Discounted at 4%

Cluster	Cluster #	Report Section	Loss Reserve Estimate Low End	Loss Reserve Estimate High End
Department of Developmental Services	1	Section 2		
Indemnity			17,973,722	22,367,278
Medical			2,310,162	3,757,623
Total			20,283,884	26,124,901
Department of Mental Health	2	Section 3		
Indemnity			14,858,311	19,104,389
Medical			2,581,172	3,081,706
Total			17,439,483	22,186,095
Department of Corrections	3	Section 4		
Indemnity			27,489,636	37,732,540
Medical			9,087,526	12,383,521
Total			36,577,162	50,116,061
UMass - Amherst	4	Section 5		
Indemnity			3,445,154	5,914,686
Medical			1,151,623	1,497,932
Total			4,596,777	7,412,618
UMass - Medical School	4	Section 6		
Indemnity			1,829,518	3,012,016
Medical			559,480	960,321
Total			2,388,998	3,972,337
Other Colleges & Universities	4	Section 7		
Indemnity			11,345,349	14,978,485
Medical			2,445,449	2,877,245
Total			13,790,798	17,855,730
All Others	5-17 & 95	Section 8		
Indemnity			117,771,865	144,340,327
Medical			20,887,411	26,150,290
Total			138,659,276	170,490,616
Grand Total		Section 1		
Indemnity			194,713,556	247,449,721
Medical			39,022,822	50,708,637
Total			233,736,378	298,158,358

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Summary of Reserve Estimates - Discounted at 6%

Cluster	Cluster #	Report Section	Loss Reserve Estimate Low End	Loss Reserve Estimate High End
Department of Developmental Services	1	Section 2		
Indemnity			16,502,727	20,607,835
Medical			2,145,786	3,484,733
Total			18,648,514	24,092,568
Department of Mental Health	2	Section 3		
Indemnity			13,338,244	17,252,032
Medical			2,352,693	2,809,758
Total			15,690,937	20,061,790
Department of Corrections	3	Section 4		
Indemnity			24,455,292	33,613,089
Medical			8,166,562	11,135,179
Total			32,621,854	44,748,268
UMass - Amherst	4	Section 5		
Indemnity			3,165,920	5,443,643
Medical			1,063,732	1,384,190
Total			4,229,652	6,827,832
UMass - Medical School	4	Section 6		
Indemnity			1,680,091	2,773,042
Medical			521,488	895,367
Total			2,201,580	3,668,409
Other Colleges & Universities	4	Section 7		
Indemnity			10,348,795	13,675,777
Medical			2,256,979	2,654,786
Total			12,605,774	16,330,563
All Others	5-17 & 95	Section 8		
Indemnity			103,053,425	126,884,481
Medical			18,758,228	23,474,945
Total			121,811,653	150,359,427
Grand Total		Section 1		
Indemnity			172,544,495	220,249,899
Medical			35,265,468	45,838,958
Total			207,809,963	266,088,857

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Reserve Analysis at June 30, 2015

Summary of Change in Ultimate Loss (excluding current Fiscal Year)

Cluster	Cluster #	Report Section	Current Ult Loss Estimate less Previous Ult Loss Estimate Low End	High End
Department of Developmental Services	1	Section 2		
Indemnity			(1,656,025)	(1,941,535)
Medical			419,396	(76,208)
Total			(1,236,629)	(2,017,744)
Department of Mental Health	2	Section 3		
Indemnity			(1,273,134)	(1,545,784)
Medical			(132,117)	(274,592)
Total			(1,405,251)	(1,820,376)
Department of Corrections	3	Section 4		
Indemnity			(7,034,829)	(11,565,233)
Medical			(846,649)	(2,418,870)
Total			(7,881,477)	(13,984,103)
UMass - Amherst	4	Section 5		
Indemnity			(1,418,330)	(1,643,001)
Medical			30,968	2,696
Total			(1,387,361)	(1,640,305)
UMass - Medical School	4	Section 6		
Indemnity			67,843	(323,774)
Medical			(14,000)	(163,133)
Total			53,843	(486,907)
Other Colleges & Universities	4	Section 7		
Indemnity			(820,222)	(281,215)
Medical			(222,266)	(152,972)
Total			(1,042,488)	(434,187)
All Others	5-17 & 95	Section 8		
Indemnity			(1,740,995)	(1,716,278)
Medical			(430,315)	(1,962,276)
Total			(2,171,310)	(3,678,555)
Grand Total		Section 1		
Indemnity			(13,875,691)	(19,016,820)
Medical			(1,194,983)	(5,045,356)
Total			(15,070,674)	(24,062,176)

Commonwealth of Massachusetts
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Summary of Estimates for 2014-15 Fiscal Year

Cluster	Cluster #	Report Section	Ultimate Loss Estimate Low End	Ultimate Loss Estimate High End	Average	Payroll (000)	Loss Rate
Department of Developmental Services	1	Section 2					
Indemnity			3,483,000	3,708,000			
Medical			1,168,000	1,472,000			
Total			4,651,000	5,180,000	4,915,500	316,552	1.553
Department of Mental Health	2	Section 3					
Indemnity			3,860,000	4,784,000			
Medical			1,118,000	1,289,000			
Total			4,978,000	6,073,000	5,525,500	213,700	2.586
Department of Corrections	3	Section 4					
Indemnity			7,793,000	9,329,000			
Medical			2,812,000	3,102,750			
Total			10,605,000	12,431,750	11,518,375	402,750	2.860
UMass - Amherst	4	Section 5					
Indemnity			1,420,000	1,717,000			
Medical			636,000	774,000			
Total			2,056,000	2,491,000	2,273,500	539,631	0.421
UMass - Medical School	4	Section 6					
Indemnity			303,000	681,000			
Medical			199,000	311,000			
Total			502,000	992,000	747,000	370,543	0.202
Other Colleges & Universities	4	Section 7					
Indemnity			3,795,000	4,195,000			
Medical			1,366,100	1,525,000			
Total			5,161,100	5,720,000	5,440,550	1,404,093	0.387
All Others	5-17 & 95	Section 8					
Indemnity			29,103,250	31,977,828			
Medical			8,300,000	9,300,000			
Total			37,403,250	41,277,828	39,340,539	3,511,622	1.120
Grand Total		Section 1					
Indemnity			49,757,250	56,391,828			
Medical			15,599,100	17,773,750			
Total			65,356,350	74,165,578	69,760,964	6,758,892	1.032

Commonwealth of Massachusetts
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Reserve Analysis at June 30, 2015

Summary of Reserve Estimates by Cluster

Cluster	Cluster / Report Section	Undiscounted Low End	Undiscounted High End	Discounted at 4% Low End	Discounted at 4% High End	Discounted at 6% Low End	Discounted at 6% High End
DDS	1 / 2	25,069,060	31,979,106	20,283,884	26,124,901	18,648,514	24,092,568
DMH	2 / 3	22,861,991	28,728,293	17,439,483	22,186,095	15,690,937	20,061,790
DOC	3 / 4	48,803,292	66,715,778	36,577,162	50,116,061	32,621,854	44,748,268
UMass - Amherst	4 / 5	5,675,498	9,075,513	4,596,777	7,412,618	4,229,652	6,827,832
UMass - Medical	4 / 6	2,910,390	4,805,177	2,388,998	3,972,337	2,201,580	3,668,409
Other Colleges & Universities	4 / 7	17,053,280	22,028,832	13,790,798	17,855,730	12,605,774	16,330,563
All Other Dept's (incl. MassDOT, excl. MTA)	5 / 8	192,228,261	233,873,139	138,659,276	170,490,616	121,811,653	150,359,427
Total		314,601,771	397,205,838	233,736,378	298,158,358	207,809,963	266,088,857

All Other Departments	Cluster / Report Section	Undiscounted Low End	Undiscounted High End	Discounted at 4% Low End	Discounted at 4% High End	Discounted at 6% Low End	Discounted at 6% High End
MassDOT Agencies (excl. MTA)	5 / 8	14,533,641	17,793,873	10,486,623	12,973,153	9,213,533	11,441,864
Non-MassDOT Agencies	5 / 8	177,694,620	216,079,267	128,172,653	157,517,464	112,598,120	138,917,563

Commonwealth of Massachusetts
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Reserve Analysis at June 30, 2015

Summary of Reserve Estimates by College

	Undiscounted		Discounted at 4%		Discounted at 6%	
Cluster	Low End	High End	Low End	High End	Low End	High End
Berkshire Community College	186,178	240,498	150,560	194,939	137,623	178,288
Bridgewater State College	1,262,438	1,630,773	1,020,919	1,321,843	933,193	1,208,936
Bristol Community College	242,073	312,702	195,762	253,464	178,941	231,814
Bunker Hill Community College	516,139	666,731	417,396	540,427	381,530	494,265
Cape Cod Community College	290,470	375,219	234,900	304,138	214,715	278,160
Fitchburg State College	584,996	755,678	473,080	612,524	432,429	560,204
Framingham State College	460,497	594,854	372,399	482,166	340,399	440,981
Greenfield Community College	162,051	209,332	131,049	169,676	119,788	155,183
Holyoke Community College	311,136	401,914	251,612	325,776	229,991	297,950
Mass Bay Community College	159,295	205,771	128,820	166,790	117,750	152,544
Mass College of Art	417,253	538,993	337,428	436,887	308,433	399,570
Mass Maritime Academy	255,845	330,492	206,899	267,884	189,121	245,003
Massachusetts College of Liberal Arts	224,030	289,394	181,171	234,572	165,603	214,536
Massasoit Community College	535,809	692,139	433,303	561,022	396,070	513,101
Middlesex Community College	496,906	641,886	401,843	520,289	367,313	475,848
Mt Wachusett Community College	306,834	396,358	248,133	321,272	226,812	293,831
North Essex Community College	189,298	244,529	153,083	198,206	139,929	181,276
North Shore Community College	285,904	369,320	231,207	299,357	211,340	273,787
Quinsigamond Community College	889,214	1,148,656	719,098	931,056	657,306	851,529
Roxbury Community College	260,989	337,136	211,059	273,270	192,923	249,928
Salem State College	1,176,844	1,520,207	951,701	1,232,221	869,923	1,126,970
Springfield Tech Community College	613,942	793,068	496,488	642,831	453,825	587,923
UMass (Boston)	2,030,798	2,623,314	1,642,284	2,126,358	1,501,164	1,944,733
UMass (Dartmouth)	1,653,874	2,136,417	1,337,469	1,731,698	1,222,543	1,583,783
University of Lowell	1,913,539	2,471,843	1,547,458	2,003,582	1,414,487	1,832,444
Westfield State College	909,969	1,175,467	735,882	952,789	672,649	871,405
Worcester State College	716,957	926,140	579,795	750,694	529,974	686,572
Total	17,053,280	22,028,832	13,790,798	17,855,730	12,605,774	16,330,563

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		102,449,641			118,550,634	127,924,673	16,100,993	25,475,032		
6/30/82-83		18,168,864	18,926,938		18,674,745	19,307,278	505,881	1,138,414		
6/30/83-84		26,137,792	28,054,007		27,699,028	28,813,614	1,561,235	2,675,822		
6/30/84-85	1,823,085	39,255,562	42,329,250	40,231,550	40,249,206	42,143,649	993,644	2,888,087	2.208	2.312
6/30/85-86	1,952,445	52,078,664	54,295,679	53,602,839	53,212,302	54,019,289	1,133,637	1,940,624	2.725	2.767
6/30/86-87	2,220,820	58,245,019	61,288,799	60,245,450	59,621,011	61,251,136	1,375,992	3,006,117	2.685	2.758
6/30/87-88	2,885,583	84,490,947	92,093,134	88,117,859	88,034,295	90,958,677	3,543,348	6,467,730	3.051	3.152
6/30/88-89	3,098,180	83,205,827	88,234,054	87,062,571	87,115,095	89,179,021	3,909,268	5,973,193	2.812	2.878
6/30/89-90	3,079,763	80,331,803	85,434,968	84,842,155	84,382,619	85,875,538	4,050,816	5,543,735	2.740	2.788
6/30/90-91	2,914,364	66,492,466	72,661,939	70,895,084	70,038,505	72,437,341	3,546,039	5,944,875	2.403	2.486
6/30/91-92	2,880,434	45,073,867	48,582,715	48,095,634	47,745,674	49,185,851	2,671,807	4,111,984	1.658	1.708
6/30/92-93	2,887,238	30,705,027	34,120,415	33,236,197	32,986,153	34,680,714	2,281,126	3,975,687	1.142	1.201
6/30/93-94	3,056,850	33,397,480	36,361,201	36,300,716	36,157,990	36,976,531	2,760,510	3,579,051	1.183	1.210
6/30/94-95	3,158,808	30,356,988	33,503,769	33,434,805	33,332,623	34,030,436	2,975,635	3,673,449	1.055	1.077
6/30/95-96	3,301,791	29,026,255	32,479,498	32,398,220	32,319,029	33,123,528	3,292,773	4,097,273	0.979	1.003
6/30/96-97	3,902,868	29,418,819	33,218,007	33,149,903	32,944,724	33,796,962	3,525,905	4,378,143	0.844	0.866
6/30/97-98	3,776,138	32,084,842	36,292,023	36,198,392	35,559,047	36,421,826	3,474,205	4,336,984	0.942	0.965
6/30/98-99	4,017,530	30,109,004	34,554,633	34,482,010	33,991,704	34,870,575	3,882,701	4,761,571	0.846	0.868
6/30/99-00	4,221,786	33,848,197	39,538,990	39,399,914	38,811,540	39,873,847	4,963,343	6,025,650	0.919	0.944
6/30/00-01	4,310,725	39,759,353	46,795,685	46,587,441	45,995,378	47,091,272	6,236,025	7,331,919	1.067	1.092
6/30/01-02	4,438,755	34,905,533	41,926,823	41,799,202	41,031,325	42,438,337	6,125,792	7,532,804	0.924	0.956
6/30/02-03	4,423,888	34,587,919	42,107,655	41,991,084	41,482,763	42,901,760	6,894,844	8,313,841	0.938	0.970
6/30/03-04	4,482,207	34,364,191	42,237,810	42,150,632	41,482,051	42,975,390	7,117,860	8,611,199	0.925	0.959
6/30/04-05	4,639,517	35,952,531	45,198,900	43,898,891	43,281,950	45,121,050	7,329,419	9,168,519	0.933	0.973
6/30/05-06	4,938,165	31,557,100	40,332,329	40,785,598	39,866,780	41,291,700	8,309,680	9,734,600	0.807	0.836
6/30/06-07	5,183,126	29,921,378	39,202,749	40,516,037	38,362,650	40,845,700	8,441,272	10,924,322	0.740	0.788
6/30/07-08	5,508,425	33,145,468	45,136,750	46,095,322	43,816,810	46,315,530	10,671,342	13,170,062	0.795	0.841
6/30/08-09	5,447,676	32,943,005	46,912,477	47,353,629	46,023,050	48,347,168	13,080,045	15,404,163	0.845	0.887
6/30/09-10	5,525,579	30,815,858	46,157,171	47,684,013	44,772,470	48,706,441	13,956,612	17,890,583	0.810	0.881
6/30/10-11	5,712,303	33,456,585	53,900,640	53,879,033	52,235,470	55,763,391	18,778,885	22,306,806	0.914	0.976
6/30/11-12	5,880,714	30,180,360	54,710,574	55,232,491	53,006,770	57,554,318	22,826,410	27,373,958	0.901	0.979
6/30/12-13	6,162,621	23,311,077	49,611,948	54,577,390	49,340,680	55,401,738	26,029,603	32,090,661	0.801	0.899
6/30/13-14	6,442,136	20,476,571	59,488,886	62,988,691	58,343,410	64,638,038	37,866,839	44,161,467	0.906	1.003
6/30/14-15	6,758,892	10,968,063	68,579,438	70,835,781	65,356,350	74,165,578	54,388,287	63,197,515	0.967	1.097
Total	129,032,410	1,361,222,058	1,594,269,850	1,548,068,536	1,675,823,829	1,758,427,896	314,601,771	397,205,838		
Tot 6/30/84-15	129,032,410	1,214,465,761	1,547,288,905	1,548,068,536	1,510,899,423	1,582,382,331	296,433,662	367,916,570	1.171	1.226

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Summary Exhibit 8, Pages 2-8

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		22,249,197			26,908,699	28,980,051	4,659,502	6,730,854		
6/30/82-83		4,960,536	5,241,706		5,242,201	5,267,097	281,665	306,561		
6/30/83-84		9,681,797	10,993,324		10,997,632	11,203,256	1,315,835	1,521,458		
6/30/84-85	181,560	7,574,978	8,279,084	7,706,567	7,707,815	8,288,457	132,837	713,479	4.245	4.565
6/30/85-86	195,247	11,874,262	12,134,954	12,135,320	11,991,000	12,095,000	116,739	220,739	6.141	6.195
6/30/86-87	224,370	15,376,859	15,755,523	15,770,452	15,530,000	15,667,000	153,141	290,141	6.922	6.983
6/30/87-88	262,864	22,019,087	24,424,230	22,655,604	22,654,000	23,331,450	634,913	1,312,363	8.618	8.876
6/30/88-89	283,884	23,946,298	24,731,973	24,745,534	24,716,036	24,746,000	769,739	799,702	8.706	8.717
6/30/89-90	285,078	18,704,342	19,347,001	19,445,621	18,914,000	19,069,000	209,658	364,658	6.635	6.689
6/30/90-91	267,732	13,770,178	14,282,537	14,278,963	13,901,440	14,040,000	131,262	269,822	5.192	5.244
6/30/91-92	261,442	10,181,953	10,580,987	10,575,999	10,549,470	10,581,000	367,517	399,047	4.035	4.047
6/30/92-93	259,992	5,947,917	6,198,162	6,194,846	6,010,030	6,070,000	62,113	122,083	2.312	2.335
6/30/93-94	257,062	4,766,721	4,978,748	4,976,339	4,853,990	4,902,000	87,269	135,279	1.888	1.907
6/30/94-95	255,854	3,009,689	3,151,793	3,152,792	3,141,480	3,153,000	131,791	143,311	1.228	1.232
6/30/95-96	255,539	4,069,975	4,286,229	4,283,698	4,284,000	4,307,000	214,025	237,025	1.676	1.685
6/30/96-97	270,071	3,349,690	3,532,219	3,533,351	3,387,000	3,418,000	37,310	68,310	1.254	1.266
6/30/97-98	245,367	3,390,235	3,604,046	3,602,237	3,603,000	3,619,000	212,765	228,765	1.468	1.475
6/30/98-99	251,453	3,044,791	3,238,620	3,240,334	3,239,000	3,253,000	194,209	208,209	1.288	1.294
6/30/99-00	255,641	3,170,076	3,411,287	3,410,671	3,410,000	3,428,000	239,924	257,924	1.334	1.341
6/30/00-01	263,918	4,685,736	5,086,784	5,074,285	5,075,000	5,116,000	389,264	430,264	1.923	1.938
6/30/01-02	267,598	3,110,446	3,403,605	3,405,996	3,157,000	3,186,000	46,554	75,554	1.180	1.191
6/30/02-03	274,465	3,833,198	4,260,401	4,254,349	4,254,000	4,279,000	420,802	445,802	1.550	1.559
6/30/03-04	272,384	4,027,427	4,525,236	4,515,361	4,515,000	4,544,000	487,573	516,573	1.658	1.668
6/30/04-05	273,647	3,708,293	4,180,722	4,152,255	3,773,000	3,810,000	64,707	101,707	1.379	1.392
6/30/05-06	285,139	3,840,334	4,377,261	4,346,625	4,346,000	4,401,000	505,666	560,666	1.524	1.543
6/30/06-07	298,516	3,956,791	4,578,546	4,567,198	4,567,000	4,603,000	610,209	646,209	1.530	1.542
6/30/07-08	314,231	2,520,816	2,941,761	3,212,437	2,942,000	3,236,000	421,184	715,184	0.936	1.030
6/30/08-09	302,998	3,293,421	3,998,211	4,120,603	3,994,000	4,188,150	700,579	894,729	1.318	1.382
6/30/09-10	297,252	4,324,997	5,479,066	5,318,721	5,248,900	5,550,050	923,903	1,225,053	1.766	1.867
6/30/10-11	292,432	3,397,936	4,673,837	4,661,195	4,552,520	4,747,750	1,154,584	1,349,814	1.557	1.624
6/30/11-12	295,908	3,435,840	4,977,575	4,921,848	4,791,000	5,044,000	1,355,160	1,608,160	1.619	1.705
6/30/12-13	301,541	2,808,843	4,710,421	4,789,322	4,577,000	4,856,000	1,768,157	2,047,157	1.518	1.610
6/30/13-14	309,910	2,214,439	4,986,343	5,021,418	4,855,000	5,090,000	2,640,561	2,875,561	1.567	1.642
6/30/14-15	316,552	1,023,056	4,780,065	5,110,469	4,651,000	5,180,000	3,627,944	4,156,944	1.469	1.636
Total	8,379,647	241,270,154	245,132,256	227,180,411	266,339,214	273,249,260	25,069,060	31,979,106		
Tot 6/30/84-15	8,379,647	204,378,624	228,897,227	227,180,411	223,190,681	227,798,857	18,812,057	23,420,233	2.663	2.718

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 2, Exhibit 1, Page 1 + Section 2, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		20,903,941			24,517,020	25,840,805	3,613,078	4,936,864		
6/30/82-83		2,823,431	3,013,405		2,955,934	3,029,171	132,502	205,740		
6/30/83-84		2,864,047	3,054,282		2,911,916	3,068,285	47,869	204,238		
6/30/84-85	142,561	4,721,443	5,266,493	4,847,311	4,847,000	5,175,980	125,557	454,537	3.400	3.631
6/30/85-86	153,298	4,891,866	5,109,047	5,100,994	4,941,000	5,109,000	49,134	217,134	3.223	3.333
6/30/86-87	176,136	6,911,248	7,261,528	7,273,020	6,982,000	7,273,000	70,752	361,752	3.964	4.129
6/30/87-88	206,319	13,456,150	14,752,282	14,152,386	14,153,000	14,495,000	696,850	1,038,850	6.860	7.026
6/30/88-89	222,806	14,315,324	15,226,080	15,164,236	15,201,196	15,226,000	885,872	910,676	6.823	6.834
6/30/89-90	223,751	13,631,306	14,598,122	14,544,652	14,541,000	14,615,000	909,694	983,694	6.499	6.532
6/30/90-91	210,162	9,576,763	10,279,504	10,274,116	9,776,000	9,854,466	199,237	277,703	4.652	4.689
6/30/91-92	205,241	5,520,691	5,938,011	5,932,965	5,589,000	5,708,000	68,309	187,309	2.723	2.781
6/30/92-93	176,705	4,702,108	5,100,059	5,092,286	5,093,000	5,111,310	390,892	409,202	2.882	2.893
6/30/93-94	173,075	3,121,821	3,441,248	3,434,515	3,435,000	3,441,000	313,179	319,179	1.985	1.988
6/30/94-95	178,317	3,667,330	4,055,929	4,045,213	3,981,720	3,992,520	314,390	325,190	2.233	2.239
6/30/95-96	175,996	2,728,118	2,993,073	2,988,426	2,945,000	2,958,280	216,882	230,162	1.673	1.681
6/30/96-97	190,083	2,108,325	2,312,208	2,313,404	2,277,020	2,283,630	168,695	175,305	1.198	1.201
6/30/97-98	177,278	3,418,667	3,816,206	3,802,734	3,639,550	3,657,240	220,883	238,573	2.053	2.063
6/30/98-99	189,080	2,395,745	2,666,164	2,665,101	2,626,960	2,628,940	231,215	233,195	1.389	1.390
6/30/99-00	194,494	2,916,057	3,261,039	3,255,555	3,196,330	3,208,640	280,273	292,583	1.643	1.650
6/30/00-01	201,568	4,053,774	4,580,007	4,560,146	4,551,890	4,580,000	498,116	526,226	2.258	2.272
6/30/01-02	203,105	3,223,618	3,673,320	3,663,362	3,662,000	3,675,000	438,382	451,382	1.803	1.809
6/30/02-03	202,515	2,524,190	2,854,335	2,859,084	2,846,010	2,867,000	321,820	342,810	1.405	1.416
6/30/03-04	189,588	4,553,542	5,237,337	5,207,980	5,005,480	5,176,860	451,938	623,318	2.640	2.731
6/30/04-05	186,990	3,632,087	4,235,880	4,079,269	4,079,000	4,235,000	446,913	602,913	2.181	2.265
6/30/05-06	193,254	2,669,951	3,160,351	3,198,814	3,150,000	3,209,000	480,049	539,049	1.630	1.661
6/30/06-07	203,359	2,891,544	3,529,111	3,513,244	3,360,100	3,408,450	468,556	516,906	1.652	1.676
6/30/07-08	212,083	2,273,469	2,819,941	2,988,186	2,718,350	2,879,200	444,881	605,731	1.282	1.358
6/30/08-09	204,679	2,538,438	3,277,372	3,348,476	3,278,000	3,349,000	739,562	810,562	1.602	1.636
6/30/09-10	184,688	1,734,838	2,307,137	2,545,966	2,403,000	2,546,000	668,162	811,162	1.301	1.379
6/30/10-11	169,689	2,562,439	3,548,205	3,435,807	3,436,000	3,614,000	873,561	1,051,561	2.025	2.130
6/30/11-12	177,399	2,072,788	3,117,883	3,177,370	3,118,000	3,237,000	1,045,212	1,164,212	1.758	1.825
6/30/12-13	189,252	2,288,411	3,866,467	3,824,251	3,794,000	3,974,000	1,505,589	1,685,589	2.005	2.100
6/30/13-14	199,876	2,004,990	4,137,115	4,004,228	3,934,000	4,290,000	1,929,010	2,285,010	1.968	2.146
6/30/14-15	213,700	1,363,024	5,956,457	4,978,436	4,978,000	6,073,000	3,614,976	4,709,976	2.329	2.842
Total	5,927,049	165,061,484	168,445,597	160,271,531	187,923,475	193,789,777	22,861,991	28,728,293		
Tot 6/30/84-15	5,927,049	138,470,065	162,377,911	160,271,531	157,538,606	161,851,516	19,068,541	23,381,451	2.658	2.731

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 3, Exhibit 1, Page 1 + Section 3, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		4,799,284			6,028,184	7,108,925	1,228,900	2,309,640		
6/30/82-83		2,912,565	2,983,425		2,924,729	2,986,461	12,164	73,896		
6/30/83-84		2,135,674	2,185,349		2,145,228	2,200,495	9,554	64,821		
6/30/84-85	115,258	4,483,063	4,992,171	4,569,950	4,565,095	4,783,000	82,032	299,937	3.961	4.150
6/30/85-86	123,937	6,962,840	7,160,084	7,126,698	7,011,186	7,079,290	48,345	116,450	5.657	5.712
6/30/86-87	142,396	4,532,327	4,667,022	4,675,284	4,590,350	4,631,910	58,023	99,583	3.224	3.253
6/30/87-88	166,792	7,243,858	7,478,953	7,501,453	7,362,102	7,427,880	118,244	184,022	4.414	4.453
6/30/88-89	180,117	8,558,028	9,225,177	8,838,297	8,838,000	9,226,000	279,972	667,972	4.907	5.122
6/30/89-90	180,883	11,141,318	11,592,449	11,586,885	11,587,000	11,592,000	445,682	450,682	6.406	6.409
6/30/90-91	169,902	12,476,145	14,467,948	13,128,588	13,129,000	14,230,060	652,855	1,753,915	7.727	8.375
6/30/91-92	165,926	6,385,744	6,724,525	6,722,783	6,723,000	6,725,000	337,256	339,256	4.052	4.053
6/30/92-93	174,198	4,516,388	4,771,440	4,771,891	4,703,999	4,738,530	187,612	222,143	2.700	2.720
6/30/93-94	185,946	6,501,455	6,975,626	6,970,868	6,970,000	6,976,000	468,545	474,545	3.748	3.752
6/30/94-95	194,051	7,479,800	8,198,165	8,185,099	8,185,000	8,198,000	705,200	718,200	4.218	4.225
6/30/95-96	205,262	6,761,635	7,518,394	7,506,398	7,507,000	7,519,000	745,365	757,365	3.657	3.663
6/30/96-97	234,073	7,815,531	8,725,876	8,709,776	8,710,000	8,726,000	894,469	910,469	3.721	3.728
6/30/97-98	221,865	10,263,351	11,618,950	11,565,962	11,125,856	11,319,950	862,504	1,056,599	5.015	5.102
6/30/98-99	256,071	9,502,133	10,858,465	10,812,630	10,398,512	10,578,900	896,379	1,076,767	4.061	4.131
6/30/99-00	268,486	10,236,178	11,844,052	11,782,019	11,336,875	11,535,460	1,100,697	1,299,282	4.223	4.296
6/30/00-01	279,182	13,452,732	15,756,193	15,640,471	15,072,755	15,341,780	1,620,023	1,889,048	5.399	5.495
6/30/01-02	283,070	10,829,898	12,845,361	12,770,107	12,275,782	12,846,000	1,445,884	2,016,102	4.337	4.538
6/30/02-03	289,846	10,987,268	13,177,256	13,097,106	12,609,753	13,177,000	1,622,485	2,189,732	4.350	4.546
6/30/03-04	293,771	9,916,434	12,024,806	11,963,253	11,514,571	12,025,000	1,598,136	2,108,566	3.920	4.093
6/30/04-05	291,382	10,848,284	13,290,494	12,405,106	12,555,950	13,291,000	1,707,666	2,442,716	4.309	4.561
6/30/05-06	294,709	7,930,720	9,837,804	9,597,963	9,647,780	9,838,000	1,717,060	1,907,280	3.274	3.338
6/30/06-07	289,603	6,470,540	8,161,785	8,234,977	8,089,550	8,243,000	1,619,010	1,772,460	2.793	2.846
6/30/07-08	354,668	6,237,501	8,038,966	8,580,700	8,244,000	8,580,000	2,006,499	2,342,499	2.324	2.419
6/30/08-09	332,413	5,406,522	7,180,580	7,842,983	7,361,000	8,130,000	1,954,478	2,723,478	2.214	2.446
6/30/09-10	336,338	3,267,334	4,528,241	6,048,171	5,172,000	6,270,000	1,904,666	3,002,666	1.538	1.864
6/30/10-11	333,783	4,454,710	6,488,914	7,595,558	6,825,000	7,974,900	2,370,290	3,520,190	2.045	2.389
6/30/11-12	348,187	2,997,700	4,765,042	6,825,490	5,607,000	7,166,200	2,609,300	4,168,500	1.610	2.058
6/30/12-13	368,022	2,721,127	5,066,032	7,810,873	6,199,000	8,202,250	3,477,874	5,481,124	1.684	2.229
6/30/13-14	390,528	2,508,302	6,243,538	9,540,194	7,584,000	10,017,000	5,075,698	7,508,698	1.942	2.565
6/30/14-15	402,750	1,664,576	9,378,710	11,839,733	10,605,000	12,431,750	8,940,424	10,767,174	2.633	3.087
Total	7,873,416	234,400,963	278,771,791	284,247,265	283,204,255	301,116,741	48,803,292	66,715,778		
Tot 6/30/84-15	7,873,416	224,553,440	273,603,017	284,247,265	272,106,114	288,820,860	47,552,674	64,267,420	3.456	3.668

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 4, Exhibit 1, Page 1 + Section 4, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		2,311,060			2,730,893	2,860,317	419,833	549,257		
6/30/82-83		225,530	228,172		229,124	232,439	3,594	6,909		
6/30/83-84		220,938	224,120		224,907	230,077	3,969	9,139		
6/30/84-85	176,924	2,021,994	2,450,456	2,054,367	2,054,801	2,452,041	32,808	430,048	1.161	1.386
6/30/85-86	188,662	1,676,445	1,998,363	1,703,253	1,709,741	1,743,263	33,296	66,818	0.906	0.924
6/30/86-87	212,277	2,582,890	3,073,707	2,627,141	2,627,000	3,074,000	44,110	491,110	1.238	1.448
6/30/87-88	243,118	2,400,412	2,672,340	2,453,495	2,453,000	2,672,000	52,588	271,588	1.009	1.099
6/30/88-89	248,990	2,200,539	2,445,701	2,254,345	2,254,000	2,446,000	53,461	245,461	0.905	0.982
6/30/89-90	250,404	679,355	695,770	702,892	692,000	703,000	12,645	23,645	0.276	0.281
6/30/90-91	235,170	2,848,128	3,145,208	2,931,256	2,932,000	3,145,000	83,872	296,872	1.247	1.337
6/30/91-92	235,607	3,014,622	3,336,581	3,113,366	3,114,000	3,337,000	99,378	322,378	1.322	1.416
6/30/92-93	241,161	712,440	728,928	728,771	719,696	740,317	7,256	27,877	0.298	0.307
6/30/93-94	254,321	1,213,315	1,250,357	1,249,432	1,230,000	1,258,000	16,685	44,685	0.484	0.495
6/30/94-95	256,665	1,067,175	1,107,111	1,105,923	1,078,423	1,111,476	11,248	44,301	0.420	0.433
6/30/95-96	265,739	835,707	870,110	869,211	844,425	870,865	8,718	35,158	0.318	0.328
6/30/96-97	296,336	700,495	736,737	735,940	707,847	730,726	7,352	30,232	0.239	0.247
6/30/97-98	296,982	651,847	680,956	680,888	664,000	682,000	12,153	30,153	0.224	0.230
6/30/98-99	299,530	905,317	950,813	949,603	922,000	949,000	16,683	43,683	0.308	0.317
6/30/99-00	323,627	1,577,004	1,677,170	1,671,029	1,606,000	1,655,000	28,996	77,996	0.496	0.511
6/30/00-01	338,348	1,758,986	1,904,541	1,895,314	1,896,000	1,905,000	137,014	146,014	0.560	0.563
6/30/01-02	329,555	1,264,186	1,359,695	1,356,023	1,356,000	1,359,000	91,814	94,814	0.411	0.412
6/30/02-03	329,179	1,178,612	1,276,765	1,273,777	1,274,000	1,277,000	95,388	98,388	0.387	0.388
6/30/03-04	344,547	414,340	454,612	458,175	454,000	458,000	39,660	43,660	0.132	0.133
6/30/04-05	325,530	912,330	1,012,256	1,001,431	1,001,000	1,013,000	88,670	100,670	0.307	0.311
6/30/05-06	403,750	640,322	719,837	759,886	719,000	760,000	78,678	119,678	0.178	0.188
6/30/06-07	420,219	652,351	741,486	794,001	741,000	794,000	88,649	141,649	0.176	0.189
6/30/07-08	425,998	849,511	984,883	1,008,895	972,000	1,022,000	122,489	172,489	0.228	0.240
6/30/08-09	420,566	1,444,012	1,707,289	1,642,215	1,642,000	1,707,000	197,988	262,988	0.390	0.406
6/30/09-10	433,206	863,389	1,057,129	1,101,083	1,058,000	1,120,650	194,611	257,261	0.244	0.259
6/30/10-11	444,673	1,159,909	1,544,967	1,489,288	1,489,000	1,567,200	329,091	407,291	0.335	0.352
6/30/11-12	467,753	1,216,646	1,787,834	1,698,583	1,698,000	1,788,000	481,354	571,354	0.363	0.382
6/30/12-13	495,398	813,871	1,476,574	1,506,207	1,476,000	1,532,750	662,129	718,879	0.298	0.309
6/30/13-14	518,391	692,844	1,266,831	1,581,324	1,267,000	1,605,750	574,156	912,906	0.244	0.310
6/30/14-15	539,631	510,835	2,491,626	2,055,726	2,056,000	2,491,000	1,545,165	1,980,165	0.381	0.462
Total	10,262,257	42,217,357	48,058,925	45,452,837	47,892,855	51,292,871	5,675,498	9,075,513		
Tot 6/30/84-15	10,262,257	39,459,830	47,606,633	45,452,837	44,707,932	47,970,038	5,248,102	8,510,208	0.436	0.467

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 5, Exhibit 1, Page 1 + Section 5, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		1,455,812			1,455,812	1,455,812	0	0		
6/30/82-83		327,566	328,741		327,672	335,649	106	8,083		
6/30/83-84		1,494,800	1,500,000		1,523,932	1,553,573	29,132	58,773		
6/30/84-85	116,303	1,015,470	1,019,282	1,020,703	1,033,339	1,052,834	17,869	37,364	0.888	0.905
6/30/85-86	123,981	2,733,296	2,743,832	2,746,224	2,744,432	2,749,662	11,136	16,367	2.214	2.218
6/30/86-87	139,388	3,777,375	3,790,976	3,790,934	3,791,000	3,845,619	13,625	68,244	2.720	2.759
6/30/87-88	159,499	3,373,806	3,651,560	3,387,631	3,388,000	3,519,917	14,194	146,111	2.124	2.207
6/30/88-89	180,644	3,112,432	3,127,259	3,132,853	3,167,349	3,253,390	54,917	140,958	1.753	1.801
6/30/89-90	142,494	3,797,545	3,816,117	3,823,327	3,865,186	3,970,803	67,641	173,258	2.713	2.787
6/30/90-91	143,694	1,403,520	1,409,586	1,409,545	1,427,065	1,464,645	23,545	61,125	0.993	1.019
6/30/91-92	155,170	2,187,492	2,201,813	2,201,593	2,221,204	2,276,791	33,712	89,299	1.431	1.467
6/30/92-93	163,283	1,033,363	1,043,166	1,043,016	1,048,102	1,073,175	14,739	39,812	0.642	0.657
6/30/93-94	177,184	2,554,236	2,594,449	2,593,143	2,593,000	2,595,000	38,764	40,764	1.463	1.465
6/30/94-95	188,391	939,312	950,966	950,940	951,000	951,000	11,688	11,688	0.505	0.505
6/30/95-96	201,751	874,675	888,493	888,580	886,424	902,003	11,749	27,328	0.439	0.447
6/30/96-97	231,872	619,155	626,852	627,816	628,838	641,246	9,683	22,091	0.271	0.277
6/30/97-98	232,237	1,028,235	1,057,190	1,056,630	1,042,642	1,063,276	14,406	35,041	0.449	0.458
6/30/98-99	232,075	940,822	961,346	961,639	956,233	968,865	15,410	28,042	0.412	0.417
6/30/99-00	211,819	872,750	904,874	903,936	889,335	903,087	16,585	30,337	0.420	0.426
6/30/00-01	215,099	943,388	974,436	973,869	961,733	976,492	18,345	33,104	0.447	0.454
6/30/01-02	227,797	561,413	582,504	583,370	571,543	582,837	10,130	21,424	0.251	0.256
6/30/02-03	242,008	1,187,905	1,255,835	1,252,503	1,253,000	1,260,380	65,095	72,475	0.518	0.521
6/30/03-04	276,758	1,259,376	1,329,975	1,328,239	1,328,000	1,345,600	68,624	86,224	0.480	0.486
6/30/04-05	260,378	366,962	391,489	423,323	391,000	432,050	24,038	65,088	0.150	0.166
6/30/05-06	317,741	1,147,427	1,237,951	1,233,606	1,233,000	1,258,700	85,573	111,273	0.388	0.396
6/30/06-07	325,922	605,124	665,849	709,834	666,000	723,250	60,876	118,126	0.204	0.222
6/30/07-08	354,130	1,687,232	1,875,620	1,840,228	1,840,000	1,903,600	152,768	216,368	0.520	0.538
6/30/08-09	362,309	824,022	946,183	982,804	942,000	1,006,500	117,978	182,478	0.260	0.278
6/30/09-10	383,298	783,717	923,050	976,675	923,000	993,700	139,283	209,983	0.241	0.259
6/30/10-11	394,924	967,947	1,188,873	1,204,792	1,189,000	1,256,050	221,053	288,103	0.301	0.318
6/30/11-12	381,943	1,001,990	1,352,883	1,358,008	1,348,000	1,420,920	346,010	418,930	0.353	0.372
6/30/12-13	384,763	571,830	889,880	1,014,697	890,000	1,032,050	318,170	460,220	0.231	0.268
6/30/13-14	364,582	468,051	967,655	1,064,481	968,000	1,081,150	499,949	613,099	0.266	0.297
6/30/14-15	370,543	118,404	501,307	992,256	502,000	992,000	383,596	873,596	0.135	0.268
Total	7,661,981	46,036,449	47,699,993	46,477,195	48,946,839	50,841,626	2,910,390	4,805,177		
Tot 6/30/84-15	7,661,981	42,758,271	45,871,252	46,477,195	45,639,423	47,496,592	2,881,152	4,738,321	0.596	0.620

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 6, Exhibit 1, Page 1 + Section 6, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		3,358,281			3,411,152	3,528,695	52,871	170,414		
6/30/82-83		796,317	797,623		811,448	826,578	15,131	30,261		
6/30/83-84		945,504	946,967		963,997	982,491	18,493	36,987		
6/30/84-85	357,749	1,604,929	1,607,487	1,608,782	1,635,334	1,665,739	30,405	60,810	0.457	0.466
6/30/85-86	380,112	2,253,254	2,257,066	2,258,366	2,292,554	2,331,854	39,300	78,600	0.603	0.613
6/30/86-87	423,770	2,949,667	3,213,924	2,954,901	2,955,246	3,215,437	5,579	265,769	0.697	0.759
6/30/87-88	480,405	5,010,056	5,834,295	5,022,457	5,098,408	5,445,970	88,352	435,914	1.061	1.134
6/30/88-89	495,261	1,941,224	1,952,058	1,958,130	1,972,514	2,017,971	31,290	76,746	0.398	0.407
6/30/89-90	502,691	4,397,880	4,763,185	4,426,674	4,476,432	4,591,945	78,552	194,065	0.890	0.913
6/30/90-91	482,143	1,866,079	1,878,585	1,878,535	1,879,000	1,879,000	12,921	12,921	0.390	0.390
6/30/91-92	492,539	2,183,228	2,320,776	2,206,931	2,207,000	2,321,000	23,772	137,772	0.448	0.471
6/30/92-93	524,541	1,653,844	1,673,408	1,673,254	1,679,326	1,716,282	25,482	62,438	0.320	0.327
6/30/93-94	584,853	1,755,216	1,778,534	1,778,327	1,778,000	1,817,851	22,784	62,636	0.304	0.311
6/30/94-95	587,701	2,190,236	2,226,813	2,226,350	2,226,000	2,227,000	35,764	36,764	0.379	0.379
6/30/95-96	614,868	1,850,889	1,889,291	1,889,008	1,879,180	1,920,160	28,290	69,271	0.306	0.312
6/30/96-97	700,686	1,962,930	2,017,172	2,016,735	2,021,020	2,085,690	58,090	122,760	0.288	0.298
6/30/97-98	684,415	2,556,994	2,666,988	2,663,754	2,663,000	2,672,480	106,006	115,486	0.389	0.390
6/30/98-99	707,796	1,744,881	1,846,072	1,845,421	1,845,000	1,865,770	100,119	120,889	0.261	0.264
6/30/99-00	760,477	1,668,934	1,791,187	1,793,333	1,791,000	1,794,000	122,066	125,066	0.236	0.236
6/30/00-01	811,600	2,178,651	2,397,784	2,395,082	2,394,000	2,399,000	215,349	220,349	0.295	0.296
6/30/01-02	835,038	2,890,395	3,260,933	3,249,097	3,248,000	3,262,000	357,605	371,605	0.389	0.391
6/30/02-03	825,340	1,852,512	2,123,707	2,124,730	2,124,000	2,162,000	271,488	309,488	0.257	0.262
6/30/03-04	849,216	2,181,200	2,528,778	2,528,058	2,528,000	2,617,000	346,800	435,800	0.298	0.308
6/30/04-05	992,508	1,681,969	1,975,666	2,120,643	1,976,000	2,120,000	294,031	438,031	0.199	0.214
6/30/05-06	962,878	2,137,309	2,580,783	2,617,657	2,581,000	2,705,000	443,691	567,691	0.268	0.281
6/30/06-07	1,032,930	1,619,655	1,985,089	2,208,385	1,985,000	2,209,000	365,345	589,345	0.192	0.214
6/30/07-08	1,063,597	3,224,706	4,044,849	3,951,969	3,931,460	4,034,730	706,754	810,024	0.370	0.379
6/30/08-09	1,073,805	2,580,398	3,400,993	3,403,320	3,255,580	3,401,850	675,182	821,452	0.303	0.317
6/30/09-10	1,084,749	3,653,901	5,189,502	4,785,270	4,580,970	5,178,090	927,069	1,524,189	0.422	0.477
6/30/10-11	1,134,164	3,117,885	4,661,815	4,507,675	4,319,620	4,649,440	1,201,735	1,531,555	0.381	0.410
6/30/11-12	1,202,674	2,684,954	4,552,029	4,343,002	4,131,500	4,568,970	1,446,546	1,884,016	0.344	0.380
6/30/12-13	1,284,741	1,843,866	3,716,068	4,091,799	3,557,380	4,081,920	1,713,514	2,238,054	0.277	0.318
6/30/13-14	1,346,902	1,870,071	5,152,476	5,076,019	4,841,010	5,160,870	2,970,939	3,290,799	0.359	0.383
6/30/14-15	1,404,093	939,136	5,719,195	5,232,832	5,161,100	5,720,000	4,221,964	4,780,864	0.368	0.407
Total	24,684,241	77,146,952	94,751,100	90,836,495	94,200,232	99,175,783	17,053,280	22,028,832		
Tot 6/30/84-15	24,684,241	72,046,850	93,006,511	90,836,495	89,013,634	93,838,019	16,966,784	21,791,169	0.361	0.380

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 7, Exhibit 1, Page 1 + Section 7, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Total Indemnity (Including Lump Sums) + Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		47,372,066			53,498,875	58,150,069	6,126,809	10,778,002		
6/30/82-83		6,122,919	6,333,867		6,183,638	6,629,883	60,719	506,964		
6/30/83-84		8,795,033	9,149,965		8,931,416	9,575,438	136,383	780,406		
6/30/84-85	732,729	17,833,685	18,714,278	18,423,870	18,405,821	18,725,596	572,136	891,911	2.512	2.556
6/30/85-86	787,208	21,686,702	22,892,332	22,531,985	22,522,390	22,911,220	835,688	1,224,518	2.861	2.910
6/30/86-87	902,483	22,114,652	23,526,118	23,153,718	23,145,415	23,544,170	1,030,763	1,429,518	2.565	2.609
6/30/87-88	1,366,586	30,987,577	33,279,473	32,944,833	32,925,785	34,066,460	1,938,208	3,078,883	2.409	2.493
6/30/88-89	1,486,478	29,131,982	31,525,807	30,969,178	30,966,000	32,263,660	1,834,018	3,131,678	2.083	2.170
6/30/89-90	1,494,463	27,980,057	30,622,323	30,312,104	30,307,000	31,333,790	2,326,943	3,353,733	2.028	2.097
6/30/90-91	1,405,560	24,551,653	27,198,571	26,994,081	26,994,000	27,824,170	2,442,347	3,272,517	1.921	1.980
6/30/91-92	1,364,510	15,600,138	17,480,021	17,341,997	17,342,000	18,237,060	1,741,862	2,636,922	1.271	1.337
6/30/92-93	1,347,359	12,138,967	14,605,251	13,732,134	13,732,000	15,231,100	1,593,033	3,092,133	1.019	1.130
6/30/93-94	1,424,410	13,484,716	15,342,240	15,298,092	15,298,000	15,986,680	1,813,284	2,501,964	1.074	1.122
6/30/94-95	1,497,829	12,003,446	13,812,991	13,768,488	13,769,000	14,397,440	1,765,554	2,393,994	0.919	0.961
6/30/95-96	1,582,635	11,905,256	14,033,907	13,972,899	13,973,000	14,646,220	2,067,744	2,740,964	0.883	0.925
6/30/96-97	1,979,748	12,862,694	15,266,943	15,212,882	15,213,000	15,911,670	2,350,306	3,048,976	0.768	0.804
6/30/97-98	1,917,994	10,775,512	12,847,688	12,826,187	12,821,000	13,407,880	2,045,488	2,632,368	0.668	0.699
6/30/98-99	2,081,524	11,575,315	14,033,153	14,007,282	14,004,000	14,626,100	2,428,685	3,050,785	0.673	0.703
6/30/99-00	2,207,243	13,407,199	16,649,382	16,583,371	16,582,000	17,349,660	3,174,801	3,942,461	0.751	0.786
6/30/00-01	2,201,008	12,686,086	16,095,940	16,048,273	16,044,000	16,773,000	3,357,914	4,086,914	0.729	0.762
6/30/01-02	2,292,592	13,025,577	16,801,404	16,771,247	16,761,000	17,527,500	3,735,423	4,501,923	0.731	0.765
6/30/02-03	2,260,534	13,024,234	17,159,355	17,129,536	17,122,000	17,879,380	4,097,766	4,855,146	0.757	0.791
6/30/03-04	2,255,942	12,011,871	16,137,066	16,149,566	16,137,000	16,808,930	4,125,129	4,797,059	0.715	0.745
6/30/04-05	2,309,083	14,802,607	20,112,392	19,716,864	19,506,000	20,220,000	4,703,393	5,417,393	0.845	0.876
6/30/05-06	2,480,693	13,191,037	18,418,343	19,031,047	18,190,000	19,120,000	4,998,963	5,928,963	0.733	0.771
6/30/06-07	2,612,577	13,725,374	19,540,883	20,488,399	18,954,000	20,865,000	5,228,626	7,139,626	0.725	0.799
6/30/07-08	2,783,717	16,352,233	24,430,730	24,512,908	23,169,000	24,660,000	6,816,767	8,307,767	0.832	0.886
6/30/08-09	2,750,907	16,856,192	26,401,848	26,013,227	25,550,470	26,564,668	8,694,278	9,708,476	0.929	0.966
6/30/09-10	2,806,048	16,187,683	26,673,045	26,908,128	25,386,600	27,047,951	9,198,917	10,860,268	0.905	0.964
6/30/10-11	2,942,638	17,795,761	31,794,028	30,984,718	30,424,330	31,954,051	12,628,570	14,158,291	1.034	1.086
6/30/11-12	3,006,849	16,770,441	34,157,328	32,908,189	32,313,270	34,329,228	15,542,829	17,558,787	1.075	1.142
6/30/12-13	3,138,905	12,263,129	29,886,508	31,540,242	28,847,300	31,722,768	16,584,171	19,459,639	0.919	1.011
6/30/13-14	3,311,947	10,717,873	36,734,928	36,701,027	34,894,400	37,393,268	24,176,527	26,675,395	1.054	1.129
6/30/14-15	3,511,622	5,349,032	39,752,079	40,626,330	37,403,250	41,277,828	32,054,218	35,928,796	1.065	1.175
Total	64,243,819	555,088,699	711,410,187	693,602,802	747,316,960	788,961,838	192,228,261	233,873,139		
Tot 6/30/84-15	64,243,819	492,798,681	695,926,355	693,602,802	678,703,031	714,606,448	185,904,351	221,807,768	1.056	1.112

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) - (9) = Sum of Section 8, Exhibit 1, Page 1 + Section 8, Exhibit 2, Page 1

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Total Indemnity (Including Lump Sums) + Medical

Calculation of Implied Development Factors

(1)	(2)	(3)	(4)
Accident Year	Pd Loss Including Lump Sum	Implied Cumulative LDF	Selected Ult Loss Including Lump Sum
All Prior Yrs	102,449,641	1.203	123,237,654
6/30/82-83	18,168,864	1.045	18,991,011
6/30/83-84	26,137,792	1.081	28,256,321
6/30/84-85	39,255,562	1.049	41,196,427
6/30/85-86	52,078,664	1.030	53,615,795
6/30/86-87	58,245,019	1.038	60,436,073
6/30/87-88	84,490,947	1.059	89,496,486
6/30/88-89	83,205,827	1.059	88,147,058
6/30/89-90	80,331,803	1.060	85,129,078
6/30/90-91	66,492,466	1.071	71,237,923
6/30/91-92	45,073,867	1.075	48,465,762
6/30/92-93	30,705,027	1.102	33,833,434
6/30/93-94	33,397,480	1.095	36,567,261
6/30/94-95	30,356,988	1.110	33,681,530
6/30/95-96	29,026,255	1.127	32,721,278
6/30/96-97	29,418,819	1.134	33,370,843
6/30/97-98	32,084,842	1.122	35,990,437
6/30/98-99	30,109,004	1.144	34,431,140
6/30/99-00	33,848,197	1.162	39,342,693
6/30/00-01	39,759,353	1.171	46,543,325
6/30/01-02	34,905,533	1.196	41,734,831
6/30/02-03	34,587,919	1.220	42,192,261
6/30/03-04	34,364,191	1.229	42,228,720
6/30/04-05	35,952,531	1.229	44,201,500
6/30/05-06	31,557,100	1.286	40,579,240
6/30/06-07	29,921,378	1.324	39,604,175
6/30/07-08	33,145,468	1.360	45,066,170
6/30/08-09	32,943,005	1.432	47,185,109
6/30/09-10	30,815,858	1.517	46,739,456
6/30/10-11	33,456,585	1.614	53,999,431
6/30/11-12	30,180,360	1.832	55,280,544
6/30/12-13	23,311,077	2.247	52,371,209
6/30/13-14	20,476,571	3.003	61,490,724
6/30/14-15	10,968,063	6.360	69,760,964
Total	1,361,222,058		1,717,125,863

NOTES:

(2) From Summary Exhibit 8, Page 1, Column (3)

(3) = (4) / (2)

(4) From Summary Exhibit 8, Page 1, Av erage of Columns (6) and (7)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Allocation Methodology

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	5 Year Average	Initial Loss Costs		Expected Losses				5 Year Average	Credibility Weighted	Distribution of Total	CURRENT Reserve Estimate		PRIOR Reserve Estimate	
Cluster	Payroll	Indemnity	Medical	Indemnity	Medical	Total	Credibility	Ult Loss	Ult Loss	Losses	Low End	High End	Low End	High End
Berkshire Community College	13,478,306	0.22	0.10	29,652	13,478	43,131	21.2%	59,249	46,553	1.1%	186,178	240,498	190,535	231,919
Bridgewater State College	82,939,514	0.22	0.10	182,467	82,940	265,406	80.6%	327,786	315,667	7.4%	1,262,438	1,630,773	1,222,059	1,487,487
Bristol Community College	37,845,841	0.22	0.10	83,261	37,846	121,107	65.4%	28,517	60,529	1.4%	242,073	312,702	387,192	471,289
Bunker Hill Community College	44,830,217	0.22	0.10	98,626	44,830	143,457	47.3%	112,999	129,058	3.0%	516,139	666,731	426,451	519,075
Cape Cod Community College	18,274,009	0.22	0.10	40,203	18,274	58,477	26.8%	111,358	72,631	1.7%	290,470	375,219	290,552	353,659
Fitchburg State College	38,219,118	0.22	0.10	84,082	38,219	122,301	65.6%	158,821	146,276	3.4%	584,996	755,678	697,874	849,451
Framingham State College	39,997,050	0.22	0.10	87,994	39,997	127,991	66.7%	108,722	115,145	2.7%	460,497	594,854	572,494	696,838
Greenfield Community College	14,372,499	0.22	0.10	31,619	14,372	45,992	22.3%	21,484	40,520	1.0%	162,051	209,332	173,496	211,179
Holyoke Community College	32,461,899	0.22	0.10	71,416	32,462	103,878	39.4%	37,628	77,798	1.8%	311,136	401,914	303,770	369,748
Mass Bay Community College	22,996,839	0.22	0.10	50,593	22,997	73,590	53.5%	10,471	39,831	0.9%	159,295	205,771	174,556	212,470
Mass College of Art	29,503,334	0.22	0.10	64,907	29,503	94,411	37.1%	121,146	104,332	2.4%	417,253	538,993	405,450	493,513
Mass Maritime Academy	20,000,712	0.22	0.10	44,002	20,001	64,002	28.6%	63,900	63,973	1.5%	255,845	330,492	330,956	402,838
Massachusetts College of Liberal Arts	20,759,622	0.22	0.10	45,671	20,760	66,431	29.3%	30,937	56,018	1.3%	224,030	289,394	262,941	320,051
Massasoit Community College	33,672,562	0.22	0.10	74,080	33,673	107,752	40.2%	172,917	133,976	3.1%	535,809	692,139	637,901	776,451
Middlesex Community College	43,015,342	0.22	0.10	94,634	43,015	137,649	68.3%	118,019	124,249	2.9%	496,906	641,886	432,985	527,028
Mt Wachusett Community College	26,935,201	0.22	0.10	59,257	26,935	86,193	35.0%	59,143	76,722	1.8%	306,834	396,358	433,917	528,163
North Essex Community College	30,690,264	0.22	0.10	67,519	30,690	98,209	60.5%	14,179	47,333	1.1%	189,298	244,529	215,948	262,852
North Shore Community College	34,451,045	0.22	0.10	75,792	34,451	110,243	63.3%	48,991	71,489	1.7%	285,904	369,320	355,533	432,754
Quinsigamond Community College	38,741,421	0.22	0.10	85,231	38,741	123,973	43.7%	349,302	222,344	5.2%	889,214	1,148,656	589,420	717,441
Roxbury Community College	16,026,839	0.22	0.10	35,259	16,027	51,286	24.3%	108,852	65,259	1.5%	260,989	337,136	286,627	348,882
Salem State College	77,521,158	0.22	0.10	170,547	77,521	248,068	79.5%	306,183	294,264	6.9%	1,176,844	1,520,207	1,018,694	1,239,952
Springfield Tech Community College	32,354,687	0.22	0.10	71,180	32,355	103,535	61.8%	184,407	153,513	3.6%	613,942	793,068	892,670	1,086,556
UMass (Boston)	175,310,969	0.22	0.10	385,684	175,311	560,995	89.8%	501,722	507,791	11.9%	2,030,798	2,623,314	1,650,000	2,008,376
UMass (Dartmouth)	104,900,703	0.22	0.10	230,782	104,901	335,682	84.0%	428,388	413,543	9.7%	1,653,874	2,136,417	2,084,313	2,537,020
University of Lowell	156,132,899	0.22	0.10	343,492	156,133	499,625	88.6%	475,762	478,471	11.2%	1,913,539	2,471,843	1,795,938	2,186,011
Westfield State College	47,689,337	0.22	0.10	104,917	47,689	152,606	70.5%	258,957	227,534	5.3%	909,969	1,175,467	891,315	1,084,907
Worcester State College	41,393,414	0.22	0.10	91,066	41,393	132,459	67.4%	201,890	179,272	4.2%	716,957	926,140	810,461	986,491
Total	1,274,514,802			2,803,933	1,274,515			4,421,728	4,264,092		17,053,280	22,028,832	17,534,049	21,342,401

NOTES:

(1) Provided by Commonwealth of Massachusetts; From Summary Exhibit 10, Page 3

(2) From Section 7, Exhibit 1, Page 4

(3) From Section 7, Exhibit 2, Page 4

(4) = (1) * (2) / 100

(5) = (1) * (3) / 100

(6) = (4) + (5)

(7) = P / (P+K); where P = Column (1) and K = 20M (if CV < 1) and K = 50M (if CV > 1). CV is the Coefficient of Variation, as calculated on Summary Exhibit 10, Page 2.

(8) = The Average of Columns (2) - (6) plus The Average of Columns (8) - (12) on Summary Exhibit 10 Page 4.

(9) = (7) * (8) + [1.00 - (7)] * (6)

(10) = (9) / Total (9)

(11) = The Total from Summary Exhibit 8, Page7, Column (8), allocated according to Column (10) of this exhibit.

(12) = The Total from Summary Exhibit 8, Page7, Column (9), allocated according to Column (10) of this exhibit.

(13), (14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Estimated Loss Costs (Indemnity and Medical Combined)

	(1)	(2)	(3)	(4)	(5)	(6)
Cluster	2015	2014	2013	2012	2011	Coefficient of Variation
Berkshire Community College	0.109	0.015	0.022	1.544	0.593	1.430
Bridgewater State College	0.541	0.444	0.179	0.273	0.519	0.405
Bristol Community College	0.103	0.081	0.044	0.031	0.117	0.496
Bunker Hill Community College	0.640	0.036	0.054	0.135	0.381	1.036
Cape Cod Community College	0.244	0.829	0.214	0.183	1.628	1.007
Fitchburg State College	0.302	0.523	0.347	0.134	0.804	0.604
Framingham State College	0.140	0.027	0.616	0.152	0.480	0.888
Greenfield Community College	0.298	0.332	0.018	0.065	0.015	1.075
Holyoke Community College	0.100	0.133	0.029	0.007	0.320	1.053
Mass Bay Community College	0.036	0.047	0.020	0.099	0.026	0.693
Mass College of Art	0.115	0.087	0.249	0.189	1.552	1.428
Mass Maritime Academy	0.368	0.043	0.876	0.155	0.126	1.072
Massachusetts College of Liberal Arts	0.530	0.124	0.014	0.024	0.004	1.604
Massasoit Community College	0.105	0.053	0.194	1.551	0.833	1.176
Middlesex Community College	0.083	0.370	0.164	0.585	0.197	0.716
Mt Wachusett Community College	0.088	0.077	0.067	0.113	0.820	1.411
North Essex Community College	0.001	0.038	0.093	0.077	0.025	0.805
North Shore Community College	0.143	0.338	0.088	0.117	0.009	0.880
Quinsigamond Community College	2.045	0.423	1.527	0.211	0.066	1.029
Roxbury Community College	0.035	0.440	2.802	0.000	0.017	1.840
Salem State College	0.324	0.211	0.240	0.395	0.873	0.660
Springfield Tech Community College	0.286	0.852	0.154	0.619	0.977	0.612
UMass (Boston)	0.389	0.348	0.134	0.326	0.214	0.372
UMass (Dartmouth)	0.288	0.484	0.304	0.786	0.177	0.585
University of Lowell	0.314	0.421	0.096	0.299	0.402	0.421
Westfield State College	0.628	0.447	0.097	1.186	0.370	0.744
Worcester State College	0.392	0.964	0.785	0.061	0.139	0.846

NOTES:

(1) - (5) - Sum of Indemnity + Medical Losses from Summary Exhibit 10, Page 4 divided by Payroll from Summary Exhibit 10, Page 3.

(6) = Std Deviation / Mean of Columns (1) - (5) Used to calculate "ballast factor" (K) on Summary Exhibit 10, Page 1, Column (7).

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Payroll

Cluster	2015	2014	2013	2012	2011	2010	2009	2008
Berkshire Community College	14,062,716	14,035,091	13,566,121	12,961,874	12,765,728	12,608,194	12,477,038	12,992,058
Bridgewater State College	94,066,876	88,447,650	81,947,985	76,987,472	73,247,587	69,620,026	68,323,197	67,652,873
Bristol Community College	42,552,559	40,293,728	37,759,083	35,468,250	33,155,586	31,455,847	30,708,796	29,632,813
Bunker Hill Community College	50,270,901	49,127,405	45,382,743	41,205,115	38,164,922	35,956,105	34,871,020	34,997,441
Cape Cod Community College	19,623,257	19,227,444	17,989,520	17,381,338	17,148,486	17,159,865	18,672,490	16,912,998
Fitchburg State College	42,608,839	40,308,199	37,998,115	35,976,187	34,204,248	33,842,950	33,451,439	33,452,473
Framingham State College	45,795,557	42,758,657	40,576,899	37,321,481	33,532,654	32,772,606	33,174,219	33,380,388
Greenfield Community College	14,856,970	14,819,125	14,413,590	14,351,088	13,421,721	13,089,560	13,957,686	14,137,583
Holyoke Community College	34,474,656	33,322,195	32,555,311	31,361,111	30,596,223	30,303,801	30,190,866	29,693,264
Mass Bay Community College	23,744,806	24,272,772	23,421,254	22,339,575	21,205,789	20,707,657	20,503,198	19,674,504
Mass College of Art	32,310,647	30,582,891	29,531,509	28,328,979	26,762,645	25,447,450	24,847,648	24,308,780
Mass Maritime Academy	22,757,480	21,228,253	20,061,575	18,578,003	17,378,246	16,347,571	16,574,691	17,178,285
Massachusetts College of Liberal Arts	22,519,342	21,509,329	21,001,880	20,035,251	18,732,309	18,675,839	18,685,437	18,454,686
Massasoit Community College	37,682,345	35,408,559	33,406,357	31,525,419	30,340,130	28,826,366	31,145,834	29,299,579
Middlesex Community College	47,127,301	45,414,002	43,177,441	40,195,957	39,162,007	38,762,758	44,276,269	46,721,418
Mt Wachusett Community College	28,917,680	28,439,714	26,759,891	25,995,624	24,563,097	22,854,199	22,358,426	22,613,805
North Essex Community College	33,365,552	32,472,002	31,238,577	28,927,197	27,447,993	26,978,801	27,092,760	26,683,224
North Shore Community College	35,917,163	36,047,728	34,642,152	33,319,965	32,328,218	31,394,592	31,025,948	30,519,208
Quinsigamond Community College	42,878,790	41,344,370	39,013,977	36,409,993	34,059,973	32,268,537	30,912,984	29,278,660
Roxbury Community College	15,813,967	16,430,288	16,551,154	15,935,833	15,402,953	15,082,812	14,798,159	14,611,682
Salem State College	85,785,305	81,595,315	77,905,236	72,888,033	69,431,901	65,990,811	66,268,106	65,262,785
Springfield Tech Community College	35,199,500	33,888,963	31,913,074	30,853,455	29,918,442	29,428,123	30,327,286	30,213,259
UMass (Boston)	195,408,787	186,646,267	178,091,389	163,491,368	152,917,036	142,970,614	134,516,405	132,813,241
UMass (Dartmouth)	107,919,804	107,144,202	108,031,901	102,971,786	98,435,825	92,935,564	90,902,061	91,166,561
University of Lowell	178,925,071	167,623,882	158,366,477	144,359,303	131,389,765	122,995,978	119,667,601	121,369,367
Westfield State College	52,770,682	50,355,432	47,718,557	45,096,498	42,505,518	41,760,360	39,918,536	36,827,031
Worcester State College	46,736,625	44,158,114	41,719,450	38,408,159	35,944,721	34,512,511	34,156,985	33,749,525
UMass (Amherst)	539,631,010	518,390,972	495,397,824	467,753,393	444,672,991	433,205,775	420,565,863	425,998,100
UMass (Medical Center)	370,542,936	364,582,039	384,762,790	381,942,827	394,924,203	383,297,750	362,308,924	354,130,286
Total	2,314,267,125	2,229,874,589	2,164,901,832	2,052,370,532	1,973,760,916	1,901,253,022	1,856,679,871	1,843,725,875

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Estimated Ultimate Losses

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
			Indemnity					Medical		
Cluster	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Berkshire Community College	50,269	171,340	0	0	2,077	25,448	28,769	2,952	2,150	13,238
Bridgewater State College	324,803	162,406	74,938	206,753	307,128	55,557	48,103	71,944	185,904	201,397
Bristol Community College	51	345	3,333	11,235	26,247	38,767	10,501	13,140	21,461	17,504
Bunker Hill Community College	89,112	33,585	11,205	9,422	232,500	56,296	22,205	13,242	8,118	89,311
Cape Cod Community College	243,696	18,137	21,560	117,253	20,773	35,443	13,750	16,918	42,138	27,119
Fitchburg State College	199,279	19,486	94,362	167,643	66,052	75,723	28,600	37,349	43,147	62,465
Framingham State College	127,184	24,780	214,298	2,416	21,991	33,812	32,061	35,830	9,041	42,199
Greenfield Community College	0	5,302	0	15,323	42,877	1,993	4,044	2,541	33,872	1,468
Holyoke Community College	61,478	1,393	0	20,971	13,425	36,342	838	9,433	23,215	21,044
Mass Bay Community College	0	17,374	3,502	10,754	0	5,497	4,827	1,271	595	8,536
Mass College of Art	354,330	26,271	33,133	16,372	29,432	60,934	27,163	40,262	10,135	7,697
Mass Maritime Academy	13,813	12,580	165,198	0	63,722	8,153	16,279	10,586	9,066	20,101
Massachusetts College of Liberal Arts	0	0	0	12,117	86,969	815	4,875	2,943	14,631	32,337
Massasoit Community College	184,025	393,851	41,659	10,957	5,421	68,810	95,180	22,998	7,692	33,990
Middlesex Community College	67,663	146,400	19,046	102,545	24,237	9,471	88,775	51,726	65,404	14,827
Mt Wachusett Community College	182,025	8,883	7,437	0	0	19,280	20,440	10,408	21,802	25,438
North Essex Community College	2,010	4,195	18,650	3,875	0	4,923	18,164	10,335	8,388	354
North Shore Community College	0	4,518	20,535	106,330	44,943	2,846	34,367	9,794	15,364	6,255
Quinsigamond Community College	12,233	50,931	514,454	127,995	733,742	10,326	25,884	81,136	46,831	142,981
Roxbury Community College	6	0	437,634	59,605	0	2,577	0	26,174	12,698	5,565
Salem State College	366,844	240,620	110,923	89,913	182,866	239,292	47,542	76,027	81,966	94,922
Springfield Tech Community College	247,146	144,918	29,682	240,009	88,031	45,094	46,089	19,490	48,824	12,752
UMass (Boston)	232,426	481,580	123,536	540,057	509,340	95,418	50,894	115,516	109,589	250,254
UMass (Dartmouth)	88,310	668,135	235,209	419,170	222,240	85,719	141,683	92,753	99,835	88,886
University of Lowell	460,458	356,083	105,914	478,136	411,199	67,967	75,527	45,839	226,870	150,816
Westfield State College	76,698	362,079	18,014	159,760	208,519	80,429	172,680	28,451	65,154	122,999
Worcester State College	10,583	7,481	270,230	348,230	152,925	39,238	15,874	57,069	77,627	30,194
Total	3,394,440	3,362,673	2,574,453	3,276,842	3,496,655	1,206,171	1,075,115	906,127	1,291,516	1,524,648
Age to Ultimate LDF's	1.656	1.824	2.180	3.064	6.811	1.222	1.278	1.367	1.613	3.581

NOTES:

(1) - (10) - Cumualtive Paid Losses from Summary Exhibit 10, Page 5 multiplied by Age to Ultimate LDF's at the bottom of this exhibit.

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Cumulative Paid Losses as of 6/30/15

	Indemnity					Medical				
Cluster	2011	2012	2013	2014	2015	2011	2012	2013	2014	2015
Berkshire Community College	30,352	93,933	0	0	305	20,823	22,516	2,159	1,333	3,696
Bridgewater State College	196,114	89,035	34,379	67,480	45,096	45,459	37,648	52,624	115,238	56,235
Bristol Community College	31	189	1,529	3,667	3,854	31,721	8,219	9,611	13,303	4,888
Bunker Hill Community College	53,805	18,412	5,141	3,075	34,138	46,064	17,379	9,686	5,032	24,938
Cape Cod Community College	147,143	9,943	9,891	38,269	3,050	29,001	10,762	12,375	26,121	7,572
Fitchburg State College	120,324	10,683	43,290	54,715	9,699	61,960	22,384	27,320	26,746	17,442
Framingham State College	76,793	13,585	98,313	788	3,229	27,666	25,092	26,208	5,604	11,783
Greenfield Community College	0	2,907	0	5,001	6,296	1,631	3,165	1,859	20,996	410
Holyoke Community College	37,120	764	0	6,845	1,971	29,737	656	6,900	14,391	5,876
Mass Bay Community College	0	9,525	1,607	3,510	0	4,498	3,778	930	369	2,383
Mass College of Art	213,943	14,403	15,200	5,344	4,322	49,859	21,260	29,450	6,283	2,149
Mass Maritime Academy	8,340	6,896	75,787	0	9,356	6,671	12,741	7,743	5,620	5,613
Massachusetts College of Liberal Arts	0	0	0	3,955	12,770	667	3,815	2,153	9,069	9,029
Massasoit Community College	111,113	215,920	19,112	3,576	796	56,304	74,494	16,822	4,768	9,491
Middlesex Community College	40,855	80,261	8,737	33,469	3,559	7,749	69,480	37,836	40,543	4,140
Mt Wachusett Community College	109,906	4,870	3,412	0	0	15,776	15,998	7,613	13,515	7,103
North Essex Community College	1,214	2,300	8,556	1,265	0	4,029	14,216	7,560	5,199	99
North Shore Community College	0	2,477	9,421	34,704	6,599	2,329	26,898	7,164	9,524	1,746
Quinsigamond Community College	7,386	27,922	236,014	41,775	107,736	8,449	20,258	59,347	29,030	39,924
Roxbury Community College	4	0	200,772	19,454	0	2,109	0	19,145	7,871	1,554
Salem State College	221,499	131,914	50,888	29,346	26,850	195,800	37,209	55,610	50,809	26,504
Springfield Tech Community College	149,226	79,448	13,617	78,334	12,926	36,898	36,072	14,256	30,265	3,561
UMass (Boston)	140,338	264,015	56,674	176,262	74,787	78,076	39,832	84,495	67,932	69,877
UMass (Dartmouth)	53,321	366,289	107,906	136,807	32,632	70,139	110,890	67,845	61,886	24,819
University of Lowell	278,022	195,214	48,590	156,053	60,377	55,614	59,112	33,529	140,632	42,112
Westfield State College	46,310	198,501	8,264	52,142	30,617	65,811	135,150	20,811	40,388	34,344
Worcester State College	6,390	4,101	123,972	113,654	22,454	32,107	12,424	41,744	48,119	8,431
Total	2,049,548	1,843,506	1,181,073	1,069,487	513,416	986,947	841,448	662,793	800,583	425,720

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Fiscal Year 2015 Paid Losses

	Indemnity								Medical							
Cluster	2008	2009	2010	2011	2012	2013	2014	2015	2008	2009	2010	2011	2012	2013	2014	2015
Berkshire Community College	0	0	0	0	28,893	0	0	305	0	0	0	0	1,373	69	292	3,696
Bridgewater State College	5,945	0	50,734	0	0	5,072	40,145	45,096	0	0	75	0	0	16,050	66,844	56,235
Bristol Community College	0	0	0	0	0	0	-524	3,854	0	0	0	0	420	1,890	392	4,888
Bunker Hill Community College	0	0	0	0	0	0	0	34,138	0	0	805	0	930	4	665	24,938
Cape Cod Community College	0	0	0	20,000	0	0	26,839	3,050	0	0	0	569	0	176	9,421	7,572
Fitchburg State College	22,020	18,959	19,343	0	0	0	41,255	9,699	3,840	2,190	1,100	0	0	4,195	14,823	17,442
Framingham State College	128,333	0	55,265	325	0	30,763	35	3,229	5,617	0	1,760	2,555	30	4,291	3,724	11,783
Greenfield Community College	0	0	0	0	0	0	0	6,296	0	215	981	0	0	0	4,175	410
Holyoke Community College	0	0	0	0	0	0	0	1,971	0	0	0	0	0	121	2,867	5,876
Mass Bay Community College	0	0	0	0	0	1,104	548	0	0	0	0	0	771	0	0	2,383
Mass College of Art	0	0	0	76,231	0	0	0	4,322	0	3,431	0	15,831	0	56	1,026	2,149
Mass Maritime Academy	0	56,204	0	0	0	0	0	9,356	0	9,727	0	0	0	11	773	5,613
Massachusetts College of Liberal Arts	0	0	35,640	0	0	0	0	12,770	0	0	530	0	0	0	3,095	9,029
Massasoit Community College	0	0	0	28,655	115,210	0	0	796	0	133	0	2,169	9,951	404	723	9,491
Middlesex Community College	0	0	0	12,787	29,702	0	20,367	3,559	0	0	0	200	3,985	10,661	37,328	4,140
Mt Wachusett Community College	0	0	40,000	0	0	0	0	0	0	0	0	0	0	194	8,202	7,103
North Essex Community College	0	0	0	0	0	0	1,265	0	0	0	0	0	0	0	3,146	99
North Shore Community College	0	0	0	0	0	0	16,494	6,599	0	0	0	0	4,606	-217	4,759	1,746
Quinsigamond Community College	0	0	0	0	0	108,338	13,546	107,736	0	0	0	0	94	12,624	13,252	39,924
Roxbury Community College	0	0	50,000	0	0	110,330	15,696	0	0	0	0	0	0	8,930	7,559	1,554
Salem State College	0	0	0	18,863	53,141	1,527	29,177	26,850	0	0	14,755	1,092	470	3,284	33,920	26,504
Springfield Tech Community College	0	63,237	41,589	0	21,251	173	41,625	12,926	240	54,685	3,463	27	4,019	503	13,742	3,561
UMass (Boston)	0	0	0	0	81,371	43,997	84,755	74,787	0	0	0	1,838	4,457	26,846	34,774	69,877
UMass (Dartmouth)	0	0	0	0	91,590	33,304	8,353	32,632	2,028	0	0	962	2,141	1,438	19,345	24,819
University of Lowell	0	0	13,753	0	68,185	21,724	92,103	60,377	0	595	3,599	2,703	1,854	3,842	86,377	42,112
Westfield State College	0	16,470	0	1,914	40,837	3,092	32,891	30,617	0	1,464	1,152	2,132	1,349	4,228	26,832	34,344
Worcester State College	33,468	0	33,606	0	0	38,784	51,642	22,454	0	0	5,541	0	689	5,531	21,999	8,431
Total	189,766	154,869	339,930	158,774	530,180	398,208	516,214	513,416	11,725	72,440	33,760	30,078	37,139	105,128	420,056	425,720

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

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Commonwealth of Massachusetts
Workers Compensation
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All Clusters Combined
Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		96,008,917			111,257,723	119,818,253	15,248,806	23,809,336		
6/30/82-83		16,927,052	17,674,574		17,429,230	18,042,778	502,178	1,115,726		
6/30/83-84		22,882,387	24,765,299		24,427,134	25,481,608	1,544,747	2,599,221		
6/30/84-85	1,823,085	36,028,724	39,064,261	36,969,239	37,002,774	38,847,574	974,050	2,818,851	2.030	2.131
6/30/85-86	1,952,445	47,116,353	49,269,085	48,576,925	48,195,471	48,964,953	1,079,118	1,848,600	2.468	2.508
6/30/86-87	2,220,820	52,486,042	55,447,933	54,401,670	53,788,350	55,387,529	1,302,307	2,901,487	2.422	2.494
6/30/87-88	2,885,583	74,604,054	82,035,545	78,056,941	77,997,510	80,860,217	3,393,456	6,256,163	2.703	2.802
6/30/88-89	3,098,180	71,195,960	75,981,153	74,805,184	74,876,829	76,873,799	3,680,868	5,677,838	2.417	2.481
6/30/89-90	3,079,763	67,748,583	72,547,117	71,941,286	71,495,887	72,909,707	3,747,304	5,161,124	2.321	2.367
6/30/90-91	2,914,364	54,608,786	60,438,268	58,673,413	57,844,859	60,172,440	3,236,074	5,563,655	1.985	2.065
6/30/91-92	2,880,434	34,360,288	37,554,597	37,070,696	36,753,670	38,113,219	2,393,382	3,752,932	1.276	1.323
6/30/92-93	2,887,238	22,842,613	25,985,678	25,104,410	24,872,376	26,498,476	2,029,763	3,655,863	0.861	0.918
6/30/93-94	3,056,850	25,246,133	27,888,826	27,832,720	27,703,000	28,473,851	2,456,867	3,227,718	0.906	0.931
6/30/94-95	3,158,808	23,483,655	26,292,302	26,226,843	26,137,720	26,793,520	2,654,065	3,309,865	0.827	0.848
6/30/95-96	3,301,791	22,463,165	25,536,883	25,458,415	25,390,985	26,130,791	2,927,820	3,667,626	0.769	0.791
6/30/96-97	3,902,868	22,270,197	25,562,359	25,498,116	25,292,858	26,077,936	3,022,660	3,807,738	0.648	0.668
6/30/97-98	3,776,138	25,612,701	29,298,398	29,207,964	28,574,047	29,365,406	2,961,346	3,752,705	0.757	0.778
6/30/98-99	4,017,530	23,402,779	27,229,769	27,158,614	26,673,704	27,495,705	3,270,925	4,092,925	0.664	0.684
6/30/99-00	4,221,786	26,343,217	31,232,799	31,100,726	30,521,970	31,513,187	4,178,752	5,169,969	0.723	0.746
6/30/00-01	4,310,725	30,618,608	36,560,477	36,374,203	35,794,488	36,787,272	5,175,879	6,168,664	0.830	0.853
6/30/01-02	4,438,755	27,575,580	33,642,625	33,509,443	32,755,325	34,086,377	5,179,745	6,510,797	0.738	0.768
6/30/02-03	4,423,888	26,595,116	32,886,595	32,774,989	32,282,753	33,604,000	5,687,637	7,008,884	0.730	0.760
6/30/03-04	4,482,207	25,968,195	32,462,553	32,378,387	31,736,521	33,102,320	5,768,326	7,134,125	0.708	0.739
6/30/04-05	4,639,517	25,930,667	33,236,212	32,340,683	31,812,000	32,993,000	5,881,333	7,062,333	0.686	0.711
6/30/05-06	4,938,165	22,635,397	29,611,401	30,066,335	29,464,000	30,299,000	6,828,603	7,663,603	0.597	0.614
6/30/06-07	5,183,126	20,446,770	27,479,646	28,985,018	27,341,100	28,888,450	6,894,330	8,441,680	0.528	0.557
6/30/07-08	5,508,425	24,137,305	33,898,612	34,604,267	32,901,350	34,639,200	8,764,045	10,501,895	0.597	0.629
6/30/08-09	5,447,676	23,574,424	34,900,424	35,253,973	34,421,170	36,004,668	10,846,746	12,430,244	0.632	0.661
6/30/09-10	5,525,579	22,445,853	35,110,733	36,141,045	34,037,050	36,912,951	11,591,197	14,467,098	0.616	0.668
6/30/10-11	5,712,303	24,318,875	41,298,679	41,072,390	40,231,630	42,557,651	15,912,755	18,238,776	0.704	0.745
6/30/11-12	5,880,714	21,793,267	42,520,824	42,485,230	41,261,270	44,482,148	19,468,003	22,688,881	0.702	0.756
6/30/12-13	6,162,621	16,143,746	38,179,282	41,878,442	37,844,800	42,368,768	21,701,054	26,225,022	0.614	0.688
6/30/13-14	6,442,136	13,971,657	46,703,540	48,776,554	45,537,250	50,064,268	31,565,593	36,092,611	0.707	0.777
6/30/14-15	6,758,892	7,233,041	51,699,759	54,263,797	49,757,250	56,391,828	42,524,209	49,158,787	0.736	0.834
Total	129,032,410	1,099,020,108	1,283,996,207	1,238,987,919	1,363,414,052	1,431,002,851	264,393,944	331,982,743		
Tot 6/30/84-15	129,032,410	963,201,752	1,241,556,334	1,238,987,919	1,210,299,966	1,267,660,212	247,098,214	304,458,460	0.938	0.982

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 1, Exhibit 1, Page 2, Column 3 and Section 1, Exhibit 1, Page 9, Column 8

(4) From Section 1, Exhibit 1, Page 2, Column 8

(5) From Section 1, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Implied Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		92,067,235							37	35		80
6/30/82-83		16,155,821	1.046	N/A	16,902,764	771,810	17,674,574		4	2	373,472	82
6/30/83-84		21,089,748	1.089	N/A	22,967,210	1,798,090	24,765,299		4	4	469,365	68
6/30/84-85	1,823,085	33,237,460	1.091	N/A	36,264,705	2,799,556	39,064,261	2.143	7	5	605,449	75
6/30/85-86	1,952,445	43,812,752	1.049	N/A	45,953,540	3,315,545	49,269,085	2.523	3	3	713,596	78
6/30/86-87	2,220,820	47,038,292	1.063	N/A	49,983,736	5,464,197	55,447,933	2.497	9	8	368,180	74
6/30/87-88	2,885,583	66,547,037	1.111	N/A	73,948,297	8,087,248	82,035,545	2.843	15	16	462,579	71
6/30/88-89	3,098,180	61,369,722	1.077	N/A	66,110,268	9,870,885	75,981,153	2.452	18	16	296,284	76
6/30/89-90	3,079,763	57,669,285	1.082	N/A	62,421,938	10,125,179	72,547,117	2.356	14	11	432,059	71
6/30/90-91	2,914,364	46,124,346	1.125	N/A	51,908,020	8,530,248	60,438,268	2.074	14	13	444,898	74
6/30/91-92	2,880,434	28,939,814	1.109	N/A	32,095,976	5,458,621	37,554,597	1.304	10	10	315,616	67
6/30/92-93	2,887,238	18,741,996	1.166	N/A	21,846,677	4,139,001	25,985,678	0.900	7	5	620,936	67
6/30/93-94	3,056,850	21,069,099	1.123	N/A	23,663,702	4,225,124	27,888,826	0.912	15	13	199,585	65
6/30/94-95	3,158,808	19,432,796	1.141	N/A	22,179,375	4,112,928	26,292,302	0.832	9	7	392,368	73
6/30/95-96	3,301,791	18,735,501	1.161	N/A	21,742,850	3,794,033	25,536,883	0.773	8	6	501,225	66
6/30/96-97	3,902,868	17,796,045	1.179	N/A	20,981,990	4,580,369	25,562,359	0.655	6	7	455,135	62
6/30/97-98	3,776,138	20,925,824	1.169	N/A	24,464,435	4,833,963	29,298,398	0.776	8	6	589,768	65
6/30/98-99	4,017,530	19,315,841	1.191	N/A	22,999,850	4,229,919	27,229,769	0.678	7	6	614,001	59
6/30/99-00	4,221,786	22,435,849	1.211	N/A	27,160,434	4,072,365	31,232,799	0.740	7	6	787,431	62
6/30/00-01	4,310,725	26,803,745	1.214	N/A	32,552,151	4,008,326	36,560,477	0.848	18	14	410,600	57
6/30/01-02	4,438,755	23,742,912	1.245	N/A	29,567,645	4,074,980	33,642,625	0.758	11	11	529,521	55
6/30/02-03	4,423,888	23,075,202	1.261	N/A	29,101,665	3,784,930	32,886,595	0.743	16	14	430,462	53
6/30/03-04	4,482,207	22,374,675	1.277	N/A	28,570,880	3,891,672	32,462,553	0.724	12	10	619,621	54
6/30/04-05	4,639,517	21,920,513	1.315	N/A	28,816,799	4,419,413	33,236,212	0.716	7	10	689,629	57
6/30/05-06	4,938,165	18,771,968	1.349	N/A	25,320,882	4,290,519	29,611,401	0.600	16	13	503,763	55
6/30/06-07	5,183,126	17,158,453	1.383	N/A	23,732,692	3,746,954	27,479,646	0.530	28	15	438,283	53
6/30/07-08	5,508,425	19,591,508	1.462	N/A	28,634,899	5,263,713	33,898,612	0.615	39	27	334,940	54
6/30/08-09	5,447,676	19,973,479	1.518	N/A	30,318,396	4,582,028	34,900,424	0.641	68	42	246,308	55
6/30/09-10	5,525,579	18,623,670	1.599	N/A	29,776,369	5,334,365	35,110,733	0.635	84	57	195,661	55
6/30/10-11	5,712,303	20,600,606	1.704	N/A	35,096,218	6,202,461	41,298,679	0.723	140	89	162,872	51
6/30/11-12	5,880,714	18,988,063	1.914	N/A	36,342,213	6,178,610	42,520,824	0.723	209	139	124,850	51
6/30/12-13	6,162,621	14,963,475	2.224	N/A	33,272,243	4,907,039	38,179,282	0.620	461	182	100,598	51
6/30/13-14	6,442,136	13,568,028	2.983	N/A	40,471,118	6,232,422	46,703,540	0.725	1,235	503	53,485	48
6/30/14-15	6,758,892	7,233,041	6.186	N/A	44,743,369	6,956,390	51,699,759	0.765		1,423	26,360	45
Total	129,032,410	959,893,803			1,119,913,305	164,082,902	1,283,996,207		2,546	2,728		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 1, Exhibit 1, Page 7

(4) = (6) / (5) / (3). For this All Clusters Combined exhibit only, this column includes the impact of the "Additional Tail consideration".

(5) Based on information from the MA WCRIB. For this All Clusters Combined exhibit only, impacts shown here are for Escalation of Benefits only.

(6) = (3) x (4) x (5)

(7) From Section 1, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

(13) Calculated for claimants that had an indemnity payment within the last calendar year.

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	1,823,085	2.991	33,237,460	1.091	34,169,683	2,799,556	36,969,239	2.028	1.874
6/30/85-86	1,952,445	3.712	43,812,752	1.049	45,261,380	3,315,545	48,576,925	2.488	2.318
6/30/86-87	2,220,820	3.485	47,038,292	1.063	48,937,473	5,464,197	54,401,670	2.450	2.204
6/30/87-88	2,885,583	3.526	66,547,037	1.111	69,969,693	8,087,248	78,056,941	2.705	2.425
6/30/88-89	3,098,180	2.963	61,369,722	1.077	64,934,299	9,870,885	74,805,184	2.414	2.096
6/30/89-90	3,079,763	2.802	57,669,285	1.082	61,816,107	10,125,179	71,941,286	2.336	2.007
6/30/90-91	2,914,364	1.770	46,124,346	1.125	50,143,165	8,530,248	58,673,413	2.013	1.721
6/30/91-92	2,880,434	1.103	28,939,814	1.109	31,612,075	5,458,621	37,070,696	1.287	1.097
6/30/92-93	2,887,238	0.749	18,741,996	1.166	20,965,410	4,139,001	25,104,410	0.869	0.726
6/30/93-94	3,056,850	0.763	21,069,099	1.123	23,607,595	4,225,124	27,832,720	0.911	0.772
6/30/94-95	3,158,808	0.692	19,432,796	1.141	22,113,915	4,112,928	26,226,843	0.830	0.700
6/30/95-96	3,301,791	0.649	18,735,501	1.161	21,664,383	3,794,033	25,458,415	0.771	0.656
6/30/96-97	3,902,868	0.535	17,796,045	1.179	20,917,747	4,580,369	25,498,116	0.653	0.536
6/30/97-98	3,776,138	0.637	20,925,824	1.169	24,374,001	4,833,963	29,207,964	0.773	0.645
6/30/98-99	4,017,530	0.568	19,315,841	1.191	22,928,695	4,229,919	27,158,614	0.676	0.571
6/30/99-00	4,221,786	0.632	22,435,849	1.211	27,028,361	4,072,365	31,100,726	0.737	0.640
6/30/00-01	4,310,725	0.734	26,803,745	1.214	32,365,877	4,008,326	36,374,203	0.844	0.751
6/30/01-02	4,438,755	0.655	23,742,912	1.245	29,434,463	4,074,980	33,509,443	0.755	0.663
6/30/02-03	4,423,888	0.648	23,075,202	1.261	28,990,059	3,784,930	32,774,989	0.741	0.655
6/30/03-04	4,482,207	0.629	22,374,675	1.277	28,486,715	3,891,672	32,378,387	0.722	0.636
6/30/04-05	4,639,517	0.559	21,920,513	1.315	27,921,270	4,419,413	32,340,683	0.697	0.602
6/30/05-06	4,938,165	0.565	18,771,968	1.349	25,775,816	4,290,519	30,066,335	0.609	0.522
6/30/06-07	5,183,126	0.571	17,158,453	1.383	25,238,063	3,746,954	28,985,018	0.559	0.487
6/30/07-08	5,508,425	0.577	19,591,508	1.462	29,340,554	5,263,713	34,604,267	0.628	0.533
6/30/08-09	5,447,676	0.584	19,973,479	1.518	30,671,945	4,582,028	35,253,973	0.647	0.563
6/30/09-10	5,525,579	0.586	18,623,670	1.599	30,806,681	5,334,365	36,141,045	0.654	0.558
6/30/10-11	5,712,303	0.586	20,600,606	1.704	34,869,929	6,202,461	41,072,390	0.719	0.610
6/30/11-12	5,880,714	0.590	18,988,063	1.914	36,306,620	6,178,610	42,485,230	0.722	0.617
6/30/12-13	6,162,621	0.595	14,963,475	2.224	36,971,403	4,907,039	41,878,442	0.680	0.600
6/30/13-14	6,442,136	0.597	13,568,028	2.983	42,544,132	6,232,422	48,776,554	0.757	0.660
6/30/14-15	6,758,892	0.600	7,233,041	6.186	47,307,408	6,956,390	54,263,797	0.803	0.700
Total	129,032,410		830,580,999		1,077,474,916	161,513,003	1,238,987,919		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 1, Exhibit 1, Page 4, Column 11

(4) From Section 1, Exhibit 1, Page 2, Column 3

(5) From Section 1, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 1, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									2.991	2.991
6/30/85-86									3.712	3.712
6/30/86-87									3.485	3.485
6/30/87-88									3.526	3.526
6/30/88-89									2.963	2.963
6/30/89-90									2.802	2.802
6/30/90-91	2,914,364	51,908,020	1.781	0.963	1.715	1.000	1.715	0.623	1.797	1.770
6/30/91-92	2,880,434	32,095,976	1.114	1.056	1.177	1.000	1.177	0.568	1.107	1.103
6/30/92-93	2,887,238	21,846,677	0.757	1.232	0.932	1.000	0.932	0.487	0.750	0.749
6/30/93-94	3,056,850	23,663,702	0.774	1.216	0.941	1.000	0.941	0.493	0.779	0.763
6/30/94-95	3,158,808	22,179,375	0.702	1.205	0.846	1.000	0.846	0.498	0.697	0.692
6/30/95-96	3,301,791	21,742,850	0.659	1.195	0.787	1.000	0.787	0.502	0.651	0.649
6/30/96-97	3,902,868	20,981,990	0.538	1.183	0.636	1.000	0.636	0.507	0.544	0.535
6/30/97-98	3,776,138	24,464,435	0.648	1.168	0.757	1.000	0.757	0.514	0.645	0.637
6/30/98-99	4,017,530	22,999,850	0.572	1.153	0.660	1.000	0.660	0.520	0.578	0.568
6/30/99-00	4,221,786	27,160,434	0.643	1.134	0.730	1.000	0.730	0.529	0.647	0.632
6/30/00-01	4,310,725	32,552,151	0.755	1.105	0.835	1.000	0.835	0.543	0.751	0.734
6/30/01-02	4,438,755	29,567,645	0.666	1.084	0.722	1.000	0.722	0.554	0.674	0.655
6/30/02-03	4,423,888	29,101,665	0.658	1.080	0.710	1.000	0.710	0.556	0.665	0.648
6/30/03-04	4,482,207	28,570,880	0.637	1.080	0.688	1.000	0.688	0.556	0.646	0.629
6/30/04-05	4,639,517	28,816,799	0.621	1.073	0.667	1.000	0.667	0.559	0.637	0.559
6/30/05-06	4,938,165	25,320,882	0.513	1.062	0.545	1.000	0.545	0.565	0.644	0.565
6/30/06-07	5,183,126	23,732,692	0.458	1.051	0.481	1.000	0.481	0.571	0.651	0.571
6/30/07-08	5,508,425	28,634,899	0.520	1.039	0.540	1.000	0.540	0.577	0.658	0.577
6/30/08-09	5,447,676	30,318,396	0.557	1.027	0.572	1.000	0.572	0.584	0.666	0.584
6/30/09-10	5,525,579	29,776,369	0.539	1.023	0.551	1.000	0.551	0.586	0.668	0.586
6/30/10-11	5,712,303	35,096,218	0.614	1.025	0.629	1.000	0.629	0.586	0.667	0.586
6/30/11-12	5,880,714	36,342,213	0.618	1.018	0.629	1.000	0.629	0.590	0.672	0.590
6/30/12-13	6,162,621	33,272,243	0.540	1.009	0.545	1.000	0.545	0.595	0.677	0.595
6/30/13-14	6,442,136	40,471,118	0.628	1.005	0.631	1.000	0.631	0.597	0.680	0.597
6/30/14-15	6,758,892	44,743,369	0.662	1.000	0.662	1.000	0.662	0.600		0.600
Total	113,972,535	745,360,847								

Trend Last 4 (ex 14-15):	-1.4%	Avg 3 (ex 14-15):	0.602
Trend Last 8 (ex 14-15):	2.8%	Avg 5 (ex 14-15):	0.597
Trend Last 12 (ex 14-15):	-0.9%	Avg 10 (ex 14-15):	0.579
Prior Selected Trend:	0.0%	Prior Sel Avg:	0.680
Selected Trend:	0.0%	Sel. Loss Cost:	0.600

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 1, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend	0.960	
(2)	Credibility	90%	
(3)	Average Pmt Trend Statewide	0.960	
(4)	Credibility Weighted Trend	0.960	
		(Low)	(High)
(5)	Selected Range	0.940	0.970
(6)	Incremental Paid for 2015	1,427,174	1,427,174
(7)	Estimated Reserve	22,359,063	46,145,301
(8)	Paid to Date (82 & Prior)	92,067,235	92,067,235
(9)	Est Ult Paid for 1982 & Prior	114,426,298	138,212,536

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	1,464,772	1,511,011
(11)	Projected Number of Years	2	2
(12)	Estimated Reserve	2,929,545	3,022,021
(13)	Paid to Date (82 & Prior)	92,067,235	90,640,061
(14)	Est Ult Paid for 1982 & Prior	94,996,780	93,662,082
(14a)	Paid Counts During Fiscal Year	35	37
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	104,711,539	115,937,309
(16)	Lump Sum Ultimates	3,959,283	3,959,283
(17)	Ult Loss Including Lump Sums	**108,670,822**	**119,896,592**
(18)	Implied Tail	1.137	1.259
(19)	Ult Loss Inc Lump Sums @ 6/14	107,393,821	118,744,553

NOTES:

(1) From Section 1, Exhibit 1, Page 6
(2) = (Average of Section 1, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 1, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 1, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 1, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	3,761,035	15.140			
1993	2	3,748,741	15.137	0.997		
1994	3	3,655,655	15.112	0.975		
1995	4	3,194,135	14.977	0.874		
1996	5	3,058,848	14.934	0.958		
1997	6	3,023,014	14.922	0.988		
1998	7	3,014,756	14.919	0.997		
1999	8	2,756,848	14.830	0.914		
2000	9	2,909,790	14.884	1.055	n =	24
2001	10	2,865,446	14.868	0.985	S(x) =	48,084
2002	11	2,547,239	14.751	0.889	S(x-sq) =	96,337,444
2003	12	2,422,167	14.700	0.951	S(xy) =	704,985
2004	13	2,289,077	14.644	0.945	S(y) =	352
2005	14	2,336,964	14.664	1.021	D =	27,600
2006	15	2,051,702	14.534	0.878	slope =	-0.044
2007	16	2,039,778	14.528	0.994	Avg Trend =	0.956
2008	17	1,799,337	14.403	0.882		
2009	18	1,743,820	14.372	0.969		
2010	19	1,812,753	14.410	1.040		
2011	20	1,656,071	14.320	0.914		
2012	21	1,565,889	14.264	0.946		
2013	22	1,527,315	14.239	0.975		
2014	23	1,439,828	14.180	0.943		
2015	24	1,427,174	14.171	0.991		
					Selected Trend:	**0.960**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 0.991 = 1427174 / 1439828

Commonwealth of Massachusetts Workers Compensation
All Clusters Combined
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	858,552	2,079,063	3,017,221	3,810,750	4,609,642	5,393,851	6,194,575	7,153,066	7,958,008	8,806,991	9,470,978	10,033,054	10,617,896	11,118,585	11,511,440	11,832,357	12,136,396	12,447,391	12,810,499	13,089,144	13,380,298	13,654,129	13,942,380	14,231,914	14,539,406	14,849,146	15,118,643	15,379,653	15,594,288	15,766,236	15,942,952	16,094,979	16,155,821
June-84	1,522,536	3,686,963	5,350,672	6,757,899	8,148,886	9,608,045	10,911,357	12,126,179	13,057,188	13,815,581	14,430,389	14,959,403	15,419,688	15,772,255	16,197,151	16,639,612	17,122,286	17,516,764	17,977,580	18,438,292	18,803,484	19,139,323	19,459,619	19,718,217	19,937,128	20,149,887	20,327,863	20,472,356	20,620,991	20,774,456	20,930,657	21,089,748	
June-85	2,512,722	6,084,789	8,830,495	11,054,439	13,342,359	15,590,069	17,427,365	18,998,017	20,498,944	21,563,372	22,525,232	23,442,205	24,219,603	25,046,022	25,818,487	26,459,414	27,121,279	27,778,658	28,406,491	28,976,876	29,543,002	30,030,413	30,523,992	30,983,182	31,363,675	31,712,251	32,055,755	32,412,266	32,782,016	33,018,728	33,237,460		
June-86	3,828,307	9,270,600	13,395,875	16,854,774	20,186,912	22,858,610	24,903,526	26,819,536	28,134,649	29,661,018	30,865,387	32,219,696	33,488,982	34,570,174	35,702,155	36,866,038	37,770,882	38,520,460	39,153,946	39,794,497	40,432,599	41,063,216	41,644,745	42,241,569	42,712,869	43,097,941	43,312,360	43,486,990	43,647,976	43,812,752			
June-87	4,540,457	10,913,697	15,583,325	19,957,432	23,712,974	26,356,678	28,401,253	30,259,862	31,823,542	33,295,483	34,562,410	35,908,967	37,317,032	38,375,710	39,392,496	40,287,844	41,070,876	41,703,092	42,193,153	42,715,548	43,489,344	43,946,144	44,426,128	44,966,121	45,385,703	45,816,061	46,262,977	46,658,728	47,038,292				
June-88	6,620,154	15,480,715	23,458,326	30,204,560	36,116,026	39,838,569	42,256,230	44,503,212	46,313,785	47,917,629	49,366,750	50,785,172	52,214,314	53,499,831	54,758,162	56,029,186	57,216,310	58,242,797	59,272,196	60,251,502	61,225,020	62,100,854	62,859,543	63,676,981	64,434,879	65,136,208	65,842,992	66,547,037					
June-89	6,105,502	16,819,476	24,950,175	31,278,437	35,945,703	38,915,779	41,415,130	43,490,698	45,072,501	46,555,926	47,860,013	49,040,632	50,166,177	51,242,940	52,234,068	53,147,033	54,016,738	54,832,591	55,632,016	56,403,282	57,157,649	57,924,017	58,698,403	59,460,012	60,103,365	60,736,487	61,369,722						
June-90	8,325,393	19,198,639	27,299,181	32,979,315	36,467,113	39,225,080	41,403,021	43,119,245	44,619,978	46,178,291	47,478,622	48,500,081	49,380,975	50,215,035	50,970,670	51,700,073	52,443,554	53,046,968	53,676,223	54,272,144	54,832,428	55,362,682	55,910,367	56,499,344	57,103,580	57,669,285							
June-91	6,727,038	15,771,999	21,820,901	25,665,833	28,606,961	30,755,665	32,249,710	33,434,382	34,630,923	35,639,652	36,661,638	37,733,064	38,765,183	39,734,589	40,612,815	41,479,663	42,275,974	42,925,167	43,635,680	44,069,182	44,462,411	44,863,611	45,327,198	45,737,838	46,124,346								
June-92	5,529,696	11,010,530	14,154,478	16,707,353	18,010,508	19,080,293	19,981,070	20,663,423	21,458,872	22,141,168	22,851,311	23,533,251	24,097,364	24,573,283	25,143,387	25,744,950	26,283,250	26,767,829	27,207,194	27,587,356	27,962,307	28,341,430	28,639,184	28,939,814									
June-93	3,873,223	8,389,572	10,824,326	12,579,041	13,682,345	14,650,572	14,980,197	15,299,706	15,652,059	15,960,508	16,198,969	16,437,335	16,647,751	16,845,525	17,057,906	17,261,464	17,446,939	17,667,638	17,927,011	18,169,867	18,397,903	18,582,538	18,741,996										
June-94	3,781,238	7,763,240	10,451,304	12,041,730	13,184,654	14,033,719	14,780,593	15,679,180	16,229,340	16,777,362	17,232,935	17,804,861	18,235,433	18,616,699	18,971,484	19,309,314	19,603,806	19,888,097	20,167,726	20,466,005	20,764,911	21,069,099											
June-95	4,117,530	8,085,099	10,658,744	12,524,501	13,540,049	14,383,050	15,205,770	15,840,120	16,337,357	16,680,320	17,024,333	17,347,955	17,691,046	17,980,888	18,198,811	18,406,575	18,613,590	18,839,234	19,049,825	19,261,206	19,432,796												
June-96	3,925,641	7,606,581	10,157,406	11,265,946	12,618,021	13,573,564	14,313,197	14,989,243	15,617,069	16,021,237	16,346,275	16,663,225	16,942,675	17,212,063	17,486,480	17,759,866	18,012,627	18,213,137	18,448,007	18,735,501													
June-97	3,802,186	7,776,567	9,916,724	11,863,394	13,377,068	14,556,289	15,406,967	15,928,071	16,176,008	16,397,842	16,558,081	16,798,807	16,939,079	17,083,096	17,228,429	17,411,092	17,558,775	17,699,497	17,796,045														
June-98	3,999,102	8,090,389	11,057,251	13,063,666	14,725,657	15,964,487	16,892,108	17,479,286	18,004,896	18,445,861	18,841,212	19,225,160	19,574,481	19,929,478	20,239,681	20,466,987	20,696,672	20,925,824															
June-99	3,807,499	8,152,795	11,043,621	13,229,580	14,782,416	15,710,384	16,521,760	17,074,054	17,452,452	17,884,931	18,180,175	18,422,658	18,600,387	18,768,162	18,941,104	19,104,918	19,315,841																
June-00	4,950,740	10,538,860	14,135,679	16,504,973	18,268,102	19,419,784	20,242,086	20,650,338	21,022,134	21,259,984	21,435,910	21,642,301	21,850,101	22,046,094	22,243,202	22,435,849																	
June-01	5,803,207	12,402,263	16,670,356	19,654,595	21,577,531	22,938,517	23,908,952	24,600,463	24,859,220	25,164,944	25,501,251	25,878,042	26,218,857	26,521,603	26,803,745																		
June-02	5,765,203	12,277,793	16,238,526	18,865,437	20,310,007	21,368,596	21,931,812	22,319,683	22,695,839	22,992,294	23,221,272	23,431,357	23,602,864	23,742,912																			
June-03	6,502,533	13,090,711	16,966,298	18,968,477	20,360,493	21,059,553	21,569,956	21,885,146	22,172,772	22,423,326	22,650,331	22,839,648	23,075,202																				
June-04	5,782,322	12,048,196	15,821,995	18,335,339	19,734,152	20,590,574	21,163,829	21,542,100	21,767,551	21,965,260	22,174,954	22,374,675																					
June-05	5,772,533	11,867,294	15,701,108	18,020,724	19,113,731	19,972,058	20,719,729	21,201,896	21,449,586	21,670,607	21,920,513																						
June-06	4,757,322	10,205,384	13,459,435	15,194,558	16,291,664	17,297,747	17,913,398	18,224,087	18,407,895	18,771,968																							
June-07	4,763,872	9,431,881	11,584,810	13,586,119	15,001,635	15,786,760	16,403,895	16,782,459	17,158,453																								
June-08	4,973,425	10,276,897	13,437,601	15,869,686	17,473,101	18,454,471	19,096,705	19,591,508																									
June-09	4,815,871	10,151,475	13,666,751	16,148,288	17,821,067	19,248,559	19,973,479																										
June-10	5,243,901	10,948,444	14,508,772	16,517,571	17,830,710	18,623,670																											
June-11	6,252,011	12,542,403	16,418,085	18,781,010	20,600,606																												
June-12	5,840,358	12,172,326	16,214,542	18,988,063																													
June-13	5,964,573	11,594,933	14,963,475																														
June-14	6,327,324	13,568,028																															
June-15	7,233,041																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.422	1.451	1.263	1.210	1.170	1.148	1.155	1.113	1.107	1.075	1.059	1.058	1.047	1.035	1.028	1.026	1.026	1.029	1.022	1.022	1.020	1.021	1.021	1.022	1.021	1.018	1.017	1.014	1.011	1.011	1.010	1.004
June-84	2.422	1.451	1.263	1.206	1.179	1.136	1.111	1.077	1.058	1.045	1.037	1.031	1.023	1.027	1.027	1.029	1.023	1.026	1.026	1.020	1.018	1.017	1.013	1.011	1.011	1.009	1.007	1.007	1.007	1.008	1.008	
June-85	2.422	1.451	1.252	1.207	1.168	1.118	1.090	1.079	1.052	1.045	1.041	1.033	1.034	1.031	1.025	1.025	1.024	1.023	1.020	1.020	1.016	1.016	1.015	1.012	1.011	1.011	1.011	1.011	1.007	1.007		
June-86	2.422	1.445	1.258	1.198	1.132	1.089	1.077	1.049	1.054	1.041	1.044	1.039	1.032	1.033	1.033	1.025	1.020	1.016	1.016	1.016	1.016	1.014	1.014	1.011	1.009	1.005	1.004	1.004	1.004			
June-87	2.404	1.428	1.281	1.188	1.111	1.078	1.065	1.052	1.046	1.038	1.039	1.039	1.028	1.026	1.023	1.019	1.015	1.012	1.012	1.018	1.011	1.011	1.012	1.009	1.009	1.010	1.009	1.008				
June-88	2.338	1.515	1.288	1.196	1.103	1.061	1.053	1.041	1.035	1.030	1.029	1.028	1.025	1.024	1.023	1.021	1.018	1.018	1.017	1.016	1.014	1.012	1.013	1.012	1.011	1.011	1.011					
June-89	2.755	1.483	1.254	1.149	1.083	1.064	1.050	1.036	1.033	1.028	1.025	1.023	1.021	1.019	1.017	1.016	1.015	1.015	1.014	1.013	1.013	1.013	1.013	1.011	1.011	1.010						
June-90	2.306	1.422	1.208	1.106	1.076	1.056	1.041	1.035	1.035	1.028	1.022	1.018	1.017	1.015	1.014	1.014	1.012	1.012	1.011	1.010	1.010	1.010	1.011	1.011	1.010							
June-91	2.345	1.384	1.176	1.115	1.075	1.049	1.037	1.036	1.029	1.029	1.029	1.027	1.025	1.022	1.021	1.019	1.015	1.017	1.010	1.009	1.009	1.010	1.009	1.008								
June-92	1.991	1.286	1.180	1.078	1.059	1.047	1.034	1.038	1.032	1.032	1.030	1.024	1.020	1.023	1.024	1.021	1.018	1.016	1.014	1.014	1.014	1.011	1.010									
June-93	2.166	1.290	1.162	1.088	1.071	1.022	1.021	1.023	1.020	1.015	1.015	1.013	1.012	1.013	1.012	1.011	1.013	1.015	1.014	1.013	1.010	1.009										
June-94	2.053	1.346	1.152	1.095	1.064	1.053	1.061	1.035	1.034	1.027	1.033	1.024	1.021	1.019	1.018	1.015	1.015	1.014	1.015	1.015	1.015											
June-95	1.964	1.318	1.175	1.081	1.062	1.057	1.042	1.031	1.021	1.021	1.019	1.020	1.016	1.012	1.011	1.011	1.012	1.011	1.011	1.009												
June-96	1.938	1.335	1.109	1.120	1.076	1.054	1.047	1.042	1.026	1.020	1.019	1.017	1.016	1.016	1.016	1.014	1.011	1.013	1.016													
June-97	2.045	1.275	1.196	1.128	1.088	1.058	1.034	1.016	1.014	1.010	1.015	1.008	1.009	1.009	1.011	1.008	1.008	1.005														
June-98	2.023	1.367	1.181	1.127	1.084	1.058	1.035	1.030	1.024	1.021	1.020	1.018	1.018	1.016	1.011	1.011	1.011															
June-99	2.141	1.355	1.198	1.117	1.063	1.052	1.033	1.022	1.025	1.017	1.013	1.010	1.009	1.009	1.009	1.011																
June-00	2.129	1.341	1.158	1.107	1.063	1.042	1.020	1.018	1.011	1.008	1.010	1.010	1.009	1.009	1.009																	
June-01	2.137	1.344	1.179	1.098	1.063	1.042	1.029	1.011	1.012	1.013	1.015	1.013	1.012	1.011																		
June-02	2.130	1.323	1.162	1.077	1.052	1.026	1.018	1.017	1.013	1.010	1.009	1.007	1.006																			
June-03	2.013	1.296	1.118	1.073	1.034	1.024	1.015	1.013	1.011	1.010	1.008	1.010																				
June-04	2.084	1.313	1.159	1.076	1.043	1.028	1.018	1.010	1.009	1.010	1.009																					
June-05	2.056	1.323	1.148	1.061	1.045	1.037	1.023	1.012	1.010	1.012																						
June-06	2.145	1.319	1.129	1.072	1.062	1.036	1.017	1.010	1.020																							
June-07	1.980	1.228	1.173	1.104	1.052	1.039	1.023	1.022																								
June-08	2.066	1.308	1.181	1.101	1.056	1.035	1.026																									
June-09	2.108	1.346	1.182	1.104	1.080	1.038																										
June-10	2.088	1.325	1.138	1.079	1.044																											
June-11	2.006	1.309	1.144	1.097																												
June-12	2.084	1.332	1.171																													
June-13	1.944	1.291																														
June-14	2.144																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.165	1.355	1.188	1.119	1.081	1.057	1.045	1.035	1.030	1.025	1.024	1.022	1.020	1.019	1.018	1.018	1.016	1.016	1.015	1.015	1.014	1.013	1.013	1.012	1.012	1.011	1.010	1.009	1.007	1.008	1.009		
Latest 5	2.053	1.321	1.163	1.097	1.059	1.037	1.021	1.014	1.013	1.011	1.010	1.010	1.011	1.011	1.011	1.011	1.012	1.014	1.012	1.011	1.011	1.011	1.010	1.010	1.009	1.008	1.009						
Latest 3	2.057	1.311	1.151	1.093	1.060	1.037	1.022	1.015	1.013	1.010	1.009	1.010	1.009	1.010	1.010	1.010	1.010	1.010	1.014	1.012	1.013	1.010	1.010	1.010	1.010	1.010	1.008	1.008	1.006	1.008			
Volume Wtd																																	
All Yrs	2.156	1.356	1.189	1.117	1.077	1.054	1.042	1.033	1.030	1.025	1.025	1.023	1.020	1.020	1.019	1.018	1.016	1.016	1.015	1.014	1.013	1.012	1.013	1.011	1.011	1.010	1.009	1.008	1.006	1.008	1.008	1.004	
Latest 5	2.053	1.320	1.162	1.097	1.059	1.037	1.021	1.013	1.012	1.011	1.010	1.010	1.011	1.011	1.011	1.011	1.011	1.012	1.014	1.011	1.011	1.011	1.011	1.010	1.010	1.010	1.009	1.008					
Latest 3	2.059	1.311	1.152	1.093	1.060	1.037	1.022	1.014	1.013	1.010	1.009	1.010	1.009	1.010	1.010	1.010	1.010	1.010	1.014	1.012	1.013	1.010	1.010	1.010	1.010	1.010	1.008	1.007	1.006	1.008			

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	110,285,182	118,957,098	111,257,723	119,818,253	972,541	0.9%	861,155	0.7%
6/30/82-83	17,594,928	18,454,721	17,429,230	18,042,778	(165,698)	-0.9%	(411,944)	-2.2%
6/30/83-84	24,810,530	26,079,635	24,427,134	25,481,608	(383,396)	-1.5%	(598,027)	-2.3%
6/30/84-85	36,727,760	38,798,574	37,002,774	38,847,574	275,014	0.7%	49,000	0.1%
6/30/85-86	48,223,654	49,666,399	48,195,471	48,964,953	(28,183)	-0.1%	(701,446)	-1.4%
6/30/86-87	53,686,000	56,303,826	53,788,350	55,387,529	102,350	0.2%	(916,297)	-1.6%
6/30/87-88	77,656,876	79,424,184	77,997,510	80,860,217	340,634	0.4%	1,436,033	1.8%
6/30/88-89	74,436,948	76,324,799	74,876,829	76,873,799	439,881	0.6%	549,000	0.7%
6/30/89-90	71,095,078	72,235,610	71,495,887	72,909,707	400,808	0.6%	674,097	0.9%
6/30/90-91	57,525,859	60,855,646	57,844,859	60,172,440	319,000	0.6%	(683,206)	-1.1%
6/30/91-92	36,657,449	37,941,974	36,753,670	38,113,219	96,221	0.3%	171,245	0.5%
6/30/92-93	24,896,376	26,477,946	24,872,376	26,498,476	(24,001)	-0.1%	20,530	0.1%
6/30/93-94	27,585,000	28,694,000	27,703,000	28,473,851	118,000	0.4%	(220,149)	-0.8%
6/30/94-95	26,233,000	26,888,000	26,137,720	26,793,520	(95,280)	-0.4%	(94,480)	-0.4%
6/30/95-96	25,092,985	26,105,891	25,390,985	26,130,791	298,000	1.2%	24,900	0.1%
6/30/96-97	25,588,838	26,303,286	25,292,858	26,077,936	(295,980)	-1.2%	(225,350)	-0.9%
6/30/97-98	29,238,642	29,892,556	28,574,047	29,365,406	(664,594)	-2.3%	(527,150)	-1.8%
6/30/98-99	27,360,000	28,066,000	26,673,704	27,495,705	(686,296)	-2.5%	(570,295)	-2.0%
6/30/99-00	31,030,877	32,292,000	30,521,970	31,513,187	(508,907)	-1.6%	(778,813)	-2.4%
6/30/00-01	36,272,632	37,641,000	35,794,488	36,787,272	(478,144)	-1.3%	(853,728)	-2.3%
6/30/01-02	34,097,000	34,930,000	32,755,325	34,086,377	(1,341,675)	-3.9%	(843,623)	-2.4%
6/30/02-03	32,792,045	34,110,000	32,282,753	33,604,000	(509,292)	-1.6%	(506,000)	-1.5%
6/30/03-04	32,441,954	33,726,000	31,736,521	33,102,320	(705,434)	-2.2%	(623,680)	-1.8%
6/30/04-05	32,894,000	34,072,000	31,812,000	32,993,000	(1,082,000)	-3.3%	(1,079,000)	-3.2%
6/30/05-06	29,951,000	30,957,000	29,464,000	30,299,000	(487,000)	-1.6%	(658,000)	-2.1%
6/30/06-07	27,990,000	29,911,000	27,341,100	28,888,450	(648,900)	-2.3%	(1,022,550)	-3.4%
6/30/07-08	34,017,800	35,977,500	32,901,350	34,639,200	(1,116,450)	-3.3%	(1,338,300)	-3.7%
6/30/08-09	35,608,600	37,426,148	34,421,170	36,004,668	(1,187,430)	-3.3%	(1,421,480)	-3.8%
6/30/09-10	35,559,250	38,594,875	34,037,050	36,912,951	(1,522,200)	-4.3%	(1,681,924)	-4.4%
6/30/10-11	40,990,010	43,513,189	40,231,630	42,557,651	(758,380)	-1.9%	(955,538)	-2.2%
6/30/11-12	41,278,170	44,994,719	41,261,270	44,482,148	(16,900)	0.0%	(512,571)	-1.1%
6/30/12-13	41,133,350	45,923,962	37,844,800	42,368,768	(3,288,550)	-8.0%	(3,555,194)	-7.7%
6/30/13-14	46,780,700	52,088,304	45,537,250	50,064,268	(1,243,450)	-2.7%	(2,024,036)	-3.9%
6/30/14-15								
Total	1,327,532,493	1,393,627,843	1,313,656,802	1,374,611,023	(13,875,691)	-1.0%	(19,016,820)	-1.4%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 1, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	92,067,235	1.198	110,324,424	0.0%	0.0%	0	3,941,682	3,941,682	3.6%	1.009	3,976,883	3,959,283	3,964,099
6/30/82-83	16,155,821	1.046	16,902,764	0.0%	0.0%	0	771,231	771,231	4.6%	1.002	772,388	771,810	772,013
6/30/83-84	21,089,748	1.089	22,967,210	0.0%	0.0%	0	1,792,639	1,792,639	7.8%	1.006	1,803,540	1,798,090	1,799,708
6/30/84-85	33,237,460	1.091	36,264,705	0.0%	0.0%	0	2,791,264	2,791,264	7.7%	1.006	2,807,847	2,799,556	2,801,973
6/30/85-86	43,812,752	1.049	45,953,540	0.0%	0.0%	0	3,303,601	3,303,601	7.2%	1.007	3,327,489	3,315,545	3,318,897
6/30/86-87	47,038,292	1.063	49,983,736	0.0%	0.0%	0	5,447,750	5,447,750	10.9%	1.006	5,480,644	5,464,197	5,473,999
6/30/87-88	66,547,037	1.111	73,948,297	0.0%	0.0%	0	8,057,017	8,057,017	10.9%	1.008	8,117,479	8,087,248	8,096,578
6/30/88-89	61,369,722	1.077	66,110,268	0.0%	0.0%	0	9,826,239	9,826,239	14.9%	1.009	9,915,531	9,870,885	9,884,508
6/30/89-90	57,669,285	1.082	62,421,938	0.0%	0.0%	0	10,079,298	10,079,298	16.1%	1.009	10,171,060	10,125,179	10,110,313
6/30/90-91	46,124,346	1.125	51,908,020	0.0%	0.0%	0	8,484,440	8,484,440	16.3%	1.011	8,576,056	8,530,248	8,392,605
6/30/91-92	28,939,814	1.109	32,095,976	0.0%	0.0%	1,264	5,420,474	5,421,738	16.9%	1.014	5,495,504	5,458,621	5,475,297
6/30/92-93	18,741,996	1.166	21,846,677	0.0%	0.1%	11,741	4,100,617	4,112,358	18.8%	1.016	4,165,644	4,139,001	4,138,625
6/30/93-94	21,069,099	1.123	23,663,702	0.0%	0.1%	22,852	4,177,034	4,199,886	17.7%	1.018	4,250,362	4,225,124	4,236,055
6/30/94-95	19,432,796	1.141	22,179,375	0.0%	0.1%	27,268	4,050,859	4,078,127	18.4%	1.024	4,147,728	4,112,928	4,126,356
6/30/95-96	18,735,501	1.161	21,742,850	0.1%	0.2%	39,953	3,727,664	3,767,616	17.3%	1.025	3,820,449	3,794,033	3,784,252
6/30/96-97	17,796,045	1.179	20,981,990	0.1%	0.3%	56,368	4,474,152	4,530,520	21.6%	1.035	4,630,217	4,580,369	4,571,035
6/30/97-98	20,925,824	1.169	24,464,435	0.0%	0.3%	71,033	4,686,877	4,757,910	19.4%	1.048	4,910,016	4,833,963	4,855,537
6/30/98-99	19,315,841	1.191	22,999,850	0.1%	0.4%	95,020	4,086,938	4,181,958	18.2%	1.047	4,277,880	4,229,919	4,248,883
6/30/99-00	22,435,849	1.211	27,160,434	0.1%	0.5%	137,150	3,907,368	4,044,518	14.9%	1.049	4,100,213	4,072,365	4,109,415
6/30/00-01	26,803,745	1.214	32,552,151	0.1%	0.6%	193,864	3,814,863	4,008,727	12.3%	1.051	4,007,925	4,008,326	4,056,991
6/30/01-02	23,742,912	1.245	29,567,645	0.2%	0.8%	226,044	3,832,668	4,058,711	13.7%	1.067	4,091,248	4,074,980	4,123,427
6/30/02-03	23,075,202	1.261	29,101,665	0.2%	0.9%	268,138	3,519,913	3,788,051	13.0%	1.074	3,781,809	3,784,930	3,854,781
6/30/03-04	22,374,675	1.277	28,570,880	0.1%	1.0%	292,289	3,593,520	3,885,809	13.6%	1.085	3,897,536	3,891,672	3,976,629
6/30/04-05	21,920,513	1.315	28,816,799	0.2%	1.3%	360,277	4,010,153	4,370,431	15.2%	1.114	4,468,396	4,419,413	4,564,635
6/30/05-06	18,771,968	1.349	25,320,882	0.2%	1.4%	360,787	3,863,429	4,224,215	16.7%	1.128	4,356,823	4,290,519	4,425,333
6/30/06-07	17,158,453	1.383	23,732,692	0.2%	1.6%	381,866	3,288,317	3,670,183	15.5%	1.149	3,778,280	3,746,954	3,914,705
6/30/07-08	19,591,508	1.462	28,634,899	0.4%	2.0%	577,176	4,545,798	5,122,973	17.9%	1.178	5,356,660	5,263,713	5,746,268
6/30/08-09	19,973,479	1.518	30,318,396	1.1%	3.1%	935,527	3,600,945	4,536,472	15.0%	1.274	4,587,397	4,582,028	4,954,906
6/30/09-10	18,623,670	1.599	29,776,369	1.4%	4.5%	1,346,379	3,822,184	5,168,562	17.4%	1.438	5,496,885	5,334,365	5,540,348
6/30/10-11	20,600,606	1.704	35,096,218	1.4%	5.9%	2,085,381	3,718,269	5,803,650	16.5%	1.699	6,316,802	6,202,461	5,932,053
6/30/11-12	18,988,063	1.914	36,342,213	2.9%	8.8%	3,215,209	2,805,204	6,020,413	16.6%	2.357	6,612,287	6,178,610	5,168,873
6/30/12-13	14,963,475	2.224	33,272,243	3.0%	11.8%	3,927,791	1,180,271	5,108,063	15.4%	4.090	4,827,521	4,907,039	5,583,423
6/30/13-14	13,568,028	2.983	40,471,118	2.6%	14.4%	5,817,721	403,628	6,221,349	15.4%	14.008	5,654,163	6,232,422	6,098,015
6/30/14-15	7,233,041	6.186	44,743,369	1.2%	15.6%	6,981,558	0	6,981,558	15.6%	n/a	0	6,956,390	
Total	959,893,803		1,230,237,729			27,432,656	139,126,305	166,558,961	13.5%		161,980,662	168,042,185	162,100,536

NOTES:
(2) From Section 1, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 1, Exhibit 1, Page 2, Column 6
(5) From Section 1, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 1, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 1, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts Workers Compensation
All Clusters Combined
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0	0	0	0	0	0	12,000	46,500	31,000	20,000	184,000	115,000	138,000	550,984	594,000	318,784	155,500	30,000	362,833	369,668	354,998	72,250	145,500	201,500	118,040	28,000	78,125	0	0	7,500	7,500	0	0	0
Jun-83	0	0	0	0	0	20,000	0	32,500	37,500	80,000	153,481	90,750	77,000	110,000	160,000	0	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	25,750	32,500	110,600	178,437	119,500	233,650	204,200	246,501	48,000	102,001	50,000	30,000	37,500	85,000	45,000	0	0	84,000	0	10,000	0	0	150,000	0	0	0	0	0		
Jun-85	0	0	0	98,476	35,500	126,500	146,555	201,250	383,400	565,833	337,200	193,500	294,550	40,000	0	133,500	120,000	30,000	35,000	25,000	0	0	0	0	0	0	0	0	25,000	0	0			
Jun-86	0	0	58,000	116,759	213,100	146,344	336,928	826,899	586,995	10,000	147,000	20,000	86,000	37,500	0	0	0	30,000	55,000	64,000	16,000	45,000	58,275	237,801	0	198,000	2,000	12,000	0	0				
Jun-87	0	81,440	184,322	246,666	253,462	621,607	1,050,537	509,001	398,456	184,806	186,424	102,671	334,859	406,500	240,000	239,999	50,000	132,000	80,000	10,000	0	0	0	135,000	0	0	0	0	0					
Jun-88	0	106,671	200,428	418,500	836,484	1,573,442	1,192,500	711,383	849,000	373,400	305,326	241,507	328,463	0	59,910	0	191,667	65,000	85,333	100,001	90,000	150,001	0	58,001	62,000	58,000	0	0						
Jun-89	0	239,195	381,000	997,744	1,789,441	1,630,950	1,022,995	995,502	531,500	332,500	603,811	258,100	276,500	92,500	25,000	18,500	63,500	218,333	116,383	160,284	62,500	0	0	10,000	0	1	0							
Jun-90	0	254,094	1,205,138	1,809,296	1,317,952	1,060,755	985,550	993,000	409,534	438,300	365,512	408,833	40,833	46,000	31,000	25,000	106,000	110,125	129,876	27,500	33,333	33,333	33,333	0	184,500	30,500								
Jun-91	13,500	438,707	1,994,750	1,433,327	920,426	1,217,840	758,000	203,289	232,000	140,000	100,001	54,000	0	0	70,000	178,100	102,500	280,000	130,000	0	0	0	60,000	0	158,000									
Jun-92	66,000	830,673	583,116	753,497	838,750	535,501	294,500	221,500	181,500	178,000	202,683	31,250	13,500	122,268	33,368	20,867	326,500	107,000	80,001	0	0	0	0	0										
Jun-93	62,000	654,058	665,328	971,951	408,250	415,801	286,729	103,000	190,000	85,000	12,000	55,000	0	0	0	0	50,000	58,000	35,000	35,000	0	0	13,500											
Jun-94	90,000	679,356	863,226	715,524	525,377	333,501	199,500	201,500	47,500	40,050	0	234,500	71,000	25,000	25,000	120,000	6,000	0	0	0	0	0												
Jun-95	219,963	888,102	977,200	797,324	399,770	225,600	67,000	10,000	70,625	134,875	58,400	35,000	0	112,000	42,500	12,500	0	0	0	0	0													
Jun-96	80,500	705,230	1,049,356	656,831	319,451	110,001	89,167	158,833	123,000	131,001	103,000	62,500	0	18,400	16,600	0	0	0	71,725	32,069														
Jun-97	134,365	1,184,751	1,074,000	820,183	422,500	172,251	16,000	140,600	106,501	109,001	167,000	17,000	0	0	40,000	40,000	0	0	30,000															
Jun-98	408,337	890,613	1,162,675	665,000	431,091	264,909	110,335	161,166	29,000	8,001	10,000	227,750	130,000	119,000	69,000	0	0	0																
Jun-99	251,500	439,250	1,042,681	765,621	367,556	218,197	270,076	179,055	73,001	180,000	52,000	73,001	0	0	65,000	110,000	0																	
Jun-00	135,731	994,493	726,541	532,050	394,551	264,499	364,884	198,118	118,001	76,000	31,500	34,000	25,000	12,000	0	0																		
Jun-01	108,490	517,820	838,510	515,804	486,170	523,565	239,504	370,500	134,000	18,000	0	0	62,500	0	0																			
Jun-02	48,000	251,595	619,400	692,914	768,087	556,815	356,721	325,000	45,136	69,000	53,000	42,000	0	5,000																				
Jun-03	20,000	243,617	973,654	830,735	554,982	452,423	125,001	80,000	6,000	96,000	77,500	60,000	1																					
Jun-04	47,500	153,200	552,463	917,102	829,753	553,000	162,000	241,501	100,000	0	1,001	36,000																						
Jun-05	6,157	171,103	840,367	1,359,602	649,723	301,000	271,000	217,001	194,200	0	0																							
Jun-06	0	307,301	772,454	1,353,001	484,173	445,500	363,000	103,000	19,700	15,300																								
Jun-07	36,000	451,583	914,752	703,751	416,002	193,002	149,442	275,002	148,783																									
Jun-08	17,730	728,501	774,649	979,000	795,250	372,462	679,872	198,334																										
Jun-09	285,000	362,500	783,767	808,001	522,676	524,500	314,501																											
Jun-10	0	601,092	797,379	946,609	922,799	554,305																												
Jun-11	315,691	461,993	1,026,227	799,329	1,115,029																													
Jun-12	0	441,786	742,328	1,621,090																														
Jun-13	113,000	371,012	696,259																															
Jun-14	102,000	301,628																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	12,000	58,500	89,500	109,500	293,500	408,500	546,500	1,097,484	1,691,484	2,010,268	2,165,768	2,195,768	2,558,601	2,928,269	3,283,267	3,355,517	3,501,017	3,702,517	3,820,557	3,848,557	3,926,682	3,926,682	3,926,682	3,934,182	3,941,682	3,941,682	3,941,682	3,941,682
Jun-83	0	0	0	0	0	20,000	20,000	52,500	90,000	170,000	323,481	414,231	491,231	601,231	761,231	761,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231		
Jun-84	0	0	0	0	25,750	58,250	168,850	347,287	466,787	700,437	904,637	1,151,138	1,199,138	1,301,139	1,351,139	1,381,139	1,418,639	1,503,639	1,548,639	1,548,639	1,548,639	1,632,639	1,632,639	1,642,639	1,642,639	1,642,639	1,642,639	1,792,639	1,792,639	1,792,639	1,792,639	1,792,639	1,792,639		
Jun-85	0	0	0	98,476	133,976	260,476	407,031	608,281	991,681	1,557,514	1,894,714	2,088,214	2,382,764	2,422,764	2,422,764	2,556,264	2,676,264	2,706,264	2,741,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,791,264	2,791,264	2,791,264			
Jun-86	0	0	58,000	174,759	387,859	534,203	871,131	1,698,030	2,285,025	2,295,025	2,442,025	2,462,025	2,548,025	2,585,525	2,585,525	2,585,525	2,585,525	2,615,525	2,670,525	2,734,525	2,750,525	2,795,525	2,853,800	3,091,601	3,091,601	3,289,601	3,291,601	3,303,601	3,303,601	3,303,601					
Jun-87	0	81,440	265,762	512,428	765,890	1,387,497	2,438,034	2,947,035	3,345,491	3,530,297	3,716,721	3,819,392	4,154,251	4,560,751	4,800,751	5,040,750	5,090,750	5,222,750	5,302,750	5,312,750	5,312,750	5,312,750	5,312,750	5,447,750	5,447,750	5,447,750	5,447,750	5,447,750	5,447,750						
Jun-88	0	106,671	307,099	725,599	1,562,083	3,135,525	4,328,025	5,039,408	5,888,408	6,261,808	6,567,134	6,808,641	7,137,104	7,137,104	7,197,014	7,197,014	7,388,681	7,453,681	7,539,014	7,639,015	7,729,015	7,879,016	7,879,016	7,937,017	7,999,017	8,057,017	8,057,017	8,057,017							
Jun-89	0	239,195	620,195	1,617,939	3,407,380	5,038,330	6,061,325	7,056,827	7,588,327	7,920,827	8,524,638	8,782,738	9,059,238	9,151,738	9,176,738	9,195,238	9,258,738	9,477,071	9,593,454	9,753,738	9,816,238	9,816,238	9,816,238	9,826,238	9,826,238	9,826,239	9,826,239								
Jun-90	0	254,094	1,459,232	3,268,528	4,586,480	5,647,235	6,632,785	7,625,785	8,035,319	8,473,619	8,839,131	9,247,964	9,288,797	9,334,797	9,365,797	9,390,797	9,496,797	9,606,922	9,736,798	9,764,298	9,797,631	9,830,965	9,864,298	9,864,298	10,048,798	10,079,298								
Jun-91	13,500	452,207	2,446,957	3,880,284	4,800,710	6,018,550	6,776,550	6,979,839	7,211,839	7,351,839	7,451,840	7,505,840	7,505,840	7,505,840	7,575,840	7,753,940	7,856,440	8,136,440	8,266,440	8,266,440	8,266,440	8,266,440	8,326,440	8,326,440	8,484,440										
Jun-92	66,000	896,673	1,479,789	2,233,286	3,072,036	3,607,537	3,902,037	4,123,537	4,305,037	4,483,037	4,685,720	4,716,970	4,730,470	4,852,738	4,886,106	4,906,973	5,233,473	5,340,473	5,420,474	5,420,474	5,420,474	5,420,474	5,420,474	5,420,474											
Jun-93	62,000	716,058	1,381,386	2,353,337	2,761,587	3,177,388	3,464,117	3,567,117	3,757,117	3,842,117	3,854,117	3,909,117	3,909,117	3,909,117	3,909,117	3,909,117	3,959,117	4,017,117	4,052,117	4,087,117	4,087,117	4,087,117	4,100,617												
Jun-94	90,000	769,356	1,632,582	2,348,106	2,873,483	3,206,984	3,406,484	3,607,984	3,655,484	3,695,534	3,695,534	3,930,034	4,001,034	4,026,034	4,051,034	4,171,034	4,177,034	4,177,034	4,177,034	4,177,034	4,177,034	4,177,034													
Jun-95	219,963	1,108,065	2,085,265	2,882,589	3,282,359	3,507,959	3,574,959	3,584,959	3,655,584	3,790,459	3,848,859	3,883,859	3,883,859	3,995,859	4,038,359	4,050,859	4,050,859	4,050,859	4,050,859	4,050,859	4,050,859	4,050,859													
Jun-96	80,500	785,730	1,835,086	2,491,917	2,811,368	2,921,369	3,010,536	3,169,369	3,292,369	3,423,370	3,526,370	3,588,870	3,588,870	3,607,270	3,623,870	3,623,870	3,623,870	3,623,870	3,623,870	3,695,595	3,727,664														
Jun-97	134,365	1,319,116	2,393,116	3,213,299	3,635,799	3,808,050	3,824,050	3,964,650	4,071,151	4,180,152	4,347,152	4,364,152	4,364,152	4,364,152	4,404,152	4,444,152	4,444,152	4,444,152	4,474,152																
Jun-98	408,337	1,298,950	2,461,625	3,126,625	3,557,716	3,822,625	3,932,960	4,094,126	4,123,126	4,131,127	4,141,127	4,368,877	4,498,877	4,617,877	4,686,877	4,686,877	4,686,877	4,686,877																
Jun-99	251,500	690,750	1,733,431	2,499,052	2,866,608	3,084,805	3,354,881	3,533,936	3,606,937	3,786,937	3,838,937	3,911,938	3,911,938	3,911,938	3,976,938	4,086,938	4,086,938																	
Jun-00	135,731	1,130,224	1,856,765	2,388,815	2,783,366	3,047,865	3,412,749	3,610,867	3,728,868	3,804,868	3,836,368	3,870,368	3,895,368	3,907,368	3,907,368	3,907,368																		
Jun-01	108,490	626,310	1,464,820	1,980,624	2,466,794	2,990,359	3,229,863	3,600,363	3,734,363	3,752,363	3,752,363	3,752,363	3,814,863	3,814,863	3,814,863																			
Jun-02	48,000	299,595	918,995	1,611,909	2,379,996	2,936,811	3,293,532	3,618,532	3,663,668	3,732,668	3,785,668	3,827,668	3,827,668	3,832,668																				
Jun-03	20,000	263,617	1,237,271	2,068,006	2,622,988	3,075,411	3,200,412	3,280,412	3,286,412	3,382,412	3,459,912	3,519,912	3,519,913																					
Jun-04	47,500	200,700	753,163	1,670,265	2,500,018	3,053,018	3,215,018	3,456,519	3,556,519	3,556,519	3,557,520	3,593,520																						
Jun-05	6,157	177,260	1,017,627	2,377,229	3,026,952	3,327,952	3,598,952	3,815,953	4,010,153	4,010,153	4,010,153																							
Jun-06	0	307,301	1,079,755	2,432,756	2,916,929	3,362,429	3,725,429	3,828,429	3,848,129	3,863,429																								
Jun-07	36,000	487,583	1,402,335	2,106,086	2,522,088	2,715,090	2,864,532	3,139,534	3,288,317																									
Jun-08	17,730	746,231	1,520,880	2,499,880	3,295,130	3,667,592	4,347,463	4,545,798																										
Jun-09	285,000	647,500	1,431,267	2,239,268	2,761,944	3,286,444	3,600,945																											
Jun-10	0	601,092	1,398,471	2,345,079	3,267,878	3,822,184																												
Jun-11	315,691	777,684	1,803,911	2,603,240	3,718,269																													
Jun-12	0	441,786	1,184,114	2,805,204																														
Jun-13	113,000	484,012	1,180,271																															
Jun-14	102,000	403,628																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensatio
All Clusters Combined
INDEMNITY
Lump Sum Developmen
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sum

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.001	0.005	0.005	0.003	0.001	0.000	0.003	0.003	0.003	0.001	0.001	0.002	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.002	0.002	0.005	0.009	0.005	0.005	0.007	0.009	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.001	0.001	0.005	0.008	0.005	0.010	0.009	0.011	0.002	0.004	0.002	0.001	0.002	0.004	0.002	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.003	0.001	0.003	0.004	0.006	0.011	0.016	0.009	0.005	0.008	0.001	0.000	0.004	0.003	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000			
Jun-86	0.000	0.000	0.001	0.003	0.005	0.003	0.007	0.018	0.013	0.000	0.003	0.000	0.002	0.001	0.000	0.000	0.000	0.001	0.001	0.001	0.000	0.001	0.001	0.005	0.000	0.004	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.002	0.004	0.005	0.005	0.012	0.021	0.010	0.008	0.004	0.004	0.002	0.007	0.008	0.005	0.005	0.001	0.003	0.002	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.001	0.003	0.006	0.011	0.021	0.016	0.010	0.011	0.005	0.004	0.003	0.004	0.000	0.001	0.000	0.003	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.001	0.001	0.000	0.000						
Jun-89	0.000	0.004	0.006	0.015	0.027	0.025	0.015	0.015	0.008	0.005	0.009	0.004	0.004	0.001	0.000	0.000	0.001	0.003	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.004	0.019	0.029	0.021	0.017	0.016	0.016	0.007	0.007	0.006	0.007	0.001	0.001	0.000	0.000	0.002	0.002	0.002	0.000	0.001	0.001	0.001	0.000	0.003	0.000								
Jun-91	0.000	0.008	0.038	0.028	0.018	0.023	0.015	0.004	0.004	0.003	0.002	0.001	0.000	0.000	0.001	0.003	0.002	0.005	0.003	0.000	0.000	0.000	0.001	0.000	0.003									
Jun-92	0.002	0.026	0.018	0.023	0.026	0.017	0.009	0.007	0.006	0.006	0.006	0.001	0.000	0.004	0.001	0.001	0.010	0.003	0.002	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.003	0.030	0.030	0.044	0.019	0.019	0.013	0.005	0.009	0.004	0.001	0.003	0.000	0.000	0.000	0.000	0.002	0.003	0.002	0.002	0.000	0.000	0.001											
Jun-94	0.004	0.029	0.036	0.030	0.022	0.014	0.008	0.009	0.002	0.002	0.000	0.010	0.003	0.001	0.001	0.005	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.010	0.040	0.044	0.036	0.018	0.010	0.003	0.000	0.003	0.006	0.003	0.002	0.000	0.005	0.002	0.001	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.004	0.032	0.048	0.030	0.015	0.005	0.004	0.007	0.006	0.006	0.005	0.003	0.000	0.001	0.001	0.000	0.000	0.000	0.003	0.001														
Jun-97	0.006	0.056	0.051	0.039	0.020	0.008	0.001	0.007	0.005	0.005	0.008	0.001	0.000	0.000	0.002	0.002	0.000	0.000	0.001															
Jun-98	0.017	0.036	0.048	0.027	0.018	0.011	0.005	0.007	0.001	0.000	0.000	0.009	0.005	0.005	0.003	0.000	0.000	0.000																
Jun-99	0.011	0.019	0.045	0.033	0.016	0.009	0.012	0.008	0.003	0.008	0.002	0.003	0.000	0.000	0.003	0.005	0.000																	
Jun-00	0.005	0.037	0.027	0.020	0.015	0.010	0.013	0.007	0.004	0.003	0.001	0.001	0.001	0.000	0.000	0.000																		
Jun-01	0.003	0.016	0.026	0.016	0.015	0.016	0.007	0.011	0.004	0.001	0.000	0.000	0.002	0.000	0.000																			
Jun-02	0.002	0.009	0.021	0.023	0.026	0.019	0.012	0.011	0.002	0.002	0.002	0.001	0.000	0.000																				
Jun-03	0.001	0.008	0.033	0.029	0.019	0.016	0.004	0.003	0.000	0.003	0.003	0.002	0.000																					
Jun-04	0.002	0.005	0.019	0.032	0.029	0.019	0.006	0.008	0.004	0.000	0.000	0.001																						
Jun-05	0.000	0.006	0.029	0.047	0.023	0.010	0.009	0.008	0.007	0.000	0.000																							
Jun-06	0.000	0.012	0.031	0.053	0.019	0.018	0.014	0.004	0.001	0.001																								
Jun-07	0.002	0.019	0.039	0.030	0.018	0.008	0.006	0.012	0.006																									
Jun-08	0.001	0.025	0.027	0.034	0.028	0.013	0.024	0.007																										
Jun-09	0.009	0.012	0.026	0.027	0.017	0.017	0.010																											
Jun-10	0.000	0.020	0.027	0.032	0.031	0.019																												
Jun-11	0.009	0.013	0.029	0.023	0.032																													
Jun-12	0.000	0.012	0.020	0.045																														
Jun-13	0.003	0.011	0.021																															
Jun-14	0.003	0.007																																
Jun-15	0.000																																	

Averages		12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
Simple Avg																																		
All Yrs (ex P)	0.003	0.016	0.025	0.025	0.018	0.013	0.010	0.008	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.000	0.001	0.000	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	
Latest 5	0.003	0.013	0.025	0.032	0.025	0.015	0.013	0.008	0.003	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000					
Latest 3	0.002	0.010	0.024	0.033	0.027	0.016	0.013	0.008	0.005	0.000	0.001	0.002	0.001	0.000	0.001	0.002	0.000	0.000	0.002	0.000	0.000	0.000	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.000				
Olympic Avg																																		
All Yrs (ex P)	0.003	0.015	0.025	0.025	0.018	0.013	0.009	0.008	0.005	0.004	0.004	0.003	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.002	0.013	0.026	0.034	0.024	0.016	0.010	0.008	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.000	0.000	0.000	0.001										
Latest 5	0.002	0.012	0.025	0.031	0.025	0.016	0.011	0.008	0.004	0.001	0.001	0.001	0.000	0.000	0.002	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000					

Commonwealth of Massachusetts Workers Compensatio
All Clusters Combined
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	12,000	58,500	89,500	109,500	293,500	408,500	546,500	1,097,484	1,691,484	2,010,268	2,165,768	2,195,768	2,558,601	2,928,269	3,283,267	3,355,517	3,501,017	3,702,517	3,820,557	3,848,557	3,926,682	3,926,682	3,934,182	3,941,682	3,941,682	3,941,682	3,941,682
Jun-83	0	0	0	0	0	20,000	20,000	52,500	90,000	170,000	323,481	414,231	491,231	601,231	761,231	761,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231	771,231		
Jun-84	0	0	0	0	25,750	58,250	168,850	347,287	466,787	700,437	904,637	1,151,138	1,199,138	1,301,139	1,351,139	1,381,139	1,418,639	1,503,639	1,548,639	1,548,639	1,548,639	1,632,639	1,632,639	1,642,639	1,642,639	1,642,639	1,792,639	1,792,639	1,792,639	1,792,639	1,792,639	1,792,639	1,792,639		
Jun-85	0	0	0	98,476	133,976	260,476	407,031	608,281	991,681	1,557,514	1,894,714	2,088,214	2,382,764	2,422,764	2,422,764	2,556,264	2,676,264	2,706,264	2,741,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,766,264	2,791,264	2,791,264	2,791,264				
Jun-86	0	0	58,000	174,759	387,859	534,203	871,131	1,698,030	2,285,025	2,295,025	2,442,025	2,462,025	2,548,025	2,585,525	2,585,525	2,585,525	2,585,525	2,615,525	2,670,525	2,734,525	2,750,525	2,795,525	2,853,800	3,091,601	3,091,601	3,289,601	3,291,601	3,303,601	3,303,601	3,303,601					
Jun-87	0	81,440	265,762	512,428	765,890	1,387,497	2,438,034	2,947,035	3,345,491	3,530,297	3,716,721	3,819,392	4,154,251	4,560,751	4,800,751	5,040,750	5,090,750	5,222,750	5,302,750	5,312,750	5,312,750	5,312,750	5,312,750	5,447,750	5,447,750	5,447,750	5,447,750	5,447,750	5,447,750						
Jun-88	0	106,671	307,099	725,599	1,562,083	3,135,525	4,328,025	5,039,408	5,888,408	6,261,808	6,567,134	6,808,641	7,137,104	7,137,104	7,197,014	7,197,014	7,388,681	7,453,681	7,539,014	7,639,015	7,729,015	7,879,016	7,879,016	7,937,017	7,999,017	8,057,017	8,057,017	8,057,017							
Jun-89	0	239,195	620,195	1,617,939	3,407,380	5,038,330	6,061,325	7,056,827	7,588,327	7,920,827	8,524,638	8,782,738	9,059,238	9,151,738	9,176,738	9,195,238	9,258,738	9,477,071	9,593,454	9,753,738	9,816,238	9,816,238	9,816,238	9,826,238	9,826,238	9,826,239	9,826,239								
Jun-90	0	254,094	1,459,232	3,268,528	4,586,480	5,647,235	6,632,785	7,625,785	8,035,319	8,473,619	8,839,131	9,247,964	9,288,797	9,334,797	9,365,797	9,390,797	9,496,797	9,606,922	9,736,798	9,764,298	9,797,631	9,830,965	9,864,298	9,864,298	10,048,798	10,079,298								
Jun-91	13,500	452,207	2,446,957	3,880,284	4,800,710	6,018,550	6,776,550	6,979,839	7,211,839	7,351,839	7,451,840	7,505,840	7,505,840	7,505,840	7,575,840	7,753,940	7,856,440	8,136,440	8,266,440	8,266,440	8,266,440	8,266,440	8,326,440	8,326,440	8,484,440									
Jun-92	66,000	896,673	1,479,789	2,233,286	3,072,036	3,607,537	3,902,037	4,123,537	4,305,037	4,483,037	4,685,720	4,716,970	4,730,470	4,852,738	4,886,106	4,906,973	5,233,473	5,340,473	5,420,474	5,420,474	5,420,474	5,420,474	5,420,474	5,420,474										
Jun-93	62,000	716,058	1,381,386	2,353,337	2,761,587	3,177,388	3,464,117	3,567,117	3,757,117	3,842,117	3,854,117	3,909,117	3,909,117	3,909,117	3,909,117	3,909,117	3,959,117	4,017,117	4,052,117	4,087,117	4,087,117	4,087,117	4,100,617											
Jun-94	90,000	769,356	1,632,582	2,348,106	2,873,483	3,206,984	3,406,484	3,607,984	3,655,484	3,695,534	3,695,534	3,930,034	4,001,034	4,026,034	4,051,034	4,171,034	4,177,034	4,177,034	4,177,034	4,177,034	4,177,034	4,177,034												
Jun-95	219,963	1,108,065	2,085,265	2,882,589	3,282,359	3,507,959	3,574,959	3,584,959	3,655,584	3,790,459	3,848,859	3,883,859	3,883,859	3,995,859	4,038,359	4,050,859	4,050,859	4,050,859	4,050,859	4,050,859	4,050,859													
Jun-96	80,500	785,730	1,835,086	2,491,917	2,811,368	2,921,369	3,010,536	3,169,369	3,292,369	3,423,370	3,526,370	3,588,870	3,588,870	3,607,270	3,623,870	3,623,870	3,623,870	3,623,870	3,695,595	3,727,664														
Jun-97	134,365	1,319,116	2,393,116	3,213,299	3,635,799	3,808,050	3,824,050	3,964,650	4,071,151	4,180,152	4,347,152	4,364,152	4,364,152	4,364,152	4,404,152	4,444,152	4,444,152	4,444,152	4,474,152															
Jun-98	408,337	1,298,950	2,461,625	3,126,625	3,557,716	3,822,625	3,932,960	4,094,126	4,123,126	4,131,127	4,141,127	4,368,877	4,498,877	4,617,877	4,686,877	4,686,877	4,686,877	4,686,877																
Jun-99	251,500	690,750	1,733,431	2,499,052	2,866,608	3,084,805	3,354,881	3,533,936	3,606,937	3,786,937	3,838,937	3,911,938	3,911,938	3,911,938	3,976,938	4,086,938	4,086,938																	
Jun-00	135,731	1,130,224	1,856,765	2,388,815	2,783,366	3,047,865	3,412,749	3,610,867	3,728,868	3,804,868	3,836,368	3,870,368	3,895,368	3,907,368	3,907,368	3,907,368																		
Jun-01	108,490	626,310	1,464,820	1,980,624	2,466,794	2,990,359	3,229,863	3,600,363	3,734,363	3,752,363	3,752,363	3,752,363	3,814,863	3,814,863	3,814,863																			
Jun-02	48,000	299,595	918,995	1,611,909	2,379,996	2,936,811	3,293,532	3,618,532	3,663,668	3,732,668	3,785,668	3,827,668	3,827,668	3,832,668																				
Jun-03	20,000	263,617	1,237,271	2,068,006	2,622,988	3,075,411	3,200,412	3,280,412	3,286,412	3,382,412	3,459,912	3,519,912	3,519,913																					
Jun-04	47,500	200,700	753,163	1,670,265	2,500,018	3,053,018	3,215,018	3,456,519	3,556,519	3,556,519	3,557,520	3,593,520																						
Jun-05	6,157	177,260	1,017,627	2,377,229	3,026,952	3,327,952	3,598,952	3,815,953	4,010,153	4,010,153	4,010,153																							
Jun-06	0	307,301	1,079,755	2,432,756	2,916,929	3,362,429	3,725,429	3,828,429	3,848,129	3,863,429																								
Jun-07	36,000	487,583	1,402,335	2,106,086	2,522,088	2,715,090	2,864,532	3,139,534	3,288,317																									
Jun-08	17,730	746,231	1,520,880	2,499,880	3,295,130	3,667,592	4,347,463	4,545,798																										
Jun-09	285,000	647,500	1,431,267	2,239,268	2,761,944	3,286,444	3,600,945																											
Jun-10	0	601,092	1,398,471	2,345,079	3,267,878	3,822,184																												
Jun-11	315,691	777,684	1,803,911	2,603,240	3,718,269																													
Jun-12	0	441,786	1,184,114	2,805,204																														
Jun-13	113,000	484,012	1,180,271																															
Jun-14	102,000	403,628																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs							4.875	1.530	1.223	2.680	1.392	1.338	2.008	1.541	1.188	1.077	1.014	1.165	1.144	1.121	1.022	1.043	1.058	1.032	1.007	1.020	1.000	1.000	1.002	1.002	1.000	1.000	1.000	
Jun-83						1.000	2.625	1.714	1.889	1.903	1.281	1.186	1.224	1.266	1.000	1.013	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	1.000	1.000		
Jun-84					2.262	2.899	2.057	1.344	1.501	1.292	1.272	1.042	1.085	1.038	1.022	1.027	1.060	1.030	1.000	1.000	1.054	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Jun-85				1.360	1.944	1.563	1.494	1.630	1.571	1.216	1.102	1.141	1.017	1.000	1.055	1.047	1.011	1.013	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Jun-86			3.013	2.219	1.377	1.631	1.949	1.346	1.004	1.064	1.008	1.035	1.015	1.000	1.000	1.000	1.012	1.021	1.024	1.006	1.016	1.021	1.083	1.000	1.064	1.001	1.004	1.000	1.000					
Jun-87		3.263	1.928	1.495	1.812	1.757	1.209	1.135	1.055	1.053	1.028	1.088	1.098	1.053	1.050	1.010	1.026	1.015	1.002	1.000	1.000	1.000	1.025	1.000	1.000	1.000	1.000	1.000						
Jun-88		2.879	2.363	2.153	2.007	1.380	1.164	1.168	1.063	1.049	1.037	1.048	1.000	1.008	1.000	1.027	1.009	1.011	1.013	1.012	1.019	1.000	1.007	1.008	1.007	1.000	1.000							
Jun-89		2.593	2.609	2.106	1.479	1.203	1.164	1.075	1.044	1.076	1.030	1.031	1.010	1.003	1.002	1.007	1.024	1.012	1.017	1.006	1.000	1.000	1.001	1.000	1.000	1.000								
Jun-90		5.743	2.240	1.403	1.231	1.175	1.150	1.054	1.055	1.043	1.046	1.004	1.005	1.003	1.003	1.011	1.012	1.014	1.003	1.003	1.003	1.003	1.000	1.019	1.003									
Jun-91	33.497	5.411	1.586	1.237	1.254	1.126	1.030	1.033	1.019	1.014	1.007	1.000	1.000	1.009	1.024	1.013	1.036	1.016	1.000	1.000	1.000	1.007	1.000	1.019										
Jun-92	13.586	1.650	1.509	1.376	1.174	1.082	1.057	1.044	1.041	1.045	1.007	1.003	1.026	1.007	1.004	1.067	1.020	1.015	1.000	1.000	1.000	1.000	1.000											
Jun-93	11.549	1.929	1.704	1.173	1.151	1.090	1.030	1.053	1.023	1.003	1.014	1.000	1.000	1.000	1.000	1.013	1.015	1.009	1.009	1.000	1.000	1.003												
Jun-94	8.548	2.122	1.438	1.224	1.116	1.062	1.059	1.013	1.011	1.000	1.063	1.018	1.006	1.006	1.030	1.001	1.000	1.000	1.000	1.000	1.000													
Jun-95	5.038	1.882	1.382	1.139	1.069	1.019	1.003	1.020	1.037	1.015	1.009	1.000	1.029	1.011	1.003	1.000	1.000	1.000	1.000	1.000														
Jun-96	9.761	2.336	1.358	1.128	1.039	1.031	1.053	1.039	1.040	1.030	1.018	1.000	1.005	1.005	1.000	1.000	1.000	1.020	1.009															
Jun-97	9.817	1.814	1.343	1.131	1.047	1.004	1.037	1.027	1.027	1.040	1.004	1.000	1.000	1.009	1.009	1.000	1.000	1.007																
Jun-98	3.181	1.895	1.270	1.138	1.074	1.029	1.041	1.007	1.002	1.002	1.055	1.030	1.026	1.015	1.000	1.000	1.000																	
Jun-99	2.747	2.509	1.442	1.147	1.076	1.088	1.053	1.021	1.050	1.014	1.019	1.000	1.000	1.017	1.028	1.000																		
Jun-00	8.327	1.643	1.287	1.165	1.095	1.120	1.058	1.033	1.020	1.008	1.009	1.006	1.003	1.000	1.000																			
Jun-01	5.773	2.339	1.352	1.245	1.212	1.080	1.115	1.037	1.005	1.000	1.000	1.017	1.000	1.000																				
Jun-02	6.242	3.067	1.754	1.477	1.234	1.121	1.099	1.012	1.019	1.014	1.011	1.000	1.001																					
Jun-03	13.181	4.693	1.671	1.268	1.172	1.041	1.025	1.002	1.029	1.023	1.017	1.000																						
Jun-04	4.225	3.753	2.218	1.497	1.221	1.053	1.075	1.029	1.000	1.000	1.010																							
Jun-05	28.790	5.741	2.336	1.273	1.099	1.081	1.060	1.051	1.000	1.000																								
Jun-06		3.514	2.253	1.199	1.153	1.108	1.028	1.005	1.004																									
Jun-07	13.544	2.876	1.502	1.198	1.077	1.055	1.096	1.047																										
Jun-08	42.089	2.038	1.644	1.318	1.113	1.185	1.046																											
Jun-09	2.272	2.210	1.565	1.233	1.190	1.096																												
Jun-10		2.327	1.677	1.394	1.170																													
Jun-11	2.463	2.320	1.443	1.428																														
Jun-12		2.680	2.369																															
Jun-13	4.283	2.439																																
Jun-14	3.957																																	

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
Simple Avg																																		
All Yrs (ex P)	11.089	2.877	1.787	1.375	1.291	1.225	1.222	1.118	1.105	1.083	1.048	1.031	1.028	1.024	1.013	1.014	1.014	1.012	1.006	1.002	1.008	1.003	1.012	1.005	1.009	1.013	1.001	1.002	1.000	1.000	1.000	1.000		
Latest 5	3.568	2.395	1.739	1.314	1.140	1.105	1.061	1.027	1.010	1.007	1.009	1.005	1.006	1.008	1.007	1.000	1.000	1.007	1.003	1.000	1.001	1.003	1.002	1.009	1.015	1.000	1.001	1.002						
Latest 3	4.120	2.479	1.830	1.352	1.158	1.112	1.056	1.034	1.001	1.008	1.013	1.006	1.001	1.006	1.009	1.000	1.000	1.009	1.003	1.000	1.000	1.004	1.000	1.013	1.003	1.000	1.001	1.003	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)	6.369	2.414	1.627	1.295	1.189	1.123	1.090	1.057	1.038	1.035	1.028	1.020	1.014	1.011	1.011	1.013	1.015	1.012	1.007	1.003	1.005	1.003	1.008	1.008	1.007	1.005	1.001	1.002	1.000	1.000	1.000	1.000		
Latest 5	5.103	2.371	1.702	1.320	1.142	1.109	1.058	1.027	1.010	1.007	1.009	1.005	1.007	1.008	1.007	1.000	1.000	1.007	1.003	1.000	1.001	1.003	1.002	1.010	1.008	1.000	1.001	1.002	1.000					
Latest 3	6.183	2.447	1.768	1.356	1.156	1.118	1.053	1.034	1.001	1.007	1.013	1.006	1.001	1.006	1.009	1.000	1.000	1.008	1.003	1.000	1.000	1.004	1.000	1.012	1.003	1.000	1.001	1.002	1.000	1.000	1.000			

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	4.4%	0.0%	1.2%	0.6%	1.000	1.000
396	95.6%	3.8%	4.4%	1.0%	0.6%	0.981	0.971
384	91.8%	0.2%	8.2%	0.1%	0.0%	0.960	0.942
372	91.7%	-3.7%	8.3%	-1.1%	-0.6%	0.924	0.890
360	95.3%	1.2%	4.7%	0.4%	0.2%	0.816	0.735
348	94.1%	4.1%	5.9%	1.3%	0.8%	0.826	0.752
336	90.0%	-2.8%	10.0%	-1.0%	-0.6%	0.871	0.817
324	92.8%	0.4%	7.2%	0.2%	0.1%	0.781	0.691
312	92.4%	3.5%	7.6%	1.3%	0.8%	0.764	0.671
300	88.9%	-1.3%	11.1%	-0.5%	-0.3%	0.812	0.740
288	90.2%	4.4%	9.8%	1.7%	1.1%	0.755	0.662
276	85.8%	-3.2%	14.2%	-1.3%	-0.9%	0.804	0.731
264	89.0%	1.4%	11.0%	0.6%	0.4%	0.712	0.606
252	87.6%	1.4%	12.4%	0.6%	0.4%	0.718	0.618
240	86.2%	1.4%	13.8%	0.6%	0.4%	0.721	0.624
228	84.8%	-0.7%	15.2%	-0.3%	-0.2%	0.719	0.622
216	85.5%	1.6%	14.5%	0.8%	0.6%	0.677	0.568
204	84.0%	1.4%	16.0%	0.7%	0.5%	0.683	0.578
192	82.6%	0.3%	17.4%	0.1%	0.1%	0.682	0.579
180	82.3%	2.0%	17.7%	1.2%	0.9%	0.661	0.553
168	80.3%	1.0%	19.7%	0.6%	0.5%	0.671	0.568
156	79.3%	1.0%	20.7%	0.6%	0.5%	0.662	0.557
144	78.3%	2.2%	21.7%	1.4%	1.1%	0.652	0.546
132	76.1%	1.9%	23.9%	1.3%	1.0%	0.660	0.558
120	74.1%	1.8%	25.9%	1.3%	1.1%	0.660	0.559
108	72.3%	3.9%	27.7%	2.8%	2.4%	0.658	0.557
96	68.4%	2.5%	31.6%	1.9%	1.6%	0.675	0.580
84	65.9%	3.3%	34.1%	2.6%	2.3%	0.674	0.579
72	62.5%	3.8%	37.5%	3.1%	2.8%	0.678	0.584
60	58.7%	6.4%	41.3%	5.4%	5.0%	0.682	0.590
48	52.2%	7.3%	47.8%	6.3%	5.9%	0.700	0.613
36	45.0%	11.4%	55.0%	10.4%	9.9%	0.714	0.630
24	33.5%	17.4%	66.5%	16.4%	15.9%	0.737	0.659
12	16.2%	16.2%	83.8%	15.9%	15.7%	0.765	0.694
Total		100.0%					

NOTES:

(2) = 1 / Section 1, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	15,248,806	23,809,336		13,391,163	20,921,461
6/30/82-83	502,178	1,115,726	0.981	492,426	1,094,059
6/30/83-84	1,544,747	2,599,221	0.960	1,464,296	2,466,734
6/30/84-85	974,050	2,818,851	0.924	901,178	2,605,072
6/30/85-86	1,079,118	1,848,600	0.816	974,592	1,669,461
6/30/86-87	1,302,307	2,901,487	0.826	1,153,302	2,548,714
6/30/87-88	3,393,456	6,256,163	0.871	2,963,974	5,454,233
6/30/88-89	3,680,868	5,677,838	0.781	3,159,083	4,859,877
6/30/89-90	3,747,304	5,161,124	0.764	3,162,219	4,363,317
6/30/90-91	3,236,074	5,563,655	0.812	2,687,869	4,591,121
6/30/91-92	2,393,382	3,752,932	0.755	1,961,406	3,077,876
6/30/92-93	2,029,763	3,655,863	0.804	1,643,688	2,966,960
6/30/93-94	2,456,867	3,227,718	0.712	1,967,420	2,584,598
6/30/94-95	2,654,065	3,309,865	0.718	2,101,313	2,619,081
6/30/95-96	2,927,820	3,667,626	0.721	2,285,142	2,864,291
6/30/96-97	3,022,660	3,807,738	0.719	2,334,476	2,946,001
6/30/97-98	2,961,346	3,752,705	0.677	2,240,440	2,841,009
6/30/98-99	3,270,925	4,092,925	0.683	2,423,916	3,036,726
6/30/99-00	4,178,752	5,169,969	0.682	3,044,349	3,768,108
6/30/00-01	5,175,879	6,168,664	0.661	3,711,353	4,424,749
6/30/01-02	5,179,745	6,510,797	0.671	3,691,510	4,637,437
6/30/02-03	5,687,637	7,008,884	0.662	3,985,629	4,914,868
6/30/03-04	5,768,326	7,134,125	0.652	3,987,399	4,928,980
6/30/04-05	5,881,333	7,062,333	0.660	3,999,878	4,808,595
6/30/05-06	6,828,603	7,663,603	0.660	4,621,103	5,197,025
6/30/06-07	6,894,330	8,441,680	0.658	4,609,824	5,667,762
6/30/07-08	8,764,045	10,501,895	0.675	5,856,327	7,017,039
6/30/08-09	10,846,746	12,430,244	0.674	7,195,894	8,262,982
6/30/09-10	11,591,197	14,467,098	0.678	7,748,074	9,728,831
6/30/10-11	15,912,755	18,238,776	0.682	10,732,580	12,327,377
6/30/11-12	19,468,003	22,688,881	0.700	13,397,617	15,652,862
6/30/12-13	21,701,054	26,225,022	0.714	15,354,436	18,592,897
6/30/13-14	31,565,593	36,092,611	0.737	23,055,083	26,433,109
6/30/14-15	42,524,209	49,158,787	0.765	32,414,595	37,576,508
Total	264,393,944	331,982,743		194,713,556	247,449,721
			(7) Total Discount Factor:	0.736	0.745

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	15,248,806	23,809,336
(9) Projected Number of Years:	N/A	N/A
(10) Projected Paid Loss per Year:	15,248,806	23,809,336
(11) Discounted Value at 4%:	2,318,766	3,654,901

NOTES:
(2), (3) From Section 1, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 1, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	15,248,806	23,809,336		12,601,823	19,694,015
6/30/82-83	502,178	1,115,726	0.981	487,758	1,083,689
6/30/83-84	1,544,747	2,599,221	0.960	1,426,844	2,405,034
6/30/84-85	974,050	2,818,851	0.924	868,076	2,508,020
6/30/85-86	1,079,118	1,848,600	0.816	928,227	1,590,005
6/30/86-87	1,302,307	2,901,487	0.826	1,088,648	2,396,216
6/30/87-88	3,393,456	6,256,163	0.871	2,781,260	5,113,789
6/30/88-89	3,680,868	5,677,838	0.781	2,941,525	4,519,690
6/30/89-90	3,747,304	5,161,124	0.764	2,923,021	4,036,969
6/30/90-91	3,236,074	5,563,655	0.812	2,468,351	4,203,721
6/30/91-92	2,393,382	3,752,932	0.755	1,791,095	2,811,689
6/30/92-93	2,029,763	3,655,863	0.804	1,493,526	2,698,708
6/30/93-94	2,456,867	3,227,718	0.712	1,780,449	2,338,657
6/30/94-95	2,654,065	3,309,865	0.718	1,893,582	2,359,323
6/30/95-96	2,927,820	3,667,626	0.721	2,047,032	2,566,399
6/30/96-97	3,022,660	3,807,738	0.719	2,082,828	2,630,680
6/30/97-98	2,961,346	3,752,705	0.677	1,981,255	2,513,052
6/30/98-99	3,270,925	4,092,925	0.683	2,124,215	2,662,730
6/30/99-00	4,178,752	5,169,969	0.682	2,649,772	3,280,253
6/30/00-01	5,175,879	6,168,664	0.661	3,211,465	3,828,999
6/30/01-02	5,179,745	6,510,797	0.671	3,189,317	4,005,221
6/30/02-03	5,687,637	7,008,884	0.662	3,421,085	4,219,814
6/30/03-04	5,768,326	7,134,125	0.652	3,406,229	4,209,498
6/30/04-05	5,881,333	7,062,333	0.660	3,395,517	4,084,184
6/30/05-06	6,828,603	7,663,603	0.660	3,921,410	4,414,258
6/30/06-07	6,894,330	8,441,680	0.658	3,897,405	4,800,076
6/30/07-08	8,764,045	10,501,895	0.675	4,956,790	5,940,008
6/30/08-09	10,846,746	12,430,244	0.674	6,085,458	6,994,254
6/30/09-10	11,591,197	14,467,098	0.678	6,588,589	8,292,977
6/30/10-11	15,912,755	18,238,776	0.682	9,184,183	10,558,155
6/30/11-12	19,468,003	22,688,881	0.700	11,593,143	13,557,548
6/30/12-13	21,701,054	26,225,022	0.714	13,469,174	16,322,826
6/30/13-14	31,565,593	36,092,611	0.737	20,512,243	23,544,407
6/30/14-15	42,524,209	49,158,787	0.765	29,353,200	34,065,035
Total	264,393,944	331,982,743		172,544,495	220,249,899
			(7) Total Discount Factor:	0.653	0.663

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	15,248,806	23,809,336
(9) Projected Number of Years:	N/A	N/A
(10) Projected Paid Loss per Year:	15,248,806	23,809,336
(11) Discounted Value at 6%:	2,318,766	3,654,901

NOTES:
(2), (3) From Section 1, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 1, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	121,062,781	130,566,245	104,542,435	16,520,346	26,023,810				1,367,349	1,504,084	8.3%	5.8%
6/30/82-83	18,721,621	19,354,839	18,212,146	509,475	1,142,693	95.7%	1.0%	23.0%	92,284	284,190	18.1%	24.9%
6/30/83-84	27,858,121	28,975,537	26,292,916	1,565,204	2,682,621	92.5%	1.0%	13.4%	164,313	421,781	10.5%	15.7%
6/30/84-85	42,152,405	44,441,607	41,127,453	1,024,951	3,314,154	95.0%	1.0%	20.0%	281,064	619,707	27.4%	18.7%
6/30/85-86	54,816,561	55,656,026	53,650,673	1,165,889	2,005,353	97.1%	1.0%	34.8%	427,368	722,883	36.7%	36.0%
6/30/86-87	61,852,011	63,929,136	60,435,268	1,416,743	3,493,867	96.1%	1.0%	25.6%	465,015	901,919	32.8%	25.8%
6/30/87-88	90,023,295	93,166,677	86,431,142	3,592,154	6,735,535	94.4%	1.0%	17.7%	684,771	1,292,240	19.1%	19.2%
6/30/88-89	88,769,095	91,025,021	84,813,506	3,955,589	6,211,515	94.3%	1.0%	17.7%	757,824	1,163,130	19.2%	18.7%
6/30/89-90	84,756,619	86,258,538	80,696,524	4,060,095	5,562,014	94.4%	1.0%	17.8%	767,067	1,120,864	18.9%	20.2%
6/30/90-91	71,942,505	74,554,341	68,325,628	3,616,877	6,228,713	93.3%	1.0%	14.9%	512,401	888,624	14.2%	14.3%
6/30/91-92	49,741,674	51,404,851	46,985,683	2,755,991	4,419,168	92.9%	2.0%	28.2%	480,845	734,637	17.4%	16.6%
6/30/92-93	33,176,457	34,886,398	30,893,317	2,283,140	3,993,080	90.8%	2.0%	21.7%	298,692	517,472	13.1%	13.0%
6/30/93-94	36,365,990	37,212,531	33,606,032	2,759,958	3,606,499	91.3%	2.0%	23.1%	376,345	501,204	13.6%	13.9%
6/30/94-95	33,794,200	34,518,960	30,813,425	2,980,775	3,705,535	90.2%	2.0%	20.4%	364,093	444,171	12.2%	12.0%
6/30/95-96	32,670,604	33,496,663	29,373,992	3,296,612	4,122,671	88.8%	2.0%	17.8%	358,035	472,527	10.9%	11.5%
6/30/96-97	33,272,878	34,144,236	29,743,380	3,529,498	4,400,856	88.2%	2.0%	17.0%	238,701	324,321	6.8%	7.4%
6/30/97-98	35,833,047	36,713,826	32,360,603	3,472,444	4,353,223	89.2%	2.0%	18.5%	409,573	482,479	11.8%	11.1%
6/30/98-99	34,425,704	35,331,575	30,545,026	3,880,679	4,786,549	87.6%	1.6%	13.2%	349,307	436,311	9.0%	9.1%
6/30/99-00	39,663,540	40,772,847	34,703,493	4,960,047	6,069,354	86.3%	1.3%	9.4%	513,678	626,746	10.4%	10.3%
6/30/00-01	47,063,378	48,166,272	40,732,310	6,331,068	7,433,962	85.5%	0.7%	5.1%	649,667	746,588	10.3%	10.0%
6/30/01-02	41,351,325	42,759,337	35,191,597	6,159,728	7,567,740	83.7%	1.9%	11.4%	648,212	772,735	10.5%	10.2%
6/30/02-03	42,136,763	43,556,760	35,188,548	6,948,215	8,368,212	82.1%	1.6%	8.7%	639,060	746,942	9.2%	8.9%
6/30/03-04	41,618,051	43,113,390	34,486,440	7,131,611	8,626,950	81.4%	0.7%	3.9%	630,059	768,189	8.8%	8.9%
6/30/04-05	43,656,950	45,500,050	36,289,611	7,367,339	9,210,439	81.4%	0.0%	0.0%	807,964	1,057,096	11.0%	11.5%
6/30/05-06	39,947,780	41,405,700	31,622,833	8,324,947	9,782,867	77.7%	3.7%	16.5%	795,278	937,512	9.6%	9.6%
6/30/06-07	38,631,650	41,135,700	30,154,566	8,477,084	10,981,134	75.6%	2.1%	8.8%	697,389	890,909	8.2%	8.1%
6/30/07-08	43,830,810	46,353,530	33,137,150	10,693,660	13,216,380	73.5%	2.1%	8.0%	617,495	780,905	5.8%	5.9%
6/30/08-09	46,445,050	48,760,168	33,280,953	13,164,097	15,479,215	69.9%	3.6%	11.9%	1,650,314	1,960,048	12.5%	12.7%
6/30/09-10	45,056,470	49,001,791	31,033,490	14,022,980	17,968,301	66.0%	3.9%	11.5%	1,384,560	1,820,407	9.9%	10.1%
6/30/10-11	52,836,470	56,398,191	33,908,854	18,927,616	22,489,337	62.1%	3.9%	10.3%	2,529,860	3,024,242	13.4%	13.4%
6/30/11-12	53,582,770	58,164,318	30,502,245	23,080,525	27,662,073	54.6%	7.5%	16.5%	3,207,323	3,805,047	13.9%	13.8%
6/30/12-13	49,788,680	55,852,988	23,452,972	26,335,708	32,400,016	44.4%	10.2%	18.3%	4,524,093	5,540,977	17.2%	17.1%
6/30/13-14	58,782,410	65,246,288	20,715,773	38,066,637	44,530,515	33.4%	11.0%	16.5%	6,273,021	7,289,566	16.5%	16.4%
6/30/14-15	66,140,350	75,108,578	11,041,876	55,098,474	64,066,702	15.6%	17.8%	21.1%	11,487,646	13,449,507	20.8%	21.0%
Total	1,701,768,013	1,786,932,913	1,384,291,860	317,476,153	402,641,054				45,450,665	57,049,960	14.3%	14.2%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10), (11) Sum of Columns (10), (11) for all clusters
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		6,440,724			7,292,911	8,106,420	852,187	1,665,696		
6/30/82-83		1,241,812	1,252,364		1,245,515	1,264,500	3,703	22,688		
6/30/83-84		3,255,405	3,288,708		3,271,894	3,332,006	16,489	76,600		
6/30/84-85	1,823,085	3,226,838	3,264,989	3,262,311	3,246,432	3,296,074	19,594	69,236	0.178	0.181
6/30/85-86	1,952,445	4,962,311	5,026,594	5,025,915	5,016,831	5,054,335	54,520	92,024	0.257	0.259
6/30/86-87	2,220,820	5,758,976	5,840,866	5,843,780	5,832,661	5,863,607	73,685	104,630	0.263	0.264
6/30/87-88	2,885,583	9,886,893	10,057,589	10,060,919	10,036,785	10,098,460	149,892	211,567	0.348	0.350
6/30/88-89	3,098,180	12,009,867	12,252,901	12,257,388	12,238,266	12,305,222	228,400	295,355	0.395	0.397
6/30/89-90	3,079,763	12,583,220	12,887,851	12,900,870	12,886,732	12,965,831	303,512	382,611	0.418	0.421
6/30/90-91	2,914,364	11,883,680	12,223,671	12,221,671	12,193,645	12,264,901	309,965	381,221	0.418	0.421
6/30/91-92	2,880,434	10,713,579	11,028,118	11,024,937	10,992,004	11,072,632	278,425	359,052	0.382	0.384
6/30/92-93	2,887,238	7,862,414	8,134,736	8,131,787	8,113,777	8,182,238	251,363	319,824	0.281	0.283
6/30/93-94	3,056,850	8,151,347	8,472,376	8,467,996	8,454,990	8,502,680	303,643	351,333	0.277	0.278
6/30/94-95	3,158,808	6,873,333	7,211,466	7,207,963	7,194,903	7,236,916	321,570	363,584	0.228	0.229
6/30/95-96	3,301,791	6,563,090	6,942,615	6,939,805	6,928,043	6,992,737	364,953	429,646	0.210	0.212
6/30/96-97	3,902,868	7,148,622	7,655,649	7,651,787	7,651,867	7,719,026	503,245	570,405	0.196	0.198
6/30/97-98	3,776,138	6,472,141	6,993,625	6,990,428	6,985,000	7,056,420	512,859	584,279	0.185	0.187
6/30/98-99	4,017,530	6,706,225	7,324,864	7,323,396	7,318,000	7,374,870	611,775	668,645	0.182	0.184
6/30/99-00	4,221,786	7,504,980	8,306,191	8,299,188	8,289,570	8,360,660	784,590	855,680	0.196	0.198
6/30/00-01	4,310,725	9,140,745	10,235,208	10,213,238	10,200,890	10,304,000	1,060,145	1,163,255	0.237	0.239
6/30/01-02	4,438,755	7,329,953	8,284,197	8,289,759	8,276,000	8,351,960	946,047	1,022,007	0.186	0.188
6/30/02-03	4,423,888	7,992,803	9,221,060	9,216,095	9,200,010	9,297,760	1,207,207	1,304,957	0.208	0.210
6/30/03-04	4,482,207	8,395,996	9,775,257	9,772,245	9,745,530	9,873,070	1,349,534	1,477,074	0.217	0.220
6/30/04-05	4,639,517	10,021,865	11,962,688	11,558,208	11,469,950	12,128,050	1,448,085	2,106,185	0.247	0.261
6/30/05-06	4,938,165	8,921,703	10,720,928	10,719,262	10,402,780	10,992,700	1,481,077	2,070,997	0.211	0.223
6/30/06-07	5,183,126	9,474,608	11,723,103	11,531,020	11,021,550	11,957,250	1,546,942	2,482,642	0.213	0.231
6/30/07-08	5,508,425	9,008,163	11,238,138	11,491,055	10,915,460	11,676,330	1,907,297	2,668,167	0.198	0.212
6/30/08-09	5,447,676	9,368,582	12,012,053	12,099,656	11,601,880	12,342,500	2,233,298	2,973,918	0.213	0.227
6/30/09-10	5,525,579	8,370,005	11,046,438	11,542,967	10,735,420	11,793,490	2,365,415	3,423,485	0.194	0.213
6/30/10-11	5,712,303	9,137,711	12,601,961	12,806,642	12,003,840	13,205,740	2,866,129	4,068,029	0.210	0.231
6/30/11-12	5,880,714	8,387,093	12,189,751	12,747,260	11,745,500	13,072,170	3,358,407	4,685,077	0.200	0.222
6/30/12-13	6,162,621	7,167,331	11,432,666	12,698,947	11,495,880	13,032,970	4,328,549	5,865,639	0.187	0.211
6/30/13-14	6,442,136	6,504,914	12,785,346	14,212,137	12,806,160	14,573,770	6,301,246	8,068,856	0.199	0.226
6/30/14-15	6,758,892	3,735,022	16,879,679	16,571,984	15,599,100	17,773,750	11,864,078	14,038,728	0.231	0.263
Total	129,032,410	262,201,950	310,273,643	309,080,617	312,409,777	327,425,045	50,207,827	65,223,095		
Tot 6/30/84-15	129,032,410	251,264,009	305,732,571	309,080,617	300,599,457	314,722,119	49,335,448	63,458,110	0.233	0.244

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 1, Exhibit 2, Page 2, Column 3

(4) From Section 1, Exhibit 2, Page 2, Column 8

(5) From Section 1, Exhibit 2, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		6,440,724							7	8	
6/30/82-83		1,241,812	1.008	N/A	1,252,364	N/A	1,252,364		2	1	10,552
6/30/83-84		3,255,405	1.010	N/A	3,288,708	N/A	3,288,708		2	2	16,651
6/30/84-85	1,823,085	3,226,838	1.012	N/A	3,264,989	N/A	3,264,989	0.179	4	4	9,538
6/30/85-86	1,952,445	4,962,311	1.013	N/A	5,026,594	N/A	5,026,594	0.257	2	1	64,282
6/30/86-87	2,220,820	5,758,976	1.014	N/A	5,840,866	N/A	5,840,866	0.263	4	3	27,296
6/30/87-88	2,885,583	9,886,893	1.017	N/A	10,057,589	N/A	10,057,589	0.349	13	13	13,130
6/30/88-89	3,098,180	12,009,867	1.020	N/A	12,252,901	N/A	12,252,901	0.395	12	11	22,094
6/30/89-90	3,079,763	12,583,220	1.024	N/A	12,887,851	N/A	12,887,851	0.418	12	10	30,463
6/30/90-91	2,914,364	11,883,680	1.029	N/A	12,223,671	N/A	12,223,671	0.419	18	14	24,285
6/30/91-92	2,880,434	10,713,579	1.029	N/A	11,028,118	N/A	11,028,118	0.383	15	10	31,454
6/30/92-93	2,887,238	7,862,414	1.035	N/A	8,134,736	N/A	8,134,736	0.282	11	11	24,757
6/30/93-94	3,056,850	8,151,347	1.039	N/A	8,472,376	N/A	8,472,376	0.277	16	16	20,064
6/30/94-95	3,158,808	6,873,333	1.049	N/A	7,211,466	N/A	7,211,466	0.228	17	16	21,133
6/30/95-96	3,301,791	6,563,090	1.058	N/A	6,942,615	N/A	6,942,615	0.210	8	8	47,441
6/30/96-97	3,902,868	7,148,622	1.071	N/A	7,655,649	N/A	7,655,649	0.196	15	16	31,689
6/30/97-98	3,776,138	6,472,141	1.081	N/A	6,993,625	N/A	6,993,625	0.185	13	14	37,249
6/30/98-99	4,017,530	6,706,225	1.092	N/A	7,324,864	N/A	7,324,864	0.182	20	18	34,369
6/30/99-00	4,221,786	7,504,980	1.107	N/A	8,306,191	N/A	8,306,191	0.197	21	18	44,512
6/30/00-01	4,310,725	9,140,745	1.120	N/A	10,235,208	N/A	10,235,208	0.237	28	25	43,779
6/30/01-02	4,438,755	7,329,953	1.130	N/A	8,284,197	N/A	8,284,197	0.187	34	27	35,342
6/30/02-03	4,423,888	7,992,803	1.154	N/A	9,221,060	N/A	9,221,060	0.208	40	34	36,125
6/30/03-04	4,482,207	8,395,996	1.164	N/A	9,775,257	N/A	9,775,257	0.218	37	33	41,796
6/30/04-05	4,639,517	10,021,865	1.194	N/A	11,962,688	N/A	11,962,688	0.258	42	32	60,651
6/30/05-06	4,938,165	8,921,703	1.202	N/A	10,720,928	N/A	10,720,928	0.217	54	41	43,884
6/30/06-07	5,183,126	9,474,608	1.237	N/A	11,723,103	N/A	11,723,103	0.226	51	46	48,880
6/30/07-08	5,508,425	9,008,163	1.248	N/A	11,238,138	N/A	11,238,138	0.204	66	53	42,075
6/30/08-09	5,447,676	9,368,582	1.282	N/A	12,012,053	N/A	12,012,053	0.220	95	74	35,723
6/30/09-10	5,525,579	8,370,005	1.320	N/A	11,046,438	N/A	11,046,438	0.200	123	93	28,779
6/30/10-11	5,712,303	9,137,711	1.379	N/A	12,601,961	N/A	12,601,961	0.221	211	131	26,445
6/30/11-12	5,880,714	8,387,093	1.453	N/A	12,189,751	N/A	12,189,751	0.207	422	207	18,370
6/30/12-13	6,162,621	7,167,331	1.595	N/A	11,432,666	N/A	11,432,666	0.186	1,571	401	10,637
6/30/13-14	6,442,136	6,504,914	1.965	N/A	12,785,346	N/A	12,785,346	0.198	2,219	1,554	4,041
6/30/14-15	6,758,892	3,735,022	4.519	N/A	16,879,679	N/A	16,879,679	0.250		2,489	5,281
Total	129,032,410	262,201,950			310,273,643		310,273,643		5,205	5,434	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 1, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	1,823,085	0.198	3,226,838	1.012	3,262,311	N/A	3,262,311	0.179	0.179
6/30/85-86	1,952,445	0.298	4,962,311	1.013	5,025,915	N/A	5,025,915	0.257	0.257
6/30/86-87	2,220,820	0.308	5,758,976	1.014	5,843,780	N/A	5,843,780	0.263	0.263
6/30/87-88	2,885,583	0.387	9,886,893	1.017	10,060,919	N/A	10,060,919	0.349	0.349
6/30/88-89	3,098,180	0.448	12,009,867	1.020	12,257,388	N/A	12,257,388	0.396	0.396
6/30/89-90	3,079,763	0.489	12,583,220	1.024	12,900,870	N/A	12,900,870	0.419	0.419
6/30/90-91	2,914,364	0.417	11,883,680	1.029	12,221,671	N/A	12,221,671	0.419	0.419
6/30/91-92	2,880,434	0.378	10,713,579	1.029	11,024,937	N/A	11,024,937	0.383	0.383
6/30/92-93	2,887,238	0.277	7,862,414	1.035	8,131,787	N/A	8,131,787	0.282	0.282
6/30/93-94	3,056,850	0.272	8,151,347	1.039	8,467,996	N/A	8,467,996	0.277	0.277
6/30/94-95	3,158,808	0.224	6,873,333	1.049	7,207,963	N/A	7,207,963	0.228	0.228
6/30/95-96	3,301,791	0.206	6,563,090	1.058	6,939,805	N/A	6,939,805	0.210	0.210
6/30/96-97	3,902,868	0.193	7,148,622	1.071	7,651,787	N/A	7,651,787	0.196	0.196
6/30/97-98	3,776,138	0.183	6,472,141	1.081	6,990,428	N/A	6,990,428	0.185	0.185
6/30/98-99	4,017,530	0.180	6,706,225	1.092	7,323,396	N/A	7,323,396	0.182	0.182
6/30/99-00	4,221,786	0.193	7,504,980	1.107	8,299,188	N/A	8,299,188	0.197	0.197
6/30/00-01	4,310,725	0.230	9,140,745	1.120	10,213,238	N/A	10,213,238	0.237	0.237
6/30/01-02	4,438,755	0.185	7,329,953	1.130	8,289,759	N/A	8,289,759	0.187	0.187
6/30/02-03	4,423,888	0.205	7,992,803	1.154	9,216,095	N/A	9,216,095	0.208	0.208
6/30/03-04	4,482,207	0.214	8,395,996	1.164	9,772,245	N/A	9,772,245	0.218	0.218
6/30/04-05	4,639,517	0.184	10,021,865	1.194	11,558,208	N/A	11,558,208	0.249	0.249
6/30/05-06	4,938,165	0.188	8,921,703	1.202	10,719,262	N/A	10,719,262	0.217	0.217
6/30/06-07	5,183,126	0.191	9,474,608	1.237	11,531,020	N/A	11,531,020	0.222	0.222
6/30/07-08	5,508,425	0.194	9,008,163	1.248	11,491,055	N/A	11,491,055	0.209	0.209
6/30/08-09	5,447,676	0.197	9,368,582	1.282	12,099,656	N/A	12,099,656	0.222	0.222
6/30/09-10	5,525,579	0.206	8,370,005	1.320	11,542,967	N/A	11,542,967	0.209	0.209
6/30/10-11	5,712,303	0.209	9,137,711	1.379	12,806,642	N/A	12,806,642	0.224	0.224
6/30/11-12	5,880,714	0.212	8,387,093	1.453	12,747,260	N/A	12,747,260	0.217	0.217
6/30/12-13	6,162,621	0.215	7,167,331	1.595	12,698,947	N/A	12,698,947	0.206	0.206
6/30/13-14	6,442,136	0.218	6,504,914	1.965	14,212,137	N/A	14,212,137	0.221	0.221
6/30/14-15	6,758,892	0.222	3,735,022	4.519	16,571,984	N/A	16,571,984	0.245	0.245
Total	129,032,410		251,264,009		309,080,617		309,080,617		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 1, Exhibit 2, Page 4, Column 11

(4) From Section 1, Exhibit 2, Page 2, Column 3

(5) From Section 1, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.198	0.198
6/30/85-86									0.298	0.298
6/30/86-87									0.308	0.308
6/30/87-88									0.387	0.387
6/30/88-89									0.448	0.448
6/30/89-90									0.489	0.489
6/30/90-91	2,914,364	12,223,671	0.419	1.194	0.501	1.451	0.727	0.130	0.419	0.417
6/30/91-92	2,880,434	11,028,118	0.383	1.189	0.455	1.430	0.651	0.132	0.377	0.378
6/30/92-93	2,887,238	8,134,736	0.282	1.189	0.335	1.408	0.472	0.134	0.279	0.277
6/30/93-94	3,056,850	8,472,376	0.277	1.178	0.327	1.388	0.453	0.138	0.274	0.272
6/30/94-95	3,158,808	7,211,466	0.228	1.170	0.267	1.367	0.365	0.141	0.227	0.224
6/30/95-96	3,301,791	6,942,615	0.210	1.155	0.243	1.347	0.327	0.145	0.210	0.206
6/30/96-97	3,902,868	7,655,649	0.196	1.137	0.223	1.327	0.296	0.149	0.195	0.193
6/30/97-98	3,776,138	6,993,625	0.185	1.135	0.210	1.307	0.275	0.152	0.185	0.183
6/30/98-99	4,017,530	7,324,864	0.182	1.135	0.207	1.288	0.267	0.154	0.182	0.180
6/30/99-00	4,221,786	8,306,191	0.197	1.135	0.223	1.269	0.283	0.156	0.196	0.193
6/30/00-01	4,310,725	10,235,208	0.237	1.109	0.263	1.250	0.329	0.162	0.233	0.230
6/30/01-02	4,438,755	8,284,197	0.187	1.101	0.205	1.232	0.253	0.166	0.189	0.185
6/30/02-03	4,423,888	9,221,060	0.208	1.073	0.224	1.214	0.271	0.173	0.208	0.205
6/30/03-04	4,482,207	9,775,257	0.218	1.046	0.228	1.196	0.273	0.180	0.220	0.214
6/30/04-05	4,639,517	11,962,688	0.258	1.036	0.267	1.178	0.315	0.184	0.214	0.184
6/30/05-06	4,938,165	10,720,928	0.217	1.032	0.224	1.161	0.260	0.188	0.217	0.188
6/30/06-07	5,183,126	11,723,103	0.226	1.032	0.233	1.143	0.267	0.191	0.219	0.191
6/30/07-08	5,508,425	11,238,138	0.204	1.032	0.211	1.126	0.237	0.194	0.221	0.194
6/30/08-09	5,447,676	12,012,053	0.220	1.027	0.226	1.110	0.251	0.197	0.225	0.197
6/30/09-10	5,525,579	11,046,438	0.200	1.000	0.200	1.093	0.219	0.206	0.233	0.206
6/30/10-11	5,712,303	12,601,961	0.221	1.000	0.221	1.077	0.238	0.209	0.235	0.209
6/30/11-12	5,880,714	12,189,751	0.207	1.000	0.207	1.061	0.220	0.212	0.238	0.212
6/30/12-13	6,162,621	11,432,666	0.186	1.000	0.186	1.046	0.194	0.215	0.240	0.215
6/30/13-14	6,442,136	12,785,346	0.198	1.000	0.198	1.030	0.204	0.218	0.243	0.218
6/30/14-15	6,758,892	16,879,679	0.250	1.000	0.250	1.015	0.253	0.222		0.222
Total	113,972,535	256,401,782								

Trend Last 4 (ex 14-15):	1.5%	Avg 3 (ex 14-15):	0.206
Trend Last 8 (ex 14-15):	0.8%	Avg 5 (ex 14-15):	0.215
Trend Last 12 (ex 14-15):	1.6%	Avg 10 (ex 14-15):	0.240
Prior Selected Trend:	1.0%	Prior Sel Avg:	0.245
Selected Trend:	1.5%	Sel. Loss Cost:	0.225

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 1, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.950
(2)	Credibility		89%
(3)	Average Pmt Trend Statewide		0.950
(4)	Credibility Weighted Trend		0.950
		(Low)	(High)
(5)	Selected Range	0.920	0.960
(6)	Incremental Paid for 2015	120,640	120,640
(7)	Estimated Reserve	1,387,364	2,895,369
(8)	Paid to Date (82 & Prior)	6,440,724	6,440,724
(9)	Est Ult Paid for 1982 & Prior	7,828,088	9,336,093

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	114,368	108,385
(11)	Projected Number of Years	3	3
(12)	Estimated Reserve	343,105	325,155
(13)	Paid to Date (82 & Prior)	6,440,724	6,320,084
(14)	Est Ult Paid for 1982 & Prior	6,783,829	6,645,239
(14a)	Paid Counts During Fiscal Year	8	7
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	7,305,959	9,336,093
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**7,305,959**	**9,336,093**
(18)	Implied Tail	1.134	1.450
(19)	Ult Loss Inc Lump Sums @ 6/14	7,149,102	10,067,605

NOTES:

(1) From Section 1, Exhibit 2, Page 6
(2) = (Average of Section 1, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 1, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 1, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	401,487	12.903			
1993	2	281,130	12.547	0.700		
1994	3	275,063	12.525	0.978		
1995	4	195,978	12.186	0.712		
1996	5	235,244	12.368	1.200		
1997	6	119,211	11.689	0.507		
1998	7	74,969	11.225	0.629		
1999	8	167,971	12.032	2.241		
2000	9	112,165	11.628	0.668	n =	24
2001	10	83,644	11.334	0.746	S(x) =	48,084
2002	11	54,441	10.905	0.651	S(x-sq) =	96,337,444
2003	12	53,298	10.884	0.979	S(xy) =	562,136
2004	13	73,810	11.209	1.385	S(y) =	281
2005	14	86,676	11.370	1.174	D =	27,600
2006	15	71,904	11.183	0.830	slope =	-0.035
2007	16	66,960	11.112	0.931	Avg Trend =	0.965
2008	17	71,871	11.183	1.073		
2009	18	156,441	11.960	2.177		
2010	19	168,137	12.033	1.075		
2011	20	139,603	11.847	0.830		
2012	21	102,690	11.539	0.736		
2013	22	106,562	11.576	1.038		
2014	23	115,903	11.661	1.088		
2015	24	120,640	11.701	1.041		
					Selected Trend:	**0.950**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 1.041 = 120640 / 115903

Commonwealth of Massachusetts Workers Compensatio
All Clusters Combined
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	80,157	194,108	281,698	355,785	430,372	505,456	583,349	673,674	790,768	861,582	915,134	975,815	1,007,922	1,082,827	1,139,603	1,141,641	1,147,008	1,150,280	1,152,153	1,152,412	1,154,034	1,170,882	1,177,268	1,193,197	1,205,857	1,216,414	1,222,393	1,225,876	1,230,254	1,233,433	1,237,128	1,241,152	1,241,812
June-84	278,846	675,251	979,952	1,237,679	1,497,148	1,692,853	1,965,008	2,259,281	2,488,041	2,658,528	2,815,940	2,906,236	2,927,914	2,961,604	2,990,903	3,026,971	3,061,107	3,088,013	3,103,364	3,110,882	3,148,274	3,167,361	3,181,238	3,187,495	3,198,788	3,205,196	3,216,959	3,243,352	3,245,106	3,246,544	3,252,369	3,255,405	
June-85	281,180	680,904	988,156	1,248,041	1,524,376	1,767,225	2,056,915	2,259,407	2,404,861	2,595,178	2,656,702	2,691,247	2,723,491	2,743,570	2,791,601	2,825,986	2,858,120	2,885,590	2,909,085	2,936,115	2,962,423	2,989,438	3,016,883	3,039,299	3,063,056	3,088,322	3,111,388	3,139,070	3,181,218	3,200,244	3,226,838			
June-86	525,630	1,272,862	1,847,229	2,295,762	2,801,909	3,261,873	3,656,708	3,915,488	4,146,092	4,242,208	4,302,418	4,368,117	4,405,703	4,495,556	4,540,345	4,569,414	4,631,690	4,679,159	4,717,866	4,751,566	4,788,347	4,826,166	4,848,695	4,868,351	4,898,350	4,937,177	4,944,321	4,952,720	4,957,299	4,962,311			
June-87	679,622	1,645,768	2,495,914	3,175,646	3,758,601	4,235,026	4,616,701	4,839,601	4,982,646	5,092,983	5,194,073	5,273,395	5,401,744	5,450,543	5,483,690	5,500,132	5,518,035	5,536,163	5,551,275	5,565,383	5,582,877	5,601,832	5,621,525	5,656,386	5,681,277	5,707,463	5,726,299	5,745,711	5,758,976					
June-88	1,191,827	3,330,054	5,139,009	6,298,489	7,138,465	7,736,797	8,238,504	8,487,549	8,654,240	8,771,119	8,871,380	8,936,796	8,998,468	9,039,583	9,080,840	9,108,289	9,182,392	9,269,235	9,323,809	9,379,358	9,460,451	9,506,848	9,566,385	9,624,005	9,677,988	9,708,186	9,746,800	9,886,893					
June-89	1,301,800	4,749,050	6,698,392	8,042,212	9,005,556	9,741,252	10,145,151	10,401,975	10,588,606	10,754,116	10,897,219	11,056,485	11,133,041	11,233,906	11,311,779	11,394,541	11,460,208	11,520,998	11,631,220	11,709,730	11,752,400	11,801,214	11,852,925	11,887,968	11,930,739	11,975,978	12,009,867						
June-90	1,971,011	6,207,955	8,378,887	9,502,646	10,377,079	10,866,795	11,178,293	11,460,398	11,654,311	11,744,612	11,853,219	11,929,544	12,013,692	12,102,616	12,193,641	12,288,370	12,363,890	12,414,703	12,454,464	12,472,674	12,492,856	12,504,730	12,520,503	12,538,576	12,563,968	12,583,220							
June-91	2,079,021	6,481,845	8,128,761	9,129,342	9,569,888	9,922,223	10,074,064	10,149,765	10,198,433	10,318,761	10,419,870	10,494,642	10,576,694	10,667,922	10,767,927	10,925,448	11,031,802	11,209,381	11,429,660	11,537,541	11,643,261	11,766,239	11,823,905	11,860,583	11,883,680								
June-92	2,582,717	6,069,511	7,466,854	8,202,774	8,503,875	8,669,993	8,827,343	9,030,623	9,135,160	9,257,875	9,372,582	9,437,134	9,514,021	9,594,979	9,639,410	9,684,641	9,729,562	9,777,992	9,843,570	9,998,090	10,162,177	10,366,472	10,602,914	10,713,579									
June-93	1,951,667	5,170,869	6,081,502	6,489,487	6,751,595	6,861,506	6,914,496	6,958,865	7,037,255	7,082,866	7,132,331	7,201,081	7,259,683	7,329,612	7,401,491	7,505,162	7,578,974	7,640,635	7,679,794	7,714,728	7,755,902	7,826,543	7,862,414										
June-94	2,254,109	4,622,918	5,401,604	5,967,695	6,235,895	6,548,173	6,736,695	6,864,534	6,987,145	7,147,202	7,266,001	7,394,198	7,524,153	7,640,660	7,736,000	7,790,584	7,842,474	7,909,569	7,974,641	8,037,509	8,101,818	8,151,347											
June-95	2,029,019	3,973,539	4,748,104	5,104,898	5,297,904	5,458,376	5,592,474	5,756,438	5,903,503	6,059,664	6,161,322	6,276,889	6,428,588	6,491,856	6,546,028	6,596,908	6,642,430	6,764,444	6,797,406	6,837,368	6,873,333												
June-96	1,766,253	4,182,294	4,865,024	5,174,865	5,452,218	5,598,854	5,739,120	5,855,214	5,980,868	6,100,238	6,209,752	6,290,753	6,361,945	6,411,788	6,464,381	6,495,988	6,521,070	6,537,735	6,548,588	6,563,090													
June-97	1,766,725	3,725,485	4,494,601	4,941,702	5,201,917	5,412,606	5,536,117	5,694,640	5,852,834	5,984,835	6,131,050	6,244,244	6,315,764	6,399,332	6,491,158	6,664,852	6,857,883	7,062,337	7,148,622														
June-98	1,434,653	3,363,240	4,046,082	4,435,465	4,731,267	4,919,954	5,122,526	5,375,830	5,487,330	5,608,858	5,703,803	5,850,033	5,931,380	6,078,298	6,191,362	6,271,642	6,360,866	6,472,141															
June-99	1,427,577	3,215,372	3,912,893	4,351,301	4,694,328	4,986,960	5,249,952	5,556,545	5,746,199	5,876,662	5,994,567	6,154,782	6,268,261	6,402,584	6,478,357	6,567,127	6,706,225																
June-00	1,919,617	4,021,129	4,792,481	5,313,057	5,734,824	6,105,211	6,329,799	6,555,866	6,681,932	6,813,975	6,898,518	6,996,942	7,138,790	7,262,102	7,372,673	7,504,980																	
June-01	1,955,272	4,077,952	5,089,014	5,933,836	6,650,457	7,105,631	7,471,084	7,767,438	8,000,937	8,307,585	8,507,669	8,703,774	8,845,415	9,003,056	9,140,745																		
June-02	1,477,425	3,509,146	4,573,760	5,338,916	5,731,628	5,955,713	6,085,017	6,292,071	6,517,249	6,663,212	6,917,679	7,073,118	7,209,384	7,329,953																			
June-03	969,154	3,818,930	5,475,517	6,135,434	6,529,665	6,778,078	6,990,986	7,205,533	7,374,939	7,547,463	7,650,965	7,822,367	7,992,803																				
June-04	1,457,859	4,815,053	6,241,371	6,962,594	7,265,206	7,595,768	7,812,538	7,975,825	8,092,945	8,180,931	8,285,856	8,395,996																					
June-05	2,296,467	6,044,403	7,443,461	8,222,874	8,698,237	9,004,663	9,337,914	9,544,673	9,739,666	9,917,957	10,021,865																						
June-06	2,480,251	5,605,314	6,838,991	7,488,958	7,923,458	8,230,916	8,500,027	8,685,758	8,828,551	8,921,703																							
June-07	2,697,227	6,287,742	7,783,576	8,319,615	8,708,706	8,952,407	9,197,087	9,352,229	9,474,608																								
June-08	3,229,281	6,460,123	7,505,731	8,076,203	8,364,088	8,613,325	8,799,265	9,008,163																									
June-09	3,247,133	6,451,648	7,766,520	8,400,468	8,775,739	9,090,669	9,368,582																										
June-10	3,060,289	6,279,753	7,213,128	7,731,312	8,124,749	8,370,005																											
June-11	3,709,038	7,016,744	8,085,690	8,709,130	9,137,711																												
June-12	3,189,372	6,711,576	7,783,683	8,387,093																													
June-13	2,903,130	6,057,463	7,167,331																														
June-14	2,931,171	6,504,914																															
June-15	3,735,022																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.422	1.451	1.263	1.210	1.174	1.154	1.155	1.174	1.090	1.062	1.066	1.033	1.074	1.052	1.002	1.005	1.003	1.002	1.000	1.001	1.015	1.005	1.014	1.011	1.009	1.005	1.003	1.004	1.003	1.003	1.003	1.001
June-84	2.422	1.451	1.263	1.210	1.131	1.161	1.150	1.101	1.069	1.059	1.032	1.007	1.012	1.010	1.012	1.011	1.009	1.005	1.002	1.012	1.006	1.004	1.002	1.004	1.002	1.004	1.008	1.001	1.000	1.002	1.001	
June-85	2.422	1.451	1.263	1.221	1.159	1.164	1.098	1.064	1.079	1.024	1.013	1.012	1.007	1.018	1.012	1.011	1.010	1.008	1.009	1.009	1.009	1.009	1.007	1.008	1.008	1.007	1.009	1.013	1.006	1.008		
June-86	2.422	1.451	1.243	1.220	1.164	1.121	1.071	1.059	1.023	1.014	1.015	1.009	1.020	1.010	1.006	1.014	1.010	1.008	1.007	1.008	1.008	1.005	1.004	1.006	1.008	1.001	1.002	1.001	1.001			
June-87	2.422	1.517	1.272	1.184	1.127	1.090	1.048	1.030	1.022	1.020	1.015	1.024	1.009	1.006	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.004	1.006	1.004	1.005	1.003	1.003	1.002				
June-88	2.794	1.543	1.226	1.133	1.084	1.065	1.030	1.020	1.014	1.011	1.007	1.007	1.005	1.005	1.003	1.008	1.009	1.006	1.006	1.009	1.005	1.006	1.006	1.006	1.003	1.004	1.014					
June-89	3.648	1.410	1.201	1.120	1.082	1.041	1.025	1.018	1.016	1.013	1.015	1.007	1.009	1.007	1.007	1.006	1.005	1.010	1.007	1.004	1.004	1.004	1.003	1.004	1.004	1.003						
June-90	3.150	1.350	1.134	1.092	1.047	1.029	1.025	1.017	1.008	1.009	1.006	1.007	1.007	1.008	1.008	1.006	1.004	1.003	1.001	1.002	1.001	1.001	1.001	1.002	1.002							
June-91	3.118	1.254	1.123	1.048	1.037	1.015	1.008	1.005	1.012	1.010	1.007	1.008	1.009	1.009	1.015	1.010	1.016	1.020	1.009	1.009	1.011	1.005	1.003	1.002								
June-92	2.350	1.230	1.099	1.037	1.020	1.018	1.023	1.012	1.013	1.012	1.007	1.008	1.009	1.005	1.005	1.005	1.005	1.007	1.016	1.016	1.020	1.023	1.010									
June-93	2.649	1.176	1.067	1.040	1.016	1.008	1.006	1.011	1.006	1.007	1.010	1.008	1.010	1.010	1.014	1.010	1.008	1.005	1.005	1.005	1.009	1.005										
June-94	2.051	1.168	1.105	1.045	1.050	1.029	1.019	1.018	1.023	1.017	1.018	1.018	1.015	1.012	1.007	1.007	1.009	1.008	1.008	1.008	1.006											
June-95	1.958	1.195	1.075	1.038	1.030	1.025	1.029	1.026	1.026	1.017	1.019	1.024	1.010	1.008	1.008	1.007	1.018	1.005	1.006	1.005												
June-96	2.368	1.163	1.064	1.054	1.027	1.025	1.020	1.021	1.020	1.018	1.013	1.011	1.008	1.008	1.005	1.004	1.003	1.002	1.002													
June-97	2.109	1.206	1.099	1.053	1.041	1.023	1.029	1.028	1.023	1.024	1.018	1.011	1.013	1.014	1.027	1.029	1.030	1.012														
June-98	2.344	1.203	1.096	1.067	1.040	1.041	1.049	1.021	1.022	1.017	1.026	1.014	1.025	1.019	1.013	1.014	1.017															
June-99	2.252	1.217	1.112	1.079	1.062	1.053	1.058	1.034	1.023	1.020	1.027	1.018	1.021	1.012	1.014	1.021																
June-00	2.095	1.192	1.109	1.079	1.065	1.037	1.036	1.019	1.020	1.012	1.014	1.020	1.017	1.015	1.018																	
June-01	2.086	1.248	1.166	1.121	1.068	1.051	1.040	1.030	1.038	1.024	1.023	1.016	1.018	1.015																		
June-02	2.375	1.303	1.167	1.074	1.039	1.022	1.034	1.036	1.022	1.038	1.022	1.019	1.017																			
June-03	3.940	1.434	1.121	1.064	1.038	1.031	1.031	1.024	1.023	1.014	1.022	1.022																				
June-04	3.303	1.296	1.116	1.043	1.045	1.029	1.021	1.015	1.011	1.013	1.013																					
June-05	2.632	1.231	1.105	1.058	1.035	1.037	1.022	1.020	1.018	1.010																						
June-06	2.260	1.220	1.095	1.058	1.039	1.033	1.022	1.016	1.011																							
June-07	2.331	1.238	1.069	1.047	1.028	1.027	1.017	1.013																								
June-08	2.000	1.162	1.076	1.036	1.030	1.022	1.024																									
June-09	1.987	1.204	1.082	1.045	1.036	1.031																										
June-10	2.052	1.149	1.072	1.051	1.030																											
June-11	1.892	1.152	1.077	1.049																												
June-12	2.104	1.160	1.078																													
June-13	2.087	1.183																														
June-14	2.219																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.446	1.278	1.135	1.089	1.062	1.051	1.042	1.033	1.026	1.020	1.019	1.015	1.016	1.013	1.010	1.010	1.010	1.007	1.006	1.007	1.008	1.006	1.006	1.005	1.005	1.004	1.007	1.004	1.003	1.004	1.002		
Latest 5	2.071	1.170	1.077	1.045	1.033	1.030	1.021	1.018	1.017	1.020	1.019	1.019	1.020	1.015	1.015	1.015	1.015	1.006	1.007	1.009	1.009	1.008	1.005	1.004	1.004	1.004	1.007	1.004					
Latest 3	2.137	1.165	1.075	1.048	1.032	1.026	1.021	1.017	1.013	1.012	1.019	1.019	1.017	1.014	1.015	1.021	1.017	1.006	1.005	1.006	1.012	1.011	1.005	1.003	1.003	1.003	1.006	1.006	1.002	1.004			
Volume Wtd																																	
All Yrs	2.343	1.241	1.113	1.070	1.048	1.037	1.030	1.023	1.020	1.016	1.015	1.013	1.013	1.010	1.010	1.010	1.010	1.008	1.006	1.007	1.008	1.007	1.005	1.004	1.004	1.003	1.008	1.004	1.002	1.005	1.002	1.001	
Latest 5	2.062	1.169	1.077	1.045	1.032	1.030	1.021	1.017	1.017	1.019	1.019	1.019	1.019	1.015	1.015	1.015	1.015	1.007	1.008	1.009	1.009	1.007	1.005	1.003	1.004	1.003	1.008	1.004					
Latest 3	2.136	1.164	1.076	1.048	1.032	1.027	1.021	1.017	1.013	1.012	1.019	1.019	1.017	1.014	1.015	1.022	1.017	1.006	1.006	1.006	1.012	1.011	1.005	1.003	1.003	1.003	1.008	1.004	1.002	1.005			

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	7,286,680	8,358,580	7,292,911	8,106,420	6,231	0.1%	(252,160)	-3.0%
6/30/82-83	1,245,814	1,280,197	1,245,515	1,264,500	(299)	0.0%	(15,697)	-1.2%
6/30/83-84	3,269,628	3,367,863	3,271,894	3,332,006	2,266	0.1%	(35,857)	-1.1%
6/30/84-85	3,248,740	3,265,636	3,246,432	3,296,074	(2,307)	-0.1%	30,438	0.9%
6/30/85-86	5,028,101	5,057,115	5,016,831	5,054,335	(11,270)	-0.2%	(2,780)	-0.1%
6/30/86-87	5,860,246	5,866,437	5,832,661	5,863,607	(27,585)	-0.5%	(2,830)	0.0%
6/30/87-88	9,979,000	9,995,000	10,036,785	10,098,460	57,785	0.6%	103,460	1.0%
6/30/88-89	12,297,230	12,327,225	12,238,266	12,305,222	(58,964)	-0.5%	(22,004)	-0.2%
6/30/89-90	12,913,950	13,004,306	12,886,732	12,965,831	(27,218)	-0.2%	(38,475)	-0.3%
6/30/90-91	12,222,115	12,303,782	12,193,645	12,264,901	(28,470)	-0.2%	(38,881)	-0.3%
6/30/91-92	10,944,074	11,016,647	10,992,004	11,072,632	47,930	0.4%	55,984	0.5%
6/30/92-93	8,141,767	8,186,684	8,113,777	8,182,238	(27,990)	-0.3%	(4,446)	-0.1%
6/30/93-94	8,495,970	8,516,000	8,454,990	8,502,680	(40,980)	-0.5%	(13,320)	-0.2%
6/30/94-95	7,250,873	7,268,476	7,194,903	7,236,916	(55,970)	-0.8%	(31,560)	-0.4%
6/30/95-96	6,995,043	7,021,625	6,928,043	6,992,737	(67,000)	-1.0%	(28,889)	-0.4%
6/30/96-97	7,651,847	7,668,626	7,651,867	7,719,026	20	0.0%	50,400	0.7%
6/30/97-98	6,968,000	7,025,700	6,985,000	7,056,420	17,000	0.2%	30,720	0.4%
6/30/98-99	7,307,000	7,334,000	7,318,000	7,374,870	11,000	0.2%	40,870	0.6%
6/30/99-00	8,309,000	8,342,000	8,289,570	8,360,660	(19,430)	-0.2%	18,660	0.2%
6/30/00-01	10,209,580	10,291,000	10,200,890	10,304,000	(8,690)	-0.1%	13,000	0.1%
6/30/01-02	8,327,000	8,371,000	8,276,000	8,351,960	(51,000)	-0.6%	(19,040)	-0.2%
6/30/02-03	9,082,000	9,264,000	9,200,010	9,297,760	118,010	1.3%	33,760	0.4%
6/30/03-04	9,774,000	9,963,650	9,745,530	9,873,070	(28,470)	-0.3%	(90,580)	-0.9%
6/30/04-05	11,121,000	12,250,050	11,469,950	12,128,050	348,950	3.1%	(122,000)	-1.0%
6/30/05-06	10,292,000	11,135,300	10,402,780	10,992,700	110,780	1.1%	(142,600)	-1.3%
6/30/06-07	11,056,000	12,153,750	11,021,550	11,957,250	(34,450)	-0.3%	(196,500)	-1.6%
6/30/07-08	10,821,000	11,869,550	10,915,460	11,676,330	94,460	0.9%	(193,220)	-1.6%
6/30/08-09	11,342,000	12,518,550	11,601,880	12,342,500	259,880	2.3%	(176,050)	-1.4%
6/30/09-10	10,648,000	12,093,350	10,735,420	11,793,490	87,420	0.8%	(299,860)	-2.5%
6/30/10-11	11,931,000	13,561,250	12,003,840	13,205,740	72,840	0.6%	(355,510)	-2.6%
6/30/11-12	12,256,000	13,646,700	11,745,500	13,072,170	(510,500)	-4.2%	(574,530)	-4.2%
6/30/12-13	11,949,000	14,042,100	11,495,880	13,032,970	(453,120)	-3.8%	(1,009,130)	-7.2%
6/30/13-14	13,782,000	16,330,500	12,806,160	14,573,770	(975,840)	-7.1%	(1,756,730)	-10.8%
6/30/14-15								
Total	298,005,659	314,696,651	296,810,677	309,651,295	(1,194,983)	-0.4%	(5,045,356)	-1.6%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 1, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Maturity	Cumulative Paid Loss Development	Incremental Paid Loss Development	Percent Unpaid	Pres Value of Increm. Pmts (4%)	Pres Value of Increm. Pmts (6%)	Discount Factor At: 4%	6%
408	100.0%	0.8%	0.0%	0.2%	0.1%	1.000	1.000
396	99.2%	0.2%	0.8%	0.0%	0.0%	0.981	0.971
384	99.0%	0.2%	1.0%	0.0%	0.0%	0.949	0.926
372	98.8%	0.1%	1.2%	0.0%	0.0%	0.922	0.886
360	98.7%	0.1%	1.3%	0.0%	0.0%	0.894	0.848
348	98.6%	0.3%	1.4%	0.1%	0.1%	0.871	0.815
336	98.3%	0.3%	1.7%	0.1%	0.1%	0.862	0.804
324	98.0%	0.4%	2.0%	0.1%	0.1%	0.851	0.789
312	97.6%	0.4%	2.4%	0.2%	0.1%	0.844	0.781
300	97.2%	0.1%	2.8%	0.0%	0.0%	0.837	0.772
288	97.1%	0.5%	2.9%	0.2%	0.1%	0.809	0.734
276	96.7%	0.4%	3.3%	0.2%	0.1%	0.808	0.734
264	96.2%	0.9%	3.8%	0.4%	0.3%	0.801	0.725
252	95.3%	0.8%	4.7%	0.3%	0.2%	0.810	0.739
240	94.5%	1.2%	5.5%	0.5%	0.4%	0.808	0.736
228	93.4%	0.8%	6.6%	0.4%	0.3%	0.812	0.743
216	92.5%	1.0%	7.5%	0.5%	0.4%	0.803	0.731
204	91.6%	1.2%	8.4%	0.6%	0.5%	0.797	0.723
192	90.4%	1.0%	9.6%	0.6%	0.4%	0.793	0.718
180	89.3%	0.8%	10.7%	0.5%	0.4%	0.784	0.706
168	88.5%	1.8%	11.5%	1.1%	0.8%	0.770	0.688
156	86.7%	0.8%	13.3%	0.5%	0.4%	0.773	0.693
144	85.9%	2.1%	14.1%	1.3%	1.1%	0.756	0.671
132	83.8%	0.6%	16.2%	0.4%	0.3%	0.760	0.677
120	83.2%	2.4%	16.8%	1.7%	1.4%	0.739	0.650
108	80.8%	0.7%	19.2%	0.5%	0.4%	0.745	0.658
96	80.2%	2.2%	19.8%	1.6%	1.4%	0.725	0.632
84	78.0%	2.2%	22.0%	1.7%	1.5%	0.725	0.633
72	75.8%	3.3%	24.2%	2.6%	2.4%	0.723	0.632
60	72.5%	3.7%	27.5%	3.1%	2.9%	0.729	0.641
48	68.8%	6.1%	31.2%	5.3%	5.0%	0.734	0.648
36	62.7%	11.8%	37.3%	10.7%	10.2%	0.751	0.670
24	50.9%	28.8%	49.1%	27.1%	26.3%	0.784	0.714
12	22.1%	22.1%	77.9%	21.7%	21.5%	0.838	0.783
Total		100.0%					

NOTES:

(2) = 1 / Section 1, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	852,187	1,665,696		794,232	1,553,381
6/30/82-83	3,703	22,688	0.981	3,638	22,266
6/30/83-84	16,489	76,600	0.949	15,654	72,694
6/30/84-85	19,594	69,236	0.922	18,095	64,201
6/30/85-86	54,520	92,024	0.894	49,351	83,786
6/30/86-87	73,685	104,630	0.871	64,952	92,473
6/30/87-88	149,892	211,567	0.862	129,291	182,736
6/30/88-89	228,400	295,355	0.851	194,817	251,630
6/30/89-90	303,512	382,611	0.844	255,377	321,322
6/30/90-91	309,965	381,221	0.837	256,774	315,543
6/30/91-92	278,425	359,052	0.809	226,853	291,486
6/30/92-93	251,363	319,824	0.808	202,220	256,594
6/30/93-94	303,643	351,333	0.801	242,687	280,592
6/30/94-95	321,570	363,584	0.810	258,317	291,310
6/30/95-96	364,953	429,646	0.808	292,202	342,732
6/30/96-97	503,245	570,405	0.812	400,515	452,673
6/30/97-98	512,859	584,279	0.803	403,695	458,931
6/30/98-99	611,775	668,645	0.797	475,575	518,889
6/30/99-00	784,590	855,680	0.793	608,372	661,827
6/30/00-01	1,060,145	1,163,255	0.784	817,122	894,028
6/30/01-02	946,047	1,022,007	0.770	722,653	779,781
6/30/02-03	1,207,207	1,304,957	0.773	917,413	991,095
6/30/03-04	1,349,534	1,477,074	0.756	1,016,954	1,114,353
6/30/04-05	1,448,085	2,106,185	0.760	1,076,226	1,572,638
6/30/05-06	1,481,077	2,070,997	0.739	1,094,700	1,536,666
6/30/06-07	1,546,942	2,482,642	0.745	1,138,852	1,832,248
6/30/07-08	1,907,297	2,668,167	0.725	1,391,789	1,952,687
6/30/08-09	2,233,298	2,973,918	0.725	1,633,084	2,174,575
6/30/09-10	2,365,415	3,423,485	0.723	1,722,568	2,498,106
6/30/10-11	2,866,129	4,068,029	0.729	2,087,245	2,966,180
6/30/11-12	3,358,407	4,685,077	0.734	2,461,654	3,442,998
6/30/12-13	4,328,549	5,865,639	0.751	3,243,156	4,406,535
6/30/13-14	6,301,246	8,068,856	0.784	4,922,955	6,312,999
6/30/14-15	11,864,078	14,038,728	0.838	9,883,833	11,718,681
Total	50,207,827	65,223,095		39,022,822	50,708,637
			(7) Total Discount Factor:	0.777	0.777

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	852,187	1,665,696
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	284,062	555,232
(11) Discounted Value at 4%:	804,065	1,571,636

NOTES:
(2), (3) From Section 1, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 1, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Clusters Combined
Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	852,187	1,665,696		768,187	1,502,869
6/30/82-83	3,703	22,688	0.971	3,607	22,064
6/30/83-84	16,489	76,600	0.926	15,265	70,876
6/30/84-85	19,594	69,236	0.886	17,416	61,916
6/30/85-86	54,520	92,024	0.848	47,062	80,135
6/30/86-87	73,685	104,630	0.815	61,178	87,214
6/30/87-88	149,892	211,567	0.804	120,588	170,539
6/30/88-89	228,400	295,355	0.789	180,905	233,525
6/30/89-90	303,512	382,611	0.781	235,797	296,421
6/30/90-91	309,965	381,221	0.772	235,517	289,308
6/30/91-92	278,425	359,052	0.734	206,614	265,038
6/30/92-93	251,363	319,824	0.734	183,234	232,226
6/30/93-94	303,643	351,333	0.725	219,487	253,658
6/30/94-95	321,570	363,584	0.739	234,546	264,157
6/30/95-96	364,953	429,646	0.736	265,170	310,498
6/30/96-97	503,245	570,405	0.743	362,602	409,300
6/30/97-98	512,859	584,279	0.731	363,782	413,195
6/30/98-99	611,775	668,645	0.723	426,424	464,915
6/30/99-00	784,590	855,680	0.718	545,402	592,697
6/30/00-01	1,060,145	1,163,255	0.706	731,005	798,877
6/30/01-02	946,047	1,022,007	0.688	644,280	694,950
6/30/02-03	1,207,207	1,304,957	0.693	816,616	882,098
6/30/03-04	1,349,534	1,477,074	0.671	902,370	989,552
6/30/04-05	1,448,085	2,106,185	0.677	949,354	1,390,574
6/30/05-06	1,481,077	2,070,997	0.650	963,965	1,355,868
6/30/06-07	1,546,942	2,482,642	0.658	1,002,018	1,613,885
6/30/07-08	1,907,297	2,668,167	0.632	1,220,384	1,714,563
6/30/08-09	2,233,298	2,973,918	0.633	1,434,933	1,910,955
6/30/09-10	2,365,415	3,423,485	0.632	1,511,668	2,195,258
6/30/10-11	2,866,129	4,068,029	0.641	1,833,252	2,608,014
6/30/11-12	3,358,407	4,685,077	0.648	2,171,044	3,041,313
6/30/12-13	4,328,549	5,865,639	0.670	2,892,169	3,935,160
6/30/13-14	6,301,246	8,068,856	0.714	4,474,363	5,742,011
6/30/14-15	11,864,078	14,038,728	0.783	9,225,266	10,945,330
Total	50,207,827	65,223,095		35,265,468	45,838,958
			(7) Total Discount Factor:	0.702	0.703

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	852,187	1,665,696
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	284,062	555,232
(11) Discounted Value at 6%:	782,081	1,528,666

NOTES:
(2), (3) From Section 1, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 1, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		21,038,052			25,695,282	27,763,024	4,657,230	6,724,972		
6/30/82-83		4,699,567	4,979,201		4,979,201	5,004,097	279,634	304,530		
6/30/83-84		8,268,300	9,570,086		9,570,000	9,761,488	1,301,700	1,493,188		
6/30/84-85	181,560	6,810,805	7,508,876	6,936,063	6,936,000	7,509,000	125,195	698,195	3.820	4.136
6/30/85-86	195,247	10,272,096	10,518,521	10,518,368	10,375,000	10,478,000	102,904	205,904	5.314	5.367
6/30/86-87	224,370	13,480,506	13,840,369	13,853,814	13,615,000	13,750,000	134,494	269,494	6.068	6.128
6/30/87-88	262,864	19,535,209	21,910,709	20,139,671	20,140,000	20,815,450	604,791	1,280,241	7.662	7.919
6/30/88-89	283,884	20,022,499	20,753,406	20,766,361	20,753,000	20,766,000	730,501	743,501	7.310	7.315
6/30/89-90	285,078	15,018,718	15,602,458	15,695,629	15,169,000	15,319,000	150,282	300,282	5.321	5.374
6/30/90-91	267,732	10,866,204	11,326,239	11,323,053	10,975,000	11,084,000	108,796	217,796	4.099	4.140
6/30/91-92	261,442	7,580,562	7,927,428	7,923,184	7,923,000	7,927,000	342,438	346,438	3.031	3.032
6/30/92-93	259,992	4,189,576	4,400,972	4,398,325	4,231,000	4,273,000	41,424	83,424	1.627	1.644
6/30/93-94	257,062	3,496,223	3,677,582	3,675,672	3,566,000	3,601,000	69,777	104,777	1.387	1.401
6/30/94-95	255,854	2,081,529	2,199,328	2,200,542	2,199,000	2,201,000	117,471	119,471	0.859	0.860
6/30/95-96	255,539	3,065,952	3,254,878	3,252,712	3,253,000	3,255,000	187,048	189,048	1.273	1.274
6/30/96-97	270,071	2,467,027	2,624,138	2,625,342	2,479,000	2,492,000	11,973	24,973	0.918	0.923
6/30/97-98	245,367	2,625,999	2,817,362	2,815,518	2,816,000	2,817,000	190,001	191,001	1.148	1.148
6/30/98-99	251,453	2,410,298	2,584,824	2,586,064	2,585,000	2,586,000	174,702	175,702	1.028	1.028
6/30/99-00	255,641	2,375,630	2,591,100	2,590,371	2,590,000	2,591,000	214,370	215,370	1.013	1.014
6/30/00-01	263,918	3,268,993	3,620,138	3,609,516	3,610,000	3,620,000	341,007	351,007	1.368	1.372
6/30/01-02	267,598	2,229,481	2,487,962	2,490,237	2,241,000	2,252,000	11,519	22,519	0.837	0.842
6/30/02-03	274,465	2,976,919	3,366,855	3,360,327	3,360,000	3,367,000	383,081	390,081	1.224	1.227
6/30/03-04	272,384	3,150,398	3,607,452	3,597,044	3,597,000	3,607,000	446,602	456,602	1.321	1.324
6/30/04-05	273,647	2,658,617	3,077,876	3,051,183	2,672,000	2,685,000	13,383	26,383	0.976	0.981
6/30/05-06	285,139	2,671,658	3,144,475	3,119,286	3,119,000	3,144,000	447,342	472,342	1.094	1.103
6/30/06-07	298,516	2,807,820	3,350,406	3,341,185	3,341,000	3,350,000	533,180	542,180	1.119	1.122
6/30/07-08	314,231	1,474,819	1,812,509	2,072,575	1,813,000	2,073,000	338,181	598,181	0.577	0.660
6/30/08-09	302,998	2,147,072	2,715,427	2,841,411	2,715,000	2,841,000	567,928	693,928	0.896	0.938
6/30/09-10	297,252	3,089,432	4,058,187	3,917,139	3,917,000	4,058,000	827,568	968,568	1.318	1.365
6/30/10-11	292,432	2,408,332	3,493,120	3,466,462	3,466,000	3,493,000	1,057,668	1,084,668	1.185	1.194
6/30/11-12	295,908	2,396,510	3,692,358	3,634,232	3,634,000	3,692,000	1,237,490	1,295,490	1.228	1.248
6/30/12-13	301,541	1,849,397	3,376,646	3,454,270	3,377,000	3,454,000	1,527,603	1,604,603	1.120	1.145
6/30/13-14	309,910	1,469,737	3,677,978	3,677,030	3,677,000	3,678,000	2,207,263	2,208,263	1.186	1.187
6/30/14-15	316,552	685,778	3,482,549	3,708,342	3,483,000	3,708,000	2,797,222	3,022,222	1.100	1.171
Total	8,379,647	195,589,716	197,051,412	180,640,929	217,871,483	223,015,060	22,281,767	27,425,343		
Tot 6/30/84-15	8,379,647	161,583,797	182,502,125	180,640,929	177,627,000	180,486,450	16,043,203	18,902,653	2.120	2.154

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 2, Exhibit 1, Page 2, Column 3 and Section 2, Exhibit 1, Page 9, Column 8

(4) From Section 2, Exhibit 1, Page 2, Column 8

(5) From Section 2, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		19,772,554							10	9		76
6/30/82-83		4,309,167	1.014	1.050	4,588,801	390,400	4,979,201		1	0		
6/30/83-84		7,719,150	1.016	1.150	9,020,936	549,150	9,570,086		3	3	433,929	68
6/30/84-85	181,560	5,655,954	1.021	1.100	6,354,025	1,154,851	7,508,876	4.136	0	1	698,071	63
6/30/85-86	195,247	9,334,452	1.026	1.000	9,580,877	937,644	10,518,521	5.387	0	0		
6/30/86-87	224,370	11,412,789	1.032	1.000	11,772,652	2,067,717	13,840,369	6.169	0	0		
6/30/87-88	262,864	16,739,445	1.038	1.100	19,107,955	2,802,753	21,910,709	8.335	3	3	789,504	71
6/30/88-89	283,884	16,382,887	1.044	1.000	17,102,866	3,650,541	20,753,406	7.311	2	2	359,990	84
6/30/89-90	285,078	11,631,137	1.049	1.000	12,203,002	3,399,456	15,602,458	5.473	1	0		
6/30/90-91	267,732	8,300,774	1.054	1.000	8,750,524	2,575,715	11,326,239	4.230	1	1	449,750	82
6/30/91-92	261,442	5,774,150	1.059	1.000	6,112,864	1,814,564	7,927,428	3.032	2	2	169,357	63
6/30/92-93	259,992	3,210,473	1.064	1.000	3,416,956	984,016	4,400,972	1.693	0	0		
6/30/93-94	257,062	2,527,522	1.070	1.000	2,703,531	974,051	3,677,582	1.431	0	0		
6/30/94-95	255,854	1,526,329	1.075	1.000	1,640,781	558,547	2,199,328	0.860	0	0		
6/30/95-96	255,539	2,319,312	1.079	1.000	2,503,359	751,519	3,254,878	1.274	1	1	184,046	58
6/30/96-97	270,071	1,787,477	1.085	1.000	1,939,803	684,334	2,624,138	0.972	0	0		
6/30/97-98	245,367	2,092,836	1.089	1.000	2,279,035	538,327	2,817,362	1.148	1	1	186,199	54
6/30/98-99	251,453	1,758,227	1.095	1.000	1,925,575	659,249	2,584,824	1.028	0	0		
6/30/99-00	255,641	2,033,129	1.103	1.000	2,242,302	348,797	2,591,100	1.014	1	1	209,173	70
6/30/00-01	263,918	3,017,890	1.112	1.000	3,356,616	263,522	3,620,138	1.372	4	4	84,681	57
6/30/01-02	267,598	1,946,268	1.125	1.000	2,190,348	297,615	2,487,962	0.930	0	0		
6/30/02-03	274,465	2,648,895	1.138	1.000	3,014,887	351,968	3,366,855	1.227	1	1	365,992	69
6/30/03-04	272,384	2,840,573	1.150	1.000	3,267,384	340,068	3,607,452	1.324	3	2	213,405	60
6/30/04-05	273,647	2,315,265	1.165	1.000	2,698,329	379,547	3,077,876	1.125	0	0		
6/30/05-06	285,139	2,390,156	1.180	1.000	2,820,933	323,542	3,144,475	1.103	3	2	215,388	57
6/30/06-07	298,516	2,399,788	1.200	1.000	2,880,481	469,925	3,350,406	1.122	7	4	120,173	52
6/30/07-08	314,231	1,309,318	1.225	1.000	1,603,276	209,233	1,812,509	0.577	2	2	146,979	55
6/30/08-09	302,998	1,866,572	1.259	1.000	2,350,094	365,332	2,715,427	0.896	6	3	161,174	52
6/30/09-10	297,252	2,700,053	1.308	1.000	3,531,472	526,715	4,058,187	1.365	17	15	55,428	53
6/30/10-11	292,432	2,176,832	1.375	1.000	2,993,120	500,000	3,493,120	1.195	19	13	62,791	52
6/30/11-12	295,908	2,089,074	1.502	1.000	3,137,954	554,404	3,692,358	1.248	27	14	74,920	55
6/30/12-13	301,541	1,677,597	1.715	1.000	2,876,646	500,000	3,376,646	1.120	61	22	54,502	51
6/30/13-14	309,910	1,434,737	2.215	1.000	3,177,978	500,000	3,677,978	1.187	241	76	22,937	48
6/30/14-15	316,552	685,778	4.349	1.000	2,982,549	500,000	3,482,549	1.100		218	10,536	45
Total	8,379,647	165,786,560			166,127,911	30,923,501	197,051,412		417	400		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 2, Exhibit 1, Page 7

(5) Based on information from the MA WCIRB

(6) = (3) x (4) x (5)

(7) From Section 2, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

(13) Calculated for claimants that had an indemnity payment within the last calendar year.

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	181,560	3.309	5,655,954	1.021	5,781,212	1,154,851	6,936,063	3.820	3.184
6/30/85-86	195,247	4.904	9,334,452	1.026	9,580,724	937,644	10,518,368	5.387	4.907
6/30/86-87	224,370	5.443	11,412,789	1.032	11,786,097	2,067,717	13,853,814	6.175	5.253
6/30/87-88	262,864	6.253	16,739,445	1.038	17,336,918	2,802,753	20,139,671	7.662	6.595
6/30/88-89	283,884	6.133	16,382,887	1.044	17,115,820	3,650,541	20,766,361	7.315	6.029
6/30/89-90	285,078	4.978	11,631,137	1.049	12,296,173	3,399,456	15,695,629	5.506	4.313
6/30/90-91	267,732	3.245	8,300,774	1.054	8,747,338	2,575,715	11,323,053	4.229	3.267
6/30/91-92	261,442	2.309	5,774,150	1.059	6,108,620	1,814,564	7,923,184	3.031	2.337
6/30/92-93	259,992	1.297	3,210,473	1.064	3,414,310	984,016	4,398,325	1.692	1.313
6/30/93-94	257,062	1.040	2,527,522	1.070	2,701,621	974,051	3,675,672	1.430	1.051
6/30/94-95	255,854	0.648	1,526,329	1.075	1,641,996	558,547	2,200,542	0.860	0.642
6/30/95-96	255,539	0.968	2,319,312	1.079	2,501,194	751,519	3,252,712	1.273	0.979
6/30/96-97	270,071	0.724	1,787,477	1.085	1,941,008	684,334	2,625,342	0.972	0.719
6/30/97-98	245,367	0.920	2,092,836	1.089	2,277,192	538,327	2,815,518	1.147	0.928
6/30/98-99	251,453	0.771	1,758,227	1.095	1,926,815	659,249	2,586,064	1.028	0.766
6/30/99-00	255,641	0.874	2,033,129	1.103	2,241,574	348,797	2,590,371	1.013	0.877
6/30/00-01	263,918	1.232	3,017,890	1.112	3,345,994	263,522	3,609,516	1.368	1.268
6/30/01-02	267,598	0.826	1,946,268	1.125	2,192,622	297,615	2,490,237	0.931	0.819
6/30/02-03	274,465	1.079	2,648,895	1.138	3,008,359	351,968	3,360,327	1.224	1.096
6/30/03-04	272,384	1.170	2,840,573	1.150	3,256,976	340,068	3,597,044	1.321	1.196
6/30/04-05	273,647	0.917	2,315,265	1.165	2,671,636	379,547	3,051,183	1.115	0.976
6/30/05-06	285,139	0.931	2,390,156	1.180	2,795,744	323,542	3,119,286	1.094	0.980
6/30/06-07	298,516	0.946	2,399,788	1.200	2,871,260	469,925	3,341,185	1.119	0.962
6/30/07-08	314,231	0.962	1,309,318	1.225	1,863,342	209,233	2,072,575	0.660	0.593
6/30/08-09	302,998	0.978	1,866,572	1.259	2,476,079	365,332	2,841,411	0.938	0.817
6/30/09-10	297,252	0.986	2,700,053	1.308	3,390,424	526,715	3,917,139	1.318	1.141
6/30/10-11	292,432	0.990	2,176,832	1.375	2,966,462	500,000	3,466,462	1.185	1.014
6/30/11-12	295,908	1.002	2,089,074	1.502	3,079,828	554,404	3,634,232	1.228	1.041
6/30/12-13	301,541	1.016	1,677,597	1.715	2,954,270	500,000	3,454,270	1.146	0.980
6/30/13-14	309,910	1.025	1,434,737	2.215	3,177,030	500,000	3,677,030	1.186	1.025
6/30/14-15	316,552	1.035	685,778	4.349	3,208,342	500,000	3,708,342	1.171	1.014
Total	8,379,647		133,985,689		150,656,978	29,983,951	180,640,929		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 2, Exhibit 1, Page 4, Column 11

(4) From Section 2, Exhibit 1, Page 2, Column 3

(5) From Section 2, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 2, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Benefit Adjusted Loss Cost	Loss Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									3.309	3.309
6/30/85-86									4.904	4.904
6/30/86-87									5.443	5.443
6/30/87-88									6.253	6.253
6/30/88-89									6.133	6.133
6/30/89-90									4.978	4.978
6/30/90-91	267,732	8,750,524	3.268	0.963	3.147	1.133	3.565	0.953	3.260	3.245
6/30/91-92	261,442	6,112,864	2.338	1.056	2.470	1.127	2.784	0.873	2.303	2.309
6/30/92-93	259,992	3,416,956	1.314	1.232	1.619	1.122	1.816	0.753	1.304	1.297
6/30/93-94	257,062	2,703,531	1.052	1.216	1.279	1.116	1.427	0.766	1.045	1.040
6/30/94-95	255,854	1,640,781	0.641	1.205	0.773	1.110	0.858	0.777	0.650	0.648
6/30/95-96	255,539	2,503,359	0.980	1.195	1.171	1.105	1.294	0.788	0.959	0.968
6/30/96-97	270,071	1,939,803	0.718	1.183	0.850	1.099	0.934	0.799	0.726	0.724
6/30/97-98	245,367	2,279,035	0.929	1.168	1.085	1.094	1.187	0.814	0.913	0.920
6/30/98-99	251,453	1,925,575	0.766	1.153	0.883	1.088	0.961	0.829	0.775	0.771
6/30/99-00	255,641	2,242,302	0.877	1.134	0.995	1.083	1.078	0.847	0.863	0.874
6/30/00-01	263,918	3,356,616	1.272	1.105	1.406	1.078	1.515	0.873	1.219	1.232
6/30/01-02	267,598	2,190,348	0.819	1.084	0.887	1.072	0.951	0.895	0.831	0.826
6/30/02-03	274,465	3,014,887	1.098	1.080	1.186	1.067	1.266	0.903	1.076	1.079
6/30/03-04	272,384	3,267,384	1.200	1.080	1.295	1.062	1.375	0.907	1.156	1.170
6/30/04-05	273,647	2,698,329	0.986	1.073	1.058	1.056	1.118	0.917	0.923	0.917
6/30/05-06	285,139	2,820,933	0.989	1.062	1.051	1.051	1.105	0.931	0.937	0.931
6/30/06-07	298,516	2,880,481	0.965	1.051	1.014	1.046	1.060	0.946	0.952	0.946
6/30/07-08	314,231	1,603,276	0.510	1.039	0.530	1.041	0.552	0.962	0.967	0.962
6/30/08-09	302,998	2,350,094	0.776	1.027	0.797	1.036	0.825	0.978	0.983	0.978
6/30/09-10	297,252	3,531,472	1.188	1.023	1.216	1.030	1.252	0.986	0.992	0.986
6/30/10-11	292,432	2,993,120	1.024	1.025	1.049	1.025	1.075	0.990	0.996	0.990
6/30/11-12	295,908	3,137,954	1.060	1.018	1.079	1.020	1.101	1.002	1.008	1.002
6/30/12-13	301,541	2,876,646	0.954	1.009	0.962	1.015	0.977	1.016	1.020	1.016
6/30/13-14	309,910	3,177,978	1.025	1.005	1.030	1.010	1.041	1.025	1.030	1.025
6/30/14-15	316,552	2,982,549	0.942	1.000	0.942	1.005	0.947	1.035		1.035
Total	6,946,644	76,396,797								

Trend Last 4 (ex 14-15):	-1.7%	Avg 3 (ex 14-15):	1.039
Trend Last 8 (ex 14-15):	4.7%	Avg 5 (ex 14-15):	1.089
Trend Last 12 (ex 14-15):	-1.1%	Avg 10 (ex 14-15):	1.011
Prior Selected Trend:	0.5%	Prior Sel Avg:	1.035
Selected Trend:	0.5%	Sel. Loss Cost:	1.040

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 2, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.960	
(2)	Credibility		42%	
(3)	Average Pmt Trend Statewide		0.960	
(4)	Credibility Weighted Trend		0.960	
		(Low)		(High)
(5)	Selected Range	0.950		0.965
(6)	Incremental Paid for 2015	352,959		352,959
(7)	Estimated Reserve	6,706,212		9,674,272
(8)	Paid to Date (82 & Prior)	19,772,554		19,772,554
(9)	Est Ult Paid for 1982 & Prior	26,478,767		29,446,827

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	372,607	379,140
(11)	Projected Number of Years	7	7
(12)	Estimated Reserve	2,608,247	2,653,980
(13)	Paid to Date (82 & Prior)	19,772,554	19,419,596
(14)	Est Ult Paid for 1982 & Prior	22,380,802	22,073,576
(14a)	Paid Counts During Fiscal Year	9	10
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	24,429,784	26,497,526
(16)	Lump Sum Ultimates	1,265,498	1,265,498
(17)	Ult Loss Including Lump Sums	**25,695,282**	**27,763,024**
(18)	Implied Tail	1.236	1.340
(19)	Ult Loss Inc Lump Sums @ 6/14	25,623,960	27,856,420

NOTES:

(1) From Section 2, Exhibit 1, Page 6
(2) = (Average of Section 2, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 2, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 2, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 2, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	689,918	13.444			
1993	2	793,381	13.584	1.150		
1994	3	677,152	13.426	0.854		
1995	4	616,229	13.331	0.910		
1996	5	581,038	13.273	0.943		
1997	6	667,765	13.412	1.149		
1998	7	676,041	13.424	1.012		
1999	8	626,143	13.347	0.926		
2000	9	638,144	13.366	1.019	n =	24
2001	10	586,837	13.283	0.920	S(x) =	48,084
2002	11	551,859	13.221	0.940	S(x-sq) =	96,337,444
2003	12	510,510	13.143	0.925	S(xy) =	631,592
2004	13	475,438	13.072	0.931	S(y) =	315
2005	14	461,151	13.041	0.970	D =	27,600
2006	15	476,801	13.075	1.034	slope =	-0.034
2007	16	429,059	12.969	0.900	Avg Trend =	0.966
2008	17	388,693	12.871	0.906		
2009	18	397,505	12.893	1.023		
2010	19	401,537	12.903	1.010		
2011	20	390,154	12.874	0.972		
2012	21	372,558	12.828	0.955		
2013	22	384,664	12.860	1.032		
2014	23	380,197	12.848	0.988		
2015	24	352,959	12.774	0.928		
					Selected Trend:	**0.960**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 0.928 = 352959 / 380197

Commonwealth of Massachusetts Workers Compensation
Department of Developmental Services - Cluster 1
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Accident Yr End	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	303,088	716,212	1,018,528	1,273,160	1,522,276	1,772,634	2,026,466	2,293,172	2,479,591	2,709,942	2,878,245	2,989,792	3,133,165	3,273,307	3,334,466	3,383,940	3,420,864	3,471,952	3,531,863	3,593,426	3,656,287	3,718,769	3,782,583	3,849,168	3,918,660	3,991,417	4,067,350	4,144,239	4,190,906	4,231,391	4,273,198	4,309,167	4,309,167
June-84	588,752	1,391,250	1,978,503	2,473,129	2,957,038	3,430,512	3,850,638	4,248,292	4,569,012	4,852,567	5,084,077	5,325,765	5,500,225	5,591,777	5,716,071	5,844,905	5,981,927	6,097,750	6,217,962	6,335,407	6,446,404	6,561,447	6,682,092	6,807,737	6,918,835	7,027,806	7,138,148	7,248,169	7,362,291	7,479,325	7,598,225	7,719,150	
June-85	722,238	1,706,685	2,427,085	3,021,356	3,575,162	4,153,362	4,555,210	4,859,145	5,067,185	5,195,242	5,289,258	5,335,046	5,422,572	5,464,010	5,505,997	5,522,923	5,523,036	5,580,502	5,609,877	5,639,252	5,659,166	5,650,202	5,650,202	5,650,202	5,650,202	5,650,202	5,650,202	5,652,195	5,655,860	5,655,860	5,655,954		
June-86	1,095,655	2,589,088	3,658,454	4,589,190	5,452,112	6,125,447	6,630,963	7,055,749	7,268,651	7,575,650	7,835,016	8,089,718	8,284,822	8,452,458	8,677,431	8,856,536	8,960,945	9,024,666	9,066,019	9,108,290	9,147,296	9,188,006	9,230,664	9,275,183	9,320,262	9,334,452	9,334,452	9,334,452	9,334,452	9,334,452			
June-87	1,432,565	3,348,783	4,705,173	6,001,822	7,077,490	7,800,986	8,402,000	9,027,460	9,393,871	9,735,307	10,048,389	10,319,413	10,602,871	10,771,580	10,933,614	11,088,267	11,148,911	11,204,986	11,255,712	11,281,293	11,313,500	11,347,192	11,382,355	11,412,789	11,412,789	11,412,789	11,412,789	11,412,789	11,412,789	11,412,789			
June-88	2,142,725	4,931,624	7,312,968	9,157,962	10,751,119	11,652,385	12,239,990	12,826,004	13,145,803	13,410,989	13,647,380	13,914,189	14,176,053	14,393,869	14,564,189	14,732,219	14,899,699	15,069,301	15,232,127	15,401,826	15,590,731	15,776,168	15,939,935	16,091,855	16,248,755	16,410,714	16,574,836	16,739,445					
June-89	2,139,859	5,737,843	8,345,508	10,235,005	11,538,085	12,380,476	13,056,104	13,607,875	13,950,193	14,223,676	14,460,790	14,677,503	14,820,152	14,959,611	15,088,991	15,215,644	15,354,762	15,504,713	15,612,328	15,710,703	15,815,015	15,923,590	16,033,593	16,140,651	16,239,237	16,310,241	16,382,887						
June-90	2,678,119	5,989,136	8,059,169	9,355,215	10,163,757	10,729,296	11,079,915	11,298,239	11,383,933	11,541,269	11,650,902	11,599,979	11,605,663	11,609,714	11,609,714	11,609,714	11,609,714	11,609,714	11,610,392	11,610,392	11,612,790	11,614,053	11,614,400	11,617,685	11,631,137	11,631,137							
June-91	2,055,995	4,525,519	5,956,270	6,809,892	7,377,934	7,700,162	7,848,119	7,941,980	8,070,661	8,111,443	8,150,308	8,195,730	8,243,748	8,275,457	8,287,806	8,289,633	8,289,633	8,289,927	8,295,115	8,296,069	8,296,953	8,297,667	8,298,631	8,299,673	8,300,774								
June-92	1,556,680	2,907,997	3,613,911	4,262,894	4,511,682	4,736,540	4,868,155	4,962,680	5,049,867	5,098,658	5,131,848	5,177,939	5,259,492	5,311,896	5,373,855	5,435,773	5,480,341	5,518,481	5,558,121	5,598,760	5,641,750	5,685,342	5,729,682	5,774,150									
June-93	931,603	1,916,981	2,439,817	2,755,036	2,906,872	3,136,998	3,162,217	3,209,301	3,219,019	3,198,001	3,197,828	3,197,728	3,197,728	3,197,728	3,204,287	3,210,473	3,210,473	3,210,473	3,210,473	3,210,473	3,210,473	3,210,473	3,210,473										
June-94	923,316	1,598,259	1,935,049	2,093,050	2,066,940	2,146,254	2,134,209	2,198,365	2,247,827	2,310,431	2,340,041	2,380,852	2,417,221	2,452,624	2,487,353	2,524,486	2,527,522	2,527,522	2,527,522	2,527,522	2,527,522	2,527,522											
June-95	684,696	1,108,550	1,371,127	1,495,864	1,512,391	1,513,346	1,516,782	1,516,872	1,519,087	1,525,732	1,525,732	1,526,329	1,526,329	1,526,329	1,526,329	1,526,329	1,526,329	1,526,329	1,526,329	1,526,329	1,526,329												
June-96	662,860	1,328,147	1,644,584	1,839,246	1,990,102	2,077,055	2,112,857	2,140,474	2,201,270	2,201,845	2,202,890	2,202,890	2,182,890	2,187,427	2,194,160	2,208,436	2,231,248	2,258,374	2,287,650	2,319,312													
June-97	698,135	1,214,849	1,461,845	1,657,511	1,722,983	1,773,677	1,788,438	1,787,621	1,785,332	1,785,117	1,785,270	1,787,627	1,787,477	1,787,477	1,787,477	1,787,477	1,787,477	1,787,477	1,787,477														
June-98	573,338	1,086,539	1,414,459	1,559,175	1,673,532	1,729,564	1,772,059	1,810,392	1,842,420	1,881,278	1,926,278	1,959,704	1,981,242	2,002,689	2,024,867	2,047,330	2,069,948	2,092,836															
June-99	474,980	1,002,186	1,286,380	1,461,855	1,602,851	1,676,266	1,728,806	1,734,926	1,734,926	1,735,176	1,735,217	1,735,938	1,735,938	1,745,975	1,758,227	1,758,227	1,758,227																
June-00	554,623	1,006,163	1,264,666	1,446,800	1,556,201	1,579,597	1,684,607	1,741,958	1,774,284	1,814,835	1,849,313	1,888,484	1,924,733	1,960,546	1,996,627	2,033,129																	
June-01	727,441	1,320,455	1,784,558	2,038,666	2,257,429	2,391,407	2,505,985	2,630,995	2,692,967	2,745,367	2,798,403	2,855,751	2,911,077	2,965,792	3,017,890																		
June-02	660,993	1,170,323	1,474,134	1,719,436	1,840,352	1,925,268	1,929,260	1,934,317	1,935,028	1,938,322	1,946,247	1,946,268	1,946,268	1,946,268																			
June-03	681,649	1,386,238	1,930,433	2,233,645	2,345,508	2,434,780	2,476,294	2,514,232	2,549,374	2,574,011	2,599,103	2,623,851	2,648,895																				
June-04	615,642	1,250,196	1,708,083	2,040,603	2,220,200	2,394,408	2,518,890	2,590,854	2,651,972	2,714,242	2,777,430	2,840,573																					
June-05	629,880	1,271,294	1,746,413	2,055,018	2,203,801	2,285,267	2,302,225	2,315,265	2,315,265	2,315,265	2,315,265																						
June-06	562,846	1,157,132	1,564,874	1,794,067	1,951,884	2,062,228	2,165,020	2,239,388	2,319,829	2,390,156																							
June-07	526,806	1,054,827	1,513,205	1,806,536	2,009,359	2,144,089	2,257,101	2,357,734	2,399,788																								
June-08	492,006	840,226	1,027,421	1,150,550	1,226,279	1,259,770	1,289,567	1,309,318																									
June-09	609,589	1,045,186	1,367,431	1,598,834	1,731,424	1,807,061	1,866,572																										
June-10	611,726	1,437,135	2,071,218	2,345,985	2,542,928	2,700,053																											
June-11	714,837	1,318,901	1,664,634	1,948,510	2,176,832																												
June-12	737,468	1,470,092	1,872,540	2,089,074																													
June-13	748,452	1,316,963	1,677,597																														
June-14	693,795	1,434,737																															
June-15	685,778																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.363	1.422	1.250	1.196	1.164	1.143	1.132	1.081	1.093	1.062	1.039	1.048	1.045	1.019	1.015	1.011	1.015	1.017	1.017	1.017	1.017	1.017	1.018	1.018	1.019	1.019	1.019	1.011	1.010	1.010	1.008	1.000
June-84	2.363	1.422	1.250	1.196	1.160	1.122	1.103	1.075	1.062	1.048	1.048	1.033	1.017	1.022	1.023	1.023	1.019	1.020	1.019	1.018	1.018	1.018	1.019	1.016	1.016	1.016	1.015	1.016	1.016	1.016	1.016	
June-85	2.363	1.422	1.245	1.183	1.162	1.097	1.067	1.043	1.025	1.018	1.009	1.016	1.008	1.008	1.003	1.000	1.010	1.005	1.005	1.004	0.998	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.000		
June-86	2.363	1.413	1.254	1.188	1.123	1.083	1.064	1.030	1.042	1.034	1.033	1.024	1.020	1.027	1.021	1.012	1.007	1.005	1.005	1.004	1.004	1.005	1.005	1.005	1.002	1.000	1.000	1.000	1.000			
June-87	2.338	1.405	1.276	1.179	1.102	1.077	1.074	1.041	1.036	1.032	1.027	1.027	1.016	1.015	1.014	1.005	1.005	1.005	1.002	1.003	1.003	1.003	1.003	1.000	1.000	1.000	1.000	1.000				
June-88	2.302	1.483	1.252	1.174	1.084	1.050	1.048	1.025	1.020	1.018	1.020	1.019	1.015	1.012	1.012	1.011	1.011	1.011	1.011	1.012	1.012	1.010	1.010	1.010	1.010	1.010	1.010					
June-89	2.681	1.454	1.226	1.127	1.073	1.055	1.042	1.025	1.020	1.017	1.015	1.010	1.009	1.009	1.008	1.009	1.010	1.007	1.006	1.007	1.007	1.007	1.007	1.006	1.004	1.004						
June-90	2.236	1.346	1.161	1.086	1.056	1.033	1.020	1.008	1.014	1.009	0.996	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							
June-91	2.201	1.316	1.143	1.083	1.044	1.019	1.012	1.016	1.005	1.005	1.006	1.006	1.004	1.001	1.000	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000								
June-92	1.868	1.243	1.180	1.058	1.050	1.028	1.019	1.018	1.010	1.007	1.009	1.016	1.010	1.012	1.012	1.008	1.007	1.007	1.007	1.008	1.008	1.008	1.008									
June-93	2.058	1.273	1.129	1.055	1.079	1.008	1.015	1.003	0.993	1.000	1.000	1.000	1.000	1.002	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
June-94	1.731	1.211	1.082	0.988	1.038	0.994	1.030	1.022	1.028	1.013	1.017	1.015	1.015	1.014	1.015	1.001	1.000	1.000	1.000	1.000	1.000											
June-95	1.619	1.237	1.091	1.011	1.001	1.002	1.000	1.001	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000												
June-96	2.004	1.238	1.118	1.082	1.044	1.017	1.013	1.028	1.000	1.000	1.000	0.991	1.002	1.003	1.007	1.010	1.012	1.013	1.014													
June-97	1.740	1.203	1.134	1.040	1.029	1.008	1.000	0.999	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-98	1.895	1.302	1.102	1.073	1.033	1.025	1.022	1.018	1.021	1.024	1.017	1.011	1.011	1.011	1.011	1.011	1.011															
June-99	2.110	1.284	1.136	1.096	1.046	1.031	1.004	1.000	1.000	1.000	1.000	1.000	1.006	1.007	1.000	1.000																
June-00	1.814	1.257	1.144	1.076	1.015	1.066	1.034	1.019	1.023	1.019	1.021	1.019	1.019	1.018	1.018																	
June-01	1.815	1.351	1.142	1.107	1.059	1.048	1.050	1.024	1.019	1.019	1.020	1.019	1.019	1.018																		
June-02	1.771	1.260	1.166	1.070	1.046	1.002	1.003	1.000	1.002	1.004	1.000	1.000	1.000																			
June-03	2.034	1.393	1.157	1.050	1.038	1.017	1.015	1.014	1.010	1.010	1.010	1.010																				
June-04	2.031	1.366	1.195	1.088	1.078	1.052	1.029	1.024	1.023	1.023	1.023																					
June-05	2.018	1.374	1.177	1.072	1.037	1.007	1.006	1.000	1.000	1.000																						
June-06	2.056	1.352	1.146	1.088	1.057	1.050	1.034	1.036	1.030																							
June-07	2.002	1.435	1.194	1.112	1.067	1.053	1.045	1.018																								
June-08	1.708	1.223	1.120	1.066	1.027	1.024	1.015																									
June-09	1.715	1.308	1.169	1.083	1.044	1.033																										
June-10	2.349	1.441	1.133	1.084	1.062																											
June-11	1.845	1.262	1.171	1.117																												
June-12	1.993	1.274	1.116																													
June-13	1.760	1.274																														
June-14	2.068																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.038	1.330	1.169	1.098	1.065	1.042	1.034	1.023	1.020	1.016	1.014	1.013	1.011	1.010	1.009	1.006	1.007	1.006	1.006	1.006	1.006	1.006	1.007	1.006	1.006	1.007	1.007	1.006	1.006	1.009	1.012		
Latest 5	2.003	1.312	1.142	1.092	1.051	1.033	1.026	1.018	1.013	1.011	1.015	1.010	1.011	1.011	1.007	1.004	1.005	1.003	1.004	1.002	1.002	1.003	1.005	1.003	1.003	1.003	1.005	1.006					
Latest 3	1.940	1.270	1.140	1.095	1.044	1.036	1.031	1.018	1.018	1.011	1.011	1.010	1.012	1.014	1.010	1.004	1.008	1.004	1.005	1.000	1.003	1.003	1.003	1.002	1.005	1.005	1.003	1.000	1.005	1.009			
Volume Wtd																																	
All Yrs	2.107	1.352	1.185	1.111	1.072	1.047	1.039	1.025	1.022	1.018	1.015	1.014	1.011	1.011	1.009	1.007	1.007	1.006	1.006	1.006	1.006	1.006	1.006	1.006	1.005	1.006	1.007	1.004	1.006	1.009	1.013	1.000	
Latest 5	1.990	1.313	1.141	1.095	1.054	1.034	1.027	1.018	1.014	1.012	1.015	1.011	1.012	1.012	1.008	1.005	1.005	1.003	1.005	1.002	1.001	1.003	1.005	1.004	1.004	1.004	1.006	1.004					
Latest 3	1.937	1.270	1.138	1.095	1.048	1.039	1.034	1.018	1.018	1.012	1.012	1.011	1.013	1.015	1.010	1.004	1.008	1.005	1.005	1.000	1.004	1.003	1.002	1.003	1.005	1.005	1.004	1.000	1.005	1.009			

Dev Factor Selection

Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	*1.925*	*1.310*	*1.157*	*1.080*	*1.049*	*1.045*	*1.028*	*1.020*	*1.017*	*1.013*	*1.013*	*1.012*	*1.012*	*1.010*	*1.007*	*1.007*	*1.004*	*1.004*	*1.004*	*1.004*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.008*	*1.008*	*1.005*	*1.005*	*1.005*	*1.012*	
Selected	1.963	1.292	1.142	1.092	1.051	1.039	1.028	1.020	1.017	1.013	1.013	1.011	1.011	1.012	1.008	1.007	1.006	1.003	1.005	1.004	1.005	1.005	1.005	1.004	1.005	1.005	1.006	1.006	1.005	1.005	1.005	1.002	1.014
FacToUlt	4.349	2.215	1.715	1.502	1.375	1.308	1.259	1.225	1.200	1.180	1.165	1.150	1.138	1.125	1.112	1.103	1.095	1.089	1.085	1.079	1.075	1.070	1.064	1.059	1.054	1.049	1.044	1.038	1.032	1.026	1.021	1.016	1.014
Percent of Ult	23.0%	45.1%	58.3%	66.6%	72.7%	76.5%	79.4%	81.7%	83.3%	84.7%	85.8%	86.9%	87.9%	88.9%	89.9%	90.7%	91.3%	91.8%	92.1%	92.6%	93.0%	93.5%	94.0%	94.5%	94.9%	95.3%	95.8%	96.4%	96.9%	97.4%	97.9%	98.4%	98.6%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	25,623,960	27,856,420	25,695,282	27,763,024	71,322	0.3%	(93,396)	-0.3%
6/30/82-83	5,056,576	5,315,887	4,979,201	5,004,097	(77,375)	-1.5%	(311,790)	-5.9%
6/30/83-84	9,623,972	10,016,787	9,570,000	9,761,488	(53,972)	-0.6%	(255,299)	-2.5%
6/30/84-85	6,879,000	6,947,000	6,936,000	7,509,000	57,000	0.8%	562,000	8.1%
6/30/85-86	10,580,000	10,683,000	10,375,000	10,478,000	(205,000)	-1.9%	(205,000)	-1.9%
6/30/86-87	13,750,000	13,885,000	13,615,000	13,750,000	(135,000)	-1.0%	(135,000)	-1.0%
6/30/87-88	20,064,000	20,738,500	20,140,000	20,815,450	76,000	0.4%	76,950	0.4%
6/30/88-89	20,760,000	20,774,000	20,753,000	20,766,000	(7,000)	0.0%	(8,000)	0.0%
6/30/89-90	15,138,000	15,288,000	15,169,000	15,319,000	31,000	0.2%	31,000	0.2%
6/30/90-91	10,974,000	11,082,000	10,975,000	11,084,000	1,000	0.0%	2,000	0.0%
6/30/91-92	7,910,000	7,915,000	7,923,000	7,927,000	13,000	0.2%	12,000	0.2%
6/30/92-93	4,231,000	4,273,000	4,231,000	4,273,000	0	0.0%	0	0.0%
6/30/93-94	3,566,000	3,601,000	3,566,000	3,601,000	0	0.0%	0	0.0%
6/30/94-95	2,207,000	2,208,000	2,199,000	2,201,000	(8,000)	-0.4%	(7,000)	-0.3%
6/30/95-96	3,230,000	3,233,000	3,253,000	3,255,000	23,000	0.7%	22,000	0.7%
6/30/96-97	2,633,000	2,634,000	2,479,000	2,492,000	(154,000)	-5.8%	(142,000)	-5.4%
6/30/97-98	2,805,000	2,807,000	2,816,000	2,817,000	11,000	0.4%	10,000	0.4%
6/30/98-99	2,602,000	2,603,000	2,585,000	2,586,000	(17,000)	-0.7%	(17,000)	-0.7%
6/30/99-00	2,574,000	2,574,000	2,590,000	2,591,000	16,000	0.6%	17,000	0.7%
6/30/00-01	3,591,000	3,602,000	3,610,000	3,620,000	19,000	0.5%	18,000	0.5%
6/30/01-02	2,517,000	2,520,000	2,241,000	2,252,000	(276,000)	-11.0%	(268,000)	-10.6%
6/30/02-03	3,374,000	3,381,000	3,360,000	3,367,000	(14,000)	-0.4%	(14,000)	-0.4%
6/30/03-04	3,546,000	3,557,000	3,597,000	3,607,000	51,000	1.4%	50,000	1.4%
6/30/04-05	3,099,000	3,128,000	2,672,000	2,685,000	(427,000)	-13.8%	(443,000)	-14.2%
6/30/05-06	3,092,000	3,109,000	3,119,000	3,144,000	27,000	0.9%	35,000	1.1%
6/30/06-07	3,368,000	3,373,000	3,341,000	3,350,000	(27,000)	-0.8%	(23,000)	-0.7%
6/30/07-08	2,116,000	2,403,000	1,813,000	2,073,000	(303,000)	-14.3%	(330,000)	-13.7%
6/30/08-09	2,866,000	3,011,000	2,715,000	2,841,000	(151,000)	-5.3%	(170,000)	-5.6%
6/30/09-10	3,978,000	4,126,000	3,917,000	4,058,000	(61,000)	-1.5%	(68,000)	-1.6%
6/30/10-11	3,390,000	3,397,000	3,466,000	3,493,000	76,000	2.2%	96,000	2.8%
6/30/11-12	3,732,000	3,829,000	3,634,000	3,692,000	(98,000)	-2.6%	(137,000)	-3.6%
6/30/12-13	3,572,000	3,636,000	3,377,000	3,454,000	(195,000)	-5.5%	(182,000)	-5.0%
6/30/13-14	3,596,000	3,742,000	3,677,000	3,678,000	81,000	2.3%	(64,000)	-1.7%
6/30/14-15								
Total	216,044,508	221,248,595	214,388,483	219,307,060	(1,656,025)	-0.8%	(1,941,535)	-0.9%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 2, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	19,772,554	1.288	25,463,655	0.0%	0.0%	0	1,265,498	1,265,498	5.0%	1.000	1,265,498	1,265,498	1,265,498
6/30/82-83	4,309,167	1.065	4,588,801	0.0%	0.0%	0	390,400	390,400	8.5%	1.000	390,400	390,400	390,400
6/30/83-84	7,719,150	1.169	9,020,936	0.0%	0.0%	0	549,150	549,150	6.1%	1.000	549,150	549,150	549,150
6/30/84-85	5,655,954	1.123	6,354,025	0.0%	0.0%	0	1,154,851	1,154,851	18.2%	1.000	1,154,851	1,154,851	1,154,851
6/30/85-86	9,334,452	1.026	9,580,877	0.0%	0.0%	0	937,644	937,644	9.8%	1.000	937,644	937,644	937,644
6/30/86-87	11,412,789	1.032	11,772,652	0.0%	0.0%	0	2,067,717	2,067,717	17.6%	1.000	2,067,717	2,067,717	2,072,886
6/30/87-88	16,739,445	1.141	19,107,955	0.0%	0.0%	0	2,795,764	2,795,764	14.6%	1.005	2,809,743	2,802,753	2,804,158
6/30/88-89	16,382,887	1.044	17,102,866	0.0%	0.0%	0	3,639,613	3,639,613	21.3%	1.006	3,661,469	3,650,541	3,652,371
6/30/89-90	11,631,137	1.049	12,203,002	0.0%	0.0%	0	3,387,581	3,387,581	27.8%	1.007	3,411,331	3,399,456	3,370,540
6/30/90-91	8,300,774	1.054	8,750,524	0.0%	0.0%	0	2,565,430	2,565,430	29.3%	1.008	2,586,000	2,575,715	2,577,008
6/30/91-92	5,774,150	1.059	6,112,864	0.0%	0.0%	0	1,806,412	1,806,412	29.6%	1.009	1,822,717	1,814,564	1,818,524
6/30/92-93	3,210,473	1.064	3,416,956	0.0%	0.0%	0	979,103	979,103	28.7%	1.010	988,928	984,016	986,227
6/30/93-94	2,527,522	1.070	2,703,531	0.0%	0.0%	0	968,701	968,701	35.8%	1.011	979,400	974,051	975,898
6/30/94-95	1,526,329	1.075	1,640,781	0.0%	0.0%	0	555,200	555,200	33.8%	1.012	561,894	558,547	560,474
6/30/95-96	2,319,312	1.079	2,503,359	0.0%	0.0%	0	746,640	746,640	29.8%	1.013	756,397	751,519	755,612
6/30/96-97	1,787,477	1.085	1,939,803	0.0%	0.0%	0	679,550	679,550	35.0%	1.014	689,119	684,334	689,538
6/30/97-98	2,092,836	1.089	2,279,035	0.1%	0.1%	2,279	533,163	535,442	23.5%	1.015	541,211	538,327	546,500
6/30/98-99	1,758,227	1.095	1,925,575	0.1%	0.2%	3,851	652,071	655,922	34.1%	1.016	662,576	659,249	668,291
6/30/99-00	2,033,129	1.103	2,242,302	0.1%	0.3%	6,727	342,501	349,228	15.6%	1.017	348,367	348,797	363,469
6/30/00-01	3,017,890	1.112	3,356,616	0.2%	0.5%	16,783	251,103	267,886	8.0%	1.032	259,158	263,522	285,265
6/30/01-02	1,946,268	1.125	2,190,348	0.2%	0.7%	15,332	283,214	298,546	13.6%	1.048	296,683	297,615	314,203
6/30/02-03	2,648,895	1.138	3,014,887	0.2%	0.9%	27,134	328,024	355,158	11.8%	1.063	348,779	351,968	375,575
6/30/03-04	2,840,573	1.150	3,267,384	0.2%	1.1%	35,941	309,825	345,766	10.6%	1.079	334,370	340,068	335,054
6/30/04-05	2,315,265	1.165	2,698,329	0.3%	1.4%	37,777	343,352	381,129	14.1%	1.101	377,964	379,547	406,612
6/30/05-06	2,390,156	1.180	2,820,933	0.3%	1.7%	47,956	281,502	329,458	11.7%	1.128	317,626	323,542	336,925
6/30/06-07	2,399,788	1.200	2,880,481	0.3%	2.0%	57,610	408,033	465,642	16.2%	1.162	474,207	469,925	500,000
6/30/07-08	1,309,318	1.225	1,603,276	0.6%	2.6%	41,388	165,501	206,889	12.9%	1.278	211,576	209,233	500,000
6/30/08-09	1,866,572	1.259	2,350,094	0.6%	3.1%	73,645	280,500	354,145	15.1%	1.342	376,519	365,332	500,000
6/30/09-10	2,700,053	1.308	3,531,472	0.8%	3.9%	137,336	389,379	526,715	14.9%	1.409	548,802	526,715	633,085
6/30/10-11	2,176,832	1.375	2,993,120	1.5%	5.4%	161,962	231,500	393,462	13.1%	1.746	404,261	500,000	500,000
6/30/11-12	2,089,074	1.502	3,137,954	2.5%	7.9%	246,968	307,436	554,404	17.7%	2.470	759,493	554,404	615,789
6/30/12-13	1,677,597	1.715	2,876,646	2.9%	10.8%	310,270	171,800	482,070	16.8%	4.466	767,212	500,000	612,797
6/30/13-14	1,434,737	2.215	3,177,978	2.6%	13.4%	426,528	35,000	461,528	14.5%	11.761	411,643	500,000	593,924
6/30/14-15	685,778	4.349	2,982,549	2.2%	15.6%	465,558	0	465,558	15.6%	64.687	0	500,000	
Total	165,786,560		191,591,566			2,115,047	29,803,156	31,918,203	16.7%		32,072,706	32,188,999	32,648,267

NOTES:

(2) From Section 2, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 2, Exhibit 1, Page 2, Column 6
(5) From Section 2, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 2, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 2, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts Workers Compensation
Department of Developmental Services - Cluster 1
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0	0	0	0	0	0	12,000	24,000	9,000	0	0	40,000	0	172,000	110,000	50,000	70,500	30,000	208,333	116,667	324,998	0	60,000	35,000	0	3,000	0	0	0	0	0	0	0	0
Jun-83	0	0	0	0	0	0	0	0	25,500	25,000	52,900	7,000	30,000	95,000	145,000	0	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	32,500	19,000	0	45,000	108,650	69,000	145,000	0	45,000	0	30,000	10,000	0	45,000	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jun-85	0	0	0	12,500	32,500	24,500	92,001	128,250	196,400	182,000	70,000	48,500	205,700	0	0	30,000	52,500	30,000	0	25,000	0	0	0	0	0	0	0	0	25,000	0	0			
Jun-86	0	0	23,500	19,200	19,100	93,844	174,500	476,000	95,500	0	0	0	36,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Jun-87	0	36,440	6,089	107,500	67,961	393,241	517,987	205,500	149,499	10,000	92,500	15,000	146,000	125,000	120,000	75,000	0	0	0	0	0	0	0	0	0	0	0	0	0					
Jun-88	0	9,000	98,700	314,201	299,750	663,711	365,000	263,001	345,000	230,400	71,500	91,500	40,000	0	0	0	0	0	0	0	1	0	0	0	4,000	0	0	0						
Jun-89	0	51,500	107,000	525,918	831,350	467,250	201,495	468,000	227,500	96,000	182,000	228,100	128,500	0	0	0	0	33,333	45,833	45,834	0	0	0	0	0	0	0							
Jun-90	0	83,875	561,509	740,856	246,000	295,600	525,500	290,000	127,241	77,000	235,834	135,833	33,333	0	0	0	0	0	0	0	0	0	0	0	4,500	30,500								
Jun-91	10,000	315,052	866,050	279,500	174,700	509,340	313,000	57,788	15,000	25,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Jun-92	54,000	344,161	128,250	87,501	545,500	236,500	52,500	15,000	30,000	60,000	88,000	0	0	0	0	0	165,000	0	0	0	0	0	0	0										
Jun-93	33,000	174,000	164,503	395,750	49,500	66,500	75,850	0	20,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
Jun-94	20,500	90,701	289,500	222,500	110,000	82,500	118,000	0	35,000	0	0	0	0	0	0	0	0	0	0	0	0	0												
Jun-95	4,000	156,500	207,200	162,500	15,000	0	0	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0													
Jun-96	52,000	212,180	221,000	48,960	42,000	0	48,667	18,833	43,000	35,000	25,000	0	0	0	0	0	0	0	0	0														
Jun-97	36,500	178,250	214,000	155,300	85,500	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0															
Jun-98	10,000	108,163	240,000	120,000	30,000	0	0	0	0	0	0	25,000	0	0	0	0	0	0																
Jun-99	0	182,500	192,000	113,220	1,824	7,437	11,035	14,055	0	0	0	0	0	0	65,000	65,000	0																	
Jun-00	12,500	57,501	82,000	36,500	38,500	8,500	10,500	27,500	10,000	0	0	34,000	25,000	0	0	0																		
Jun-01	17,500	22,844	43,510	37,903	34,170	41,676	38,500	15,000	0	0	0	0	0	0	0																			
Jun-02	0	800	23,940	52,775	72,135	32,564	76,000	25,000	0	0	0	0	0	0																				
Jun-03	0	0	48,352	99,400	91,822	48,450	10,000	0	0	30,000	0	0	0																					
Jun-04	0	0	88,974	64,100	121,250	0	0	5,501	0	0	0	30,000																						
Jun-05	0	7,500	39,052	104,600	42,000	94,000	20,000	0	36,200	0	0																							
Jun-06	0	14,800	50,202	87,500	46,500	30,000	3,500	14,000	19,700	15,300																								
Jun-07	0	8,500	85,000	83,750	78,000	6,000	6,000	20,000	120,783																									
Jun-08	0	37,000	17,501	25,000	45,000	30,000	3,000	8,000																										
Jun-09	0	24,000	55,000	41,000	35,500	90,500	34,500																											
Jun-10	0	12,500	57,878	128,398	138,602	52,001																												
Jun-11	0	27,523	53,478	75,263	75,237																													
Jun-12	0	35,436	120,064	151,936																														
Jun-13	0	101,200	70,600																															
Jun-14	0	35,000																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	12,000	36,000	45,000	45,000	45,000	85,000	85,000	257,000	367,000	417,000	487,500	517,500	725,833	842,500	1,167,498	1,167,498	1,227,498	1,262,498	1,262,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498
Jun-83	0	0	0	0	0	0	0	0	25,500	50,500	103,400	110,400	140,400	235,400	380,400	380,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	
Jun-84	0	0	0	0	0	32,500	51,500	51,500	96,500	205,150	274,150	419,150	419,150	464,150	464,150	494,150	504,150	504,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150		
Jun-85	0	0	0	12,500	45,000	69,500	161,501	289,751	486,151	668,151	738,151	786,651	992,351	992,351	992,351	1,022,351	1,074,851	1,104,851	1,104,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,154,851	1,154,851	1,154,851			
Jun-86	0	0	23,500	42,700	61,800	155,644	330,144	806,144	901,644	901,644	901,644	901,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644					
Jun-87	0	36,440	42,529	150,029	217,990	611,231	1,129,218	1,334,718	1,484,217	1,494,217	1,586,717	1,601,717	1,747,717	1,872,717	1,992,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717					
Jun-88	0	9,000	107,700	421,901	721,651	1,385,362	1,750,362	2,013,363	2,358,363	2,588,763	2,660,263	2,751,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,764	2,791,764	2,791,764	2,795,764	2,795,764	2,795,764	2,795,764						
Jun-89	0	51,500	158,500	684,418	1,515,768	1,983,018	2,184,513	2,652,513	2,880,013	2,976,013	3,158,013	3,386,113	3,514,613	3,514,613	3,514,613	3,514,613	3,514,613	3,547,946	3,593,779	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613						
Jun-90	0	83,875	645,384	1,386,240	1,632,240	1,927,840	2,453,340	2,743,340	2,870,581	2,947,581	3,183,415	3,319,248	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,357,081	3,387,581							
Jun-91	10,000	325,052	1,191,102	1,470,602	1,645,302	2,154,642	2,467,642	2,525,430	2,540,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430								
Jun-92	54,000	398,161	526,411	613,912	1,159,412	1,395,912	1,448,412	1,463,412	1,493,412	1,553,412	1,641,412	1,641,412	1,641,412	1,641,412	1,641,412	1,641,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412										
Jun-93	33,000	207,000	371,503	767,253	816,753	883,253	959,103	959,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103											
Jun-94	20,500	111,201	400,701	623,201	733,201	815,701	933,701	933,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701												
Jun-95	4,000	160,500	367,700	530,200	545,200	545,200	545,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200													
Jun-96	52,000	264,180	485,180	534,140	576,140	576,140	624,807	643,640	686,640	721,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640														
Jun-97	36,500	214,750	428,750	584,050	669,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550															
Jun-98	10,000	118,163	358,163	478,163	508,163	508,163	508,163	508,163	508,163	508,163	508,163	533,163	533,163	533,163	533,163	533,163	533,163	533,163	533,163															
Jun-99	0	182,500	374,500	487,720	489,544	496,981	508,016	522,071	522,071	522,071	522,071	522,071	522,071	522,071	587,071	652,071	652,071																	
Jun-00	12,500	70,001	152,001	188,501	227,001	235,501	246,001	273,501	283,501	283,501	283,501	317,501	342,501	342,501	342,501	342,501																		
Jun-01	17,500	40,344	83,854	121,757	155,927	197,603	236,103	251,103	251,103	251,103	251,103	251,103	251,103	251,103	251,103																			
Jun-02	0	800	24,740	77,515	149,650	182,214	258,214	283,214	283,214	283,214	283,214	283,214	283,214	283,214																				
Jun-03	0	0	48,352	147,752	239,574	288,024	298,024	298,024	298,024	328,024	328,024	328,024	328,024																					
Jun-04	0	0	88,974	153,074	274,324	274,324	274,324	279,825	279,825	279,825	279,825	309,825																						
Jun-05	0	7,500	46,552	151,152	193,152	287,152	307,152	307,152	343,352	343,352	343,352																							
Jun-06	0	14,800	65,002	152,502	199,002	229,002	232,502	246,502	266,202	281,502																								
Jun-07	0	8,500	93,500	177,250	255,250	261,250	267,250	287,250	408,033																									
Jun-08	0	37,000	54,501	79,501	124,501	154,501	157,501	165,501																										
Jun-09	0	24,000	79,000	120,000	155,500	246,000	280,500																											
Jun-10	0	12,500	70,378	198,776	337,378	389,379																												
Jun-11	0	27,523	81,000	156,263	231,500																													
Jun-12	0	35,436	155,500	307,436																														
Jun-13	0	101,200	171,800																															
Jun-14	0	35,000																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
Department of Developmental Services - Cluster 1
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	*0-12*	*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.002	0.000	0.007	0.004	0.002	0.003	0.001	0.008	0.005	0.013	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.005	0.012	0.002	0.007	0.021	0.032	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.000	0.004	0.002	0.000	0.005	0.012	0.008	0.016	0.000	0.005	0.000	0.003	0.001	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.002	0.005	0.004	0.014	0.020	0.031	0.029	0.011	0.008	0.032	0.000	0.000	0.005	0.008	0.005	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000			
Jun-86	0.000	0.000	0.002	0.002	0.002	0.010	0.018	0.050	0.010	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.003	0.001	0.009	0.006	0.033	0.044	0.017	0.013	0.001	0.008	0.001	0.012	0.011	0.010	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.000	0.005	0.016	0.016	0.035	0.019	0.014	0.018	0.012	0.004	0.005	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
Jun-89	0.000	0.003	0.006	0.031	0.049	0.027	0.012	0.027	0.013	0.006	0.011	0.013	0.008	0.000	0.000	0.000	0.000	0.002	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.007	0.046	0.061	0.020	0.024	0.043	0.024	0.010	0.006	0.019	0.011	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002								
Jun-91	0.001	0.036	0.099	0.032	0.020	0.058	0.036	0.007	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000									
Jun-92	0.009	0.056	0.021	0.014	0.089	0.039	0.009	0.002	0.005	0.010	0.014	0.000	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.010	0.051	0.048	0.116	0.014	0.019	0.022	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
Jun-94	0.008	0.034	0.107	0.082	0.041	0.031	0.044	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.002	0.095	0.126	0.099	0.009	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.021	0.085	0.088	0.020	0.017	0.000	0.019	0.008	0.017	0.014	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000														
Jun-97	0.019	0.092	0.110	0.080	0.044	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000															
Jun-98	0.004	0.047	0.105	0.053	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.000																
Jun-99	0.000	0.095	0.100	0.059	0.001	0.004	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.034	0.000																	
Jun-00	0.006	0.026	0.037	0.016	0.017	0.004	0.005	0.012	0.004	0.000	0.000	0.015	0.011	0.000	0.000	0.000																		
Jun-01	0.005	0.007	0.013	0.011	0.010	0.012	0.011	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000																			
Jun-02	0.000	0.000	0.011	0.024	0.033	0.015	0.035	0.011	0.000	0.000	0.000	0.000	0.000	0.000																				
Jun-03	0.000	0.000	0.016	0.033	0.030	0.016	0.003	0.000	0.000	0.010	0.000	0.000	0.000																					
Jun-04	0.000	0.000	0.027	0.020	0.037	0.000	0.000	0.002	0.000	0.000	0.000	0.009																						
Jun-05	0.000	0.003	0.014	0.039	0.016	0.035	0.007	0.000	0.013	0.000	0.000																							
Jun-06	0.000	0.005	0.018	0.031	0.016	0.011	0.001	0.005	0.007	0.005																								
Jun-07	0.000	0.003	0.030	0.029	0.027	0.002	0.002	0.007	0.042																									
Jun-08	0.000	0.023	0.011	0.016	0.028	0.019	0.002	0.005																										
Jun-09	0.000	0.010	0.023	0.017	0.015	0.039	0.015																											
Jun-10	0.000	0.004	0.016	0.036	0.039	0.015																												
Jun-11	0.000	0.009	0.018	0.025	0.025																													
Jun-12	0.000	0.011	0.038	0.048																														
Jun-13	0.000	0.035	0.025																															
Jun-14	0.000	0.011																																
Jun-15	0.000																																	

Averages		*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
Simple Avg																																		
All Yrs (ex P)	0.003	0.023	0.037	0.034	0.022	0.016	0.014	0.009	0.009	0.005	0.004	0.004	0.004	0.002	0.004	0.003	0.002	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	
Latest 5	0.000	0.014	0.024	0.029	0.027	0.017	0.005	0.004	0.012	0.003	0.000	0.005	0.002	0.000	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001					
Latest 3	0.000	0.019	0.027	0.037	0.026	0.024	0.006	0.006	0.021	0.002	0.000	0.003	0.000	0.000	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.001	0.000	0.000			
Olympic Avg																																		
All Yrs (ex P)	0.002	0.022	0.036	0.032	0.020	0.015	0.013	0.007	0.008	0.004	0.004	0.004	0.002	0.001	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.000	0.010	0.021	0.029	0.027	0.016	0.006	0.005	0.003	0.001	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000									
Latest 5	0.000	0.011	0.022	0.026	0.027	0.015	0.004	0.004	0.007	0.002	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					

Dev Factor Selection																																		
Prior	*NA*	*0.025*	*0.030*	*0.034*	*0.025*	*0.019*	*0.010*	*0.010*	*0.010*	*0.005*	*0.005*	*0.003*	*0.003*	*0.003*	*0.003*	*0.003*	*0.003*	*0.003*	*0.002*	*0.001*	*0.001*	*0.000*	*0.000*	*0.001*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	
Selected	NA	0.022	0.026	0.029	0.025	0.015	0.008	0.006	0.006	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.156	0.134	0.108	0.079	0.054	0.039	0.031	0.026	0.020	0.017	0.014	0.011	0.009	0.007	0.005	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
Department of Developmental Services - Cluster 1
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	*12*	*24*	*36*	*48*	*60*	*72*	*84*	*96*	*108*	*120*	*132*	*144*	*156*	*168*	*180*	*192*	*204*	*216*	*228*	*240*	*252*	*264*	*276*	*288*	*300*	*312*	*324*	*336*	*348*	*360*	*372*	*384*	*396*	*408*
All Prior Yrs	0	0	0	0	0	0	12,000	36,000	45,000	45,000	45,000	85,000	85,000	257,000	367,000	417,000	487,500	517,500	725,833	842,500	1,167,498	1,167,498	1,227,498	1,262,498	1,262,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498	1,265,498
Jun-83	0	0	0	0	0	0	0	0	25,500	50,500	103,400	110,400	140,400	235,400	380,400	380,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	390,400	
Jun-84	0	0	0	0	0	32,500	51,500	51,500	96,500	205,150	274,150	419,150	419,150	464,150	464,150	494,150	504,150	504,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150	549,150		
Jun-85	0	0	0	12,500	45,000	69,500	161,501	289,751	486,151	668,151	738,151	786,651	992,351	992,351	992,351	1,022,351	1,074,851	1,104,851	1,104,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,129,851	1,154,851	1,154,851	1,154,851			
Jun-86	0	0	23,500	42,700	61,800	155,644	330,144	806,144	901,644	901,644	901,644	901,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644	937,644				
Jun-87	0	36,440	42,529	150,029	217,990	611,231	1,129,218	1,334,718	1,484,217	1,494,217	1,586,717	1,601,717	1,747,717	1,872,717	1,992,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717	2,067,717				
Jun-88	0	9,000	107,700	421,901	721,651	1,385,362	1,750,362	2,013,363	2,358,363	2,588,763	2,660,263	2,751,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,763	2,791,764	2,791,764	2,795,764	2,795,764										
Jun-89	0	51,500	158,500	684,418	1,515,768	1,983,018	2,184,513	2,652,513	2,880,013	2,976,013	3,158,013	3,386,113	3,514,613	3,514,613	3,514,613	3,514,613	3,514,613	3,547,946	3,593,779	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613	3,639,613							
Jun-90	0	83,875	645,384	1,386,240	1,632,240	1,927,840	2,453,340	2,743,340	2,870,581	2,947,581	3,183,415	3,319,248	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,352,581	3,357,081	3,387,581						
Jun-91	10,000	325,052	1,191,102	1,470,602	1,645,302	2,154,642	2,467,642	2,525,430	2,540,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430	2,565,430								
Jun-92	54,000	398,161	526,411	613,912	1,159,412	1,395,912	1,448,412	1,463,412	1,493,412	1,553,412	1,641,412	1,641,412	1,641,412	1,641,412	1,641,412	1,641,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412	1,806,412										
Jun-93	33,000	207,000	371,503	767,253	816,753	883,253	959,103	959,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103	979,103											
Jun-94	20,500	111,201	400,701	623,201	733,201	815,701	933,701	933,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701	968,701												
Jun-95	4,000	160,500	367,700	530,200	545,200	545,200	545,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200	555,200													
Jun-96	52,000	264,180	485,180	534,140	576,140	576,140	624,807	643,640	686,640	721,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640	746,640														
Jun-97	36,500	214,750	428,750	584,050	669,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550	679,550														
Jun-98	10,000	118,163	358,163	478,163	508,163	508,163	508,163	508,163	508,163	508,163	508,163	533,163	533,163	533,163	533,163	533,163	533,163	533,163	533,163															
Jun-99	0	182,500	374,500	487,720	489,544	496,981	508,016	522,071	522,071	522,071	522,071	522,071	522,071	522,071	522,071	587,071	652,071	652,071																
Jun-00	12,500	70,001	152,001	188,501	227,001	235,501	246,001	273,501	283,501	283,501	283,501	317,501	342,501	342,501	342,501	342,501																		
Jun-01	17,500	40,344	83,854	121,757	155,927	197,603	236,103	251,103	251,103	251,103	251,103	251,103	251,103	251,103	251,103																			
Jun-02	0	800	24,740	77,515	149,650	182,214	258,214	283,214	283,214	283,214	283,214	283,214	283,214	283,214																				
Jun-03	0	0	48,352	147,752	239,574	288,024	298,024	298,024	298,024	328,024	328,024	328,024	328,024	328,024																				
Jun-04	0	0	88,974	153,074	274,324	274,324	274,324	279,825	279,825	279,825	279,825	309,825																						
Jun-05	0	7,500	46,552	151,152	193,152	287,152	307,152	307,152	343,352	343,352	343,352																							
Jun-06	0	14,800	65,002	152,502	199,002	229,002	232,502	246,502	266,202	281,502																								
Jun-07	0	8,500	93,500	177,250	255,250	261,250	267,250	287,250	408,033																									
Jun-08	0	37,000	54,501	79,501	124,501	154,501	157,501	165,501																										
Jun-09	0	24,000	79,000	120,000	155,500	246,000	280,500																											
Jun-10	0	12,500	70,378	198,776	337,378	389,379																												
Jun-11	0	27,523	81,000	156,263	231,500																													
Jun-12	0	35,436	155,500	307,436																														
Jun-13	0	101,200	171,800																															
Jun-14	0	35,000																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*	*To Ult*
All Prior Yrs							3.000	1.250	1.000	1.000	1.889	1.000	3.024	1.428	1.136	1.169	1.062	1.403	1.161	1.386	1.000	1.051	1.029	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Jun-83									1.980	2.048	1.068	1.272	1.677	1.616	1.000	1.026	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	1.000	1.000		
Jun-84						1.585	1.000	1.874	2.126	1.336	1.529	1.000	1.107	1.000	1.065	1.020	1.000	1.089	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			
Jun-85				3.600	1.544	2.324	1.794	1.678	1.374	1.105	1.066	1.261	1.000	1.000	1.030	1.051	1.028	1.000	1.023	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Jun-86			1.817	1.447	2.519	2.121	2.442	1.118	1.000	1.000	1.000	1.040	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	1.000	1.000	1.000	1.000				
Jun-87		1.167	3.528	1.453	2.804	1.847	1.182	1.112	1.007	1.062	1.009	1.091	1.072	1.064	1.038	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					
Jun-88		11.967	3.917	1.710	1.920	1.263	1.150	1.171	1.098	1.028	1.034	1.015	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.000							
Jun-89		3.078	4.318	2.215	1.308	1.102	1.214	1.086	1.033	1.061	1.072	1.038	1.000	1.000	1.000	1.000	1.009	1.013	1.013	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
Jun-90		7.695	2.148	1.177	1.181	1.273	1.118	1.046	1.027	1.080	1.043	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.009									
Jun-91	32.505	3.664	1.235	1.119	1.310	1.145	1.023	1.006	1.010	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	1.000										
Jun-92	7.373	1.322	1.166	1.889	1.204	1.038	1.010	1.021	1.040	1.057	1.000	1.000	1.000	1.000	1.000	1.101	1.000	1.000	1.000	1.000	1.000	1.000	1.000											
Jun-93	6.273	1.795	2.065	1.065	1.081	1.086	1.000	1.021	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												
Jun-94	5.424	3.603	1.555	1.177	1.113	1.145	1.000	1.037	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													
Jun-95	40.125	2.291	1.442	1.028	1.000	1.000	1.018	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														
Jun-96	5.080	1.837	1.101	1.079	1.000	1.084	1.030	1.067	1.051	1.035	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
Jun-97	5.884	1.997	1.362	1.146	1.015	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																
Jun-98	11.816	3.031	1.335	1.063	1.000	1.000	1.000	1.000	1.000	1.049	1.000	1.000	1.000	1.000	1.000	1.000	1.000																	
Jun-99		2.052	1.302	1.004	1.015	1.022	1.028	1.000	1.000	1.000	1.000	1.000	1.000	1.125	1.111	1.000																		
Jun-00	5.600	2.171	1.240	1.204	1.037	1.045	1.112	1.037	1.000	1.000	1.120	1.079	1.000	1.000	1.000																			
Jun-01	2.305	2.078	1.452	1.281	1.267	1.195	1.064	1.000	1.000	1.000	1.000	1.000	1.000	1.000																				
Jun-02		30.925	3.133	1.931	1.218	1.417	1.097	1.000	1.000	1.000	1.000	1.000	1.000																					
Jun-03			3.056	1.621	1.202	1.035	1.000	1.000	1.101	1.000	1.000	1.000																						
Jun-04			1.720	1.792	1.000	1.000	1.020	1.000	1.000	1.000	1.107																							
Jun-05		6.207	3.247	1.278	1.487	1.070	1.000	1.118	1.000	1.000																								
Jun-06		4.392	2.346	1.305	1.151	1.015	1.060	1.080	1.057																									
Jun-07		11.000	1.896	1.440	1.024	1.023	1.075	1.420																										
Jun-08		1.473	1.459	1.566	1.241	1.019	1.051																											
Jun-09		3.292	1.519	1.296	1.582	1.140																												
Jun-10		5.630	2.824	1.697	1.154																													
Jun-11		2.943	1.929	1.481																														
Jun-12		4.388	1.977																															
Jun-13		1.698																																
Jun-14																																		

Averages *12-24 24-36 36-48 48-60 60-72 72-84 84-96 96-108 108-120 120-132 132-144 144-156 156-168 168-180 180-192 192-204 204-216 216-228 228-240 240-252 252-264 264-276 276-288 288-300 300-312 312-324 324-336 336-348 348-360 360-372 372-384 384-396 396-408 To Ult*

Simple Avg																																		
All Yrs (ex P)	12.239	4.868	2.077	1.484	1.322	1.231	1.140	1.120	1.121	1.079	1.050	1.038	1.043	1.042	1.014	1.012	1.002	1.007	1.003	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.004	1.000	1.000	1.000	1.000		
Latest 5		3.590	1.942	1.496	1.230	1.054	1.041	1.124	1.032	1.000	1.045	1.016	1.000	1.025	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.002	1.000	1.000	1.004						
Latest 3		3.010	2.244	1.492	1.326	1.061	1.062	1.206	1.019	1.000	1.036	1.000	1.000	1.042	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.003	1.000	1.000	1.007	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.635	1.658	1.321	1.243	1.164	1.108	1.074	1.041	1.039	1.033	1.027	1.011	1.014	1.008	1.010	1.003	1.004	1.003	1.000	1.000	1.000	1.000	1.000	1.002	1.000	1.000	1.005	1.000	1.000	1.000	1.000		
Latest 5		2.779	1.957	1.509	1.195	1.057	1.038	1.125	1.031	1.000	1.045	1.015	1.000	1.028	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.002	1.000	1.000	1.005	1.000					
Latest 3		2.487	2.159	1.525	1.279	1.066	1.064	1.210	1.017	1.000	1.034	1.000	1.000	1.058	1.044	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.003	1.000	1.000	1.006	1.000	1.000	1.000			

Dev Factor Selection

	5.500	*2.673*	*1.750*	*1.434*	*1.245*	*1.035*	*1.030*	*1.040*	*1.030*	*1.025*	*1.015*	*1.015*	*1.015*	*1.015*	*1.015*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.005*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	
Prior	5.500	2.634	1.808	1.415	1.239	1.050	1.050	1.100	1.030	1.025	1.020	1.015	1.015	1.015	1.015	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.005	1.000	1.000	1.000	1.000	1.000	1.000
Selected	5.500	2.634	1.808	1.415	1.239	1.050	1.050	1.100	1.030	1.025	1.020	1.015	1.015	1.015	1.015	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.005	1.000	1.000	1.000	1.000	1.000	1.000
FacToUlt	64.687	11.761	4.466	2.470	1.746	1.409	1.342	1.278	1.162	1.128	1.101	1.079	1.063	1.048	1.032	1.017	1.016	1.015	1.014	1.013	1.012	1.011	1.010	1.009	1.008	1.007	1.006	1.005	1.000	1.000	1.000	1.000	1.000	1.000
Percent of Ult	1.5%	8.5%	22.4%	40.5%	57.3%	71.0%	74.5%	78.2%	86.0%	88.6%	90.8%	92.7%	94.0%	95.5%	96.9%	98.3%	98.4%	98.5%	98.6%	98.7%	98.8%	98.9%	99.0%	99.1%	99.2%	99.3%	99.4%	99.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Maturity	Cumulative Paid Loss Development	Incremental Paid Loss Development	Percent Unpaid	Pres Value of Increm. Pmts (4%)	Pres Value of Increm. Pmts (6%)	Discount Factor At: 4%	6%
408	100.0%	1.4%	0.0%	0.4%	0.2%	1.000	1.000
396	98.6%	0.2%	1.4%	0.1%	0.0%	0.981	0.971
384	98.4%	0.5%	1.6%	0.1%	0.1%	0.948	0.923
372	97.9%	0.5%	2.1%	0.1%	0.1%	0.927	0.894
360	97.4%	0.5%	2.6%	0.2%	0.1%	0.909	0.868
348	96.9%	0.6%	3.1%	0.2%	0.1%	0.891	0.843
336	96.4%	0.6%	3.6%	0.2%	0.1%	0.876	0.823
324	95.8%	0.5%	4.2%	0.2%	0.1%	0.861	0.803
312	95.3%	0.5%	4.7%	0.2%	0.1%	0.844	0.779
300	94.9%	0.4%	5.1%	0.2%	0.1%	0.826	0.756
288	94.5%	0.5%	5.5%	0.2%	0.1%	0.808	0.732
276	94.0%	0.5%	6.0%	0.2%	0.1%	0.794	0.714
264	93.5%	0.5%	6.5%	0.2%	0.1%	0.779	0.695
252	93.0%	0.4%	7.0%	0.2%	0.1%	0.764	0.677
240	92.6%	0.5%	7.4%	0.2%	0.2%	0.747	0.655
228	92.1%	0.3%	7.9%	0.2%	0.1%	0.735	0.641
216	91.8%	0.5%	8.2%	0.3%	0.2%	0.718	0.619
204	91.3%	0.6%	8.7%	0.3%	0.2%	0.708	0.607
192	90.7%	0.8%	9.3%	0.4%	0.3%	0.701	0.600
180	89.9%	1.1%	10.1%	0.6%	0.5%	0.697	0.597
168	88.9%	1.0%	11.1%	0.6%	0.5%	0.700	0.601
156	87.9%	0.9%	12.1%	0.6%	0.4%	0.698	0.600
144	86.9%	1.1%	13.1%	0.7%	0.6%	0.693	0.595
132	85.8%	1.1%	14.2%	0.7%	0.6%	0.691	0.594
120	84.7%	1.4%	15.3%	1.0%	0.8%	0.687	0.589
108	83.3%	1.6%	16.7%	1.2%	1.0%	0.688	0.591
96	81.7%	2.2%	18.3%	1.7%	1.4%	0.690	0.595
84	79.4%	3.0%	20.6%	2.3%	2.0%	0.698	0.606
72	76.5%	3.7%	23.5%	3.0%	2.7%	0.710	0.622
60	72.7%	6.2%	27.3%	5.2%	4.7%	0.724	0.639
48	66.6%	8.3%	33.4%	7.2%	6.7%	0.748	0.671
36	58.3%	13.2%	41.7%	11.9%	11.4%	0.771	0.700
24	45.1%	22.2%	54.9%	20.9%	20.3%	0.799	0.735
12	23.0%	23.0%	77.0%	22.5%	22.3%	0.829	0.773
Total		100.0%					

NOTES:

(2) = 1 / Section 2, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	4,657,230	6,724,972		4,073,144	5,881,560
6/30/82-83	279,634	304,530	0.981	274,204	298,616
6/30/83-84	1,301,700	1,493,188	0.948	1,233,385	1,414,824
6/30/84-85	125,195	698,195	0.927	116,106	647,504
6/30/85-86	102,904	205,904	0.909	93,494	187,075
6/30/86-87	134,494	269,494	0.891	119,776	240,004
6/30/87-88	604,791	1,280,241	0.876	529,849	1,121,602
6/30/88-89	730,501	743,501	0.861	629,149	640,346
6/30/89-90	150,282	300,282	0.844	126,784	253,329
6/30/90-91	108,796	217,796	0.826	89,880	179,928
6/30/91-92	342,438	346,438	0.808	276,636	279,868
6/30/92-93	41,424	83,424	0.794	32,878	66,214
6/30/93-94	69,777	104,777	0.779	54,341	81,599
6/30/94-95	117,471	119,471	0.764	89,781	91,310
6/30/95-96	187,048	189,048	0.747	139,813	141,308
6/30/96-97	11,973	24,973	0.735	8,805	18,365
6/30/97-98	190,001	191,001	0.718	136,375	137,092
6/30/98-99	174,702	175,702	0.708	123,611	124,318
6/30/99-00	214,370	215,370	0.701	150,244	150,945
6/30/00-01	341,007	351,007	0.697	237,712	244,683
6/30/01-02	11,519	22,519	0.700	8,058	15,753
6/30/02-03	383,081	390,081	0.698	267,365	272,251
6/30/03-04	446,602	456,602	0.693	309,479	316,409
6/30/04-05	13,383	26,383	0.691	9,253	18,241
6/30/05-06	447,342	472,342	0.687	307,337	324,513
6/30/06-07	533,180	542,180	0.688	366,710	372,900
6/30/07-08	338,181	598,181	0.690	233,346	412,746
6/30/08-09	567,928	693,928	0.698	396,406	484,352
6/30/09-10	827,568	968,568	0.710	587,703	687,835
6/30/10-11	1,057,668	1,084,668	0.724	765,280	784,816
6/30/11-12	1,237,490	1,295,490	0.748	925,847	969,240
6/30/12-13	1,527,603	1,604,603	0.771	1,177,977	1,237,354
6/30/13-14	2,207,263	2,208,263	0.799	1,763,349	1,764,148
6/30/14-15	2,797,222	3,022,222	0.829	2,319,646	2,506,231
Total	22,281,767	27,425,343		17,973,722	22,367,278
			(7) Total Discount Factor:	0.807	0.816

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	4,657,230	6,724,972
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	665,319	960,710
(11) Discounted Value at 4%:	4,073,144	5,881,560

NOTES:
(2), (3) From Section 2, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 2, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	4,657,230	6,724,972		3,825,484	5,523,943
6/30/82-83	279,634	304,530	0.971	271,604	295,786
6/30/83-84	1,301,700	1,493,188	0.923	1,201,586	1,378,347
6/30/84-85	125,195	698,195	0.894	111,978	624,484
6/30/85-86	102,904	205,904	0.868	89,315	178,713
6/30/86-87	134,494	269,494	0.843	113,377	227,181
6/30/87-88	604,791	1,280,241	0.823	497,908	1,053,988
6/30/88-89	730,501	743,501	0.803	586,769	597,212
6/30/89-90	150,282	300,282	0.779	117,144	234,067
6/30/90-91	108,796	217,796	0.756	82,269	164,693
6/30/91-92	342,438	346,438	0.732	250,684	253,612
6/30/92-93	41,424	83,424	0.714	29,574	59,559
6/30/93-94	69,777	104,777	0.695	48,488	72,809
6/30/94-95	117,471	119,471	0.677	79,483	80,836
6/30/95-96	187,048	189,048	0.655	122,585	123,896
6/30/96-97	11,973	24,973	0.641	7,672	16,002
6/30/97-98	190,001	191,001	0.619	117,565	118,184
6/30/98-99	174,702	175,702	0.607	106,037	106,644
6/30/99-00	214,370	215,370	0.600	128,591	129,191
6/30/00-01	341,007	351,007	0.597	203,425	209,391
6/30/01-02	11,519	22,519	0.601	6,927	13,541
6/30/02-03	383,081	390,081	0.600	230,023	234,227
6/30/03-04	446,602	456,602	0.595	265,764	271,715
6/30/04-05	13,383	26,383	0.594	7,951	15,675
6/30/05-06	447,342	472,342	0.589	263,662	278,397
6/30/06-07	533,180	542,180	0.591	315,270	320,591
6/30/07-08	338,181	598,181	0.595	201,207	355,899
6/30/08-09	567,928	693,928	0.606	344,121	420,467
6/30/09-10	827,568	968,568	0.622	514,763	602,467
6/30/10-11	1,057,668	1,084,668	0.639	676,253	693,516
6/30/11-12	1,237,490	1,295,490	0.671	830,298	869,214
6/30/12-13	1,527,603	1,604,603	0.700	1,069,306	1,123,205
6/30/13-14	2,207,263	2,208,263	0.735	1,622,395	1,623,130
6/30/14-15	2,797,222	3,022,222	0.773	2,163,249	2,337,254
Total	22,281,767	27,425,343		16,502,727	20,607,835
			(7) Total Discount Factor:	0.741	0.751

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	4,657,230	6,724,972
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	665,319	960,710
(11) Discounted Value at 6%:	3,825,484	5,523,943

NOTES:
(2), (3) From Section 2, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 2, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	26,908,699	28,980,051	22,249,197	4,659,502	6,730,854				338,840	372,724	7.3%	5.5%
6/30/82-83	5,242,201	5,267,097	4,960,536	281,665	306,561	94.4%	1.0%	17.9%	50,323	54,770	17.9%	17.9%
6/30/83-84	10,997,632	11,203,256	9,681,797	1,315,835	1,521,458	87.2%	1.0%	7.8%	102,960	119,049	7.8%	7.8%
6/30/84-85	7,707,815	8,288,457	7,574,978	132,837	713,479	94.7%	1.0%	18.9%	25,108	134,855	18.9%	18.9%
6/30/85-86	11,991,000	12,095,000	11,874,262	116,739	220,739	98.6%	1.0%	71.4%	83,317	157,543	71.4%	71.4%
6/30/86-87	15,530,000	15,667,000	15,376,859	153,141	290,141	98.6%	1.0%	70.4%	107,777	204,193	70.4%	70.4%
6/30/87-88	22,654,000	23,331,450	22,019,087	634,913	1,312,363	95.8%	1.0%	23.6%	149,936	309,918	23.6%	23.6%
6/30/88-89	24,716,036	24,746,000	23,946,298	769,739	799,703	96.8%	1.0%	31.5%	242,589	252,032	31.5%	31.5%
6/30/89-90	18,914,000	19,069,000	18,704,342	209,658	364,658	98.5%	1.0%	66.1%	138,660	241,170	66.1%	66.1%
6/30/90-91	13,901,440	14,040,000	13,770,178	131,262	269,822	98.6%	1.0%	69.7%	91,443	187,971	69.7%	69.7%
6/30/91-92	10,549,470	10,581,000	10,181,953	367,517	399,047	96.4%	1.0%	27.6%	101,307	109,998	27.6%	27.6%
6/30/92-93	6,010,030	6,070,000	5,947,917	62,113	122,083	98.5%	1.0%	65.6%	40,735	80,065	65.6%	65.6%
6/30/93-94	4,853,990	4,902,000	4,766,721	87,269	135,279	97.7%	1.0%	43.8%	38,257	59,303	43.8%	43.8%
6/30/94-95	3,141,480	3,153,000	3,009,689	131,791	143,311	95.6%	1.0%	22.9%	30,154	32,790	22.9%	22.9%
6/30/95-96	4,284,000	4,307,000	4,069,975	214,025	237,025	94.7%	1.0%	19.0%	40,765	45,145	19.0%	19.0%
6/30/96-97	3,387,000	3,418,000	3,349,690	37,310	68,310	98.4%	1.0%	64.4%	24,039	44,011	64.4%	64.4%
6/30/97-98	3,603,000	3,619,000	3,390,235	212,765	228,765	93.9%	4.6%	74.6%	158,749	170,687	74.6%	74.6%
6/30/98-99	3,239,000	3,253,000	3,044,791	194,209	208,209	93.8%	0.1%	1.4%	2,663	2,855	1.4%	1.4%
6/30/99-00	3,410,000	3,428,000	3,170,076	239,924	257,924	92.7%	1.1%	14.9%	35,654	38,329	14.9%	14.9%
6/30/00-01	5,075,000	5,116,000	4,685,736	389,264	430,264	92.0%	0.8%	9.5%	36,840	40,720	9.5%	9.5%
6/30/01-02	3,157,000	3,186,000	3,110,446	46,554	75,554	98.1%	0.5%	26.0%	12,091	19,624	26.0%	26.0%
6/30/02-03	4,254,000	4,279,000	3,833,198	420,802	445,802	89.8%	2.0%	19.7%	82,868	87,792	19.7%	19.7%
6/30/03-04	4,515,000	4,544,000	4,027,427	487,573	516,573	88.9%	2.0%	18.0%	87,974	93,206	18.0%	18.0%
6/30/04-05	3,773,000	3,810,000	3,708,293	64,707	101,707	97.8%	2.0%	91.1%	58,970	92,690	91.1%	91.1%
6/30/05-06	4,346,000	4,401,000	3,840,334	505,666	560,666	87.8%	2.0%	16.4%	82,958	91,982	16.4%	16.4%
6/30/06-07	4,567,000	4,603,000	3,956,791	610,209	646,209	86.3%	2.0%	14.6%	89,073	94,327	14.6%	14.6%
6/30/07-08	2,942,000	3,236,000	2,520,816	421,184	715,184	81.6%	2.0%	10.9%	45,796	77,764	10.9%	10.9%
6/30/08-09	3,994,000	4,188,150	3,293,421	700,579	894,729	80.5%	2.0%	10.3%	71,864	91,779	10.3%	10.3%
6/30/09-10	5,248,900	5,550,050	4,324,997	923,903	1,225,053	80.1%	2.0%	10.1%	92,856	123,123	10.1%	10.1%
6/30/10-11	4,552,520	4,747,750	3,397,936	1,154,584	1,349,814	73.1%	7.0%	26.1%	301,359	352,316	26.1%	26.1%
6/30/11-12	4,791,000	5,044,000	3,435,840	1,355,160	1,608,160	69.9%	3.2%	10.6%	144,020	170,908	10.6%	10.6%
6/30/12-13	4,577,000	4,856,000	2,808,843	1,768,157	2,047,157	59.6%	10.3%	25.5%	450,979	522,140	25.5%	25.5%
6/30/13-14	4,855,000	5,090,000	2,214,439	2,640,561	2,875,561	44.5%	15.0%	27.1%	715,042	778,679	27.1%	27.1%
6/30/14-15	4,651,000	5,180,000	1,023,056	3,627,944	4,156,944	20.8%	23.7%	30.0%	1,086,767	1,245,231	30.0%	30.0%
Total	266,339,214	273,249,260	241,270,154	25,069,060	31,979,106				5,162,732	6,499,691	20.6%	20.3%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		1,211,144			1,213,417	1,217,026	2,272	5,882		
6/30/82-83		260,969	262,505		263,000	263,000	2,031	2,031		
6/30/83-84		1,413,497	1,423,237		1,427,632	1,441,767	14,135	28,270		
6/30/84-85	181,560	764,174	770,209	770,504	771,815	779,457	7,642	15,283	0.425	0.429
6/30/85-86	195,247	1,602,166	1,616,433	1,616,952	1,616,000	1,617,000	13,835	14,835	0.828	0.828
6/30/86-87	224,370	1,896,353	1,915,154	1,916,639	1,915,000	1,917,000	18,647	20,647	0.853	0.854
6/30/87-88	262,864	2,483,878	2,513,521	2,515,933	2,514,000	2,516,000	30,122	32,122	0.956	0.957
6/30/88-89	283,884	3,923,798	3,978,567	3,979,173	3,963,036	3,980,000	39,238	56,202	1.396	1.402
6/30/89-90	285,078	3,685,625	3,744,543	3,749,992	3,745,000	3,750,000	59,375	64,375	1.314	1.315
6/30/90-91	267,732	2,903,974	2,956,298	2,955,910	2,926,440	2,956,000	22,466	52,026	1.093	1.104
6/30/91-92	261,442	2,601,391	2,653,559	2,652,815	2,626,470	2,654,000	25,079	52,609	1.005	1.015
6/30/92-93	259,992	1,758,341	1,797,190	1,796,520	1,779,030	1,797,000	20,689	38,659	0.684	0.691
6/30/93-94	257,062	1,270,498	1,301,166	1,300,667	1,287,990	1,301,000	17,492	30,502	0.501	0.506
6/30/94-95	255,854	928,160	952,465	952,249	942,480	952,000	14,320	23,840	0.368	0.372
6/30/95-96	255,539	1,004,022	1,031,351	1,030,986	1,031,000	1,052,000	26,978	47,978	0.403	0.412
6/30/96-97	270,071	882,663	908,081	908,009	908,000	926,000	25,337	43,337	0.336	0.343
6/30/97-98	245,367	764,236	786,683	786,719	787,000	802,000	22,764	37,764	0.321	0.327
6/30/98-99	251,453	634,493	653,796	654,270	654,000	667,000	19,507	32,507	0.260	0.265
6/30/99-00	255,641	794,445	820,187	820,300	820,000	837,000	25,555	42,555	0.321	0.327
6/30/00-01	263,918	1,416,743	1,466,646	1,464,769	1,465,000	1,496,000	48,257	79,257	0.555	0.567
6/30/01-02	267,598	880,964	915,643	915,759	916,000	934,000	35,036	53,036	0.342	0.349
6/30/02-03	274,465	856,279	893,546	894,022	894,000	912,000	37,721	55,721	0.326	0.332
6/30/03-04	272,384	877,029	917,784	918,316	918,000	937,000	40,971	59,971	0.337	0.344
6/30/04-05	273,647	1,049,675	1,102,846	1,101,073	1,101,000	1,125,000	51,325	75,325	0.402	0.411
6/30/05-06	285,139	1,168,675	1,232,786	1,227,339	1,227,000	1,257,000	58,325	88,325	0.430	0.441
6/30/06-07	298,516	1,148,970	1,228,140	1,226,013	1,226,000	1,253,000	77,030	104,030	0.411	0.420
6/30/07-08	314,231	1,045,997	1,129,252	1,139,862	1,129,000	1,163,000	83,003	117,003	0.359	0.370
6/30/08-09	302,998	1,146,349	1,282,784	1,279,192	1,279,000	1,347,150	132,651	200,801	0.422	0.445
6/30/09-10	297,252	1,235,565	1,420,880	1,401,582	1,331,900	1,492,050	96,335	256,485	0.448	0.502
6/30/10-11	292,432	989,604	1,180,717	1,194,732	1,086,520	1,254,750	96,916	265,146	0.372	0.429
6/30/11-12	295,908	1,039,330	1,285,218	1,287,617	1,157,000	1,352,000	117,670	312,670	0.391	0.457
6/30/12-13	301,541	959,446	1,333,774	1,335,052	1,200,000	1,402,000	240,554	442,554	0.398	0.465
6/30/13-14	309,910	744,703	1,308,365	1,344,388	1,178,000	1,412,000	433,297	667,297	0.380	0.456
6/30/14-15	316,552	337,278	1,297,516	1,402,128	1,168,000	1,472,000	830,722	1,134,722	0.369	0.465
Total	8,379,647	45,680,438	48,080,844	46,539,482	48,467,731	50,234,201	2,787,293	4,553,763		
Tot 6/30/84-15	8,379,647	42,794,827	46,395,102	46,539,482	45,563,681	47,312,407	2,768,854	4,517,580	0.544	0.565

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 2, Exhibit 2, Page 2, Column 3
(4) From Section 2, Exhibit 2, Page 2, Column 8
(5) From Section 2, Exhibit 2, Page 3, Column 8
(6), (7) Selected based on (3), (4), and (5)
(8) = (6) - (3)
(9) = (7) - (3)
(10) = (6) / (2) / 10
(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		1,211,144							1	2	
6/30/82-83		260,969	1.006	1.000	262,505	N/A	262,505		0	0	
6/30/83-84		1,413,497	1.007	1.000	1,423,237	N/A	1,423,237		2	2	4,870
6/30/84-85	181,560	764,174	1.008	1.000	770,209	N/A	770,209	0.424	1	1	6,035
6/30/85-86	195,247	1,602,166	1.009	1.000	1,616,433	N/A	1,616,433	0.828	0	0	
6/30/86-87	224,370	1,896,353	1.010	1.000	1,915,154	N/A	1,915,154	0.854	0	0	
6/30/87-88	262,864	2,483,878	1.012	1.000	2,513,521	N/A	2,513,521	0.956	1	1	29,643
6/30/88-89	283,884	3,923,798	1.014	1.000	3,978,567	N/A	3,978,567	1.401	3	3	18,256
6/30/89-90	285,078	3,685,625	1.016	1.000	3,744,543	N/A	3,744,543	1.314	2	1	58,918
6/30/90-91	267,732	2,903,974	1.018	1.000	2,956,298	N/A	2,956,298	1.104	1	1	52,324
6/30/91-92	261,442	2,601,391	1.020	1.000	2,653,559	N/A	2,653,559	1.015	2	2	26,084
6/30/92-93	259,992	1,758,341	1.022	1.000	1,797,190	N/A	1,797,190	0.691	1	1	38,849
6/30/93-94	257,062	1,270,498	1.024	1.000	1,301,166	N/A	1,301,166	0.506	2	3	10,223
6/30/94-95	255,854	928,160	1.026	1.000	952,465	N/A	952,465	0.372	1	0	
6/30/95-96	255,539	1,004,022	1.027	1.000	1,031,351	N/A	1,031,351	0.404	0	0	
6/30/96-97	270,071	882,663	1.029	1.000	908,081	N/A	908,081	0.336	1	0	
6/30/97-98	245,367	764,236	1.029	1.000	786,683	N/A	786,683	0.321	1	1	22,447
6/30/98-99	251,453	634,493	1.030	1.000	653,796	N/A	653,796	0.260	1	0	
6/30/99-00	255,641	794,445	1.032	1.000	820,187	N/A	820,187	0.321	1	1	25,742
6/30/00-01	263,918	1,416,743	1.035	1.000	1,466,646	N/A	1,466,646	0.556	7	7	7,129
6/30/01-02	267,598	880,964	1.039	1.000	915,643	N/A	915,643	0.342	3	3	11,560
6/30/02-03	274,465	856,279	1.044	1.000	893,546	N/A	893,546	0.326	6	4	9,317
6/30/03-04	272,384	877,029	1.046	1.000	917,784	N/A	917,784	0.337	5	3	13,585
6/30/04-05	273,647	1,049,675	1.051	1.000	1,102,846	N/A	1,102,846	0.403	1	2	26,586
6/30/05-06	285,139	1,168,675	1.055	1.000	1,232,786	N/A	1,232,786	0.432	4	3	21,370
6/30/06-07	298,516	1,148,970	1.069	1.000	1,228,140	N/A	1,228,140	0.411	6	6	13,195
6/30/07-08	314,231	1,045,997	1.080	1.000	1,129,252	N/A	1,129,252	0.359	3	6	13,876
6/30/08-09	302,998	1,146,349	1.119	1.000	1,282,784	N/A	1,282,784	0.423	11	7	19,491
6/30/09-10	297,252	1,235,565	1.150	1.000	1,420,880	N/A	1,420,880	0.478	21	18	10,295
6/30/10-11	292,432	989,604	1.193	1.000	1,180,717	N/A	1,180,717	0.404	25	16	11,945
6/30/11-12	295,908	1,039,330	1.237	1.000	1,285,218	N/A	1,285,218	0.434	56	24	10,245
6/30/12-13	301,541	959,446	1.390	1.000	1,333,774	N/A	1,333,774	0.442	194	47	7,964
6/30/13-14	309,910	744,703	1.757	1.000	1,308,365	N/A	1,308,365	0.422	294	179	3,149
6/30/14-15	316,552	337,278	3.847	1.000	1,297,516	N/A	1,297,516	0.410		256	3,751
Total	8,379,647	45,680,438			48,080,844		48,080,844		657	600	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 2, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	181,560	0.445	764,174	1.008	770,504	N/A	770,504	0.424	0.424
6/30/85-86	195,247	0.858	1,602,166	1.009	1,616,952	N/A	1,616,952	0.828	0.828
6/30/86-87	224,370	0.921	1,896,353	1.010	1,916,639	N/A	1,916,639	0.854	0.854
6/30/87-88	262,864	1.034	2,483,878	1.012	2,515,933	N/A	2,515,933	0.957	0.957
6/30/88-89	283,884	1.417	3,923,798	1.014	3,979,173	N/A	3,979,173	1.402	1.402
6/30/89-90	285,078	1.435	3,685,625	1.016	3,749,992	N/A	3,749,992	1.315	1.315
6/30/90-91	267,732	1.096	2,903,974	1.018	2,955,910	N/A	2,955,910	1.104	1.104
6/30/91-92	261,442	1.000	2,601,391	1.020	2,652,815	N/A	2,652,815	1.015	1.015
6/30/92-93	259,992	0.679	1,758,341	1.022	1,796,520	N/A	1,796,520	0.691	0.691
6/30/93-94	257,062	0.498	1,270,498	1.024	1,300,667	N/A	1,300,667	0.506	0.506
6/30/94-95	255,854	0.369	928,160	1.026	952,249	N/A	952,249	0.372	0.372
6/30/95-96	255,539	0.398	1,004,022	1.027	1,030,986	N/A	1,030,986	0.403	0.403
6/30/96-97	270,071	0.335	882,663	1.029	908,009	N/A	908,009	0.336	0.336
6/30/97-98	245,367	0.321	764,236	1.029	786,719	N/A	786,719	0.321	0.321
6/30/98-99	251,453	0.266	634,493	1.030	654,270	N/A	654,270	0.260	0.260
6/30/99-00	255,641	0.322	794,445	1.032	820,300	N/A	820,300	0.321	0.321
6/30/00-01	263,918	0.535	1,416,743	1.035	1,464,769	N/A	1,464,769	0.555	0.555
6/30/01-02	267,598	0.343	880,964	1.039	915,759	N/A	915,759	0.342	0.342
6/30/02-03	274,465	0.330	856,279	1.044	894,022	N/A	894,022	0.326	0.326
6/30/03-04	272,384	0.341	877,029	1.046	918,316	N/A	918,316	0.337	0.337
6/30/04-05	273,647	0.390	1,049,675	1.051	1,101,073	N/A	1,101,073	0.402	0.402
6/30/05-06	285,139	0.396	1,168,675	1.055	1,227,339	N/A	1,227,339	0.430	0.430
6/30/06-07	298,516	0.400	1,148,970	1.069	1,226,013	N/A	1,226,013	0.411	0.411
6/30/07-08	314,231	0.405	1,045,997	1.080	1,139,862	N/A	1,139,862	0.363	0.363
6/30/08-09	302,998	0.412	1,146,349	1.119	1,279,192	N/A	1,279,192	0.422	0.422
6/30/09-10	297,252	0.428	1,235,565	1.150	1,401,582	N/A	1,401,582	0.472	0.472
6/30/10-11	292,432	0.433	989,604	1.193	1,194,732	N/A	1,194,732	0.409	0.409
6/30/11-12	295,908	0.439	1,039,330	1.237	1,287,617	N/A	1,287,617	0.435	0.435
6/30/12-13	301,541	0.444	959,446	1.390	1,335,052	N/A	1,335,052	0.443	0.443
6/30/13-14	309,910	0.449	744,703	1.757	1,344,388	N/A	1,344,388	0.434	0.434
6/30/14-15	316,552	0.455	337,278	3.847	1,402,128	N/A	1,402,128	0.443	0.443
Total	8,379,647		42,794,827		46,539,482		46,539,482		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 2, Exhibit 2, Page 4, Column 11

(4) From Section 2, Exhibit 2, Page 2, Column 3

(5) From Section 2, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.445	0.445
6/30/85-86									0.858	0.858
6/30/86-87									0.921	0.921
6/30/87-88									1.034	1.034
6/30/88-89									1.417	1.417
6/30/89-90									1.435	1.435
6/30/90-91	267,732	2,956,298	1.104	1.194	1.318	1.347	1.776	0.286	1.098	1.096
6/30/91-92	261,442	2,653,559	1.015	1.189	1.206	1.331	1.606	0.291	0.998	1.000
6/30/92-93	259,992	1,797,190	0.691	1.189	0.822	1.316	1.081	0.294	0.681	0.679
6/30/93-94	257,062	1,301,166	0.506	1.178	0.596	1.300	0.775	0.300	0.500	0.498
6/30/94-95	255,854	952,465	0.372	1.170	0.436	1.285	0.560	0.306	0.371	0.369
6/30/95-96	255,539	1,031,351	0.404	1.155	0.466	1.269	0.592	0.314	0.401	0.398
6/30/96-97	270,071	908,081	0.336	1.137	0.382	1.254	0.479	0.323	0.338	0.335
6/30/97-98	245,367	786,683	0.321	1.135	0.364	1.240	0.451	0.327	0.323	0.321
6/30/98-99	251,453	653,796	0.260	1.135	0.295	1.225	0.361	0.331	0.270	0.266
6/30/99-00	255,641	820,187	0.321	1.135	0.364	1.210	0.441	0.335	0.321	0.322
6/30/00-01	263,918	1,466,646	0.556	1.109	0.616	1.196	0.737	0.347	0.520	0.535
6/30/01-02	267,598	915,643	0.342	1.101	0.377	1.182	0.445	0.354	0.341	0.343
6/30/02-03	274,465	893,546	0.326	1.073	0.349	1.168	0.408	0.367	0.332	0.330
6/30/03-04	272,384	917,784	0.337	1.046	0.353	1.154	0.407	0.381	0.341	0.341
6/30/04-05	273,647	1,102,846	0.403	1.036	0.417	1.140	0.476	0.390	0.415	0.390
6/30/05-06	285,139	1,232,786	0.432	1.032	0.446	1.127	0.503	0.396	0.421	0.396
6/30/06-07	298,516	1,228,140	0.411	1.032	0.425	1.113	0.473	0.400	0.425	0.400
6/30/07-08	314,231	1,129,252	0.359	1.032	0.371	1.100	0.408	0.405	0.429	0.405
6/30/08-09	302,998	1,282,784	0.423	1.027	0.435	1.087	0.472	0.412	0.436	0.412
6/30/09-10	297,252	1,420,880	0.478	1.000	0.478	1.074	0.513	0.428	0.452	0.428
6/30/10-11	292,432	1,180,717	0.404	1.000	0.404	1.061	0.429	0.433	0.456	0.433
6/30/11-12	295,908	1,285,218	0.434	1.000	0.434	1.049	0.456	0.439	0.461	0.439
6/30/12-13	301,541	1,333,774	0.442	1.000	0.442	1.036	0.458	0.444	0.466	0.444
6/30/13-14	309,910	1,308,365	0.422	1.000	0.422	1.024	0.432	0.449	0.470	0.449
6/30/14-15	316,552	1,297,516	0.410	1.000	0.410	1.012	0.415	0.455		0.455
Total	6,946,644	31,856,675								

Trend Last 4 (ex 14-15):	1.5%	Avg 3 (ex 14-15):	0.449
Trend Last 8 (ex 14-15):	0.8%	Avg 5 (ex 14-15):	0.458
Trend Last 12 (ex 14-15):	1.6%	Avg 10 (ex 14-15):	0.462
Prior Selected Trend:	1.0%	Prior Sel Avg:	0.475
Selected Trend:	1.2%	Sel. Loss Cost:	0.460

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 2, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend	0.800	
(2)	Credibility	33%	
(3)	Average Pmt Trend Statewide	0.950	
(4)	Credibility Weighted Trend	0.901	
		(Low)	(High)
(5)	Selected Range	0.860	0.946
(6)	Incremental Paid for 2015	632	632
(7)	Estimated Reserve	3,884	11,141
(8)	Paid to Date (82 & Prior)	1,211,144	1,211,144
(9)	Est Ult Paid for 1982 & Prior	1,215,029	1,222,286

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	330	179
(11)	Projected Number of Years	2	7
(12)	Estimated Reserve	661	1,255
(13)	Paid to Date (82 & Prior)	1,211,144	1,210,512
(14)	Est Ult Paid for 1982 & Prior	1,211,805	1,211,767
(14a)	Paid Counts During Fiscal Year	2	1
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	1,213,417	1,217,026
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**1,213,417**	**1,217,026**
(18)	Implied Tail	1.002	1.005
(19)	Ult Loss Inc Lump Sums @ 6/14	1,211,690	1,213,782

NOTES:

(1) From Section 2, Exhibit 2, Page 6
(2) = (Average of Section 2, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 2, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 2, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	76,171	11.241			
1993	2	75,723	11.235	0.994		
1994	3	63,040	11.052	0.833		
1995	4	28,227	10.248	0.448		
1996	5	63,291	11.055	2.242		
1997	6	29,585	10.295	0.467		
1998	7	13,039	9.476	0.441		
1999	8	13,407	9.504	1.028		
2000	9	11,930	9.387	0.890	n =	24
2001	10	9,078	9.114	0.761	S(x) =	48,084
2002	11	5,110	8.539	0.563	S(x-sq) =	96,337,444
2003	12	6,295	8.748	1.232	S(xy) =	418,795
2004	13	4,115	8.322	0.654	S(y) =	209
2005	14	17,494	9.770	4.251	D =	27,600
2006	15	5,802	8.666	0.332	slope =	-0.240
2007	16	8,975	9.102	1.547	Avg Trend =	0.760
2008	17	3,912	8.272	0.436		
2009	18	2,186	7.690	0.559		
2010	19	4,246	8.354	1.943		
2011	20	1,195	7.086	0.281		
2012	21	179	5.189	0.150		
2013	22	179	5.189	1.000		
2014	23	179	5.189	1.000		
2015	24	632	6.449	3.527		
					Selected Trend:	**0.800**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 3.527 = 632 / 179

Commonwealth of Massachusetts Workers Compensation
Department of Developmental Services - Cluster 1
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	21,006	49,638	70,591	88,239	105,504	122,855	138,893	160,692	180,838	198,763	206,648	244,385	249,094	254,712	256,363	256,876	257,735	258,257	258,537	258,637	259,334	259,869	260,265	260,719	260,969	260,969	260,969	260,969	260,969	260,969	260,969	260,969	260,969
June-84	130,216	307,707	437,592	546,990	654,018	741,928	857,012	959,232	1,050,170	1,118,632	1,160,913	1,192,447	1,199,268	1,203,920	1,225,075	1,249,653	1,268,798	1,290,858	1,296,673	1,300,275	1,316,793	1,333,199	1,342,906	1,349,107	1,358,330	1,363,288	1,375,051	1,401,444	1,403,198	1,404,636	1,410,461	1,413,497	
June-85	89,170	210,713	299,656	374,570	455,180	522,720	582,177	634,207	685,633	702,603	713,358	717,026	720,062	720,920	726,880	729,520	730,301	731,081	731,204	731,204	731,218	731,218	731,218	731,218	731,218	731,218	731,218	739,645	763,916	764,161	764,174		
June-86	189,273	447,261	636,052	765,617	939,707	1,103,818	1,243,019	1,358,130	1,444,684	1,485,929	1,499,042	1,514,132	1,520,647	1,537,037	1,547,606	1,553,176	1,564,852	1,567,432	1,573,496	1,575,982	1,582,467	1,586,081	1,593,552	1,596,723	1,600,637	1,602,166	1,602,166	1,602,166	1,602,166	1,602,166	1,602,166			
June-87	243,465	575,319	884,604	1,135,085	1,272,135	1,441,924	1,619,831	1,685,111	1,741,279	1,772,270	1,801,621	1,842,953	1,884,775	1,889,603	1,894,366	1,894,597	1,895,476	1,895,651	1,895,651	1,895,651	1,896,140	1,896,353	1,896,353	1,896,353	1,896,353	1,896,353	1,896,353	1,896,353	1,896,353	1,896,353				
June-88	363,164	980,917	1,485,789	1,802,447	2,044,603	2,209,730	2,337,274	2,381,902	2,440,826	2,450,413	2,453,714	2,458,155	2,468,582	2,469,709	2,470,273	2,472,242	2,472,926	2,474,120	2,475,679	2,476,698	2,479,622	2,480,422	2,482,560	2,482,824	2,483,087	2,483,417	2,483,681	2,483,878						
June-89	524,148	1,718,544	2,367,574	2,805,123	3,095,247	3,298,078	3,424,849	3,485,100	3,510,635	3,573,650	3,625,589	3,649,159	3,663,581	3,699,511	3,725,869	3,746,061	3,765,157	3,783,602	3,796,379	3,809,734	3,820,868	3,838,465	3,852,950	3,867,441	3,882,545	3,902,335	3,923,798						
June-90	721,216	2,076,487	2,697,946	3,042,168	3,365,956	3,509,844	3,547,356	3,618,254	3,660,798	3,669,321	3,673,294	3,674,043	3,675,267	3,676,903	3,676,903	3,676,975	3,676,975	3,677,208	3,677,264	3,677,264	3,677,264	3,677,264	3,680,769	3,681,790	3,685,474	3,685,625							
June-91	573,775	1,832,452	2,336,684	2,570,536	2,690,503	2,737,602	2,767,093	2,783,177	2,796,096	2,807,853	2,815,389	2,817,526	2,821,013	2,824,311	2,824,746	2,835,316	2,844,386	2,852,912	2,862,970	2,871,036	2,880,572	2,890,850	2,897,227	2,902,044	2,903,974								
June-92	682,252	1,646,809	2,002,754	2,139,991	2,195,456	2,229,059	2,250,251	2,258,976	2,271,388	2,282,222	2,299,759	2,312,696	2,324,613	2,341,522	2,353,263	2,361,934	2,370,332	2,377,427	2,385,401	2,392,636	2,402,525	2,411,498	2,588,626	2,601,391									
June-93	530,227	1,313,078	1,537,374	1,593,966	1,619,013	1,650,226	1,662,183	1,669,637	1,672,913	1,676,324	1,679,743	1,683,745	1,688,008	1,694,444	1,700,344	1,735,033	1,740,584	1,747,278	1,750,189	1,752,832	1,755,026	1,755,793	1,758,341										
June-94	507,386	988,866	1,093,334	1,170,915	1,212,098	1,230,432	1,235,833	1,243,122	1,247,382	1,251,645	1,252,686	1,255,338	1,260,284	1,261,941	1,262,624	1,262,948	1,263,197	1,263,431	1,264,853	1,267,940	1,270,183	1,270,498											
June-95	419,212	715,818	815,621	863,086	890,307	917,113	922,985	923,881	924,606	926,605	926,605	926,605	926,605	926,605	926,779	927,514	927,514	927,514	927,514	928,160	928,160												
June-96	382,658	780,302	879,753	927,773	959,109	977,572	986,429	994,587	997,113	999,835	999,878	999,878	1,002,373	1,003,880	1,003,880	1,004,022	1,004,022	1,004,022	1,004,022	1,004,022													
June-97	375,777	680,288	796,380	819,630	848,942	854,522	862,163	870,431	872,306	876,115	878,979	880,535	881,313	882,123	882,572	882,572	882,572	882,663	882,663														
June-98	271,043	554,887	629,610	674,301	694,718	711,568	723,173	728,434	739,218	743,949	744,590	744,993	744,993	746,349	751,655	753,336	760,571	764,236															
June-99	200,054	434,499	509,933	556,932	596,752	611,737	618,749	622,442	625,193	627,351	628,383	630,351	632,095	633,627	633,750	634,493	634,493																
June-00	278,690	480,160	554,610	607,363	639,042	681,279	703,362	725,333	730,593	734,009	743,547	751,052	758,824	768,373	779,490	794,445																	
June-01	312,280	500,976	665,683	751,467	818,710	893,280	968,370	1,062,045	1,117,446	1,168,471	1,217,356	1,269,474	1,306,387	1,358,630	1,416,743																		
June-02	197,389	476,132	547,189	630,575	673,854	722,281	746,769	768,857	788,866	810,710	820,868	840,995	861,213	880,964																			
June-03	163,049	459,264	666,927	739,223	775,337	800,620	814,827	825,961	832,962	839,586	845,639	851,935	856,279																				
June-04	79,919	361,725	544,497	684,486	731,761	788,111	824,704	835,702	842,619	849,442	861,676	877,029																					
June-05	394,825	766,546	887,167	942,140	987,834	999,094	1,003,380	1,005,881	1,006,180	1,046,856	1,049,675																						
June-06	318,539	662,581	842,645	941,494	1,038,675	1,080,705	1,115,105	1,134,878	1,157,537	1,168,675																							
June-07	310,954	746,618	936,091	1,034,943	1,071,013	1,094,137	1,114,504	1,128,520	1,148,970																								
June-08	418,873	692,272	777,557	805,740	842,963	874,236	948,911	1,045,997																									
June-09	491,289	882,544	982,774	1,088,621	1,119,184	1,136,600	1,146,349																										
June-10	412,961	823,720	1,038,592	1,141,629	1,181,671	1,235,565																											
June-11	434,256	781,068	901,778	953,435	989,604																												
June-12	463,779	899,638	985,560	1,039,330																													
June-13	317,812	782,569	959,446																														
June-14	343,501	744,703																															
June-15	337,278																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.363	1.422	1.250	1.196	1.164	1.131	1.157	1.125	1.099	1.040	1.183	1.019	1.023	1.006	1.002	1.003	1.002	1.001	1.000	1.003	1.002	1.002	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
June-84	2.363	1.422	1.250	1.196	1.134	1.155	1.119	1.095	1.065	1.038	1.027	1.006	1.004	1.018	1.020	1.015	1.017	1.005	1.003	1.013	1.012	1.007	1.005	1.007	1.004	1.009	1.019	1.001	1.001	1.004	1.002	
June-85	2.363	1.422	1.250	1.215	1.148	1.114	1.089	1.081	1.025	1.015	1.005	1.004	1.001	1.008	1.004	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.012	1.033	1.000	1.000		
June-86	2.363	1.422	1.204	1.227	1.175	1.126	1.093	1.064	1.029	1.009	1.010	1.004	1.011	1.007	1.004	1.008	1.002	1.004	1.002	1.004	1.002	1.005	1.002	1.002	1.001	1.000	1.000	1.000	1.000			
June-87	2.363	1.538	1.283	1.121	1.133	1.123	1.040	1.033	1.018	1.017	1.023	1.023	1.003	1.003	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				
June-88	2.701	1.515	1.213	1.134	1.081	1.058	1.019	1.025	1.004	1.001	1.002	1.004	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.001	1.000	1.001	1.000	1.000	1.000	1.000	1.000					
June-89	3.279	1.378	1.185	1.103	1.066	1.038	1.018	1.007	1.018	1.015	1.007	1.004	1.010	1.007	1.005	1.005	1.005	1.003	1.004	1.003	1.005	1.004	1.004	1.004	1.005	1.006						
June-90	2.879	1.299	1.128	1.106	1.043	1.011	1.020	1.012	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.001	1.000							
June-91	3.194	1.275	1.100	1.047	1.018	1.011	1.006	1.005	1.004	1.003	1.001	1.001	1.001	1.000	1.004	1.003	1.003	1.004	1.003	1.003	1.004	1.002	1.002	1.001								
June-92	2.414	1.216	1.069	1.026	1.015	1.010	1.004	1.005	1.005	1.008	1.006	1.005	1.007	1.005	1.004	1.004	1.003	1.003	1.003	1.004	1.004	1.073	1.005									
June-93	2.476	1.171	1.037	1.016	1.019	1.007	1.004	1.002	1.002	1.002	1.002	1.003	1.004	1.003	1.020	1.003	1.004	1.002	1.002	1.001	1.000	1.001										
June-94	1.949	1.106	1.071	1.035	1.015	1.004	1.006	1.003	1.003	1.001	1.002	1.004	1.001	1.001	1.000	1.000	1.000	1.001	1.002	1.002	1.000											
June-95	1.708	1.139	1.058	1.032	1.030	1.006	1.001	1.001	1.002	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.000	1.001	1.000												
June-96	2.039	1.127	1.055	1.034	1.019	1.009	1.008	1.003	1.003	1.000	1.000	1.002	1.002	1.000	1.000	1.000	1.000	1.000	1.000													
June-97	1.810	1.171	1.029	1.036	1.007	1.009	1.010	1.002	1.004	1.003	1.002	1.001	1.001	1.001	1.000	1.000	1.000	1.000														
June-98	2.047	1.135	1.071	1.030	1.024	1.016	1.007	1.015	1.006	1.001	1.001	1.000	1.002	1.007	1.002	1.010	1.005															
June-99	2.172	1.174	1.092	1.071	1.025	1.011	1.006	1.004	1.003	1.002	1.003	1.003	1.002	1.000	1.001	1.000																
June-00	1.723	1.155	1.095	1.052	1.066	1.032	1.031	1.007	1.005	1.013	1.010	1.010	1.013	1.014	1.019																	
June-01	1.604	1.329	1.129	1.089	1.091	1.084	1.097	1.052	1.046	1.042	1.043	1.029	1.040	1.043																		
June-02	2.412	1.149	1.152	1.069	1.072	1.034	1.030	1.026	1.028	1.013	1.025	1.024	1.023																			
June-03	2.817	1.452	1.108	1.049	1.033	1.018	1.014	1.008	1.008	1.007	1.007	1.005																				
June-04	4.526	1.505	1.257	1.069	1.077	1.046	1.013	1.008	1.008	1.014	1.018																					
June-05	1.941	1.157	1.062	1.049	1.011	1.004	1.002	1.000	1.040	1.003																						
June-06	2.080	1.272	1.117	1.103	1.040	1.032	1.018	1.020	1.010																							
June-07	2.401	1.254	1.106	1.035	1.022	1.019	1.013	1.018																								
June-08	1.653	1.123	1.036	1.046	1.037	1.085	1.102																									
June-09	1.796	1.114	1.108	1.028	1.016	1.009																										
June-10	1.995	1.261	1.099	1.035	1.046																											
June-11	1.799	1.155	1.057	1.038																												
June-12	1.940	1.096	1.055																													
June-13	2.462	1.226																														
June-14	2.168																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.306	1.264	1.124	1.079	1.058	1.045	1.036	1.025	1.018	1.011	1.017	1.007	1.007	1.007	1.005	1.003	1.003	1.002	1.001	1.003	1.002	1.009	1.002	1.002	1.001	1.002	1.005	1.007	1.000	1.001	1.001		
Latest 5	2.073	1.170	1.071	1.036	1.032	1.030	1.030	1.011	1.019	1.016	1.021	1.014	1.016	1.013	1.005	1.002	1.001	1.001	1.002	1.002	1.002	1.016	1.002	1.001	1.001	1.001	1.006	1.007					
Latest 3	2.190	1.159	1.070	1.034	1.033	1.038	1.044	1.013	1.019	1.008	1.017	1.019	1.025	1.019	1.008	1.003	1.002	1.000	1.001	1.001	1.001	1.026	1.002	1.002	1.002	1.002	1.000	1.011	1.000	1.001			
Volume Wtd																																	
All Yrs	2.273	1.249	1.115	1.072	1.049	1.036	1.026	1.018	1.013	1.009	1.009	1.006	1.006	1.006	1.004	1.003	1.003	1.002	1.002	1.002	1.002	1.010	1.002	1.002	1.002	1.003	1.004	1.004	1.000	1.002	1.002	1.000	
Latest 5	2.044	1.168	1.073	1.036	1.032	1.028	1.029	1.012	1.019	1.017	1.023	1.016	1.020	1.017	1.004	1.002	1.001	1.001	1.002	1.003	1.002	1.014	1.002	1.001	1.002	1.002	1.004	1.004					
Latest 3	2.157	1.156	1.071	1.034	1.033	1.034	1.041	1.013	1.020	1.008	1.017	1.021	1.028	1.025	1.008	1.003	1.001	1.000	1.001	1.001	1.002	1.026	1.002	1.002	1.002	1.003	1.000	1.006	1.000	1.002			

Dev Factor Selection

Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*2.125*	*1.265*	*1.127*	*1.049*	*1.038*	*1.035*	*1.019*	*1.015*	*1.013*	*1.004*	*1.004*	*1.003*	*1.004*	*1.004*	*1.003*	*1.002*	*1.001*	*1.001*	*1.002*	*1.002*	*1.002*	*1.002*	*1.002*	*1.002*	*1.002*	*1.002*	*1.002*	*1.002*	*1.001*	*1.001*	*1.001*	*1.007*	
Selected	2.190	1.264	1.124	1.036	1.038	1.028	1.037	1.010	1.013	1.004	1.004	1.003	1.004	1.004	1.003	1.002	1.001	1.001	1.002	1.001	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.001	1.001	1.001	1.001	1.006
FacToUlt	3.847	1.757	1.390	1.237	1.193	1.150	1.119	1.080	1.069	1.055	1.051	1.046	1.044	1.039	1.035	1.032	1.030	1.029	1.029	1.027	1.026	1.024	1.022	1.020	1.018	1.016	1.014	1.012	1.010	1.009	1.008	1.007	1.006
Percent of Ult	26.0%	56.9%	71.9%	80.9%	83.8%	87.0%	89.4%	92.6%	93.6%	94.8%	95.2%	95.6%	95.8%	96.2%	96.6%	96.9%	97.0%	97.1%	97.2%	97.4%	97.4%	97.6%	97.8%	98.0%	98.2%	98.4%	98.6%	98.8%	99.0%	99.1%	99.2%	99.3%	99.4%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	1,211,690	1,213,782	1,213,417	1,217,026	1,727	0.1%	3,245	0.3%
6/30/82-83	263,579	271,000	263,000	263,000	(579)	-0.2%	(8,000)	-3.0%
6/30/83-84	1,424,565	1,465,000	1,427,632	1,441,767	3,067	0.2%	(23,233)	-1.6%
6/30/84-85	771,803	779,444	771,815	779,457	13	0.0%	13	0.0%
6/30/85-86	1,619,000	1,620,000	1,616,000	1,617,000	(3,000)	-0.2%	(3,000)	-0.2%
6/30/86-87	1,920,000	1,922,000	1,915,000	1,917,000	(5,000)	-0.3%	(5,000)	-0.3%
6/30/87-88	2,519,000	2,522,000	2,514,000	2,516,000	(5,000)	-0.2%	(6,000)	-0.2%
6/30/88-89	3,966,000	3,967,000	3,963,036	3,980,000	(2,964)	-0.1%	13,000	0.3%
6/30/89-90	3,722,328	3,759,183	3,745,000	3,750,000	22,672	0.6%	(9,183)	-0.2%
6/30/90-91	2,931,390	2,961,000	2,926,440	2,956,000	(4,950)	-0.2%	(5,000)	-0.2%
6/30/91-92	2,619,540	2,647,000	2,626,470	2,654,000	6,930	0.3%	7,000	0.3%
6/30/92-93	1,780,020	1,799,000	1,779,030	1,797,000	(990)	-0.1%	(2,000)	-0.1%
6/30/93-94	1,289,970	1,304,000	1,287,990	1,301,000	(1,980)	-0.2%	(3,000)	-0.2%
6/30/94-95	945,450	955,000	942,480	952,000	(2,970)	-0.3%	(3,000)	-0.3%
6/30/95-96	1,035,000	1,035,000	1,031,000	1,052,000	(4,000)	-0.4%	17,000	1.6%
6/30/96-97	911,000	911,000	908,000	926,000	(3,000)	-0.3%	15,000	1.6%
6/30/97-98	786,000	802,000	787,000	802,000	1,000	0.1%	0	0.0%
6/30/98-99	657,000	671,000	654,000	667,000	(3,000)	-0.5%	(4,000)	-0.6%
6/30/99-00	809,000	826,000	820,000	837,000	11,000	1.4%	11,000	1.3%
6/30/00-01	1,414,000	1,444,000	1,465,000	1,496,000	51,000	3.6%	52,000	3.6%
6/30/01-02	901,000	920,000	916,000	934,000	15,000	1.7%	14,000	1.5%
6/30/02-03	894,000	913,000	894,000	912,000	0	0.0%	(1,000)	-0.1%
6/30/03-04	908,000	927,000	918,000	937,000	10,000	1.1%	10,000	1.1%
6/30/04-05	1,052,000	1,109,000	1,101,000	1,125,000	49,000	4.7%	16,000	1.4%
6/30/05-06	1,179,000	1,241,000	1,227,000	1,257,000	48,000	4.1%	16,000	1.3%
6/30/06-07	1,167,000	1,231,000	1,226,000	1,253,000	59,000	5.1%	22,000	1.8%
6/30/07-08	999,000	1,081,000	1,129,000	1,163,000	130,000	13.0%	82,000	7.6%
6/30/08-09	1,174,000	1,372,000	1,279,000	1,347,150	105,000	8.9%	(24,850)	-1.8%
6/30/09-10	1,266,000	1,477,000	1,331,900	1,492,050	65,900	5.2%	15,050	1.0%
6/30/10-11	1,072,000	1,281,000	1,086,520	1,254,750	14,520	1.4%	(26,250)	-2.0%
6/30/11-12	1,248,000	1,457,000	1,157,000	1,352,000	(91,000)	-7.3%	(105,000)	-7.2%
6/30/12-13	1,254,000	1,468,000	1,200,000	1,402,000	(54,000)	-4.3%	(66,000)	-4.5%
6/30/13-14	1,170,000	1,487,000	1,178,000	1,412,000	8,000	0.7%	(75,000)	-5.0%
6/30/14-15								
Total	46,880,335	48,838,409	47,299,731	48,762,201	419,396	0.9%	(76,208)	-0.2%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 2, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.6%	0.0%	0.2%	0.1%	1.000	1.000
396	99.4%	0.1%	0.6%	0.0%	0.0%	0.981	0.971
384	99.3%	0.1%	0.7%	0.0%	0.0%	0.948	0.924
372	99.2%	0.1%	0.8%	0.0%	0.0%	0.921	0.885
360	99.1%	0.1%	0.9%	0.0%	0.0%	0.896	0.850
348	99.0%	0.2%	1.0%	0.1%	0.0%	0.873	0.819
336	98.8%	0.2%	1.2%	0.1%	0.0%	0.863	0.806
324	98.6%	0.2%	1.4%	0.1%	0.0%	0.852	0.790
312	98.4%	0.2%	1.6%	0.1%	0.0%	0.839	0.774
300	98.2%	0.2%	1.8%	0.1%	0.0%	0.826	0.757
288	98.0%	0.2%	2.0%	0.1%	0.0%	0.813	0.740
276	97.8%	0.2%	2.2%	0.1%	0.1%	0.800	0.723
264	97.6%	0.2%	2.4%	0.1%	0.1%	0.787	0.706
252	97.4%	0.1%	2.6%	0.0%	0.0%	0.773	0.689
240	97.4%	0.1%	2.6%	0.1%	0.0%	0.752	0.662
228	97.2%	0.1%	2.8%	0.0%	0.0%	0.737	0.643
216	97.1%	0.1%	2.9%	0.0%	0.0%	0.714	0.614
204	97.0%	0.2%	3.0%	0.1%	0.1%	0.696	0.592
192	96.9%	0.3%	3.1%	0.1%	0.1%	0.688	0.583
180	96.6%	0.4%	3.4%	0.2%	0.2%	0.686	0.583
168	96.2%	0.4%	3.8%	0.2%	0.2%	0.693	0.592
156	95.8%	0.3%	4.2%	0.2%	0.1%	0.695	0.597
144	95.6%	0.4%	4.4%	0.2%	0.2%	0.687	0.588
132	95.2%	0.4%	4.8%	0.3%	0.2%	0.686	0.587
120	94.8%	1.2%	5.2%	0.9%	0.7%	0.683	0.585
108	93.6%	0.9%	6.4%	0.7%	0.6%	0.719	0.633
96	92.6%	3.3%	7.4%	2.4%	2.1%	0.728	0.644
84	89.4%	2.4%	10.6%	1.9%	1.6%	0.786	0.719
72	87.0%	3.1%	13.0%	2.5%	2.3%	0.797	0.732
60	83.8%	2.9%	16.2%	2.5%	2.3%	0.808	0.745
48	80.9%	8.9%	19.1%	7.8%	7.3%	0.808	0.744
36	71.9%	15.0%	28.1%	13.6%	13.0%	0.842	0.788
24	56.9%	30.9%	43.1%	29.2%	28.3%	0.869	0.823
12	26.0%	26.0%	74.0%	25.5%	25.2%	0.896	0.858
Total		100.0%					

NOTES:

(2) = 1 / Section 2, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	2,272	5,882		2,186	5,658
6/30/82-83	2,031	2,031	0.981	1,992	1,992
6/30/83-84	14,135	28,270	0.948	13,405	26,810
6/30/84-85	7,642	15,283	0.921	7,035	14,069
6/30/85-86	13,835	14,835	0.896	12,394	13,290
6/30/86-87	18,647	20,647	0.873	16,287	18,034
6/30/87-88	30,122	32,122	0.863	26,008	27,735
6/30/88-89	39,238	56,202	0.852	33,422	47,871
6/30/89-90	59,375	64,375	0.839	49,829	54,025
6/30/90-91	22,466	52,026	0.826	18,561	42,984
6/30/91-92	25,079	52,609	0.813	20,389	42,771
6/30/92-93	20,689	38,659	0.800	16,545	30,917
6/30/93-94	17,492	30,502	0.787	13,757	23,990
6/30/94-95	14,320	23,840	0.773	11,075	18,438
6/30/95-96	26,978	47,978	0.752	20,298	36,099
6/30/96-97	25,337	43,337	0.737	18,678	31,948
6/30/97-98	22,764	37,764	0.714	16,253	26,963
6/30/98-99	19,507	32,507	0.696	13,585	22,638
6/30/99-00	25,555	42,555	0.688	17,583	29,280
6/30/00-01	48,257	79,257	0.686	33,121	54,397
6/30/01-02	35,036	53,036	0.693	24,263	36,728
6/30/02-03	37,721	55,721	0.695	26,209	38,716
6/30/03-04	40,971	59,971	0.687	28,150	41,204
6/30/04-05	51,325	75,325	0.686	35,204	51,666
6/30/05-06	58,325	88,325	0.683	39,832	60,321
6/30/06-07	77,030	104,030	0.719	55,405	74,826
6/30/07-08	83,003	117,003	0.728	60,419	85,168
6/30/08-09	132,651	200,801	0.786	104,268	157,836
6/30/09-10	96,335	256,485	0.797	76,805	204,488
6/30/10-11	96,916	265,146	0.808	78,325	214,283
6/30/11-12	117,670	312,670	0.808	95,127	252,768
6/30/12-13	240,554	442,554	0.842	202,552	372,641
6/30/13-14	433,297	667,297	0.869	376,631	580,028
6/30/14-15	830,722	1,134,722	0.896	744,569	1,017,042
Total	2,787,293	4,553,763		2,310,162	3,757,623
			(7) Total Discount Factor:	0.829	0.825

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	2,272	5,882
(9) Projected Number of Years:	2	2
(10) Projected Paid Loss per Year:	1,136	2,941
(11) Discounted Value at 4%:	2,186	5,658

NOTES:
(2), (3) From Section 2, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 2, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Developmental Services - Cluster 1
Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	2,272	5,882		2,146	5,554
6/30/82-83	2,031	2,031	0.971	1,973	1,973
6/30/83-84	14,135	28,270	0.924	13,065	26,130
6/30/84-85	7,642	15,283	0.885	6,759	13,519
6/30/85-86	13,835	14,835	0.850	11,757	12,607
6/30/86-87	18,647	20,647	0.819	15,269	16,907
6/30/87-88	30,122	32,122	0.806	24,272	25,884
6/30/88-89	39,238	56,202	0.790	31,015	44,424
6/30/89-90	59,375	64,375	0.774	45,952	49,821
6/30/90-91	22,466	52,026	0.757	17,004	39,377
6/30/91-92	25,079	52,609	0.740	18,551	38,915
6/30/92-93	20,689	38,659	0.723	14,949	27,934
6/30/93-94	17,492	30,502	0.706	12,343	21,524
6/30/94-95	14,320	23,840	0.689	9,867	16,427
6/30/95-96	26,978	47,978	0.662	17,858	31,759
6/30/96-97	25,337	43,337	0.643	16,291	27,865
6/30/97-98	22,764	37,764	0.614	13,966	23,168
6/30/98-99	19,507	32,507	0.592	11,548	19,243
6/30/99-00	25,555	42,555	0.583	14,897	24,806
6/30/00-01	48,257	79,257	0.583	28,116	46,177
6/30/01-02	35,036	53,036	0.592	20,758	31,423
6/30/02-03	37,721	55,721	0.597	22,514	33,257
6/30/03-04	40,971	59,971	0.588	24,085	35,255
6/30/04-05	51,325	75,325	0.587	30,153	44,253
6/30/05-06	58,325	88,325	0.585	34,100	51,639
6/30/06-07	77,030	104,030	0.633	48,735	65,817
6/30/07-08	83,003	117,003	0.644	53,446	75,339
6/30/08-09	132,651	200,801	0.719	95,388	144,394
6/30/09-10	96,335	256,485	0.732	70,558	187,857
6/30/10-11	96,916	265,146	0.745	72,243	197,644
6/30/11-12	117,670	312,670	0.744	87,605	232,782
6/30/12-13	240,554	442,554	0.788	189,547	348,714
6/30/13-14	433,297	667,297	0.823	356,518	549,054
6/30/14-15	830,722	1,134,722	0.858	712,540	973,291
Total	2,787,293	4,553,763		2,145,786	3,484,733
			(7) Total Discount Factor:	0.770	0.765

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	2,272	5,882
(9) Projected Number of Years:	2	2
(10) Projected Paid Loss per Year:	1,136	2,941
(11) Discounted Value at 6%:	2,146	5,554

NOTES:
(2), (3) From Section 2, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 2, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		20,090,734			23,699,323	25,021,982	3,608,589	4,931,248		
6/30/82-83		2,684,871	2,873,544		2,816,073	2,887,912	131,202	203,041		
6/30/83-84		2,655,007	2,843,069		2,700,916	2,857,285	45,909	202,278		
6/30/84-85	142,561	4,229,060	4,768,495	4,349,141	4,349,000	4,673,000	119,940	443,940	3.051	3.278
6/30/85-86	153,298	4,634,091	4,848,072	4,839,966	4,680,000	4,848,000	45,909	213,909	3.053	3.162
6/30/86-87	176,136	6,208,413	6,549,255	6,560,452	6,270,000	6,560,000	61,587	351,587	3.560	3.724
6/30/87-88	206,319	11,607,670	12,875,234	12,280,763	12,281,000	12,618,000	673,330	1,010,330	5.952	6.116
6/30/88-89	222,806	12,265,283	13,138,110	13,075,825	13,113,196	13,138,000	847,913	872,717	5.885	5.897
6/30/89-90	223,751	11,692,928	12,617,958	12,563,638	12,564,000	12,618,000	871,072	925,072	5.615	5.639
6/30/90-91	210,162	7,830,550	8,490,296	8,485,173	7,987,000	8,065,466	156,450	234,916	3.800	3.838
6/30/91-92	205,241	4,260,079	4,642,486	4,637,772	4,303,000	4,410,000	42,921	149,921	2.097	2.149
6/30/92-93	176,705	3,604,843	3,969,021	3,961,732	3,962,000	3,969,000	357,157	364,157	2.242	2.246
6/30/93-94	173,075	2,475,733	2,773,277	2,766,646	2,767,000	2,773,000	291,267	297,267	1.599	1.602
6/30/94-95	178,317	2,817,853	3,174,167	3,163,933	3,100,720	3,110,520	282,867	292,667	1.739	1.744
6/30/95-96	175,996	1,924,351	2,154,587	2,150,472	2,107,000	2,111,900	182,649	187,549	1.197	1.200
6/30/96-97	190,083	1,571,537	1,749,433	1,750,211	1,714,020	1,715,000	142,483	143,463	0.902	0.902
6/30/97-98	177,278	2,912,109	3,282,468	3,268,511	3,105,550	3,117,900	193,441	205,791	1.752	1.759
6/30/98-99	189,080	1,674,660	1,902,591	1,901,830	1,863,960	1,864,940	189,300	190,280	0.986	0.986
6/30/99-00	194,494	2,313,702	2,618,297	2,612,260	2,559,760	2,565,640	246,058	251,938	1.316	1.319
6/30/00-01	201,568	3,299,797	3,768,373	3,748,719	3,749,000	3,768,000	449,203	468,203	1.860	1.869
6/30/01-02	203,105	2,606,204	3,002,861	2,991,858	2,992,000	3,003,000	385,796	396,796	1.473	1.479
6/30/02-03	202,515	1,795,408	2,054,950	2,059,435	2,055,000	2,059,000	259,592	263,592	1.015	1.017
6/30/03-04	189,588	3,243,734	3,783,793	3,760,860	3,572,950	3,708,320	329,216	464,586	1.885	1.956
6/30/04-05	186,990	2,721,593	3,212,426	3,079,459	3,079,000	3,212,000	357,407	490,407	1.647	1.718
6/30/05-06	193,254	1,858,384	2,234,413	2,282,549	2,234,000	2,283,000	375,616	424,616	1.156	1.181
6/30/06-07	203,359	2,221,812	2,751,062	2,718,096	2,582,100	2,613,450	360,288	391,638	1.270	1.285
6/30/07-08	212,083	1,609,584	2,033,121	2,176,040	1,931,350	2,067,200	321,766	457,616	0.911	0.975
6/30/08-09	204,679	1,846,241	2,436,606	2,491,965	2,437,000	2,492,000	590,759	645,759	1.191	1.218
6/30/09-10	184,688	1,231,427	1,676,275	1,866,808	1,772,000	1,867,000	540,573	635,573	0.959	1.011
6/30/10-11	169,689	1,844,303	2,607,598	2,526,737	2,527,000	2,673,000	682,697	828,697	1.489	1.575
6/30/11-12	177,399	1,551,888	2,398,019	2,420,879	2,398,000	2,481,000	846,112	929,112	1.352	1.399
6/30/12-13	189,252	1,747,917	3,036,902	2,963,720	2,964,000	3,113,000	1,216,083	1,365,083	1.566	1.645
6/30/13-14	199,876	1,543,069	3,319,323	3,115,985	3,116,000	3,402,000	1,572,931	1,858,931	1.559	1.702
6/30/14-15	213,700	1,026,870	4,667,584	3,860,278	3,860,000	4,784,000	2,833,130	3,757,130	1.806	2.239
Total	5,927,049	137,601,705	138,253,666	130,431,713	157,212,918	162,451,515	19,611,213	24,849,810		
Tot 6/30/84-15	5,927,049	112,171,093	132,537,052	130,431,713	127,996,606	131,684,336	15,825,513	19,513,243	2.160	2.222

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 3, Exhibit 1, Page 2, Column 3 and Section 3, Exhibit 1, Page 9, Column 8

(4) From Section 3, Exhibit 1, Page 2, Column 8

(5) From Section 3, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		19,425,054							9	9		85
6/30/82-83		2,590,871	1.022	1.050	2,779,403	94,141	2,873,544		1	1	188,532	88
6/30/83-84		2,245,006	1.032	1.050	2,432,453	410,616	2,843,069		0	0		
6/30/84-85	142,561	3,677,977	1.042	1.100	4,216,585	551,910	4,768,495	3.345	2	1	538,608	73
6/30/85-86	153,298	4,048,163	1.053	1.000	4,261,265	586,807	4,848,072	3.163	0	0		
6/30/86-87	176,136	5,376,022	1.063	1.000	5,715,615	833,640	6,549,255	3.718	0	0		
6/30/87-88	206,319	9,922,648	1.074	1.050	11,187,684	1,687,550	12,875,234	6.240	2	2	632,518	74
6/30/88-89	222,806	10,289,641	1.085	1.000	11,159,504	1,978,605	13,138,110	5.897	3	3	289,954	77
6/30/89-90	223,751	9,655,288	1.095	1.000	10,576,240	2,041,718	12,617,958	5.639	2	2	460,476	74
6/30/90-91	210,162	6,165,086	1.106	1.000	6,820,662	1,669,633	8,490,296	4.040	1	1	655,577	86
6/30/91-92	205,241	3,230,938	1.117	1.000	3,610,251	1,032,235	4,642,486	2.262	0	0		
6/30/92-93	176,705	2,810,764	1.129	1.000	3,172,156	796,865	3,969,021	2.246	1	1	361,392	63
6/30/93-94	173,075	2,117,149	1.140	1.000	2,413,254	360,023	2,773,277	1.602	2	2	148,052	64
6/30/94-95	178,317	2,341,429	1.151	1.000	2,695,591	478,576	3,174,167	1.780	1	0		
6/30/95-96	175,996	1,440,291	1.158	1.000	1,668,097	486,490	2,154,587	1.224	0	0		
6/30/96-97	190,083	1,057,037	1.165	1.000	1,231,570	517,863	1,749,433	0.920	0	0		
6/30/97-98	177,278	2,101,308	1.172	1.000	2,462,955	819,513	3,282,468	1.852	0	0		
6/30/98-99	189,080	1,254,410	1.176	1.000	1,475,503	427,088	1,902,591	1.006	0	0		
6/30/99-00	194,494	1,634,502	1.179	1.000	1,926,432	691,865	2,618,297	1.346	0	0		
6/30/00-01	201,568	2,503,297	1.181	1.000	2,956,299	812,075	3,768,373	1.870	2	0		
6/30/01-02	203,105	2,097,298	1.183	1.000	2,481,783	521,078	3,002,861	1.478	0	0		
6/30/02-03	202,515	1,298,408	1.189	1.000	1,543,981	510,969	2,054,950	1.015	2	2	122,787	44
6/30/03-04	189,588	2,662,734	1.193	1.000	3,177,145	606,648	3,783,793	1.996	1	0		
6/30/04-05	186,990	2,086,593	1.218	1.000	2,542,090	670,337	3,212,426	1.718	0	1	455,497	63
6/30/05-06	193,254	1,355,634	1.251	1.000	1,696,157	538,256	2,234,413	1.156	1	1	340,523	51
6/30/06-07	203,359	1,791,061	1.271	1.000	2,276,057	475,005	2,751,062	1.353	2	0		
6/30/07-08	212,083	1,293,854	1.293	1.000	1,672,500	360,621	2,033,121	0.959	1	2	189,323	50
6/30/08-09	204,679	1,576,741	1.327	1.000	2,092,026	344,580	2,436,606	1.190	3	3	171,762	53
6/30/09-10	184,688	1,060,427	1.361	1.000	1,442,730	233,546	1,676,275	0.908	3	1	382,303	50
6/30/10-11	169,689	1,663,173	1.399	1.000	2,326,625	280,973	2,607,598	1.537	9	4	165,863	55
6/30/11-12	177,399	1,421,088	1.511	1.000	2,147,008	251,011	2,398,019	1.352	14	6	120,987	55
6/30/12-13	189,252	1,608,152	1.643	1.000	2,642,325	394,577	3,036,902	1.605	38	18	57,454	53
6/30/13-14	199,876	1,535,219	2.010	1.000	3,086,238	233,085	3,319,323	1.661	185	53	29,265	46
6/30/14-15	213,700	1,026,870	3.943	1.000	4,048,563	619,021	4,667,584	2.184		265	11,403	44
Total	5,927,049	116,364,133			115,936,747	22,316,919	138,253,666		285	378		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 3, Exhibit 1, Page 7

(5) Based on information from the MA WCRIB

(6) = (3) x (4) x (5)

(7) From Section 3, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	142,561	2.065	3,677,977	1.042	3,797,232	551,910	4,349,141	3.051	2.664
6/30/85-86	153,298	2.674	4,048,163	1.053	4,253,159	586,807	4,839,966	3.157	2.774
6/30/86-87	176,136	3.352	5,376,022	1.063	5,726,812	833,640	6,560,452	3.725	3.251
6/30/87-88	206,319	4.729	9,922,648	1.074	10,593,214	1,687,550	12,280,763	5.952	5.134
6/30/88-89	222,806	4.650	10,289,641	1.085	11,097,220	1,978,605	13,075,825	5.869	4.981
6/30/89-90	223,751	4.448	9,655,288	1.095	10,521,919	2,041,718	12,563,638	5.615	4.703
6/30/90-91	210,162	3.220	6,165,086	1.106	6,815,539	1,669,633	8,485,173	4.037	3.243
6/30/91-92	205,241	1.737	3,230,938	1.117	3,605,537	1,032,235	4,637,772	2.260	1.757
6/30/92-93	176,705	1.759	2,810,764	1.129	3,164,867	796,865	3,961,732	2.242	1.791
6/30/93-94	173,075	1.363	2,117,149	1.140	2,406,623	360,023	2,766,646	1.599	1.391
6/30/94-95	178,317	1.468	2,341,429	1.151	2,685,357	478,576	3,163,933	1.774	1.506
6/30/95-96	175,996	0.931	1,440,291	1.158	1,663,982	486,490	2,150,472	1.222	0.945
6/30/96-97	190,083	0.651	1,057,037	1.165	1,232,348	517,863	1,750,211	0.921	0.648
6/30/97-98	177,278	1.336	2,101,308	1.172	2,448,998	819,513	3,268,511	1.844	1.381
6/30/98-99	189,080	0.778	1,254,410	1.176	1,474,742	427,088	1,901,830	1.006	0.780
6/30/99-00	194,494	0.970	1,634,502	1.179	1,920,395	691,865	2,612,260	1.343	0.987
6/30/00-01	201,568	1.403	2,503,297	1.181	2,936,644	812,075	3,748,719	1.860	1.457
6/30/01-02	203,105	1.187	2,097,298	1.183	2,470,780	521,078	2,991,858	1.473	1.217
6/30/02-03	202,515	0.776	1,298,408	1.189	1,548,466	510,969	2,059,435	1.017	0.765
6/30/03-04	189,588	1.601	2,662,734	1.193	3,154,212	606,648	3,760,860	1.984	1.664
6/30/04-05	186,990	0.963	2,086,593	1.218	2,409,122	670,337	3,079,459	1.647	1.288
6/30/05-06	193,254	1.002	1,355,634	1.251	1,744,293	538,256	2,282,549	1.181	0.903
6/30/06-07	203,359	1.043	1,791,061	1.271	2,243,091	475,005	2,718,096	1.337	1.103
6/30/07-08	212,083	1.086	1,293,854	1.293	1,815,420	360,621	2,176,040	1.026	0.856
6/30/08-09	204,679	1.132	1,576,741	1.327	2,147,385	344,580	2,491,965	1.218	1.049
6/30/09-10	184,688	1.170	1,060,427	1.361	1,633,262	233,546	1,866,808	1.011	0.884
6/30/10-11	169,689	1.204	1,663,173	1.399	2,245,764	280,973	2,526,737	1.489	1.323
6/30/11-12	177,399	1.248	1,421,088	1.511	2,169,868	251,011	2,420,879	1.365	1.223
6/30/12-13	189,252	1.297	1,608,152	1.643	2,569,143	394,577	2,963,720	1.566	1.358
6/30/13-14	199,876	1.342	1,535,219	2.010	2,882,900	233,085	3,115,985	1.559	1.442
6/30/14-15	213,700	1.388	1,026,870	3.943	3,241,257	619,021	3,860,278	1.806	1.517
Total	5,927,049		92,103,202		108,619,551	21,812,162	130,431,713		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 3, Exhibit 1, Page 4, Column 11

(4) From Section 3, Exhibit 1, Page 2, Column 3

(5) From Section 3, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 3, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									2.065	2.065
6/30/85-86									2.674	2.674
6/30/86-87									3.352	3.352
6/30/87-88									4.729	4.729
6/30/88-89									4.650	4.650
6/30/89-90									4.448	4.448
6/30/90-91	210,162	6,820,662	3.245	0.963	3.125	2.094	6.543	0.709	3.213	3.220
6/30/91-92	205,241	3,610,251	1.759	1.056	1.858	2.033	3.777	0.666	1.741	1.737
6/30/92-93	176,705	3,172,156	1.795	1.232	2.211	1.974	4.364	0.588	1.745	1.759
6/30/93-94	173,075	2,413,254	1.394	1.216	1.695	1.916	3.249	0.614	1.341	1.363
6/30/94-95	178,317	2,695,591	1.512	1.205	1.821	1.860	3.388	0.638	1.477	1.468
6/30/95-96	175,996	1,668,097	0.948	1.195	1.133	1.806	2.046	0.662	0.943	0.931
6/30/96-97	190,083	1,231,570	0.648	1.183	0.767	1.754	1.344	0.689	0.665	0.651
6/30/97-98	177,278	2,462,955	1.389	1.168	1.623	1.702	2.763	0.719	1.356	1.336
6/30/98-99	189,080	1,475,503	0.780	1.153	0.900	1.653	1.487	0.751	0.794	0.778
6/30/99-00	194,494	1,926,432	0.990	1.134	1.123	1.605	1.803	0.786	0.988	0.970
6/30/00-01	201,568	2,956,299	1.467	1.105	1.621	1.558	2.526	0.830	1.423	1.403
6/30/01-02	203,105	2,481,783	1.222	1.084	1.324	1.513	2.003	0.872	1.209	1.187
6/30/02-03	202,515	1,543,981	0.762	1.080	0.823	1.469	1.209	0.902	0.793	0.776
6/30/03-04	189,588	3,177,145	1.676	1.080	1.810	1.426	2.580	0.929	1.651	1.601
6/30/04-05	186,990	2,542,090	1.359	1.073	1.459	1.384	2.020	0.963	1.076	0.963
6/30/05-06	193,254	1,696,157	0.878	1.062	0.932	1.344	1.253	1.002	1.109	1.002
6/30/06-07	203,359	2,276,057	1.119	1.051	1.176	1.305	1.534	1.043	1.144	1.043
6/30/07-08	212,083	1,672,500	0.789	1.039	0.820	1.267	1.038	1.086	1.179	1.086
6/30/08-09	204,679	2,092,026	1.022	1.027	1.050	1.230	1.291	1.132	1.217	1.132
6/30/09-10	184,688	1,442,730	0.781	1.023	0.799	1.194	0.954	1.170	1.246	1.170
6/30/10-11	169,689	2,326,625	1.371	1.025	1.405	1.159	1.628	1.204	1.270	1.204
6/30/11-12	177,399	2,147,008	1.210	1.018	1.232	1.126	1.386	1.248	1.304	1.248
6/30/12-13	189,252	2,642,325	1.396	1.009	1.408	1.093	1.539	1.297	1.339	1.297
6/30/13-14	199,876	3,086,238	1.544	1.005	1.551	1.061	1.646	1.342	1.373	1.342
6/30/14-15	213,700	4,048,563	1.895	1.000	1.895	1.030	1.951	1.388		1.388
Total	4,802,178	63,607,997								

Trend Last 4 (ex 14-15):	4.4%	Avg 3 (ex 14-15):	1.524
Trend Last 8 (ex 14-15):	7.0%	Avg 5 (ex 14-15):	1.431
Trend Last 12 (ex 14-15):	1.6%	Avg 10 (ex 14-15):	1.429
Prior Selected Trend:	2.0%	Prior Sel Avg:	1.400
Selected Trend:	3.0%	Sel. Loss Cost:	1.430

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 3, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.960	
(2)	Credibility		43%	
(3)	Average Pmt Trend Statewide		0.960	
(4)	Credibility Weighted Trend		0.960	
		(Low)		(High)
(5)	Selected Range	0.930		0.960
(6)	Incremental Paid for 2015	356,384		356,384
(7)	Estimated Reserve	4,734,820		8,553,224
(8)	Paid to Date (82 & Prior)	19,425,054		19,425,054
(9)	Est Ult Paid for 1982 & Prior	24,159,874		27,978,278

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	354,337	358,915
(11)	Projected Number of Years	7	8
(12)	Estimated Reserve	2,480,360	2,871,318
(13)	Paid to Date (82 & Prior)	19,425,054	19,068,670
(14)	Est Ult Paid for 1982 & Prior	21,905,414	21,939,987
(14a)	Paid Counts During Fiscal Year	9	9
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	23,032,644	24,355,304
(16)	Lump Sum Ultimates	666,679	666,679
(17)	Ult Loss Including Lump Sums	**23,699,323**	**25,021,982**
(18)	Implied Tail	1.186	1.254
(19)	Ult Loss Inc Lump Sums @ 6/14	23,331,188	24,658,738

NOTES:

(1) From Section 3, Exhibit 1, Page 6
(2) = (Average of Section 3, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 3, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 3, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 3, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	750,775	13.529			
1993	2	716,997	13.483	0.955		
1994	3	790,631	13.581	1.103		
1995	4	675,209	13.423	0.854		
1996	5	721,864	13.490	1.069		
1997	6	762,764	13.545	1.057		
1998	7	718,856	13.485	0.942		
1999	8	630,481	13.354	0.877		
2000	9	625,893	13.347	0.993	n =	24
2001	10	614,002	13.328	0.981	S(x) =	48,084
2002	11	594,569	13.296	0.968	S(x-sq) =	96,337,444
2003	12	551,328	13.220	0.927	S(xy) =	633,380
2004	13	536,825	13.193	0.974	S(y) =	316
2005	14	518,060	13.158	0.965	D =	27,600
2006	15	465,230	13.050	0.898	slope =	-0.039
2007	16	463,442	13.046	0.996	Avg Trend =	0.961
2008	17	390,409	12.875	0.842		
2009	18	394,388	12.885	1.010		
2010	19	396,721	12.891	1.006		
2011	20	371,480	12.825	0.936		
2012	21	370,117	12.822	0.996		
2013	22	354,524	12.779	0.958		
2014	23	352,103	12.772	0.993		
2015	24	356,384	12.784	1.012		
					Selected Trend:	**0.960**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 1.012 = 356384 / 352103

Commonwealth of Massachusetts Workers Compensation
Department of Mental Health - Cluster 2
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	79,308	192,487	287,043	366,841	453,896	544,549	640,359	749,442	914,819	1,077,281	1,197,004	1,318,238	1,411,761	1,487,347	1,551,200	1,663,300	1,725,578	1,794,915	1,844,320	1,889,378	1,935,146	1,980,854	2,027,803	2,076,694	2,127,762	2,181,186	2,236,941	2,293,398	2,349,618	2,407,755	2,467,791	2,528,627	2,590,871
June-84	140,777	341,678	509,522	651,169	805,697	966,187	1,136,616	1,274,005	1,376,021	1,469,295	1,531,586	1,571,197	1,574,113	1,632,297	1,648,271	1,715,119	1,788,667	1,866,433	1,948,603	2,027,969	2,039,380	2,061,132	2,116,425	2,146,711	2,178,653	2,211,990	2,245,006	2,245,006	2,245,006	2,245,006	2,245,006	2,245,006	
June-85	229,548	557,132	830,815	1,036,782	1,282,444	1,536,673	1,759,380	1,967,113	2,201,587	2,336,765	2,327,938	2,488,898	2,562,953	2,635,303	2,683,281	2,681,236	2,703,322	2,765,472	2,829,392	2,893,225	2,958,066	3,025,906	3,097,014	3,171,404	3,249,041	3,327,655	3,405,939	3,486,893	3,570,488	3,628,593	3,677,977		
June-86	424,946	1,031,378	1,515,527	1,911,756	2,265,456	2,545,075	2,747,857	2,913,298	3,035,997	3,203,939	3,246,126	3,354,664	3,430,712	3,506,894	3,646,690	3,769,482	3,845,436	3,884,426	3,884,426	3,901,838	3,936,022	3,971,963	4,009,622	4,048,163	4,048,163	4,048,163	4,048,163	4,048,163	4,048,163	4,048,163			
June-87	556,509	1,350,692	1,993,369	2,579,183	3,116,291	3,554,448	3,811,881	4,007,455	4,213,271	4,383,210	4,532,492	4,672,974	4,887,827	5,019,452	5,138,398	5,229,397	5,303,153	5,343,074	5,369,509	5,376,022	5,376,022	5,376,022	5,376,022	5,376,022	5,376,022	5,376,022	5,376,022	5,376,022	5,376,022				
June-88	996,188	2,332,317	3,514,867	4,556,262	5,500,101	6,017,634	6,366,291	6,722,900	7,030,156	7,360,513	7,651,811	7,905,775	8,097,655	8,296,173	8,504,343	8,714,431	8,884,786	9,012,909	9,145,701	9,284,112	9,391,001	9,490,888	9,559,720	9,628,264	9,699,144	9,772,337	9,846,507	9,922,648					
June-89	974,368	2,808,156	4,300,397	5,491,438	6,395,798	6,912,277	7,273,583	7,577,849	7,816,082	8,040,709	8,232,999	8,388,997	8,540,736	8,681,850	8,813,773	8,957,148	9,087,424	9,215,619	9,374,489	9,492,897	9,614,904	9,738,023	9,864,181	9,984,126	10,084,005	10,185,647	10,289,641						
June-90	1,353,410	3,008,842	4,338,167	5,277,757	5,970,429	6,408,269	6,735,493	6,970,610	7,237,879	7,548,184	7,808,304	7,989,794	8,127,173	8,265,835	8,400,915	8,532,029	8,676,814	8,783,514	8,912,207	9,013,337	9,115,739	9,217,710	9,323,158	9,432,048	9,542,392	9,655,288							
June-91	1,118,653	2,593,016	3,552,946	4,081,060	4,371,249	4,603,681	4,879,272	5,042,637	5,246,506	5,361,660	5,458,410	5,545,863	5,634,530	5,719,796	5,801,980	5,891,283	5,939,454	5,965,760	5,993,853	6,022,299	6,050,626	6,079,918	6,110,167	6,140,819	6,165,086								
June-92	779,443	1,600,490	2,051,414	2,363,890	2,560,991	2,732,954	2,816,302	2,946,286	2,972,351	3,048,807	3,074,042	3,100,183	3,111,601	3,122,928	3,137,949	3,150,571	3,201,317	3,230,938	3,230,938	3,230,938	3,230,938	3,230,938	3,230,938	3,230,938									
June-93	508,042	1,139,423	1,618,359	1,905,411	2,126,599	2,257,595	2,393,075	2,425,099	2,385,748	2,412,183	2,438,986	2,465,788	2,494,233	2,522,478	2,551,473	2,581,602	2,612,495	2,644,362	2,676,330	2,710,104	2,745,340	2,778,023	2,810,764										
June-94	377,925	709,441	935,174	1,117,965	1,249,550	1,323,162	1,417,563	1,481,985	1,569,098	1,629,814	1,690,715	1,751,099	1,818,321	1,857,805	1,886,745	1,916,420	1,946,311	1,976,077	2,006,857	2,038,037	2,070,230	2,117,149											
June-95	574,439	1,025,079	1,426,023	1,674,484	1,757,816	1,829,216	1,892,841	1,966,438	2,053,313	2,075,609	2,139,480	2,201,203	2,270,427	2,322,083	2,335,644	2,336,631	2,340,671	2,340,974	2,341,126	2,341,429	2,341,429												
June-96	465,550	766,030	964,996	1,197,748	1,382,594	1,418,297	1,422,506	1,435,178	1,435,753	1,438,193	1,438,193	1,438,193	1,438,193	1,438,193	1,438,193	1,438,193	1,438,931	1,440,291	1,440,291	1,440,291													
June-97	368,317	714,320	867,272	851,009	922,681	963,841	1,008,538	1,037,840	1,056,559	1,056,947	1,057,037	1,057,037	1,057,037	1,057,037	1,057,037	1,057,037	1,057,037	1,057,037	1,057,037														
June-98	492,131	922,570	1,176,288	1,346,558	1,538,911	1,686,620	1,733,801	1,756,573	1,858,553	1,897,738	1,938,454	2,001,913	2,059,542	2,101,308	2,101,308	2,101,308	2,101,308	2,101,308															
June-99	519,180	827,646	1,011,258	1,112,460	1,171,394	1,215,503	1,243,288	1,247,060	1,247,060	1,249,270	1,249,270	1,254,410	1,254,410	1,254,410	1,254,410	1,254,410	1,254,410																
June-00	421,812	853,733	1,204,737	1,330,009	1,450,814	1,536,528	1,585,725	1,622,250	1,634,502	1,634,502	1,634,502	1,634,502	1,634,502	1,634,502	1,634,502	1,634,502																	
June-01	729,752	1,342,599	1,726,067	1,967,587	2,098,934	2,195,511	2,276,106	2,353,436	2,394,597	2,417,073	2,440,162	2,469,209	2,492,651	2,503,297	2,503,297																		
June-02	623,060	1,199,282	1,469,081	1,634,403	1,755,795	1,921,999	2,013,718	2,051,869	2,088,811	2,097,298	2,097,298	2,097,298	2,097,298	2,097,298																			
June-03	598,151	1,030,113	1,208,133	1,287,181	1,329,302	1,354,993	1,378,440	1,386,422	1,396,038	1,404,611	1,404,724	1,297,452	1,298,408																				
June-04	770,179	1,494,135	1,959,406	2,261,994	2,448,308	2,553,905	2,614,936	2,661,897	2,661,897	2,661,897	2,662,734	2,662,734																					
June-05	665,795	1,274,934	1,639,401	1,834,908	1,949,257	2,006,584	2,055,842	2,083,828	2,083,828	2,083,828	2,086,593																						
June-06	602,391	1,043,862	1,212,582	1,295,959	1,330,737	1,350,327	1,353,060	1,354,447	1,354,589	1,355,634																							
June-07	589,461	977,401	1,280,907	1,496,099	1,629,703	1,702,117	1,772,404	1,791,061	1,791,061																								
June-08	619,287	959,312	1,100,546	1,186,728	1,222,576	1,245,348	1,259,889	1,293,854																									
June-09	633,064	1,071,264	1,269,944	1,347,802	1,449,944	1,535,542	1,576,741																										
June-10	415,006	709,896	895,282	1,025,770	1,055,921	1,060,427																											
June-11	652,304	1,099,134	1,404,624	1,565,671	1,663,173																												
June-12	603,523	1,201,631	1,349,652	1,421,088																													
June-13	652,867	1,253,353	1,608,152																														
June-14	737,949	1,535,219																															
June-15	1,026,870																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.427	1.491	1.278	1.237	1.200	1.176	1.170	1.221	1.178	1.111	1.101	1.071	1.054	1.043	1.072	1.037	1.040	1.028	1.024	1.024	1.024	1.024	1.024	1.025	1.025	1.026	1.025	1.025	1.025	1.025	1.025	1.025
June-84	2.427	1.491	1.278	1.237	1.199	1.176	1.121	1.080	1.068	1.042	1.026	1.002	1.037	1.010	1.041	1.043	1.043	1.044	1.041	1.006	1.011	1.027	1.014	1.015	1.015	1.015	1.000	1.000	1.000	1.000	1.000	
June-85	2.427	1.491	1.248	1.237	1.198	1.145	1.118	1.119	1.061	0.996	1.069	1.030	1.028	1.018	0.999	1.008	1.023	1.023	1.023	1.022	1.023	1.023	1.024	1.024	1.024	1.024	1.024	1.024	1.016	1.014		
June-86	2.427	1.469	1.261	1.185	1.123	1.080	1.060	1.042	1.055	1.013	1.033	1.023	1.022	1.040	1.034	1.020	1.010	1.000	1.004	1.009	1.009	1.009	1.010	1.000	1.000	1.000	1.000	1.000	1.000			
June-87	2.427	1.476	1.294	1.208	1.141	1.072	1.051	1.051	1.040	1.034	1.031	1.046	1.027	1.024	1.018	1.014	1.008	1.005	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
June-88	2.341	1.507	1.296	1.207	1.094	1.058	1.056	1.046	1.047	1.040	1.033	1.024	1.025	1.025	1.025	1.020	1.014	1.015	1.015	1.012	1.011	1.007	1.007	1.007	1.008	1.008	1.008					
June-89	2.882	1.531	1.277	1.165	1.081	1.052	1.042	1.031	1.029	1.024	1.019	1.018	1.017	1.015	1.016	1.015	1.014	1.017	1.013	1.013	1.013	1.013	1.012	1.010	1.010	1.010						
June-90	2.223	1.442	1.217	1.131	1.073	1.051	1.035	1.038	1.043	1.034	1.023	1.017	1.017	1.016	1.016	1.017	1.012	1.015	1.011	1.011	1.011	1.011	1.012	1.012	1.012							
June-91	2.318	1.370	1.149	1.071	1.053	1.060	1.033	1.040	1.022	1.018	1.016	1.016	1.015	1.014	1.015	1.008	1.004	1.005	1.005	1.005	1.005	1.005	1.005	1.004								
June-92	2.053	1.282	1.152	1.083	1.067	1.030	1.046	1.009	1.026	1.008	1.009	1.004	1.004	1.005	1.004	1.016	1.009	1.000	1.000	1.000	1.000	1.000	1.000									
June-93	2.243	1.420	1.177	1.116	1.062	1.060	1.013	0.984	1.011	1.011	1.011	1.012	1.011	1.011	1.012	1.012	1.012	1.012	1.013	1.013	1.012	1.012										
June-94	1.877	1.318	1.195	1.118	1.059	1.071	1.045	1.059	1.039	1.037	1.036	1.038	1.022	1.016	1.016	1.016	1.015	1.016	1.016	1.016	1.023											
June-95	1.784	1.391	1.174	1.050	1.041	1.035	1.039	1.044	1.011	1.031	1.029	1.031	1.023	1.006	1.000	1.002	1.000	1.000	1.000	1.000												
June-96	1.645	1.260	1.241	1.154	1.026	1.003	1.009	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.001	1.000	1.000													
June-97	1.939	1.214	0.981	1.084	1.045	1.046	1.029	1.018	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-98	1.875	1.275	1.145	1.143	1.096	1.028	1.013	1.058	1.021	1.021	1.033	1.029	1.020	1.000	1.000	1.000	1.000															
June-99	1.594	1.222	1.100	1.053	1.038	1.023	1.003	1.000	1.002	1.000	1.004	1.000	1.000	1.000	1.000	1.000																
June-00	2.024	1.411	1.104	1.091	1.059	1.032	1.023	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000																	
June-01	1.840	1.286	1.140	1.067	1.046	1.037	1.034	1.017	1.009	1.010	1.012	1.009	1.004	1.000																		
June-02	1.925	1.225	1.113	1.074	1.095	1.048	1.019	1.018	1.004	1.000	1.000	1.000	1.000																			
June-03	1.722	1.173	1.065	1.033	1.019	1.017	1.006	1.007	1.006	1.000	0.924	1.001																				
June-04	1.940	1.311	1.154	1.082	1.043	1.024	1.018	1.000	1.000	1.000	1.000																					
June-05	1.915	1.286	1.119	1.062	1.029	1.025	1.014	1.000	1.000	1.001																						
June-06	1.733	1.162	1.069	1.027	1.015	1.002	1.001	1.000	1.001																							
June-07	1.658	1.311	1.168	1.089	1.044	1.041	1.011	1.000																								
June-08	1.549	1.147	1.078	1.030	1.019	1.012	1.027																									
June-09	1.692	1.185	1.061	1.076	1.059	1.027																										
June-10	1.711	1.261	1.146	1.029	1.004																											
June-11	1.685	1.278	1.115	1.062																												
June-12	1.991	1.123	1.053																													
June-13	1.920	1.283																														
June-14	2.080																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.009	1.326	1.162	1.110	1.072	1.053	1.040	1.036	1.028	1.019	1.019	1.018	1.016	1.013	1.015	1.013	1.013	1.012	1.012	1.010	1.012	1.012	1.011	1.011	1.012	1.012	1.009	1.010	1.010	1.013	1.012		
Latest 5	1.877	1.226	1.091	1.057	1.028	1.021	1.014	1.001	1.002	1.002	0.987	1.002	1.005	1.000	1.000	1.000	1.003	1.006	1.006	1.007	1.010	1.008	1.007	1.007	1.006	1.008	1.006	1.010					
Latest 3	1.997	1.228	1.104	1.056	1.027	1.027	1.013	1.000	1.000	1.001	0.975	1.003	1.001	1.000	1.000	1.000	1.000	1.000	1.005	1.010	1.012	1.006	1.006	1.009	1.010	1.006	1.003	1.008	1.005	1.013			
Volume Wtd																																	
All Yrs	2.022	1.342	1.176	1.117	1.072	1.051	1.039	1.033	1.029	1.021	1.021	1.020	1.018	1.016	1.016	1.015	1.012	1.012	1.011	1.010	1.010	1.010	1.010	1.009	1.010	1.009	1.008	1.008	1.010	1.013	1.013	1.025	
Latest 5	1.894	1.223	1.088	1.060	1.031	1.023	1.014	1.001	1.002	1.003	0.992	1.003	1.005	1.000	1.000	1.001	1.004	1.007	1.006	1.006	1.009	1.009	1.009	1.008	1.007	1.008	1.006	1.008					
Latest 3	2.001	1.227	1.099	1.058	1.030	1.028	1.012	1.000	1.000	1.001	0.983	1.004	1.002	1.000	1.000	1.000	1.000	1.000	1.005	1.010	1.010	1.005	1.007	1.009	1.010	1.007	1.004	1.006	1.006	1.013			

Dev Factor Selection

Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	*1.891*	*1.194*	*1.113*	*1.085*	*1.033*	*1.037*	*1.025*	*1.020*	*1.017*	*1.027*	*1.022*	*1.003*	*1.005*	*1.002*	*1.002*	*1.002*	*1.007*	*1.008*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.010*	*1.022*	
Selected	1.961	1.223	1.088	1.080	1.028	1.025	1.026	1.017	1.016	1.027	1.021	1.003	1.005	1.002	1.002	1.002	1.004	1.006	1.006	1.006	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.022
FacToUlt	3.943	2.010	1.643	1.511	1.399	1.361	1.327	1.293	1.271	1.251	1.218	1.193	1.189	1.183	1.181	1.179	1.176	1.172	1.165	1.158	1.151	1.140	1.129	1.117	1.106	1.095	1.085	1.074	1.063	1.053	1.042	1.032	1.022
Percent of Ult	25.4%	49.7%	60.9%	66.2%	71.5%	73.5%	75.4%	77.4%	78.7%	79.9%	82.1%	83.8%	84.1%	84.5%	84.7%	84.8%	85.0%	85.3%	85.8%	86.3%	86.9%	87.7%	88.6%	89.5%	90.4%	91.3%	92.2%	93.1%	94.1%	95.0%	95.9%	96.9%	97.9%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	23,331,188	24,658,738	23,699,323	25,021,982	368,135	1.6%	363,244	1.5%
6/30/82-83	2,651,109	2,744,835	2,816,073	2,887,912	164,965	6.2%	143,077	5.2%
6/30/83-84	2,772,572	2,914,755	2,700,916	2,857,285	(71,656)	-2.6%	(57,470)	-2.0%
6/30/84-85	4,301,000	4,713,000	4,349,000	4,673,000	48,000	1.1%	(40,000)	-0.8%
6/30/85-86	4,680,000	4,849,000	4,680,000	4,848,000	0	0.0%	(1,000)	0.0%
6/30/86-87	6,270,000	6,562,000	6,270,000	6,560,000	0	0.0%	(2,000)	0.0%
6/30/87-88	12,247,069	12,274,000	12,281,000	12,618,000	33,931	0.3%	344,000	2.8%
6/30/88-89	13,014,315	13,040,000	13,113,196	13,138,000	98,881	0.8%	98,000	0.8%
6/30/89-90	12,454,000	12,509,000	12,564,000	12,618,000	110,000	0.9%	109,000	0.9%
6/30/90-91	7,962,000	8,040,472	7,987,000	8,065,466	25,000	0.3%	24,994	0.3%
6/30/91-92	4,303,000	4,412,000	4,303,000	4,410,000	0	0.0%	(2,000)	0.0%
6/30/92-93	3,928,000	3,937,000	3,962,000	3,969,000	34,000	0.9%	32,000	0.8%
6/30/93-94	2,716,000	2,723,000	2,767,000	2,773,000	51,000	1.9%	50,000	1.8%
6/30/94-95	3,167,000	3,178,000	3,100,720	3,110,520	(66,280)	-2.1%	(67,480)	-2.1%
6/30/95-96	1,963,000	2,249,000	2,107,000	2,111,900	144,000	7.3%	(137,100)	-6.1%
6/30/96-97	1,759,000	1,763,000	1,714,020	1,715,000	(44,980)	-2.6%	(48,000)	-2.7%
6/30/97-98	3,293,000	3,305,000	3,105,550	3,117,900	(187,450)	-5.7%	(187,100)	-5.7%
6/30/98-99	1,912,000	1,915,000	1,863,960	1,864,940	(48,040)	-2.5%	(50,060)	-2.6%
6/30/99-00	2,627,000	2,629,000	2,559,760	2,565,640	(67,240)	-2.6%	(63,360)	-2.4%
6/30/00-01	3,772,000	3,788,000	3,749,000	3,768,000	(23,000)	-0.6%	(20,000)	-0.5%
6/30/01-02	3,022,000	3,030,000	2,992,000	3,003,000	(30,000)	-1.0%	(27,000)	-0.9%
6/30/02-03	2,071,000	2,080,000	2,055,000	2,059,000	(16,000)	-0.8%	(21,000)	-1.0%
6/30/03-04	3,853,000	3,876,000	3,572,950	3,708,320	(280,050)	-7.3%	(167,680)	-4.3%
6/30/04-05	3,184,000	3,308,000	3,079,000	3,212,000	(105,000)	-3.3%	(96,000)	-2.9%
6/30/05-06	2,284,000	2,373,000	2,234,000	2,283,000	(50,000)	-2.2%	(90,000)	-3.8%
6/30/06-07	2,829,000	2,831,000	2,582,100	2,613,450	(246,900)	-8.7%	(217,550)	-7.7%
6/30/07-08	1,979,800	2,175,500	1,931,350	2,067,200	(48,450)	-2.4%	(108,300)	-5.0%
6/30/08-09	2,501,000	2,602,000	2,437,000	2,492,000	(64,000)	-2.6%	(110,000)	-4.2%
6/30/09-10	1,888,000	2,006,000	1,772,000	1,867,000	(116,000)	-6.1%	(139,000)	-6.9%
6/30/10-11	2,687,000	2,924,000	2,527,000	2,673,000	(160,000)	-6.0%	(251,000)	-8.6%
6/30/11-12	2,728,000	2,872,000	2,398,000	2,481,000	(330,000)	-12.1%	(391,000)	-13.6%
6/30/12-13	3,158,000	3,343,000	2,964,000	3,113,000	(194,000)	-6.1%	(230,000)	-6.9%
6/30/13-14	3,318,000	3,588,000	3,116,000	3,402,000	(202,000)	-6.1%	(186,000)	-5.2%
6/30/14-15								
Total	154,626,052	159,213,300	153,352,918	157,667,515	(1,273,134)	-0.8%	(1,545,784)	-1.0%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 3, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	19,425,054	1.220	23,693,974	0.0%	0.0%	0	665,680	665,680	2.8%	1.003	667,677	666,679	667,344
6/30/82-83	2,590,871	1.073	2,779,403	0.0%	0.0%	0	94,000	94,000	3.4%	1.003	94,282	94,141	94,235
6/30/83-84	2,245,006	1.083	2,432,453	0.0%	0.0%	0	410,001	410,001	16.9%	1.003	411,231	410,616	411,026
6/30/84-85	3,677,977	1.146	4,216,585	0.0%	0.0%	0	551,083	551,083	13.1%	1.003	552,736	551,910	552,461
6/30/85-86	4,048,163	1.053	4,261,265	0.0%	0.0%	0	585,928	585,928	13.8%	1.003	587,686	586,807	587,393
6/30/86-87	5,376,022	1.063	5,715,615	0.0%	0.0%	0	832,391	832,391	14.6%	1.003	834,888	833,640	834,472
6/30/87-88	9,922,648	1.127	11,187,684	0.0%	0.0%	0	1,685,022	1,685,022	15.1%	1.003	1,690,077	1,687,550	1,689,235
6/30/88-89	10,289,641	1.085	11,159,504	0.0%	0.0%	0	1,975,642	1,975,642	17.7%	1.003	1,981,569	1,978,605	1,981,574
6/30/89-90	9,655,288	1.095	10,576,240	0.0%	0.0%	0	2,037,640	2,037,640	19.3%	1.004	2,045,797	2,041,718	2,044,783
6/30/90-91	6,165,086	1.106	6,820,662	0.0%	0.0%	0	1,665,464	1,665,464	24.4%	1.005	1,673,803	1,669,633	1,672,141
6/30/91-92	3,230,938	1.117	3,610,251	0.0%	0.0%	0	1,029,141	1,029,141	28.5%	1.006	1,035,328	1,032,235	1,033,786
6/30/92-93	2,810,764	1.129	3,172,156	0.0%	0.0%	0	794,079	794,079	25.0%	1.007	799,652	796,865	798,063
6/30/93-94	2,117,149	1.140	2,413,254	0.0%	0.0%	0	358,584	358,584	14.9%	1.008	361,462	360,023	360,564
6/30/94-95	2,341,429	1.151	2,695,591	0.0%	0.0%	0	476,424	476,424	17.7%	1.009	480,728	478,576	479,296
6/30/95-96	1,440,291	1.158	1,668,097	0.0%	0.0%	0	484,060	484,060	29.0%	1.010	488,921	486,490	487,713
6/30/96-97	1,057,037	1.165	1,231,570	0.0%	0.0%	0	514,500	514,500	41.8%	1.013	521,226	517,863	520,447
6/30/97-98	2,101,308	1.172	2,462,955	0.1%	0.1%	1,897	810,801	812,698	33.0%	1.019	826,328	819,513	824,865
6/30/98-99	1,254,410	1.176	1,475,503	0.1%	0.2%	3,057	420,250	423,307	28.7%	1.025	430,868	427,088	429,074
6/30/99-00	1,634,502	1.179	1,926,432	0.0%	0.2%	3,992	679,200	683,192	35.5%	1.031	700,539	691,865	692,905
6/30/00-01	2,503,297	1.181	2,956,299	0.0%	0.2%	6,125	796,500	802,625	27.1%	1.031	821,524	812,075	816,339
6/30/01-02	2,097,298	1.183	2,481,783	0.1%	0.3%	8,356	508,906	517,262	20.8%	1.031	524,895	521,078	527,714
6/30/02-03	1,298,408	1.189	1,543,981	0.1%	0.5%	7,198	497,000	504,198	32.7%	1.042	517,740	510,969	518,083
6/30/03-04	2,662,734	1.193	3,177,145	0.0%	0.5%	14,811	581,000	595,811	18.8%	1.063	617,484	606,648	619,394
6/30/04-05	2,086,593	1.218	2,542,090	0.2%	0.6%	15,951	635,000	650,951	25.6%	1.086	689,723	670,337	690,231
6/30/05-06	1,355,634	1.251	1,696,157	0.2%	0.8%	14,035	502,750	516,785	30.5%	1.113	559,727	538,256	553,699
6/30/06-07	1,791,061	1.271	2,276,057	0.2%	1.0%	23,386	430,751	454,137	20.0%	1.151	495,874	475,005	498,338
6/30/07-08	1,293,854	1.293	1,672,500	0.4%	1.4%	23,875	315,730	339,605	20.3%	1.209	381,637	360,621	402,426
6/30/08-09	1,576,741	1.327	2,092,026	1.2%	2.6%	54,967	269,500	324,467	15.5%	1.353	364,692	344,580	375,637
6/30/09-10	1,060,427	1.361	1,442,730	1.3%	4.0%	57,012	171,000	228,012	15.8%	1.398	239,080	233,546	258,362
6/30/10-11	1,663,173	1.399	2,326,625	0.8%	4.7%	109,604	181,130	290,734	12.5%	1.497	271,212	280,973	355,687
6/30/11-12	1,421,088	1.511	2,147,008	2.0%	6.7%	144,603	130,800	275,403	12.8%	1.733	226,619	251,011	405,466
6/30/12-13	1,608,152	1.643	2,642,325	2.7%	9.5%	250,608	139,765	390,373	14.8%	2.853	398,781	394,577	599,701
6/30/13-14	1,535,219	2.010	3,086,238	3.2%	12.6%	390,344	7,850	398,194	12.9%	8.659	67,975	233,085	540,469
6/30/14-15	1,026,870	3.943	4,048,563	2.6%	15.3%	619,021	0	619,021	15.3%	40.482	0	619,021	
Total	116,364,133		139,630,721			1,748,843	21,237,573	22,986,415	16.5%		22,361,758	22,983,597	23,322,922

NOTES:
(2) From Section 3, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 3, Exhibit 1, Page 2, Column 6
(5) From Section 3, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 3, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 3, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts Workers Compensation
Department of Mental Health - Cluster 2
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0	0	0	0	0	0	0	0	0	20,000	46,500	35,000	0	73,500	50,000	69,180	0	0	97,000	198,000	0	0	0	26,500	25,000	25,000	0	0	0	0	0	0	0	0
Jun-83	0	0	0	0	0	0	0	15,000	0	20,000	24,000	35,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	0	42,000	0	70,000	40,000	10,001	48,000	0	50,000	0	0	0	0	0	0	0	0	0	0	0	150,000	0	0	0	0	0	0	
Jun-85	0	0	0	25,000	0	28,000	0	31,500	45,000	116,583	190,000	25,000	0	0	0	54,500	35,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jun-86	0	0	22,500	27,000	52,500	10,000	24,428	133,500	166,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150,000	0	0	0	0	0	0				
Jun-87	0	0	14,910	16,000	12,500	60,000	255,275	85,000	106,206	0	27,500	25,000	30,000	90,000	70,000	0	0	40,000	0	0	0	0	0	0	0	0	0	0	0					
Jun-88	0	17,171	21,420	31,841	231,000	272,884	239,000	113,000	90,000	20,000	53,826	87,507	227,463	0	19,910	0	36,667	25,000	48,333	0	0	150,000	0	0	0	0	0	0					
Jun-89	0	79,840	44,000	108,000	417,491	668,500	334,500	165,000	6,500	16,500	57,811	0	0	52,500	0	0	0	0	20,550	4,450	0	0	0	0	0	0	0							
Jun-90	0	39,218	184,450	480,000	338,500	235,500	155,000	60,000	65,793	0	128,678	106,000	7,500	31,000	31,000	0	0	50,125	124,876	0	0	0	0	0	0	0								
Jun-91	0	23,609	651,500	370,355	182,000	135,000	97,000	6,000	0	75,000	90,000	0	0	0	35,000	0	0	0	0	0	0	0	0	0	0	0								
Jun-92	0	341,000	83,230	201,910	88,000	23,000	125,000	55,000	75,000	0	0	0	0	0	0	0	0	37,000	1	0	0	0	0	0										
Jun-93	23,000	109,000	142,400	120,500	84,000	161,300	42,879	0	93,000	0	0	0	0	0	0	0	0	18,000	0	0	0	0	0											
Jun-94	5,000	85,000	44,300	28,284	37,000	0	46,000	63,000	0	0	0	0	0	25,000	25,000	0	0	0	0	0	0	0												
Jun-95	12,000	35,000	45,000	142,024	68,400	16,500	40,000	0	50,000	25,000	0	0	0	0	42,500	0	0	0	0	0	0													
Jun-96	0	90,000	144,500	10,000	77,560	27,000	0	100,000	0	15,000	20,000	0	0	0	0	0	0	0	0	0														
Jun-97	0	76,500	124,000	215,000	0	0	0	15,000	0	0	84,000	0	0	0	0	0	0	0	0															
Jun-98	53,300	122,501	318,000	16,000	33,091	127,909	20,000	20,000	0	0	0	0	50,000	50,000	0	0	0	0																
Jun-99	48,000	52,250	115,000	130,000	0	7,459	37,541	30,000	0	0	0	0	0	0	0	0	0																	
Jun-00	20,500	255,500	125,500	82,000	65,200	27,500	62,000	26,000	15,000	0	0	0	0	0	0	0																		
Jun-01	45,000	221,500	170,000	132,500	67,500	77,500	12,500	20,000	50,000	0	0	0	0	0	0																			
Jun-02	0	75,000	68,000	62,100	52,950	32,000	144,721	35,000	20,135	19,000	0	0	0	0																				
Jun-03	20,000	30,000	107,000	142,500	137,500	0	0	0	0	60,000	0	0	0																					
Jun-04	0	28,000	54,000	106,000	132,000	215,000	0	46,000	0	0	0	0																						
Jun-05	0	50,787	151,713	171,500	107,000	25,000	39,000	90,000	0	0	0																							
Jun-06	0	18,000	261,750	170,500	32,500	20,000	0	0	0	0																								
Jun-07	10,000	58,500	66,250	51,001	95,000	0	0	150,000	0																									
Jun-08	17,730	170,000	22,500	34,500	40,000	0	31,000	0																										
Jun-09	35,000	85,000	124,500	25,000	0	0	0																											
Jun-10	0	30,000	6,000	110,000	25,000	0																												
Jun-11	8,500	28,530	28,000	116,100	0																													
Jun-12	0	5,500	125,300	0																														
Jun-13	0	75,000	64,765																															
Jun-14	0	7,850																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	0	20,000	66,500	101,500	101,500	175,000	225,000	294,180	294,180	294,180	391,180	589,180	589,180	589,180	589,180	615,680	640,680	665,680	665,680	665,680	665,680	665,680	665,680	665,680	665,680	665,680
Jun-83	0	0	0	0	0	0	0	15,000	15,000	35,000	59,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	
Jun-84	0	0	0	0	0	0	0	42,000	42,000	112,000	152,000	162,001	210,001	210,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	410,001	410,001	410,001	410,001	410,001	410,001		
Jun-85	0	0	0	25,000	25,000	53,000	53,000	84,500	129,500	246,083	436,083	461,083	461,083	461,083	461,083	515,583	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083		
Jun-86	0	0	22,500	49,500	102,000	112,000	136,428	269,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	585,928	585,928	585,928	585,928	585,928	585,928	585,928				
Jun-87	0	0	14,910	30,910	43,410	103,410	358,685	443,685	549,891	549,891	577,391	602,391	632,391	722,391	792,391	792,391	792,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391					
Jun-88	0	17,171	38,591	70,432	301,432	574,316	813,316	926,316	1,016,316	1,036,316	1,090,142	1,177,649	1,405,112	1,405,112	1,425,022	1,425,022	1,461,689	1,486,689	1,535,022	1,535,022	1,535,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022						
Jun-89	0	79,840	123,840	231,840	649,331	1,317,831	1,652,331	1,817,331	1,823,831	1,840,331	1,898,142	1,898,142	1,898,142	1,950,642	1,950,642	1,950,642	1,950,642	1,950,642	1,971,192	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642							
Jun-90	0	39,218	223,668	703,668	1,042,168	1,277,668	1,432,668	1,492,668	1,558,461	1,558,461	1,687,139	1,793,139	1,800,639	1,831,639	1,862,639	1,862,639	1,862,639	1,912,764	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640								
Jun-91	0	23,609	675,109	1,045,464	1,227,464	1,362,464	1,459,464	1,465,464	1,465,464	1,540,464	1,630,464	1,630,464	1,630,464	1,630,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464										
Jun-92	0	341,000	424,230	626,140	714,140	737,140	862,140	917,140	992,140	992,140	992,140	992,140	992,140	992,140	992,140	992,140	992,140	1,029,140	1,029,141	1,029,141	1,029,141	1,029,141	1,029,141	1,029,141										
Jun-93	23,000	132,000	274,400	394,900	478,900	640,200	683,079	683,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	794,079	794,079	794,079	794,079	794,079	794,079											
Jun-94	5,000	90,000	134,300	162,584	199,584	199,584	245,584	308,584	308,584	308,584	308,584	308,584	308,584	308,584	333,584	358,584	358,584	358,584	358,584	358,584	358,584	358,584												
Jun-95	12,000	47,000	92,000	234,024	302,424	318,924	358,924	358,924	408,924	433,924	433,924	433,924	433,924	433,924	476,424	476,424	476,424	476,424	476,424	476,424	476,424													
Jun-96	0	90,000	234,500	244,500	322,060	349,060	349,060	449,060	449,060	464,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060														
Jun-97	0	76,500	200,500	415,500	415,500	415,500	415,500	430,500	430,500	430,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500															
Jun-98	53,300	175,801	493,801	509,801	542,892	670,801	690,801	710,801	710,801	710,801	710,801	710,801	760,801	810,801	810,801	810,801	810,801	810,801																
Jun-99	48,000	100,250	215,250	345,250	345,250	352,709	390,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250																	
Jun-00	20,500	276,000	401,500	483,500	548,700	576,200	638,200	664,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200																	
Jun-01	45,000	266,500	436,500	569,000	636,500	714,000	726,500	746,500	796,500	796,500	796,500	796,500	796,500	796,500	796,500	796,500																		
Jun-02	0	75,000	143,000	205,100	258,050	290,050	434,771	469,771	489,906	508,906	508,906	508,906	508,906	508,906	508,906																			
Jun-03	20,000	50,000	157,000	299,500	437,000	437,000	437,000	437,000	437,000	497,000	497,000	497,000	497,000	497,000																				
Jun-04	0	28,000	82,000	188,000	320,000	535,000	535,000	581,000	581,000	581,000	581,000	581,000																						
Jun-05	0	50,787	202,500	374,000	481,000	506,000	545,000	635,000	635,000	635,000	635,000																							
Jun-06	0	18,000	279,750	450,250	482,750	502,750	502,750	502,750	502,750	502,750																								
Jun-07	10,000	68,500	134,750	185,751	280,751	280,751	280,751	430,751	430,751																									
Jun-08	17,730	187,730	210,230	244,730	284,730	284,730	315,730	315,730																										
Jun-09	35,000	120,000	244,500	269,500	269,500	269,500	269,500																											
Jun-10	0	30,000	36,000	146,000	171,000	171,000																												
Jun-11	8,500	37,030	65,030	181,130	181,130																													
Jun-12	0	5,500	130,800	130,800																														
Jun-13	0	75,000	139,765																															
Jun-14	0	7,850																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
Department of Mental Health - Cluster 2
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.001	0.000	0.003	0.002	0.003	0.000	0.000	0.004	0.008	0.000	0.000	0.000	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.007	0.009	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.000	0.029	0.016	0.004	0.020	0.000	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.062	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.006	0.000	0.007	0.000	0.007	0.011	0.028	0.045	0.006	0.000	0.000	0.000	0.013	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Jun-86	0.000	0.000	0.005	0.006	0.012	0.002	0.006	0.031	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.000	0.003	0.003	0.002	0.010	0.045	0.015	0.019	0.000	0.005	0.004	0.005	0.016	0.012	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.002	0.002	0.003	0.021	0.024	0.021	0.010	0.008	0.002	0.005	0.008	0.020	0.000	0.002	0.000	0.003	0.002	0.004	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000						
Jun-89	0.000	0.007	0.004	0.010	0.037	0.060	0.030	0.015	0.001	0.001	0.005	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.004	0.017	0.045	0.032	0.022	0.015	0.006	0.006	0.000	0.012	0.010	0.001	0.003	0.003	0.000	0.000	0.005	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000								
Jun-91	0.000	0.003	0.096	0.054	0.027	0.020	0.014	0.001	0.000	0.011	0.013	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000									
Jun-92	0.000	0.094	0.023	0.056	0.024	0.006	0.035	0.015	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.007	0.034	0.045	0.038	0.026	0.051	0.014	0.000	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000											
Jun-94	0.002	0.035	0.018	0.012	0.015	0.000	0.019	0.026	0.000	0.000	0.000	0.000	0.000	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.004	0.013	0.017	0.053	0.025	0.006	0.015	0.000	0.019	0.009	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.000	0.054	0.087	0.006	0.046	0.016	0.000	0.060	0.000	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000														
Jun-97	0.000	0.062	0.101	0.175	0.000	0.000	0.000	0.012	0.000	0.000	0.068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000															
Jun-98	0.022	0.050	0.129	0.006	0.013	0.052	0.008	0.008	0.000	0.000	0.000	0.000	0.020	0.020	0.000	0.000	0.000	0.000																
Jun-99	0.033	0.035	0.078	0.088	0.000	0.005	0.025	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																	
Jun-00	0.011	0.133	0.065	0.043	0.034	0.014	0.032	0.013	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000																		
Jun-01	0.015	0.075	0.058	0.045	0.023	0.026	0.004	0.007	0.017	0.000	0.000	0.000	0.000	0.000	0.000																			
Jun-02	0.000	0.030	0.027	0.025	0.021	0.013	0.058	0.014	0.008	0.008	0.000	0.000	0.000	0.000																				
Jun-03	0.013	0.019	0.069	0.092	0.089	0.000	0.000	0.000	0.000	0.039	0.000	0.000	0.000																					
Jun-04	0.000	0.009	0.017	0.033	0.042	0.068	0.000	0.014	0.000	0.000	0.000	0.000																						
Jun-05	0.000	0.020	0.060	0.067	0.042	0.010	0.015	0.035	0.000	0.000	0.000																							
Jun-06	0.000	0.011	0.154	0.101	0.019	0.012	0.000	0.000	0.000	0.000																								
Jun-07	0.004	0.026	0.029	0.022	0.042	0.000	0.000	0.066	0.000																									
Jun-08	0.011	0.102	0.013	0.021	0.024	0.000	0.019	0.000																										
Jun-09	0.017	0.041	0.060	0.012	0.000	0.000	0.000																											
Jun-10	0.000	0.021	0.004	0.076	0.017	0.000																												
Jun-11	0.004	0.012	0.012	0.050	0.000																													
Jun-12	0.000	0.003	0.058	0.000																														
Jun-13	0.000	0.028	0.025																															
Jun-14	0.000	0.003																																
Jun-15	0.000																																	

Averages		12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
Simple Avg																																		
All Yrs (ex P)	0.004	0.029	0.041	0.038	0.022	0.015	0.014	0.015	0.007	0.006	0.008	0.002	0.003	0.003	0.004	0.001	0.001	0.002	0.001	0.000	0.000	0.001	0.000	0.004	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	
Latest 5	0.001	0.013	0.032	0.032	0.017	0.002	0.007	0.023	0.000	0.009	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Latest 3	0.000	0.011	0.032	0.042	0.006	0.000	0.006	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Olympic Avg																																		
All Yrs (ex P)	0.004	0.026	0.039	0.035	0.020	0.014	0.013	0.014	0.006	0.005	0.006	0.002	0.002	0.002	0.003	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.002	0.020	0.034	0.047	0.026	0.008	0.009	0.013	0.002	0.001	0.001	0.000	0.000	0.001	0.001	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000									
Latest 5	0.000	0.012	0.032	0.027	0.014	0.000	0.005	0.017	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					

Dev Factor Selection																																		
Prior	NA	0.027	0.028	0.047	0.028	0.009	0.013	0.016	0.005	0.000	0.006	0.002	0.000	0.001	0.002	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Selected	NA	0.026	0.032	0.027	0.020	0.008	0.013	0.012	0.004	0.002	0.002	0.002	0.000	0.001	0.001	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.153	0.126	0.095	0.067	0.047	0.040	0.026	0.014	0.010	0.008	0.006	0.005	0.005	0.003	0.002	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
Department of Mental Health - Cluster 2
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	0	20,000	66,500	101,500	101,500	175,000	225,000	294,180	294,180	294,180	391,180	589,180	589,180	589,180	589,180	615,680	640,680	665,680	665,680	665,680	665,680	665,680	665,680	665,680	665,680	665,680
Jun-83	0	0	0	0	0	0	0	15,000	15,000	35,000	59,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	94,000	
Jun-84	0	0	0	0	0	0	0	42,000	42,000	112,000	152,000	162,001	210,001	210,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	260,001	410,001	410,001	410,001	410,001	410,001	410,001	
Jun-85	0	0	0	25,000	25,000	53,000	53,000	84,500	129,500	246,083	436,083	461,083	461,083	461,083	461,083	515,583	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083	551,083		
Jun-86	0	0	22,500	49,500	102,000	112,000	136,428	269,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	435,928	585,928	585,928	585,928	585,928	585,928	585,928	585,928				
Jun-87	0	0	14,910	30,910	43,410	103,410	358,685	443,685	549,891	549,891	577,391	602,391	632,391	722,391	792,391	792,391	792,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391	832,391					
Jun-88	0	17,171	38,591	70,432	301,432	574,316	813,316	926,316	1,016,316	1,036,316	1,090,142	1,177,649	1,405,112	1,405,112	1,425,022	1,425,022	1,461,689	1,486,689	1,535,022	1,535,022	1,535,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022	1,685,022					
Jun-89	0	79,840	123,840	231,840	649,331	1,317,831	1,652,331	1,817,331	1,823,831	1,840,331	1,898,142	1,898,142	1,898,142	1,950,642	1,950,642	1,950,642	1,950,642	1,950,642	1,971,192	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642	1,975,642						
Jun-90	0	39,218	223,668	703,668	1,042,168	1,277,668	1,432,668	1,492,668	1,558,461	1,558,461	1,687,139	1,793,139	1,800,639	1,831,639	1,862,639	1,862,639	1,862,639	1,912,764	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640	2,037,640							
Jun-91	0	23,609	675,109	1,045,464	1,227,464	1,362,464	1,459,464	1,465,464	1,465,464	1,540,464	1,630,464	1,630,464	1,630,464	1,630,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464	1,665,464								
Jun-92	0	341,000	424,230	626,140	714,140	737,140	862,140	917,140	992,140	992,140	992,140	992,140	992,140	992,140	992,140	992,140	992,140	1,029,140	1,029,141	1,029,141	1,029,141	1,029,141	1,029,141	1,029,141										
Jun-93	23,000	132,000	274,400	394,900	478,900	640,200	683,079	683,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	776,079	794,079	794,079	794,079	794,079	794,079	794,079										
Jun-94	5,000	90,000	134,300	162,584	199,584	199,584	245,584	308,584	308,584	308,584	308,584	308,584	308,584	333,584	358,584	358,584	358,584	358,584	358,584	358,584	358,584	358,584	358,584											
Jun-95	12,000	47,000	92,000	234,024	302,424	318,924	358,924	358,924	408,924	433,924	433,924	433,924	433,924	433,924	433,924	476,424	476,424	476,424	476,424	476,424	476,424	476,424												
Jun-96	0	90,000	234,500	244,500	322,060	349,060	349,060	449,060	449,060	464,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060	484,060													
Jun-97	0	76,500	200,500	415,500	415,500	415,500	415,500	430,500	430,500	430,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500	514,500														
Jun-98	53,300	175,801	493,801	509,801	542,892	670,801	690,801	710,801	710,801	710,801	710,801	710,801	760,801	810,801	810,801	810,801	810,801	810,801	810,801															
Jun-99	48,000	100,250	215,250	345,250	345,250	352,709	390,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250	420,250																
Jun-00	20,500	276,000	401,500	483,500	548,700	576,200	638,200	664,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200	679,200																
Jun-01	45,000	266,500	436,500	569,000	636,500	714,000	726,500	746,500	796,500	796,500	796,500	796,500	796,500	796,500	796,500	796,500																		
Jun-02	0	75,000	143,000	205,100	258,050	290,050	434,771	469,771	489,906	508,906	508,906	508,906	508,906	508,906	508,906																			
Jun-03	20,000	50,000	157,000	299,500	437,000	437,000	437,000	437,000	437,000	497,000	497,000	497,000	497,000	497,000																				
Jun-04	0	28,000	82,000	188,000	320,000	535,000	535,000	581,000	581,000	581,000	581,000	581,000																						
Jun-05	0	50,787	202,500	374,000	481,000	506,000	545,000	635,000	635,000	635,000	635,000																							
Jun-06	0	18,000	279,750	450,250	482,750	502,750	502,750	502,750	502,750	502,750																								
Jun-07	10,000	68,500	134,750	185,751	280,751	280,751	280,751	430,751	430,751																									
Jun-08	17,730	187,730	210,230	244,730	284,730	284,730	315,730	315,730																										
Jun-09	35,000	120,000	244,500	269,500	269,500	269,500	269,500																											
Jun-10	0	30,000	36,000	146,000	171,000	171,000																												
Jun-11	8,500	37,030	65,030	181,130	181,130																													
Jun-12	0	5,500	130,800	130,800																														
Jun-13	0	75,000	139,765																															
Jun-14	0	7,850																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs										3.325	1.526	1.000	1.724	1.286	1.307	1.000	1.000	1.330	1.506	1.000	1.000	1.000	1.045	1.041	1.039	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Jun-83								1.000	2.333	1.686	1.593	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Jun-84								1.000	2.667	1.357	1.066	1.296	1.000	1.238	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.577	1.000	1.000	1.000	1.000	1.000			
Jun-85			1.000	2.120	1.000	1.594	1.533	1.533	1.900	1.772	1.057	1.000	1.000	1.000	1.118	1.069	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				
Jun-86		2.200	2.061	1.098	1.218	1.979	1.615	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	1.000	1.344	1.000	1.000	1.000	1.000	1.000	1.000					
Jun-87		2.073	1.404	2.382	3.469	1.237	1.239	1.000	1.050	1.043	1.050	1.142	1.097	1.000	1.000	1.000	1.050	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Jun-88	2.247	1.825	4.280	1.905	1.416	1.139	1.097	1.020	1.052	1.080	1.193	1.000	1.014	1.000	1.026	1.017	1.033	1.000	1.000	1.098	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
Jun-89	1.551	1.872	2.801	2.030	1.254	1.100	1.004	1.009	1.031	1.000	1.000	1.028	1.000	1.000	1.000	1.000	1.011	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
Jun-90	5.703	3.146	1.481	1.226	1.121	1.042	1.044	1.000	1.083	1.063	1.004	1.017	1.017	1.000	1.000	1.027	1.065	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
Jun-91	28.595	1.549	1.174	1.110	1.071	1.004	1.000	1.051	1.058	1.000	1.000	1.000	1.000	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
Jun-92	1.244	1.476	1.141	1.032	1.170	1.064	1.082	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.037	1.000	1.000	1.000	1.000	1.000	1.000											
Jun-93	2.079	1.439	1.213	1.337	1.067	1.000	1.136	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.023	1.000	1.000	1.000	1.000	1.000												
Jun-94	1.492	1.211	1.228	1.000	1.230	1.257	1.000	1.000	1.000	1.000	1.000	1.000	1.081	1.075	1.000	1.000	1.000	1.000	1.000	1.000	1.000													
Jun-95	1.957	2.544	1.292	1.055	1.125	1.000	1.139	1.061	1.000	1.000	1.000	1.000	1.098	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
Jun-96	2.606	1.043	1.317	1.084	1.000	1.286	1.000	1.033	1.043	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
Jun-97	2.621	2.072	1.000	1.000	1.000	1.036	1.000	1.000	1.195	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																
Jun-98	2.809	1.032	1.065	1.236	1.030	1.029	1.000	1.000	1.000	1.000	1.070	1.066	1.000	1.000	1.000	1.000	1.000																	
Jun-99	2.147	1.604	1.000	1.022	1.106	1.077	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																		
Jun-00	1.455	1.204	1.135	1.050	1.108	1.041	1.023	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																			
Jun-01	1.638	1.304	1.119	1.122	1.018	1.028	1.067	1.000	1.000	1.000	1.000	1.000	1.000	1.000																				
Jun-02	1.907	1.434	1.258	1.124	1.499	1.081	1.043	1.039	1.000	1.000	1.000	1.000	1.000																					
Jun-03	3.140	1.908	1.459	1.000	1.000	1.000	1.000	1.137	1.000	1.000	1.000	1.000																						
Jun-04	2.929	2.293	1.702	1.672	1.000	1.086	1.000	1.000	1.000	1.000	1.000																							
Jun-05	3.987	1.847	1.286	1.052	1.077	1.165	1.000	1.000	1.000																									
Jun-06	15.542	1.609	1.072	1.041	1.000	1.000	1.000	1.000																										
Jun-07	6.850	1.967	1.378	1.511	1.000	1.000	1.534	1.000																										
Jun-08	10.588	1.120	1.164	1.163	1.000	1.109	1.000																											
Jun-09	3.429	2.038	1.102	1.000	1.000	1.000																												
Jun-10		1.200	4.056	1.171	1.000																													
Jun-11	4.357	1.756	2.785	1.000																														
Jun-12		23.782	1.000																															
Jun-13		1.864																																
Jun-14																																		

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
Simple Avg																																		
All Yrs (ex P)	6.679	4.591	1.784	1.420	1.258	1.204	1.157	1.081	1.177	1.101	1.041	1.029	1.017	1.029	1.007	1.006	1.010	1.007	1.000	1.000	1.008	1.000	1.034	1.000	1.000	1.082	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		6.128	2.021	1.169	1.008	1.037	1.157	1.000	1.035	1.000	1.000	1.000	1.013	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	1.000	1.000					
Latest 3		9.134	2.614	1.057	1.000	1.036	1.178	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.332	1.549	1.274	1.199	1.132	1.091	1.051	1.028	1.046	1.018	1.024	1.016	1.018	1.004	1.005	1.013	1.015	1.000	1.000	1.013	1.000	1.014	1.000	1.000	1.025	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		2.303	1.416	1.156	1.013	1.038	1.131	1.000	1.030	1.000	1.000	1.000	1.016	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	1.000	1.000					
Latest 3		2.855	1.975	1.042	1.000	1.037	1.136	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			

Dev Factor Selection																																		
Prior	4.675	3.330	1.592	1.175	1.076	1.033	1.124	1.050	1.034	1.025	1.022	1.020	1.012	1.000	1.000	1.006	1.006	1.006	1.003	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.005	
Selected	4.675	3.035	1.647	1.157	1.071	1.033	1.120	1.050	1.034	1.025	1.022	1.020	1.010	1.000	1.000	1.006	1.006	1.006	1.003	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.003
FacToUlt	40.482	8.659	2.853	1.733	1.497	1.398	1.353	1.209	1.151	1.113	1.086	1.063	1.042	1.031	1.031	1.031	1.025	1.019	1.013	1.010	1.009	1.008	1.007	1.006	1.005	1.004	1.003	1.003	1.003	1.003	1.003	1.003	1.003	1.003
Percent of Ult	2.5%	11.5%	35.0%	57.7%	66.8%	71.5%	73.9%	82.7%	86.9%	89.8%	92.1%	94.1%	96.0%	97.0%	97.0%	97.0%	97.5%	98.1%	98.7%	99.0%	99.1%	99.2%	99.3%	99.4%	99.5%	99.6%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%	99.7%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	2.1%	0.0%	0.6%	0.3%	1.000	1.000
396	97.9%	1.0%	2.1%	0.3%	0.1%	0.981	0.971
384	96.9%	1.0%	3.1%	0.3%	0.2%	0.955	0.934
372	95.9%	0.9%	4.1%	0.3%	0.2%	0.933	0.902
360	95.0%	0.9%	5.0%	0.3%	0.2%	0.913	0.874
348	94.1%	0.9%	5.9%	0.3%	0.2%	0.894	0.848
336	93.1%	0.9%	6.9%	0.3%	0.2%	0.876	0.823
324	92.2%	0.9%	7.8%	0.3%	0.2%	0.859	0.799
312	91.3%	0.9%	8.7%	0.3%	0.2%	0.842	0.777
300	90.4%	0.9%	9.6%	0.3%	0.2%	0.826	0.755
288	89.5%	0.9%	10.5%	0.4%	0.2%	0.810	0.735
276	88.6%	0.9%	11.4%	0.4%	0.2%	0.794	0.715
264	87.7%	0.9%	12.3%	0.4%	0.2%	0.779	0.695
252	86.9%	0.5%	13.1%	0.2%	0.2%	0.765	0.677
240	86.3%	0.5%	13.7%	0.2%	0.2%	0.744	0.651
228	85.8%	0.5%	14.2%	0.2%	0.2%	0.725	0.627
216	85.3%	0.3%	14.7%	0.2%	0.1%	0.707	0.605
204	85.0%	0.2%	15.0%	0.1%	0.1%	0.686	0.579
192	84.8%	0.2%	15.2%	0.1%	0.1%	0.663	0.551
180	84.7%	0.2%	15.3%	0.1%	0.1%	0.642	0.525
168	84.5%	0.4%	15.5%	0.2%	0.2%	0.621	0.500
156	84.1%	0.3%	15.9%	0.2%	0.1%	0.607	0.485
144	83.8%	1.7%	16.2%	1.1%	0.9%	0.591	0.466
132	82.1%	2.2%	17.9%	1.4%	1.2%	0.608	0.491
120	79.9%	1.2%	20.1%	0.8%	0.7%	0.627	0.518
108	78.7%	1.3%	21.3%	1.0%	0.8%	0.625	0.517
96	77.4%	2.0%	22.6%	1.5%	1.3%	0.623	0.516
84	75.4%	1.9%	24.6%	1.4%	1.3%	0.630	0.526
72	73.5%	2.0%	26.5%	1.6%	1.5%	0.632	0.530
60	71.5%	5.3%	28.5%	4.4%	4.1%	0.634	0.533
48	66.2%	5.3%	33.8%	4.6%	4.3%	0.668	0.576
36	60.9%	11.1%	39.1%	10.1%	9.6%	0.688	0.602
24	49.7%	24.4%	50.3%	23.0%	22.3%	0.732	0.657
12	25.4%	25.4%	74.6%	24.9%	24.6%	0.794	0.735
Total		100.0%					

NOTES:

(2) = 1 / Section 3, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
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Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	3,608,589	4,931,248		3,156,018	4,312,796
6/30/82-83	131,202	203,041	0.981	128,654	199,098
6/30/83-84	45,909	202,278	0.955	43,829	193,113
6/30/84-85	119,940	443,940	0.933	111,880	414,107
6/30/85-86	45,909	213,909	0.913	41,907	195,260
6/30/86-87	61,587	351,587	0.894	55,058	314,316
6/30/87-88	673,330	1,010,330	0.876	589,837	885,049
6/30/88-89	847,913	872,717	0.859	728,072	749,371
6/30/89-90	871,072	925,072	0.842	733,340	778,802
6/30/90-91	156,450	234,916	0.826	129,164	193,945
6/30/91-92	42,921	149,921	0.810	34,755	121,397
6/30/92-93	357,157	364,157	0.794	283,693	289,253
6/30/93-94	291,267	297,267	0.779	226,973	231,649
6/30/94-95	282,867	292,667	0.765	216,275	223,767
6/30/95-96	182,649	187,549	0.744	135,979	139,627
6/30/96-97	142,483	143,463	0.725	103,367	104,078
6/30/97-98	193,441	205,791	0.707	136,847	145,584
6/30/98-99	189,300	190,280	0.686	129,907	130,580
6/30/99-00	246,058	251,938	0.663	163,247	167,148
6/30/00-01	449,203	468,203	0.642	288,262	300,455
6/30/01-02	385,796	396,796	0.621	239,581	246,412
6/30/02-03	259,592	263,592	0.607	157,592	160,020
6/30/03-04	329,216	464,586	0.591	194,478	274,445
6/30/04-05	357,407	490,407	0.608	217,225	298,059
6/30/05-06	375,616	424,616	0.627	235,507	266,229
6/30/06-07	360,288	391,638	0.625	225,079	244,664
6/30/07-08	321,766	457,616	0.623	200,468	285,105
6/30/08-09	590,759	645,759	0.630	372,124	406,769
6/30/09-10	540,573	635,573	0.632	341,698	401,748
6/30/10-11	682,697	828,697	0.634	432,939	525,527
6/30/11-12	846,112	929,112	0.668	565,070	620,501
6/30/12-13	1,216,083	1,365,083	0.688	836,940	939,486
6/30/13-14	1,572,931	1,858,931	0.732	1,151,833	1,361,266
6/30/14-15	2,833,130	3,757,130	0.794	2,250,714	2,984,764
Total	19,611,213	24,849,810		14,858,311	19,104,389
			(7) Total Discount Factor:	0.758	0.769

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	3,608,589	4,931,248
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	515,513	704,464
(11) Discounted Value at 4%:	3,156,018	4,312,796

NOTES:
(2), (3) From Section 3, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 3, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

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Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	3,608,589	4,931,248		2,964,122	4,050,564
6/30/82-83	131,202	203,041	0.971	127,435	197,211
6/30/83-84	45,909	202,278	0.934	42,858	188,835
6/30/84-85	119,940	443,940	0.902	108,204	400,503
6/30/85-86	45,909	213,909	0.874	40,121	186,940
6/30/86-87	61,587	351,587	0.848	52,207	298,040
6/30/87-88	673,330	1,010,330	0.823	554,127	831,466
6/30/88-89	847,913	872,717	0.799	677,853	697,683
6/30/89-90	871,072	925,072	0.777	676,777	718,732
6/30/90-91	156,450	234,916	0.755	118,179	177,451
6/30/91-92	42,921	149,921	0.735	31,532	110,140
6/30/92-93	357,157	364,157	0.715	255,264	260,267
6/30/93-94	291,267	297,267	0.695	202,574	206,747
6/30/94-95	282,867	292,667	0.677	191,490	198,124
6/30/95-96	182,649	187,549	0.651	118,952	122,143
6/30/96-97	142,483	143,463	0.627	89,389	90,004
6/30/97-98	193,441	205,791	0.605	117,048	124,521
6/30/98-99	189,300	190,280	0.579	109,580	110,147
6/30/99-00	246,058	251,938	0.551	135,545	138,784
6/30/00-01	449,203	468,203	0.525	235,686	245,654
6/30/01-02	385,796	396,796	0.500	192,965	198,466
6/30/02-03	259,592	263,592	0.485	125,857	127,797
6/30/03-04	329,216	464,586	0.466	153,564	216,708
6/30/04-05	357,407	490,407	0.491	175,579	240,917
6/30/05-06	375,616	424,616	0.518	194,583	219,967
6/30/06-07	360,288	391,638	0.517	186,134	202,331
6/30/07-08	321,766	457,616	0.516	165,977	236,052
6/30/08-09	590,759	645,759	0.526	310,631	339,551
6/30/09-10	540,573	635,573	0.530	286,260	336,567
6/30/10-11	682,697	828,697	0.533	363,837	441,646
6/30/11-12	846,112	929,112	0.576	487,486	535,306
6/30/12-13	1,216,083	1,365,083	0.602	731,797	821,460
6/30/13-14	1,572,931	1,858,931	0.657	1,033,386	1,221,283
6/30/14-15	2,833,130	3,757,130	0.735	2,081,245	2,760,024
Total	19,611,213	24,849,810		13,338,244	17,252,032
			(7) Total Discount Factor:	0.680	0.694

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	3,608,589	4,931,248
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	515,513	704,464
(11) Discounted Value at 6%:	2,964,122	4,050,564

NOTES:
(2), (3) From Section 3, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 3, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	24,517,020	25,840,805	20,903,941	3,613,078	4,936,864				342,129	376,342	9.5%	7.6%
6/30/82-83	2,955,934	3,029,171	2,823,431	132,502	205,740	94.3%	0.5%	8.8%	11,723	18,203	8.8%	8.8%
6/30/83-84	2,911,916	3,068,285	2,864,047	47,869	204,238	95.8%	0.5%	11.9%	5,678	24,223	11.9%	11.9%
6/30/84-85	4,847,000	5,175,980	4,721,443	125,557	454,537	94.2%	0.5%	8.6%	10,847	39,268	8.6%	8.6%
6/30/85-86	4,941,000	5,109,000	4,891,866	49,134	217,134	97.4%	0.5%	18.9%	9,273	40,977	18.9%	18.9%
6/30/86-87	6,982,000	7,273,000	6,911,248	70,752	361,752	97.0%	0.5%	16.5%	11,660	59,615	16.5%	16.5%
6/30/87-88	14,153,000	14,495,000	13,456,150	696,850	1,038,850	93.9%	0.5%	8.3%	57,508	85,732	8.3%	8.3%
6/30/88-89	15,201,196	15,226,000	14,315,324	885,872	910,676	94.1%	0.5%	8.5%	75,018	77,118	8.5%	8.5%
6/30/89-90	14,541,000	14,615,000	13,631,306	909,694	983,694	93.5%	0.6%	9.1%	82,589	89,307	9.1%	9.1%
6/30/90-91	9,776,000	9,854,466	9,576,763	199,237	277,703	97.6%	0.5%	20.6%	41,002	57,150	20.6%	20.6%
6/30/91-92	5,589,000	5,708,000	5,520,691	68,309	187,309	97.7%	0.5%	22.1%	15,095	41,390	22.1%	22.1%
6/30/92-93	5,093,000	5,111,310	4,702,108	390,892	409,202	92.2%	1.0%	12.8%	49,854	52,189	12.8%	12.8%
6/30/93-94	3,435,000	3,441,000	3,121,821	313,179	319,179	90.8%	1.0%	10.9%	34,054	34,706	10.9%	10.9%
6/30/94-95	3,981,720	3,992,520	3,667,330	314,390	325,190	92.0%	1.0%	12.5%	39,198	40,544	12.5%	12.5%
6/30/95-96	2,945,000	2,958,280	2,728,118	216,882	230,162	92.4%	1.0%	13.2%	28,640	30,393	13.2%	13.2%
6/30/96-97	2,277,020	2,283,630	2,108,325	168,695	175,305	92.5%	1.0%	13.3%	22,365	23,241	13.3%	13.3%
6/30/97-98	3,639,550	3,657,240	3,418,667	220,883	238,573	93.7%	1.0%	15.9%	35,079	37,889	15.9%	15.9%
6/30/98-99	2,626,960	2,628,940	2,395,745	231,215	233,195	91.2%	1.0%	11.3%	26,167	26,392	11.3%	11.3%
6/30/99-00	3,196,330	3,208,640	2,916,057	280,273	292,583	91.1%	1.0%	11.2%	31,337	32,713	11.2%	11.2%
6/30/00-01	4,551,890	4,580,000	4,053,774	498,116	526,226	88.8%	2.0%	17.8%	88,813	93,825	17.8%	17.8%
6/30/01-02	3,662,000	3,675,000	3,223,618	438,382	451,382	87.9%	2.0%	16.5%	72,298	74,442	16.5%	16.5%
6/30/02-03	2,846,010	2,867,000	2,524,190	321,820	342,810	88.4%	2.0%	17.2%	55,326	58,934	17.2%	17.2%
6/30/03-04	5,005,480	5,176,860	4,553,542	451,938	623,318	89.4%	2.0%	18.9%	85,594	118,053	18.9%	18.9%
6/30/04-05	4,079,000	4,235,000	3,632,087	446,913	602,913	87.4%	2.0%	15.8%	70,786	95,494	15.8%	15.8%
6/30/05-06	3,150,000	3,209,000	2,669,951	480,049	539,049	84.0%	2.0%	12.5%	59,908	67,272	12.5%	12.5%
6/30/06-07	3,360,100	3,408,450	2,891,544	468,556	516,906	85.4%	2.0%	13.7%	64,365	71,006	13.7%	13.7%
6/30/07-08	2,718,350	2,879,200	2,273,469	444,881	605,731	81.2%	4.2%	22.4%	99,782	135,858	22.4%	22.4%
6/30/08-09	3,278,000	3,349,000	2,538,438	739,562	810,562	76.6%	6.0%	25.7%	189,704	207,916	25.7%	25.7%
6/30/09-10	2,403,000	2,546,000	1,734,838	668,162	811,162	70.1%	7.0%	23.4%	156,471	189,959	23.4%	23.4%
6/30/10-11	3,436,000	3,614,000	2,562,439	873,561	1,051,561	72.7%	8.0%	29.3%	255,926	308,074	29.3%	29.3%
6/30/11-12	3,118,000	3,237,000	2,072,788	1,045,212	1,164,212	65.2%	7.5%	21.5%	224,274	249,809	21.5%	21.5%
6/30/12-13	3,794,000	3,974,000	2,288,411	1,505,589	1,685,589	58.9%	6.3%	15.4%	231,417	259,084	15.4%	15.4%
6/30/13-14	3,934,000	4,290,000	2,004,990	1,929,010	2,285,010	48.8%	10.2%	19.8%	382,464	453,048	19.8%	19.8%
6/30/14-15	4,978,000	6,073,000	1,363,024	3,614,976	4,709,976	24.7%	22.0%	29.2%	1,055,718	1,375,502	29.2%	29.2%
Total	187,923,475	193,789,777	165,061,484	22,861,991	28,728,293				4,022,060	4,945,671	17.6%	17.2%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		813,207			817,697	818,823	4,490	5,616		
6/30/82-83		138,560	139,860		139,860	141,259	1,300	2,699		
6/30/83-84		209,040	211,213		211,000	211,000	1,960	1,960		
6/30/84-85	142,561	492,382	497,998	498,169	498,000	502,980	5,618	10,598	0.349	0.353
6/30/85-86	153,298	257,775	260,976	261,027	261,000	261,000	3,225	3,225	0.170	0.170
6/30/86-87	176,136	702,835	712,273	712,568	712,000	713,000	9,165	10,165	0.404	0.405
6/30/87-88	206,319	1,848,480	1,877,049	1,871,623	1,872,000	1,877,000	23,520	28,520	0.907	0.910
6/30/88-89	222,806	2,050,041	2,087,970	2,088,410	2,088,000	2,088,000	37,959	37,959	0.937	0.937
6/30/89-90	223,751	1,938,378	1,980,164	1,981,015	1,977,000	1,997,000	38,622	58,622	0.884	0.893
6/30/90-91	210,162	1,746,213	1,789,208	1,788,943	1,789,000	1,789,000	42,787	42,787	0.851	0.851
6/30/91-92	205,241	1,260,611	1,295,525	1,295,193	1,286,000	1,298,000	25,389	37,389	0.627	0.632
6/30/92-93	176,705	1,097,266	1,131,038	1,130,554	1,131,000	1,142,310	33,734	45,044	0.640	0.646
6/30/93-94	173,075	646,088	667,971	667,869	668,000	668,000	21,912	21,912	0.386	0.386
6/30/94-95	178,317	849,477	881,763	881,281	881,000	882,000	31,523	32,523	0.494	0.495
6/30/95-96	175,996	803,766	838,486	837,954	838,000	846,380	34,234	42,614	0.476	0.481
6/30/96-97	190,083	536,788	562,775	563,193	563,000	568,630	26,212	31,842	0.296	0.299
6/30/97-98	177,278	506,558	533,738	534,223	534,000	539,340	27,442	32,782	0.301	0.304
6/30/98-99	189,080	721,085	763,574	763,272	763,000	764,000	41,915	42,915	0.404	0.404
6/30/99-00	194,494	602,355	642,742	643,295	636,570	643,000	34,215	40,645	0.327	0.331
6/30/00-01	201,568	753,977	811,633	811,427	802,890	812,000	48,913	58,023	0.398	0.403
6/30/01-02	203,105	617,414	670,459	671,504	670,000	672,000	52,586	54,586	0.330	0.331
6/30/02-03	202,515	728,783	799,385	799,649	791,010	808,000	62,227	79,217	0.391	0.399
6/30/03-04	189,588	1,309,808	1,453,544	1,447,120	1,432,530	1,468,540	122,722	158,732	0.756	0.775
6/30/04-05	186,990	910,494	1,023,453	999,810	1,000,000	1,023,000	89,506	112,506	0.535	0.547
6/30/05-06	193,254	811,567	925,938	916,265	916,000	926,000	104,433	114,433	0.474	0.479
6/30/06-07	203,359	669,732	778,049	795,147	778,000	795,000	108,268	125,268	0.383	0.391
6/30/07-08	212,083	663,885	786,820	812,146	787,000	812,000	123,115	148,115	0.371	0.383
6/30/08-09	204,679	692,197	840,766	856,512	841,000	857,000	148,803	164,803	0.411	0.419
6/30/09-10	184,688	503,411	630,862	679,158	631,000	679,000	127,589	175,589	0.342	0.368
6/30/10-11	169,689	718,136	940,607	909,070	909,000	941,000	190,864	222,864	0.536	0.555
6/30/11-12	177,399	520,900	719,863	756,491	720,000	756,000	199,100	235,100	0.406	0.426
6/30/12-13	189,252	540,494	829,565	860,531	830,000	861,000	289,506	320,506	0.439	0.455
6/30/13-14	199,876	461,922	817,793	888,243	818,000	888,000	356,078	426,078	0.409	0.444
6/30/14-15	213,700	336,154	1,288,872	1,118,157	1,118,000	1,289,000	781,846	952,846	0.523	0.603
Total	5,927,049	27,459,778	30,191,932	29,839,818	30,710,557	31,338,262	3,250,778	3,878,484		
Tot 6/30/84-15	5,927,049	26,298,972	29,840,859	29,839,818	29,542,000	30,167,180	3,243,028	3,868,208	0.498	0.509

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 3, Exhibit 2, Page 2, Column 3
(4) From Section 3, Exhibit 2, Page 2, Column 8
(5) From Section 3, Exhibit 2, Page 3, Column 8
(6), (7) Selected based on (3), (4), and (5)
(8) = (6) - (3)
(9) = (7) - (3)
(10) = (6) / (2) / 10
(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		813,207							0	2	
6/30/82-83		138,560	1.009	1.000	139,860	N/A	139,860		1	1	1,300
6/30/83-84		209,040	1.010	1.000	211,213	N/A	211,213		0	0	
6/30/84-85	142,561	492,382	1.011	1.000	497,998	N/A	497,998	0.349	1	1	5,615
6/30/85-86	153,298	257,775	1.012	1.000	260,976	N/A	260,976	0.170	0	0	
6/30/86-87	176,136	702,835	1.013	1.000	712,273	N/A	712,273	0.404	0	0	
6/30/87-88	206,319	1,848,480	1.015	1.000	1,877,049	N/A	1,877,049	0.910	2	1	28,569
6/30/88-89	222,806	2,050,041	1.019	1.000	2,087,970	N/A	2,087,970	0.937	1	1	37,929
6/30/89-90	223,751	1,938,378	1.022	1.000	1,980,164	N/A	1,980,164	0.885	0	1	41,786
6/30/90-91	210,162	1,746,213	1.025	1.000	1,789,208	N/A	1,789,208	0.851	2	1	42,995
6/30/91-92	205,241	1,260,611	1.028	1.000	1,295,525	N/A	1,295,525	0.631	1	0	
6/30/92-93	176,705	1,097,266	1.031	1.000	1,131,038	N/A	1,131,038	0.640	3	3	11,257
6/30/93-94	173,075	646,088	1.034	1.000	667,971	N/A	667,971	0.386	1	0	
6/30/94-95	178,317	849,477	1.038	1.000	881,763	N/A	881,763	0.494	2	2	16,143
6/30/95-96	175,996	803,766	1.043	1.000	838,486	N/A	838,486	0.476	1	1	34,720
6/30/96-97	190,083	536,788	1.048	1.000	562,775	N/A	562,775	0.296	3	3	8,662
6/30/97-98	177,278	506,558	1.054	1.000	533,738	N/A	533,738	0.301	1	2	13,590
6/30/98-99	189,080	721,085	1.059	1.000	763,574	N/A	763,574	0.404	1	1	42,488
6/30/99-00	194,494	602,355	1.067	1.000	642,742	N/A	642,742	0.330	1	1	40,387
6/30/00-01	201,568	753,977	1.076	1.000	811,633	N/A	811,633	0.403	1	0	
6/30/01-02	203,105	617,414	1.086	1.000	670,459	N/A	670,459	0.330	1	1	53,045
6/30/02-03	202,515	728,783	1.097	1.000	799,385	N/A	799,385	0.395	3	3	23,534
6/30/03-04	189,588	1,309,808	1.110	1.000	1,453,544	N/A	1,453,544	0.767	4	4	35,934
6/30/04-05	186,990	910,494	1.124	1.000	1,023,453	N/A	1,023,453	0.547	6	5	22,592
6/30/05-06	193,254	811,567	1.141	1.000	925,938	N/A	925,938	0.479	3	3	38,123
6/30/06-07	203,359	669,732	1.162	1.000	778,049	N/A	778,049	0.383	2	2	54,158
6/30/07-08	212,083	663,885	1.185	1.000	786,820	N/A	786,820	0.371	5	2	61,468
6/30/08-09	204,679	692,197	1.215	1.000	840,766	N/A	840,766	0.411	4	4	37,142
6/30/09-10	184,688	503,411	1.253	1.000	630,862	N/A	630,862	0.342	3	2	63,726
6/30/10-11	169,689	718,136	1.310	1.000	940,607	N/A	940,607	0.554	10	8	27,809
6/30/11-12	177,399	520,900	1.382	1.000	719,863	N/A	719,863	0.406	29	9	22,107
6/30/12-13	189,252	540,494	1.535	1.000	829,565	N/A	829,565	0.438	126	28	10,324
6/30/13-14	199,876	461,922	1.770	1.000	817,793	N/A	817,793	0.409	241	135	2,636
6/30/14-15	213,700	336,154	3.834	1.000	1,288,872	N/A	1,288,872	0.603		321	2,968
Total	5,927,049	27,459,778			30,191,932		30,191,932		459	548	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 3, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	142,561	0.360	492,382	1.011	498,169	N/A	498,169	0.349	0.349
6/30/85-86	153,298	0.173	257,775	1.012	261,027	N/A	261,027	0.170	0.170
6/30/86-87	176,136	0.417	702,835	1.013	712,568	N/A	712,568	0.405	0.405
6/30/87-88	206,319	0.737	1,848,480	1.015	1,871,623	N/A	1,871,623	0.907	0.907
6/30/88-89	222,806	0.948	2,050,041	1.019	2,088,410	N/A	2,088,410	0.937	0.937
6/30/89-90	223,751	0.903	1,938,378	1.022	1,981,015	N/A	1,981,015	0.885	0.885
6/30/90-91	210,162	0.846	1,746,213	1.025	1,788,943	N/A	1,788,943	0.851	0.851
6/30/91-92	205,241	0.625	1,260,611	1.028	1,295,193	N/A	1,295,193	0.631	0.631
6/30/92-93	176,705	0.631	1,097,266	1.031	1,130,554	N/A	1,130,554	0.640	0.640
6/30/93-94	173,075	0.384	646,088	1.034	667,869	N/A	667,869	0.386	0.386
6/30/94-95	178,317	0.487	849,477	1.038	881,281	N/A	881,281	0.494	0.494
6/30/95-96	175,996	0.469	803,766	1.043	837,954	N/A	837,954	0.476	0.476
6/30/96-97	190,083	0.301	536,788	1.048	563,193	N/A	563,193	0.296	0.296
6/30/97-98	177,278	0.306	506,558	1.054	534,223	N/A	534,223	0.301	0.301
6/30/98-99	189,080	0.401	721,085	1.059	763,272	N/A	763,272	0.404	0.404
6/30/99-00	194,494	0.335	602,355	1.067	643,295	N/A	643,295	0.331	0.331
6/30/00-01	201,568	0.401	753,977	1.076	811,427	N/A	811,427	0.403	0.403
6/30/01-02	203,105	0.337	617,414	1.086	671,504	N/A	671,504	0.331	0.331
6/30/02-03	202,515	0.396	728,783	1.097	799,649	N/A	799,649	0.395	0.395
6/30/03-04	189,588	0.732	1,309,808	1.110	1,447,120	N/A	1,447,120	0.763	0.763
6/30/04-05	186,990	0.433	910,494	1.124	999,810	N/A	999,810	0.535	0.535
6/30/05-06	193,254	0.439	811,567	1.141	916,265	N/A	916,265	0.474	0.474
6/30/06-07	203,359	0.443	669,732	1.162	795,147	N/A	795,147	0.391	0.391
6/30/07-08	212,083	0.447	663,885	1.185	812,146	N/A	812,146	0.383	0.383
6/30/08-09	204,679	0.454	692,197	1.215	856,512	N/A	856,512	0.418	0.418
6/30/09-10	184,688	0.471	503,411	1.253	679,158	N/A	679,158	0.368	0.368
6/30/10-11	169,689	0.476	718,136	1.310	909,070	N/A	909,070	0.536	0.536
6/30/11-12	177,399	0.480	520,900	1.382	756,491	N/A	756,491	0.426	0.426
6/30/12-13	189,252	0.485	540,494	1.535	860,531	N/A	860,531	0.455	0.455
6/30/13-14	199,876	0.490	461,922	1.770	888,243	N/A	888,243	0.444	0.444
6/30/14-15	213,700	0.495	336,154	3.834	1,118,157	N/A	1,118,157	0.523	0.523
Total	5,927,049		26,298,972		29,839,818		29,839,818		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 3, Exhibit 2, Page 4, Column 11

(4) From Section 3, Exhibit 2, Page 2, Column 3

(5) From Section 3, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.360	0.360
6/30/85-86									0.173	0.173
6/30/86-87									0.417	0.417
6/30/87-88									0.737	0.737
6/30/88-89									0.948	0.948
6/30/89-90									0.903	0.903
6/30/90-91	210,162	1,789,208	0.851	1.194	1.016	1.282	1.304	0.327	0.849	0.846
6/30/91-92	205,241	1,295,525	0.631	1.189	0.750	1.270	0.953	0.331	0.628	0.625
6/30/92-93	176,705	1,131,038	0.640	1.189	0.761	1.257	0.957	0.334	0.623	0.631
6/30/93-94	173,075	667,971	0.386	1.178	0.455	1.245	0.566	0.341	0.386	0.384
6/30/94-95	178,317	881,763	0.494	1.170	0.579	1.232	0.713	0.347	0.488	0.487
6/30/95-96	175,996	838,486	0.476	1.155	0.550	1.220	0.672	0.355	0.471	0.469
6/30/96-97	190,083	562,775	0.296	1.137	0.337	1.208	0.407	0.364	0.302	0.301
6/30/97-98	177,278	533,738	0.301	1.135	0.342	1.196	0.409	0.368	0.309	0.306
6/30/98-99	189,080	763,574	0.404	1.135	0.458	1.184	0.543	0.372	0.385	0.401
6/30/99-00	194,494	642,742	0.330	1.135	0.375	1.173	0.440	0.376	0.339	0.335
6/30/00-01	201,568	811,633	0.403	1.109	0.447	1.161	0.519	0.388	0.407	0.401
6/30/01-02	203,105	670,459	0.330	1.101	0.363	1.149	0.418	0.395	0.342	0.337
6/30/02-03	202,515	799,385	0.395	1.073	0.424	1.138	0.482	0.409	0.392	0.396
6/30/03-04	189,588	1,453,544	0.767	1.046	0.802	1.127	0.904	0.424	0.727	0.732
6/30/04-05	186,990	1,023,453	0.547	1.036	0.567	1.116	0.632	0.433	0.458	0.433
6/30/05-06	193,254	925,938	0.479	1.032	0.494	1.105	0.546	0.439	0.466	0.439
6/30/06-07	203,359	778,049	0.383	1.032	0.395	1.094	0.432	0.443	0.473	0.443
6/30/07-08	212,083	786,820	0.371	1.032	0.383	1.083	0.415	0.447	0.480	0.447
6/30/08-09	204,679	840,766	0.411	1.027	0.422	1.072	0.452	0.454	0.490	0.454
6/30/09-10	184,688	630,862	0.342	1.000	0.342	1.062	0.363	0.471	0.511	0.471
6/30/10-11	169,689	940,607	0.554	1.000	0.554	1.051	0.583	0.476	0.518	0.476
6/30/11-12	177,399	719,863	0.406	1.000	0.406	1.041	0.422	0.480	0.526	0.480
6/30/12-13	189,252	829,565	0.438	1.000	0.438	1.030	0.452	0.485	0.534	0.485
6/30/13-14	199,876	817,793	0.409	1.000	0.409	1.020	0.417	0.490	0.542	0.490
6/30/14-15	213,700	1,288,872	0.603	1.000	0.603	1.010	0.609	0.495		0.495
Total	4,802,178	22,424,429								

Trend Last 4 (ex 14-15):	-8.0%	Avg 3 (ex 14-15):	0.430
Trend Last 8 (ex 14-15):	1.6%	Avg 5 (ex 14-15):	0.447
Trend Last 12 (ex 14-15):	-2.7%	Avg 10 (ex 14-15):	0.471
Prior Selected Trend:	1.5%	Prior Sel Avg:	0.550
Selected Trend:	1.0%	Sel. Loss Cost:	0.500

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 3, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.950	
(2)	Credibility		32%	
(3)	Average Pmt Trend Statewide		0.950	
(4)	Credibility Weighted Trend		0.950	
		(Low)		(High)
(5)	Selected Range	0.941		0.960
(6)	Incremental Paid for 2015	495		495
(7)	Estimated Reserve	7,824		11,727
(8)	Paid to Date (82 & Prior)	813,207		813,207
(9)	Est Ult Paid for 1982 & Prior	821,031		824,934

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	165	0
(11)	Projected Number of Years	7	7
(12)	Estimated Reserve	1,155	0
(13)	Paid to Date (82 & Prior)	813,207	812,712
(14)	Est Ult Paid for 1982 & Prior	814,362	812,712
(14a)	Paid Counts During Fiscal Year	2	0

		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	817,697	818,823
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**817,697**	**818,823**
(18)	Implied Tail	1.006	1.007
(19)	Ult Loss Inc Lump Sums @ 6/15	812,712	821,958

NOTES:

(1) From Section 3, Exhibit 2, Page 6
(2) = (Average of Section 3, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 3, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 3, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	51,889	10.857			
1993	2	26,449	10.183	0.510		
1994	3	19,386	9.872	0.733		
1995	4	14,214	9.562	0.733		
1996	5	30,374	10.321	2.137		
1997	6	29,871	10.305	0.983		
1998	7	19,565	9.881	0.655		
1999	8	34,912	10.461	1.784		
2000	9	33,563	10.421	0.961	n =	21
2001	10	21,898	9.994	0.652	S(x) =	42,045
2002	11	10,530	9.262	0.481	S(x-sq) =	84,180,935
2003	12	13,888	9.539	1.319	S(xy) =	407,572
2004	13	14,770	9.600	1.064	S(y) =	204
2005	14	16,486	9.710	1.116	D =	17,610
2006	15	16,533	9.713	1.003	slope =	-0.096
2007	16	15,051	9.619	0.910	Avg Trend =	0.904
2008	17	15,931	9.676	1.058		
2009	18	15,802	9.668	0.992		
2010	19	17,686	9.781	1.119		
2011	20	7,925	8.978	0.448		
2012	21	0				
2013	22	0				
2014	23	0				
2015	24	495	6.205			
					Selected Trend:	**0.950**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2011: 0.448 = 7925 / 17686

Commonwealth of Massachusetts Workers Compensation
Department of Mental Health - Cluster 2
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	6,910	16,771	25,010	31,963	39,548	47,447	55,206	65,979	79,676	97,881	109,437	118,040	122,472	123,657	124,261	124,960	125,364	127,246	128,435	128,594	128,869	130,242	130,978	131,631	133,115	134,239	135,539	136,526	137,668	137,734	137,833	137,899	138,560
June-84	15,115	36,685	54,706	69,914	86,505	104,208	114,043	135,514	154,763	169,780	196,611	201,984	204,351	205,488	205,929	206,289	207,062	207,303	207,590	207,590	207,590	207,590	207,590	207,590	207,590	209,040	209,040	209,040	209,040	209,040	209,040	209,040	
June-85	45,034	109,301	162,993	208,305	264,045	295,679	375,978	436,398	457,324	469,156	478,993	481,392	482,690	484,957	486,098	486,337	486,602	486,918	487,378	488,092	488,848	489,022	489,458	490,407	490,672	490,804	491,592	491,855	492,053	492,119	492,382		
June-86	31,328	76,036	113,387	149,251	177,640	201,245	224,645	234,675	242,982	244,710	248,077	248,146	248,146	248,464	249,109	249,459	249,459	249,734	249,759	250,509	253,317	253,317	253,317	257,775	257,775	257,775	257,775	257,775	257,775	257,775			
June-87	76,748	186,273	283,696	389,472	457,883	509,794	575,159	621,158	638,516	650,997	655,971	660,694	667,637	681,728	687,346	690,455	693,082	696,366	698,158	699,573	700,478	701,229	701,978	702,712	702,835	702,835	702,835	702,835	702,835				
June-88	178,894	502,531	738,028	895,402	1,063,080	1,183,773	1,248,121	1,279,736	1,298,796	1,310,333	1,339,541	1,367,561	1,385,075	1,399,869	1,424,718	1,427,592	1,445,010	1,498,101	1,524,412	1,550,835	1,609,155	1,632,873	1,663,246	1,690,901	1,720,638	1,733,092	1,753,364	1,848,480					
June-89	179,890	786,968	1,088,315	1,330,240	1,584,004	1,681,826	1,741,013	1,807,955	1,845,172	1,876,501	1,906,158	1,945,202	1,962,565	1,969,371	1,973,430	1,978,126	1,981,710	1,986,429	2,002,120	2,035,745	2,040,920	2,043,319	2,045,069	2,046,563	2,047,864	2,049,094	2,050,041						
June-90	298,701	961,341	1,346,536	1,509,954	1,639,655	1,697,547	1,735,975	1,749,267	1,768,436	1,790,051	1,817,206	1,838,401	1,863,987	1,878,469	1,905,280	1,915,675	1,921,866	1,934,997	1,937,028	1,938,078	1,938,078	1,938,078	1,938,078	1,938,078	1,938,078	1,938,378							
June-91	336,650	1,034,501	1,248,801	1,338,322	1,397,546	1,497,111	1,506,640	1,518,859	1,530,350	1,582,638	1,604,133	1,610,563	1,618,558	1,622,507	1,624,821	1,627,667	1,633,766	1,732,296	1,736,277	1,737,397	1,738,820	1,740,878	1,741,982	1,744,875	1,746,213								
June-92	391,215	804,359	985,930	1,100,607	1,131,087	1,152,839	1,156,897	1,204,770	1,207,427	1,217,326	1,239,794	1,242,292	1,245,829	1,245,829	1,247,305	1,249,031	1,251,673	1,256,737	1,256,737	1,257,214	1,258,829	1,260,461	1,260,611	1,260,611									
June-93	258,020	628,980	745,922	854,118	902,554	912,950	924,291	930,378	935,510	938,871	941,935	946,379	956,312	969,261	977,539	988,688	1,003,269	1,015,451	1,027,786	1,045,649	1,059,121	1,078,986	1,097,266										
June-94	182,635	373,628	418,730	436,391	447,015	469,585	491,352	516,384	534,463	550,753	585,007	594,302	601,406	609,303	615,358	624,226	630,803	638,628	643,805	645,213	646,088	646,088											
June-95	212,717	409,284	509,019	570,032	608,100	631,875	651,359	673,340	687,056	708,855	725,773	748,542	771,912	790,063	800,522	812,267	823,958	831,209	836,947	844,533	849,477												
June-96	161,311	580,474	655,522	690,974	709,369	717,233	722,565	739,256	747,885	753,899	765,449	771,693	782,222	790,224	794,884	796,128	797,390	798,222	801,390	803,766													
June-97	135,202	301,857	352,150	378,182	408,711	433,559	446,704	473,023	486,546	493,154	499,117	502,144	505,108	509,796	517,517	522,815	524,946	533,925	536,788														
June-98	160,545	332,451	383,627	422,681	445,088	461,616	487,824	498,965	499,061	499,770	500,001	503,898	505,757	505,921	506,053	506,185	506,317	506,558															
June-99	177,752	299,718	340,747	360,722	405,072	439,482	477,272	520,347	561,026	584,273	585,114	588,553	606,906	637,239	655,001	683,204	721,085																
June-00	185,350	429,256	483,565	521,929	539,722	558,001	575,939	582,579	584,965	587,880	590,258	592,928	595,238	598,391	601,805	602,355																	
June-01	241,669	433,098	500,398	575,365	598,840	628,934	693,180	725,143	730,102	735,829	737,792	740,203	753,446	753,977	753,977																		
June-02	174,410	368,134	462,671	501,999	514,827	521,795	525,972	571,546	580,032	584,275	614,358	616,264	616,631	617,414																			
June-03	106,077	382,205	468,554	496,191	560,019	574,291	585,592	637,875	657,335	673,709	685,713	706,227	728,783																				
June-04	258,429	665,381	856,411	1,022,737	1,071,500	1,113,490	1,161,995	1,192,531	1,222,893	1,246,683	1,275,099	1,309,808																					
June-05	223,896	627,798	728,574	772,233	797,587	811,216	848,381	866,048	884,416	901,770	910,494																						
June-06	251,300	520,856	684,007	715,286	737,612	754,221	768,311	780,173	795,227	811,567																							
June-07	266,977	578,217	638,599	652,141	659,793	664,093	666,803	669,308	669,732																								
June-08	278,965	550,541	604,168	629,658	649,695	656,991	663,910	663,885																									
June-09	302,300	569,565	595,188	605,449	639,872	662,294	692,197																										
June-10	216,046	447,208	465,324	474,345	490,538	503,411																											
June-11	336,085	580,670	657,420	693,645	718,136																												
June-12	227,796	448,648	504,764	520,900																													
June-13	232,201	491,890	540,494																														
June-14	217,605	461,922																															
June-15	336,154																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.427	1.491	1.278	1.237	1.200	1.164	1.195	1.208	1.228	1.118	1.079	1.038	1.010	1.005	1.006	1.003	1.015	1.009	1.001	1.002	1.011	1.006	1.005	1.011	1.008	1.010	1.007	1.008	1.000	1.001	1.000	1.005	
June-84	2.427	1.491	1.278	1.237	1.205	1.094	1.188	1.142	1.097	1.158	1.027	1.012	1.006	1.002	1.002	1.004	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000		
June-85	2.427	1.491	1.278	1.268	1.120	1.272	1.161	1.048	1.026	1.021	1.005	1.003	1.005	1.002	1.000	1.001	1.001	1.001	1.001	1.002	1.000	1.001	1.002	1.001	1.000	1.002	1.001	1.000	1.000	1.001			
June-86	2.427	1.491	1.316	1.190	1.133	1.116	1.045	1.035	1.007	1.014	1.000	1.000	1.001	1.003	1.001	1.000	1.001	1.000	1.003	1.011	1.000	1.000	1.018	1.000	1.000	1.000	1.000	1.000	1.000				
June-87	2.427	1.523	1.373	1.176	1.113	1.128	1.080	1.028	1.020	1.008	1.007	1.011	1.021	1.008	1.005	1.004	1.005	1.003	1.002	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.000					
June-88	2.809	1.469	1.213	1.187	1.114	1.054	1.025	1.015	1.009	1.022	1.021	1.013	1.011	1.018	1.002	1.012	1.037	1.018	1.017	1.038	1.015	1.019	1.017	1.018	1.007	1.012	1.054						
June-89	4.375	1.383	1.222	1.191	1.062	1.035	1.038	1.021	1.017	1.016	1.020	1.009	1.003	1.002	1.002	1.002	1.002	1.008	1.017	1.003	1.001	1.001	1.001	1.001	1.001	1.000							
June-90	3.218	1.401	1.121	1.086	1.035	1.023	1.008	1.011	1.012	1.015	1.012	1.014	1.008	1.014	1.005	1.003	1.007	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000								
June-91	3.073	1.207	1.072	1.044	1.071	1.006	1.008	1.008	1.034	1.014	1.004	1.005	1.002	1.001	1.002	1.004	1.060	1.002	1.001	1.001	1.001	1.001	1.002	1.001									
June-92	2.056	1.226	1.116	1.028	1.019	1.004	1.041	1.002	1.008	1.018	1.002	1.003	1.000	1.001	1.001	1.002	1.004	1.000	1.000	1.001	1.001	1.000	1.000										
June-93	2.438	1.186	1.145	1.057	1.012	1.012	1.007	1.006	1.004	1.003	1.005	1.010	1.014	1.009	1.011	1.015	1.012	1.012	1.017	1.013	1.019	1.017											
June-94	2.046	1.121	1.042	1.024	1.050	1.046	1.051	1.035	1.030	1.062	1.016	1.012	1.013	1.010	1.014	1.011	1.012	1.008	1.002	1.001	1.000												
June-95	1.924	1.244	1.120	1.067	1.039	1.031	1.034	1.020	1.032	1.024	1.031	1.031	1.024	1.013	1.015	1.014	1.009	1.007	1.009	1.006													
June-96	3.598	1.129	1.054	1.027	1.011	1.007	1.023	1.012	1.008	1.015	1.008	1.014	1.010	1.006	1.002	1.002	1.001	1.004	1.003														
June-97	2.233	1.167	1.074	1.081	1.061	1.030	1.059	1.029	1.014	1.012	1.006	1.006	1.009	1.015	1.010	1.004	1.017	1.005															
June-98	2.071	1.154	1.102	1.053	1.037	1.057	1.023	1.000	1.001	1.000	1.008	1.004	1.000	1.000	1.000	1.000	1.000																
June-99	1.686	1.137	1.059	1.123	1.085	1.086	1.090	1.078	1.041	1.001	1.006	1.031	1.050	1.028	1.043	1.055																	
June-00	2.316	1.127	1.079	1.034	1.034	1.032	1.012	1.004	1.005	1.004	1.005	1.004	1.005	1.006	1.001																		
June-01	1.792	1.155	1.150	1.041	1.050	1.102	1.046	1.007	1.008	1.003	1.003	1.018	1.001	1.000																			
June-02	2.111	1.257	1.085	1.026	1.014	1.008	1.087	1.015	1.007	1.051	1.003	1.001	1.001																				
June-03	3.603	1.226	1.059	1.129	1.025	1.020	1.089	1.031	1.025	1.018	1.030	1.032																					
June-04	2.575	1.287	1.194	1.048	1.039	1.044	1.026	1.025	1.019	1.023	1.027																						
June-05	2.804	1.161	1.060	1.033	1.017	1.046	1.021	1.021	1.020	1.010																							
June-06	2.073	1.313	1.046	1.031	1.023	1.019	1.015	1.019	1.021																								
June-07	2.166	1.104	1.021	1.012	1.007	1.004	1.004	1.001																									
June-08	1.974	1.097	1.042	1.032	1.011	1.011	1.000																										
June-09	1.884	1.045	1.017	1.057	1.035	1.045																											
June-10	2.070	1.041	1.019	1.034	1.026																												
June-11	1.728	1.132	1.055	1.035																													
June-12	1.970	1.125	1.032																														
June-13	2.118	1.099																															
June-14	2.123																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.405	1.241	1.124	1.089	1.059	1.055	1.053	1.033	1.029	1.027	1.015	1.013	1.010	1.008	1.007	1.008	1.012	1.005	1.005	1.006	1.004	1.004	1.004	1.003	1.003	1.003	1.010	1.002	1.000	1.000	1.000		
Latest 5	2.002	1.088	1.033	1.034	1.020	1.025	1.013	1.019	1.018	1.021	1.014	1.017	1.012	1.010	1.011	1.015	1.008	1.007	1.006	1.004	1.004	1.004	1.004	1.004	1.002	1.003	1.011	1.002					
Latest 3	2.070	1.119	1.035	1.042	1.024	1.020	1.006	1.014	1.020	1.017	1.020	1.017	1.002	1.011	1.015	1.020	1.006	1.005	1.005	1.007	1.007	1.006	1.001	1.000	1.003	1.004	1.018	1.000	1.000	1.000			
Volume Wtd																																	
All Yrs	2.355	1.214	1.106	1.073	1.045	1.038	1.034	1.019	1.018	1.018	1.013	1.012	1.009	1.008	1.006	1.008	1.015	1.006	1.007	1.007	1.004	1.005	1.004	1.004	1.002	1.004	1.027	1.001	1.000	1.000	1.005		
Latest 5	1.976	1.089	1.034	1.034	1.020	1.026	1.015	1.020	1.019	1.020	1.016	1.018	1.011	1.010	1.012	1.016	1.008	1.008	1.007	1.004	1.004	1.003	1.004	1.004	1.002	1.004	1.028						
Latest 3	2.070	1.119	1.038	1.042	1.024	1.020	1.007	1.015	1.020	1.017	1.022	1.018	1.002	1.011	1.016	1.023	1.005	1.005	1.005	1.008	1.007	1.005	1.001	1.000	1.002	1.005	1.035	1.000	1.000				

Dev Factor Selection

Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*2.147*	*1.153*	*1.111*	*1.055*	*1.046*	*1.032*	*1.026*	*1.023*	*1.018*	*1.015*	*1.012*	*1.011*	*1.011*	*1.010*	*1.010*	*1.006*	*1.005*	*1.005*	*1.005*	*1.005*	*1.004*	*1.003*	*1.003*	*1.003*	*1.003*	*1.003*	*1.003*	*1.002*	*1.001*	*1.001*	*1.001*	*1.012*	
Selected	2.166	1.153	1.111	1.055	1.045	1.032	1.025	1.020	1.018	1.015	1.013	1.012	1.010	1.009	1.009	1.008	1.005	1.005	1.005	1.005	1.004	1.003	1.003	1.003	1.003	1.003	1.003	1.002	1.001	1.001	1.001	1.001	1.009
FacToUlt	3.834	1.770	1.535	1.382	1.310	1.253	1.215	1.185	1.162	1.141	1.124	1.110	1.097	1.086	1.076	1.067	1.059	1.054	1.048	1.043	1.038	1.034	1.031	1.028	1.025	1.022	1.019	1.015	1.013	1.012	1.011	1.010	1.009
Percent of Ult	26.1%	56.5%	65.2%	72.4%	76.3%	79.8%	82.3%	84.4%	86.1%	87.6%	89.0%	90.1%	91.2%	92.1%	92.9%	93.7%	94.4%	94.9%	95.4%	95.9%	96.3%	96.7%	97.0%	97.3%	97.6%	97.9%	98.2%	98.5%	98.7%	98.8%	98.9%	99.0%	99.1%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	812,712	821,958	817,697	818,823	4,985	0.6%	(3,135)	-0.4%
6/30/82-83	139,581	140,977	139,860	141,259	279	0.2%	282	0.2%
6/30/83-84	211,801	213,919	211,000	211,000	(801)	-0.4%	(2,919)	-1.4%
6/30/84-85	499,000	499,000	498,000	502,980	(1,000)	-0.2%	3,980	0.8%
6/30/85-86	262,000	262,000	261,000	261,000	(1,000)	-0.4%	(1,000)	-0.4%
6/30/86-87	715,000	715,000	712,000	713,000	(3,000)	-0.4%	(2,000)	-0.3%
6/30/87-88	1,784,000	1,789,000	1,872,000	1,877,000	88,000	4.9%	88,000	4.9%
6/30/88-89	2,097,000	2,097,000	2,088,000	2,088,000	(9,000)	-0.4%	(9,000)	-0.4%
6/30/89-90	1,977,000	1,996,000	1,977,000	1,997,000	0	0.0%	1,000	0.1%
6/30/90-91	1,796,000	1,796,000	1,789,000	1,789,000	(7,000)	-0.4%	(7,000)	-0.4%
6/30/91-92	1,286,000	1,298,000	1,286,000	1,298,000	0	0.0%	0	0.0%
6/30/92-93	1,117,000	1,118,000	1,131,000	1,142,310	14,000	1.3%	24,310	2.2%
6/30/93-94	672,000	672,000	668,000	668,000	(4,000)	-0.6%	(4,000)	-0.6%
6/30/94-95	882,000	883,000	881,000	882,000	(1,000)	-0.1%	(1,000)	-0.1%
6/30/95-96	841,000	842,000	838,000	846,380	(3,000)	-0.4%	4,380	0.5%
6/30/96-97	564,000	564,000	563,000	568,630	(1,000)	-0.2%	4,630	0.8%
6/30/97-98	537,000	538,000	534,000	539,340	(3,000)	-0.6%	1,340	0.2%
6/30/98-99	729,000	729,000	763,000	764,000	34,000	4.7%	35,000	4.8%
6/30/99-00	649,000	650,000	636,570	643,000	(12,430)	-1.9%	(7,000)	-1.1%
6/30/00-01	804,580	821,000	802,890	812,000	(1,690)	-0.2%	(9,000)	-1.1%
6/30/01-02	679,000	680,000	670,000	672,000	(9,000)	-1.3%	(8,000)	-1.2%
6/30/02-03	786,000	787,000	791,010	808,000	5,010	0.6%	21,000	2.7%
6/30/03-04	1,430,000	1,437,000	1,432,530	1,468,540	2,530	0.2%	31,540	2.2%
6/30/04-05	1,009,000	1,032,000	1,000,000	1,023,000	(9,000)	-0.9%	(9,000)	-0.9%
6/30/05-06	923,000	926,000	916,000	926,000	(7,000)	-0.8%	0	0.0%
6/30/06-07	797,000	824,000	778,000	795,000	(19,000)	-2.4%	(29,000)	-3.5%
6/30/07-08	811,000	849,000	787,000	812,000	(24,000)	-3.0%	(37,000)	-4.4%
6/30/08-09	836,000	870,000	841,000	857,000	5,000	0.6%	(13,000)	-1.5%
6/30/09-10	647,000	719,000	631,000	679,000	(16,000)	-2.5%	(40,000)	-5.6%
6/30/10-11	941,000	966,000	909,000	941,000	(32,000)	-3.4%	(25,000)	-2.6%
6/30/11-12	780,000	834,000	720,000	756,000	(60,000)	-7.7%	(78,000)	-9.4%
6/30/12-13	877,000	936,000	830,000	861,000	(47,000)	-5.4%	(75,000)	-8.0%
6/30/13-14	833,000	1,018,000	818,000	888,000	(15,000)	-1.8%	(130,000)	-12.8%
6/30/14-15								
Total	29,724,674	30,323,854	29,592,557	30,049,262	(132,117)	-0.4%	(274,592)	-0.9%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 3, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.9%	0.0%	0.2%	0.1%	1.000	1.000
396	99.1%	0.1%	0.9%	0.0%	0.0%	0.981	0.971
384	99.0%	0.1%	1.0%	0.0%	0.0%	0.946	0.922
372	98.9%	0.1%	1.1%	0.0%	0.0%	0.916	0.878
360	98.8%	0.1%	1.2%	0.0%	0.0%	0.889	0.840
348	98.7%	0.2%	1.3%	0.1%	0.0%	0.864	0.806
336	98.5%	0.3%	1.5%	0.1%	0.1%	0.850	0.788
324	98.2%	0.3%	1.8%	0.1%	0.1%	0.844	0.780
312	97.9%	0.3%	2.1%	0.1%	0.1%	0.835	0.769
300	97.6%	0.3%	2.4%	0.1%	0.1%	0.825	0.755
288	97.3%	0.3%	2.7%	0.1%	0.1%	0.813	0.740
276	97.0%	0.3%	3.0%	0.1%	0.1%	0.801	0.725
264	96.7%	0.4%	3.3%	0.2%	0.1%	0.789	0.709
252	96.3%	0.5%	3.7%	0.2%	0.1%	0.782	0.701
240	95.9%	0.5%	4.1%	0.2%	0.2%	0.778	0.697
228	95.4%	0.5%	4.6%	0.2%	0.2%	0.773	0.690
216	94.9%	0.5%	5.1%	0.2%	0.2%	0.765	0.681
204	94.4%	0.7%	5.6%	0.4%	0.3%	0.756	0.670
192	93.7%	0.8%	6.3%	0.4%	0.3%	0.756	0.671
180	92.9%	0.8%	7.1%	0.5%	0.3%	0.756	0.672
168	92.1%	0.9%	7.9%	0.5%	0.4%	0.753	0.669
156	91.2%	1.1%	8.8%	0.6%	0.5%	0.751	0.666
144	90.1%	1.1%	9.9%	0.7%	0.6%	0.750	0.665
132	89.0%	1.3%	11.0%	0.9%	0.7%	0.748	0.663
120	87.6%	1.6%	12.4%	1.1%	0.9%	0.747	0.663
108	86.1%	1.7%	13.9%	1.2%	1.0%	0.748	0.664
96	84.4%	2.0%	15.6%	1.5%	1.3%	0.748	0.664
84	82.3%	2.5%	17.7%	2.0%	1.7%	0.749	0.666
72	79.8%	3.4%	20.2%	2.8%	2.5%	0.753	0.672
60	76.3%	4.0%	23.7%	3.3%	3.1%	0.761	0.683
48	72.4%	7.2%	27.6%	6.3%	5.9%	0.768	0.691
36	65.2%	8.7%	34.8%	7.9%	7.5%	0.788	0.718
24	56.5%	30.4%	43.5%	28.7%	27.9%	0.802	0.736
12	26.1%	26.1%	73.9%	25.6%	25.3%	0.858	0.808
Total		100.0%					

NOTES:

(2) = 1 / Section 3, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	4,490	5,616		3,927	4,912
6/30/82-83	1,300	2,699	0.981	1,275	2,647
6/30/83-84	1,960	1,960	0.946	1,855	1,855
6/30/84-85	5,618	10,598	0.916	5,147	9,710
6/30/85-86	3,225	3,225	0.889	2,867	2,867
6/30/86-87	9,165	10,165	0.864	7,920	8,784
6/30/87-88	23,520	28,520	0.850	20,000	24,252
6/30/88-89	37,959	37,959	0.844	32,039	32,039
6/30/89-90	38,622	58,622	0.835	32,253	48,955
6/30/90-91	42,787	42,787	0.825	35,283	35,283
6/30/91-92	25,389	37,389	0.813	20,647	30,406
6/30/92-93	33,734	45,044	0.801	27,032	36,095
6/30/93-94	21,912	21,912	0.789	17,291	17,291
6/30/94-95	31,523	32,523	0.782	24,654	25,436
6/30/95-96	34,234	42,614	0.778	26,650	33,174
6/30/96-97	26,212	31,842	0.773	20,249	24,598
6/30/97-98	27,442	32,782	0.765	20,991	25,076
6/30/98-99	41,915	42,915	0.756	31,701	32,457
6/30/99-00	34,215	40,645	0.756	25,875	30,737
6/30/00-01	48,913	58,023	0.756	36,998	43,888
6/30/01-02	52,586	54,586	0.753	39,607	41,113
6/30/02-03	62,227	79,217	0.751	46,728	59,486
6/30/03-04	122,722	158,732	0.750	92,001	118,996
6/30/04-05	89,506	112,506	0.748	66,938	84,139
6/30/05-06	104,433	114,433	0.747	78,004	85,473
6/30/06-07	108,268	125,268	0.748	80,962	93,674
6/30/07-08	123,115	148,115	0.748	92,032	110,720
6/30/08-09	148,803	164,803	0.749	111,468	123,453
6/30/09-10	127,589	175,589	0.753	96,063	132,202
6/30/10-11	190,864	222,864	0.761	145,319	169,683
6/30/11-12	199,100	235,100	0.768	152,896	180,542
6/30/12-13	289,506	320,506	0.788	228,273	252,716
6/30/13-14	356,078	426,078	0.802	285,745	341,918
6/30/14-15	781,846	952,846	0.858	670,481	817,124
Total	3,250,778	3,878,484		2,581,172	3,081,706
			(7) Total Discount Factor:	0.794	0.795

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	4,490	5,616
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	641	802
(11) Discounted Value at 4%:	3,927	4,912

NOTES:
(2), (3) From Section 3, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 3, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Mental Health - Cluster 2
Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	4,490	5,616		3,688	4,613
6/30/82-83	1,300	2,699	0.971	1,263	2,621
6/30/83-84	1,960	1,960	0.922	1,806	1,806
6/30/84-85	5,618	10,598	0.878	4,934	9,309
6/30/85-86	3,225	3,225	0.840	2,709	2,709
6/30/86-87	9,165	10,165	0.806	7,386	8,191
6/30/87-88	23,520	28,520	0.788	18,524	22,462
6/30/88-89	37,959	37,959	0.780	29,608	29,608
6/30/89-90	38,622	58,622	0.769	29,686	45,058
6/30/90-91	42,787	42,787	0.755	32,309	32,309
6/30/91-92	25,389	37,389	0.740	18,798	27,683
6/30/92-93	33,734	45,044	0.725	24,461	32,661
6/30/93-94	21,912	21,912	0.709	15,547	15,547
6/30/94-95	31,523	32,523	0.701	22,101	22,802
6/30/95-96	34,234	42,614	0.697	23,871	29,714
6/30/96-97	26,212	31,842	0.690	18,092	21,977
6/30/97-98	27,442	32,782	0.681	18,687	22,323
6/30/98-99	41,915	42,915	0.670	28,097	28,767
6/30/99-00	34,215	40,645	0.671	22,964	27,280
6/30/00-01	48,913	58,023	0.672	32,880	39,004
6/30/01-02	52,586	54,586	0.669	35,159	36,496
6/30/02-03	62,227	79,217	0.666	41,458	52,778
6/30/03-04	122,722	158,732	0.665	81,628	105,580
6/30/04-05	89,506	112,506	0.663	59,367	74,622
6/30/05-06	104,433	114,433	0.663	69,188	75,813
6/30/06-07	108,268	125,268	0.664	71,896	83,185
6/30/07-08	123,115	148,115	0.664	81,754	98,355
6/30/08-09	148,803	164,803	0.666	99,160	109,823
6/30/09-10	127,589	175,589	0.672	85,690	117,927
6/30/10-11	190,864	222,864	0.683	130,330	152,181
6/30/11-12	199,100	235,100	0.691	137,653	162,542
6/30/12-13	289,506	320,506	0.718	207,931	230,196
6/30/13-14	356,078	426,078	0.736	262,106	313,632
6/30/14-15	781,846	952,846	0.808	631,964	770,183
Total	3,250,778	3,878,484		2,352,693	2,809,758
			(7) Total Discount Factor:	0.724	0.724

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	4,490	5,616
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	641	802
(11) Discounted Value at 6%:	3,688	4,613

NOTES:
(2), (3) From Section 3, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 3, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		3,996,538			4,651,743	5,166,577	655,205	1,170,039		
6/30/82-83		2,747,816	2,816,306		2,759,980	2,816,000	12,164	68,184		
6/30/83-84		1,405,260	1,443,688		1,414,814	1,444,000	9,554	38,740		
6/30/84-85	115,258	3,987,269	4,488,239	4,069,856	4,065,095	4,279,000	77,826	291,731	3.527	3.713
6/30/85-86	123,937	6,399,508	6,586,360	6,554,835	6,439,186	6,505,290	39,678	105,782	5.196	5.249
6/30/86-87	142,396	3,884,640	4,004,748	4,012,292	3,928,350	3,968,910	43,710	84,270	2.759	2.787
6/30/87-88	166,792	6,097,875	6,302,474	6,322,223	6,186,102	6,248,880	88,227	151,005	3.709	3.747
6/30/88-89	180,117	7,288,521	7,916,673	7,531,322	7,531,000	7,917,000	242,479	628,479	4.181	4.395
6/30/89-90	180,883	9,279,844	9,666,120	9,660,554	9,661,000	9,666,000	381,156	386,156	5.341	5.344
6/30/90-91	169,902	10,001,303	11,896,637	10,557,866	10,558,000	11,659,060	556,697	1,657,757	6.214	6.862
6/30/91-92	165,926	4,324,952	4,574,839	4,574,059	4,574,000	4,575,000	249,048	250,048	2.757	2.757
6/30/92-93	174,198	3,157,115	3,346,445	3,347,432	3,279,999	3,313,530	122,884	156,415	1.883	1.902
6/30/93-94	185,946	4,995,546	5,381,117	5,377,412	5,377,000	5,381,000	381,454	385,454	2.892	2.894
6/30/94-95	194,051	6,149,952	6,757,741	6,745,673	6,746,000	6,758,000	596,048	608,048	3.476	3.483
6/30/95-96	205,262	5,290,232	5,895,564	5,885,558	5,886,000	5,896,000	595,768	605,768	2.868	2.872
6/30/96-97	234,073	6,004,157	6,703,639	6,691,548	6,692,000	6,704,000	687,843	699,843	2.859	2.864
6/30/97-98	221,865	8,174,901	9,256,624	9,212,546	8,772,856	8,957,950	597,954	783,049	3.954	4.038
6/30/98-99	256,071	7,606,948	8,689,827	8,650,198	8,236,512	8,409,900	629,564	802,952	3.216	3.284
6/30/99-00	268,486	8,170,937	9,443,928	9,391,598	8,946,875	9,135,460	775,938	964,523	3.332	3.403
6/30/00-01	279,182	10,538,673	12,320,050	12,228,909	11,660,755	11,905,780	1,122,082	1,367,107	4.177	4.265
6/30/01-02	283,070	8,955,672	10,603,763	10,534,725	10,040,782	10,604,000	1,085,110	1,648,328	3.547	3.746
6/30/02-03	289,846	8,738,259	10,454,238	10,387,347	9,899,753	10,454,000	1,161,494	1,715,741	3.416	3.607
6/30/03-04	293,771	7,887,626	9,537,817	9,484,438	9,035,571	9,538,000	1,147,945	1,650,374	3.076	3.247
6/30/04-05	291,382	8,251,812	10,061,633	9,406,520	9,407,000	10,062,000	1,155,188	1,810,188	3.228	3.453
6/30/05-06	294,709	5,828,507	7,179,074	7,058,494	7,058,000	7,179,000	1,229,493	1,350,493	2.395	2.436
6/30/06-07	289,603	4,836,173	6,064,314	6,146,243	6,105,000	6,146,000	1,268,827	1,309,827	2.108	2.122
6/30/07-08	354,668	4,734,181	6,073,409	6,483,214	6,278,000	6,483,000	1,543,819	1,748,819	1.770	1.828
6/30/08-09	332,413	3,924,501	5,178,076	5,740,649	5,459,000	6,028,000	1,534,499	2,103,499	1.642	1.813
6/30/09-10	336,338	2,381,002	3,281,686	4,443,729	3,863,000	4,666,000	1,481,998	2,284,998	1.149	1.387
6/30/10-11	333,783	3,343,763	4,839,197	5,677,195	5,258,000	5,961,000	1,914,237	2,617,237	1.575	1.786
6/30/11-12	348,187	2,215,825	3,504,040	5,061,254	4,283,000	5,314,000	2,067,175	3,098,175	1.230	1.526
6/30/12-13	368,022	1,968,988	3,698,875	5,826,337	4,763,000	6,118,000	2,794,012	4,149,012	1.294	1.662
6/30/13-14	390,528	1,834,297	4,694,325	7,219,755	5,957,000	7,581,000	4,122,703	5,746,703	1.525	1.941
6/30/14-15	402,750	1,195,780	6,700,214	8,885,202	7,793,000	9,329,000	6,597,220	8,133,220	1.935	2.316
Total	7,873,416	185,598,373	219,361,677	223,168,979	222,567,371	236,170,337	36,968,998	50,571,965		
Tot 6/30/84-15	7,873,416	177,448,758	215,101,684	223,168,979	213,740,834	226,743,760	36,292,076	49,295,002	2.715	2.880

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 4, Exhibit 1, Page 2, Column 3 and Section 4, Exhibit 1, Page 9, Column 8

(4) From Section 4, Exhibit 1, Page 2, Column 8

(5) From Section 4, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		3,836,538							2	2		66
6/30/82-83		2,566,735	1.027	1.000	2,635,225	181,081	2,816,306		0	0		
6/30/83-84		1,386,759	1.028	1.000	1,425,187	18,501	1,443,688		0	0		
6/30/84-85	115,258	3,806,419	1.029	1.100	4,307,389	180,850	4,488,239	3.894	1	1	500,970	70
6/30/85-86	123,937	6,067,508	1.031	1.000	6,254,360	332,000	6,586,360	5.314	0	0		
6/30/86-87	142,396	3,544,280	1.034	1.000	3,664,388	340,360	4,004,748	2.812	0	0		
6/30/87-88	166,792	5,380,873	1.038	1.000	5,585,472	717,002	6,302,474	3.779	0	0		
6/30/88-89	180,117	6,662,320	1.042	1.050	7,290,472	626,201	7,916,673	4.395	2	1	628,152	58
6/30/89-90	180,883	8,334,944	1.046	1.000	8,721,220	944,900	9,666,120	5.344	2	1	386,277	72
6/30/90-91	169,902	8,901,535	1.055	1.150	10,796,869	1,099,768	11,896,637	7.002	4	4	473,834	69
6/30/91-92	165,926	3,941,701	1.063	1.000	4,190,630	384,209	4,574,839	2.757	2	1	248,929	79
6/30/92-93	174,198	2,519,814	1.075	1.000	2,707,550	638,894	3,346,445	1.921	0	0		
6/30/93-94	185,946	4,152,871	1.092	1.000	4,536,335	844,782	5,381,117	2.894	5	2	191,732	55
6/30/94-95	194,051	5,417,339	1.112	1.000	6,023,297	734,445	6,757,741	3.482	2	0		
6/30/95-96	205,262	4,734,439	1.128	1.000	5,338,381	557,183	5,895,564	2.872	2	1	603,943	59
6/30/96-97	234,073	5,236,556	1.132	1.000	5,929,226	774,413	6,703,639	2.864	1	2	346,335	58
6/30/97-98	221,865	7,743,183	1.138	1.000	8,812,839	443,785	9,256,624	4.172	4	2	534,828	52
6/30/98-99	256,071	7,430,895	1.144	1.000	8,499,698	190,130	8,689,827	3.394	2	1	1,068,802	71
6/30/99-00	268,486	7,894,835	1.159	1.000	9,147,450	296,478	9,443,928	3.517	1	0		
6/30/00-01	279,182	10,123,390	1.173	1.000	11,871,594	448,456	12,320,050	4.413	2	1	1,748,204	47
6/30/01-02	283,070	8,651,791	1.187	1.000	10,266,252	337,511	10,603,763	3.746	3	2	807,230	52
6/30/02-03	289,846	8,374,756	1.200	1.000	10,050,489	403,748	10,454,238	3.607	3	2	837,867	50
6/30/03-04	293,771	7,553,195	1.213	1.000	9,161,314	376,502	9,537,817	3.247	3	1	1,608,119	61
6/30/04-05	291,382	7,974,262	1.221	1.000	9,733,557	328,076	10,061,633	3.453	2	3	586,432	51
6/30/05-06	294,709	5,568,003	1.235	1.000	6,876,414	302,661	7,179,074	2.436	2	2	654,206	44
6/30/06-07	289,603	4,629,170	1.252	1.000	5,794,674	269,640	6,064,314	2.094	5	3	388,502	58
6/30/07-08	354,668	4,535,679	1.280	1.000	5,806,337	267,071	6,073,409	1.712	5	4	317,664	50
6/30/08-09	332,413	3,754,484	1.317	1.000	4,946,319	231,757	5,178,076	1.558	13	6	198,639	49
6/30/09-10	336,338	2,280,502	1.375	1.000	3,135,773	145,913	3,281,686	0.976	7	3	285,090	50
6/30/10-11	333,783	3,188,982	1.444	1.000	4,604,696	234,501	4,839,197	1.450	20	13	108,901	47
6/30/11-12	348,187	2,155,722	1.561	1.000	3,365,456	138,583	3,504,040	1.006	19	17	71,161	46
6/30/12-13	368,022	1,926,676	1.836	1.000	3,538,052	160,823	3,698,875	1.005	57	18	89,521	47
6/30/13-14	390,528	1,825,797	2.459	1.000	4,489,764	204,561	4,694,325	1.202	134	58	45,930	42
6/30/14-15	402,750	1,195,780	5.329	1.000	6,372,142	328,072	6,700,214	1.664		172	30,095	40
Total	7,873,416	173,297,732			205,878,821	13,482,857	219,361,677		305	323		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 4, Exhibit 1, Page 7

(5) Based on information from the MA WCRIB

(6) = (3) x (4) x (5)

(7) From Section 4, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	115,258	2.565	3,806,419	1.029	3,889,006	180,850	4,069,856	3.531	3.374
6/30/85-86	123,937	4.195	6,067,508	1.031	6,222,835	332,000	6,554,835	5.289	5.021
6/30/86-87	142,396	2.735	3,544,280	1.034	3,671,932	340,360	4,012,292	2.818	2.579
6/30/87-88	166,792	3.672	5,380,873	1.038	5,605,221	717,002	6,322,223	3.790	3.361
6/30/88-89	180,117	3.331	6,662,320	1.042	6,905,121	626,201	7,531,322	4.181	3.834
6/30/89-90	180,883	4.752	8,334,944	1.046	8,715,654	944,900	9,660,554	5.341	4.818
6/30/90-91	169,902	6.315	8,901,535	1.055	9,458,098	1,099,768	10,557,866	6.214	5.567
6/30/91-92	165,926	2.518	3,941,701	1.063	4,189,850	384,209	4,574,059	2.757	2.525
6/30/92-93	174,198	1.562	2,519,814	1.075	2,708,537	638,894	3,347,432	1.922	1.555
6/30/93-94	185,946	2.416	4,152,871	1.092	4,532,630	844,782	5,377,412	2.892	2.438
6/30/94-95	194,051	3.042	5,417,339	1.112	6,011,229	734,445	6,745,673	3.476	3.098
6/30/95-96	205,262	2.558	4,734,439	1.128	5,328,374	557,183	5,885,558	2.867	2.596
6/30/96-97	234,073	2.489	5,236,556	1.132	5,917,135	774,413	6,691,548	2.859	2.528
6/30/97-98	221,865	3.808	7,743,183	1.138	8,768,761	443,785	9,212,546	4.152	3.952
6/30/98-99	256,071	3.196	7,430,895	1.144	8,460,068	190,130	8,650,198	3.378	3.304
6/30/99-00	268,486	3.265	7,894,835	1.159	9,095,120	296,478	9,391,598	3.498	3.388
6/30/00-01	279,182	4.031	10,123,390	1.173	11,780,453	448,456	12,228,909	4.380	4.220
6/30/01-02	283,070	3.472	8,651,791	1.187	10,197,215	337,511	10,534,725	3.722	3.602
6/30/02-03	289,846	3.329	8,374,756	1.200	9,983,599	403,748	10,387,347	3.584	3.444
6/30/03-04	293,771	3.015	7,553,195	1.213	9,107,935	376,502	9,484,438	3.229	3.100
6/30/04-05	291,382	2.097	7,974,262	1.221	9,078,444	328,076	9,406,520	3.228	3.116
6/30/05-06	294,709	2.118	5,568,003	1.235	6,755,833	302,661	7,058,494	2.395	2.292
6/30/06-07	289,603	2.142	4,629,170	1.252	5,876,603	269,640	6,146,243	2.122	2.029
6/30/07-08	354,668	2.165	4,535,679	1.280	6,216,143	267,071	6,483,214	1.828	1.753
6/30/08-09	332,413	2.190	3,754,484	1.317	5,508,892	231,757	5,740,649	1.727	1.657
6/30/09-10	336,338	2.199	2,280,502	1.375	4,297,816	145,913	4,443,729	1.321	1.278
6/30/10-11	333,783	2.196	3,188,982	1.444	5,442,694	234,501	5,677,195	1.701	1.631
6/30/11-12	348,187	2.211	2,155,722	1.561	4,922,670	138,583	5,061,254	1.454	1.414
6/30/12-13	368,022	2.231	1,926,676	1.836	5,665,513	160,823	5,826,337	1.583	1.539
6/30/13-14	390,528	2.240	1,825,797	2.459	7,015,194	204,561	7,219,755	1.849	1.796
6/30/14-15	402,750	2.250	1,195,780	5.329	8,557,130	328,072	8,885,202	2.206	2.125
Total	7,873,416		165,507,700		209,885,704	13,283,275	223,168,979		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 4, Exhibit 1, Page 4, Column 11

(4) From Section 4, Exhibit 1, Page 2, Column 3

(5) From Section 4, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 4, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									2.565	2.565
6/30/85-86									4.195	4.195
6/30/86-87									2.735	2.735
6/30/87-88									3.672	3.672
6/30/88-89									3.331	3.331
6/30/89-90									4.752	4.752
6/30/90-91	169,902	10,796,869	6.355	0.963	6.119	1.000	6.119	2.337	7.095	6.315
6/30/91-92	165,926	4,190,630	2.526	1.056	2.668	1.000	2.668	2.130	2.524	2.518
6/30/92-93	174,198	2,707,550	1.554	1.232	1.915	1.000	1.915	1.827	1.596	1.562
6/30/93-94	185,946	4,536,335	2.440	1.216	2.966	1.000	2.966	1.850	2.449	2.416
6/30/94-95	194,051	6,023,297	3.104	1.205	3.739	1.000	3.739	1.868	3.100	3.042
6/30/95-96	205,262	5,338,381	2.601	1.195	3.108	1.000	3.108	1.883	2.596	2.558
6/30/96-97	234,073	5,929,226	2.533	1.183	2.997	1.000	2.997	1.901	2.538	2.489
6/30/97-98	221,865	8,812,839	3.972	1.168	4.640	1.000	4.640	1.926	3.837	3.808
6/30/98-99	256,071	8,499,698	3.319	1.153	3.826	1.000	3.826	1.952	3.274	3.196
6/30/99-00	268,486	9,147,450	3.407	1.134	3.864	1.000	3.864	1.984	3.360	3.265
6/30/00-01	279,182	11,871,594	4.252	1.105	4.701	1.000	4.701	2.035	4.148	4.031
6/30/01-02	283,070	10,266,252	3.627	1.084	3.931	1.000	3.931	2.076	3.572	3.472
6/30/02-03	289,846	10,050,489	3.468	1.080	3.745	1.000	3.745	2.083	3.426	3.329
6/30/03-04	293,771	9,161,314	3.119	1.080	3.368	1.000	3.368	2.083	3.099	3.015
6/30/04-05	291,382	9,733,557	3.340	1.073	3.585	1.000	3.585	2.097	2.343	2.097
6/30/05-06	294,709	6,876,414	2.333	1.062	2.478	1.000	2.478	2.118	2.367	2.118
6/30/06-07	289,603	5,794,674	2.001	1.051	2.102	1.000	2.102	2.142	2.393	2.142
6/30/07-08	354,668	5,806,337	1.637	1.039	1.701	1.000	1.701	2.165	2.419	2.165
6/30/08-09	332,413	4,946,319	1.488	1.027	1.529	1.000	1.529	2.190	2.448	2.190
6/30/09-10	336,338	3,135,773	0.932	1.023	0.954	1.000	0.954	2.199	2.457	2.199
6/30/10-11	333,783	4,604,696	1.380	1.025	1.413	1.000	1.413	2.196	2.454	2.196
6/30/11-12	348,187	3,365,456	0.967	1.018	0.984	1.000	0.984	2.211	2.470	2.211
6/30/12-13	368,022	3,538,052	0.961	1.009	0.970	1.000	0.970	2.231	2.488	2.231
6/30/13-14	390,528	4,489,764	1.150	1.005	1.155	1.000	1.155	2.240	2.500	2.240
6/30/14-15	402,750	6,372,142	1.582	1.000	1.582	1.000	1.582	2.250		2.250
Total	6,964,032	165,995,108								

Trend Last 4 (ex 14-15):	-6.0%	Avg 3 (ex 14-15):	1.036
Trend Last 8 (ex 14-15):	-9.0%	Avg 5 (ex 14-15):	1.095
Trend Last 12 (ex 14-15):	-12.6%	Avg 10 (ex 14-15):	1.687
Prior Selected Trend:	0.0%	Prior Sel Avg:	2.500
Selected Trend:	0.0%	Sel. Loss Cost:	2.250

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 4, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend	1.000	
(2)	Credibility	19%	
(3)	Average Pmt Trend Statewide	0.960	
(4)	Credibility Weighted Trend	0.968	
		(Low)	(High)
(5)	Selected Range	0.948	0.977
(6)	Incremental Paid for 2015	95,801	95,801
(7)	Estimated Reserve	1,755,953	4,123,226
(8)	Paid to Date (82 & Prior)	3,836,538	3,836,538
(9)	Est Ult Paid for 1982 & Prior	5,592,492	7,959,764

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	96,096	93,815
(11)	Projected Number of Years	3	3
(12)	Estimated Reserve	288,288	281,445
(13)	Paid to Date (82 & Prior)	3,836,538	3,740,737
(14)	Est Ult Paid for 1982 & Prior	4,124,827	4,022,182
(14a)	Paid Counts During Fiscal Year	2	2
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	4,491,743	5,006,577
(16)	Lump Sum Ultimates	160,000	160,000
(17)	Ult Loss Including Lump Sums	**4,651,743**	**5,166,577**
(18)	Implied Tail	1.171	1.305
(19)	Ult Loss Inc Lump Sums @ 6/14	4,543,917	5,067,310

NOTES:

(1) From Section 4, Exhibit 1, Page 6
(2) = (Average of Section 4, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 4, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 4, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 4, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	188,569	12.147			
1993	2	151,483	11.928	0.803		
1994	3	104,509	11.557	0.690		
1995	4	93,428	11.445	0.894		
1996	5	94,858	11.460	1.015		
1997	6	35,075	10.465	0.370		
1998	7	103,538	11.548	2.952		
1999	8	96,697	11.479	0.934		
2000	9	73,478	11.205	0.760	n =	24
2001	10	66,717	11.108	0.908	S(x) =	48,084
2002	11	70,033	11.157	1.050	S(x-sq) =	96,337,444
2003	12	124,671	11.733	1.780	S(xy) =	554,220
2004	13	92,927	11.440	0.745	S(y) =	277
2005	14	283,599	12.555	3.052	D =	27,600
2006	15	99,838	11.511	0.352	slope =	0.000
2007	16	101,854	11.531	1.020	Avg Trend =	1.000
2008	17	110,209	11.610	1.082		
2009	18	118,086	11.679	1.071		
2010	19	114,911	11.652	0.973		
2011	20	108,994	11.599	0.949		
2012	21	88,958	11.396	0.816		
2013	22	98,227	11.495	1.104		
2014	23	94,260	11.454	0.960		
2015	24	95,801	11.470	1.016		
					Selected Trend:	**1.000**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 1.016 = 95801 / 94260

Commonwealth of Massachusetts Workers Compensation
Department of Corrections - Cluster 3
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	160,888	374,220	534,542	675,661	811,997	954,058	1,116,909	1,304,184	1,471,217	1,635,013	1,757,490	1,859,844	1,949,141	2,029,453	2,148,093	2,178,681	2,205,456	2,235,374	2,318,345	2,353,359	2,388,924	2,424,404	2,461,295	2,499,289	2,538,974	2,566,735	2,566,735	2,566,735	2,566,735	2,566,735	2,566,735	2,566,735	2,566,735
June-84	149,256	331,713	467,188	590,124	701,300	845,012	973,143	1,100,933	1,224,966	1,294,374	1,350,379	1,377,980	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	1,386,759	
June-85	278,562	647,928	925,510	1,158,844	1,390,342	1,636,071	1,810,725	1,948,970	2,082,835	2,178,082	2,319,274	2,402,755	2,445,792	2,537,445	2,628,105	2,728,723	2,834,546	2,914,527	2,998,669	3,082,607	3,169,057	3,258,902	3,352,791	3,451,011	3,510,756	3,557,919	3,604,884	3,653,451	3,703,603	3,754,423	3,806,419		
June-86	597,558	1,389,906	1,985,364	2,475,336	2,928,617	3,253,763	3,464,240	3,764,813	3,935,847	4,097,154	4,211,904	4,374,071	4,479,419	4,611,691	4,746,846	4,891,689	5,026,555	5,162,645	5,288,465	5,417,172	5,551,316	5,691,506	5,810,912	5,922,767	6,004,210	6,066,309	6,067,508	6,067,508	6,067,508	6,067,508			
June-87	463,134	1,057,238	1,522,773	1,934,421	2,261,898	2,491,874	2,659,729	2,799,050	2,901,503	3,021,876	3,103,922	3,271,697	3,314,455	3,410,332	3,452,632	3,495,733	3,527,775	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280	3,544,280				
June-88	759,128	1,737,832	2,686,963	3,506,695	4,220,441	4,682,677	4,893,879	5,026,539	5,141,074	5,203,833	5,239,349	5,242,532	5,243,019	5,243,019	5,260,048	5,288,978	5,318,482	5,326,859	5,355,106	5,361,539	5,362,873	5,362,873	5,362,873	5,380,873	5,380,873	5,380,873	5,380,873	5,380,873					
June-89	680,636	1,738,554	2,435,784	3,057,497	3,492,498	3,784,686	4,070,002	4,251,487	4,490,766	4,687,032	4,846,109	4,998,762	5,152,745	5,318,978	5,453,186	5,596,167	5,742,890	5,832,925	5,929,581	6,031,181	6,137,243	6,244,608	6,352,619	6,475,512	6,535,663	6,603,324	6,662,320						
June-90	1,246,443	2,758,107	3,953,901	4,833,484	5,310,648	5,694,385	6,073,411	6,354,690	6,596,629	6,831,981	7,007,542	7,150,038	7,296,131	7,414,103	7,526,903	7,637,465	7,757,732	7,827,571	7,914,306	7,972,756	8,030,743	8,088,272	8,148,032	8,208,709	8,272,034	8,334,944							
June-91	1,000,517	2,462,230	3,477,661	4,227,150	4,729,807	5,106,814	5,363,266	5,600,518	5,854,394	6,102,795	6,340,515	6,600,177	6,839,938	7,070,212	7,325,430	7,572,623	7,805,418	8,019,651	8,226,001	8,354,608	8,448,679	8,541,379	8,674,427	8,786,248	8,901,535								
June-92	963,115	1,684,344	2,020,505	2,282,563	2,488,454	2,659,321	2,775,749	2,916,157	3,056,759	3,187,754	3,331,193	3,457,174	3,499,791	3,525,037	3,564,269	3,587,669	3,612,762	3,661,736	3,712,392	3,755,041	3,800,723	3,849,408	3,896,141	3,941,701									
June-93	801,947	1,527,666	1,907,058	2,209,630	2,348,676	2,429,818	2,460,521	2,483,853	2,505,893	2,512,506	2,512,506	2,515,387	2,517,666	2,518,289	2,518,289	2,518,289	2,518,289	2,518,289	2,518,289	2,518,289	2,519,814	2,519,814	2,519,814										
June-94	875,165	1,819,302	2,384,278	2,739,772	2,916,720	3,056,071	3,202,146	3,363,364	3,490,849	3,617,239	3,691,543	3,766,820	3,806,934	3,840,602	3,876,771	3,914,626	3,951,801	3,987,674	4,025,425	4,065,927	4,115,667	4,152,871											
June-95	1,066,149	2,306,245	2,941,602	3,493,104	3,941,201	4,297,491	4,665,184	4,944,044	5,062,779	5,143,804	5,226,875	5,309,969	5,385,490	5,413,698	5,413,698	5,413,698	5,415,952	5,416,002	5,416,002	5,417,339	5,417,339												
June-96	1,138,070	2,104,418	2,766,267	3,096,876	3,400,508	3,669,768	3,910,958	4,114,697	4,277,458	4,365,040	4,414,632	4,445,368	4,479,763	4,513,668	4,547,750	4,581,690	4,620,397	4,658,156	4,733,649	4,734,439													
June-97	1,262,694	2,691,990	3,329,480	3,919,297	4,322,162	4,636,666	4,943,217	5,112,087	5,158,225	5,193,663	5,222,438	5,229,461	5,229,461	5,232,465	5,232,465	5,232,660	5,233,422	5,235,361	5,236,556														
June-98	1,638,670	3,196,042	4,206,538	4,955,846	5,569,408	6,119,997	6,488,625	6,735,243	6,883,928	7,016,935	7,118,193	7,210,560	7,304,495	7,390,265	7,484,278	7,569,489	7,657,448	7,743,183															
June-99	1,336,118	2,975,082	4,075,622	4,979,874	5,739,985	6,193,457	6,542,142	6,776,193	6,959,053	7,099,219	7,215,948	7,278,599	7,305,413	7,335,907	7,367,640	7,401,488	7,430,895																
June-00	1,879,439	3,995,519	5,337,812	6,367,281	6,972,119	7,368,789	7,595,232	7,618,785	7,768,614	7,812,460	7,834,124	7,857,055	7,878,617	7,888,220	7,894,835	7,894,835																	
June-01	2,226,443	4,927,848	6,754,618	8,128,201	8,912,524	9,501,364	9,916,815	10,090,085	10,093,706	10,098,792	10,102,701	10,107,752	10,115,331	10,122,622	10,123,390																		
June-02	2,224,570	4,640,913	6,255,872	7,251,577	7,851,163	8,205,089	8,352,527	8,442,240	8,504,072	8,548,892	8,597,046	8,636,684	8,638,876	8,651,791																			
June-03	2,532,484	5,029,957	6,520,088	7,358,736	7,963,011	8,162,267	8,271,915	8,286,330	8,290,078	8,307,565	8,336,977	8,361,400	8,374,756																				
June-04	2,147,040	4,500,943	5,865,460	6,696,306	7,139,497	7,374,551	7,518,148	7,544,299	7,548,670	7,549,433	7,552,695	7,553,195																					
June-05	2,241,999	4,614,395	5,992,285	6,941,629	7,354,316	7,648,410	7,859,634	7,944,264	7,956,390	7,960,585	7,974,262																						
June-06	1,249,906	3,009,799	4,221,387	4,926,296	5,233,916	5,403,155	5,520,760	5,558,413	5,563,096	5,568,003																							
June-07	1,380,680	2,815,182	3,556,899	4,026,861	4,280,218	4,409,792	4,495,865	4,564,874	4,629,170																								
June-08	1,238,290	2,624,403	3,322,948	3,832,582	4,162,771	4,361,974	4,466,756	4,535,679																									
June-09	1,050,261	2,223,832	2,862,597	3,295,878	3,498,318	3,641,036	3,754,484																										
June-10	907,606	1,619,359	1,983,041	2,120,199	2,204,203	2,280,502																											
June-11	985,007	2,210,801	2,754,241	3,017,762	3,188,982																												
June-12	628,004	1,365,683	1,786,119	2,155,722																													
June-13	594,769	1,413,063	1,926,676																														
June-14	832,638	1,825,797																															
June-15	1,195,780																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.326	1.428	1.264	1.202	1.175	1.171	1.168	1.128	1.111	1.075	1.058	1.048	1.041	1.058	1.014	1.012	1.014	1.037	1.015	1.015	1.015	1.015	1.015	1.016	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000
June-84	2.222	1.408	1.263	1.188	1.205	1.152	1.131	1.113	1.057	1.043	1.020	1.006	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	1.000	1.000	1.000	1.000	1.000	
June-85	2.326	1.428	1.252	1.200	1.177	1.107	1.076	1.069	1.046	1.065	1.036	1.018	1.037	1.036	1.038	1.039	1.028	1.029	1.028	1.028	1.028	1.029	1.029	1.017	1.013	1.013	1.013	1.014	1.014	1.014		
June-86	2.326	1.428	1.247	1.183	1.111	1.065	1.087	1.045	1.041	1.028	1.039	1.024	1.030	1.029	1.031	1.028	1.027	1.024	1.024	1.025	1.025	1.021	1.019	1.014	1.010	1.000	1.000	1.000	1.000			
June-87	2.283	1.440	1.270	1.169	1.102	1.067	1.052	1.037	1.041	1.027	1.054	1.013	1.029	1.012	1.012	1.009	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
June-88	2.289	1.546	1.305	1.204	1.110	1.045	1.027	1.023	1.012	1.007	1.001	1.000	1.000	1.003	1.005	1.006	1.002	1.005	1.001	1.000	1.000	1.000	1.003	1.000	1.000	1.000	1.000					
June-89	2.554	1.401	1.255	1.142	1.084	1.075	1.045	1.056	1.044	1.034	1.032	1.031	1.032	1.025	1.026	1.026	1.016	1.017	1.017	1.018	1.017	1.017	1.019	1.009	1.010	1.009						
June-90	2.213	1.434	1.222	1.099	1.072	1.067	1.046	1.038	1.036	1.026	1.020	1.020	1.016	1.015	1.015	1.016	1.009	1.011	1.007	1.007	1.007	1.007	1.007	1.008	1.008							
June-91	2.461	1.412	1.216	1.119	1.080	1.050	1.044	1.045	1.042	1.039	1.041	1.036	1.034	1.036	1.034	1.031	1.027	1.026	1.016	1.011	1.011	1.016	1.013	1.013								
June-92	1.749	1.200	1.130	1.090	1.069	1.044	1.051	1.048	1.043	1.045	1.038	1.012	1.007	1.011	1.007	1.007	1.014	1.014	1.011	1.012	1.013	1.012	1.012									
June-93	1.905	1.248	1.159	1.063	1.035	1.013	1.009	1.009	1.003	1.000	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.001	1.000	1.000										
June-94	2.079	1.311	1.149	1.065	1.048	1.048	1.050	1.038	1.036	1.021	1.020	1.011	1.009	1.009	1.010	1.009	1.009	1.009	1.010	1.012	1.009											
June-95	2.163	1.275	1.187	1.128	1.090	1.086	1.060	1.024	1.016	1.016	1.016	1.014	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000												
June-96	1.849	1.315	1.120	1.098	1.079	1.066	1.052	1.040	1.020	1.011	1.007	1.008	1.008	1.008	1.007	1.008	1.008	1.016	1.000													
June-97	2.132	1.237	1.177	1.103	1.073	1.066	1.034	1.009	1.007	1.006	1.001	1.000	1.001	1.000	1.000	1.000	1.000	1.000														
June-98	1.950	1.316	1.178	1.124	1.099	1.060	1.038	1.022	1.019	1.014	1.013	1.013	1.012	1.013	1.011	1.012	1.011															
June-99	2.227	1.370	1.222	1.153	1.079	1.056	1.036	1.027	1.020	1.016	1.009	1.004	1.004	1.004	1.005	1.004																
June-00	2.126	1.336	1.193	1.095	1.057	1.031	1.003	1.020	1.006	1.003	1.003	1.003	1.001	1.001	1.000																	
June-01	2.213	1.371	1.203	1.096	1.066	1.044	1.017	1.000	1.001	1.000	1.000	1.001	1.001	1.000																		
June-02	2.086	1.348	1.159	1.083	1.045	1.018	1.011	1.007	1.005	1.006	1.005	1.000	1.001																			
June-03	1.986	1.296	1.129	1.082	1.025	1.013	1.002	1.000	1.002	1.004	1.003	1.002																				
June-04	2.096	1.303	1.142	1.066	1.033	1.019	1.003	1.001	1.000	1.000	1.000																					
June-05	2.058	1.299	1.158	1.059	1.040	1.028	1.011	1.002	1.001	1.002																						
June-06	2.408	1.403	1.167	1.062	1.032	1.022	1.007	1.001	1.001																							
June-07	2.039	1.263	1.132	1.063	1.030	1.020	1.015	1.014																								
June-08	2.119	1.266	1.153	1.086	1.048	1.024	1.015																									
June-09	2.117	1.287	1.151	1.061	1.041	1.031																										
June-10	1.784	1.225	1.069	1.040	1.035																											
June-11	2.244	1.246	1.096	1.057																												
June-12	2.175	1.308	1.207																													
June-13	2.376	1.363																														
June-14	2.193																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.159	1.339	1.186	1.110	1.076	1.055	1.042	1.033	1.025	1.021	1.019	1.013	1.013	1.014	1.012	1.012	1.011	1.013	1.009	1.010	1.010	1.011	1.012	1.009	1.007	1.003	1.002	1.003	1.003	1.005	1.000		
Latest 5	2.154	1.286	1.135	1.061	1.037	1.025	1.010	1.003	1.002	1.002	1.002	1.002	1.004	1.004	1.005	1.005	1.006	1.005	1.004	1.007	1.008	1.010	1.011	1.006	1.006	1.004	1.003	1.003					
Latest 3	2.248	1.306	1.124	1.053	1.041	1.025	1.013	1.005	1.001	1.002	1.003	1.001	1.001	1.002	1.005	1.005	1.007	1.005	1.003	1.004	1.007	1.009	1.011	1.010	1.006	1.003	1.000	1.005	1.005	1.005			
Volume Wtd																																	
All Yrs	2.124	1.329	1.176	1.098	1.063	1.044	1.029	1.022	1.017	1.015	1.014	1.011	1.011	1.012	1.012	1.013	1.011	1.013	1.010	1.010	1.011	1.012	1.012	1.009	1.007	1.004	1.002	1.003	1.004	1.007	1.000	1.000	
Latest 5	2.136	1.281	1.135	1.064	1.037	1.025	1.010	1.003	1.002	1.002	1.002	1.002	1.004	1.004	1.005	1.005	1.006	1.005	1.004	1.008	1.009	1.012	1.011	1.007	1.006	1.004	1.002	1.003					
Latest 3	2.240	1.296	1.118	1.054	1.042	1.025	1.012	1.004	1.000	1.002	1.003	1.001	1.001	1.002	1.005	1.006	1.007	1.005	1.003	1.004	1.008	1.012	1.011	1.010	1.006	1.004	1.000	1.004	1.005	1.007			

Dev Factor Selection																																	
Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	*2.168*	*1.338*	*1.176*	*1.082*	*1.051*	*1.044*	*1.030*	*1.023*	*1.014*	*1.012*	*1.007*	*1.011*	*1.012*	*1.013*	*1.013*	*1.014*	*1.005*	*1.008*	*1.009*	*1.014*	*1.018*	*1.017*	*1.013*	*1.008*	*1.008*	*1.004*	*1.004*	*1.004*	*1.003*	*1.002*	*1.001*	*1.027*	
Selected	2.167	1.339	1.176	1.081	1.050	1.044	1.029	1.023	1.014	1.012	1.006	1.011	1.011	1.012	1.012	1.013	1.005	1.005	1.004	1.014	1.018	1.017	1.011	1.008	1.008	1.004	1.004	1.004	1.003	1.002	1.001	1.001	1.027
FacToUlt	5.329	2.459	1.836	1.561	1.444	1.375	1.317	1.280	1.252	1.235	1.221	1.213	1.200	1.187	1.173	1.159	1.144	1.138	1.132	1.128	1.112	1.092	1.075	1.063	1.055	1.046	1.042	1.038	1.034	1.031	1.029	1.028	1.027
Percent of Ult	18.8%	40.7%	54.5%	64.1%	69.3%	72.7%	75.9%	78.1%	79.9%	81.0%	81.9%	82.4%	83.3%	84.3%	85.3%	86.3%	87.4%	87.9%	88.3%	88.7%	89.9%	91.5%	93.1%	94.1%	94.8%	95.6%	96.0%	96.3%	96.7%	97.0%	97.2%	97.3%	97.4%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	4,543,917	5,067,310	4,651,743	5,166,577	107,826	2.4%	99,267	2.0%
6/30/82-83	2,788,339	2,817,000	2,759,980	2,816,000	(28,360)	-1.0%	(1,000)	0.0%
6/30/83-84	1,407,700	1,444,000	1,414,814	1,444,000	7,114	0.5%	0	0.0%
6/30/84-85	4,016,081	4,227,000	4,065,095	4,279,000	49,014	1.2%	52,000	1.2%
6/30/85-86	6,450,654	6,582,000	6,439,186	6,505,290	(11,468)	-0.2%	(76,710)	-1.2%
6/30/86-87	4,016,000	4,024,000	3,928,350	3,968,910	(87,650)	-2.2%	(55,090)	-1.4%
6/30/87-88	6,320,000	6,340,000	6,186,102	6,248,880	(133,898)	-2.1%	(91,120)	-1.4%
6/30/88-89	7,490,000	8,219,000	7,531,000	7,917,000	41,000	0.5%	(302,000)	-3.7%
6/30/89-90	9,655,000	9,661,000	9,661,000	9,666,000	6,000	0.1%	5,000	0.1%
6/30/90-91	10,434,000	12,943,260	10,558,000	11,659,060	124,000	1.2%	(1,284,200)	-9.9%
6/30/91-92	4,576,000	4,576,000	4,574,000	4,575,000	(2,000)	0.0%	(1,000)	0.0%
6/30/92-93	3,394,000	3,396,000	3,279,999	3,313,530	(114,001)	-3.4%	(82,470)	-2.4%
6/30/93-94	5,423,000	5,426,000	5,377,000	5,381,000	(46,000)	-0.8%	(45,000)	-0.8%
6/30/94-95	6,839,000	6,851,000	6,746,000	6,758,000	(93,000)	-1.4%	(93,000)	-1.4%
6/30/95-96	5,910,000	5,917,000	5,886,000	5,896,000	(24,000)	-0.4%	(21,000)	-0.4%
6/30/96-97	6,776,000	6,785,000	6,692,000	6,704,000	(84,000)	-1.2%	(81,000)	-1.2%
6/30/97-98	9,236,000	9,280,000	8,772,856	8,957,950	(463,144)	-5.0%	(322,050)	-3.5%
6/30/98-99	8,810,000	8,851,000	8,236,512	8,409,900	(573,488)	-6.5%	(441,100)	-5.0%
6/30/99-00	9,148,877	9,657,000	8,946,875	9,135,460	(202,002)	-2.2%	(521,540)	-5.4%
6/30/00-01	11,932,632	12,561,000	11,660,755	11,905,780	(271,877)	-2.3%	(655,220)	-5.2%
6/30/01-02	10,775,000	10,845,000	10,040,782	10,604,000	(734,218)	-6.8%	(241,000)	-2.2%
6/30/02-03	10,123,045	10,689,000	9,899,753	10,454,000	(223,292)	-2.2%	(235,000)	-2.2%
6/30/03-04	9,219,954	9,729,000	9,035,571	9,538,000	(184,384)	-2.0%	(191,000)	-2.0%
6/30/04-05	9,674,000	10,313,000	9,407,000	10,062,000	(267,000)	-2.8%	(251,000)	-2.4%
6/30/05-06	7,360,000	7,381,000	7,058,000	7,179,000	(302,000)	-4.1%	(202,000)	-2.7%
6/30/06-07	6,323,000	6,438,000	6,105,000	6,146,000	(218,000)	-3.4%	(292,000)	-4.5%
6/30/07-08	6,579,000	6,908,000	6,278,000	6,483,000	(301,000)	-4.6%	(425,000)	-6.2%
6/30/08-09	5,756,000	6,499,000	5,459,000	6,028,000	(297,000)	-5.2%	(471,000)	-7.2%
6/30/09-10	4,199,000	5,252,000	3,863,000	4,666,000	(336,000)	-8.0%	(586,000)	-11.2%
6/30/10-11	5,668,000	6,612,000	5,258,000	5,961,000	(410,000)	-7.2%	(651,000)	-9.8%
6/30/11-12	4,695,000	6,215,000	4,283,000	5,314,000	(412,000)	-8.8%	(901,000)	-14.5%
6/30/12-13	5,391,000	7,431,000	4,763,000	6,118,000	(628,000)	-11.6%	(1,313,000)	-17.7%
6/30/13-14	6,879,000	9,470,000	5,957,000	7,581,000	(922,000)	-13.4%	(1,889,000)	-19.9%
6/30/14-15								
Total	221,809,200	238,406,570	214,774,371	226,841,337	(7,034,829)	-3.2%	(11,565,233)	-4.9%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 4, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	3,836,538	1.238	4,749,160	0.0%	0.0%	0	160,000	160,000	3.4%	1.000	160,000	160,000	160,000
6/30/82-83	2,566,735	1.027	2,635,225	0.0%	0.0%	0	181,081	181,081	6.9%	1.000	181,081	181,081	181,081
6/30/83-84	1,386,759	1.028	1,425,187	0.0%	0.0%	0	18,501	18,501	1.3%	1.000	18,501	18,501	18,501
6/30/84-85	3,806,419	1.132	4,307,389	0.0%	0.0%	0	180,850	180,850	4.2%	1.000	180,850	180,850	180,850
6/30/85-86	6,067,508	1.031	6,254,360	0.0%	0.0%	0	332,000	332,000	5.3%	1.000	332,000	332,000	332,000
6/30/86-87	3,544,280	1.034	3,664,388	0.0%	0.0%	0	340,360	340,360	9.3%	1.000	340,360	340,360	340,360
6/30/87-88	5,380,873	1.038	5,585,472	0.0%	0.0%	0	717,002	717,002	12.8%	1.000	717,002	717,002	717,002
6/30/88-89	6,662,320	1.094	7,290,472	0.0%	0.0%	0	626,201	626,201	8.6%	1.000	626,201	626,201	626,201
6/30/89-90	8,334,944	1.046	8,721,220	0.0%	0.0%	0	944,900	944,900	10.8%	1.000	944,900	944,900	944,900
6/30/90-91	8,901,535	1.213	10,796,869	0.0%	0.0%	0	1,099,768	1,099,768	10.2%	1.000	1,099,768	1,099,768	941,768
6/30/91-92	3,941,701	1.063	4,190,630	0.0%	0.0%	0	383,251	383,251	9.1%	1.005	385,167	384,209	383,251
6/30/92-93	2,519,814	1.075	2,707,550	0.0%	0.0%	0	637,301	637,301	23.5%	1.005	640,488	638,894	637,301
6/30/93-94	4,152,871	1.092	4,536,335	0.0%	0.0%	0	842,675	842,675	18.6%	1.005	846,888	844,782	842,675
6/30/94-95	5,417,339	1.112	6,023,297	0.0%	0.0%	0	732,613	732,613	12.2%	1.005	736,276	734,445	732,613
6/30/95-96	4,734,439	1.128	5,338,381	0.0%	0.0%	0	555,794	555,794	10.4%	1.005	558,573	557,183	523,725
6/30/96-97	5,236,556	1.132	5,929,226	0.1%	0.1%	5,929	767,601	773,530	13.0%	1.010	775,296	774,413	772,526
6/30/97-98	7,743,183	1.138	8,812,839	0.1%	0.2%	17,626	431,718	449,344	5.1%	1.015	438,226	443,785	441,635
6/30/98-99	7,430,895	1.144	8,499,698	0.1%	0.3%	25,499	176,053	201,552	2.4%	1.015	178,707	190,130	189,485
6/30/99-00	7,894,835	1.159	9,147,450	0.1%	0.4%	36,590	276,102	312,692	3.4%	1.015	280,264	296,478	295,768
6/30/00-01	10,123,390	1.173	11,871,594	0.1%	0.5%	59,358	415,283	474,641	4.0%	1.017	422,271	448,456	447,499
6/30/01-02	8,651,791	1.187	10,266,252	0.1%	0.6%	61,598	303,881	365,479	3.6%	1.019	309,543	337,511	338,119
6/30/02-03	8,374,756	1.200	10,050,489	0.1%	0.7%	70,353	363,503	433,856	4.3%	1.028	373,640	403,748	403,842
6/30/03-04	7,553,195	1.213	9,161,314	0.1%	0.8%	71,071	334,431	405,502	4.4%	1.039	347,503	376,502	372,670
6/30/04-05	7,974,262	1.221	9,733,557	0.1%	0.9%	85,747	277,550	363,297	3.7%	1.055	292,855	328,076	329,820
6/30/05-06	5,568,003	1.235	6,876,414	0.1%	1.0%	67,453	260,504	327,957	4.8%	1.065	277,364	302,661	305,864
6/30/06-07	4,629,170	1.252	5,794,674	0.1%	1.1%	62,637	207,003	269,640	4.7%	1.083	224,194	269,640	271,533
6/30/07-08	4,535,679	1.280	5,806,337	0.1%	1.2%	68,569	198,502	267,071	4.6%	1.105	219,279	267,071	268,478
6/30/08-09	3,754,484	1.317	4,946,319	0.1%	1.2%	61,740	170,017	231,757	4.7%	1.127	191,570	231,757	231,754
6/30/09-10	2,280,502	1.375	3,135,773	0.2%	1.4%	45,413	100,500	145,913	4.7%	1.199	120,543	145,913	157,823
6/30/10-11	3,188,982	1.444	4,604,696	0.3%	1.7%	79,720	154,781	234,501	5.1%	1.310	202,823	234,501	239,501
6/30/11-12	2,155,722	1.561	3,365,456	0.6%	2.3%	78,480	60,103	138,583	4.1%	1.665	100,048	138,583	132,560
6/30/12-13	1,926,676	1.836	3,538,052	1.0%	3.3%	118,511	42,312	160,823	4.5%	3.039	128,568	160,823	168,476
6/30/13-14	1,825,797	2.459	4,489,764	1.0%	4.4%	196,061	8,500	204,561	4.6%	11.091	94,271	204,561	223,612
6/30/14-15	1,195,780	5.329	6,372,142	0.8%	5.1%	328,072	0	328,072	5.1%	56.563	0	328,072	
Total	173,297,732		210,627,981			1,540,427	12,300,641	13,841,068	6.6%		12,745,020	13,642,857	13,153,192

NOTES:
(2) From Section 4, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 4, Exhibit 1, Page 2, Column 6
(5) From Section 4, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 4, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 4, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts Workers Compensation
Department of Corrections - Cluster 3
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	*0-12*	*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
All Prior Yrs	0	0	0	0	0	0	0	0	15,000	0	0	0	57,500	26,000	0	60,000	0	0	0	0	0	0	1,500	0	0	0	0	0	0	0	0	0	0	0
Jun-83	0	0	0	0	0	0	0	17,500	0	35,000	41,581	41,000	46,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	0	0	18,500	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jun-85	0	0	0	11,000	0	0	20,000	0	69,000	0	42,000	0	38,850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Jun-86	0	0	0	30,000	68,000	10,000	40,000	27,000	50,000	0	45,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48,000	2,000	12,000	0	0				
Jun-87	0	20,000	25,000	22,500	22,500	27,000	38,250	25,001	11,250	85,000	0	37,000	14,859	0	0	0	0	12,000	0	0	0	0	0	0	0	0	0	0	0					
Jun-88	0	31,500	17,000	20,000	40,000	191,500	199,000	23,000	102,000	30,000	60,000	0	0	0	0	0	0	3,000	0	1	0	0	0	1	0	0	0	0						
Jun-89	0	5,000	70,500	4,500	125,000	86,200	157,000	70,000	30,000	49,500	0	0	0	0	0	18,500	0	0	0	0	0	0	0	10,000	0	1	0							
Jun-90	0	16,700	104,500	133,000	151,700	139,500	73,000	98,000	40,000	170,000	1,000	0	0	0	0	0	0	0	5,000	12,500	0	0	0	0	0	0								
Jun-91	0	19,996	27,700	321,471	173,500	181,000	68,000	0	40,000	40,000	1	0	0	0	0	100	0	0	10,000	0	0	0	60,000	0	158,000									
Jun-92	0	30,500	94,000	95,000	50,000	90,000	0	0	0	0	0	11,250	0	0	12,501	0	0	0	0	0	0	0	0	0										
Jun-93	0	122,600	116,000	160,700	27,000	80,001	119,000	0	0	0	12,000	0	0	0	0	0	0	0	0	0	0	0	0											
Jun-94	52,000	162,000	181,925	221,000	101,000	77,500	7,500	7,500	0	15,750	0	4,500	6,000	0	0	0	0	6,000	0	0	0	0												
Jun-95	18,613	172,000	187,000	82,000	135,000	70,000	10,000	0	0	25,000	0	1,000	0	32,000	0	0	0	0	0	0	0													
Jun-96	0	35,000	32,000	335,000	0	0	0	0	12,000	15,000	23,000	0	0	0	0	0	0	0	71,725	32,069														
Jun-97	59,500	268,000	190,500	120,000	43,000	24,000	16,000	20,600	0	9,001	0	17,000	0	0	0	0	0	0	0															
Jun-98	56,500	160,501	125,715	0	10,000	29,000	20,800	12,201	9,000	8,001	0	0	0	0	0	0	0	0																
Jun-99	0	0	20,000	1	91,750	12,800	20,500	15,000	8,001	0	0	8,001	0	0	0	0	0																	
Jun-00	0	27,501	5,000	85,500	78,101	17,500	28,500	4,500	10,000	0	7,500	0	0	12,000	0	0																		
Jun-01	8,490	1	74,500	89,900	93,000	73,389	33,503	20,500	4,000	18,000	0	0	0	0	0																			
Jun-02	0	10,000	43,880	99,500	47,501	66,000	7,000	0	0	0	3,000	27,000	0	0																				
Jun-03	0	58,500	110,001	81,000	77,501	21,500	10,001	5,000	0	0	0	0	0																					
Jun-04	0	21,923	84,502	80,002	26,003	65,000	35,000	15,000	0	0	1,001	6,000																						
Jun-05	0	12,500	108,002	89,501	37,546	0	12,000	10,001	8,000	0	0																							
Jun-06	0	35,001	24,502	113,501	81,500	6,000	0	0	0	0																								
Jun-07	0	36,000	69,500	32,500	50,000	19,000	1	2	0																									
Jun-08	0	36,001	37,000	72,000	25,500	10,000	18,000	1																										
Jun-09	0	16,000	42,767	47,000	46,250	10,000	8,000																											
Jun-10	0	3,000	56,000	31,500	10,000	0																												
Jun-11	0	11,750	47,031	67,000	29,000																													
Jun-12	0	11,050	19,003	30,050																														
Jun-13	4,000	17,312	21,000																															
Jun-14	0	8,500																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	*12*	*24*	*36*	*48*	*60*	*72*	*84*	*96*	*108*	*120*	*132*	*144*	*156*	*168*	*180*	*192*	*204*	*216*	*228*	*240*	*252*	*264*	*276*	*288*	*300*	*312*	*324*	*336*	*348*	*360*	*372*	*384*	*396*	*408*
All Prior Yrs	0	0	0	0	0	0	0	0	15,000	15,000	15,000	15,000	72,500	98,500	98,500	158,500	158,500	158,500	158,500	158,500	158,500	158,500	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000
Jun-83	0	0	0	0	0	0	0	17,500	17,500	52,500	94,081	135,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081		
Jun-84	0	0	0	0	0	0	0	0	18,500	18,500	18,500	18,500	18,500	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501		
Jun-85	0	0	0	11,000	11,000	11,000	31,000	31,000	100,000	100,000	142,000	142,000	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850		
Jun-86	0	0	0	30,000	98,000	108,000	148,000	175,000	225,000	225,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	318,000	320,000	332,000	332,000	332,000				
Jun-87	0	20,000	45,000	67,500	90,000	117,000	155,250	180,251	191,501	276,501	276,501	313,501	328,360	328,360	328,360	328,360	328,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360					
Jun-88	0	31,500	48,500	68,500	108,500	300,000	499,000	522,000	624,000	654,000	714,000	714,000	714,000	714,000	714,000	714,000	714,000	717,000	717,000	717,001	717,001	717,001	717,001	717,002	717,002	717,002	717,002	717,002						
Jun-89	0	5,000	75,500	80,000	205,000	291,200	448,200	518,200	548,200	597,700	597,700	597,700	597,700	597,700	597,700	616,200	616,200	616,200	616,200	616,200	616,200	616,200	616,200	626,200	626,200	626,201	626,201							
Jun-90	0	16,700	121,200	254,200	405,900	545,400	618,400	716,400	756,400	926,400	927,400	927,400	927,400	927,400	927,400	927,400	927,400	927,400	932,400	944,900	944,900	944,900	944,900	944,900	944,900	944,900								
Jun-91	0	19,996	47,696	369,167	542,667	723,667	791,667	791,667	831,667	871,667	871,668	871,668	871,668	871,668	871,668	871,768	871,768	871,768	881,768	881,768	881,768	881,768	941,768	941,768	1,099,768									
Jun-92	0	30,500	124,500	219,500	269,500	359,500	359,500	359,500	359,500	359,500	359,500	370,750	370,750	370,750	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251										
Jun-93	0	122,600	238,600	399,300	426,300	506,301	625,301	625,301	625,301	625,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301											
Jun-94	52,000	214,000	395,925	616,925	717,925	795,425	802,925	810,425	810,425	826,175	826,175	830,675	836,675	836,675	836,675	836,675	842,675	842,675	842,675	842,675	842,675	842,675												
Jun-95	18,613	190,613	377,613	459,613	594,613	664,613	674,613	674,613	674,613	699,613	699,613	700,613	700,613	732,613	732,613	732,613	732,613	732,613	732,613	732,613	732,613													
Jun-96	0	35,000	67,000	402,000	402,000	402,000	402,000	402,000	414,000	429,000	452,000	452,000	452,000	452,000	452,000	452,000	452,000	452,000	523,725	555,794														
Jun-97	59,500	327,500	518,000	638,000	681,000	705,000	721,000	741,600	741,600	750,601	750,601	767,601	767,601	767,601	767,601	767,601	767,601	767,601	767,601															
Jun-98	56,500	217,001	342,716	342,716	352,716	381,716	402,516	414,717	423,717	431,718	431,718	431,718	431,718	431,718	431,718	431,718	431,718	431,718																
Jun-99	0	0	20,000	20,001	111,751	124,551	145,051	160,051	168,052	168,052	168,052	176,053	176,053	176,053	176,053	176,053	176,053																	
Jun-00	0	27,501	32,501	118,001	196,102	213,602	242,102	246,602	256,602	256,602	264,102	264,102	264,102	276,102	276,102	276,102																		
Jun-01	8,490	8,491	82,991	172,891	265,891	339,280	372,783	393,283	397,283	415,283	415,283	415,283	415,283	415,283	415,283																			
Jun-02	0	10,000	53,880	153,380	200,881	266,881	273,881	273,881	273,881	273,881	276,881	303,881	303,881	303,881																				
Jun-03	0	58,500	168,501	249,501	327,002	348,502	358,503	363,503	363,503	363,503	363,503	363,503	363,503																					
Jun-04	0	21,923	106,425	186,427	212,430	277,430	312,430	327,430	327,430	327,430	328,431	334,431																						
Jun-05	0	12,500	120,502	210,003	247,549	247,549	259,549	269,550	277,550	277,550	277,550																							
Jun-06	0	35,001	59,503	173,004	254,504	260,504	260,504	260,504	260,504	260,504																								
Jun-07	0	36,000	105,500	138,000	188,000	207,000	207,001	207,003	207,003																									
Jun-08	0	36,001	73,001	145,001	170,501	180,501	198,501	198,502																										
Jun-09	0	16,000	58,767	105,767	152,017	162,017	170,017																											
Jun-10	0	3,000	59,000	90,500	100,500	100,500																												
Jun-11	0	11,750	58,781	125,781	154,781																													
Jun-12	0	11,050	30,053	60,103																														
Jun-13	4,000	21,312	42,312																															
Jun-14	0	8,500																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
Department of Corrections - Cluster 3
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.012	0.005	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.013	0.016	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.003	0.000	0.000	0.005	0.000	0.016	0.000	0.010	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Jun-86	0.000	0.000	0.000	0.005	0.011	0.002	0.006	0.004	0.008	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.000	0.002	0.000	0.000				
Jun-87	0.000	0.005	0.007	0.006	0.006	0.007	0.010	0.007	0.003	0.023	0.000	0.010	0.004	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.006	0.003	0.004	0.007	0.034	0.036	0.004	0.018	0.005	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
Jun-89	0.000	0.001	0.010	0.001	0.017	0.012	0.022	0.010	0.004	0.007	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.002	0.012	0.015	0.017	0.016	0.008	0.011	0.005	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000								
Jun-91	0.000	0.002	0.003	0.030	0.016	0.017	0.006	0.000	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.006	0.000	0.015									
Jun-92	0.000	0.007	0.022	0.023	0.012	0.021	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.000	0.045	0.043	0.059	0.010	0.030	0.044	0.000	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
Jun-94	0.011	0.036	0.040	0.049	0.022	0.017	0.002	0.002	0.000	0.003	0.000	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.003	0.029	0.031	0.014	0.022	0.012	0.002	0.000	0.000	0.004	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.000	0.007	0.006	0.063	0.000	0.000	0.000	0.000	0.002	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.006														
Jun-97	0.010	0.045	0.032	0.020	0.007	0.004	0.003	0.003	0.000	0.002	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000															
Jun-98	0.006	0.018	0.014	0.000	0.001	0.003	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																
Jun-99	0.000	0.000	0.002	0.000	0.011	0.002	0.002	0.002	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000																	
Jun-00	0.000	0.003	0.001	0.009	0.009	0.002	0.003	0.000	0.001	0.000	0.001	0.000	0.000	0.001	0.000	0.000																		
Jun-01	0.001	0.000	0.006	0.008	0.008	0.006	0.003	0.002	0.000	0.002	0.000	0.000	0.000	0.000	0.000																			
Jun-02	0.000	0.001	0.004	0.010	0.005	0.006	0.001	0.000	0.000	0.000	0.000	0.003	0.000	0.000																				
Jun-03	0.000	0.006	0.011	0.008	0.008	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000																					
Jun-04	0.000	0.002	0.009	0.009	0.003	0.007	0.004	0.002	0.000	0.000	0.000	0.001																						
Jun-05	0.000	0.001	0.011	0.009	0.004	0.000	0.001	0.001	0.001	0.000	0.000																							
Jun-06	0.000	0.005	0.004	0.017	0.012	0.001	0.000	0.000	0.000	0.000																								
Jun-07	0.000	0.006	0.012	0.006	0.009	0.003	0.000	0.000	0.000																									
Jun-08	0.000	0.006	0.006	0.012	0.004	0.002	0.003	0.000																										
Jun-09	0.000	0.003	0.009	0.010	0.009	0.002	0.002																											
Jun-10	0.000	0.001	0.018	0.010	0.003	0.000																												
Jun-11	0.000	0.003	0.010	0.015	0.006																													
Jun-12	0.000	0.003	0.006	0.009																														
Jun-13	0.001	0.005	0.006																															
Jun-14	0.000	0.002																																
Jun-15	0.000																																	

Averages		12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
Simple Avg																																		
All Yrs (ex P)	0.001	0.008	0.011	0.014	0.008	0.007	0.006	0.002	0.003	0.004	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.001	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Latest 5	0.000	0.003	0.010	0.011	0.006	0.002	0.001	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.001	0.000	0.000	0.001	0.000	0.003	0.002	0.000	0.000	0.000					
Latest 3	0.000	0.003	0.007	0.011	0.006	0.001	0.002	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.002	0.000	0.000	0.002	0.000	0.005	0.000	0.000	0.001	0.000	0.000	0.000			
Olympic Avg																																		
All Yrs (ex P)	0.001	0.007	0.010	0.013	0.008	0.007	0.005	0.002	0.003	0.003	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.000	0.004	0.009	0.010	0.006	0.003	0.002	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000										
Latest 5	0.000	0.003	0.008	0.011	0.006	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					

Dev Factor Selection																																		
Prior	NA	0.008	0.011	0.007	0.006	0.004	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Selected	NA	0.008	0.010	0.010	0.006	0.003	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.051	0.044	0.033	0.023	0.017	0.014	0.012	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
Department of Corrections - Cluster 3
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	15,000	15,000	15,000	15,000	72,500	98,500	98,500	158,500	158,500	158,500	158,500	158,500	158,500	158,500	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000	160,000
Jun-83	0	0	0	0	0	0	0	17,500	17,500	52,500	94,081	135,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081	181,081		
Jun-84	0	0	0	0	0	0	0	0	18,500	18,500	18,500	18,500	18,500	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501	18,501		
Jun-85	0	0	0	11,000	11,000	11,000	31,000	31,000	100,000	100,000	142,000	142,000	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850	180,850			
Jun-86	0	0	0	30,000	98,000	108,000	148,000	175,000	225,000	225,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	318,000	320,000	332,000	332,000	332,000				
Jun-87	0	20,000	45,000	67,500	90,000	117,000	155,250	180,251	191,501	276,501	276,501	313,501	328,360	328,360	328,360	328,360	328,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360	340,360					
Jun-88	0	31,500	48,500	68,500	108,500	300,000	499,000	522,000	624,000	654,000	714,000	714,000	714,000	714,000	714,000	714,000	714,000	717,000	717,000	717,001	717,001	717,001	717,001	717,002	717,002	717,002	717,002	717,002						
Jun-89	0	5,000	75,500	80,000	205,000	291,200	448,200	518,200	548,200	597,700	597,700	597,700	597,700	597,700	597,700	616,200	616,200	616,200	616,200	616,200	616,200	616,200	616,200	626,200	626,200	626,201	626,201							
Jun-90	0	16,700	121,200	254,200	405,900	545,400	618,400	716,400	756,400	926,400	927,400	927,400	927,400	927,400	927,400	927,400	927,400	927,400	932,400	944,900	944,900	944,900	944,900	944,900	944,900	944,900								
Jun-91	0	19,996	47,696	369,167	542,667	723,667	791,667	791,667	831,667	871,667	871,668	871,668	871,668	871,668	871,668	871,768	871,768	871,768	881,768	881,768	881,768	881,768	941,768	941,768	1,099,768									
Jun-92	0	30,500	124,500	219,500	269,500	359,500	359,500	359,500	359,500	359,500	359,500	370,750	370,750	370,750	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251	383,251									
Jun-93	0	122,600	238,600	399,300	426,300	506,301	625,301	625,301	625,301	625,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301	637,301										
Jun-94	52,000	214,000	395,925	616,925	717,925	795,425	802,925	810,425	810,425	826,175	826,175	830,675	836,675	836,675	836,675	836,675	836,675	842,675	842,675	842,675	842,675	842,675	842,675											
Jun-95	18,613	190,613	377,613	459,613	594,613	664,613	674,613	674,613	674,613	699,613	699,613	700,613	700,613	732,613	732,613	732,613	732,613	732,613	732,613	732,613	732,613	732,613												
Jun-96	0	35,000	67,000	402,000	402,000	402,000	402,000	402,000	414,000	429,000	452,000	452,000	452,000	452,000	452,000	452,000	452,000	452,000	452,000	523,725	555,794													
Jun-97	59,500	327,500	518,000	638,000	681,000	705,000	721,000	741,600	741,600	750,601	750,601	767,601	767,601	767,601	767,601	767,601	767,601	767,601	767,601	767,601														
Jun-98	56,500	217,001	342,716	342,716	352,716	381,716	402,516	414,717	423,717	431,718	431,718	431,718	431,718	431,718	431,718	431,718	431,718	431,718	431,718															
Jun-99	0	0	20,000	20,001	111,751	124,551	145,051	160,051	168,052	168,052	168,052	176,053	176,053	176,053	176,053	176,053	176,053	176,053																
Jun-00	0	27,501	32,501	118,001	196,102	213,602	242,102	246,602	256,602	256,602	264,102	264,102	264,102	276,102	276,102	276,102																		
Jun-01	8,490	8,491	82,991	172,891	265,891	339,280	372,783	393,283	397,283	415,283	415,283	415,283	415,283	415,283	415,283																			
Jun-02	0	10,000	53,880	153,380	200,881	266,881	273,881	273,881	273,881	273,881	276,881	303,881	303,881	303,881	303,881																			
Jun-03	0	58,500	168,501	249,501	327,002	348,502	358,503	363,503	363,503	363,503	363,503	363,503	363,503	363,503																				
Jun-04	0	21,923	106,425	186,427	212,430	277,430	312,430	327,430	327,430	327,430	328,431	334,431																						
Jun-05	0	12,500	120,502	210,003	247,549	247,549	259,549	269,550	277,550	277,550	277,550																							
Jun-06	0	35,001	59,503	173,004	254,504	260,504	260,504	260,504	260,504	260,504																								
Jun-07	0	36,000	105,500	138,000	188,000	207,000	207,001	207,003	207,003																									
Jun-08	0	36,001	73,001	145,001	170,501	180,501	198,501	198,502																										
Jun-09	0	16,000	58,767	105,767	152,017	162,017	170,017																											
Jun-10	0	3,000	59,000	90,500	100,500	100,500																												
Jun-11	0	11,750	58,781	125,781	154,781																													
Jun-12	0	11,050	30,053	60,103																														
Jun-13	4,000	21,312	42,312																															
Jun-14	0	8,500																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs									1.000	1.000	1.000	4.833	1.359	1.000	1.609	1.000	1.000	1.000	1.000	1.000	1.000	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Jun-83								1.000	3.000	1.792	1.436	1.341	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	1.000	1.000	1.000	1.000	1.000	1.000		
Jun-84									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	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Jun-85				1.000	1.000	2.818	1.000	3.226	1.000	1.420	1.000	1.274	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	1.000	1.000	1.000	1.000				
Jun-86				3.267	1.102	1.370	1.182	1.286	1.000	1.200	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	1.000	1.178	1.006	1.038	1.000	1.000				
Jun-87		2.250	1.500	1.333	1.300	1.327	1.161	1.062	1.444	1.000	1.134	1.047	1.000	1.000	1.000	1.000	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Jun-88		1.540	1.412	1.584	2.765	1.663	1.046	1.195	1.048	1.092	1.000	1.000	1.000	1.000	1.000	1.000	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
Jun-89		15.100	1.060	2.563	1.420	1.539	1.156	1.058	1.090	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.016	1.000	1.000	1.000								
Jun-90		7.257	2.097	1.597	1.344	1.134	1.158	1.056	1.225	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.005	1.013	1.000	1.000	1.000	1.000	1.000	1.000									
Jun-91		2.385	7.740	1.470	1.334	1.094	1.000	1.051	1.048	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.011	1.000	1.000	1.000	1.068	1.000	1.168										
Jun-92		4.082	1.763	1.228	1.334	1.000	1.000	1.000	1.000	1.000	1.031	1.000	1.000	1.034	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000											
Jun-93		1.946	1.674	1.068	1.188	1.235	1.000	1.000	1.000	1.019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000												
Jun-94	4.115	1.850	1.558	1.164	1.108	1.009	1.009	1.000	1.019	1.000	1.005	1.007	1.000	1.000	1.000	1.007	1.000	1.000	1.000	1.000	1.000													
Jun-95	10.241	1.981	1.217	1.294	1.118	1.015	1.000	1.000	1.037	1.000	1.001	1.000	1.046	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
Jun-96		1.914	6.000	1.000	1.000	1.000	1.000	1.030	1.036	1.054	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.061															
Jun-97	5.504	1.582	1.232	1.067	1.035	1.023	1.029	1.000	1.012	1.000	1.023	1.000	1.000	1.000	1.000	1.000	1.000	1.000																
Jun-98	3.841	1.579	1.000	1.029	1.082	1.054	1.030	1.022	1.019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																	
Jun-99			1.000	5.587	1.115	1.165	1.103	1.050	1.000	1.000	1.048	1.000	1.000	1.000	1.000	1.000																		
Jun-00		1.182	3.631	1.662	1.089	1.133	1.019	1.041	1.000	1.029	1.000	1.000	1.045	1.000	1.000																			
Jun-01	1.000	9.774	2.083	1.538	1.276	1.099	1.055	1.010	1.045	1.000	1.000	1.000	1.000	1.000																				
Jun-02		5.388	2.847	1.310	1.329	1.026	1.000	1.000	1.000	1.011	1.098	1.000	1.000																					
Jun-03		2.880	1.481	1.311	1.066	1.029	1.014	1.000	1.000	1.000	1.000	1.000																						
Jun-04		4.854	1.752	1.139	1.306	1.126	1.048	1.000	1.000	1.003	1.018																							
Jun-05		9.640	1.743	1.179	1.000	1.048	1.039	1.030	1.000	1.000																								
Jun-06		1.700	2.907	1.471	1.024	1.000	1.000	1.000	1.000																									
Jun-07		2.931	1.308	1.362	1.101	1.000	1.000	1.000																										
Jun-08		2.028	1.986	1.176	1.059	1.100	1.000																											
Jun-09		3.673	1.800	1.437	1.066	1.049																												
Jun-10		19.667	1.534	1.110	1.000																													
Jun-11		5.003	2.140	1.231																														
Jun-12		2.720	2.000																															
Jun-13	5.328	1.985																																
Jun-14																																		

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
Simple Avg																																		
All Yrs (ex P)	5.005	4.496	2.172	1.562	1.214	1.202	1.044	1.130	1.126	1.070	1.036	1.032	1.005	1.002	1.002	1.000	1.003	1.012	1.005	1.000	1.000	1.006	1.002	1.019	1.022	1.001	1.006	1.000	1.000	1.000	1.000	1.000		
Latest 5		6.609	1.892	1.263	1.050	1.040	1.017	1.006	1.000	1.003	1.023	1.000	1.009	1.000	1.000	1.000	1.000	1.032	1.012	1.000	1.000	1.014	1.003	1.034	1.036	1.001	1.008	1.000						
Latest 3		3.236	1.891	1.259	1.041	1.050	1.000	1.010	1.000	1.001	1.039	1.000	1.015	1.000	1.000	1.000	1.000	1.053	1.020	1.000	1.000	1.023	1.000	1.056	1.000	1.000	1.013	1.000	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.257	1.721	1.281	1.178	1.110	1.040	1.043	1.052	1.024	1.015	1.011	1.005	1.001	1.002	1.001	1.002	1.011	1.006	1.000	1.000	1.012	1.002	1.037	1.015	1.001	1.007	1.000	1.000	1.000	1.000	1.000		
Latest 5		3.944	1.885	1.266	1.052	1.036	1.020	1.006	1.000	1.002	1.020	1.000	1.008	1.000	1.000	1.000	1.000	1.021	1.010	1.000	1.000	1.017	1.003	1.044	1.017	1.001	1.008	1.000	1.000					
Latest 3		2.973	1.870	1.265	1.047	1.047	1.000	1.011	1.000	1.001	1.034	1.000	1.012	1.000	1.000	1.000	1.000	1.037	1.015	1.000	1.000	1.032	1.000	1.063	1.000	1.000	1.009	1.000	1.000	1.000	1.000			

Dev Factor Selection																																		
Prior	5.100	3.650	1.749	1.283	1.101	1.065	1.025	1.020	1.021	1.012	1.015	1.011	1.009	1.002	1.002	1.000	1.000	1.005	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	1.000	
Selected	5.100	3.650	1.825	1.270	1.093	1.064	1.020	1.020	1.017	1.009	1.015	1.011	1.009	1.002	1.002	1.000	1.000	1.005	1.005	1.000	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
FacToUlt	56.563	11.091	3.039	1.665	1.310	1.199	1.127	1.105	1.083	1.065	1.055	1.039	1.028	1.019	1.017	1.015	1.015	1.015	1.010	1.005	1.005	1.005	1.005	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Percent of Ult	1.8%	9.0%	32.9%	60.1%	76.3%	83.4%	88.7%	90.5%	92.3%	93.9%	94.8%	96.2%	97.3%	98.2%	98.3%	98.5%	98.5%	98.5%	99.0%	99.5%	99.5%	99.5%	99.5%	99.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	2.6%	0.0%	0.7%	0.4%	1.000	1.000
396	97.4%	0.1%	2.6%	0.0%	0.0%	0.981	0.971
384	97.3%	0.1%	2.7%	0.0%	0.0%	0.944	0.918
372	97.2%	0.2%	2.8%	0.1%	0.0%	0.910	0.870
360	97.0%	0.3%	3.0%	0.1%	0.1%	0.882	0.831
348	96.7%	0.4%	3.3%	0.1%	0.1%	0.860	0.800
336	96.3%	0.4%	3.7%	0.1%	0.1%	0.843	0.778
324	96.0%	0.4%	4.0%	0.1%	0.1%	0.827	0.756
312	95.6%	0.8%	4.4%	0.3%	0.2%	0.811	0.736
300	94.8%	0.8%	5.2%	0.3%	0.2%	0.809	0.735
288	94.1%	1.0%	5.9%	0.4%	0.3%	0.804	0.728
276	93.1%	1.5%	6.9%	0.6%	0.4%	0.803	0.728
264	91.5%	1.6%	8.5%	0.7%	0.5%	0.809	0.738
252	89.9%	1.3%	10.1%	0.6%	0.4%	0.810	0.740
240	88.7%	0.4%	11.3%	0.2%	0.1%	0.802	0.728
228	88.3%	0.5%	11.7%	0.2%	0.2%	0.777	0.696
216	87.9%	0.4%	12.1%	0.2%	0.2%	0.756	0.668
204	87.4%	1.1%	12.6%	0.6%	0.4%	0.736	0.642
192	86.3%	1.0%	13.7%	0.6%	0.4%	0.730	0.636
180	85.3%	1.0%	14.7%	0.6%	0.4%	0.721	0.626
168	84.3%	0.9%	15.7%	0.6%	0.4%	0.712	0.615
156	83.3%	0.9%	16.7%	0.5%	0.4%	0.701	0.602
144	82.4%	0.5%	17.6%	0.3%	0.3%	0.690	0.588
132	81.9%	1.0%	18.1%	0.6%	0.5%	0.672	0.567
120	81.0%	1.1%	19.0%	0.7%	0.6%	0.663	0.557
108	79.9%	1.8%	20.1%	1.3%	1.1%	0.656	0.549
96	78.1%	2.2%	21.9%	1.6%	1.4%	0.659	0.555
84	75.9%	3.2%	24.1%	2.5%	2.2%	0.666	0.565
72	72.7%	3.5%	27.3%	2.8%	2.5%	0.680	0.584
60	69.3%	5.2%	30.7%	4.4%	4.0%	0.691	0.598
48	64.1%	9.6%	35.9%	8.4%	7.8%	0.710	0.623
36	54.5%	13.8%	45.5%	12.5%	11.9%	0.745	0.669
24	40.7%	21.9%	59.3%	20.6%	20.1%	0.778	0.710
12	18.8%	18.8%	81.2%	18.4%	18.2%	0.811	0.751
Total		100.0%					

NOTES:

(2) = 1 / Section 4, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	655,205	1,170,039		618,206	1,103,968
6/30/82-83	12,164	68,184	0.981	11,927	66,860
6/30/83-84	9,554	38,740	0.944	9,021	36,579
6/30/84-85	77,826	291,731	0.910	70,856	265,603
6/30/85-86	39,678	105,782	0.882	35,006	93,327
6/30/86-87	43,710	84,270	0.860	37,591	72,475
6/30/87-88	88,227	151,005	0.843	74,385	127,314
6/30/88-89	242,479	628,479	0.827	200,481	519,625
6/30/89-90	381,156	386,156	0.811	309,124	313,179
6/30/90-91	556,697	1,657,757	0.809	450,466	1,341,417
6/30/91-92	249,048	250,048	0.804	200,162	200,966
6/30/92-93	122,884	156,415	0.803	98,624	125,535
6/30/93-94	381,454	385,454	0.809	308,692	311,929
6/30/94-95	596,048	608,048	0.810	483,076	492,801
6/30/95-96	595,768	605,768	0.802	477,560	485,576
6/30/96-97	687,843	699,843	0.777	534,720	544,048
6/30/97-98	597,954	783,049	0.756	452,189	592,163
6/30/98-99	629,564	802,952	0.736	463,329	590,934
6/30/99-00	775,938	964,523	0.730	566,395	704,053
6/30/00-01	1,122,082	1,367,107	0.721	809,485	986,248
6/30/01-02	1,085,110	1,648,328	0.712	772,501	1,173,461
6/30/02-03	1,161,494	1,715,741	0.701	814,612	1,203,333
6/30/03-04	1,147,945	1,650,374	0.690	791,770	1,138,310
6/30/04-05	1,155,188	1,810,188	0.672	776,693	1,217,083
6/30/05-06	1,229,493	1,350,493	0.663	815,431	895,681
6/30/06-07	1,268,827	1,309,827	0.656	832,638	859,543
6/30/07-08	1,543,819	1,748,819	0.659	1,017,797	1,152,947
6/30/08-09	1,534,499	2,103,499	0.666	1,021,565	1,400,366
6/30/09-10	1,481,998	2,284,998	0.680	1,007,479	1,553,367
6/30/10-11	1,914,237	2,617,237	0.691	1,321,906	1,807,374
6/30/11-12	2,067,175	3,098,175	0.710	1,467,297	2,199,108
6/30/12-13	2,794,012	4,149,012	0.745	2,082,452	3,092,370
6/30/13-14	4,122,703	5,746,703	0.778	3,207,459	4,470,929
6/30/14-15	6,597,220	8,133,220	0.811	5,348,743	6,594,066
Total	36,968,998	50,571,965		27,489,636	37,732,540
			(7) Total Discount Factor:	0.744	0.746

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	655,205	1,170,039
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	218,402	390,013
(11) Discounted Value at 4%:	618,206	1,103,968

NOTES:
(2), (3) From Section 4, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 4, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	655,205	1,170,039		601,304	1,073,785
6/30/82-83	12,164	68,184	0.971	11,814	66,226
6/30/83-84	9,554	38,740	0.918	8,773	35,575
6/30/84-85	77,826	291,731	0.870	67,706	253,796
6/30/85-86	39,678	105,782	0.831	32,952	87,852
6/30/86-87	43,710	84,270	0.800	34,973	67,426
6/30/87-88	88,227	151,005	0.778	68,605	117,421
6/30/88-89	242,479	628,479	0.756	183,345	475,210
6/30/89-90	381,156	386,156	0.736	280,375	284,053
6/30/90-91	556,697	1,657,757	0.735	408,896	1,217,629
6/30/91-92	249,048	250,048	0.728	181,354	182,083
6/30/92-93	122,884	156,415	0.728	89,425	113,826
6/30/93-94	381,454	385,454	0.738	281,402	284,353
6/30/94-95	596,048	608,048	0.740	441,035	449,915
6/30/95-96	595,768	605,768	0.728	433,905	441,188
6/30/96-97	687,843	699,843	0.696	478,784	487,137
6/30/97-98	597,954	783,049	0.668	399,711	523,440
6/30/98-99	629,564	802,952	0.642	404,475	515,872
6/30/99-00	775,938	964,523	0.636	493,453	613,383
6/30/00-01	1,122,082	1,367,107	0.626	702,401	855,781
6/30/01-02	1,085,110	1,648,328	0.615	667,079	1,013,321
6/30/02-03	1,161,494	1,715,741	0.602	699,442	1,033,205
6/30/03-04	1,147,945	1,650,374	0.588	675,363	970,953
6/30/04-05	1,155,188	1,810,188	0.567	655,020	1,026,421
6/30/05-06	1,229,493	1,350,493	0.557	684,562	751,933
6/30/06-07	1,268,827	1,309,827	0.549	697,026	719,549
6/30/07-08	1,543,819	1,748,819	0.555	856,674	970,430
6/30/08-09	1,534,499	2,103,499	0.565	866,368	1,187,622
6/30/09-10	1,481,998	2,284,998	0.584	865,140	1,333,904
6/30/10-11	1,914,237	2,617,237	0.598	1,145,085	1,565,616
6/30/11-12	2,067,175	3,098,175	0.623	1,288,288	1,930,820
6/30/12-13	2,794,012	4,149,012	0.669	1,868,433	2,774,559
6/30/13-14	4,122,703	5,746,703	0.710	2,927,082	4,080,108
6/30/14-15	6,597,220	8,133,220	0.751	4,955,040	6,108,699
Total	36,968,998	50,571,965		24,455,292	33,613,089
			(7) Total Discount Factor:	0.662	0.665

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	655,205	1,170,039
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	218,402	390,013
(11) Discounted Value at 6%:	601,304	1,073,785

NOTES:
(2), (3) From Section 4, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 4, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	6,028,184	7,108,925	4,799,284	1,228,900	2,309,640				95,801	105,382	7.8%	4.6%
6/30/82-83	2,924,729	2,986,461	2,912,565	12,164	73,896	98.5%	0.5%	34.3%	4,177	25,379	34.3%	34.3%
6/30/83-84	2,145,228	2,200,495	2,135,674	9,554	64,821	98.3%	0.5%	29.2%	2,791	18,937	29.2%	29.2%
6/30/84-85	4,565,095	4,783,000	4,483,063	82,032	299,937	95.9%	0.5%	12.2%	10,038	36,702	12.2%	12.2%
6/30/85-86	7,011,186	7,079,290	6,962,840	48,345	116,450	98.8%	0.5%	42.8%	20,668	49,784	42.8%	42.8%
6/30/86-87	4,590,350	4,631,910	4,532,327	58,023	99,583	98.3%	1.0%	58.5%	33,952	58,271	58.5%	58.5%
6/30/87-88	7,362,102	7,427,880	7,243,858	118,244	184,022	98.0%	1.0%	48.9%	57,857	90,043	48.9%	48.9%
6/30/88-89	8,838,000	9,226,000	8,558,028	279,972	667,972	94.8%	1.0%	19.1%	53,351	127,289	19.1%	19.1%
6/30/89-90	11,587,000	11,592,000	11,141,318	445,682	450,682	96.1%	1.0%	25.9%	115,249	116,541	25.9%	25.9%
6/30/90-91	13,129,000	14,230,060	12,476,145	652,855	1,753,915	91.2%	1.0%	11.4%	74,214	199,377	11.4%	11.4%
6/30/91-92	6,723,000	6,725,000	6,385,744	337,256	339,256	95.0%	1.0%	19.9%	67,041	67,439	19.9%	19.9%
6/30/92-93	4,703,999	4,738,530	4,516,388	187,612	222,143	95.7%	1.0%	23.0%	43,234	51,191	23.0%	23.0%
6/30/93-94	6,970,000	6,976,000	6,501,455	468,545	474,545	93.2%	1.0%	14.8%	69,286	70,174	14.8%	14.8%
6/30/94-95	8,185,000	8,198,000	7,479,800	705,200	718,200	91.3%	1.0%	11.5%	81,167	82,663	11.5%	11.5%
6/30/95-96	7,507,000	7,519,000	6,761,635	745,365	757,365	90.0%	1.0%	10.0%	74,530	75,730	10.0%	10.0%
6/30/96-97	8,710,000	8,726,000	7,815,531	894,469	910,469	89.6%	1.0%	9.7%	86,407	87,953	9.7%	9.7%
6/30/97-98	11,125,856	11,319,950	10,263,351	862,504	1,056,599	91.5%	1.0%	11.7%	100,878	123,580	11.7%	11.7%
6/30/98-99	10,398,512	10,578,900	9,502,133	896,379	1,076,767	90.6%	1.0%	10.6%	95,298	114,476	10.6%	10.6%
6/30/99-00	11,336,875	11,535,460	10,236,178	1,100,697	1,299,282	89.5%	1.0%	9.5%	104,899	123,824	9.5%	9.5%
6/30/00-01	15,072,755	15,341,780	13,452,732	1,620,023	1,889,048	88.5%	1.0%	8.7%	140,414	163,731	8.7%	8.7%
6/30/01-02	12,275,782	12,846,000	10,829,898	1,445,884	2,016,102	86.2%	1.0%	7.3%	104,920	146,298	7.3%	7.3%
6/30/02-03	12,609,753	13,177,000	10,987,268	1,622,485	2,189,732	85.2%	1.0%	6.8%	109,749	148,119	6.8%	6.8%
6/30/03-04	11,514,571	12,025,000	9,916,434	1,598,136	2,108,566	84.3%	1.0%	6.4%	101,490	133,905	6.4%	6.4%
6/30/04-05	12,555,950	13,291,000	10,848,284	1,707,666	2,442,716	83.9%	2.0%	12.5%	212,693	304,246	12.5%	12.5%
6/30/05-06	9,647,780	9,838,000	7,930,720	1,717,060	1,907,280	81.4%	2.0%	10.8%	184,631	205,085	10.8%	10.8%
6/30/06-07	8,089,550	8,243,000	6,470,540	1,619,010	1,772,460	79.2%	2.0%	9.6%	155,936	170,715	9.6%	9.6%
6/30/07-08	8,244,000	8,580,000	6,237,501	2,006,499	2,342,499	74.2%	2.0%	7.7%	155,242	181,238	7.7%	7.7%
6/30/08-09	7,361,000	8,130,000	5,406,522	1,954,478	2,723,478	69.8%	5.0%	16.6%	323,612	450,938	16.6%	16.6%
6/30/09-10	5,172,000	6,270,000	3,267,334	1,904,666	3,002,666	57.1%	5.0%	11.7%	222,047	350,053	11.7%	11.7%
6/30/10-11	6,825,000	7,974,900	4,454,710	2,370,290	3,520,190	60.2%	5.0%	12.6%	297,769	442,226	12.6%	12.6%
6/30/11-12	5,607,000	7,166,200	2,997,700	2,609,300	4,168,500	46.9%	5.0%	9.4%	245,870	392,790	9.4%	9.4%
6/30/12-13	6,199,000	8,202,250	2,721,127	3,477,874	5,481,124	37.8%	9.1%	14.7%	511,378	805,932	14.7%	14.7%
6/30/13-14	7,584,000	10,017,000	2,508,302	5,075,698	7,508,698	28.5%	9.3%	13.0%	659,384	975,455	13.0%	13.0%
6/30/14-15	10,605,000	12,431,750	1,664,576	8,940,424	10,767,174	14.5%	14.1%	16.4%	1,468,359	1,768,381	16.4%	16.4%
Total	283,204,255	301,116,741	234,400,963	48,803,292	66,715,778				6,084,334	8,263,846	12.5%	12.4%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		802,746			1,376,441	1,942,347	573,695	1,139,601		
6/30/82-83		164,749	167,119		164,749	170,461	0	5,712		
6/30/83-84		730,414	741,662		730,414	756,495	0	26,081		
6/30/84-85	115,258	495,794	503,932	500,093	500,000	504,000	4,206	8,206	0.434	0.437
6/30/85-86	123,937	563,332	573,724	571,863	572,000	574,000	8,668	10,668	0.462	0.463
6/30/86-87	142,396	647,687	662,274	662,992	662,000	663,000	14,313	15,313	0.465	0.466
6/30/87-88	166,792	1,145,983	1,176,479	1,179,230	1,176,000	1,179,000	30,017	33,017	0.705	0.707
6/30/88-89	180,117	1,269,507	1,308,503	1,306,975	1,307,000	1,309,000	37,493	39,493	0.726	0.727
6/30/89-90	180,883	1,861,474	1,926,329	1,926,331	1,926,000	1,926,000	64,526	64,526	1.065	1.065
6/30/90-91	169,902	2,474,842	2,571,311	2,570,723	2,571,000	2,571,000	96,158	96,158	1.513	1.513
6/30/91-92	165,926	2,060,792	2,149,686	2,148,724	2,149,000	2,150,000	88,208	89,208	1.295	1.296
6/30/92-93	174,198	1,359,273	1,424,995	1,424,459	1,424,000	1,425,000	64,727	65,727	0.817	0.818
6/30/93-94	185,946	1,505,910	1,594,510	1,593,456	1,593,000	1,595,000	87,090	89,090	0.857	0.858
6/30/94-95	194,051	1,329,847	1,440,424	1,439,426	1,439,000	1,440,000	109,153	110,153	0.742	0.742
6/30/95-96	205,262	1,471,403	1,622,830	1,620,840	1,621,000	1,623,000	149,597	151,597	0.790	0.791
6/30/96-97	234,073	1,811,375	2,022,237	2,018,228	2,018,000	2,022,000	206,625	210,625	0.862	0.864
6/30/97-98	221,865	2,088,450	2,362,326	2,353,416	2,353,000	2,362,000	264,550	273,550	1.061	1.065
6/30/98-99	256,071	1,895,185	2,168,638	2,162,432	2,162,000	2,169,000	266,815	273,815	0.844	0.847
6/30/99-00	268,486	2,065,241	2,400,124	2,390,421	2,390,000	2,400,000	324,759	334,759	0.890	0.894
6/30/00-01	279,182	2,914,059	3,436,143	3,411,562	3,412,000	3,436,000	497,941	521,941	1.222	1.231
6/30/01-02	283,070	1,874,225	2,241,598	2,235,381	2,235,000	2,242,000	360,775	367,775	0.790	0.792
6/30/02-03	289,846	2,249,009	2,723,018	2,709,759	2,710,000	2,723,000	460,991	473,991	0.935	0.939
6/30/03-04	293,771	2,028,809	2,486,989	2,478,815	2,479,000	2,487,000	450,191	458,191	0.844	0.847
6/30/04-05	291,382	2,596,472	3,228,861	2,998,586	3,148,950	3,229,000	552,478	632,528	1.081	1.108
6/30/05-06	294,709	2,102,214	2,658,729	2,539,469	2,589,780	2,659,000	487,566	556,786	0.879	0.902
6/30/06-07	289,603	1,634,367	2,097,471	2,088,735	1,984,550	2,097,000	350,183	462,633	0.685	0.724
6/30/07-08	354,668	1,503,319	1,965,557	2,097,486	1,966,000	2,097,000	462,681	593,681	0.554	0.591
6/30/08-09	332,413	1,482,021	2,002,504	2,102,335	1,902,000	2,102,000	419,979	619,979	0.572	0.632
6/30/09-10	336,338	886,332	1,246,555	1,604,442	1,309,000	1,604,000	422,668	717,668	0.389	0.477
6/30/10-11	333,783	1,110,947	1,649,717	1,918,363	1,567,000	2,013,900	456,053	902,953	0.469	0.603
6/30/11-12	348,187	781,875	1,261,003	1,764,236	1,324,000	1,852,200	542,125	1,070,325	0.380	0.532
6/30/12-13	368,022	752,139	1,367,157	1,984,537	1,436,000	2,084,250	683,861	1,332,111	0.390	0.566
6/30/13-14	390,528	674,005	1,549,213	2,320,439	1,627,000	2,436,000	952,995	1,761,995	0.417	0.624
6/30/14-15	402,750	468,795	2,678,496	2,954,532	2,812,000	3,102,750	2,343,205	2,633,955	0.698	0.770
Total	7,873,416	48,802,590	59,410,113	61,078,286	60,636,884	64,946,403	11,834,294	16,143,813		
Tot 6/30/84-15	7,873,416	47,104,682	58,501,333	61,078,286	58,365,280	62,077,100	11,260,598	14,972,418	0.741	0.788

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 4, Exhibit 2, Page 2, Column 3

(4) From Section 4, Exhibit 2, Page 2, Column 8

(5) From Section 4, Exhibit 2, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		802,746							1	1	
6/30/82-83		164,749	1.014	1.000	167,119	N/A	167,119		0	0	
6/30/83-84		730,414	1.015	1.000	741,662	N/A	741,662		0	0	
6/30/84-85	115,258	495,794	1.016	1.000	503,932	N/A	503,932	0.437	1	1	8,138
6/30/85-86	123,937	563,332	1.018	1.000	573,724	N/A	573,724	0.463	1	0	
6/30/86-87	142,396	647,687	1.023	1.000	662,274	N/A	662,274	0.465	1	0	
6/30/87-88	166,792	1,145,983	1.027	1.000	1,176,479	N/A	1,176,479	0.705	1	1	30,496
6/30/88-89	180,117	1,269,507	1.031	1.000	1,308,503	N/A	1,308,503	0.726	2	1	38,996
6/30/89-90	180,883	1,861,474	1.035	1.000	1,926,329	N/A	1,926,329	1.065	3	2	32,427
6/30/90-91	169,902	2,474,842	1.039	1.000	2,571,311	N/A	2,571,311	1.513	7	5	19,294
6/30/91-92	165,926	2,060,792	1.043	1.000	2,149,686	N/A	2,149,686	1.296	6	4	22,223
6/30/92-93	174,198	1,359,273	1.048	1.000	1,424,995	N/A	1,424,995	0.818	1	2	32,861
6/30/93-94	185,946	1,505,910	1.059	1.000	1,594,510	N/A	1,594,510	0.858	4	3	29,533
6/30/94-95	194,051	1,329,847	1.083	1.000	1,440,424	N/A	1,440,424	0.742	3	1	110,577
6/30/95-96	205,262	1,471,403	1.103	1.000	1,622,830	N/A	1,622,830	0.791	3	4	37,857
6/30/96-97	234,073	1,811,375	1.116	1.000	2,022,237	N/A	2,022,237	0.864	3	3	70,287
6/30/97-98	221,865	2,088,450	1.131	1.000	2,362,326	N/A	2,362,326	1.065	4	3	91,292
6/30/98-99	256,071	1,895,185	1.144	1.000	2,168,638	N/A	2,168,638	0.847	7	5	54,691
6/30/99-00	268,486	2,065,241	1.162	1.000	2,400,124	N/A	2,400,124	0.894	6	5	66,977
6/30/00-01	279,182	2,914,059	1.179	1.000	3,436,143	N/A	3,436,143	1.231	5	5	104,417
6/30/01-02	283,070	1,874,225	1.196	1.000	2,241,598	N/A	2,241,598	0.792	6	3	122,458
6/30/02-03	289,846	2,249,009	1.211	1.000	2,723,018	N/A	2,723,018	0.939	5	3	158,003
6/30/03-04	293,771	2,028,809	1.226	1.000	2,486,989	N/A	2,486,989	0.847	6	6	76,363
6/30/04-05	291,382	2,596,472	1.244	1.000	3,228,861	N/A	3,228,861	1.108	7	5	126,478
6/30/05-06	294,709	2,102,214	1.265	1.000	2,658,729	N/A	2,658,729	0.902	7	4	139,129
6/30/06-07	289,603	1,634,367	1.283	1.000	2,097,471	N/A	2,097,471	0.724	9	11	42,100
6/30/07-08	354,668	1,503,319	1.307	1.000	1,965,557	N/A	1,965,557	0.554	5	5	92,448
6/30/08-09	332,413	1,482,021	1.351	1.000	2,002,504	N/A	2,002,504	0.602	12	9	57,831
6/30/09-10	336,338	886,332	1.406	1.000	1,246,555	N/A	1,246,555	0.371	13	8	45,028
6/30/10-11	333,783	1,110,947	1.485	1.000	1,649,717	N/A	1,649,717	0.494	25	14	38,484
6/30/11-12	348,187	781,875	1.613	1.000	1,261,003	N/A	1,261,003	0.362	29	18	26,618
6/30/12-13	368,022	752,139	1.818	1.000	1,367,157	N/A	1,367,157	0.371	156	36	17,084
6/30/13-14	390,528	674,005	2.299	1.000	1,549,213	N/A	1,549,213	0.397	204	166	5,272
6/30/14-15	402,750	468,795	5.714	1.000	2,678,496	N/A	2,678,496	0.665		265	8,338
Total	7,873,416	48,802,590			59,410,113		59,410,113		543	599	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 4, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	115,258	0.231	495,794	1.016	500,093	N/A	500,093	0.434	0.434
6/30/85-86	123,937	0.380	563,332	1.018	571,863	N/A	571,863	0.461	0.461
6/30/86-87	142,396	0.488	647,687	1.023	662,992	N/A	662,992	0.466	0.466
6/30/87-88	166,792	0.769	1,145,983	1.027	1,179,230	N/A	1,179,230	0.707	0.707
6/30/88-89	180,117	0.698	1,269,507	1.031	1,306,975	N/A	1,306,975	0.726	0.726
6/30/89-90	180,883	1.065	1,861,474	1.035	1,926,331	N/A	1,926,331	1.065	1.065
6/30/90-91	169,902	1.504	2,474,842	1.039	2,570,723	N/A	2,570,723	1.513	1.513
6/30/91-92	165,926	1.282	2,060,792	1.043	2,148,724	N/A	2,148,724	1.295	1.295
6/30/92-93	174,198	0.811	1,359,273	1.048	1,424,459	N/A	1,424,459	0.818	0.818
6/30/93-94	185,946	0.847	1,505,910	1.059	1,593,456	N/A	1,593,456	0.857	0.857
6/30/94-95	194,051	0.736	1,329,847	1.083	1,439,426	N/A	1,439,426	0.742	0.742
6/30/95-96	205,262	0.780	1,471,403	1.103	1,620,840	N/A	1,620,840	0.790	0.790
6/30/96-97	234,073	0.848	1,811,375	1.116	2,018,228	N/A	2,018,228	0.862	0.862
6/30/97-98	221,865	1.030	2,088,450	1.131	2,353,416	N/A	2,353,416	1.061	1.061
6/30/98-99	256,071	0.828	1,895,185	1.144	2,162,432	N/A	2,162,432	0.844	0.844
6/30/99-00	268,486	0.868	2,065,241	1.162	2,390,421	N/A	2,390,421	0.890	0.890
6/30/00-01	279,182	1.173	2,914,059	1.179	3,411,562	N/A	3,411,562	1.222	1.222
6/30/01-02	283,070	0.778	1,874,225	1.196	2,235,381	N/A	2,235,381	0.790	0.790
6/30/02-03	289,846	0.913	2,249,009	1.211	2,709,759	N/A	2,709,759	0.935	0.935
6/30/03-04	293,771	0.831	2,028,809	1.226	2,478,815	N/A	2,478,815	0.844	0.844
6/30/04-05	291,382	0.705	2,596,472	1.244	2,998,586	N/A	2,998,586	1.029	1.029
6/30/05-06	294,709	0.709	2,102,214	1.265	2,539,469	N/A	2,539,469	0.862	0.862
6/30/06-07	289,603	0.711	1,634,367	1.283	2,088,735	N/A	2,088,735	0.721	0.721
6/30/07-08	354,668	0.712	1,503,319	1.307	2,097,486	N/A	2,097,486	0.591	0.591
6/30/08-09	332,413	0.718	1,482,021	1.351	2,102,335	N/A	2,102,335	0.632	0.632
6/30/09-10	336,338	0.739	886,332	1.406	1,604,442	N/A	1,604,442	0.477	0.477
6/30/10-11	333,783	0.741	1,110,947	1.485	1,918,363	N/A	1,918,363	0.575	0.575
6/30/11-12	348,187	0.743	781,875	1.613	1,764,236	N/A	1,764,236	0.507	0.507
6/30/12-13	368,022	0.744	752,139	1.818	1,984,537	N/A	1,984,537	0.539	0.539
6/30/13-14	390,528	0.746	674,005	2.299	2,320,439	N/A	2,320,439	0.594	0.594
6/30/14-15	402,750	0.748	468,795	5.714	2,954,532	N/A	2,954,532	0.734	0.734
Total	7,873,416		47,104,682		61,078,286		61,078,286		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 4, Exhibit 2, Page 4, Column 11

(4) From Section 4, Exhibit 2, Page 2, Column 3

(5) From Section 4, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.231	0.231
6/30/85-86									0.380	0.380
6/30/86-87									0.488	0.488
6/30/87-88									0.769	0.769
6/30/88-89									0.698	0.698
6/30/89-90									1.065	1.065
6/30/90-91	169,902	2,571,311	1.513	1.194	1.807	1.064	1.923	0.590	1.516	1.504
6/30/91-92	165,926	2,149,686	1.296	1.189	1.540	1.062	1.635	0.594	1.245	1.282
6/30/92-93	174,198	1,424,995	0.818	1.189	0.973	1.059	1.030	0.596	0.824	0.811
6/30/93-94	185,946	1,594,510	0.858	1.178	1.010	1.056	1.068	0.602	0.864	0.847
6/30/94-95	194,051	1,440,424	0.742	1.170	0.868	1.054	0.915	0.608	0.756	0.736
6/30/95-96	205,262	1,622,830	0.791	1.155	0.913	1.051	0.960	0.617	0.798	0.780
6/30/96-97	234,073	2,022,237	0.864	1.137	0.982	1.049	1.030	0.629	0.847	0.848
6/30/97-98	221,865	2,362,326	1.065	1.135	1.208	1.046	1.264	0.632	1.016	1.030
6/30/98-99	256,071	2,168,638	0.847	1.135	0.961	1.043	1.003	0.633	0.825	0.828
6/30/99-00	268,486	2,400,124	0.894	1.135	1.015	1.041	1.056	0.635	0.876	0.868
6/30/00-01	279,182	3,436,143	1.231	1.109	1.365	1.038	1.417	0.651	1.189	1.173
6/30/01-02	283,070	2,241,598	0.792	1.101	0.872	1.036	0.903	0.658	0.793	0.778
6/30/02-03	289,846	2,723,018	0.939	1.073	1.008	1.033	1.041	0.677	0.922	0.913
6/30/03-04	293,771	2,486,989	0.847	1.046	0.886	1.030	0.913	0.696	0.853	0.831
6/30/04-05	291,382	3,228,861	1.108	1.036	1.148	1.028	1.179	0.705	0.735	0.705
6/30/05-06	294,709	2,658,729	0.902	1.032	0.931	1.025	0.955	0.709	0.741	0.709
6/30/06-07	289,603	2,097,471	0.724	1.032	0.747	1.023	0.764	0.711	0.745	0.711
6/30/07-08	354,668	1,965,557	0.554	1.032	0.572	1.020	0.583	0.712	0.749	0.712
6/30/08-09	332,413	2,002,504	0.602	1.027	0.618	1.018	0.629	0.718	0.756	0.718
6/30/09-10	336,338	1,246,555	0.371	1.000	0.371	1.015	0.376	0.739	0.780	0.739
6/30/10-11	333,783	1,649,717	0.494	1.000	0.494	1.013	0.500	0.741	0.784	0.741
6/30/11-12	348,187	1,261,003	0.362	1.000	0.362	1.010	0.366	0.743	0.788	0.743
6/30/12-13	368,022	1,367,157	0.371	1.000	0.371	1.008	0.374	0.744	0.792	0.744
6/30/13-14	390,528	1,549,213	0.397	1.000	0.397	1.005	0.399	0.746	0.796	0.746
6/30/14-15	402,750	2,678,496	0.665	1.000	0.665	1.003	0.667	0.748		0.748
Total	6,964,032	52,350,092								

Trend Last 4 (ex 14-15):	-6.1%	Avg 3 (ex 14-15):	0.380
Trend Last 8 (ex 14-15):	-9.0%	Avg 5 (ex 14-15):	0.403
Trend Last 12 (ex 14-15):	-10.4%	Avg 10 (ex 14-15):	0.613
Prior Selected Trend:	0.5%	Prior Sel Avg:	0.800
Selected Trend:	0.25%	Sel. Loss Cost:	0.750

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 4, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.900	
(2)	Credibility		41%	
(3)	Average Pmt Trend Statewide		0.950	
(4)	Credibility Weighted Trend		0.929	
		(Low)		(High)
(5)	Selected Range	0.920		0.934
(6)	Incremental Paid for 2015	80,571		80,571
(7)	Estimated Reserve	926,915		1,139,601
(8)	Paid to Date (82 & Prior)	802,746		802,746
(9)	Est Ult Paid for 1982 & Prior	1,729,661		1,942,347

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	73,492	71,571
(11)	Projected Number of Years	3	3
(12)	Estimated Reserve	220,476	214,714
(13)	Paid to Date (82 & Prior)	802,746	722,175
(14)	Est Ult Paid for 1982 & Prior	1,023,222	936,890
(14a)	Paid Counts During Fiscal Year	1	1
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	1,376,441	1,942,347
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**1,376,441**	**1,942,347**
(18)	Implied Tail	1.715	2.420
(19)	Ult Loss Inc Lump Sums @ 6/15	1,367,370	2,158,029

NOTES:

(1) From Section 4, Exhibit 2, Page 6
(2) = (Average of Section 4, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 4, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 4, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	24,180	10.093			
1993	2	4,649	8.444	0.192		
1994	3	4,226	8.349	0.909		
1995	4	2,463	7.809	0.583		
1996	5	3,867	8.260	1.570		
1997	6	12,692	9.449	3.282		
1998	7	3,736	8.226	0.294		
1999	8	1,455	7.283	0.389		
2000	9	13,993	9.546	9.617	n =	24
2001	10	18,860	9.845	1.348	S(x) =	48,084
2002	11	1,907	7.553	0.101	S(x-sq) =	96,337,444
2003	12	725	6.586	0.380	S(xy) =	446,567
2004	13	1,808	7.500	2.494	S(y) =	223
2005	14	2,687	7.896	1.486	D =	27,600
2006	15	3,792	8.241	1.411	slope =	0.137
2007	16	10,343	9.244	2.728	Avg Trend =	1.137
2008	17	8,983	9.103	0.869		
2009	18	100,501	11.518	11.187		
2010	19	110,847	11.616	1.103		
2011	20	91,392	11.423	0.824		
2012	21	74,810	11.223	0.819		
2013	22	71,853	11.182	0.960		
2014	23	68,052	11.128	0.947		
2015	24	80,571	11.297	1.121		
					Selected Trend:	**0.900**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 1.121 = 80571 / 68052

Commonwealth of Massachusetts Workers Compensation
Department of Corrections - Cluster 3
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	11,197	26,045	37,203	47,025	56,514	66,401	72,814	83,440	107,442	118,641	128,866	135,800	137,783	138,069	140,735	141,596	141,596	141,914	142,318	142,318	142,318	142,748	144,456	154,891	160,448	164,749	164,749	164,749	164,749	164,749	164,749	164,749	164,749
June-84	52,670	137,962	203,703	257,882	317,818	352,402	422,888	501,855	591,716	647,521	689,358	721,711	724,550	728,685	728,693	728,709	728,709	728,709	729,143	729,143	729,143	730,066	730,414	730,414	730,414	730,414	730,414	730,414	730,414	730,414	730,414	730,414	
June-85	24,581	57,175	81,670	103,231	128,616	150,557	165,276	184,340	192,621	201,787	208,269	211,465	217,592	220,213	229,343	238,016	247,437	257,231	266,584	280,985	298,608	318,573	337,983	352,978	369,873	394,344	415,317	434,308	451,747	470,326	495,794		
June-86	48,446	112,684	160,960	207,617	233,762	263,664	302,247	319,414	339,302	351,896	365,470	378,302	387,035	413,763	422,216	433,663	460,852	480,856	494,886	512,562	523,474	541,163	550,005	554,546	557,077	558,277	559,768	562,871	563,332	563,332			
June-87	77,936	181,278	229,911	293,653	369,221	440,930	473,706	485,578	509,980	540,282	563,925	581,583	602,759	614,805	618,094	621,890	624,842	627,889	633,482	636,887	638,336	639,623	640,749	642,212	643,694	648,271	647,521	647,687	647,687				
June-88	139,053	319,817	519,537	680,966	823,361	912,703	998,546	1,039,983	1,059,846	1,072,337	1,112,168	1,116,550	1,122,900	1,125,982	1,127,653	1,131,576	1,136,086	1,139,881	1,139,671	1,140,874	1,141,510	1,142,078	1,144,288	1,145,006	1,145,741	1,145,836	1,145,900	1,145,983					
June-89	131,654	415,398	576,800	731,889	811,584	895,533	936,684	955,349	999,849	1,017,126	1,032,040	1,060,186	1,074,102	1,089,934	1,108,376	1,126,235	1,147,403	1,157,458	1,164,985	1,178,930	1,193,712	1,206,048	1,216,929	1,227,147	1,246,391	1,260,610	1,269,507						
June-90	233,608	695,685	1,052,182	1,224,162	1,354,697	1,427,692	1,488,096	1,536,324	1,567,188	1,604,683	1,637,523	1,658,777	1,680,547	1,714,885	1,752,807	1,778,979	1,821,497	1,836,851	1,849,519	1,851,871	1,853,225	1,854,022	1,856,452	1,857,840	1,861,177	1,861,474							
June-91	236,602	942,522	1,192,208	1,419,689	1,530,020	1,581,521	1,621,661	1,644,367	1,676,462	1,699,513	1,748,257	1,799,332	1,845,064	1,889,995	1,951,997	2,058,075	2,109,105	2,138,832	2,230,499	2,269,406	2,337,283	2,427,731	2,454,390	2,467,892	2,474,842								
June-92	391,819	811,780	1,023,022	1,084,480	1,141,810	1,171,673	1,196,735	1,319,302	1,369,241	1,426,734	1,445,752	1,475,976	1,501,400	1,542,584	1,553,065	1,562,833	1,573,916	1,589,949	1,615,152	1,692,813	1,819,909	1,945,315	1,977,667	2,060,792									
June-93	344,830	901,476	1,061,794	1,155,998	1,198,560	1,220,287	1,266,026	1,272,695	1,293,165	1,297,361	1,300,910	1,301,951	1,307,475	1,311,803	1,319,110	1,321,122	1,322,034	1,323,404	1,323,509	1,323,675	1,327,602	1,358,187	1,359,273										
June-94	431,268	816,076	959,344	1,052,996	1,141,756	1,231,287	1,271,524	1,296,482	1,314,355	1,335,010	1,357,475	1,376,074	1,390,533	1,402,752	1,413,794	1,423,336	1,430,519	1,446,576	1,458,508	1,476,979	1,496,298	1,505,910											
June-95	351,310	722,998	906,028	985,528	1,057,961	1,106,846	1,136,019	1,186,110	1,209,822	1,232,732	1,266,835	1,285,546	1,294,524	1,301,613	1,305,920	1,312,490	1,318,475	1,323,435	1,325,511	1,329,061	1,329,847												
June-96	344,486	709,731	859,884	962,823	1,085,060	1,150,008	1,181,678	1,213,854	1,256,984	1,305,951	1,334,696	1,371,532	1,394,601	1,418,259	1,433,202	1,445,908	1,456,275	1,465,439	1,469,259	1,471,403													
June-97	404,402	880,944	1,029,045	1,129,661	1,192,806	1,242,248	1,291,581	1,332,755	1,404,699	1,468,293	1,534,845	1,608,334	1,629,854	1,671,824	1,708,017	1,745,451	1,758,270	1,766,104	1,811,375														
June-98	352,321	850,419	1,071,815	1,188,934	1,283,207	1,349,964	1,408,091	1,486,280	1,529,830	1,572,573	1,615,592	1,716,755	1,772,391	1,838,516	1,900,110	1,958,286	2,022,922	2,088,450															
June-99	335,840	780,685	1,009,719	1,120,546	1,237,603	1,345,867	1,452,103	1,561,531	1,613,648	1,654,503	1,683,574	1,743,457	1,791,004	1,820,118	1,838,665	1,854,418	1,895,185																
June-00	496,994	1,118,525	1,328,041	1,481,979	1,601,386	1,717,688	1,766,903	1,812,535	1,852,179	1,901,468	1,931,755	1,967,861	2,003,457	2,029,359	2,049,264	2,065,241																	
June-01	553,191	1,161,108	1,486,434	1,729,264	2,113,882	2,296,440	2,415,155	2,501,361	2,567,715	2,697,204	2,775,225	2,860,089	2,886,161	2,906,989	2,914,059																		
June-02	441,054	954,595	1,190,752	1,457,269	1,628,226	1,698,307	1,736,904	1,769,478	1,813,443	1,830,775	1,851,171	1,867,504	1,871,731	1,874,225																			
June-03	268,200	928,702	1,552,091	1,775,257	1,904,289	1,988,413	2,045,138	2,103,051	2,147,004	2,184,461	2,214,085	2,218,226	2,249,009																				
June-04	152,994	1,174,712	1,612,636	1,744,790	1,811,022	1,896,424	1,965,029	1,975,226	1,988,740	1,997,998	2,012,411	2,028,809																					
June-05	504,986	1,476,366	1,809,319	2,048,757	2,193,956	2,297,784	2,392,936	2,464,260	2,513,823	2,554,231	2,596,472																						
June-06	456,471	1,195,789	1,564,242	1,729,098	1,847,555	1,939,187	2,044,654	2,084,339	2,092,454	2,102,214																							
June-07	537,825	1,000,141	1,218,822	1,380,770	1,450,003	1,505,529	1,543,801	1,601,192	1,634,367																								
June-08	539,208	1,080,479	1,291,808	1,419,250	1,474,245	1,483,165	1,498,179	1,503,319																									
June-09	508,581	995,354	1,230,224	1,338,898	1,369,306	1,446,964	1,482,021																										
June-10	391,950	706,776	789,348	818,015	852,862	886,332																											
June-11	496,567	863,714	960,779	1,031,286	1,110,947																												
June-12	293,489	638,905	723,823	781,875																													
June-13	286,539	659,431	752,139																														
June-14	290,720	674,005																															
June-15	468,795																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.326	1.428	1.264	1.202	1.175	1.097	1.146	1.288	1.104	1.086	1.054	1.015	1.002	1.019	1.006	1.000	1.002	1.003	1.000	1.000	1.003	1.012	1.072	1.036	1.027	1.000	1.000	1.000	1.000	1.000	1.000	1.000
June-84	2.619	1.477	1.266	1.232	1.109	1.200	1.187	1.179	1.094	1.065	1.047	1.004	1.006	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
June-85	2.326	1.428	1.264	1.246	1.171	1.098	1.115	1.045	1.048	1.032	1.015	1.029	1.012	1.041	1.038	1.040	1.040	1.036	1.054	1.063	1.067	1.061	1.044	1.048	1.066	1.053	1.046	1.040	1.041	1.054		
June-86	2.326	1.428	1.290	1.126	1.128	1.146	1.057	1.062	1.037	1.039	1.035	1.023	1.069	1.020	1.027	1.063	1.043	1.029	1.036	1.021	1.034	1.016	1.008	1.005	1.002	1.003	1.006	1.001	1.000			
June-87	2.326	1.268	1.277	1.257	1.194	1.074	1.025	1.050	1.059	1.044	1.031	1.036	1.020	1.005	1.006	1.005	1.005	1.009	1.005	1.002	1.002	1.002	1.002	1.002	1.007	0.999	1.000	1.000				
June-88	2.300	1.624	1.311	1.209	1.109	1.094	1.041	1.019	1.012	1.037	1.004	1.006	1.003	1.001	1.003	1.004	1.003	1.000	1.001	1.001	1.000	1.002	1.001	1.001	1.000	1.000	1.000					
June-89	3.155	1.389	1.269	1.109	1.103	1.046	1.020	1.047	1.017	1.015	1.027	1.013	1.015	1.017	1.016	1.019	1.009	1.007	1.012	1.013	1.010	1.009	1.008	1.016	1.011	1.007						
June-90	2.978	1.512	1.163	1.107	1.054	1.042	1.032	1.020	1.024	1.020	1.013	1.013	1.020	1.022	1.015	1.024	1.008	1.007	1.001	1.001	1.000	1.001	1.001	1.002	1.000							
June-91	3.984	1.265	1.191	1.078	1.034	1.025	1.014	1.020	1.014	1.029	1.029	1.025	1.024	1.033	1.054	1.025	1.014	1.043	1.017	1.030	1.039	1.011	1.006	1.003								
June-92	2.072	1.260	1.060	1.053	1.026	1.021	1.102	1.038	1.042	1.013	1.021	1.017	1.027	1.007	1.006	1.007	1.010	1.016	1.048	1.075	1.069	1.017	1.042									
June-93	2.614	1.178	1.089	1.037	1.018	1.037	1.005	1.016	1.003	1.003	1.001	1.004	1.003	1.006	1.002	1.001	1.001	1.000	1.000	1.003	1.023	1.001										
June-94	1.892	1.176	1.098	1.084	1.078	1.033	1.020	1.014	1.016	1.017	1.014	1.011	1.009	1.008	1.007	1.005	1.011	1.008	1.013	1.013	1.006											
June-95	2.058	1.253	1.088	1.073	1.046	1.026	1.044	1.020	1.019	1.028	1.015	1.007	1.005	1.003	1.005	1.005	1.004	1.002	1.003	1.001												
June-96	2.060	1.212	1.120	1.127	1.060	1.028	1.027	1.036	1.039	1.022	1.028	1.017	1.017	1.011	1.009	1.007	1.006	1.003	1.001													
June-97	2.178	1.168	1.098	1.056	1.041	1.040	1.032	1.054	1.045	1.045	1.048	1.013	1.026	1.022	1.022	1.007	1.004	1.026														
June-98	2.414	1.260	1.109	1.079	1.052	1.043	1.056	1.029	1.028	1.027	1.063	1.032	1.037	1.034	1.031	1.033	1.032															
June-99	2.325	1.293	1.110	1.104	1.087	1.079	1.075	1.033	1.025	1.018	1.036	1.027	1.016	1.010	1.009	1.022																
June-00	2.251	1.187	1.116	1.081	1.073	1.029	1.026	1.022	1.027	1.016	1.019	1.018	1.013	1.010	1.008																	
June-01	2.099	1.280	1.163	1.222	1.086	1.052	1.036	1.027	1.050	1.029	1.031	1.009	1.007	1.002																		
June-02	2.164	1.247	1.224	1.117	1.043	1.023	1.019	1.025	1.010	1.011	1.009	1.002	1.001																			
June-03	3.463	1.671	1.144	1.073	1.044	1.029	1.028	1.021	1.017	1.014	1.002	1.014																				
June-04	7.678	1.373	1.082	1.038	1.047	1.036	1.005	1.007	1.005	1.007	1.008																					
June-05	2.924	1.226	1.132	1.071	1.047	1.041	1.030	1.020	1.016	1.017																						
June-06	2.620	1.308	1.105	1.069	1.050	1.054	1.019	1.004	1.005																							
June-07	1.860	1.219	1.133	1.050	1.038	1.025	1.037	1.021																								
June-08	2.004	1.196	1.099	1.039	1.006	1.010	1.003																									
June-09	1.957	1.236	1.088	1.023	1.057	1.024																										
June-10	1.803	1.117	1.036	1.043	1.039																											
June-11	1.739	1.112	1.073	1.077																												
June-12	2.177	1.133	1.080																													
June-13	2.301	1.141																														
June-14	2.318																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.541	1.292	1.151	1.106	1.072	1.054	1.046	1.045	1.032	1.027	1.025	1.016	1.017	1.014	1.015	1.016	1.012	1.013	1.014	1.017	1.021	1.012	1.018	1.012	1.014	1.009	1.009	1.008	1.010	1.018	1.000		
Latest 5	2.068	1.148	1.075	1.046	1.038	1.031	1.019	1.014	1.010	1.015	1.014	1.014	1.015	1.016	1.016	1.015	1.012	1.008	1.013	1.024	1.027	1.008	1.011	1.005	1.004	1.012	1.010	1.008					
Latest 3	2.266	1.129	1.063	1.048	1.034	1.020	1.020	1.015	1.008	1.012	1.006	1.008	1.007	1.007	1.016	1.021	1.014	1.010	1.006	1.006	1.033	1.009	1.016	1.007	1.004	1.002	1.002	1.014	1.014	1.018			
Volume Wtd																																	
All Yrs	2.368	1.265	1.127	1.086	1.056	1.041	1.033	1.027	1.024	1.022	1.023	1.015	1.016	1.013	1.015	1.015	1.011	1.013	1.012	1.018	1.023	1.009	1.013	1.006	1.007	1.006	1.006	1.007	1.010	1.019	1.000	1.000	
Latest 5	2.014	1.153	1.079	1.045	1.038	1.033	1.019	1.015	1.011	1.016	1.015	1.014	1.014	1.014	1.016	1.016	1.013	1.009	1.014	1.027	1.029	1.008	1.013	1.004	1.004	1.008	1.006	1.007					
Latest 3	2.265	1.127	1.064	1.045	1.032	1.020	1.020	1.015	1.009	1.013	1.006	1.009	1.007	1.007	1.016	1.021	1.016	1.011	1.006	1.006	1.036	1.010	1.016	1.005	1.003	1.003	1.001	1.011	1.011	1.019			

Dev Factor Selection

Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*2.548*	*1.298*	*1.128*	*1.086*	*1.056*	*1.042*	*1.035*	*1.015*	*1.020*	*1.015*	*1.024*	*1.015*	*1.018*	*1.015*	*1.015*	*1.011*	*1.005*	*1.012*	*1.013*	*1.025*	*1.020*	*1.010*	*1.005*	*1.004*	*1.004*	*1.004*	*1.004*	*1.004*	*1.004*	*1.002*	*1.001*	*1.022*	
Selected	2.486	1.265	1.127	1.086	1.056	1.041	1.033	1.019	1.015	1.017	1.014	1.012	1.012	1.014	1.015	1.016	1.012	1.013	1.012	1.018	1.023	1.010	1.005	1.004	1.004	1.004	1.004	1.004	1.004	1.002	1.001	1.001	1.014
FacToUlt	5.714	2.299	1.818	1.613	1.485	1.406	1.351	1.307	1.283	1.265	1.244	1.226	1.211	1.196	1.179	1.162	1.144	1.131	1.116	1.103	1.083	1.059	1.048	1.043	1.039	1.035	1.031	1.027	1.023	1.018	1.016	1.015	1.014
Percent of Ult	17.5%	43.5%	55.0%	62.0%	67.3%	71.1%	74.0%	76.5%	77.9%	79.1%	80.4%	81.6%	82.6%	83.6%	84.8%	86.0%	87.4%	88.4%	89.6%	90.7%	92.3%	94.4%	95.4%	95.9%	96.2%	96.6%	97.0%	97.4%	97.8%	98.2%	98.4%	98.5%	98.6%

Commonwealth of Massachusetts
Workers Compensation
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Department of Corrections - Cluster 3
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	1,367,370	2,158,029	1,376,441	1,942,347	9,071	0.7%	(215,682)	-10.0%
6/30/82-83	164,749	171,774	164,749	170,461	0	0.0%	(1,313)	-0.8%
6/30/83-84	730,414	762,321	730,414	756,495	0	0.0%	(5,826)	-0.8%
6/30/84-85	477,000	482,000	500,000	504,000	23,000	4.8%	22,000	4.6%
6/30/85-86	577,000	580,000	572,000	574,000	(5,000)	-0.9%	(6,000)	-1.0%
6/30/86-87	669,000	670,000	662,000	663,000	(7,000)	-1.0%	(7,000)	-1.0%
6/30/87-88	1,189,000	1,192,000	1,176,000	1,179,000	(13,000)	-1.1%	(13,000)	-1.1%
6/30/88-89	1,311,000	1,313,000	1,307,000	1,309,000	(4,000)	-0.3%	(4,000)	-0.3%
6/30/89-90	1,946,000	1,947,000	1,926,000	1,926,000	(20,000)	-1.0%	(21,000)	-1.1%
6/30/90-91	2,591,000	2,592,000	2,571,000	2,571,000	(20,000)	-0.8%	(21,000)	-0.8%
6/30/91-92	2,086,000	2,087,000	2,149,000	2,150,000	63,000	3.0%	63,000	3.0%
6/30/92-93	1,447,000	1,448,000	1,424,000	1,425,000	(23,000)	-1.6%	(23,000)	-1.6%
6/30/93-94	1,625,000	1,627,000	1,593,000	1,595,000	(32,000)	-2.0%	(32,000)	-2.0%
6/30/94-95	1,480,000	1,482,000	1,439,000	1,440,000	(41,000)	-2.8%	(42,000)	-2.8%
6/30/95-96	1,657,000	1,660,000	1,621,000	1,623,000	(36,000)	-2.2%	(37,000)	-2.2%
6/30/96-97	2,014,000	2,019,000	2,018,000	2,022,000	4,000	0.2%	3,000	0.1%
6/30/97-98	2,316,000	2,325,000	2,353,000	2,362,000	37,000	1.6%	37,000	1.6%
6/30/98-99	2,149,000	2,156,000	2,162,000	2,169,000	13,000	0.6%	13,000	0.6%
6/30/99-00	2,408,000	2,418,000	2,390,000	2,400,000	(18,000)	-0.7%	(18,000)	-0.7%
6/30/00-01	3,455,000	3,481,000	3,412,000	3,436,000	(43,000)	-1.2%	(45,000)	-1.3%
6/30/01-02	2,274,000	2,281,000	2,235,000	2,242,000	(39,000)	-1.7%	(39,000)	-1.7%
6/30/02-03	2,594,000	2,744,000	2,710,000	2,723,000	116,000	4.5%	(21,000)	-0.8%
6/30/03-04	2,412,000	2,548,000	2,479,000	2,487,000	67,000	2.8%	(61,000)	-2.4%
6/30/04-05	3,030,000	3,284,000	3,148,950	3,229,000	118,950	3.9%	(55,000)	-1.7%
6/30/05-06	2,610,000	2,743,000	2,589,780	2,659,000	(20,220)	-0.8%	(84,000)	-3.1%
6/30/06-07	2,131,000	2,138,000	1,984,550	2,097,000	(146,450)	-6.9%	(41,000)	-1.9%
6/30/07-08	2,063,000	2,226,000	1,966,000	2,097,000	(97,000)	-4.7%	(129,000)	-5.8%
6/30/08-09	1,972,000	2,209,000	1,902,000	2,102,000	(70,000)	-3.5%	(107,000)	-4.8%
6/30/09-10	1,357,000	1,745,000	1,309,000	1,604,000	(48,000)	-3.5%	(141,000)	-8.1%
6/30/10-11	1,613,000	2,161,950	1,567,000	2,013,900	(46,000)	-2.9%	(148,050)	-6.8%
6/30/11-12	1,412,000	2,090,550	1,324,000	1,852,200	(88,000)	-6.2%	(238,350)	-11.4%
6/30/12-13	1,669,000	2,483,250	1,436,000	2,084,250	(233,000)	-14.0%	(399,000)	-16.1%
6/30/13-14	1,875,000	3,037,650	1,627,000	2,436,000	(248,000)	-13.2%	(601,650)	-19.8%
6/30/14-15								
Total	58,671,533	64,262,523	57,824,884	61,843,653	(846,649)	-1.4%	(2,418,870)	-3.8%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 4, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Department of Corrections - Cluster 3
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative	Incremental		Pres Value	Pres Value		
	Paid Loss	Paid Loss	Percent	of Increm.	of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	1.4%	0.0%	0.4%	0.2%	1.000	1.000
396	98.6%	0.1%	1.4%	0.0%	0.0%	0.981	0.971
384	98.5%	0.1%	1.5%	0.0%	0.0%	0.945	0.920
372	98.4%	0.2%	1.6%	0.1%	0.0%	0.913	0.874
360	98.2%	0.4%	1.8%	0.1%	0.1%	0.889	0.841
348	97.8%	0.4%	2.2%	0.1%	0.1%	0.877	0.825
336	97.4%	0.4%	2.6%	0.1%	0.1%	0.864	0.807
324	97.0%	0.4%	3.0%	0.1%	0.1%	0.850	0.789
312	96.6%	0.4%	3.4%	0.1%	0.1%	0.836	0.770
300	96.2%	0.4%	3.8%	0.1%	0.1%	0.822	0.752
288	95.9%	0.5%	4.1%	0.2%	0.1%	0.808	0.733
276	95.4%	0.9%	4.6%	0.4%	0.3%	0.798	0.721
264	94.4%	2.1%	5.6%	0.9%	0.6%	0.804	0.730
252	92.3%	1.7%	7.7%	0.7%	0.5%	0.830	0.766
240	90.7%	1.1%	9.3%	0.5%	0.4%	0.831	0.767
228	89.6%	1.2%	10.4%	0.6%	0.4%	0.818	0.750
216	88.4%	1.0%	11.6%	0.5%	0.4%	0.806	0.734
204	87.4%	1.3%	12.6%	0.7%	0.5%	0.791	0.715
192	86.0%	1.2%	14.0%	0.7%	0.5%	0.782	0.703
180	84.8%	1.2%	15.2%	0.7%	0.5%	0.771	0.688
168	83.6%	1.0%	16.4%	0.6%	0.5%	0.759	0.673
156	82.6%	1.0%	17.4%	0.6%	0.5%	0.744	0.654
144	81.6%	1.2%	18.4%	0.7%	0.6%	0.730	0.637
132	80.4%	1.3%	19.6%	0.9%	0.7%	0.719	0.623
120	79.1%	1.1%	20.9%	0.8%	0.7%	0.710	0.612
108	77.9%	1.4%	22.1%	1.0%	0.9%	0.698	0.598
96	76.5%	2.5%	23.5%	1.8%	1.6%	0.690	0.589
84	74.0%	2.9%	26.0%	2.3%	2.0%	0.694	0.595
72	71.1%	3.8%	28.9%	3.0%	2.7%	0.698	0.603
60	67.3%	5.3%	32.7%	4.5%	4.1%	0.707	0.615
48	62.0%	7.0%	38.0%	6.1%	5.7%	0.722	0.635
36	55.0%	11.5%	45.0%	10.4%	9.9%	0.739	0.657
24	43.5%	26.0%	56.5%	24.5%	23.8%	0.765	0.691
12	17.5%	17.5%	82.5%	17.2%	17.0%	0.813	0.753
Total		100.0%					

NOTES:

(2) = 1 / Section 4, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
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Department of Corrections - Cluster 3
Medical

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	573,695	1,139,601		541,299	1,075,249
6/30/82-83	0	5,712	0.981	0	5,601
6/30/83-84	0	26,081	0.945	0	24,655
6/30/84-85	4,206	8,206	0.913	3,842	7,495
6/30/85-86	8,668	10,668	0.889	7,708	9,487
6/30/86-87	14,313	15,313	0.877	12,558	13,435
6/30/87-88	30,017	33,017	0.864	25,941	28,534
6/30/88-89	37,493	39,493	0.850	31,886	33,587
6/30/89-90	64,526	64,526	0.836	53,972	53,972
6/30/90-91	96,158	96,158	0.822	79,077	79,077
6/30/91-92	88,208	89,208	0.808	71,302	72,110
6/30/92-93	64,727	65,727	0.798	51,670	52,469
6/30/93-94	87,090	89,090	0.804	70,001	71,609
6/30/94-95	109,153	110,153	0.830	90,622	91,452
6/30/95-96	149,597	151,597	0.831	124,258	125,919
6/30/96-97	206,625	210,625	0.818	168,977	172,248
6/30/97-98	264,550	273,550	0.806	213,195	220,448
6/30/98-99	266,815	273,815	0.791	211,173	216,713
6/30/99-00	324,759	334,759	0.782	254,012	261,833
6/30/00-01	497,941	521,941	0.771	383,783	402,280
6/30/01-02	360,775	367,775	0.759	273,668	278,978
6/30/02-03	460,991	473,991	0.744	343,015	352,688
6/30/03-04	450,191	458,191	0.730	328,674	334,515
6/30/04-05	552,478	632,528	0.719	396,973	454,491
6/30/05-06	487,566	556,786	0.710	345,941	395,054
6/30/06-07	350,183	462,633	0.698	244,337	322,798
6/30/07-08	462,681	593,681	0.690	319,175	409,544
6/30/08-09	419,979	619,979	0.694	291,261	429,964
6/30/09-10	422,668	717,668	0.698	295,187	501,213
6/30/10-11	456,053	902,953	0.707	322,484	638,495
6/30/11-12	542,125	1,070,325	0.722	391,499	772,942
6/30/12-13	683,861	1,332,111	0.739	505,270	984,228
6/30/13-14	952,995	1,761,995	0.765	729,483	1,348,744
6/30/14-15	2,343,205	2,633,955	0.813	1,905,283	2,141,695
Total	11,834,294	16,143,813		9,087,526	12,383,521
			(7) Total Discount Factor:	0.768	0.767

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	573,695	1,139,601
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	191,232	379,867
(11) Discounted Value at 4%:	541,299	1,075,249

NOTES:
(2), (3) From Section 4, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 4, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

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Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	573,695	1,139,601		526,500	1,045,851
6/30/82-83	0	5,712	0.971	0	5,548
6/30/83-84	0	26,081	0.920	0	23,991
6/30/84-85	4,206	8,206	0.874	3,677	7,173
6/30/85-86	8,668	10,668	0.841	7,285	8,966
6/30/86-87	14,313	15,313	0.825	11,803	12,628
6/30/87-88	30,017	33,017	0.807	24,224	26,645
6/30/88-89	37,493	39,493	0.789	29,570	31,147
6/30/89-90	64,526	64,526	0.770	49,693	49,693
6/30/90-91	96,158	96,158	0.752	72,277	72,277
6/30/91-92	88,208	89,208	0.733	64,693	65,426
6/30/92-93	64,727	65,727	0.721	46,655	47,376
6/30/93-94	87,090	89,090	0.730	63,532	64,991
6/30/94-95	109,153	110,153	0.766	83,653	84,420
6/30/95-96	149,597	151,597	0.767	114,745	116,279
6/30/96-97	206,625	210,625	0.750	154,896	157,894
6/30/97-98	264,550	273,550	0.734	194,121	200,725
6/30/98-99	266,815	273,815	0.715	190,700	195,703
6/30/99-00	324,759	334,759	0.703	228,262	235,291
6/30/00-01	497,941	521,941	0.688	342,712	359,230
6/30/01-02	360,775	367,775	0.673	242,721	247,430
6/30/02-03	460,991	473,991	0.654	301,669	310,176
6/30/03-04	450,191	458,191	0.637	286,710	291,804
6/30/04-05	552,478	632,528	0.623	344,084	393,939
6/30/05-06	487,566	556,786	0.612	298,501	340,879
6/30/06-07	350,183	462,633	0.598	209,421	276,670
6/30/07-08	462,681	593,681	0.589	272,552	349,721
6/30/08-09	419,979	619,979	0.595	250,011	369,070
6/30/09-10	422,668	717,668	0.603	254,783	432,608
6/30/10-11	456,053	902,953	0.615	280,491	555,351
6/30/11-12	542,125	1,070,325	0.635	344,336	679,827
6/30/12-13	683,861	1,332,111	0.657	449,309	875,220
6/30/13-14	952,995	1,761,995	0.691	658,924	1,218,286
6/30/14-15	2,343,205	2,633,955	0.753	1,764,055	1,982,943
Total	11,834,294	16,143,813		8,166,562	11,135,179
			(7) Total Discount Factor:	0.690	0.690

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	573,695	1,139,601
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	191,232	379,867
(11) Discounted Value at 6%:	526,500	1,045,851

NOTES:
(2), (3) From Section 4, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 4, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4

Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		2,201,927			2,621,520	2,750,944	419,593	549,017		
6/30/82-83		134,406	136,648		138,000	140,000	3,594	5,594		
6/30/83-84		188,031	191,036		192,000	196,000	3,969	7,969		
6/30/84-85	176,924	1,946,943	2,374,925	1,978,743	1,979,000	2,375,000	32,057	428,057	1.119	1.342
6/30/85-86	188,662	1,624,227	1,945,758	1,650,549	1,657,000	1,690,000	32,773	65,773	0.878	0.896
6/30/86-87	212,277	2,386,570	2,875,736	2,429,174	2,429,000	2,876,000	42,430	489,430	1.144	1.355
6/30/87-88	243,118	2,170,303	2,440,064	2,221,299	2,221,000	2,440,000	50,697	269,697	0.914	1.004
6/30/88-89	248,990	1,904,109	2,146,180	1,954,189	1,954,000	2,146,000	49,891	241,891	0.785	0.862
6/30/89-90	250,404	522,038	536,654	543,197	533,000	543,000	10,962	20,962	0.213	0.217
6/30/90-91	235,170	2,340,645	2,631,408	2,417,503	2,418,000	2,631,000	77,355	290,355	1.028	1.119
6/30/91-92	235,607	2,463,219	2,777,756	2,554,654	2,555,000	2,778,000	91,781	314,781	1.084	1.179
6/30/92-93	241,161	450,365	463,059	462,956	455,000	473,000	4,635	22,635	0.189	0.196
6/30/93-94	254,321	710,933	739,175	738,496	719,000	747,000	8,067	36,067	0.283	0.294
6/30/94-95	256,665	761,806	795,461	794,427	770,000	800,000	8,194	38,194	0.300	0.312
6/30/95-96	265,739	591,722	619,861	619,082	598,000	622,000	6,278	30,278	0.225	0.234
6/30/96-97	296,336	512,528	542,980	542,176	518,000	539,000	5,473	26,473	0.175	0.182
6/30/97-98	296,982	463,804	486,151	486,064	469,000	487,000	5,196	23,196	0.158	0.164
6/30/98-99	299,530	670,669	706,513	705,435	678,000	705,000	7,331	34,331	0.226	0.235
6/30/99-00	323,627	1,216,150	1,299,594	1,294,113	1,229,000	1,277,000	12,850	60,850	0.380	0.395
6/30/00-01	338,348	1,365,971	1,489,927	1,481,561	1,482,000	1,490,000	116,029	124,029	0.438	0.440
6/30/01-02	329,555	775,125	840,390	838,289	838,000	840,000	62,875	64,875	0.254	0.255
6/30/02-03	329,179	889,621	966,143	963,501	964,000	966,000	74,379	76,379	0.293	0.293
6/30/03-04	344,547	268,295	295,412	297,931	295,000	298,000	26,705	29,705	0.086	0.086
6/30/04-05	325,530	624,705	695,589	688,300	688,000	696,000	63,295	71,295	0.211	0.214
6/30/05-06	403,750	353,027	400,370	437,038	400,000	437,000	46,973	83,973	0.099	0.108
6/30/06-07	420,219	442,769	505,453	542,418	505,000	542,000	62,231	99,231	0.120	0.129
6/30/07-08	425,998	420,596	492,945	530,331	493,000	530,000	72,404	109,404	0.116	0.124
6/30/08-09	420,566	890,980	1,060,256	1,032,185	1,032,000	1,060,000	141,020	169,020	0.245	0.252
6/30/09-10	433,206	540,511	670,547	708,476	671,000	708,000	130,489	167,489	0.155	0.163
6/30/10-11	444,673	806,089	1,100,870	1,045,408	1,045,000	1,101,000	238,911	294,911	0.235	0.248
6/30/11-12	467,753	769,266	1,199,189	1,137,128	1,137,000	1,199,000	367,734	429,734	0.243	0.256
6/30/12-13	495,398	477,883	961,568	991,721	962,000	992,000	484,117	514,117	0.194	0.200
6/30/13-14	518,391	466,023	852,669	1,106,583	853,000	1,107,000	386,977	640,977	0.165	0.214
6/30/14-15	539,631	292,324	1,717,469	1,419,521	1,420,000	1,717,000	1,127,676	1,424,676	0.263	0.318
Total	10,262,257	32,643,580	36,957,758	34,612,449	36,918,520	39,898,944	4,274,940	7,255,365		
Tot 6/30/84-15	10,262,257	30,119,216	36,630,074	34,612,449	33,967,000	36,812,000	3,847,784	6,692,784	0.331	0.359

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 5, Exhibit 1, Page 2, Column 3 and Section 5, Exhibit 1, Page 9, Column 8

(4) From Section 5, Exhibit 1, Page 2, Column 8

(5) From Section 5, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		2,113,887							1	1		79
6/30/82-83		134,406	1.017	1.000	136,648	0	136,648		0	0		
6/30/83-84		160,531	1.019	1.000	163,536	27,500	191,036		0	0		
6/30/84-85	176,924	1,902,943	1.021	1.200	2,330,925	44,000	2,374,925	1.342	1	1	427,982	75
6/30/85-86	188,662	1,414,227	1.023	1.200	1,735,758	210,000	1,945,758	1.031	0	0		
6/30/86-87	212,277	2,128,570	1.025	1.200	2,617,736	258,000	2,875,736	1.355	1	1	489,166	63
6/30/87-88	243,118	2,081,803	1.027	1.100	2,351,564	88,500	2,440,064	1.004	1	1	269,761	64
6/30/88-89	248,990	1,836,109	1.029	1.100	2,078,180	68,000	2,146,180	0.862	1	1	242,072	65
6/30/89-90	250,404	471,448	1.031	1.000	486,064	50,590	536,654	0.214	0	0		
6/30/90-91	235,170	2,132,145	1.033	1.100	2,422,908	208,500	2,631,408	1.119	1	1	290,764	75
6/30/91-92	235,607	2,214,219	1.038	1.100	2,528,756	249,000	2,777,756	1.179	1	1	314,537	73
6/30/92-93	241,161	292,355	1.043	1.000	305,049	158,010	463,059	0.192	0	0		
6/30/93-94	254,321	580,633	1.049	1.000	608,875	130,300	739,175	0.291	0	0		
6/30/94-95	256,665	624,606	1.054	1.000	658,261	137,200	795,461	0.310	0	0		
6/30/95-96	265,739	475,722	1.059	1.000	503,861	116,000	619,861	0.233	0	0		
6/30/96-97	296,336	472,528	1.064	1.000	502,980	40,000	542,980	0.183	0	0		
6/30/97-98	296,982	320,304	1.070	1.000	342,651	143,500	486,151	0.164	0	0		
6/30/98-99	299,530	477,169	1.075	1.000	513,013	193,500	706,513	0.236	0	0		
6/30/99-00	323,627	1,036,650	1.080	1.000	1,120,094	179,500	1,299,594	0.402	0	0		
6/30/00-01	338,348	1,195,971	1.103	1.000	1,319,077	170,850	1,489,927	0.440	1	1	123,106	52
6/30/01-02	329,555	582,625	1.108	1.000	645,632	194,757	840,390	0.255	0	0		
6/30/02-03	329,179	629,649	1.114	1.000	701,180	264,962	966,143	0.294	2	0		
6/30/03-04	344,547	212,295	1.119	1.000	237,562	57,850	295,412	0.086	0	0		
6/30/04-05	325,530	457,755	1.140	1.000	521,772	173,817	695,589	0.214	0	0		
6/30/05-06	403,750	276,027	1.154	1.000	318,411	81,959	400,370	0.099	0	0		
6/30/06-07	420,219	324,328	1.163	1.000	377,318	128,135	505,453	0.120	0	0		
6/30/07-08	425,998	358,096	1.174	1.000	420,310	72,635	492,945	0.116	1	2	31,107	43
6/30/08-09	420,566	727,480	1.189	1.000	865,208	195,048	1,060,256	0.252	3	2	68,864	61
6/30/09-10	433,206	422,920	1.210	1.000	511,816	158,731	670,547	0.155	3	2	44,448	65
6/30/10-11	444,673	786,089	1.290	1.000	1,013,995	86,875	1,100,870	0.248	7	6	37,984	53
6/30/11-12	467,753	683,266	1.494	1.000	1,020,533	178,656	1,199,189	0.256	15	6	56,211	45
6/30/12-13	495,398	474,086	1.779	1.000	843,262	118,306	961,568	0.194	25	4	92,294	59
6/30/13-14	518,391	231,996	2.293	1.000	531,917	320,752	852,669	0.164	55	18	16,662	52
6/30/14-15	539,631	292,324	4.884	1.000	1,427,606	289,863	1,717,469	0.318		93	12,207	47
Total	10,262,257	28,525,160			32,162,461	4,795,297	36,957,758		119	141		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 5, Exhibit 1, Page 7

(5) Based on information from the MA WCRIB

(6) = (3) x (4) x (5)

(7) From Section 5, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	176,924	0.884	1,902,943	1.021	1,934,743	44,000	1,978,743	1.118	1.094
6/30/85-86	188,662	0.626	1,414,227	1.023	1,440,549	210,000	1,650,549	0.875	0.764
6/30/86-87	212,277	0.828	2,128,570	1.025	2,171,174	258,000	2,429,174	1.144	1.023
6/30/87-88	243,118	0.801	2,081,803	1.027	2,132,799	88,500	2,221,299	0.914	0.877
6/30/88-89	248,990	0.715	1,836,109	1.029	1,886,189	68,000	1,954,189	0.785	0.758
6/30/89-90	250,404	0.281	471,448	1.031	492,607	50,590	543,197	0.217	0.197
6/30/90-91	235,170	1.021	2,132,145	1.033	2,209,003	208,500	2,417,503	1.028	0.939
6/30/91-92	235,607	1.054	2,214,219	1.038	2,305,654	249,000	2,554,654	1.084	0.979
6/30/92-93	241,161	0.125	292,355	1.043	304,946	158,010	462,956	0.192	0.126
6/30/93-94	254,321	0.234	580,633	1.049	608,196	130,300	738,496	0.290	0.239
6/30/94-95	256,665	0.249	624,606	1.054	657,227	137,200	794,427	0.310	0.256
6/30/95-96	265,739	0.184	475,722	1.059	503,082	116,000	619,082	0.233	0.189
6/30/96-97	296,336	0.165	472,528	1.064	502,176	40,000	542,176	0.183	0.169
6/30/97-98	296,982	0.115	320,304	1.070	342,564	143,500	486,064	0.164	0.115
6/30/98-99	299,530	0.166	477,169	1.075	511,935	193,500	705,435	0.236	0.171
6/30/99-00	323,627	0.323	1,036,650	1.080	1,114,613	179,500	1,294,113	0.400	0.344
6/30/00-01	338,348	0.363	1,195,971	1.103	1,310,711	170,850	1,481,561	0.438	0.387
6/30/01-02	329,555	0.189	582,625	1.108	643,532	194,757	838,289	0.254	0.195
6/30/02-03	329,179	0.205	629,649	1.114	698,539	264,962	963,501	0.293	0.212
6/30/03-04	344,547	0.076	212,295	1.119	240,081	57,850	297,931	0.086	0.070
6/30/04-05	325,530	0.142	457,755	1.140	514,483	173,817	688,300	0.211	0.158
6/30/05-06	403,750	0.147	276,027	1.154	355,079	81,959	437,038	0.108	0.088
6/30/06-07	420,219	0.152	324,328	1.163	414,283	128,135	542,418	0.129	0.099
6/30/07-08	425,998	0.158	358,096	1.174	457,696	72,635	530,331	0.124	0.107
6/30/08-09	420,566	0.164	727,480	1.189	837,137	195,048	1,032,185	0.245	0.199
6/30/09-10	433,206	0.169	422,920	1.210	549,746	158,731	708,476	0.164	0.127
6/30/10-11	444,673	0.173	786,089	1.290	958,533	86,875	1,045,408	0.235	0.216
6/30/11-12	467,753	0.178	683,266	1.494	958,472	178,656	1,137,128	0.243	0.205
6/30/12-13	495,398	0.184	474,086	1.779	873,416	118,306	991,721	0.200	0.176
6/30/13-14	518,391	0.189	231,996	2.293	785,831	320,752	1,106,583	0.213	0.152
6/30/14-15	539,631	0.195	292,324	4.884	1,129,657	289,863	1,419,521	0.263	0.209
Total	10,262,257		26,116,337		29,844,652	4,767,797	34,612,449		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 5, Exhibit 1, Page 4, Column 11

(4) From Section 5, Exhibit 1, Page 2, Column 3

(5) From Section 5, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 5, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.884	0.884
6/30/85-86									0.626	0.626
6/30/86-87									0.828	0.828
6/30/87-88									0.801	0.801
6/30/88-89									0.715	0.715
6/30/89-90									0.281	0.281
6/30/90-91	235,170	2,422,908	1.030	0.963	0.992	1.854	1.839	0.112	0.904	1.021
6/30/91-92	235,607	2,528,756	1.073	1.056	1.134	1.809	2.051	0.105	1.034	1.054
6/30/92-93	241,161	305,049	0.126	1.232	0.156	1.765	0.275	0.092	0.127	0.125
6/30/93-94	254,321	608,875	0.239	1.216	0.291	1.722	0.501	0.096	0.288	0.234
6/30/94-95	256,665	658,261	0.256	1.205	0.309	1.680	0.519	0.099	0.260	0.249
6/30/95-96	265,739	503,861	0.190	1.195	0.227	1.639	0.371	0.102	0.196	0.184
6/30/96-97	296,336	502,980	0.170	1.183	0.201	1.599	0.321	0.106	0.178	0.165
6/30/97-98	296,982	342,651	0.115	1.168	0.135	1.560	0.210	0.110	0.126	0.115
6/30/98-99	299,530	513,013	0.171	1.153	0.197	1.522	0.300	0.114	0.185	0.166
6/30/99-00	323,627	1,120,094	0.346	1.134	0.393	1.485	0.583	0.119	0.366	0.323
6/30/00-01	338,348	1,319,077	0.390	1.105	0.431	1.448	0.624	0.125	0.403	0.363
6/30/01-02	329,555	645,632	0.196	1.084	0.212	1.413	0.300	0.131	0.219	0.189
6/30/02-03	329,179	701,180	0.213	1.080	0.230	1.379	0.317	0.134	0.239	0.205
6/30/03-04	344,547	237,562	0.069	1.080	0.074	1.345	0.100	0.138	0.090	0.076
6/30/04-05	325,530	521,772	0.160	1.073	0.172	1.312	0.226	0.142	0.165	0.142
6/30/05-06	403,750	318,411	0.079	1.062	0.084	1.280	0.107	0.147	0.171	0.147
6/30/06-07	420,219	377,318	0.090	1.051	0.094	1.249	0.118	0.152	0.177	0.152
6/30/07-08	425,998	420,310	0.099	1.039	0.103	1.218	0.125	0.158	0.183	0.158
6/30/08-09	420,566	865,208	0.206	1.027	0.211	1.189	0.251	0.164	0.190	0.164
6/30/09-10	433,206	511,816	0.118	1.023	0.121	1.160	0.140	0.169	0.195	0.169
6/30/10-11	444,673	1,013,995	0.228	1.025	0.234	1.131	0.264	0.173	0.200	0.173
6/30/11-12	467,753	1,020,533	0.218	1.018	0.222	1.104	0.245	0.178	0.206	0.178
6/30/12-13	495,398	843,262	0.170	1.009	0.172	1.077	0.185	0.184	0.213	0.184
6/30/13-14	518,391	531,917	0.103	1.005	0.103	1.051	0.108	0.189	0.220	0.189
6/30/14-15	539,631	1,427,606	0.265	1.000	0.265	1.025	0.271	0.195		0.195
Total	8,941,883	20,262,049								

Trend Last 4 (ex 14-15):	-23.8%	Avg 3 (ex 14-15):	0.179
Trend Last 8 (ex 14-15):	4.9%	Avg 5 (ex 14-15):	0.189
Trend Last 12 (ex 14-15):	2.5%	Avg 10 (ex 14-15):	0.177
Prior Selected Trend:	2.5%	Prior Sel Avg:	0.225
Selected Trend:	2.5%	Sel. Loss Cost:	0.200

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 5, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.940	
(2)	Credibility		14%	
(3)	Average Pmt Trend Statewide		0.960	
(4)	Credibility Weighted Trend		0.957	
		(Low)		(High)
(5)	Selected Range	0.948		0.976
(6)	Incremental Paid for 2015	35,034		35,034
(7)	Estimated Reserve	633,053		1,441,614
(8)	Paid to Date (82 & Prior)	2,113,887		2,113,887
(9)	Est Ult Paid for 1982 & Prior	2,746,940		3,555,501

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	34,355	33,585
(11)	Projected Number of Years	6	6
(12)	Estimated Reserve	206,133	201,510
(13)	Paid to Date (82 & Prior)	2,113,887	2,078,853
(14)	Est Ult Paid for 1982 & Prior	2,320,020	2,280,363
(14a)	Paid Counts During Fiscal Year	1	1
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	2,533,480	2,662,904
(16)	Lump Sum Ultimates	88,040	88,040
(17)	Ult Loss Including Lump Sums	**2,621,520**	**2,750,944**
(18)	Implied Tail	1.198	1.260
(19)	Ult Loss Inc Lump Sums @ 6/14	2,576,849	2,702,546

NOTES:

(1) From Section 5, Exhibit 1, Page 6
(2) = (Average of Section 5, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 5, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 5, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 5, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	105,743	11.569			
1993	2	106,772	11.578	1.010		
1994	3	104,490	11.557	0.979		
1995	4	93,231	11.443	0.892		
1996	5	83,819	11.336	0.899		
1997	6	71,966	11.184	0.859		
1998	7	75,700	11.235	1.052		
1999	8	69,564	11.150	0.919		
2000	9	65,140	11.084	0.936	n =	24
2001	10	69,462	11.149	1.066	S(x) =	48,084
2002	11	72,621	11.193	1.045	S(x-sq) =	96,337,444
2003	12	73,534	11.206	1.013	S(xy) =	525,552
2004	13	73,411	11.204	0.998	S(y) =	262
2005	14	77,899	11.263	1.061	D =	27,600
2006	15	44,021	10.692	0.565	slope =	-0.060
2007	16	28,745	10.266	0.653	Avg Trend =	0.940
2008	17	31,541	10.359	1.097		
2009	18	31,382	10.354	0.995		
2010	19	34,140	10.438	1.088		
2011	20	31,644	10.362	0.927		
2012	21	32,723	10.396	1.034		
2013	22	33,791	10.428	1.033		
2014	23	34,242	10.441	1.013		
2015	24	35,034	10.464	1.023		
					Selected Trend:	**0.940**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 1.023 = 35034 / 34242

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Amherst) - Cluster 4
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	9,901	27,199	38,094	47,389	62,514	76,567	110,541	128,600	128,600	128,600	128,600	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406	134,406
June-84	12,002	32,972	46,180	57,447	75,782	92,840	110,643	140,015	147,985	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	160,531	
June-85	96,162	264,176	369,998	460,278	608,898	675,356	769,715	839,890	909,635	972,316	1,027,903	1,068,427	1,096,448	1,126,464	1,157,182	1,193,170	1,230,415	1,270,584	1,311,388	1,352,093	1,394,014	1,437,567	1,483,096	1,530,726	1,581,634	1,636,270	1,687,070	1,738,901	1,792,424	1,846,661	1,902,943		
June-86	62,242	170,991	239,486	289,205	386,115	436,793	545,340	637,721	703,230	742,718	771,694	801,514	833,158	865,475	902,795	941,906	984,064	1,026,987	1,069,806	1,113,907	1,159,474	1,207,370	1,257,125	1,309,416	1,362,366	1,414,227	1,414,227	1,414,227	1,414,227	1,414,227			
June-87	114,930	315,736	434,426	540,241	638,550	728,426	816,220	883,030	959,990	1,087,438	1,157,085	1,228,783	1,294,957	1,353,217	1,408,627	1,466,232	1,524,982	1,583,672	1,643,019	1,705,167	1,769,184	1,838,793	1,908,370	1,966,226	1,996,908	2,028,636	2,061,400	2,094,601	2,128,570				
June-88	145,512	388,262	580,167	742,458	913,661	1,023,389	1,122,499	1,187,899	1,243,915	1,301,898	1,363,345	1,426,364	1,496,845	1,538,376	1,582,716	1,627,788	1,673,942	1,720,105	1,757,371	1,788,805	1,821,696	1,856,017	1,892,584	1,933,305	1,969,091	2,006,043	2,043,490	2,081,803					
June-89	149,323	412,040	585,718	734,611	862,714	940,958	1,000,308	1,091,299	1,155,714	1,209,050	1,258,035	1,312,045	1,364,494	1,425,132	1,470,732	1,496,093	1,522,212	1,550,498	1,578,865	1,608,540	1,639,511	1,670,871	1,702,101	1,734,395	1,767,742	1,801,535	1,836,109						
June-90	147,842	316,313	418,270	483,765	493,004	500,207	470,618	470,618	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448	471,448							
June-91	221,834	616,722	912,374	1,121,784	1,264,030	1,316,233	1,389,392	1,447,121	1,486,680	1,550,949	1,590,832	1,657,948	1,707,507	1,756,977	1,801,084	1,841,720	1,882,581	1,912,600	1,943,013	1,973,183	2,003,226	2,034,294	2,066,375	2,098,884	2,132,145								
June-92	172,146	475,588	707,613	916,461	996,673	1,097,913	1,173,097	1,245,955	1,399,954	1,481,116	1,564,487	1,649,535	1,732,053	1,809,950	1,869,935	1,921,123	1,976,310	2,034,348	2,068,242	2,095,831	2,124,362	2,153,822	2,183,675	2,214,219									
June-93	81,038	222,727	276,572	310,192	330,479	348,662	351,823	276,708	276,708	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355	292,355										
June-94	106,895	214,659	321,406	344,959	362,159	373,504	398,819	422,133	440,603	460,274	479,091	498,642	518,380	538,584	559,634	580,633	580,633	580,633	580,633	580,633	580,633	580,633	580,633										
June-95	150,379	381,117	506,335	558,037	585,924	605,733	622,315	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606	624,606											
June-96	188,667	308,485	416,852	435,702	459,899	469,932	470,598	475,072	475,222	475,722	475,722	475,722	475,722	475,722	475,722	475,722	475,722	475,722	475,722	475,722													
June-97	106,252	219,810	296,841	353,903	388,354	412,255	429,409	446,564	464,289	472,427	472,427	472,427	472,427	472,427	472,427	472,427	472,528	472,528	472,528														
June-98	89,150	206,061	269,266	292,631	307,643	318,681	318,681	318,681	319,304	320,304	320,304	320,304	320,304	320,304	320,304	320,304	320,304	320,304															
June-99	79,713	235,741	363,483	410,110	440,701	457,432	467,619	476,062	476,685	476,775	476,815	476,815	476,815	477,169	477,169	477,169	477,169																
June-00	199,557	423,727	611,687	721,978	842,583	936,681	993,407	1,021,874	1,036,650	1,036,650	1,036,650	1,036,650	1,036,650	1,036,650	1,036,650	1,036,650																	
June-01	195,155	433,892	620,127	728,970	802,692	874,675	926,705	967,811	1,019,057	1,061,416	1,087,275	1,114,014	1,141,100	1,168,374	1,195,971																		
June-02	134,258	318,384	436,848	510,454	554,485	576,982	577,623	579,568	581,568	581,568	582,625	582,625	582,625	582,625																			
June-03	110,118	229,192	295,970	379,354	446,784	478,317	500,756	523,384	546,666	569,968	589,299	629,649	629,649																				
June-04	119,754	192,578	206,484	211,562	212,295	212,295	212,295	212,295	212,295	212,295	212,295	212,295																					
June-05	118,177	251,133	297,710	349,273	395,191	448,261	457,017	457,755	457,755	457,755	457,755																						
June-06	109,288	227,014	271,354	276,027	276,027	276,027	276,027	276,027	276,027	276,027																							
June-07	130,909	212,144	272,353	307,382	318,762	324,328	324,328	324,328	324,328																								
June-08	136,833	207,607	263,568	288,690	304,525	321,451	336,306	358,096																									
June-09	157,647	372,637	490,926	555,124	656,285	711,812	727,480																										
June-10	84,674	225,140	286,244	344,751	390,834	422,920																											
June-11	203,344	361,140	445,050	584,777	786,089																												
June-12	198,403	427,078	566,988	683,266																													
June-13	283,404	453,488	474,086																														
June-14	158,266	231,996																															
June-15	292,324																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.747	1.401	1.244	1.319	1.225	1.444	1.163	1.000	1.000	1.000	1.045	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
June-84	2.747	1.401	1.244	1.319	1.225	1.192	1.265	1.057	1.085	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
June-85	2.747	1.401	1.244	1.323	1.109	1.140	1.091	1.083	1.069	1.057	1.039	1.026	1.027	1.027	1.031	1.031	1.033	1.032	1.031	1.031	1.031	1.032	1.032	1.033	1.035	1.031	1.031	1.031	1.030	1.030			
June-86	2.747	1.401	1.208	1.335	1.131	1.249	1.169	1.103	1.056	1.039	1.039	1.039	1.039	1.043	1.043	1.045	1.044	1.042	1.041	1.041	1.041	1.041	1.042	1.040	1.038	1.000	1.000	1.000	1.000				
June-87	2.747	1.376	1.244	1.182	1.141	1.121	1.082	1.087	1.133	1.064	1.062	1.054	1.045	1.041	1.041	1.040	1.038	1.037	1.038	1.038	1.039	1.038	1.030	1.016	1.016	1.016	1.016	1.016					
June-88	2.668	1.494	1.280	1.231	1.120	1.097	1.058	1.047	1.047	1.047	1.046	1.049	1.028	1.029	1.028	1.028	1.028	1.022	1.018	1.018	1.019	1.020	1.022	1.019	1.019	1.019	1.019						
June-89	2.759	1.422	1.254	1.174	1.091	1.063	1.091	1.059	1.046	1.041	1.043	1.040	1.044	1.032	1.017	1.017	1.019	1.018	1.019	1.019	1.019	1.019	1.019	1.019	1.019	1.019							
June-90	2.140	1.322	1.157	1.019	1.015	0.941	1.000	1.002	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	1.000	1.000	1.000								
June-91	2.780	1.479	1.230	1.127	1.041	1.056	1.042	1.027	1.043	1.026	1.042	1.030	1.029	1.025	1.023	1.022	1.016	1.016	1.016	1.015	1.016	1.016	1.016	1.016									
June-92	2.763	1.488	1.295	1.088	1.102	1.068	1.062	1.124	1.058	1.056	1.054	1.050	1.045	1.033	1.027	1.029	1.029	1.017	1.013	1.014	1.014	1.014	1.014										
June-93	2.748	1.242	1.122	1.065	1.055	1.009	0.786	1.000	1.057	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											
June-94	2.008	1.497	1.073	1.050	1.031	1.068	1.058	1.044	1.045	1.041	1.041	1.040	1.039	1.039	1.038	1.000	1.000	1.000	1.000	1.000	1.000												
June-95	2.534	1.329	1.102	1.050	1.034	1.027	1.004	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													
June-96	1.635	1.351	1.045	1.056	1.022	1.001	1.010	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-97	2.069	1.350	1.192	1.097	1.062	1.042	1.040	1.040	1.018	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
June-98	2.311	1.307	1.087	1.051	1.036	1.000	1.000	1.002	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																
June-99	2.957	1.542	1.128	1.075	1.038	1.022	1.018	1.001	1.000	1.000	1.000	1.000	1.001	1.000	1.000	1.000																	
June-00	2.123	1.444	1.180	1.167	1.112	1.061	1.029	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000																		
June-01	2.223	1.429	1.176	1.101	1.090	1.059	1.044	1.053	1.042	1.024	1.025	1.024	1.024	1.024																			
June-02	2.371	1.372	1.168	1.086	1.041	1.001	1.003	1.003	1.000	1.002	1.000	1.000	1.000																				
June-03	2.081	1.291	1.282	1.178	1.071	1.047	1.045	1.044	1.043	1.034	1.068	1.000																					
June-04	1.608	1.072	1.025	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000																						
June-05	2.125	1.185	1.173	1.131	1.134	1.020	1.002	1.000	1.000	1.000																							
June-06	2.077	1.195	1.017	1.000	1.000	1.000	1.000	1.000	1.000																								
June-07	1.621	1.284	1.129	1.037	1.017	1.000	1.000	1.000																									
June-08	1.517	1.270	1.095	1.055	1.056	1.046	1.065																										
June-09	2.364	1.317	1.131	1.182	1.085	1.022																											
June-10	2.659	1.271	1.204	1.134	1.082																												
June-11	1.776	1.232	1.314	1.344																													
June-12	2.153	1.328	1.205																														
June-13	1.600	1.045																															
June-14	1.466																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.277	1.340	1.175	1.137	1.077	1.066	1.043	1.032	1.031	1.019	1.023	1.017	1.016	1.015	1.014	1.013	1.013	1.012	1.013	1.014	1.015	1.016	1.017	1.016	1.016	1.012	1.011	1.009	1.008	1.010	1.000		
Latest 5	1.931	1.239	1.190	1.150	1.048	1.018	1.013	1.009	1.009	1.012	1.019	1.005	1.005	1.005	1.000	1.000	1.000	1.000	1.003	1.006	1.006	1.010	1.014	1.014	1.018	1.017	1.013	1.009					
Latest 3	1.740	1.202	1.241	1.220	1.074	1.023	1.022	1.000	1.000	1.011	1.023	1.008	1.008	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.005	1.010	1.010	1.012	1.013	1.018	1.012	1.016	1.010	1.010			
Volume Wtd																																	
All Yrs	2.194	1.348	1.185	1.135	1.075	1.057	1.044	1.043	1.039	1.028	1.031	1.026	1.025	1.023	1.021	1.021	1.021	1.019	1.019	1.020	1.021	1.022	1.022	1.021	1.022	1.017	1.016	1.016	1.015	1.026	1.000	1.000	
Latest 5	1.830	1.230	1.197	1.181	1.057	1.019	1.014	1.013	1.011	1.016	1.019	1.007	1.008	1.008	1.000	1.000	1.000	1.000	1.007	1.011	1.011	1.014	1.016	1.016	1.020	1.018	1.017	1.016					
Latest 3	1.738	1.197	1.242	1.235	1.077	1.022	1.023	1.000	1.000	1.016	1.029	1.012	1.010	1.010	1.000	1.000	1.000	1.000	1.000	1.000	1.010	1.014	1.013	1.015	1.017	1.018	1.013	1.017	1.016	1.026			

Dev Factor Selection

Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	*2.130*	*1.363*	*1.184*	*1.100*	*1.058*	*1.013*	*1.013*	*1.000*	*1.017*	*1.021*	*1.026*	*1.015*	*1.025*	*1.023*	*1.022*	*1.022*	*1.022*	*1.020*	*1.019*	*1.021*	*1.022*	*1.023*	*1.010*	*1.005*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*1.017*	
Selected	2.130	1.289	1.191	1.158	1.066	1.018	1.013	1.009	1.009	1.012	1.019	1.005	1.005	1.005	1.021	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.017
FacToUlt	4.884	2.293	1.779	1.494	1.290	1.210	1.189	1.174	1.163	1.154	1.140	1.119	1.114	1.108	1.103	1.080	1.075	1.070	1.064	1.059	1.054	1.049	1.043	1.038	1.033	1.031	1.029	1.027	1.025	1.023	1.021	1.019	1.017
Percent of Ult	20.5%	43.6%	56.2%	67.0%	77.5%	82.6%	84.1%	85.2%	86.0%	86.7%	87.7%	89.4%	89.8%	90.2%	90.7%	92.6%	93.0%	93.5%	93.9%	94.4%	94.9%	95.4%	95.8%	96.3%	96.8%	97.0%	97.2%	97.4%	97.6%	97.8%	98.0%	98.2%	98.4%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	2,576,849	2,702,546	2,621,520	2,750,944	44,670	1.7%	48,398	1.8%
6/30/82-83	138,000	140,000	138,000	140,000	0	0.0%	0	0.0%
6/30/83-84	192,000	196,000	192,000	196,000	0	0.0%	0	0.0%
6/30/84-85	1,916,000	2,297,000	1,979,000	2,375,000	63,000	3.3%	78,000	3.4%
6/30/85-86	1,644,000	1,933,399	1,657,000	1,690,000	13,000	0.8%	(243,399)	-12.6%
6/30/86-87	2,382,000	3,240,000	2,429,000	2,876,000	47,000	2.0%	(364,000)	-11.2%
6/30/87-88	2,164,000	2,166,000	2,221,000	2,440,000	57,000	2.6%	274,000	12.7%
6/30/88-89	1,899,000	1,900,000	1,954,000	2,146,000	55,000	2.9%	246,000	12.9%
6/30/89-90	530,000	534,000	533,000	543,000	3,000	0.6%	9,000	1.7%
6/30/90-91	2,353,000	2,353,000	2,418,000	2,631,000	65,000	2.8%	278,000	11.8%
6/30/91-92	2,508,000	2,728,000	2,555,000	2,778,000	47,000	1.9%	50,000	1.8%
6/30/92-93	455,000	473,000	455,000	473,000	0	0.0%	0	0.0%
6/30/93-94	719,000	747,000	719,000	747,000	0	0.0%	0	0.0%
6/30/94-95	770,000	800,000	770,000	800,000	0	0.0%	0	0.0%
6/30/95-96	598,000	622,000	598,000	622,000	0	0.0%	0	0.0%
6/30/96-97	518,000	539,000	518,000	539,000	0	0.0%	0	0.0%
6/30/97-98	469,000	487,000	469,000	487,000	0	0.0%	0	0.0%
6/30/98-99	761,000	764,000	678,000	705,000	(83,000)	-10.9%	(59,000)	-7.7%
6/30/99-00	1,432,000	1,447,000	1,229,000	1,277,000	(203,000)	-14.2%	(170,000)	-11.7%
6/30/00-01	1,613,000	1,632,000	1,482,000	1,490,000	(131,000)	-8.1%	(142,000)	-8.7%
6/30/01-02	938,000	943,000	838,000	840,000	(100,000)	-10.7%	(103,000)	-10.9%
6/30/02-03	1,079,000	1,087,000	964,000	966,000	(115,000)	-10.7%	(121,000)	-11.1%
6/30/03-04	342,000	349,000	295,000	298,000	(47,000)	-13.7%	(51,000)	-14.6%
6/30/04-05	778,000	801,000	688,000	696,000	(90,000)	-11.6%	(105,000)	-13.1%
6/30/05-06	467,000	553,000	400,000	437,000	(67,000)	-14.3%	(116,000)	-21.0%
6/30/06-07	582,000	664,000	505,000	542,000	(77,000)	-13.2%	(122,000)	-18.4%
6/30/07-08	550,000	638,000	493,000	530,000	(57,000)	-10.4%	(108,000)	-16.9%
6/30/08-09	1,138,000	1,202,000	1,032,000	1,060,000	(106,000)	-9.3%	(142,000)	-11.8%
6/30/09-10	776,000	863,000	671,000	708,000	(105,000)	-13.5%	(155,000)	-18.0%
6/30/10-11	1,017,000	1,048,000	1,045,000	1,101,000	28,000	2.8%	53,000	5.1%
6/30/11-12	1,233,000	1,304,000	1,137,000	1,199,000	(96,000)	-7.8%	(105,000)	-8.1%
6/30/12-13	1,302,000	1,400,000	962,000	992,000	(340,000)	-26.1%	(408,000)	-29.1%
6/30/13-14	1,077,000	1,272,000	853,000	1,107,000	(224,000)	-20.8%	(165,000)	-13.0%
6/30/14-15								
Total	36,916,849	39,824,945	35,498,520	38,181,944	(1,418,330)	-3.8%	(1,643,001)	-4.1%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 5, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	2,113,887	1.229	2,598,192	0.0%	0.0%	0	88,040	88,040	3.4%	1.000	88,040	88,040	88,040
6/30/82-83	134,406	1.017	136,648	0.0%	0.0%	0	0	0	0.0%	1.000	0	0	0
6/30/83-84	160,531	1.019	163,536	0.0%	0.0%	0	27,500	27,500	16.8%	1.000	27,500	27,500	27,500
6/30/84-85	1,902,943	1.225	2,330,925	0.0%	0.0%	0	44,000	44,000	1.9%	1.000	44,000	44,000	44,000
6/30/85-86	1,414,227	1.227	1,735,758	0.0%	0.0%	0	210,000	210,000	12.1%	1.000	210,000	210,000	210,000
6/30/86-87	2,128,570	1.230	2,617,736	0.0%	0.0%	0	258,000	258,000	9.9%	1.000	258,000	258,000	258,000
6/30/87-88	2,081,803	1.130	2,351,564	0.0%	0.0%	0	88,500	88,500	3.8%	1.000	88,500	88,500	88,500
6/30/88-89	1,836,109	1.132	2,078,180	0.0%	0.0%	0	68,000	68,000	3.3%	1.000	68,000	68,000	68,000
6/30/89-90	471,448	1.031	486,064	0.0%	0.0%	0	50,590	50,590	10.4%	1.000	50,590	50,590	50,590
6/30/90-91	2,132,145	1.136	2,422,908	0.0%	0.0%	0	208,500	208,500	8.6%	1.000	208,500	208,500	208,500
6/30/91-92	2,214,219	1.142	2,528,756	0.0%	0.0%	0	249,000	249,000	9.8%	1.000	249,000	249,000	249,000
6/30/92-93	292,355	1.043	305,049	0.0%	0.0%	0	158,010	158,010	51.8%	1.000	158,010	158,010	158,010
6/30/93-94	580,633	1.049	608,875	0.0%	0.0%	0	130,300	130,300	21.4%	1.000	130,300	130,300	130,300
6/30/94-95	624,606	1.054	658,261	0.0%	0.0%	0	137,200	137,200	20.8%	1.000	137,200	137,200	137,200
6/30/95-96	475,722	1.059	503,861	0.0%	0.0%	0	116,000	116,000	23.0%	1.000	116,000	116,000	116,000
6/30/96-97	472,528	1.064	502,980	0.0%	0.0%	0	40,000	40,000	8.0%	1.000	40,000	40,000	40,000
6/30/97-98	320,304	1.070	342,651	0.0%	0.0%	0	143,500	143,500	41.9%	1.000	143,500	143,500	143,500
6/30/98-99	477,169	1.075	513,013	0.0%	0.0%	0	193,500	193,500	37.7%	1.000	193,500	193,500	193,500
6/30/99-00	1,036,650	1.080	1,120,094	0.0%	0.0%	0	179,500	179,500	16.0%	1.000	179,500	179,500	180,398
6/30/00-01	1,195,971	1.103	1,319,077	0.0%	0.0%	0	170,000	170,000	12.9%	1.010	171,700	170,850	172,439
6/30/01-02	582,625	1.108	645,632	0.1%	0.1%	646	192,500	193,146	29.9%	1.020	196,369	194,757	196,536
6/30/02-03	629,649	1.114	701,180	0.2%	0.3%	2,104	259,972	262,076	37.4%	1.030	267,849	264,962	267,706
6/30/03-04	212,295	1.119	237,562	0.3%	0.6%	1,425	56,000	57,425	24.2%	1.041	58,274	57,850	58,845
6/30/04-05	457,755	1.140	521,772	0.4%	1.0%	5,218	166,950	172,168	33.0%	1.051	175,466	173,817	177,203
6/30/05-06	276,027	1.154	318,411	0.5%	1.5%	4,776	77,000	81,776	25.7%	1.067	82,142	81,959	84,846
6/30/06-07	324,328	1.163	377,318	0.7%	2.2%	8,301	118,441	126,742	33.6%	1.094	129,528	128,135	132,782
6/30/07-08	358,096	1.174	420,310	0.7%	2.9%	12,189	62,500	74,689	17.8%	1.129	70,581	72,635	77,323
6/30/08-09	727,480	1.189	865,208	0.8%	3.7%	32,013	163,500	195,513	22.6%	1.190	194,584	195,048	188,906
6/30/09-10	422,920	1.210	511,816	1.2%	4.9%	24,954	117,591	142,545	27.9%	1.487	174,916	158,731	187,567
6/30/10-11	786,089	1.290	1,013,995	1.7%	6.6%	66,875	20,000	86,875	8.6%	1.818	36,360	86,875	79,682
6/30/11-12	683,266	1.494	1,020,533	2.5%	9.1%	92,656	86,000	178,656	17.5%	3.344	287,582	178,656	192,513
6/30/12-13	474,086	1.779	843,262	4.5%	13.6%	114,508	3,798	118,306	14.0%	6.000	22,785	118,306	187,358
6/30/13-14	231,996	2.293	531,917	2.7%	16.3%	86,725	234,027	320,752	60.3%	16.026	3,750,456	320,752	175,329
6/30/14-15	292,324	4.884	1,427,606	4.0%	20.3%	289,863	0	289,863	20.3%	16.026	0	289,863	
Total	28,525,160		34,760,653			742,252	4,118,419	4,860,671	14.0%		8,008,732	4,883,337	4,570,073

NOTES:
(2) From Section 5, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 5, Exhibit 1, Page 2, Column 6
(5) From Section 5, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 5, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 5, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Amherst) - Cluster 4
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0	0	0	0	0	0	0	0	7,000	0	0	0	0	0	54,000	0	0	0	0	0	0	0	0	0	27,040	0	0	0	0	0	0	0	0	0
Jun-83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jun-85	0	0	0	0	0	16,500	0	0	0	0	0	27,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Jun-86	0	0	0	0	0	0	0	0	50,000	0	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150,000	0	0	0	0				
Jun-87	0	0	0	0	0	10,000	37,500	0	10,000	0	0	0	19,000	46,500	0	0	0	0	0	0	0	0	0	135,000	0	0	0	0	0					
Jun-88	0	0	0	12,500	12,500	0	43,500	0	0	0	0	0	0	0	0	0	0	0	20,000	0	0	0	0	0	0	0	0	0						
Jun-89	0	0	0	0	14,000	0	0	9,000	45,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Jun-90	0	0	0	33,000	8,000	9,590	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Jun-91	0	0	0	30,000	20,000	60,000	46,500	0	27,000	0	0	0	0	0	25,000	0	0	0	0	0	0	0	0	0	0								
Jun-92	0	5,000	0	100,500	0	0	0	27,500	0	0	0	0	0	36,000	0	0	0	0	80,000	0	0	0	0	0									
Jun-93	0	20,010	43,000	10,000	0	10,000	0	75,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
Jun-94	0	0	0	0	0	0	0	0	0	10,300	0	0	0	0	0	120,000	0	0	0	0	0	0												
Jun-95	0	37,200	35,000	40,000	25,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0													
Jun-96	0	0	16,000	0	25,000	37,500	37,500	0	0	0	0	0	0	0	0	0	0	0	0	0														
Jun-97	0	0	0	0	0	0	0	0	0	40,000	0	0	0	0	0	0	0	0	0															
Jun-98	0	0	88,500	0	30,000	25,000	0	0	0	0	0	0	0	0	0	0	0	0																
Jun-99	0	40,000	93,500	27,500	0	22,500	0	0	0	10,000	0	0	0	0	0	0	0																	
Jun-00	0	0	23,000	27,500	75,000	0	24,000	0	30,000	0	0	0	0	0	0	0																		
Jun-01	0	17,500	72,500	50,000	0	30,000	0	0	0	0	0	0	0	0	0																			
Jun-02	0	24,000	18,000	52,500	63,000	35,000	0	0	0	0	0	0	0	0																				
Jun-03	0	9,000	26,500	32,000	30,000	92,472	0	0	0	0	70,000	0	0																					
Jun-04	0	6,000	0	0	50,000	0	0	0	0	0	0	0																						
Jun-05	0	24,450	18,500	0	35,000	12,000	65,000	12,000	0	0	0																							
Jun-06	0	35,000	28,000	14,000	0	0	0	0	0	0																								
Jun-07	0	0	0	60,000	40,000	15,000	3,441	0	0																									
Jun-08	0	0	17,500	45,000	0	0	0	0																										
Jun-09	0	62,500	30,000	0	0	40,000	31,000																											
Jun-10	0	62,591	25,000	0	30,000	0																												
Jun-11	0	0	0	0	20,000																													
Jun-12	0	0	51,000	35,000																														
Jun-13	0	0	3,798																															
Jun-14	0	234,027																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	7,000	7,000	7,000	7,000	7,000	7,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	88,040	88,040	88,040	88,040	88,040	88,040	88,040	88,040	88,040	88,040
Jun-83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500		
Jun-85	0	0	0	0	0	16,500	16,500	16,500	16,500	16,500	16,500	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000			
Jun-86	0	0	0	0	0	0	0	0	50,000	50,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	210,000	210,000	210,000	210,000	210,000				
Jun-87	0	0	0	0	0	10,000	47,500	47,500	57,500	57,500	57,500	57,500	76,500	123,000	123,000	123,000	123,000	123,000	123,000	123,000	123,000	123,000	123,000	258,000	258,000	258,000	258,000	258,000	258,000					
Jun-88	0	0	0	12,500	25,000	25,000	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500						
Jun-89	0	0	0	0	14,000	14,000	14,000	23,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000							
Jun-90	0	0	0	33,000	41,000	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590								
Jun-91	0	0	0	30,000	50,000	110,000	156,500	156,500	183,500	183,500	183,500	183,500	183,500	183,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500									
Jun-92	0	5,000	5,000	105,500	105,500	105,500	105,500	133,000	133,000	133,000	133,000	133,000	133,000	169,000	169,000	169,000	169,000	169,000	249,000	249,000	249,000	249,000	249,000	249,000										
Jun-93	0	20,010	63,010	73,010	73,010	83,010	83,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010											
Jun-94	0	0	0	0	0	0	0	0	0	10,300	10,300	10,300	10,300	10,300	10,300	130,300	130,300	130,300	130,300	130,300	130,300	130,300												
Jun-95	0	37,200	72,200	112,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200													
Jun-96	0	0	16,000	16,000	41,000	78,500	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000														
Jun-97	0	0	0	0	0	0	0	0	0	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000															
Jun-98	0	0	88,500	88,500	118,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500																
Jun-99	0	40,000	133,500	161,000	161,000	183,500	183,500	183,500	183,500	193,500	193,500	193,500	193,500	193,500	193,500	193,500	193,500																	
Jun-00	0	0	23,000	50,500	125,500	125,500	149,500	149,500	179,500	179,500	179,500	179,500	179,500	179,500	179,500	179,500																		
Jun-01	0	17,500	90,000	140,000	140,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000																			
Jun-02	0	24,000	42,000	94,500	157,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500																				
Jun-03	0	9,000	35,500	67,500	97,500	189,972	189,972	189,972	189,972	189,972	259,972	259,972	259,972																					
Jun-04	0	6,000	6,000	6,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000																						
Jun-05	0	24,450	42,950	42,950	77,950	89,950	154,950	166,950	166,950	166,950	166,950																							
Jun-06	0	35,000	63,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000																								
Jun-07	0	0	0	60,000	100,000	115,000	118,441	118,441	118,441																									
Jun-08	0	0	17,500	62,500	62,500	62,500	62,500	62,500																										
Jun-09	0	62,500	92,500	92,500	92,500	132,500	163,500																											
Jun-10	0	62,591	87,591	87,591	117,591	117,591																												
Jun-11	0	0	0	0	20,000																													
Jun-12	0	0	51,000	86,000																														
Jun-13	0	0	3,798																															
Jun-14	0	234,027																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Amherst) - Cluster 4
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.168	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Jun-86	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.086	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.000	0.000	0.000	0.000	0.004	0.014	0.000	0.004	0.000	0.000	0.000	0.007	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.052	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.000	0.000	0.005	0.005	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
Jun-89	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.004	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.000	0.000	0.068	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000								
Jun-91	0.000	0.000	0.000	0.012	0.008	0.025	0.019	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000									
Jun-92	0.000	0.002	0.000	0.040	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.000	0.066	0.141	0.033	0.000	0.033	0.000	0.246	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
Jun-94	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.197	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.000	0.057	0.053	0.061	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.000	0.000	0.032	0.000	0.050	0.074	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000														
Jun-97	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000															
Jun-98	0.000	0.000	0.258	0.000	0.088	0.073	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																
Jun-99	0.000	0.078	0.182	0.054	0.000	0.044	0.000	0.000	0.000	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000																	
Jun-00	0.000	0.000	0.021	0.025	0.067	0.000	0.021	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000																		
Jun-01	0.000	0.013	0.055	0.038	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																			
Jun-02	0.000	0.037	0.028	0.081	0.098	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																				
Jun-03	0.000	0.013	0.038	0.046	0.043	0.132	0.000	0.000	0.000	0.000	0.100	0.000	0.000																					
Jun-04	0.000	0.025	0.000	0.000	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.000																						
Jun-05	0.000	0.047	0.035	0.000	0.067	0.023	0.125	0.023	0.000	0.000	0.000																							
Jun-06	0.000	0.110	0.088	0.044	0.000	0.000	0.000	0.000	0.000	0.000																								
Jun-07	0.000	0.000	0.000	0.159	0.106	0.040	0.009	0.000	0.000																									
Jun-08	0.000	0.000	0.042	0.107	0.000	0.000	0.000	0.000																										
Jun-09	0.000	0.072	0.035	0.000	0.000	0.046	0.036																											
Jun-10	0.000	0.122	0.049	0.000	0.059	0.000																												
Jun-11	0.000	0.000	0.000	0.000	0.020																													
Jun-12	0.000	0.000	0.050	0.034																														
Jun-13	0.000	0.000	0.005																															
Jun-14	0.000	0.164																																
Jun-15	0.000																																	

Averages		12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
Simple Avg																																		
All Yrs (ex P)	0.000	0.025	0.036	0.027	0.030	0.021	0.012	0.011	0.004	0.005	0.005	0.001	0.000	0.002	0.001	0.011	0.010	0.000	0.003	0.000	0.000	0.000	0.000	0.005	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Latest 5	0.000	0.057	0.028	0.028	0.037	0.017	0.034	0.005	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.000	0.000	0.000					
Latest 3	0.000	0.055	0.018	0.011	0.026	0.015	0.015	0.000	0.000	0.000	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Olympic Avg																																		
All Yrs (ex P)	0.000	0.021	0.029	0.023	0.025	0.018	0.008	0.002	0.003	0.002	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.000	0.044	0.027	0.029	0.049	0.023	0.008	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000										
Latest 5	0.000	0.041	0.029	0.011	0.026	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					

Dev Factor Selection																																		
Prior	NA	0.040	0.027	0.045	0.017	0.018	0.010	0.008	0.007	0.007	0.005	0.004	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Selected	NA	0.040	0.027	0.045	0.025	0.017	0.012	0.008	0.007	0.007	0.005	0.004	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.203	0.163	0.136	0.091	0.066	0.049	0.037	0.029	0.022	0.015	0.010	0.006	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Amherst) - Cluster 4
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	7,000	7,000	7,000	7,000	7,000	7,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	88,040	88,040	88,040	88,040	88,040	88,040	88,040	88,040	88,040	88,040
Jun-83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500		
Jun-85	0	0	0	0	0	16,500	16,500	16,500	16,500	16,500	16,500	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000	44,000			
Jun-86	0	0	0	0	0	0	0	0	50,000	50,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	210,000	210,000	210,000	210,000	210,000				
Jun-87	0	0	0	0	0	10,000	47,500	47,500	57,500	57,500	57,500	57,500	76,500	123,000	123,000	123,000	123,000	123,000	123,000	123,000	123,000	123,000	123,000	258,000	258,000	258,000	258,000	258,000	258,000					
Jun-88	0	0	0	12,500	25,000	25,000	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	68,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500	88,500						
Jun-89	0	0	0	0	14,000	14,000	14,000	23,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000	68,000							
Jun-90	0	0	0	33,000	41,000	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590	50,590								
Jun-91	0	0	0	30,000	50,000	110,000	156,500	156,500	183,500	183,500	183,500	183,500	183,500	183,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500	208,500									
Jun-92	0	5,000	5,000	105,500	105,500	105,500	105,500	133,000	133,000	133,000	133,000	133,000	133,000	169,000	169,000	169,000	169,000	169,000	249,000	249,000	249,000	249,000	249,000	249,000										
Jun-93	0	20,010	63,010	73,010	73,010	83,010	83,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010	158,010											
Jun-94	0	0	0	0	0	0	0	0	0	10,300	10,300	10,300	10,300	10,300	10,300	10,300	130,300	130,300	130,300	130,300	130,300	130,300	130,300											
Jun-95	0	37,200	72,200	112,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200	137,200													
Jun-96	0	0	16,000	16,000	41,000	78,500	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000	116,000														
Jun-97	0	0	0	0	0	0	0	0	0	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000															
Jun-98	0	0	88,500	88,500	118,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500	143,500																
Jun-99	0	40,000	133,500	161,000	161,000	183,500	183,500	183,500	183,500	193,500	193,500	193,500	193,500	193,500	193,500	193,500	193,500																	
Jun-00	0	0	23,000	50,500	125,500	125,500	149,500	149,500	179,500	179,500	179,500	179,500	179,500	179,500	179,500	179,500																		
Jun-01	0	17,500	90,000	140,000	140,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000																			
Jun-02	0	24,000	42,000	94,500	157,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500	192,500																				
Jun-03	0	9,000	35,500	67,500	97,500	189,972	189,972	189,972	189,972	189,972	259,972	259,972	259,972																					
Jun-04	0	6,000	6,000	6,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000	56,000																						
Jun-05	0	24,450	42,950	42,950	77,950	89,950	154,950	166,950	166,950	166,950	166,950																							
Jun-06	0	35,000	63,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000																								
Jun-07	0	0	0	60,000	100,000	115,000	118,441	118,441	118,441																									
Jun-08	0	0	17,500	62,500	62,500	62,500	62,500	62,500																										
Jun-09	0	62,500	92,500	92,500	92,500	132,500	163,500																											
Jun-10	0	62,591	87,591	87,591	117,591	117,591																												
Jun-11	0	0	0	0	20,000																													
Jun-12	0	0	51,000	86,000																														
Jun-13	0	0	3,798																															
Jun-14	0	234,027																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs									1.000	1.000	1.000	1.000	1.000	8.714	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.443	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Jun-83																																		
Jun-84																	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	1.000			
Jun-85						1.000	1.000	1.000	1.000	1.000	2.667	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	1.000	1.000	1.000	1.000	1.000				
Jun-86									1.000	1.200	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	3.500	1.000	1.000	1.000	1.000					
Jun-87						4.750	1.000	1.211	1.000	1.000	1.000	1.330	1.608	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	2.098	1.000	1.000	1.000	1.000						
Jun-88				2.000	1.000	2.740	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.292	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
Jun-89					1.000	1.000	1.643	2.957	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	1.000	1.000	1.000	1.000								
Jun-90				1.242	1.234	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
Jun-91				1.667	2.200	1.423	1.000	1.173	1.000	1.000	1.000	1.000	1.000	1.136	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
Jun-92		1.000	21.100	1.000	1.000	1.000	1.261	1.000	1.000	1.000	1.000	1.000	1.271	1.000	1.000	1.000	1.000	1.473	1.000	1.000	1.000	1.000	1.000											
Jun-93		3.149	1.159	1.000	1.137	1.000	1.904	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	1.000												
Jun-94											1.000	1.000	1.000	1.000	1.000	12.650	1.000	1.000	1.000	1.000	1.000	1.000												
Jun-95		1.941	1.554	1.223	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	1.000	1.000														
Jun-96			1.000	2.563	1.915	1.478	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															
Jun-97											1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																
Jun-98			1.000	1.339	1.211	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																	
Jun-99		3.338	1.206	1.000	1.140	1.000	1.000	1.000	1.054	1.000	1.000	1.000	1.000	1.000	1.000	1.000																		
Jun-00			2.196	2.485	1.000	1.191	1.000	1.201	1.000	1.000	1.000	1.000	1.000	1.000	1.000																			
Jun-01		5.143	1.556	1.000	1.214	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																				
Jun-02		1.750	2.250	1.667	1.222	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																					
Jun-03		3.944	1.901	1.444	1.948	1.000	1.000	1.000	1.000	1.368	1.000	1.000																						
Jun-04		1.000	1.000	9.333	1.000	1.000	1.000	1.000	1.000	1.000	1.000																							
Jun-05		1.757	1.000	1.815	1.154	1.723	1.077	1.000	1.000	1.000																								
Jun-06		1.800	1.222	1.000	1.000	1.000	1.000	1.000	1.000																									
Jun-07				1.667	1.150	1.030	1.000	1.000																										
Jun-08			3.571	1.000	1.000	1.000	1.000																											
Jun-09		1.480	1.000	1.000	1.432	1.234																												
Jun-10		1.399	1.000	1.343	1.000																													
Jun-11																																		
Jun-12			1.686																															
Jun-13																																		
Jun-14																																		

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
Simple Avg																																		
All Yrs (ex P)		2.308	2.671	1.839	1.236	1.344	1.090	1.127	1.003	1.027	1.083	1.017	1.049	1.008	1.728	1.000	1.000	1.055	1.000	1.000	1.000	1.000	1.122	1.000	1.357	1.000	1.000	1.000	1.000	1.000	1.000			
Latest 5			1.814	1.252	1.116	1.197	1.015	1.000	1.000	1.074	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	1.500	1.000	1.000	1.000						
Latest 3			1.343	1.171	1.144	1.088	1.000	1.000	1.000	1.123	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	1.000	1.000	1.000	1.000	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.718	1.613	1.338	1.222	1.133	1.054	1.069	1.025	1.034	1.012	1.008	1.041	1.013	1.068	1.016	1.000	1.071	1.000	1.000	1.000	1.000	1.147	1.000	1.251	1.000	1.000	1.000	1.000	1.000	1.000			
Latest 5			1.322	1.297	1.122	1.208	1.026	1.000	1.000	1.090	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	1.286	1.000	1.000	1.000	1.000					
Latest 3			1.253	1.278	1.147	1.111	1.000	1.000	1.000	1.170	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000			

Dev Factor Selection																																		
Prior	1.000	2.671	1.794	1.866	1.248	1.250	1.055	1.034	1.026	1.015	1.010	1.010	1.010	1.010	1.010	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	1.000	1.000	1.000	1.000	
Selected	1.000	2.671	1.794	1.839	1.222	1.250	1.054	1.033	1.025	1.015	1.010	1.010	1.010	1.010	1.010	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	1.000	1.000	1.000	1.000	1.000
FacToUlt	16.026	16.026	6.000	3.344	1.818	1.487	1.190	1.129	1.094	1.067	1.051	1.041	1.030	1.020	1.010	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	1.000	1.000	1.000	1.000	1.000
Percent of Ult	6.2%	6.2%	16.7%	29.9%	55.0%	67.2%	84.0%	88.6%	91.4%	93.7%	95.1%	96.1%	97.1%	98.0%	99.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Commonwealth of Massachusetts
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University of Massachusetts (Amherst) - Cluster 4
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Maturity	Cumulative Paid Loss Development	Incremental Paid Loss Development	Percent Unpaid	Pres Value of Increm. Pmts (4%)	Pres Value of Increm. Pmts (6%)	Discount Factor At: 4%	6%
408	100.0%	1.6%	0.0%	0.4%	0.2%	1.000	1.000
396	98.4%	0.2%	1.6%	0.1%	0.0%	0.981	0.971
384	98.2%	0.2%	1.8%	0.1%	0.0%	0.947	0.922
372	98.0%	0.2%	2.0%	0.1%	0.0%	0.917	0.880
360	97.8%	0.2%	2.2%	0.1%	0.0%	0.891	0.842
348	97.6%	0.2%	2.4%	0.1%	0.0%	0.866	0.809
336	97.4%	0.2%	2.6%	0.1%	0.0%	0.844	0.779
324	97.2%	0.2%	2.8%	0.1%	0.0%	0.823	0.751
312	97.0%	0.2%	3.0%	0.1%	0.0%	0.804	0.725
300	96.8%	0.5%	3.2%	0.2%	0.1%	0.785	0.702
288	96.3%	0.5%	3.7%	0.2%	0.1%	0.785	0.702
276	95.8%	0.5%	4.2%	0.2%	0.1%	0.781	0.698
264	95.4%	0.5%	4.6%	0.2%	0.1%	0.774	0.691
252	94.9%	0.5%	5.1%	0.2%	0.1%	0.766	0.681
240	94.4%	0.5%	5.6%	0.2%	0.2%	0.757	0.671
228	93.9%	0.5%	6.1%	0.2%	0.2%	0.748	0.659
216	93.5%	0.5%	6.5%	0.2%	0.2%	0.738	0.647
204	93.0%	0.5%	7.0%	0.2%	0.2%	0.728	0.634
192	92.6%	1.9%	7.4%	1.0%	0.8%	0.717	0.621
180	90.7%	0.4%	9.3%	0.2%	0.2%	0.748	0.664
168	90.2%	0.4%	9.8%	0.3%	0.2%	0.731	0.641
156	89.8%	0.4%	10.2%	0.3%	0.2%	0.715	0.621
144	89.4%	1.6%	10.6%	1.0%	0.8%	0.699	0.602
132	87.7%	1.0%	12.3%	0.7%	0.6%	0.713	0.621
120	86.7%	0.7%	13.3%	0.5%	0.4%	0.709	0.616
108	86.0%	0.8%	14.0%	0.5%	0.5%	0.697	0.602
96	85.2%	1.1%	14.8%	0.8%	0.7%	0.686	0.588
84	84.1%	1.5%	15.9%	1.1%	1.0%	0.682	0.584
72	82.6%	5.1%	17.4%	4.1%	3.7%	0.683	0.586
60	77.5%	10.6%	22.5%	8.9%	8.1%	0.731	0.648
48	67.0%	10.7%	33.0%	9.4%	8.8%	0.791	0.727
36	56.2%	12.6%	43.8%	11.4%	10.9%	0.815	0.755
24	43.6%	23.1%	56.4%	21.8%	21.2%	0.828	0.771
12	20.5%	20.5%	79.5%	20.1%	19.9%	0.850	0.798
Total		100.0%					

NOTES:

(2) = 1 / Section 5, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
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Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	419,593	549,017		373,926	489,264
6/30/82-83	3,594	5,594	0.981	3,524	5,485
6/30/83-84	3,969	7,969	0.947	3,758	7,546
6/30/84-85	32,057	428,057	0.917	29,404	392,628
6/30/85-86	32,773	65,773	0.891	29,188	58,578
6/30/86-87	42,430	489,430	0.866	36,760	424,020
6/30/87-88	50,697	269,697	0.844	42,788	227,626
6/30/88-89	49,891	241,891	0.823	41,072	199,131
6/30/89-90	10,962	20,962	0.804	8,811	16,848
6/30/90-91	77,355	290,355	0.785	60,755	228,047
6/30/91-92	91,781	314,781	0.785	72,018	247,001
6/30/92-93	4,635	22,635	0.781	3,618	17,667
6/30/93-94	8,067	36,067	0.774	6,245	27,921
6/30/94-95	8,194	38,194	0.766	6,279	29,268
6/30/95-96	6,278	30,278	0.757	4,755	22,934
6/30/96-97	5,473	26,473	0.748	4,093	19,798
6/30/97-98	5,196	23,196	0.738	3,834	17,115
6/30/98-99	7,331	34,331	0.728	5,333	24,976
6/30/99-00	12,850	60,850	0.717	9,213	43,629
6/30/00-01	116,029	124,029	0.748	86,808	92,794
6/30/01-02	62,875	64,875	0.731	45,949	47,411
6/30/02-03	74,379	76,379	0.715	53,162	54,592
6/30/03-04	26,705	29,705	0.699	18,674	20,771
6/30/04-05	63,295	71,295	0.713	45,153	50,860
6/30/05-06	46,973	83,973	0.709	33,303	59,536
6/30/06-07	62,231	99,231	0.697	43,395	69,195
6/30/07-08	72,404	109,404	0.686	49,696	75,092
6/30/08-09	141,020	169,020	0.682	96,242	115,351
6/30/09-10	130,489	167,489	0.683	89,164	114,447
6/30/10-11	238,911	294,911	0.731	174,536	215,446
6/30/11-12	367,734	429,734	0.791	291,033	340,102
6/30/12-13	484,117	514,117	0.815	394,464	418,908
6/30/13-14	386,977	640,977	0.828	320,238	530,433
6/30/14-15	1,127,676	1,424,676	0.850	957,962	1,210,264
Total	4,274,940	7,255,365		3,445,154	5,914,686
			(7) Total Discount Factor:	0.806	0.815

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	419,593	549,017
(9) Projected Number of Years:	6	6
(10) Projected Paid Loss per Year:	69,932	91,503
(11) Discounted Value at 4%:	373,926	489,264

NOTES:
(2), (3) From Section 5, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 5, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

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Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	419,593	549,017		354,196	463,448
6/30/82-83	3,594	5,594	0.971	3,491	5,433
6/30/83-84	3,969	7,969	0.922	3,660	7,349
6/30/84-85	32,057	428,057	0.880	28,202	376,581
6/30/85-86	32,773	65,773	0.842	27,607	55,404
6/30/86-87	42,430	489,430	0.809	34,321	395,894
6/30/87-88	50,697	269,697	0.779	39,472	209,982
6/30/88-89	49,891	241,891	0.751	37,462	181,630
6/30/89-90	10,962	20,962	0.725	7,951	15,204
6/30/90-91	77,355	290,355	0.702	54,275	203,724
6/30/91-92	91,781	314,781	0.702	64,465	221,096
6/30/92-93	4,635	22,635	0.698	3,236	15,803
6/30/93-94	8,067	36,067	0.691	5,572	24,914
6/30/94-95	8,194	38,194	0.681	5,583	26,023
6/30/95-96	6,278	30,278	0.671	4,210	20,303
6/30/96-97	5,473	26,473	0.659	3,606	17,442
6/30/97-98	5,196	23,196	0.647	3,360	14,999
6/30/98-99	7,331	34,331	0.634	4,648	21,768
6/30/99-00	12,850	60,850	0.621	7,985	37,810
6/30/00-01	116,029	124,029	0.664	77,030	82,341
6/30/01-02	62,875	64,875	0.641	40,327	41,610
6/30/02-03	74,379	76,379	0.621	46,187	47,429
6/30/03-04	26,705	29,705	0.602	16,065	17,870
6/30/04-05	63,295	71,295	0.621	39,322	44,292
6/30/05-06	46,973	83,973	0.616	28,946	51,747
6/30/06-07	62,231	99,231	0.602	37,444	59,707
6/30/07-08	72,404	109,404	0.588	42,596	64,364
6/30/08-09	141,020	169,020	0.584	82,386	98,744
6/30/09-10	130,489	167,489	0.586	76,497	98,187
6/30/10-11	238,911	294,911	0.648	154,834	191,127
6/30/11-12	367,734	429,734	0.727	267,169	312,213
6/30/12-13	484,117	514,117	0.755	365,740	388,405
6/30/13-14	386,977	640,977	0.771	298,174	493,887
6/30/14-15	1,127,676	1,424,676	0.798	899,900	1,136,910
Total	4,274,940	7,255,365		3,165,920	5,443,643
			(7) Total Discount Factor:	0.741	0.750

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	419,593	549,017
(9) Projected Number of Years:	6	6
(10) Projected Paid Loss per Year:	69,932	91,503
(11) Discounted Value at 6%:	354,196	463,448

NOTES:
(2), (3) From Section 5, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 5, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	5,243,039	5,501,888	4,403,853	839,186	1,098,035				32,932	36,225	3.9%	3.3%
6/30/82-83	276,000	280,000	268,812	7,188	11,188	96.7%	0.0%	0.0%	0	0	0.0%	0.0%
6/30/83-84	384,000	392,000	376,062	7,938	15,938	96.9%	0.0%	0.0%	0	0	0.0%	0.0%
6/30/84-85	3,958,000	4,750,000	3,893,886	64,114	856,114	89.4%	0.5%	4.7%	3,034	40,506	4.7%	4.7%
6/30/85-86	3,314,000	3,380,000	3,248,453	65,547	131,547	97.1%	0.5%	17.0%	11,131	22,339	17.0%	17.0%
6/30/86-87	4,858,000	5,752,000	4,773,140	84,860	978,860	90.0%	0.5%	5.0%	4,232	48,818	5.0%	5.0%
6/30/87-88	4,442,000	4,880,000	4,340,607	101,393	539,393	93.1%	0.5%	7.3%	7,375	39,235	7.3%	7.3%
6/30/88-89	3,908,000	4,292,000	3,808,217	99,783	483,783	92.9%	0.5%	7.0%	7,011	33,989	7.0%	7.0%
6/30/89-90	1,066,000	1,086,000	1,044,076	21,924	41,924	97.0%	0.5%	16.9%	3,695	7,065	16.9%	16.9%
6/30/90-91	4,836,000	5,262,000	4,681,290	154,710	580,710	92.7%	0.5%	6.9%	10,622	39,868	6.9%	6.9%
6/30/91-92	5,110,000	5,556,000	4,926,439	183,561	629,561	92.4%	0.5%	6.6%	12,039	41,291	6.6%	6.6%
6/30/92-93	910,000	946,000	900,730	9,270	45,270	97.1%	0.5%	17.0%	1,577	7,703	17.0%	17.0%
6/30/93-94	1,438,000	1,494,000	1,421,867	16,133	72,133	97.0%	0.5%	16.6%	2,680	11,980	16.6%	16.6%
6/30/94-95	1,540,000	1,600,000	1,523,612	16,388	76,388	97.0%	0.5%	16.9%	2,773	12,927	16.9%	16.9%
6/30/95-96	1,196,000	1,244,000	1,183,444	12,556	60,556	97.0%	0.5%	16.7%	2,095	10,105	16.7%	16.7%
6/30/96-97	1,036,000	1,078,000	1,025,055	10,945	52,945	97.0%	0.5%	16.5%	1,811	8,759	16.5%	16.5%
6/30/97-98	938,000	974,000	927,608	10,392	46,392	97.0%	0.5%	16.8%	1,750	7,810	16.8%	16.8%
6/30/98-99	1,356,000	1,410,000	1,341,339	14,661	68,661	97.0%	0.5%	16.6%	2,434	11,396	16.6%	16.6%
6/30/99-00	2,458,000	2,554,000	2,432,300	25,700	121,700	97.1%	0.5%	17.0%	4,369	20,691	17.0%	17.0%
6/30/00-01	2,964,000	2,980,000	2,731,943	232,057	248,057	91.9%	1.0%	12.4%	28,730	30,710	12.4%	12.4%
6/30/01-02	1,676,000	1,680,000	1,550,250	125,750	129,750	92.4%	1.0%	13.1%	16,517	17,043	13.1%	13.1%
6/30/02-03	1,928,000	1,932,000	1,779,241	148,759	152,759	92.2%	2.0%	25.6%	38,088	39,112	25.6%	25.6%
6/30/03-04	590,000	596,000	536,589	53,411	59,411	90.5%	2.0%	21.0%	11,229	12,491	21.0%	21.0%
6/30/04-05	1,376,000	1,392,000	1,249,410	126,590	142,590	90.3%	2.0%	20.6%	26,035	29,325	20.6%	20.6%
6/30/05-06	800,000	874,000	706,055	93,945	167,945	84.4%	2.0%	12.8%	12,010	21,470	12.8%	12.8%
6/30/06-07	1,010,000	1,084,000	885,539	124,461	198,461	84.6%	2.0%	13.0%	16,141	25,739	13.0%	13.0%
6/30/07-08	986,000	1,060,000	841,192	144,808	218,808	82.2%	2.0%	11.3%	16,296	24,624	11.3%	11.3%
6/30/08-09	2,064,000	2,120,000	1,781,960	282,040	338,040	85.2%	2.0%	13.5%	38,061	45,619	13.5%	13.5%
6/30/09-10	1,342,000	1,416,000	1,081,021	260,979	334,979	78.4%	3.0%	13.9%	36,233	46,507	13.9%	13.9%
6/30/10-11	2,090,000	2,202,000	1,612,178	477,822	589,822	75.1%	3.0%	12.1%	57,626	71,134	12.1%	12.1%
6/30/11-12	2,274,000	2,398,000	1,538,531	735,469	859,469	65.9%	5.0%	14.6%	107,719	125,881	14.6%	14.6%
6/30/12-13	1,924,000	1,984,000	955,767	968,233	1,028,233	48.9%	10.0%	19.6%	189,528	201,272	19.6%	19.6%
6/30/13-14	1,706,000	2,214,000	932,046	773,954	1,281,954	47.6%	10.0%	19.1%	147,570	244,430	19.1%	19.1%
6/30/14-15	2,840,000	3,434,000	584,648	2,255,352	2,849,352	18.6%	28.9%	35.5%	801,548	1,012,655	35.5%	35.5%
Total	73,837,039	79,797,888	65,287,159	8,549,880	14,510,729				1,654,890	2,348,720	19.4%	16.2%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		109,133			109,373	109,373	240	240		
6/30/82-83		91,124	91,524		91,124	92,439	0	1,315		
6/30/83-84		32,907	33,084		32,907	34,077	0	1,170		
6/30/84-85	176,924	75,051	75,531	75,624	75,801	77,041	751	1,991	0.043	0.044
6/30/85-86	188,662	52,218	52,605	52,704	52,741	53,263	522	1,044	0.028	0.028
6/30/86-87	212,277	196,321	197,971	197,967	198,000	198,000	1,679	1,679	0.093	0.093
6/30/87-88	243,118	230,109	232,276	232,195	232,000	232,000	1,891	1,891	0.095	0.095
6/30/88-89	248,990	296,430	299,521	300,155	300,000	300,000	3,570	3,570	0.120	0.120
6/30/89-90	250,404	157,317	159,116	159,695	159,000	160,000	1,683	2,683	0.063	0.064
6/30/90-91	235,170	507,483	513,800	513,753	514,000	514,000	6,517	6,517	0.219	0.219
6/30/91-92	235,607	551,403	558,825	558,713	559,000	559,000	7,597	7,597	0.237	0.237
6/30/92-93	241,161	262,075	265,868	265,815	264,696	267,317	2,621	5,242	0.110	0.111
6/30/93-94	254,321	502,382	511,182	510,936	511,000	511,000	8,618	8,618	0.201	0.201
6/30/94-95	256,665	305,369	311,650	311,497	308,423	311,476	3,054	6,107	0.120	0.121
6/30/95-96	265,739	243,985	250,249	250,129	246,425	248,865	2,440	4,880	0.093	0.094
6/30/96-97	296,336	187,967	193,757	193,763	189,847	191,726	1,880	3,759	0.064	0.065
6/30/97-98	296,982	188,043	194,804	194,823	195,000	195,000	6,957	6,957	0.066	0.066
6/30/98-99	299,530	234,647	244,300	244,168	244,000	244,000	9,353	9,353	0.081	0.081
6/30/99-00	323,627	360,854	377,576	376,916	377,000	378,000	16,146	17,146	0.116	0.117
6/30/00-01	338,348	393,015	414,614	413,753	414,000	415,000	20,985	21,985	0.122	0.123
6/30/01-02	329,555	489,061	519,305	517,734	518,000	519,000	28,939	29,939	0.157	0.157
6/30/02-03	329,179	288,992	310,622	310,276	310,000	311,000	21,008	22,008	0.094	0.094
6/30/03-04	344,547	146,045	159,200	160,244	159,000	160,000	12,955	13,955	0.046	0.046
6/30/04-05	325,530	287,625	316,667	313,130	313,000	317,000	25,375	29,375	0.096	0.097
6/30/05-06	403,750	287,295	319,467	322,848	319,000	323,000	31,705	35,705	0.079	0.080
6/30/06-07	420,219	209,581	236,033	251,583	236,000	252,000	26,419	42,419	0.056	0.060
6/30/07-08	425,998	428,915	491,939	478,564	479,000	492,000	50,085	63,085	0.112	0.115
6/30/08-09	420,566	553,032	647,033	610,030	610,000	647,000	56,968	93,968	0.145	0.154
6/30/09-10	433,206	322,879	386,583	392,607	387,000	412,650	64,121	89,771	0.089	0.095
6/30/10-11	444,673	353,820	444,097	443,880	444,000	466,200	90,180	112,380	0.100	0.105
6/30/11-12	467,753	447,380	588,645	561,455	561,000	589,000	113,620	141,620	0.120	0.126
6/30/12-13	495,398	335,988	515,006	514,485	514,000	540,750	178,012	204,762	0.104	0.109
6/30/13-14	518,391	226,821	414,162	474,741	414,000	498,750	187,179	271,929	0.080	0.096
6/30/14-15	539,631	218,511	774,156	636,205	636,000	774,000	417,489	555,489	0.118	0.143
Total	10,262,257	9,573,778	11,101,167	10,840,388	10,974,336	11,393,927	1,400,558	1,820,149		
Tot 6/30/84-15	10,262,257	9,340,614	10,976,559	10,840,388	10,740,932	11,158,038	1,400,318	1,817,424	0.105	0.109

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 5, Exhibit 2, Page 2, Column 3
(4) From Section 5, Exhibit 2, Page 2, Column 8
(5) From Section 5, Exhibit 2, Page 3, Column 8
(6), (7) Selected based on (3), (4), and (5)
(8) = (6) - (3)
(9) = (7) - (3)
(10) = (6) / (2) / 10
(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		109,133							0	0	
6/30/82-83		91,124	1.004	1.000	91,524	N/A	91,524		0	0	
6/30/83-84		32,907	1.005	1.000	33,084	N/A	33,084		0	0	
6/30/84-85	176,924	75,051	1.006	1.000	75,531	N/A	75,531	0.043	1	1	480
6/30/85-86	188,662	52,218	1.007	1.000	52,605	N/A	52,605	0.028	0	0	
6/30/86-87	212,277	196,321	1.008	1.000	197,971	N/A	197,971	0.093	1	1	1,651
6/30/87-88	243,118	230,109	1.009	1.000	232,276	N/A	232,276	0.096	2	2	1,083
6/30/88-89	248,990	296,430	1.010	1.000	299,521	N/A	299,521	0.120	0	0	
6/30/89-90	250,404	157,317	1.011	1.000	159,116	N/A	159,116	0.064	0	0	
6/30/90-91	235,170	507,483	1.012	1.000	513,800	N/A	513,800	0.218	1	1	6,317
6/30/91-92	235,607	551,403	1.013	1.000	558,825	N/A	558,825	0.237	1	1	7,422
6/30/92-93	241,161	262,075	1.014	1.000	265,868	N/A	265,868	0.110	0	0	
6/30/93-94	254,321	502,382	1.018	1.000	511,182	N/A	511,182	0.201	1	1	8,800
6/30/94-95	256,665	305,369	1.021	1.000	311,650	N/A	311,650	0.121	0	0	
6/30/95-96	265,739	243,985	1.026	1.000	250,249	N/A	250,249	0.094	0	0	
6/30/96-97	296,336	187,967	1.031	1.000	193,757	N/A	193,757	0.065	0	0	
6/30/97-98	296,982	188,043	1.036	1.000	194,804	N/A	194,804	0.066	0	0	
6/30/98-99	299,530	234,647	1.041	1.000	244,300	N/A	244,300	0.082	1	1	9,652
6/30/99-00	323,627	360,854	1.046	1.000	377,576	N/A	377,576	0.117	1	0	
6/30/00-01	338,348	393,015	1.055	1.000	414,614	N/A	414,614	0.123	1	2	10,800
6/30/01-02	329,555	489,061	1.062	1.000	519,305	N/A	519,305	0.158	4	3	10,081
6/30/02-03	329,179	288,992	1.075	1.000	310,622	N/A	310,622	0.094	2	2	10,815
6/30/03-04	344,547	146,045	1.090	1.000	159,200	N/A	159,200	0.046	0	0	
6/30/04-05	325,530	287,625	1.101	1.000	316,667	N/A	316,667	0.097	0	0	
6/30/05-06	403,750	287,295	1.112	1.000	319,467	N/A	319,467	0.079	0	1	32,172
6/30/06-07	420,219	209,581	1.126	1.000	236,033	N/A	236,033	0.056	2	1	26,452
6/30/07-08	425,998	428,915	1.147	1.000	491,939	N/A	491,939	0.115	2	2	31,512
6/30/08-09	420,566	553,032	1.170	1.000	647,033	N/A	647,033	0.154	5	5	18,800
6/30/09-10	433,206	322,879	1.197	1.000	386,583	N/A	386,583	0.089	3	5	12,741
6/30/10-11	444,673	353,820	1.255	1.000	444,097	N/A	444,097	0.100	9	6	15,046
6/30/11-12	467,753	447,380	1.316	1.000	588,645	N/A	588,645	0.126	23	9	15,696
6/30/12-13	495,398	335,988	1.533	1.000	515,006	N/A	515,006	0.104	116	16	11,189
6/30/13-14	518,391	226,821	1.826	1.000	414,162	N/A	414,162	0.080	183	92	2,036
6/30/14-15	539,631	218,511	3.543	1.000	774,156	N/A	774,156	0.143		233	2,385
Total	10,262,257	9,573,778			11,101,167		11,101,167		359	385	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 5, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	176,924	0.051	75,051	1.006	75,624	N/A	75,624	0.043	0.043
6/30/85-86	188,662	0.035	52,218	1.007	52,704	N/A	52,704	0.028	0.028
6/30/86-87	212,277	0.093	196,321	1.008	197,967	N/A	197,967	0.093	0.093
6/30/87-88	243,118	0.092	230,109	1.009	232,195	N/A	232,195	0.096	0.096
6/30/88-89	248,990	0.145	296,430	1.010	300,155	N/A	300,155	0.121	0.121
6/30/89-90	250,404	0.084	157,317	1.011	159,695	N/A	159,695	0.064	0.064
6/30/90-91	235,170	0.217	507,483	1.012	513,753	N/A	513,753	0.218	0.218
6/30/91-92	235,607	0.234	551,403	1.013	558,713	N/A	558,713	0.237	0.237
6/30/92-93	241,161	0.109	262,075	1.014	265,815	N/A	265,815	0.110	0.110
6/30/93-94	254,321	0.195	502,382	1.018	510,936	N/A	510,936	0.201	0.201
6/30/94-95	256,665	0.118	305,369	1.021	311,497	N/A	311,497	0.121	0.121
6/30/95-96	265,739	0.092	243,985	1.026	250,129	N/A	250,129	0.094	0.094
6/30/96-97	296,336	0.065	187,967	1.031	193,763	N/A	193,763	0.065	0.065
6/30/97-98	296,982	0.066	188,043	1.036	194,823	N/A	194,823	0.066	0.066
6/30/98-99	299,530	0.080	234,647	1.041	244,168	N/A	244,168	0.082	0.082
6/30/99-00	323,627	0.112	360,854	1.046	376,916	N/A	376,916	0.116	0.116
6/30/00-01	338,348	0.118	393,015	1.055	413,753	N/A	413,753	0.122	0.122
6/30/01-02	329,555	0.149	489,061	1.062	517,734	N/A	517,734	0.157	0.157
6/30/02-03	329,179	0.093	288,992	1.075	310,276	N/A	310,276	0.094	0.094
6/30/03-04	344,547	0.050	146,045	1.090	160,244	N/A	160,244	0.047	0.047
6/30/04-05	325,530	0.085	287,625	1.101	313,130	N/A	313,130	0.096	0.096
6/30/05-06	403,750	0.087	287,295	1.112	322,848	N/A	322,848	0.080	0.080
6/30/06-07	420,219	0.089	209,581	1.126	251,583	N/A	251,583	0.060	0.060
6/30/07-08	425,998	0.091	428,915	1.147	478,564	N/A	478,564	0.112	0.112
6/30/08-09	420,566	0.093	553,032	1.170	610,030	N/A	610,030	0.145	0.145
6/30/09-10	433,206	0.098	322,879	1.197	392,607	N/A	392,607	0.091	0.091
6/30/10-11	444,673	0.100	353,820	1.255	443,880	N/A	443,880	0.100	0.100
6/30/11-12	467,753	0.102	447,380	1.316	561,455	N/A	561,455	0.120	0.120
6/30/12-13	495,398	0.104	335,988	1.533	514,485	N/A	514,485	0.104	0.104
6/30/13-14	518,391	0.106	226,821	1.826	474,741	N/A	474,741	0.092	0.092
6/30/14-15	539,631	0.108	218,511	3.543	636,205	N/A	636,205	0.118	0.118
Total	10,262,257		9,340,614		10,840,388		10,840,388		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 5, Exhibit 2, Page 4, Column 11

(4) From Section 5, Exhibit 2, Page 2, Column 3

(5) From Section 5, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.051	0.051
6/30/85-86									0.035	0.035
6/30/86-87									0.093	0.093
6/30/87-88									0.092	0.092
6/30/88-89									0.145	0.145
6/30/89-90									0.084	0.084
6/30/90-91	235,170	513,800	0.218	1.194	0.261	1.641	0.428	0.056	0.217	0.217
6/30/91-92	235,607	558,825	0.237	1.189	0.282	1.608	0.453	0.058	0.233	0.234
6/30/92-93	241,161	265,868	0.110	1.189	0.131	1.577	0.207	0.059	0.109	0.109
6/30/93-94	254,321	511,182	0.201	1.178	0.237	1.546	0.366	0.060	0.194	0.195
6/30/94-95	256,665	311,650	0.121	1.170	0.142	1.516	0.215	0.062	0.118	0.118
6/30/95-96	265,739	250,249	0.094	1.155	0.109	1.486	0.162	0.064	0.092	0.092
6/30/96-97	296,336	193,757	0.065	1.137	0.074	1.457	0.108	0.066	0.065	0.065
6/30/97-98	296,982	194,804	0.066	1.135	0.074	1.428	0.106	0.068	0.065	0.066
6/30/98-99	299,530	244,300	0.082	1.135	0.093	1.400	0.130	0.069	0.076	0.080
6/30/99-00	323,627	377,576	0.117	1.135	0.132	1.373	0.182	0.071	0.112	0.112
6/30/00-01	338,348	414,614	0.123	1.109	0.136	1.346	0.183	0.074	0.117	0.118
6/30/01-02	329,555	519,305	0.158	1.101	0.173	1.319	0.229	0.076	0.141	0.149
6/30/02-03	329,179	310,622	0.094	1.073	0.101	1.294	0.131	0.079	0.090	0.093
6/30/03-04	344,547	159,200	0.046	1.046	0.048	1.268	0.061	0.083	0.050	0.050
6/30/04-05	325,530	316,667	0.097	1.036	0.101	1.243	0.125	0.085	0.085	0.085
6/30/05-06	403,750	319,467	0.079	1.032	0.082	1.219	0.100	0.087	0.089	0.087
6/30/06-07	420,219	236,033	0.056	1.032	0.058	1.195	0.069	0.089	0.092	0.089
6/30/07-08	425,998	491,939	0.115	1.032	0.119	1.172	0.140	0.091	0.096	0.091
6/30/08-09	420,566	647,033	0.154	1.027	0.158	1.149	0.181	0.093	0.100	0.093
6/30/09-10	433,206	386,583	0.089	1.000	0.089	1.126	0.100	0.098	0.107	0.098
6/30/10-11	444,673	444,097	0.100	1.000	0.100	1.104	0.110	0.100	0.111	0.100
6/30/11-12	467,753	588,645	0.126	1.000	0.126	1.082	0.136	0.102	0.116	0.102
6/30/12-13	495,398	515,006	0.104	1.000	0.104	1.061	0.110	0.104	0.120	0.104
6/30/13-14	518,391	414,162	0.080	1.000	0.080	1.040	0.083	0.106	0.125	0.106
6/30/14-15	539,631	774,156	0.143	1.000	0.143	1.020	0.146	0.108		0.108
Total	8,941,883	9,959,540								

Trend Last 4 (ex 14-15):	-8.2%	Avg 3 (ex 14-15):	0.110
Trend Last 8 (ex 14-15):	1.2%	Avg 5 (ex 14-15):	0.108
Trend Last 12 (ex 14-15):	3.0%	Avg 10 (ex 14-15):	0.116
Prior Selected Trend:	4.0%	Prior Sel Avg:	0.130
Selected Trend:	2.0%	Sel. Loss Cost:	0.110

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 5, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.950	
(2)	Credibility		11%	
(3)	Average Pmt Trend Statewide		0.950	
(4)	Credibility Weighted Trend		0.950	
		(Low)		(High)
(5)	Selected Range	0.941		0.960
(6)	Incremental Paid for 2015	0		0
(7)	Estimated Reserve	0		0
(8)	Paid to Date (82 & Prior)	109,133		109,133
(9)	Est Ult Paid for 1982 & Prior	109,133		109,133

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	240	240
(11)	Projected Number of Years	2	2
(12)	Estimated Reserve	480	480
(13)	Paid to Date (82 & Prior)	109,133	109,133
(14)	Est Ult Paid for 1982 & Prior	109,613	109,613
(14a)	Paid Counts During Fiscal Year	0	0
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	109,373	109,373
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**109,373**	**109,373**
(18)	Implied Tail	1.002	1.002
(19)	Ult Loss Inc Lump Sums @ 6/14	109,373	109,373

NOTES:

(1) From Section 5, Exhibit 2, Page 6
(2) = (Average of Section 5, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 5, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 5, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	9,975	9.208			
1993	2	1,394	7.240	0.140		
1994	3	30,337	10.320	21.763		
1995	4	-7,026		-0.232		
1996	5	2,087	7.643	-0.297		
1997	6	418	6.035	0.200		
1998	7	0				
1999	8	390	5.966			
2000	9	1,546	7.343	3.964	n =	14
2001	10	0			S(x) =	28,028
2002	11	0			S(x-sq) =	56,112,690
2003	12	0			S(xy) =	205,935
2004	13	1,400	7.244		S(y) =	103
2005	14	0			D =	8,876
2006	15	424	6.050		slope =	0
2007	16	284	5.649	0.670	Avg Trend =	0.932
2008	17	1,845	7.520	6.499		
2009	18	3,150	8.055	1.707		
2010	19	3,080	8.033	0.978		
2011	20	0				
2012	21	0				
2013	22	720	6.579			
2014	23	0				
2015	24	0				
					Selected Trend:	**0.950**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 208)

(4) LN [(3)]

(5) Eg. 2010: 0.978 = 3080 / 3150

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Amherst) - Cluster 4
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	7,015	19,272	26,992	33,578	44,296	54,254	69,123	86,430	87,691	89,009	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124	91,124
June-84	2,065	5,673	7,945	9,884	13,039	15,948	22,112	25,109	27,259	27,620	27,620	29,236	29,236	29,236	29,774	29,774	33,170	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	32,907	
June-85	5,341	14,673	20,551	25,565	32,019	36,080	42,108	45,751	51,440	65,690	69,695	65,951	67,047	67,047	67,068	67,485	69,103	70,526	70,577	71,427	71,777	71,777	71,777	73,027	73,027	73,027	74,065	74,065	74,065	74,201	75,051		
June-86	4,254	11,686	16,367	29,076	33,757	37,603	39,971	43,583	45,896	47,123	47,123	47,123	47,123	47,123	48,153	48,153	48,153	48,153	48,503	49,375	49,375	49,375	50,070	50,670	50,670	52,218	52,218	52,218	52,218	52,218			
June-87	17,332	47,614	74,474	96,432	115,240	124,178	130,253	135,326	138,193	142,828	144,778	146,075	148,983	150,159	151,984	152,431	153,300	154,154	156,424	159,661	167,912	175,836	182,412	189,688	194,323	195,870	195,870	196,094	196,321				
June-88	21,776	71,312	105,389	144,783	150,052	156,889	162,436	164,340	165,770	169,300	170,433	171,904	172,900	173,563	174,460	176,155	179,540	184,256	189,906	193,501	195,901	201,522	207,981	215,719	220,354	223,356	225,509	230,109					
June-89	31,748	113,449	180,690	213,618	227,584	232,537	247,318	252,055	260,621	266,739	270,947	278,041	284,182	288,891	291,536	292,751	293,625	293,975	294,069	294,094	295,364	295,364	296,430	296,430	296,430	296,430	296,430						
June-90	19,060	117,509	146,705	152,013	155,556	157,028	157,217	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317	157,317							
June-91	49,629	201,675	266,883	315,231	324,767	338,441	344,037	344,920	345,667	349,590	353,310	355,602	356,167	359,042	361,717	364,813	366,594	376,706	462,325	499,976	507,147	507,299	507,299	507,399	507,483								
June-92	93,121	216,421	309,712	382,754	413,527	441,551	469,869	498,257	502,052	506,299	508,720	511,219	517,091	518,976	521,249	523,045	528,030	532,841	536,465	544,719	549,635	550,127	550,346	551,403									
June-93	81,970	229,344	254,404	256,957	260,901	261,422	261,544	261,544	261,544	262,036	262,075	262,075	262,075	262,075	262,075	262,075	262,075	262,075	262,075	262,075	262,075	262,075	262,075										
June-94	77,508	161,802	222,213	282,819	289,168	318,109	326,227	327,931	339,521	345,752	357,217	392,989	403,792	437,920	445,327	454,454	462,395	472,317	484,855	493,591	497,802	502,382											
June-95	86,716	239,689	284,148	295,763	301,706	303,344	303,490	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369	305,369												
June-96	81,054	187,654	205,831	215,693	219,869	225,627	237,068	241,239	242,923	243,938	243,985	243,985	243,985	243,985	243,985	243,985	243,985	243,985	243,985	243,985													
June-97	61,666	103,895	129,694	181,008	185,516	187,189	187,267	187,617	187,617	187,967	187,967	187,967	187,967	187,967	187,967	187,967	187,967	187,967	187,967														
June-98	40,014	98,284	119,324	134,344	139,107	141,779	147,819	148,338	149,621	183,281	184,542	185,346	186,264	187,193	188,013	188,043	188,043	188,043															
June-99	57,055	145,931	161,873	165,175	173,370	179,001	181,785	183,278	186,735	189,893	194,365	198,821	204,465	208,778	214,267	223,056	234,647																
June-00	78,904	144,101	178,359	211,117	245,711	260,589	272,440	284,728	298,320	311,888	326,984	344,501	356,294	360,812	360,854	360,854																	
June-01	78,435	185,081	235,180	264,482	271,555	289,614	313,258	334,076	349,005	361,767	371,025	374,808	383,719	389,538	393,015																		
June-02	42,493	107,557	182,137	222,791	235,866	244,961	262,574	293,121	350,090	378,624	404,630	431,685	458,566	489,061																			
June-03	25,041	124,452	162,035	187,240	223,402	231,574	235,669	238,598	245,618	250,270	253,237	278,177	288,992																				
June-04	58,014	123,410	131,529	133,995	134,242	145,534	145,992	146,045	146,045	146,045	146,045	146,045																					
June-05	90,145	204,953	256,853	271,491	281,203	284,263	285,428	287,625	287,625	287,625	287,625																						
June-06	104,747	269,295	283,925	286,559	286,907	286,907	287,115	287,115	287,115	287,295																							
June-07	90,114	168,280	184,018	193,167	200,918	206,920	207,690	208,341	209,581																								
June-08	174,365	329,758	353,009	367,373	382,156	389,416	393,780	428,915																									
June-09	175,201	332,994	476,353	502,636	515,594	547,517	553,032																										
June-10	71,728	205,753	256,446	286,005	301,536	322,879																											
June-11	188,496	302,104	334,423	349,891	353,820																												
June-12	156,195	356,432	391,171	447,380																													
June-13	144,944	280,644	335,988																														
June-14	132,938	226,821																															
June-15	218,511																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.747	1.401	1.244	1.319	1.225	1.274	1.250	1.015	1.015	1.024	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
June-84	2.747	1.400	1.244	1.319	1.223	1.387	1.136	1.086	1.013	1.000	1.059	1.000	1.000	1.018	1.000	1.114	0.992	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		
June-85	2.747	1.401	1.244	1.252	1.127	1.167	1.087	1.124	1.277	1.061	0.946	1.017	1.000	1.000	1.006	1.024	1.021	1.001	1.012	1.005	1.000	1.000	1.017	1.000	1.000	1.014	1.000	1.000	1.002	1.011			
June-86	2.747	1.401	1.777	1.161	1.114	1.063	1.090	1.053	1.027	1.000	1.000	1.000	1.000	1.022	1.000	1.000	1.000	1.007	1.018	1.000	1.000	1.014	1.012	1.000	1.031	1.000	1.000	1.000	1.000				
June-87	2.747	1.564	1.295	1.195	1.078	1.049	1.039	1.021	1.034	1.014	1.009	1.020	1.008	1.012	1.003	1.006	1.006	1.015	1.021	1.052	1.047	1.037	1.040	1.024	1.008	1.000	1.001	1.001					
June-88	3.275	1.478	1.374	1.036	1.046	1.035	1.012	1.009	1.021	1.007	1.009	1.006	1.004	1.005	1.010	1.019	1.026	1.031	1.019	1.012	1.029	1.032	1.037	1.021	1.014	1.010	1.020						
June-89	3.573	1.593	1.182	1.065	1.022	1.064	1.019	1.034	1.023	1.016	1.026	1.022	1.017	1.009	1.004	1.003	1.001	1.000	1.000	1.004	1.000	1.004	1.000	1.000	1.000	1.000							
June-90	6.165	1.248	1.036	1.023	1.009	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
June-91	4.064	1.323	1.181	1.030	1.042	1.017	1.003	1.002	1.011	1.011	1.006	1.002	1.008	1.007	1.009	1.005	1.028	1.227	1.081	1.014	1.000	1.000	1.000	1.000									
June-92	2.324	1.431	1.236	1.080	1.068	1.064	1.060	1.008	1.008	1.005	1.005	1.011	1.004	1.004	1.003	1.010	1.009	1.007	1.015	1.009	1.001	1.000	1.002										
June-93	2.798	1.109	1.010	1.015	1.002	1.000	1.000	1.000	1.002	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											
June-94	2.088	1.373	1.273	1.022	1.100	1.026	1.005	1.035	1.018	1.033	1.100	1.027	1.085	1.017	1.020	1.017	1.021	1.027	1.018	1.009	1.009												
June-95	2.764	1.185	1.041	1.020	1.005	1.000	1.006	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													
June-96	2.315	1.097	1.048	1.019	1.026	1.051	1.018	1.007	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-97	1.685	1.248	1.396	1.025	1.009	1.000	1.002	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
June-98	2.456	1.214	1.126	1.035	1.019	1.043	1.004	1.009	1.225	1.007	1.004	1.005	1.005	1.004	1.000	1.000	1.000																
June-99	2.558	1.109	1.020	1.050	1.032	1.016	1.008	1.019	1.017	1.024	1.023	1.028	1.021	1.026	1.041	1.052																	
June-00	1.826	1.238	1.184	1.164	1.061	1.045	1.045	1.048	1.045	1.048	1.054	1.034	1.013	1.000	1.000																		
June-01	2.360	1.271	1.125	1.027	1.067	1.082	1.066	1.045	1.037	1.026	1.010	1.024	1.015	1.009																			
June-02	2.531	1.693	1.223	1.059	1.039	1.072	1.116	1.194	1.082	1.069	1.067	1.062	1.067																				
June-03	4.970	1.302	1.156	1.193	1.037	1.018	1.012	1.029	1.019	1.012	1.098	1.039																					
June-04	2.127	1.066	1.019	1.002	1.084	1.003	1.000	1.000	1.000	1.000	1.000																						
June-05	2.274	1.253	1.057	1.036	1.011	1.004	1.008	1.000	1.000	1.000																							
June-06	2.571	1.054	1.009	1.001	1.000	1.001	1.000	1.000	1.001																								
June-07	1.867	1.094	1.050	1.040	1.030	1.004	1.003	1.006																									
June-08	1.891	1.071	1.041	1.040	1.019	1.011	1.089																										
June-09	1.901	1.431	1.055	1.026	1.062	1.010																											
June-10	2.869	1.246	1.115	1.054	1.071																												
June-11	1.603	1.107	1.046	1.011																													
June-12	2.282	1.097	1.144																														
June-13	1.936	1.197																															
June-14	1.706																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.641	1.281	1.165	1.080	1.058	1.056	1.042	1.030	1.037	1.015	1.019	1.014	1.012	1.007	1.005	1.015	1.006	1.021	1.013	1.008	1.007	1.008	1.011	1.005	1.007	1.003	1.004	1.000	1.000	1.004	1.000		
Latest 5	2.079	1.216	1.080	1.034	1.036	1.006	1.020	1.007	1.020	1.021	1.046	1.038	1.024	1.008	1.008	1.010	1.004	1.005	1.007	1.006	1.002	1.001	1.008	1.009	1.010	1.005	1.004	1.000					
Latest 3	1.975	1.134	1.102	1.030	1.051	1.008	1.031	1.002	1.000	1.004	1.055	1.042	1.031	1.012	1.014	1.017	1.000	1.000	1.006	1.003	1.003	1.000	1.001	1.000	1.005	1.003	1.007	1.000	1.001	1.004			
Volume Wtd																																	
All Yrs	2.276	1.229	1.118	1.048	1.043	1.031	1.032	1.026	1.027	1.017	1.025	1.018	1.019	1.007	1.006	1.010	1.009	1.032	1.019	1.009	1.007	1.006	1.008	1.006	1.005	1.003	1.007	1.001	1.001	1.004	1.000	1.000	
Latest 5	1.976	1.214	1.078	1.032	1.039	1.007	1.029	1.007	1.025	1.027	1.049	1.039	1.029	1.007	1.007	1.010	1.007	1.009	1.009	1.008	1.003	1.001	1.005	1.007	1.007	1.004	1.008	1.001					
Latest 3	1.990	1.130	1.103	1.028	1.050	1.009	1.040	1.002	1.000	1.004	1.065	1.043	1.034	1.009	1.012	1.019	1.000	1.000	1.008	1.004	1.004	1.000	1.001	1.000	1.004	1.003	1.010	1.001	1.001	1.004			

Dev Factor Selection

Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*1.940*	*1.186*	*1.166*	*1.052*	*1.040*	*1.022*	*1.005*	*1.025*	*1.020*	*1.010*	*1.010*	*1.010*	*1.009*	*1.006*	*1.008*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.003*	*1.003*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.005*	
Selected	1.940	1.191	1.165	1.048	1.048	1.023	1.020	1.018	1.013	1.010	1.010	1.014	1.012	1.007	1.008	1.005	1.005	1.005	1.005	1.005	1.003	1.003	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.001	1.004
FacToUlt	3.543	1.826	1.533	1.316	1.255	1.197	1.170	1.147	1.126	1.112	1.101	1.090	1.075	1.062	1.055	1.046	1.041	1.036	1.031	1.026	1.021	1.018	1.014	1.013	1.012	1.011	1.010	1.009	1.008	1.007	1.006	1.005	1.004
Percent of Ult	28.2%	54.8%	65.2%	76.0%	79.7%	83.5%	85.5%	87.2%	88.8%	89.9%	90.8%	91.7%	93.0%	94.2%	94.8%	95.6%	96.0%	96.5%	97.0%	97.5%	98.0%	98.3%	98.6%	98.7%	98.8%	98.9%	99.0%	99.1%	99.2%	99.3%	99.4%	99.5%	99.6%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/8)		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	109,373	109,373	109,373	109,373	0	0.0%	0	0.0%
6/30/82-83	91,124	92,467	91,124	92,439	0	0.0%	(29)	0.0%
6/30/83-84	32,907	34,087	32,907	34,077	0	0.0%	(11)	0.0%
6/30/84-85	74,943	76,192	75,801	77,041	859	1.1%	849	1.1%
6/30/85-86	52,741	53,263	52,741	53,263	0	0.0%	0	0.0%
6/30/86-87	198,000	198,000	198,000	198,000	0	0.0%	0	0.0%
6/30/87-88	228,000	228,000	232,000	232,000	4,000	1.8%	4,000	1.8%
6/30/88-89	300,000	300,000	300,000	300,000	0	0.0%	0	0.0%
6/30/89-90	158,890	160,463	159,000	160,000	110	0.1%	(463)	-0.3%
6/30/90-91	514,000	514,000	514,000	514,000	0	0.0%	0	0.0%
6/30/91-92	558,000	558,000	559,000	559,000	1,000	0.2%	1,000	0.2%
6/30/92-93	264,696	267,317	264,696	267,317	0	0.0%	0	0.0%
6/30/93-94	507,000	508,000	511,000	511,000	4,000	0.8%	3,000	0.6%
6/30/94-95	308,423	311,476	308,423	311,476	0	0.0%	0	0.0%
6/30/95-96	246,425	248,865	246,425	248,865	0	0.0%	0	0.0%
6/30/96-97	189,847	191,726	189,847	191,726	0	0.0%	0	0.0%
6/30/97-98	196,000	196,000	195,000	195,000	(1,000)	-0.5%	(1,000)	-0.5%
6/30/98-99	233,000	233,000	244,000	244,000	11,000	4.7%	11,000	4.7%
6/30/99-00	380,000	380,000	377,000	378,000	(3,000)	-0.8%	(2,000)	-0.5%
6/30/00-01	412,000	413,000	414,000	415,000	2,000	0.5%	2,000	0.5%
6/30/01-02	489,000	491,000	518,000	519,000	29,000	5.9%	28,000	5.7%
6/30/02-03	300,000	301,000	310,000	311,000	10,000	3.3%	10,000	3.3%
6/30/03-04	160,000	161,000	159,000	160,000	(1,000)	-0.6%	(1,000)	-0.6%
6/30/04-05	313,000	317,000	313,000	317,000	0	0.0%	0	0.0%
6/30/05-06	323,000	327,000	319,000	323,000	(4,000)	-1.2%	(4,000)	-1.2%
6/30/06-07	240,000	260,000	236,000	252,000	(4,000)	-1.7%	(8,000)	-3.1%
6/30/07-08	450,000	456,000	479,000	492,000	29,000	6.4%	36,000	7.9%
6/30/08-09	613,000	649,000	610,000	647,000	(3,000)	-0.5%	(2,000)	-0.3%
6/30/09-10	372,000	389,000	387,000	412,650	15,000	4.0%	23,650	6.1%
6/30/10-11	453,000	463,000	444,000	466,200	(9,000)	-2.0%	3,200	0.7%
6/30/11-12	574,000	591,000	561,000	589,000	(13,000)	-2.3%	(2,000)	-0.3%
6/30/12-13	503,000	544,000	514,000	540,750	11,000	2.2%	(3,250)	-0.6%
6/30/13-14	462,000	595,000	414,000	498,750	(48,000)	-10.4%	(96,250)	-16.2%
6/30/14-15								
Total	10,307,367	10,617,230	10,338,336	10,619,927	30,968	0.3%	2,696	0.0%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 5, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.4%	0.0%	0.1%	0.1%	1.000	1.000
396	99.6%	0.1%	0.4%	0.0%	0.0%	0.981	0.971
384	99.5%	0.1%	0.5%	0.0%	0.0%	0.950	0.927
372	99.4%	0.1%	0.6%	0.0%	0.0%	0.924	0.889
360	99.3%	0.1%	0.7%	0.0%	0.0%	0.901	0.857
348	99.2%	0.1%	0.8%	0.0%	0.0%	0.880	0.828
336	99.1%	0.1%	0.9%	0.0%	0.0%	0.860	0.801
324	99.0%	0.1%	1.0%	0.0%	0.0%	0.842	0.776
312	98.9%	0.1%	1.1%	0.0%	0.0%	0.824	0.753
300	98.8%	0.1%	1.2%	0.0%	0.0%	0.808	0.732
288	98.7%	0.1%	1.3%	0.0%	0.0%	0.792	0.711
276	98.6%	0.3%	1.4%	0.1%	0.1%	0.777	0.692
264	98.3%	0.3%	1.7%	0.1%	0.1%	0.787	0.707
252	98.0%	0.5%	2.0%	0.2%	0.1%	0.789	0.711
240	97.5%	0.5%	2.5%	0.2%	0.2%	0.802	0.730
228	97.0%	0.5%	3.0%	0.2%	0.2%	0.805	0.734
216	96.5%	0.5%	3.5%	0.2%	0.2%	0.803	0.731
204	96.0%	0.5%	4.0%	0.3%	0.2%	0.797	0.724
192	95.6%	0.8%	4.4%	0.4%	0.3%	0.790	0.714
180	94.8%	0.6%	5.2%	0.3%	0.3%	0.793	0.718
168	94.2%	1.1%	5.8%	0.7%	0.5%	0.785	0.709
156	93.0%	1.3%	7.0%	0.8%	0.6%	0.792	0.718
144	91.7%	0.9%	8.3%	0.6%	0.5%	0.796	0.724
132	90.8%	0.9%	9.2%	0.6%	0.5%	0.787	0.711
120	89.9%	1.1%	10.1%	0.8%	0.7%	0.776	0.698
108	88.8%	1.6%	11.2%	1.1%	1.0%	0.770	0.690
96	87.2%	1.7%	12.8%	1.3%	1.1%	0.771	0.691
84	85.5%	2.0%	14.5%	1.5%	1.3%	0.769	0.690
72	83.5%	3.8%	16.5%	3.1%	2.8%	0.768	0.689
60	79.7%	3.7%	20.3%	3.1%	2.8%	0.785	0.711
48	76.0%	10.8%	24.0%	9.4%	8.8%	0.789	0.716
36	65.2%	10.5%	34.8%	9.5%	9.1%	0.827	0.767
24	54.8%	26.5%	45.2%	25.0%	24.3%	0.838	0.781
12	28.2%	28.2%	71.8%	27.7%	27.4%	0.871	0.824
Total		100.0%					

NOTES:

(2) = 1 / Section 5, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
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University of Massachusetts (Amherst) - Cluster 4
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Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	240	240		231	231
6/30/82-83	0	1,315	0.981	0	1,289
6/30/83-84	0	1,170	0.950	0	1,111
6/30/84-85	751	1,991	0.924	693	1,839
6/30/85-86	522	1,044	0.901	470	941
6/30/86-87	1,679	1,679	0.880	1,477	1,477
6/30/87-88	1,891	1,891	0.860	1,627	1,627
6/30/88-89	3,570	3,570	0.842	3,005	3,005
6/30/89-90	1,683	2,683	0.824	1,388	2,212
6/30/90-91	6,517	6,517	0.808	5,265	5,265
6/30/91-92	7,597	7,597	0.792	6,016	6,016
6/30/92-93	2,621	5,242	0.777	2,035	4,070
6/30/93-94	8,618	8,618	0.787	6,780	6,780
6/30/94-95	3,054	6,107	0.789	2,410	4,820
6/30/95-96	2,440	4,880	0.802	1,957	3,914
6/30/96-97	1,880	3,759	0.805	1,513	3,027
6/30/97-98	6,957	6,957	0.803	5,585	5,585
6/30/98-99	9,353	9,353	0.797	7,457	7,457
6/30/99-00	16,146	17,146	0.790	12,752	13,542
6/30/00-01	20,985	21,985	0.793	16,632	17,424
6/30/01-02	28,939	29,939	0.785	22,720	23,506
6/30/02-03	21,008	22,008	0.792	16,635	17,427
6/30/03-04	12,955	13,955	0.796	10,310	11,106
6/30/04-05	25,375	29,375	0.787	19,959	23,106
6/30/05-06	31,705	35,705	0.776	24,615	27,720
6/30/06-07	26,419	42,419	0.770	20,348	32,672
6/30/07-08	50,085	63,085	0.771	38,599	48,617
6/30/08-09	56,968	93,968	0.769	43,827	72,292
6/30/09-10	64,121	89,771	0.768	49,261	68,966
6/30/10-11	90,180	112,380	0.785	70,746	88,162
6/30/11-12	113,620	141,620	0.789	89,638	111,728
6/30/12-13	178,012	204,762	0.827	147,273	169,403
6/30/13-14	187,179	271,929	0.838	156,922	227,972
6/30/14-15	417,489	555,489	0.871	363,475	483,622
Total	1,400,558	1,820,149		1,151,623	1,497,932
			(7) Total Discount Factor:	0.822	0.823

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	240	240
(9) Projected Number of Years:	2	2
(10) Projected Paid Loss per Year:	120	120
(11) Discounted Value at 4%:	231	231

NOTES:
(2), (3) From Section 5, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 5, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Amherst) - Cluster 4
Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	240	240		227	227
6/30/82-83	0	1,315	0.971	0	1,277
6/30/83-84	0	1,170	0.927	0	1,084
6/30/84-85	751	1,991	0.889	667	1,770
6/30/85-86	522	1,044	0.857	447	895
6/30/86-87	1,679	1,679	0.828	1,390	1,390
6/30/87-88	1,891	1,891	0.801	1,515	1,515
6/30/88-89	3,570	3,570	0.776	2,772	2,772
6/30/89-90	1,683	2,683	0.753	1,268	2,021
6/30/90-91	6,517	6,517	0.732	4,768	4,768
6/30/91-92	7,597	7,597	0.711	5,402	5,402
6/30/92-93	2,621	5,242	0.692	1,813	3,625
6/30/93-94	8,618	8,618	0.707	6,094	6,094
6/30/94-95	3,054	6,107	0.711	2,172	4,345
6/30/95-96	2,440	4,880	0.730	1,780	3,560
6/30/96-97	1,880	3,759	0.734	1,380	2,760
6/30/97-98	6,957	6,957	0.731	5,088	5,088
6/30/98-99	9,353	9,353	0.724	6,773	6,773
6/30/99-00	16,146	17,146	0.714	11,533	12,247
6/30/00-01	20,985	21,985	0.718	15,077	15,795
6/30/01-02	28,939	29,939	0.709	20,510	21,219
6/30/02-03	21,008	22,008	0.718	15,087	15,805
6/30/03-04	12,955	13,955	0.724	9,375	10,099
6/30/04-05	25,375	29,375	0.711	18,050	20,895
6/30/05-06	31,705	35,705	0.698	22,126	24,917
6/30/06-07	26,419	42,419	0.690	18,231	29,272
6/30/07-08	50,085	63,085	0.691	34,616	43,601
6/30/08-09	56,968	93,968	0.690	39,293	64,814
6/30/09-10	64,121	89,771	0.689	44,157	61,821
6/30/10-11	90,180	112,380	0.711	64,079	79,854
6/30/11-12	113,620	141,620	0.716	81,394	101,453
6/30/12-13	178,012	204,762	0.767	136,589	157,114
6/30/13-14	187,179	271,929	0.781	146,216	212,419
6/30/14-15	417,489	555,489	0.824	343,842	457,498
Total	1,400,558	1,820,149		1,063,732	1,384,190
			(7) Total Discount Factor:	0.760	0.760

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	240	240
(9) Projected Number of Years:	2	2
(10) Projected Paid Loss per Year:	120	120
(11) Discounted Value at 6%:	227	227

NOTES:
(2), (3) From Section 5, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 5, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4

Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		1,329,412			1,329,412	1,329,412	0	0		
6/30/82-83		306,340	307,475		306,340	313,999	0	7,659		
6/30/83-84		1,443,839	1,448,943		1,472,716	1,501,593	28,877	57,754		
6/30/84-85	116,303	852,745	856,250	857,552	869,800	886,855	17,055	34,110	0.748	0.763
6/30/85-86	123,981	2,517,941	2,528,071	2,530,311	2,528,000	2,530,000	10,059	12,059	2.039	2.041
6/30/86-87	139,388	3,380,019	3,392,871	3,392,574	3,393,000	3,447,619	12,981	67,600	2.434	2.473
6/30/87-88	159,499	3,025,877	3,302,976	3,038,859	3,039,000	3,170,917	13,123	145,040	1.905	1.988
6/30/88-89	180,644	2,623,646	2,637,552	2,642,881	2,676,119	2,754,828	52,473	131,182	1.481	1.525
6/30/89-90	142,494	3,243,583	3,261,111	3,267,850	3,308,455	3,405,762	64,872	162,179	2.322	2.390
6/30/90-91	143,694	1,101,823	1,107,320	1,107,283	1,123,859	1,156,914	22,036	55,091	0.782	0.805
6/30/91-92	155,170	1,518,304	1,531,364	1,531,164	1,548,670	1,594,219	30,366	75,915	0.998	1.027
6/30/92-93	163,283	638,167	647,225	647,089	650,930	670,075	12,763	31,908	0.399	0.410
6/30/93-94	177,184	1,855,382	1,893,577	1,892,335	1,892,000	1,894,000	36,618	38,618	1.068	1.069
6/30/94-95	188,391	521,127	531,154	531,179	531,000	531,000	9,873	9,873	0.282	0.282
6/30/95-96	201,751	491,723	503,667	503,816	501,557	511,392	9,834	19,669	0.249	0.253
6/30/96-97	231,872	422,390	428,927	429,888	430,838	439,286	8,448	16,896	0.186	0.189
6/30/97-98	232,237	545,727	571,350	570,945	556,642	567,556	10,915	21,829	0.240	0.244
6/30/98-99	232,075	631,601	649,149	649,535	644,233	656,865	12,632	25,264	0.278	0.283
6/30/99-00	211,819	687,583	717,199	716,263	701,335	715,087	13,752	27,503	0.331	0.338
6/30/00-01	215,099	737,973	765,719	765,176	752,733	767,492	14,759	29,519	0.350	0.357
6/30/01-02	227,797	341,709	359,046	359,939	348,543	355,377	6,834	13,668	0.153	0.156
6/30/02-03	242,008	974,854	1,037,232	1,033,883	1,034,000	1,037,000	59,146	62,146	0.427	0.428
6/30/03-04	276,758	962,971	1,018,342	1,016,836	1,017,000	1,018,000	54,029	55,029	0.367	0.368
6/30/04-05	260,378	201,102	215,051	242,388	215,000	242,000	13,898	40,898	0.083	0.093
6/30/05-06	317,741	778,823	843,876	845,101	844,000	845,000	65,177	66,177	0.266	0.266
6/30/06-07	325,922	368,698	406,097	445,048	406,000	445,000	37,302	76,302	0.125	0.137
6/30/07-08	354,130	1,174,827	1,303,481	1,291,996	1,292,000	1,303,000	117,173	128,173	0.365	0.368
6/30/08-09	362,309	481,560	555,996	597,172	556,000	597,000	74,440	115,440	0.153	0.165
6/30/09-10	383,298	503,510	597,143	642,719	597,000	643,000	93,490	139,490	0.156	0.168
6/30/10-11	394,924	641,463	800,646	815,499	801,000	847,600	159,537	206,137	0.203	0.215
6/30/11-12	381,943	731,784	1,022,542	1,018,274	1,018,000	1,063,920	286,216	332,136	0.267	0.279
6/30/12-13	384,763	315,791	561,517	673,912	562,000	674,000	246,209	358,209	0.146	0.175
6/30/13-14	364,582	261,428	664,703	741,933	665,000	742,000	403,572	480,572	0.182	0.204
6/30/14-15	370,543	49,642	302,639	681,201	303,000	681,000	253,358	631,358	0.082	0.184
Total	7,661,981	35,663,362	36,770,212	35,480,601	37,915,181	39,338,767	2,251,819	3,675,405		
Tot 6/30/84-15	7,661,981	32,583,771	35,013,794	35,480,601	34,806,713	36,193,764	2,222,942	3,609,993	0.454	0.472

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 6, Exhibit 1, Page 2, Column 3 and Section 6, Exhibit 1, Page 9, Column 8

(4) From Section 6, Exhibit 1, Page 2, Column 8

(5) From Section 6, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		1,242,912							0	0		
6/30/82-83		271,340	1.004	1.000	272,475	35,000	307,475		0	0		
6/30/83-84		1,219,902	1.004	1.000	1,225,006	223,937	1,448,943		0	0		
6/30/84-85	116,303	837,745	1.004	1.000	841,250	15,000	856,250	0.736	0	0		
6/30/85-86	123,981	2,421,446	1.004	1.000	2,431,576	96,495	2,528,071	2.039	0	0		
6/30/86-87	139,388	3,072,101	1.004	1.000	3,084,953	307,918	3,392,871	2.434	1	0		
6/30/87-88	159,499	2,621,395	1.005	1.100	2,898,494	404,482	3,302,976	2.071	0	0		
6/30/88-89	180,644	2,245,396	1.006	1.000	2,259,302	378,250	2,637,552	1.460	0	0		
6/30/89-90	142,494	2,830,333	1.006	1.000	2,847,861	413,250	3,261,111	2.289	0	0		
6/30/90-91	143,694	887,647	1.006	1.000	893,144	214,176	1,107,320	0.771	0	0		
6/30/91-92	155,170	1,163,553	1.011	1.000	1,176,613	354,751	1,531,364	0.987	0	0		
6/30/92-93	163,283	494,916	1.018	1.000	503,974	143,251	647,225	0.396	0	0		
6/30/93-94	177,184	1,444,130	1.026	1.000	1,482,325	411,252	1,893,577	1.069	1	1	38,196	72
6/30/94-95	188,391	273,127	1.037	1.000	283,154	248,000	531,154	0.282	0	0		
6/30/95-96	201,751	253,697	1.047	1.000	265,641	238,026	503,667	0.250	0	0		
6/30/96-97	231,872	113,590	1.058	1.000	120,127	308,800	428,927	0.185	0	0		
6/30/97-98	232,237	445,227	1.058	1.000	470,850	100,500	571,350	0.246	0	0		
6/30/98-99	232,075	289,851	1.061	1.000	307,399	341,750	649,149	0.280	0	0		
6/30/99-00	211,819	489,166	1.061	1.000	518,782	198,417	717,199	0.339	0	0		
6/30/00-01	215,099	431,926	1.064	1.000	459,672	306,047	765,719	0.356	0	0		
6/30/01-02	227,797	246,210	1.070	1.000	263,547	95,499	359,046	0.158	0	0		
6/30/02-03	242,008	873,438	1.070	1.000	934,941	102,291	1,037,232	0.429	1	1	61,503	53
6/30/03-04	276,758	635,971	1.081	1.000	687,561	330,781	1,018,342	0.368	0	0		
6/30/04-05	260,378	134,102	1.095	1.000	146,886	68,165	215,051	0.083	0	0		
6/30/05-06	317,741	498,323	1.117	1.000	556,667	287,209	843,876	0.266	0	0		
6/30/06-07	325,922	238,698	1.140	1.000	272,099	133,998	406,097	0.125	0	0		
6/30/07-08	354,130	614,827	1.177	1.000	723,766	579,716	1,303,481	0.368	1	1	108,939	46
6/30/08-09	362,309	348,059	1.192	1.000	415,057	140,939	555,996	0.153	2	1	66,998	43
6/30/09-10	383,298	374,510	1.216	1.000	455,531	141,612	597,143	0.156	1	0		
6/30/10-11	394,924	528,963	1.239	1.000	655,398	145,248	800,646	0.203	4	3	42,145	58
6/30/11-12	381,943	526,284	1.384	1.000	728,418	294,124	1,022,542	0.268	5	5	40,427	55
6/30/12-13	384,763	265,791	1.605	1.000	426,623	134,894	561,517	0.146	11	4	40,208	43
6/30/13-14	364,582	261,428	2.064	1.000	539,703	125,000	664,703	0.182	28	13	21,406	47
6/30/14-15	370,543	49,642	4.082	1.000	202,639	100,000	302,639	0.082		23	6,652	48
Total	7,661,981	28,645,644			29,351,434	7,418,779	36,770,212		55	52		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 6, Exhibit 1, Page 7

(5) Based on information from the MA WCRIB

(6) = (3) x (4) x (5)

(7) From Section 6, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	116,303	0.992	837,745	1.004	842,552	15,000	857,552	0.737	0.724
6/30/85-86	123,981	2.395	2,421,446	1.004	2,433,816	96,495	2,530,311	2.041	1.963
6/30/86-87	139,388	2.162	3,072,101	1.004	3,084,656	307,918	3,392,574	2.434	2.213
6/30/87-88	159,499	1.577	2,621,395	1.005	2,634,377	404,482	3,038,859	1.905	1.652
6/30/88-89	180,644	1.730	2,245,396	1.006	2,264,631	378,250	2,642,881	1.463	1.254
6/30/89-90	142,494	2.767	2,830,333	1.006	2,854,600	413,250	3,267,850	2.293	2.003
6/30/90-91	143,694	0.617	887,647	1.006	893,107	214,176	1,107,283	0.771	0.622
6/30/91-92	155,170	0.747	1,163,553	1.011	1,176,413	354,751	1,531,164	0.987	0.758
6/30/92-93	163,283	0.304	494,916	1.018	503,838	143,251	647,089	0.396	0.309
6/30/93-94	177,184	0.809	1,444,130	1.026	1,481,083	411,252	1,892,335	1.068	0.836
6/30/94-95	188,391	0.151	273,127	1.037	283,179	248,000	531,179	0.282	0.150
6/30/95-96	201,751	0.133	253,697	1.047	265,790	238,026	503,816	0.250	0.132
6/30/96-97	231,872	0.059	113,590	1.058	121,088	308,800	429,888	0.185	0.052
6/30/97-98	232,237	0.200	445,227	1.058	470,445	100,500	570,945	0.246	0.203
6/30/98-99	232,075	0.135	289,851	1.061	307,785	341,750	649,535	0.280	0.133
6/30/99-00	211,819	0.237	489,166	1.061	517,846	198,417	716,263	0.338	0.244
6/30/00-01	215,099	0.210	431,926	1.064	459,129	306,047	765,176	0.356	0.213
6/30/01-02	227,797	0.122	246,210	1.070	264,440	95,499	359,939	0.158	0.116
6/30/02-03	242,008	0.365	873,438	1.070	931,592	102,291	1,033,883	0.427	0.385
6/30/03-04	276,758	0.241	635,971	1.081	686,055	330,781	1,016,836	0.367	0.248
6/30/04-05	260,378	0.177	134,102	1.095	174,223	68,165	242,388	0.093	0.067
6/30/05-06	317,741	0.179	498,323	1.117	557,892	287,209	845,101	0.266	0.176
6/30/06-07	325,922	0.181	238,698	1.140	311,049	133,998	445,048	0.137	0.095
6/30/07-08	354,130	0.183	614,827	1.177	712,281	579,716	1,291,996	0.365	0.201
6/30/08-09	362,309	0.185	348,059	1.192	456,233	140,939	597,172	0.165	0.126
6/30/09-10	383,298	0.186	374,510	1.216	501,107	141,612	642,719	0.168	0.131
6/30/10-11	394,924	0.185	528,963	1.239	670,252	145,248	815,499	0.206	0.170
6/30/11-12	381,943	0.187	526,284	1.384	724,150	294,124	1,018,274	0.267	0.190
6/30/12-13	384,763	0.188	265,791	1.605	539,018	134,894	673,912	0.175	0.140
6/30/13-14	364,582	0.189	261,428	2.064	616,933	125,000	741,933	0.204	0.169
6/30/14-15	370,543	0.190	49,642	4.082	581,201	100,000	681,201	0.184	0.157
Total	7,661,981		25,911,490		28,320,759	7,159,842	35,480,601		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 6, Exhibit 1, Page 4, Column 11

(4) From Section 6, Exhibit 1, Page 2, Column 3

(5) From Section 6, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 6, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.992	0.992
6/30/85-86									2.395	2.395
6/30/86-87									2.162	2.162
6/30/87-88									1.577	1.577
6/30/88-89									1.730	1.730
6/30/89-90									2.767	2.767
6/30/90-91	143,694	893,144	0.622	0.963	0.598	1.000	0.598	0.197	0.620	0.617
6/30/91-92	155,170	1,176,613	0.758	1.056	0.801	1.000	0.801	0.180	0.752	0.747
6/30/92-93	163,283	503,974	0.309	1.232	0.380	1.000	0.380	0.154	0.306	0.304
6/30/93-94	177,184	1,482,325	0.837	1.216	1.017	1.000	1.017	0.156	0.805	0.809
6/30/94-95	188,391	283,154	0.150	1.205	0.181	1.000	0.181	0.158	0.152	0.151
6/30/95-96	201,751	265,641	0.132	1.195	0.157	1.000	0.157	0.159	0.134	0.133
6/30/96-97	231,872	120,127	0.052	1.183	0.061	1.000	0.061	0.161	0.060	0.059
6/30/97-98	232,237	470,850	0.203	1.168	0.237	1.000	0.237	0.163	0.202	0.200
6/30/98-99	232,075	307,399	0.132	1.153	0.153	1.000	0.153	0.165	0.137	0.135
6/30/99-00	211,819	518,782	0.245	1.134	0.278	1.000	0.278	0.168	0.241	0.237
6/30/00-01	215,099	459,672	0.214	1.105	0.236	1.000	0.236	0.172	0.213	0.210
6/30/01-02	227,797	263,547	0.116	1.084	0.125	1.000	0.125	0.175	0.123	0.122
6/30/02-03	242,008	934,941	0.386	1.080	0.417	1.000	0.417	0.176	0.350	0.365
6/30/03-04	276,758	687,561	0.248	1.080	0.268	1.000	0.268	0.176	0.245	0.241
6/30/04-05	260,378	146,886	0.056	1.073	0.061	1.000	0.061	0.177	0.178	0.177
6/30/05-06	317,741	556,667	0.175	1.062	0.186	1.000	0.186	0.179	0.180	0.179
6/30/06-07	325,922	272,099	0.083	1.051	0.088	1.000	0.088	0.181	0.182	0.181
6/30/07-08	354,130	723,766	0.204	1.039	0.212	1.000	0.212	0.183	0.184	0.183
6/30/08-09	362,309	415,057	0.115	1.027	0.118	1.000	0.118	0.185	0.186	0.185
6/30/09-10	383,298	455,531	0.119	1.023	0.122	1.000	0.122	0.186	0.187	0.186
6/30/10-11	394,924	655,398	0.166	1.025	0.170	1.000	0.170	0.185	0.187	0.185
6/30/11-12	381,943	728,418	0.191	1.018	0.194	1.000	0.194	0.187	0.188	0.187
6/30/12-13	384,763	426,623	0.111	1.009	0.112	1.000	0.112	0.188	0.189	0.188
6/30/13-14	364,582	539,703	0.148	1.005	0.149	1.000	0.149	0.189	0.190	0.189
6/30/14-15	370,543	202,639	0.055	1.000	0.055	1.000	0.055	0.190		0.190
Total	6,799,672	13,490,517								

Trend Last 4 (ex 14-15):	-9.1%	Avg 3 (ex 14-15):	0.152
Trend Last 8 (ex 14-15):	2.8%	Avg 5 (ex 14-15):	0.149
Trend Last 12 (ex 14-15):	-3.8%	Avg 10 (ex 14-15):	0.141
Prior Selected Trend:	0.0%	Prior Sel Avg:	0.190
Selected Trend:	0.0%	Sel. Loss Cost:	0.190

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 6, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.860	
(2)	Credibility		10%	
(3)	Average Pmt Trend Statewide		0.960	
(4)	Credibility Weighted Trend		0.950	
		(Low)		(High)
(5)	Selected Range	0.941		0.969
(6)	Incremental Paid for 2015	0		0
(7)	Estimated Reserve	0		0
(8)	Paid to Date (82 & Prior)	1,242,912		1,242,912
(9)	Est Ult Paid for 1982 & Prior	1,242,912		1,242,912

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	0	0
(11)	Projected Number of Years	1	1
(12)	Estimated Reserve	0	0
(13)	Paid to Date (82 & Prior)	1,242,912	1,242,912
(14)	Est Ult Paid for 1982 & Prior	1,242,912	1,242,912
(14a)	Paid Counts During Fiscal Year	0	0
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	1,242,912	1,242,912
(16)	Lump Sum Ultimates	86,500	86,500
(17)	Ult Loss Including Lump Sums	**1,329,412**	**1,329,412**
(18)	Implied Tail	1.000	1.000
(19)	Ult Loss Inc Lump Sums @ 6/14	1,329,412	1,329,412

NOTES:

(1) From Section 6, Exhibit 1, Page 6
(2) = (Average of Section 6, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 6, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 6, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 6, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	92,878	11.439			
1993	2	83,290	11.330	0.897		
1994	3	82,744	11.324	0.993		
1995	4	76,872	11.250	0.929		
1996	5	73,496	11.205	0.956		
1997	6	42,425	10.655	0.577		
1998	7	43,683	10.685	1.030		
1999	8	44,262	10.698	1.013		
2000	9	49,469	10.809	1.118	n =	12
2001	10	47,733	10.773	0.965	S(x) =	23,970
2002	11	28,782	10.268	0.603	S(x-sq) =	47,880,218
2003	12	12,543	9.437	0.436	S(xy) =	259,401
2004	13	0			S(y) =	130
2005	14	0			D =	1,716
2006	15	0			slope =	-0.137
2007	16	0			Avg Trend =	0.863
2008	17	0				
2009	18	0				
2010	19	0				
2011	20	0				
2012	21	0				
2013	22	0				
2014	23	0				
2015	24	0				
					Selected Trend:	**0.860**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2003: 0.436 = 12543 / 28782

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Medical Center) - Cluster 4
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	20,333	51,116	80,072	103,773	130,398	141,779	176,965	199,729	221,812	232,715	258,415	258,415	263,521	253,827	259,034	264,240	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340	271,340
June-84	57,600	144,806	226,837	293,981	343,659	432,433	537,475	627,523	702,624	756,969	803,646	836,058	882,478	912,918	944,937	977,381	1,013,642	1,052,979	1,095,405	1,138,804	1,183,544	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	1,219,902	
June-85	63,759	160,290	251,092	325,415	403,737	509,752	570,921	613,784	663,935	693,110	702,075	726,654	753,001	779,914	809,196	840,064	837,165	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745	837,745		
June-86	154,113	387,438	606,915	783,976	961,962	1,132,149	1,274,833	1,393,763	1,502,381	1,636,065	1,751,114	1,854,218	1,962,657	2,114,127	2,191,041	2,271,411	2,297,923	2,325,043	2,352,163	2,379,342	2,408,086	2,421,446	2,421,446	2,421,446	2,421,446	2,421,446	2,421,446	2,421,446	2,421,446	2,421,446			
June-87	166,736	419,172	641,668	854,284	1,072,274	1,249,198	1,388,337	1,542,716	1,758,390	1,875,672	1,986,394	2,093,920	2,135,258	2,199,362	2,260,862	2,284,043	2,302,892	2,321,741	2,340,539	2,359,336	2,708,676	2,762,266	2,818,196	2,874,830	2,931,224	2,989,542	3,049,764	3,072,101	3,072,101				
June-88	174,358	435,032	660,480	866,856	1,054,956	1,195,356	1,302,385	1,395,569	1,488,786	1,568,531	1,652,757	1,723,638	1,803,152	1,884,392	1,957,379	2,019,197	2,082,510	2,146,026	2,212,010	2,280,936	2,353,096	2,428,406	2,506,612	2,583,636	2,620,881	2,621,395	2,621,395	2,621,395					
June-89	244,759	583,650	955,229	1,207,778	1,405,394	1,580,598	1,710,863	1,867,443	1,974,910	2,078,269	2,163,384	2,208,386	2,233,112	2,239,652	2,239,652	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396	2,245,396						
June-90	351,648	811,854	1,353,747	1,739,540	2,053,362	2,300,598	2,503,649	2,605,537	2,726,706	2,654,988	2,740,214	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333	2,830,333							
June-91	156,076	357,539	517,757	630,387	728,239	832,901	871,395	947,686	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647	887,647							
June-92	261,100	669,245	900,334	1,044,793	1,152,142	1,241,017	1,237,974	1,112,699	1,137,295	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553	1,163,553								
June-93	206,631	396,390	480,534	554,071	597,393	614,181	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916	494,916						
June-94	247,518	643,612	941,958	1,088,319	1,200,112	1,123,946	1,143,130	1,179,142	1,181,321	1,181,499	1,181,499	1,246,051	1,265,620	1,286,180	1,304,675	1,323,640	1,345,114	1,364,136	1,383,838	1,403,763	1,423,826	1,444,130											
June-95	205,179	254,027	345,287	415,297	285,940	285,940	285,940	286,111	286,111	286,111	286,111	273,127	273,127	273,127	273,127	273,127	273,127	273,127	273,127	273,127	273,127												
June-96	155,417	406,013	576,300	245,663	246,118	246,118	246,697	246,697	253,697	253,697	253,697	253,697	253,697	253,697	253,697	253,697	253,697	253,697	253,697	253,697													
June-97	97,433	256,318	57,502	85,876	119,079	124,761	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590	113,590													
June-98	240,727	143,983	232,600	419,169	444,399	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227	445,227														
June-99	58,149	198,506	223,119	274,795	288,604	286,087	287,457	287,658	287,796	287,796	287,796	287,796	289,251	289,251	289,851	289,851	289,851																
June-00	139,725	319,021	396,283	425,910	459,317	480,109	487,559	487,559	487,559	487,559	487,559	487,559	489,166	489,166	489,166	489,166																	
June-01	103,272	231,200	298,053	357,230	397,007	413,694	429,139	431,926	431,926	431,926	431,926	431,926	431,926	431,926	431,926																		
June-02	111,843	169,158	211,386	237,447	244,070	244,070	244,070	244,070	246,210	246,210	246,210	246,210	246,210	246,210																			
June-03	103,346	214,476	266,732	299,619	422,566	501,970	559,245	599,400	671,238	720,943	771,432	822,132	873,438																				
June-04	158,939	366,873	493,674	593,313	624,409	635,971	635,971	635,971	635,971	635,971	635,971	635,971																					
June-05	66,383	103,442	111,589	111,589	111,589	111,589	111,589	125,745	134,102	134,102	134,102																						
June-06	148,922	299,710	423,237	498,323	498,323	498,323	498,323	498,323	498,323	498,323																							
June-07	129,667	222,028	238,698	238,698	238,698	238,698	238,698	238,698	238,698																								
June-08	199,585	456,548	645,562	768,096	799,003	692,172	609,450	614,827																									
June-09	126,394	222,250	303,425	345,595	337,031	345,960	348,059																										
June-10	173,596	323,966	367,986	373,360	374,510	374,510																											
June-11	204,108	361,900	447,595	503,639	528,963																												
June-12	169,232	317,366	416,322	526,284																													
June-13	159,666	227,306	265,791																														
June-14	86,121	261,428																															
June-15	49,642																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.514	1.566	1.296	1.257	1.087	1.248	1.129	1.111	1.049	1.110	1.000	1.020	0.963	1.021	1.020	1.027	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	1.000	1.000
June-84	2.514	1.566	1.296	1.169	1.258	1.243	1.168	1.120	1.077	1.062	1.040	1.056	1.034	1.035	1.034	1.037	1.039	1.040	1.040	1.039	1.031	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
June-85	2.514	1.566	1.296	1.241	1.263	1.120	1.075	1.082	1.044	1.013	1.035	1.036	1.036	1.038	1.038	0.997	1.001	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		
June-86	2.514	1.566	1.292	1.227	1.177	1.126	1.093	1.078	1.089	1.070	1.059	1.058	1.077	1.036	1.037	1.012	1.012	1.012	1.012	1.012	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
June-87	2.514	1.531	1.331	1.255	1.165	1.111	1.111	1.140	1.067	1.059	1.054	1.020	1.030	1.028	1.010	1.008	1.008	1.008	1.008	1.148	1.020	1.020	1.020	1.020	1.020	1.007	1.000					
June-88	2.495	1.518	1.312	1.217	1.133	1.090	1.072	1.067	1.054	1.054	1.043	1.046	1.045	1.039	1.032	1.031	1.030	1.031	1.031	1.032	1.032	1.032	1.031	1.014	1.000	1.000	1.000					
June-89	2.385	1.637	1.264	1.164	1.125	1.082	1.092	1.058	1.052	1.041	1.021	1.011	1.003	1.000	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
June-90	2.309	1.667	1.285	1.180	1.120	1.088	1.041	1.047	0.974	1.032	1.033	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							
June-91	2.291	1.448	1.218	1.155	1.144	1.046	1.088	0.937	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	1.000	1.000								
June-92	2.563	1.345	1.160	1.103	1.077	0.998	0.899	1.022	1.023	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									
June-93	1.918	1.212	1.153	1.078	1.028	0.806	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	1.000	1.000										
June-94	2.600	1.464	1.155	1.103	0.937	1.017	1.032	1.002	1.000	1.000	1.055	1.016	1.016	1.014	1.015	1.016	1.014	1.014	1.014	1.014	1.014											
June-95	1.238	1.359	1.203	0.689	1.000	1.000	1.001	1.000	1.000	1.000	0.955	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000												
June-96	2.612	1.419	0.426	1.002	1.000	1.002	1.000	1.028	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000													
June-97	2.631	0.224	1.493	1.387	1.048	0.910	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-98	0.598	1.615	1.802	1.060	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
June-99	3.414	1.124	1.232	1.050	0.991	1.005	1.001	1.000	1.000	1.000	1.000	1.005	1.000	1.002	1.000	1.000																
June-00	2.283	1.242	1.075	1.078	1.045	1.016	1.000	1.000	1.000	1.000	1.000	1.003	1.000	1.000	1.000																	
June-01	2.239	1.289	1.199	1.111	1.042	1.037	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000																		
June-02	1.512	1.250	1.123	1.028	1.000	1.000	1.000	1.009	1.000	1.000	1.000	1.000	1.000																			
June-03	2.075	1.244	1.123	1.410	1.188	1.114	1.072	1.120	1.074	1.070	1.066	1.062																				
June-04	2.308	1.346	1.202	1.052	1.019	1.000	1.000	1.000	1.000	1.000	1.000																					
June-05	1.558	1.079	1.000	1.000	1.000	1.000	1.127	1.066	1.000	1.000																						
June-06	2.013	1.412	1.177	1.000	1.000	1.000	1.000	1.000	1.000																							
June-07	1.712	1.075	1.000	1.000	1.000	1.000	1.000	1.000																								
June-08	2.287	1.414	1.190	1.040	0.866	0.880	1.009																									
June-09	1.758	1.365	1.139	0.975	1.026	1.006																										
June-10	1.866	1.136	1.015	1.003	1.000																											
June-11	1.773	1.237	1.125	1.050																												
June-12	1.875	1.312	1.264																													
June-13	1.424	1.169																														
June-14	3.036																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.167	1.335	1.195	1.106	1.062	1.035	1.039	1.035	1.021	1.022	1.016	1.016	1.010	1.011	1.010	1.008	1.007	1.007	1.007	1.019	1.009	1.005	1.005	1.004	1.003	1.003	1.001	1.000	1.000	1.000	1.000		
Latest 5	1.995	1.244	1.147	1.014	0.979	0.977	1.027	1.037	1.015	1.014	1.013	1.014	1.000	1.000	1.000	1.000	1.003	1.003	1.003	1.003	1.003	1.000	1.006	1.007	1.004	1.004	1.001	1.000					
Latest 3	2.112	1.239	1.135	1.010	0.964	0.962	1.003	1.022	1.000	1.023	1.022	1.021	1.000	1.001	1.000	1.000	1.000	1.000	1.005	1.005	1.005	1.000	1.000	1.000	1.000	1.007	1.002	1.000	1.000	1.000			
Volume Wtd																																	
All Yrs	2.107	1.373	1.186	1.117	1.076	1.047	1.045	1.046	1.028	1.032	1.029	1.021	1.019	1.015	1.013	1.009	1.009	1.009	1.010	1.028	1.011	1.008	1.008	1.006	1.004	1.005	1.002	1.000	1.000	1.000	1.000	1.000	
Latest 5	1.882	1.240	1.154	1.022	0.956	0.957	1.009	1.038	1.023	1.023	1.020	1.024	1.000	1.000	1.000	1.000	1.008	1.008	1.006	1.005	1.003	1.000	1.008	1.008	1.005	1.005	1.002	1.000					
Latest 3	1.942	1.246	1.139	1.015	0.935	0.937	1.004	1.010	1.000	1.034	1.031	1.034	1.000	1.000	1.000	1.000	1.000	1.000	1.010	1.009	1.007	1.000	1.000	1.000	1.000	1.008	1.003	1.000	1.000	1.000			

Dev Factor Selection

Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	*1.918*	*1.301*	*1.113*	*1.119*	*1.019*	*1.020*	*1.013*	*1.033*	*1.020*	*1.020*	*1.013*	*1.002*	*1.000*	*1.006*	*1.004*	*1.003*	*1.003*	*1.010*	*1.010*	*1.010*	*1.008*	*1.008*	*1.007*	*1.005*	*1.000*	*1.000*	*1.001*	*1.001*	*1.000*	*1.000*	*1.000*	*1.004*	
Selected	1.977	1.286	1.160	1.117	1.019	1.020	1.013	1.033	1.020	1.020	1.013	1.010	1.000	1.006	1.003	1.000	1.003	1.000	1.010	1.010	1.010	1.008	1.007	1.005	1.000	1.000	1.001	1.001	1.000	1.000	1.000	1.000	1.004
FacToUlt	4.082	2.064	1.605	1.384	1.239	1.216	1.192	1.177	1.140	1.117	1.095	1.081	1.070	1.070	1.064	1.061	1.061	1.058	1.058	1.047	1.037	1.026	1.018	1.011	1.006	1.006	1.006	1.005	1.004	1.004	1.004	1.004	1.004
Percent of Ult	24.5%	48.4%	62.3%	72.3%	80.7%	82.2%	83.9%	84.9%	87.7%	89.5%	91.3%	92.5%	93.4%	93.4%	94.0%	94.3%	94.3%	94.6%	94.6%	95.5%	96.5%	97.4%	98.2%	98.9%	99.4%	99.4%	99.4%	99.5%	99.6%	99.6%	99.6%	99.6%	99.6%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	1,329,412	1,329,412	1,329,412	1,329,412	0	0.0%	0	0.0%
6/30/82-83	306,340	313,999	306,340	313,999	0	0.0%	0	0.0%
6/30/83-84	1,472,716	1,501,593	1,472,716	1,501,593	0	0.0%	0	0.0%
6/30/84-85	869,800	886,855	869,800	886,855	0	0.0%	0	0.0%
6/30/85-86	2,528,000	2,531,000	2,528,000	2,530,000	0	0.0%	(1,000)	0.0%
6/30/86-87	3,396,000	3,704,826	3,393,000	3,447,619	(3,000)	-0.1%	(257,207)	-6.9%
6/30/87-88	3,042,000	3,173,824	3,039,000	3,170,917	(3,000)	-0.1%	(2,907)	-0.1%
6/30/88-89	2,676,119	2,754,828	2,676,119	2,754,828	0	0.0%	0	0.0%
6/30/89-90	3,308,455	3,405,762	3,308,455	3,405,762	0	0.0%	0	0.0%
6/30/90-91	1,123,859	1,156,914	1,123,859	1,156,914	0	0.0%	0	0.0%
6/30/91-92	1,548,670	1,594,219	1,548,670	1,594,219	0	0.0%	0	0.0%
6/30/92-93	650,930	670,075	650,930	670,075	0	0.0%	0	0.0%
6/30/93-94	1,883,000	1,885,000	1,892,000	1,894,000	9,000	0.5%	9,000	0.5%
6/30/94-95	533,000	533,000	531,000	531,000	(2,000)	-0.4%	(2,000)	-0.4%
6/30/95-96	501,557	511,392	501,557	511,392	0	0.0%	0	0.0%
6/30/96-97	430,838	439,286	430,838	439,286	0	0.0%	0	0.0%
6/30/97-98	556,642	567,556	556,642	567,556	0	0.0%	0	0.0%
6/30/98-99	653,000	653,000	644,233	656,865	(8,767)	-1.3%	3,865	0.6%
6/30/99-00	724,000	725,000	701,335	715,087	(22,665)	-3.1%	(9,913)	-1.4%
6/30/00-01	773,000	774,000	752,733	767,492	(20,267)	-2.6%	(6,508)	-0.8%
6/30/01-02	363,000	364,000	348,543	355,377	(14,457)	-4.0%	(8,623)	-2.4%
6/30/02-03	992,000	995,000	1,034,000	1,037,000	42,000	4.2%	42,000	4.2%
6/30/03-04	1,030,000	1,032,000	1,017,000	1,018,000	(13,000)	-1.3%	(14,000)	-1.4%
6/30/04-05	219,000	253,000	215,000	242,000	(4,000)	-1.8%	(11,000)	-4.3%
6/30/05-06	860,000	860,000	844,000	845,000	(16,000)	-1.9%	(15,000)	-1.7%
6/30/06-07	418,000	466,000	406,000	445,000	(12,000)	-2.9%	(21,000)	-4.5%
6/30/07-08	1,302,000	1,315,000	1,292,000	1,303,000	(10,000)	-0.8%	(12,000)	-0.9%
6/30/08-09	569,000	614,000	556,000	597,000	(13,000)	-2.3%	(17,000)	-2.8%
6/30/09-10	625,000	674,000	597,000	643,000	(28,000)	-4.5%	(31,000)	-4.6%
6/30/10-11	844,000	854,000	801,000	847,600	(43,000)	-5.1%	(6,400)	-0.7%
6/30/11-12	861,000	886,000	1,018,000	1,063,920	157,000	18.2%	177,920	20.1%
6/30/12-13	679,000	815,000	562,000	674,000	(117,000)	-17.2%	(141,000)	-17.3%
6/30/13-14	475,000	742,000	665,000	742,000	190,000	40.0%	0	0.0%
6/30/14-15								
Total	37,544,338	38,981,541	37,612,181	38,657,767	67,843	0.2%	(323,774)	-0.8%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 6, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	1,242,912	1.000	1,242,912	0.0%	0.0%	0	86,500	86,500	7.0%	1.000	86,500	86,500	86,500
6/30/82-83	271,340	1.004	272,475	0.0%	0.0%	0	35,000	35,000	12.8%	1.000	35,000	35,000	35,000
6/30/83-84	1,219,902	1.004	1,225,006	0.0%	0.0%	0	223,937	223,937	18.3%	1.000	223,937	223,937	223,937
6/30/84-85	837,745	1.004	841,250	0.0%	0.0%	0	15,000	15,000	1.8%	1.000	15,000	15,000	15,000
6/30/85-86	2,421,446	1.004	2,431,576	0.0%	0.0%	0	96,495	96,495	4.0%	1.000	96,495	96,495	96,495
6/30/86-87	3,072,101	1.004	3,084,953	0.0%	0.0%	0	307,918	307,918	10.0%	1.000	307,918	307,918	307,918
6/30/87-88	2,621,395	1.106	2,898,494	0.0%	0.0%	0	404,482	404,482	14.0%	1.000	404,482	404,482	404,482
6/30/88-89	2,245,396	1.006	2,259,302	0.0%	0.0%	0	378,250	378,250	16.7%	1.000	378,250	378,250	378,250
6/30/89-90	2,830,333	1.006	2,847,861	0.0%	0.0%	0	413,250	413,250	14.5%	1.000	413,250	413,250	413,250
6/30/90-91	887,647	1.006	893,144	0.0%	0.0%	0	214,176	214,176	24.0%	1.000	214,176	214,176	214,176
6/30/91-92	1,163,553	1.011	1,176,613	0.0%	0.0%	0	354,751	354,751	30.2%	1.000	354,751	354,751	354,751
6/30/92-93	494,916	1.018	503,974	0.0%	0.0%	0	143,251	143,251	28.4%	1.000	143,251	143,251	143,251
6/30/93-94	1,444,130	1.026	1,482,325	0.0%	0.0%	0	411,252	411,252	27.7%	1.000	411,252	411,252	411,252
6/30/94-95	273,127	1.037	283,154	0.0%	0.0%	0	248,000	248,000	87.6%	1.000	248,000	248,000	248,000
6/30/95-96	253,697	1.047	265,641	0.0%	0.0%	0	238,026	238,026	89.6%	1.000	238,026	238,026	238,026
6/30/96-97	113,590	1.058	120,127	0.0%	0.0%	0	308,800	308,800	257.1%	1.000	308,800	308,800	308,800
6/30/97-98	445,227	1.058	470,850	0.0%	0.0%	0	100,500	100,500	21.3%	1.000	100,500	100,500	100,500
6/30/98-99	289,851	1.061	307,399	0.0%	0.0%	0	341,750	341,750	111.2%	1.000	341,750	341,750	341,750
6/30/99-00	489,166	1.061	518,782	0.0%	0.0%	0	198,417	198,417	38.2%	1.000	198,417	198,417	198,417
6/30/00-01	431,926	1.064	459,672	0.0%	0.0%	0	306,047	306,047	66.6%	1.000	306,047	306,047	306,047
6/30/01-02	246,210	1.070	263,547	0.0%	0.0%	0	95,499	95,499	36.2%	1.000	95,499	95,499	96,082
6/30/02-03	873,438	1.070	934,941	0.1%	0.1%	736	101,416	102,152	10.9%	1.010	102,430	102,291	103,077
6/30/03-04	635,971	1.081	687,561	0.1%	0.1%	990	327,000	327,990	47.7%	1.020	333,573	330,781	332,668
6/30/04-05	134,102	1.095	146,886	0.1%	0.2%	300	67,000	67,300	45.8%	1.030	69,030	68,165	68,634
6/30/05-06	498,323	1.117	556,667	0.2%	0.4%	2,029	280,500	282,529	50.8%	1.041	291,889	287,209	289,157
6/30/06-07	238,698	1.140	272,099	0.1%	0.5%	1,365	130,000	131,365	48.3%	1.051	136,631	133,998	135,778
6/30/07-08	614,827	1.177	723,766	0.2%	0.7%	4,980	560,000	564,980	78.1%	1.062	594,451	579,716	585,322
6/30/08-09	348,059	1.192	415,057	0.6%	1.3%	5,246	133,501	138,747	33.4%	1.072	143,131	140,939	146,146
6/30/09-10	374,510	1.216	455,531	0.9%	2.2%	9,971	129,000	138,971	30.5%	1.118	144,253	141,612	158,883
6/30/10-11	528,963	1.239	655,398	3.3%	5.5%	35,837	112,500	148,337	22.6%	1.264	142,159	145,248	142,955
6/30/11-12	526,284	1.384	728,418	5.0%	10.5%	76,576	205,500	282,076	38.7%	1.490	306,172	294,124	215,358
6/30/12-13	265,791	1.605	426,623	12.4%	22.9%	97,787	50,000	147,787	34.6%	2.440	122,001	134,894	221,243
6/30/13-14	261,428	2.064	539,703	9.1%	32.1%	173,084	0	173,084	32.1%	5.368	0	125,000	141,896
6/30/14-15	49,642	4.082	202,639	8.4%	40.5%	82,067	0	82,067	40.5%	5.368	0	100,000	
Total	28,645,644		30,594,346			490,968	7,017,718	7,508,686	24.5%		7,307,021	7,505,279	7,463,002

NOTES:
(2) From Section 6, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 6, Exhibit 1, Page 2, Column 6
(5) From Section 6, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 6, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 6, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From Aon analysis as of June 30, 2013

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Medical Center) - Cluster 4
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	*0-12*	*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
All Prior Yrs	0	0	0	0	0	0	0	0	0	0	0	0	0	26,500	0	0	0	0	0	0	0	60,000	0	0	0	0	0	0	0	0	0	0	0	0
Jun-83	0	0	0	0	0	20,000	0	0	0	0	0	0	0	15,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	25,750	0	0	36,687	25,000	0	35,500	17,000	0	0	0	0	0	0	0	0	0	84,000	0	0	0	0	0	0	0	0	0	0		
Jun-85	0	0	0	0	0	0	0	0	0	0	5,000	0	0	0	0	0	0	0	10,000	0	0	0	0	0	0	0	0	0	0	0	0			
Jun-86	0	0	0	0	0	0	23,000	15,000	10,995	10,000	0	0	0	37,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Jun-87	0	0	8,323	0	0	43,000	9,000	5,000	0	30,000	38,424	25,671	112,500	36,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Jun-88	0	0	0	0	10,482	6,500	21,000	46,000	29,000	0	45,000	32,500	0	0	40,000	0	0	0	0	0	0	0	0	58,000	58,000	58,000	0	0						
Jun-89	0	0	16,000	76,750	27,500	0	75,000	15,000	0	0	143,000	0	25,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Jun-90	0	0	47,500	50,000	3,000	72,500	51,250	50,500	77,200	51,300	0	10,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
Jun-91	0	6,300	28,000	0	88,376	13,000	30,000	41,500	7,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Jun-92	0	0	80,001	43,500	79,250	35,000	117,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
Jun-93	0	28,000	1	22,500	52,750	40,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
Jun-94	0	68,500	118,500	39,375	92,877	79,500	0	0	12,500	0	0	0	0	0	0	0	0	0	0	0	0	0												
Jun-95	0	158,500	29,500	35,000	25,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0													
Jun-96	0	25,000	162,356	22,670	0	0	0	0	28,000	0	0	0	0	0	0	0	0	0	0	0														
Jun-97	15,000	113,800	110,000	0	70,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Jun-98	1,500	62,500	15,000	0	21,500	0	0	0	0	0	0	0	0	0	0	0	0	0																
Jun-99	0	33,750	125,000	160,000	23,000	0	0	0	0	0	0	0	0	0	0	0	0																	
Jun-00	5,000	72,513	47,154	18,750	0	0	25,000	30,000	0	0	0	0	0	0	0	0																		
Jun-01	0	71,047	80,000	60,000	0	50,000	0	45,000	0	0	0	0	0	0	0																			
Jun-02	0	9,000	38,999	30,000	17,500	0	0	0	0	0	0	0	0	0																				
Jun-03	0	16,416	55,000	0	0	0	30,000	0	0	0	0	0	0																					
Jun-04	0	65,000	30,000	125,000	55,000	52,000	0	0	0	0	0	0																						
Jun-05	0	0	67,000	0	0	0	0	0	0	0	0																							
Jun-06	0	15,000	18,000	177,500	40,000	30,000	0	0	0	0																								
Jun-07	0	70,000	45,000	15,000	0	0	0	0	0																									
Jun-08	0	170,000	150,000	165,000	0	75,000	0	0																										
Jun-09	0	0	0	133,501	0	0	0																											
Jun-10	0	36,000	93,000	0	0	0																												
Jun-11	0	50,000	0	37,500	25,000																													
Jun-12	0	95,000	0	110,500																														
Jun-13	0	50,000	0																															
Jun-14	0	0																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	*12*	*24*	*36*	*48*	*60*	*72*	*84*	*96*	*108*	*120*	*132*	*144*	*156*	*168*	*180*	*192*	*204*	*216*	*228*	*240*	*252*	*264*	*276*	*288*	*300*	*312*	*324*	*336*	*348*	*360*	*372*	*384*	*396*	*408*
All Prior Yrs	0	0	0	0	0	0	0	0	0	0	0	0	0	26,500	26,500	26,500	26,500	26,500	26,500	26,500	26,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500
Jun-83	0	0	0	0	0	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000		
Jun-84	0	0	0	0	25,750	25,750	25,750	62,437	87,437	87,437	122,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937			
Jun-85	0	0	0	0	0	0	0	0	0	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000				
Jun-86	0	0	0	0	0	0	23,000	38,000	48,995	58,995	58,995	58,995	58,995	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495				
Jun-87	0	0	8,323	8,323	8,323	51,323	60,323	65,323	65,323	95,323	133,747	159,418	271,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918					
Jun-88	0	0	0	0	10,482	16,982	37,982	83,982	112,982	112,982	157,982	190,482	190,482	190,482	230,482	230,482	230,482	230,482	230,482	230,482	230,482	230,482	230,482	288,482	346,482	404,482	404,482	404,482						
Jun-89	0	0	16,000	92,750	120,250	120,250	195,250	210,250	210,250	210,250	353,250	353,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250						
Jun-90	0	0	47,500	97,500	100,500	173,000	224,250	274,750	351,950	403,250	403,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250							
Jun-91	0	6,300	34,300	34,300	122,676	135,676	165,676	207,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176								
Jun-92	0	0	80,001	123,501	202,751	237,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751										
Jun-93	0	28,000	28,001	50,501	103,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251											
Jun-94	0	68,500	187,000	226,375	319,252	398,752	398,752	398,752	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252												
Jun-95	0	158,500	188,000	223,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000													
Jun-96	0	25,000	187,356	210,026	210,026	210,026	210,026	210,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026														
Jun-97	15,000	128,800	238,800	238,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800															
Jun-98	1,500	64,000	79,000	79,000	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500																
Jun-99	0	33,750	158,750	318,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750																	
Jun-00	5,000	77,513	124,667	143,417	143,417	143,417	168,417	198,417	198,417	198,417	198,417	198,417	198,417	198,417	198,417	198,417																		
Jun-01	0	71,047	151,047	211,047	211,047	261,047	261,047	306,047	306,047	306,047	306,047	306,047	306,047	306,047	306,047																			
Jun-02	0	9,000	47,999	77,999	95,499	95,499	95,499	95,499	95,499	95,499	95,499	95,499	95,499	95,499																				
Jun-03	0	16,416	71,416	71,416	71,416	71,416	101,416	101,416	101,416	101,416	101,416	101,416	101,416																					
Jun-04	0	65,000	95,000	220,000	275,000	327,000	327,000	327,000	327,000	327,000	327,000	327,000																						
Jun-05	0	0	67,000	67,000	67,000	67,000	67,000	67,000	67,000	67,000	67,000																							
Jun-06	0	15,000	33,000	210,500	250,500	280,500	280,500	280,500	280,500	280,500																								
Jun-07	0	70,000	115,000	130,000	130,000	130,000	130,000	130,000	130,000																									
Jun-08	0	170,000	320,000	485,000	485,000	560,000	560,000	560,000																										
Jun-09	0	0	0	133,501	133,501	133,501	133,501																											
Jun-10	0	36,000	129,000	129,000	129,000	129,000																												
Jun-11	0	50,000	50,000	87,500	112,500																													
Jun-12	0	95,000	95,000	205,500																														
Jun-13	0	50,000	50,000																															
Jun-14	0	0																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Medical Center) - Cluster 4
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.073	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.030	0.020	0.000	0.029	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.069	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Jun-86	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.006	0.005	0.004	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.000	0.003	0.000	0.000	0.014	0.003	0.002	0.000	0.010	0.012	0.008	0.036	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.000	0.000	0.000	0.004	0.002	0.007	0.016	0.010	0.000	0.016	0.011	0.000	0.000	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.020	0.020	0.000	0.000						
Jun-89	0.000	0.000	0.007	0.034	0.012	0.000	0.033	0.007	0.000	0.000	0.063	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.000	0.017	0.018	0.001	0.025	0.018	0.018	0.027	0.018	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000								
Jun-91	0.000	0.007	0.031	0.000	0.099	0.015	0.034	0.046	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000									
Jun-92	0.000	0.000	0.068	0.037	0.067	0.030	0.099	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.000	0.056	0.000	0.045	0.105	0.079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
Jun-94	0.000	0.046	0.080	0.027	0.063	0.054	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.000	0.560	0.104	0.124	0.088	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.000	0.094	0.611	0.085	0.000	0.000	0.000	0.000	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000														
Jun-97	0.125	0.947	0.916	0.000	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000															
Jun-98	0.003	0.133	0.032	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																
Jun-99	0.000	0.110	0.407	0.520	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																	
Jun-00	0.010	0.140	0.091	0.036	0.000	0.000	0.048	0.058	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																		
Jun-01	0.000	0.155	0.174	0.131	0.000	0.109	0.000	0.098	0.000	0.000	0.000	0.000	0.000	0.000	0.000																			
Jun-02	0.000	0.034	0.148	0.114	0.066	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																				
Jun-03	0.000	0.018	0.059	0.000	0.000	0.000	0.032	0.000	0.000	0.000	0.000	0.000	0.000																					
Jun-04	0.000	0.095	0.044	0.182	0.080	0.076	0.000	0.000	0.000	0.000	0.000	0.000																						
Jun-05	0.000	0.000	0.456	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																							
Jun-06	0.000	0.027	0.032	0.319	0.072	0.054	0.000	0.000	0.000	0.000																								
Jun-07	0.000	0.257	0.165	0.055	0.000	0.000	0.000	0.000	0.000																									
Jun-08	0.000	0.235	0.207	0.228	0.000	0.104	0.000	0.000																										
Jun-09	0.000	0.000	0.000	0.322	0.000	0.000	0.000																											
Jun-10	0.000	0.079	0.294	0.000	0.000	0.000																												
Jun-11	0.000	0.076	0.000	0.057	0.038																													
Jun-12	0.000	0.130	0.000	0.152																														
Jun-13	0.000	0.117	0.000																															
Jun-14	0.000	0.000																																
Jun-15	0.000																																	

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
Simple Avg																																	
All Yrs (ex P)	0.004	0.124	0.083	0.049	0.023	0.011	0.011	0.007	0.001	0.005	0.002	0.002	0.004	0.001	0.000	0.000	0.000	0.001	0.000	0.000	0.006	0.000	0.002	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Latest 5	0.000	0.041	0.152	0.008	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.004	0.004	0.000	0.000	0.000					
Latest 3	0.000	0.000	0.070	0.013	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000			
Olympic Avg																																	
All Yrs (ex P)	0.000	0.101	0.070	0.031	0.020	0.007	0.008	0.003	0.001	0.003	0.001	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.000	0.082	0.124	0.022	0.029	0.004	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Latest 5	0.000	0.000	0.146	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					

Dev Factor Selection																																		
Prior	NA	0.100	0.104	0.117	0.050	0.033	0.009	0.006	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Selected	NA	0.084	0.091	0.124	0.050	0.033	0.009	0.006	0.002	0.001	0.002	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.405	0.321	0.229	0.105	0.055	0.022	0.013	0.007	0.005	0.004	0.002	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Medical Center) - Cluster 4
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	0	0	0	0	0	26,500	26,500	26,500	26,500	26,500	26,500	26,500	26,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500	86,500
Jun-83	0	0	0	0	0	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	
Jun-84	0	0	0	0	25,750	25,750	25,750	62,437	87,437	87,437	122,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	139,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937	223,937		
Jun-85	0	0	0	0	0	0	0	0	0	0	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000			
Jun-86	0	0	0	0	0	0	23,000	38,000	48,995	58,995	58,995	58,995	58,995	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495	96,495				
Jun-87	0	0	8,323	8,323	8,323	51,323	60,323	65,323	65,323	95,323	133,747	159,418	271,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918	307,918					
Jun-88	0	0	0	0	10,482	16,982	37,982	83,982	112,982	112,982	157,982	190,482	190,482	190,482	230,482	230,482	230,482	230,482	230,482	230,482	230,482	230,482	230,482	288,482	346,482	404,482	404,482	404,482						
Jun-89	0	0	16,000	92,750	120,250	120,250	195,250	210,250	210,250	210,250	353,250	353,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250	378,250							
Jun-90	0	0	47,500	97,500	100,500	173,000	224,250	274,750	351,950	403,250	403,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250	413,250								
Jun-91	0	6,300	34,300	34,300	122,676	135,676	165,676	207,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176	214,176									
Jun-92	0	0	80,001	123,501	202,751	237,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751	354,751										
Jun-93	0	28,000	28,001	50,501	103,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251	143,251											
Jun-94	0	68,500	187,000	226,375	319,252	398,752	398,752	398,752	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252	411,252												
Jun-95	0	158,500	188,000	223,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000	248,000													
Jun-96	0	25,000	187,356	210,026	210,026	210,026	210,026	210,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026	238,026														
Jun-97	15,000	128,800	238,800	238,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800	308,800															
Jun-98	1,500	64,000	79,000	79,000	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500	100,500																
Jun-99	0	33,750	158,750	318,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750	341,750																	
Jun-00	5,000	77,513	124,667	143,417	143,417	143,417	168,417	198,417	198,417	198,417	198,417	198,417	198,417	198,417	198,417	198,417																		
Jun-01	0	71,047	151,047	211,047	211,047	261,047	261,047	306,047	306,047	306,047	306,047	306,047	306,047	306,047	306,047																			
Jun-02	0	9,000	47,999	77,999	95,499	95,499	95,499	95,499	95,499	95,499	95,499	95,499	95,499	95,499																				
Jun-03	0	16,416	71,416	71,416	71,416	71,416	101,416	101,416	101,416	101,416	101,416	101,416	101,416																					
Jun-04	0	65,000	95,000	220,000	275,000	327,000	327,000	327,000	327,000	327,000	327,000	327,000																						
Jun-05	0	0	67,000	67,000	67,000	67,000	67,000	67,000	67,000	67,000	67,000																							
Jun-06	0	15,000	33,000	210,500	250,500	280,500	280,500	280,500	280,500	280,500																								
Jun-07	0	70,000	115,000	130,000	130,000	130,000	130,000	130,000	130,000																									
Jun-08	0	170,000	320,000	485,000	485,000	560,000	560,000	560,000																										
Jun-09	0	0	0	133,501	133,501	133,501	133,501																											
Jun-10	0	36,000	129,000	129,000	129,000	129,000																												
Jun-11	0	50,000	50,000	87,500	112,500																													
Jun-12	0	95,000	95,000	205,500																														
Jun-13	0	50,000	50,000																															
Jun-14	0	0																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs														1.000	1.000	1.000	1.000	1.000	1.000	1.000	3.264	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Jun-83						1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.750	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	1.000	1.000	1.000	1.000	1.000		
Jun-84				1.000	1.000	2.425	1.400	1.000	1.406	1.138	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.600	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Jun-85										1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	3.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Jun-86							1.652	1.289	1.204	1.000	1.000	1.000	1.636	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	1.000	1.000					
Jun-87			1.000	1.000	6.166	1.175	1.083	1.000	1.459	1.403	1.192	1.706	1.132	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	1.000	1.000					
Jun-88					1.620	2.237	2.211	1.345	1.000	1.398	1.206	1.000	1.000	1.210	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.252	1.201	1.167	1.000	1.000	1.000							
Jun-89			5.797	1.296	1.000	1.624	1.077	1.000	1.000	1.680	1.000	1.071	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	1.000							
Jun-90			2.053	1.031	1.721	1.296	1.225	1.281	1.146	1.000	1.025	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	1.000								
Jun-91		5.444	1.000	3.577	1.106	1.221	1.250	1.034	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	1.000	1.000	1.000									
Jun-92			1.544	1.642	1.173	1.492	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	1.000	1.000	1.000	1.000										
Jun-93		1.000	1.804	2.045	1.387	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	1.000	1.000	1.000												
Jun-94		2.730	1.211	1.410	1.249	1.000	1.000	1.031	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													
Jun-95			1.186	1.186	1.112	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	1.000														
Jun-96			7.494	1.121	1.000	1.000	1.000	1.000	1.133	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
Jun-97	8.587	1.854	1.000	1.293	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																
Jun-98	42.667	1.234	1.000	1.272	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																	
Jun-99		4.704	2.008	1.072	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																		
Jun-00	15.503	1.608	1.150	1.000	1.000	1.174	1.178	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																			
Jun-01		2.126	1.397	1.000	1.237	1.000	1.172	1.000	1.000	1.000	1.000	1.000	1.000	1.000																				
Jun-02		5.333	1.625	1.224	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																					
Jun-03		4.350	1.000	1.000	1.000	1.420	1.000	1.000	1.000	1.000	1.000	1.000																						
Jun-04		1.462	2.316	1.250	1.189	1.000	1.000	1.000	1.000	1.000	1.000																							
Jun-05			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																								
Jun-06		2.200	6.379	1.190	1.120	1.000	1.000	1.000	1.000																									
Jun-07		1.643	1.130	1.000	1.000	1.000	1.000	1.000																										
Jun-08		1.882	1.516	1.000	1.155	1.000	1.000																											
Jun-09				1.000	1.000	1.000																												
Jun-10		3.583	1.000	1.000	1.000																													
Jun-11		1.000	1.750	1.286																														
Jun-12		1.000	2.163																															
Jun-13		1.000																																
Jun-14																																		

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
Simple Avg																																		
All Yrs (ex P)	22.252	2.642	1.798	1.279	1.325	1.146	1.171	1.063	1.035	1.086	1.025	1.037	1.076	1.011	1.000	1.000	1.000	1.133	1.000	1.000	1.050	1.000	1.025	1.022	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		1.646	1.607	1.057	1.055	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	1.000	1.000	1.000	1.050	1.040	1.033	1.000	1.000	1.000						
Latest 3		1.000	1.638	1.095	1.052	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	1.000	1.000	1.000	1.000	1.000	1.056	1.000	1.000	1.000	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.102	1.518	1.179	1.123	1.083	1.059	1.041	1.020	1.060	1.018	1.031	1.020	1.009	1.000	1.000	1.000	1.003	1.000	1.000	1.031	1.000	1.026	1.029	1.032	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		1.403	1.752	1.026	1.093	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	1.000	1.000	1.000	1.036	1.036	1.038	1.000	1.000	1.000	1.000					
Latest 3		1.000	1.540	1.071	1.100	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	1.000	1.000	1.000	1.000	1.000	1.051	1.000	1.000	1.000	1.000	1.000				

Dev Factor Selection																																		
Prior	1.000	2.400	1.422	1.126	1.130	1.043	1.000	1.021	1.010	1.010	1.010	1.010	1.010	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	1.000	1.000	1.000	1.000	1.000	1.000	
Selected	1.000	2.200	1.638	1.179	1.130	1.043	1.010	1.010	1.010	1.010	1.010	1.010	1.010	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000
FacToUlt	5.368	5.368	2.440	1.490	1.264	1.118	1.072	1.062	1.051	1.041	1.030	1.020	1.010	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	1.000	1.000	1.000	1.000	1.000	1.000	
Percent of Ult	18.6%	18.6%	41.0%	67.1%	79.1%	89.4%	93.3%	94.2%	95.1%	96.1%	97.1%	98.0%	99.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Maturity	Cumulative Paid Loss Development	Incremental Paid Loss Development	Percent Unpaid	Pres Value of Increm. Pmts (4%)	Pres Value of Increm. Pmts (6%)	Discount Factor At: 4%	6%
408	100.0%	0.4%	0.0%	0.1%	0.1%	1.000	1.000
396	99.6%	0.0%	0.4%	0.0%	0.0%	0.981	0.971
384	99.6%	0.0%	0.4%	0.0%	0.0%	0.943	0.916
372	99.6%	0.0%	0.4%	0.0%	0.0%	0.907	0.864
360	99.6%	0.0%	0.4%	0.0%	0.0%	0.872	0.816
348	99.6%	0.1%	0.4%	0.0%	0.0%	0.838	0.769
336	99.5%	0.1%	0.5%	0.0%	0.0%	0.840	0.773
324	99.4%	0.0%	0.6%	0.0%	0.0%	0.835	0.768
312	99.4%	0.0%	0.6%	0.0%	0.0%	0.803	0.725
300	99.4%	0.5%	0.6%	0.2%	0.1%	0.772	0.684
288	98.9%	0.7%	1.1%	0.3%	0.2%	0.849	0.790
276	98.2%	0.8%	1.8%	0.3%	0.2%	0.879	0.832
264	97.4%	1.0%	2.6%	0.4%	0.3%	0.886	0.841
252	96.5%	1.0%	3.5%	0.4%	0.3%	0.887	0.842
240	95.5%	0.9%	4.5%	0.4%	0.3%	0.880	0.832
228	94.6%	0.0%	5.4%	0.0%	0.0%	0.870	0.817
216	94.6%	0.3%	5.4%	0.1%	0.1%	0.836	0.771
204	94.3%	0.0%	5.7%	0.0%	0.0%	0.812	0.739
192	94.3%	0.3%	5.7%	0.2%	0.1%	0.781	0.697
180	94.0%	0.5%	6.0%	0.3%	0.2%	0.763	0.675
168	93.4%	0.0%	6.6%	0.0%	0.0%	0.754	0.664
156	93.4%	0.9%	6.6%	0.6%	0.4%	0.725	0.626
144	92.5%	1.2%	7.5%	0.8%	0.6%	0.732	0.638
132	91.3%	1.8%	8.7%	1.2%	1.0%	0.742	0.653
120	89.5%	1.8%	10.5%	1.2%	1.0%	0.759	0.676
108	87.7%	2.8%	12.3%	2.0%	1.7%	0.766	0.687
96	84.9%	1.1%	15.1%	0.8%	0.7%	0.782	0.707
84	83.9%	1.6%	16.1%	1.3%	1.1%	0.767	0.688
72	82.2%	1.5%	17.8%	1.2%	1.1%	0.760	0.679
60	80.7%	8.5%	19.3%	7.1%	6.5%	0.750	0.666
48	72.3%	9.9%	27.7%	8.7%	8.1%	0.801	0.733
36	62.3%	13.9%	37.7%	12.6%	12.0%	0.825	0.765
24	48.4%	23.9%	51.6%	22.6%	21.9%	0.844	0.789
12	24.5%	24.5%	75.5%	24.0%	23.8%	0.865	0.816
Total		100.0%					

NOTES:

(2) = 1 / Section 6, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4

Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	0	0		0	0
6/30/82-83	0	7,659	0.981	0	7,510
6/30/83-84	28,877	57,754	0.943	27,227	54,454
6/30/84-85	17,055	34,110	0.907	15,462	30,924
6/30/85-86	10,059	12,059	0.872	8,769	10,513
6/30/86-87	12,981	67,600	0.838	10,881	56,663
6/30/87-88	13,123	145,040	0.840	11,018	121,779
6/30/88-89	52,473	131,182	0.835	43,831	109,577
6/30/89-90	64,872	162,179	0.803	52,104	130,259
6/30/90-91	22,036	55,091	0.772	17,018	42,546
6/30/91-92	30,366	75,915	0.849	25,769	64,422
6/30/92-93	12,763	31,908	0.879	11,218	28,045
6/30/93-94	36,618	38,618	0.886	32,447	34,220
6/30/94-95	9,873	9,873	0.887	8,758	8,758
6/30/95-96	9,834	19,669	0.880	8,655	17,309
6/30/96-97	8,448	16,896	0.870	7,346	14,691
6/30/97-98	10,915	21,829	0.836	9,126	18,251
6/30/98-99	12,632	25,264	0.812	10,260	20,519
6/30/99-00	13,752	27,503	0.781	10,739	21,479
6/30/00-01	14,759	29,519	0.763	11,267	22,534
6/30/01-02	6,834	13,668	0.754	5,155	10,311
6/30/02-03	59,146	62,146	0.725	42,900	45,076
6/30/03-04	54,029	55,029	0.732	39,567	40,299
6/30/04-05	13,898	40,898	0.742	10,316	30,358
6/30/05-06	65,177	66,177	0.759	49,469	50,228
6/30/06-07	37,302	76,302	0.766	28,591	58,482
6/30/07-08	117,173	128,173	0.782	91,619	100,220
6/30/08-09	74,440	115,440	0.767	57,116	88,575
6/30/09-10	93,490	139,490	0.760	71,073	106,044
6/30/10-11	159,537	206,137	0.750	119,726	154,697
6/30/11-12	286,216	332,136	0.801	229,126	265,887
6/30/12-13	246,209	358,209	0.825	203,218	295,661
6/30/13-14	403,572	480,572	0.844	340,574	405,554
6/30/14-15	253,358	631,358	0.865	219,173	546,171
Total	2,251,819	3,675,405		1,829,518	3,012,016
			(7) Total Discount Factor:	0.812	0.820

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	0	0
(9) Projected Number of Years:	1	1
(10) Projected Paid Loss per Year:	0	0
(11) Discounted Value at 4%:	0	0

NOTES:

(2), (3) From Section 6, Exhibit 1, Page 1, Columns 8, 9

(4) From Section 6, Exhibit 1, Page 13, Column 7

(5) = (2) x (4)

(6) = (3) x (4)

(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)

(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	0	0		0	0
6/30/82-83	0	7,659	0.971	0	7,439
6/30/83-84	28,877	57,754	0.916	26,460	52,920
6/30/84-85	17,055	34,110	0.864	14,743	29,486
6/30/85-86	10,059	12,059	0.816	8,204	9,835
6/30/86-87	12,981	67,600	0.769	9,987	52,008
6/30/87-88	13,123	145,040	0.773	10,146	112,134
6/30/88-89	52,473	131,182	0.768	40,321	100,804
6/30/89-90	64,872	162,179	0.725	47,027	117,568
6/30/90-91	22,036	55,091	0.684	15,071	37,677
6/30/91-92	30,366	75,915	0.790	24,003	60,007
6/30/92-93	12,763	31,908	0.832	10,619	26,547
6/30/93-94	36,618	38,618	0.841	30,806	32,489
6/30/94-95	9,873	9,873	0.842	8,313	8,313
6/30/95-96	9,834	19,669	0.832	8,182	16,364
6/30/96-97	8,448	16,896	0.817	6,904	13,808
6/30/97-98	10,915	21,829	0.771	8,415	16,830
6/30/98-99	12,632	25,264	0.739	9,332	18,664
6/30/99-00	13,752	27,503	0.697	9,584	19,168
6/30/00-01	14,759	29,519	0.675	9,955	19,911
6/30/01-02	6,834	13,668	0.664	4,537	9,075
6/30/02-03	59,146	62,146	0.626	37,046	38,925
6/30/03-04	54,029	55,029	0.638	34,459	35,097
6/30/04-05	13,898	40,898	0.653	9,070	26,692
6/30/05-06	65,177	66,177	0.676	44,061	44,737
6/30/06-07	37,302	76,302	0.687	25,608	52,382
6/30/07-08	117,173	128,173	0.707	82,882	90,662
6/30/08-09	74,440	115,440	0.688	51,202	79,403
6/30/09-10	93,490	139,490	0.679	63,452	94,673
6/30/10-11	159,537	206,137	0.666	106,270	137,311
6/30/11-12	286,216	332,136	0.733	209,774	243,430
6/30/12-13	246,209	358,209	0.765	188,422	274,134
6/30/13-14	403,572	480,572	0.789	318,418	379,171
6/30/14-15	253,358	631,358	0.816	206,816	515,379
Total	2,251,819	3,675,405		1,680,091	2,773,042
			(7) Total Discount Factor:	0.746	0.754

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	0	0
(9) Projected Number of Years:	1	1
(10) Projected Paid Loss per Year:	0	0
(11) Discounted Value at 6%:	0	0

NOTES:
(2), (3) From Section 6, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 6, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	1,455,812	1,455,812	1,455,812	0	0				0	0		
6/30/82-83	327,672	335,649	327,566	106	8,083	98.8%	0.5%	40.5%	43	3,274	40.5%	40.5%
6/30/83-84	1,523,932	1,553,573	1,494,800	29,132	58,773	97.1%	0.5%	17.5%	5,099	10,288	17.5%	17.5%
6/30/84-85	1,033,339	1,052,834	1,015,470	17,869	37,364	97.4%	0.5%	18.9%	3,375	7,056	18.9%	18.9%
6/30/85-86	2,744,432	2,749,662	2,733,296	11,136	16,367	99.5%	0.5%	99.9%	11,123	16,347	99.9%	99.9%
6/30/86-87	3,791,000	3,845,619	3,777,375	13,625	68,244	98.9%	1.0%	93.3%	12,709	63,657	93.3%	93.3%
6/30/87-88	3,388,000	3,519,917	3,373,806	14,194	146,111	97.7%	1.0%	43.1%	6,117	62,963	43.1%	43.1%
6/30/88-89	3,167,349	3,253,390	3,112,432	54,917	140,958	96.9%	1.0%	32.8%	18,002	46,206	32.8%	32.8%
6/30/89-90	3,865,186	3,970,803	3,797,545	67,641	173,258	96.9%	1.0%	32.5%	22,002	56,357	32.5%	32.5%
6/30/90-91	1,427,065	1,464,645	1,403,520	23,545	61,125	97.1%	1.0%	34.2%	8,041	20,876	34.2%	34.2%
6/30/91-92	2,221,204	2,276,791	2,187,492	33,712	89,299	97.3%	1.0%	36.6%	12,327	32,653	36.6%	36.6%
6/30/92-93	1,048,102	1,073,175	1,033,363	14,739	39,812	97.4%	1.0%	38.9%	5,731	15,481	38.9%	38.9%
6/30/93-94	2,593,000	2,595,000	2,554,236	38,764	40,764	98.5%	1.0%	65.2%	25,288	26,592	65.2%	65.2%
6/30/94-95	951,000	951,000	939,312	11,688	11,688	98.8%	1.0%	81.4%	9,510	9,510	81.4%	81.4%
6/30/95-96	886,424	902,003	874,675	11,749	27,328	97.8%	1.0%	45.8%	5,377	12,507	45.8%	45.8%
6/30/96-97	628,838	641,246	619,155	9,683	22,091	97.5%	1.0%	40.0%	3,871	8,830	40.0%	40.0%
6/30/97-98	1,042,642	1,063,276	1,028,235	14,406	35,041	97.7%	1.0%	42.6%	6,136	14,924	42.6%	42.6%
6/30/98-99	956,233	968,865	940,822	15,410	28,042	97.7%	1.0%	44.3%	6,827	12,424	44.3%	44.3%
6/30/99-00	889,335	903,087	872,750	16,585	30,337	97.4%	1.0%	38.2%	6,336	11,589	38.2%	38.2%
6/30/00-01	961,733	976,492	943,388	18,345	33,104	97.3%	1.0%	37.7%	6,911	12,471	37.7%	37.7%
6/30/01-02	571,543	582,837	561,413	10,130	21,424	97.3%	1.0%	36.6%	3,706	7,838	36.6%	36.6%
6/30/02-03	1,253,000	1,260,380	1,187,905	65,095	72,475	94.5%	2.0%	36.5%	23,785	26,482	36.5%	36.5%
6/30/03-04	1,328,000	1,345,600	1,259,376	68,624	86,224	94.2%	2.0%	34.5%	23,697	29,775	34.5%	34.5%
6/30/04-05	391,000	432,050	366,962	24,038	65,088	89.2%	2.0%	18.5%	4,440	12,021	18.5%	18.5%
6/30/05-06	1,233,000	1,258,700	1,147,427	85,573	111,273	92.1%	2.0%	25.3%	21,664	28,170	25.3%	25.3%
6/30/06-07	666,000	723,250	605,124	60,876	118,126	87.1%	2.0%	15.5%	9,449	18,336	15.5%	15.5%
6/30/07-08	1,840,000	1,903,600	1,687,232	152,768	216,368	90.1%	2.0%	20.3%	30,986	43,886	20.3%	20.3%
6/30/08-09	942,000	1,006,500	824,022	117,978	182,478	84.6%	2.0%	13.0%	15,302	23,668	13.0%	13.0%
6/30/09-10	923,000	993,700	783,717	139,283	209,983	81.8%	2.8%	15.4%	21,421	32,294	15.4%	15.4%
6/30/10-11	1,189,000	1,256,050	967,947	221,053	288,103	79.2%	2.6%	12.5%	27,618	35,995	12.5%	12.5%
6/30/11-12	1,348,000	1,420,920	1,001,990	346,010	418,930	72.4%	6.8%	24.6%	85,193	103,148	24.6%	24.6%
6/30/12-13	890,000	1,032,050	571,830	318,170	460,220	59.5%	12.9%	31.8%	101,128	146,278	31.8%	31.8%
6/30/13-14	968,000	1,081,150	468,051	499,949	613,099	45.7%	13.8%	25.4%	127,198	155,986	25.4%	25.4%
6/30/14-15	502,000	992,000	118,404	383,596	873,596	15.9%	20.0%	23.8%	91,170	207,630	23.8%	23.8%
Total	48,946,839	50,841,626	46,036,449	2,910,390	4,805,177				761,582	1,315,511	26.2%	27.4%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		126,400			126,400	126,400	0	0		
6/30/82-83		21,226	21,266		21,332	21,651	106	425		
6/30/83-84		50,961	51,057		51,216	51,980	255	1,019		
6/30/84-85	116,303	162,725	163,032	163,152	163,539	165,980	814	3,255	0.141	0.143
6/30/85-86	123,981	215,355	215,761	215,912	216,432	219,662	1,077	4,307	0.175	0.177
6/30/86-87	139,388	397,356	398,105	398,361	398,000	398,000	644	644	0.286	0.286
6/30/87-88	159,499	347,929	348,585	348,772	349,000	349,000	1,071	1,071	0.219	0.219
6/30/88-89	180,644	488,786	489,707	489,972	491,230	498,562	2,444	9,776	0.272	0.276
6/30/89-90	142,494	553,962	555,006	555,477	556,732	565,041	2,770	11,079	0.391	0.397
6/30/90-91	143,694	301,697	302,266	302,262	303,205	307,731	1,508	6,034	0.211	0.214
6/30/91-92	155,170	669,188	670,449	670,429	672,534	682,572	3,346	13,384	0.433	0.440
6/30/92-93	163,283	395,196	395,941	395,926	397,172	403,100	1,976	7,904	0.243	0.247
6/30/93-94	177,184	698,854	700,871	700,808	701,000	701,000	2,146	2,146	0.396	0.396
6/30/94-95	188,391	418,185	419,811	419,761	420,000	420,000	1,815	1,815	0.223	0.223
6/30/95-96	201,751	382,952	384,826	384,765	384,867	390,611	1,915	7,659	0.191	0.194
6/30/96-97	231,872	196,765	197,925	197,928	198,000	201,960	1,235	5,195	0.085	0.087
6/30/97-98	232,237	482,508	485,839	485,685	486,000	495,720	3,492	13,212	0.209	0.213
6/30/98-99	232,075	309,222	312,197	312,105	312,000	312,000	2,778	2,778	0.134	0.134
6/30/99-00	211,819	185,166	187,675	187,674	188,000	188,000	2,834	2,834	0.089	0.089
6/30/00-01	215,099	205,415	208,716	208,693	209,000	209,000	3,585	3,585	0.097	0.097
6/30/01-02	227,797	219,704	223,459	223,431	223,000	227,460	3,296	7,756	0.098	0.100
6/30/02-03	242,008	213,052	218,603	218,620	219,000	223,380	5,948	10,328	0.090	0.092
6/30/03-04	276,758	296,405	311,633	311,403	311,000	327,600	14,595	31,195	0.112	0.118
6/30/04-05	260,378	165,860	176,438	180,934	176,000	190,050	10,140	24,190	0.068	0.073
6/30/05-06	317,741	368,605	394,075	388,504	389,000	413,700	20,395	45,095	0.122	0.130
6/30/06-07	325,922	236,426	259,752	264,786	260,000	278,250	23,574	41,824	0.080	0.085
6/30/07-08	354,130	512,405	572,139	548,231	548,000	600,600	35,595	88,195	0.155	0.170
6/30/08-09	362,309	342,462	390,187	385,632	386,000	409,500	43,538	67,038	0.107	0.113
6/30/09-10	383,298	280,207	325,908	333,955	326,000	350,700	45,793	70,493	0.085	0.091
6/30/10-11	394,924	326,484	388,227	389,292	388,000	408,450	61,516	81,966	0.098	0.103
6/30/11-12	381,943	270,206	330,341	339,734	330,000	357,000	59,794	86,794	0.086	0.093
6/30/12-13	384,763	256,039	328,362	340,785	328,000	358,050	71,961	102,011	0.085	0.093
6/30/13-14	364,582	206,623	302,952	322,549	303,000	339,150	96,377	132,527	0.083	0.093
6/30/14-15	370,543	68,762	198,669	311,055	199,000	311,000	130,238	242,238	0.054	0.084
Total	7,661,981	10,373,087	10,929,781	10,996,594	11,031,658	11,502,859	658,571	1,129,771		
Tot 6/30/84-15	7,661,981	10,174,500	10,857,458	10,996,594	10,832,710	11,302,828	658,210	1,128,328	0.141	0.148

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 6, Exhibit 2, Page 2, Column 3
(4) From Section 6, Exhibit 2, Page 2, Column 8
(5) From Section 6, Exhibit 2, Page 3, Column 8
(6), (7) Selected based on (3), (4), and (5)
(8) = (6) - (3)
(9) = (7) - (3)
(10) = (6) / (2) / 10
(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		126,400							0	0	
6/30/82-83		21,226	1.002	1.000	21,266	N/A	21,266		0	0	
6/30/83-84		50,961	1.002	1.000	51,057	N/A	51,057		0	0	
6/30/84-85	116,303	162,725	1.002	1.000	163,032	N/A	163,032	0.140	0	0	
6/30/85-86	123,981	215,355	1.002	1.000	215,761	N/A	215,761	0.174	0	0	
6/30/86-87	139,388	397,356	1.002	1.000	398,105	N/A	398,105	0.286	0	0	
6/30/87-88	159,499	347,929	1.002	1.000	348,585	N/A	348,585	0.219	0	0	
6/30/88-89	180,644	488,786	1.002	1.000	489,707	N/A	489,707	0.271	0	0	
6/30/89-90	142,494	553,962	1.002	1.000	555,006	N/A	555,006	0.389	0	0	
6/30/90-91	143,694	301,697	1.002	1.000	302,266	N/A	302,266	0.210	0	0	
6/30/91-92	155,170	669,188	1.002	1.000	670,449	N/A	670,449	0.432	0	0	
6/30/92-93	163,283	395,196	1.002	1.000	395,941	N/A	395,941	0.242	0	0	
6/30/93-94	177,184	698,854	1.003	1.000	700,871	N/A	700,871	0.396	0	1	2,017
6/30/94-95	188,391	418,185	1.004	1.000	419,811	N/A	419,811	0.223	1	1	1,627
6/30/95-96	201,751	382,952	1.005	1.000	384,826	N/A	384,826	0.191	0	0	
6/30/96-97	231,872	196,765	1.006	1.000	197,925	N/A	197,925	0.085	1	1	1,161
6/30/97-98	232,237	482,508	1.007	1.000	485,839	N/A	485,839	0.209	1	1	3,331
6/30/98-99	232,075	309,222	1.010	1.000	312,197	N/A	312,197	0.135	2	0	
6/30/99-00	211,819	185,166	1.014	1.000	187,675	N/A	187,675	0.089	0	0	
6/30/00-01	215,099	205,415	1.016	1.000	208,716	N/A	208,716	0.097	1	0	
6/30/01-02	227,797	219,704	1.017	1.000	223,459	N/A	223,459	0.098	1	1	3,755
6/30/02-03	242,008	213,052	1.026	1.000	218,603	N/A	218,603	0.090	2	1	5,551
6/30/03-04	276,758	296,405	1.051	1.000	311,633	N/A	311,633	0.113	0	0	
6/30/04-05	260,378	165,860	1.064	1.000	176,438	N/A	176,438	0.068	1	2	5,289
6/30/05-06	317,741	368,605	1.069	1.000	394,075	N/A	394,075	0.124	3	3	8,490
6/30/06-07	325,922	236,426	1.099	1.000	259,752	N/A	259,752	0.080	0	0	
6/30/07-08	354,130	512,405	1.117	1.000	572,139	N/A	572,139	0.162	4	3	19,911
6/30/08-09	362,309	342,462	1.139	1.000	390,187	N/A	390,187	0.108	2	2	23,863
6/30/09-10	383,298	280,207	1.163	1.000	325,908	N/A	325,908	0.085	2	1	45,700
6/30/10-11	394,924	326,484	1.189	1.000	388,227	N/A	388,227	0.098	9	3	20,581
6/30/11-12	381,943	270,206	1.223	1.000	330,341	N/A	330,341	0.086	30	8	7,517
6/30/12-13	384,763	256,039	1.282	1.000	328,362	N/A	328,362	0.085	101	18	4,018
6/30/13-14	364,582	206,623	1.466	1.000	302,952	N/A	302,952	0.083	126	82	1,175
6/30/14-15	370,543	68,762	2.889	1.000	198,669	N/A	198,669	0.054		110	1,181
Total	7,661,981	10,373,087			10,929,781		10,929,781		287	238	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 6, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	116,303	0.195	162,725	1.002	163,152	N/A	163,152	0.140	0.140
6/30/85-86	123,981	0.239	215,355	1.002	215,912	N/A	215,912	0.174	0.174
6/30/86-87	139,388	0.383	397,356	1.002	398,361	N/A	398,361	0.286	0.286
6/30/87-88	159,499	0.281	347,929	1.002	348,772	N/A	348,772	0.219	0.219
6/30/88-89	180,644	0.349	488,786	1.002	489,972	N/A	489,972	0.271	0.271
6/30/89-90	142,494	0.565	553,962	1.002	555,477	N/A	555,477	0.390	0.390
6/30/90-91	143,694	0.209	301,697	1.002	302,262	N/A	302,262	0.210	0.210
6/30/91-92	155,170	0.425	669,188	1.002	670,429	N/A	670,429	0.432	0.432
6/30/92-93	163,283	0.238	395,196	1.002	395,926	N/A	395,926	0.242	0.242
6/30/93-94	177,184	0.383	698,854	1.003	700,808	N/A	700,808	0.396	0.396
6/30/94-95	188,391	0.216	418,185	1.004	419,761	N/A	419,761	0.223	0.223
6/30/95-96	201,751	0.184	382,952	1.005	384,765	N/A	384,765	0.191	0.191
6/30/96-97	231,872	0.086	196,765	1.006	197,928	N/A	197,928	0.085	0.085
6/30/97-98	232,237	0.200	482,508	1.007	485,685	N/A	485,685	0.209	0.209
6/30/98-99	232,075	0.130	309,222	1.010	312,105	N/A	312,105	0.134	0.134
6/30/99-00	211,819	0.089	185,166	1.014	187,674	N/A	187,674	0.089	0.089
6/30/00-01	215,099	0.096	205,415	1.016	208,693	N/A	208,693	0.097	0.097
6/30/01-02	227,797	0.097	219,704	1.017	223,431	N/A	223,431	0.098	0.098
6/30/02-03	242,008	0.091	213,052	1.026	218,620	N/A	218,620	0.090	0.090
6/30/03-04	276,758	0.111	296,405	1.051	311,403	N/A	311,403	0.113	0.113
6/30/04-05	260,378	0.097	165,860	1.064	180,934	N/A	180,934	0.069	0.069
6/30/05-06	317,741	0.097	368,605	1.069	388,504	N/A	388,504	0.122	0.122
6/30/06-07	325,922	0.097	236,426	1.099	264,786	N/A	264,786	0.081	0.081
6/30/07-08	354,130	0.097	512,405	1.117	548,231	N/A	548,231	0.155	0.155
6/30/08-09	362,309	0.097	342,462	1.139	385,632	N/A	385,632	0.106	0.106
6/30/09-10	383,298	0.100	280,207	1.163	333,955	N/A	333,955	0.087	0.087
6/30/10-11	394,924	0.100	326,484	1.189	389,292	N/A	389,292	0.099	0.099
6/30/11-12	381,943	0.100	270,206	1.223	339,734	N/A	339,734	0.089	0.089
6/30/12-13	384,763	0.100	256,039	1.282	340,785	N/A	340,785	0.089	0.089
6/30/13-14	364,582	0.100	206,623	1.466	322,549	N/A	322,549	0.088	0.088
6/30/14-15	370,543	0.100	68,762	2.889	311,055	N/A	311,055	0.084	0.084
Total	7,661,981		10,174,500		10,996,594		10,996,594		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 6, Exhibit 2, Page 4, Column 11

(4) From Section 6, Exhibit 2, Page 2, Column 3

(5) From Section 6, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.195	0.195
6/30/85-86									0.239	0.239
6/30/86-87									0.383	0.383
6/30/87-88									0.281	0.281
6/30/88-89									0.349	0.349
6/30/89-90									0.565	0.565
6/30/90-91	143,694	302,266	0.210	1.194	0.251	1.000	0.251	0.084	0.209	0.209
6/30/91-92	155,170	670,449	0.432	1.189	0.514	1.000	0.514	0.084	0.425	0.425
6/30/92-93	163,283	395,941	0.242	1.189	0.288	1.000	0.288	0.084	0.238	0.238
6/30/93-94	177,184	700,871	0.396	1.178	0.466	1.000	0.466	0.085	0.381	0.383
6/30/94-95	188,391	419,811	0.223	1.170	0.261	1.000	0.261	0.085	0.216	0.216
6/30/95-96	201,751	384,826	0.191	1.155	0.220	1.000	0.220	0.087	0.185	0.184
6/30/96-97	231,872	197,925	0.085	1.137	0.097	1.000	0.097	0.088	0.085	0.086
6/30/97-98	232,237	485,839	0.209	1.135	0.237	1.000	0.237	0.088	0.195	0.200
6/30/98-99	232,075	312,197	0.135	1.135	0.153	1.000	0.153	0.088	0.131	0.130
6/30/99-00	211,819	187,675	0.089	1.135	0.101	1.000	0.101	0.088	0.089	0.089
6/30/00-01	215,099	208,716	0.097	1.109	0.108	1.000	0.108	0.090	0.096	0.096
6/30/01-02	227,797	223,459	0.098	1.101	0.108	1.000	0.108	0.091	0.096	0.097
6/30/02-03	242,008	218,603	0.090	1.073	0.097	1.000	0.097	0.093	0.089	0.091
6/30/03-04	276,758	311,633	0.113	1.046	0.118	1.000	0.118	0.096	0.111	0.111
6/30/04-05	260,378	176,438	0.068	1.036	0.070	1.000	0.070	0.097	0.097	0.097
6/30/05-06	317,741	394,075	0.124	1.032	0.128	1.000	0.128	0.097	0.097	0.097
6/30/06-07	325,922	259,752	0.080	1.032	0.082	1.000	0.082	0.097	0.097	0.097
6/30/07-08	354,130	572,139	0.162	1.032	0.167	1.000	0.167	0.097	0.097	0.097
6/30/08-09	362,309	390,187	0.108	1.027	0.111	1.000	0.111	0.097	0.097	0.097
6/30/09-10	383,298	325,908	0.085	1.000	0.085	1.000	0.085	0.100	0.100	0.100
6/30/10-11	394,924	388,227	0.098	1.000	0.098	1.000	0.098	0.100	0.100	0.100
6/30/11-12	381,943	330,341	0.086	1.000	0.086	1.000	0.086	0.100	0.100	0.100
6/30/12-13	384,763	328,362	0.085	1.000	0.085	1.000	0.085	0.100	0.100	0.100
6/30/13-14	364,582	302,952	0.083	1.000	0.083	1.000	0.083	0.100	0.100	0.100
6/30/14-15	370,543	198,669	0.054	1.000	0.054	1.000	0.054	0.100		0.100
Total	6,799,672	8,687,262								

Trend Last 4 (ex 14-15):	-5.0%	Avg 3 (ex 14-15):	0.085
Trend Last 8 (ex 14-15):	-4.5%	Avg 5 (ex 14-15):	0.088
Trend Last 12 (ex 14-15):	-1.7%	Avg 10 (ex 14-15):	0.100
Prior Selected Trend:	0.0%	Prior Sel Avg:	0.100
Selected Trend:	0.0%	Sel. Loss Cost:	0.100

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 6, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend	0.750	
(2)	Credibility	14%	
(3)	Average Pmt Trend Statewide	0.950	
(4)	Credibility Weighted Trend	0.921	
		(Low)	(High)
(5)	Selected Range	0.912	0.930
(6)	Incremental Paid for 2015	0	0
(7)	Estimated Reserve	0	0
(8)	Paid to Date (82 & Prior)	126,400	126,400
(9)	Est Ult Paid for 1982 & Prior	126,400	126,400

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	0	0
(11)	Projected Number of Years	2	2
(12)	Estimated Reserve	0	0
(13)	Paid to Date (82 & Prior)	126,400	126,400
(14)	Est Ult Paid for 1982 & Prior	126,400	126,400
(14a)	Paid Counts During Fiscal Year	0	0
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	126,400	126,400
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**126,400**	**126,400**
(18)	Implied Tail	1.000	1.000
(19)	Ult Loss Inc Lump Sums @ 6/14	126,400	126,400

NOTES:

(1) From Section 6, Exhibit 2, Page 6
(2) = (Average of Section 6, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 6, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 6, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	1,277	7.152			
1993	2	1,933	7.567	1.514		
1994	3	2,959	7.993	1.531		
1995	4	30,696	10.332	10.374		
1996	5	1,619	7.390	0.053		
1997	6	7,074	8.864	4.369		
1998	7	5,136	8.544	0.726		
1999	8	26,679	10.192	5.195		
2000	9	8,683	9.069	0.325	n =	12
2001	10	453	6.116	0.052	S(x) =	23,970
2002	11	573	6.351	1.265	S(x-sq) =	47,880,218
2003	12	16	2.773	0.028	S(xy) =	184,417
2004	13	0			S(y) =	92
2005	14	0			D =	1,716
2006	15	0			slope =	-0.246
2007	16	0			Avg Trend =	0.754
2008	17	0				
2009	18	0				
2010	19	0				
2011	20	0				
2012	21	0				
2013	22	0				
2014	23	0				
2015	24	0				
					Selected Trend:	**0.750**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2003: 0.028 = 16 / 573

Commonwealth of Massachusetts Workers Compensation
University of Massachusetts (Medical Center) - Cluster 4
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	1,234	3,103	4,861	6,300	7,916	9,821	13,039	13,611	14,794	16,517	16,901	19,950	21,086	21,192	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226	21,226
June-84	2,119	5,327	8,344	10,814	13,588	16,986	18,288	23,404	25,737	31,059	49,301	49,301	49,616	49,616	49,616	49,911	50,261	50,611	50,611	50,611	50,961	50,961	50,961	50,961	50,961	50,961	50,961	50,961	50,961	50,961	50,961	50,961	
June-85	12,116	30,459	47,713	61,836	82,871	90,557	102,192	116,196	126,162	134,269	144,586	146,053	155,423	156,868	159,570	160,025	160,725	160,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725	162,725		
June-86	20,894	52,527	82,283	109,226	113,177	157,428	181,217	194,111	201,338	202,138	203,815	204,040	204,668	207,774	211,955	212,780	212,780	212,780	215,180	215,355	215,355	215,355	215,355	215,355	215,355	215,355	215,355	215,355	215,355	215,355			
June-87	31,042	78,039	128,883	164,579	225,534	253,273	269,701	290,822	307,535	321,418	343,535	347,855	391,585	394,847	396,769	397,163	397,163	397,163	397,163	397,163	397,356	397,356	397,356	397,356	397,356	397,356	397,356	397,356	397,356				
June-88	38,803	100,851	169,323	220,047	246,044	269,806	298,617	307,956	313,205	317,782	319,598	322,343	325,039	329,817	329,817	329,817	331,017	332,429	332,429	333,094	334,344	338,304	341,814	346,679	347,929	347,929	347,929	347,929					
June-89	23,530	123,605	224,861	257,852	314,169	363,076	415,231	428,349	431,502	433,102	439,481	459,235	462,320	479,638	484,373	488,387	488,786	488,786	488,786	488,786	488,786	488,786	488,786	488,786	488,786	488,786	488,786						
June-90	50,815	273,859	359,066	409,059	478,183	534,786	577,745	596,162	604,078	543,745	548,041	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962	553,962						
June-91	100,348	235,116	278,654	299,094	305,642	311,577	324,200	331,771	300,441	301,585	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697	301,697							
June-92	214,704	524,294	598,233	667,108	699,896	707,764	731,353	668,555	669,244	669,244	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188	669,188								
June-93	170,873	375,060	420,253	430,949	444,131	448,308	394,918	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196	395,196									
June-94	300,512	596,595	667,456	713,591	730,452	676,827	679,845	681,410	682,760	684,108	684,108	684,335	686,279	687,551	690,014	691,979	693,434	694,829	694,829	694,829	694,829	694,829	698,854										
June-95	224,267	378,724	433,955	457,533	409,745	410,858	411,003	411,481	412,287	412,616	413,407	414,199	414,911	415,394	415,394	416,151	416,388	416,634	416,984	417,700	418,185												
June-96	167,356	393,930	501,689	378,074	378,587	378,666	378,667	379,037	379,508	382,952	382,952	382,952	382,952	382,952	382,952	382,952	382,952	382,952	382,952	382,952													
June-97	130,080	273,734	170,451	178,673	186,292	189,102	189,531	190,062	190,753	191,531	192,270	193,209	194,029	194,724	195,455	195,912	196,119	196,392	196,765														
June-98	153,489	249,584	276,046	301,383	308,237	314,372	326,267	379,647	404,376	420,822	440,261	450,569	452,424	455,322	458,466	462,440	470,685	482,508															
June-99	74,009	144,825	187,509	205,821	213,634	225,729	262,895	277,050	296,551	301,615	304,333	305,562	306,665	306,876	308,775	309,222	309,222																
June-00	42,966	116,743	129,805	138,406	149,847	152,795	156,525	163,267	168,512	177,868	177,868	177,992	185,166	185,166	185,166	185,166																	
June-01	66,977	112,847	134,511	164,585	186,174	191,353	193,876	196,194	197,019	200,449	202,529	202,659	204,334	205,415	205,415																		
June-02	51,704	99,105	124,129	132,683	137,298	144,909	146,854	147,302	174,745	189,334	201,469	209,356	215,153	219,704																			
June-03	24,338	126,639	167,817	173,658	176,063	176,926	181,096	186,492	190,822	196,704	200,649	205,235	213,052																				
June-04	83,690	216,265	266,643	284,876	292,325	295,052	295,295	296,029	296,255	296,405	296,405	296,405																					
June-05	70,794	151,383	161,299	162,118	162,383	162,449	162,848	165,224	165,325	165,630	165,860																						
June-06	111,267	215,773	247,375	290,539	295,723	304,040	318,675	338,665	353,952	368,605																							
June-07	135,214	210,808	235,383	235,931	236,426	236,426	236,426	236,426	236,426																								
June-08	163,349	354,750	465,422	484,430	499,466	503,458	508,133	512,405																									
June-09	147,783	237,019	285,263	290,878	311,776	330,161	342,462																										
June-10	151,041	251,654	264,987	272,182	276,801	280,207																											
June-11	207,552	306,733	317,839	322,382	326,484																												
June-12	139,332	221,373	251,760	270,206																													
June-13	127,443	223,391	256,039																														
June-14	99,522	206,623																															
June-15	68,762																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.515	1.567	1.296	1.257	1.241	1.328	1.044	1.087	1.116	1.023	1.180	1.057	1.005	1.002	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	1.000	1.000	1.000	1.000	
June-84	2.514	1.566	1.296	1.257	1.250	1.077	1.280	1.100	1.207	1.587	1.000	1.006	1.000	1.000	1.006	1.007	1.007	1.000	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
June-85	2.514	1.566	1.296	1.340	1.093	1.128	1.137	1.086	1.064	1.077	1.010	1.064	1.009	1.017	1.003	1.004	1.000	1.012	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
June-86	2.514	1.566	1.327	1.036	1.391	1.151	1.071	1.037	1.004	1.008	1.001	1.003	1.015	1.020	1.004	1.000	1.000	1.011	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
June-87	2.514	1.652	1.277	1.370	1.123	1.065	1.078	1.057	1.045	1.069	1.013	1.126	1.008	1.005	1.001	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					
June-88	2.599	1.679	1.300	1.118	1.097	1.107	1.031	1.017	1.015	1.006	1.009	1.008	1.015	1.000	1.000	1.004	1.004	1.000	1.002	1.004	1.012	1.010	1.014	1.004	1.000	1.000	1.000						
June-89	5.253	1.819	1.147	1.218	1.156	1.144	1.032	1.007	1.004	1.015	1.045	1.007	1.037	1.010	1.008	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
June-90	5.389	1.311	1.139	1.169	1.118	1.080	1.032	1.013	0.900	1.008	1.011	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								
June-91	2.343	1.185	1.073	1.022	1.019	1.041	1.023	0.906	1.004	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	1.000									
June-92	2.442	1.141	1.115	1.049	1.011	1.033	0.914	1.001	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	1.000										
June-93	2.195	1.120	1.025	1.031	1.009	0.881	1.001	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	1.000											
June-94	1.985	1.119	1.069	1.024	0.927	1.004	1.002	1.002	1.002	1.000	1.000	1.003	1.002	1.004	1.003	1.002	1.002	1.000	1.000	1.000	1.006												
June-95	1.689	1.146	1.054	0.896	1.003	1.000	1.001	1.002	1.001	1.002	1.002	1.002	1.001	1.000	1.002	1.001	1.001	1.001	1.002	1.001													
June-96	2.354	1.274	0.754	1.001	1.000	1.000	1.001	1.001	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-97	2.104	0.623	1.048	1.043	1.015	1.002	1.003	1.004	1.004	1.004	1.005	1.004	1.004	1.004	1.002	1.001	1.001	1.002															
June-98	1.626	1.106	1.092	1.023	1.020	1.038	1.164	1.065	1.041	1.046	1.023	1.004	1.006	1.007	1.009	1.018	1.025																
June-99	1.957	1.295	1.098	1.038	1.057	1.165	1.054	1.070	1.017	1.009	1.004	1.004	1.001	1.006	1.001	1.000																	
June-00	2.717	1.112	1.066	1.083	1.020	1.024	1.043	1.032	1.056	1.000	1.001	1.040	1.000	1.000	1.000																		
June-01	1.685	1.192	1.224	1.131	1.028	1.013	1.012	1.004	1.017	1.010	1.001	1.008	1.005	1.000																			
June-02	1.917	1.252	1.069	1.035	1.055	1.013	1.003	1.186	1.083	1.064	1.039	1.028	1.021																				
June-03	5.203	1.325	1.035	1.014	1.005	1.024	1.030	1.023	1.031	1.020	1.023	1.038																					
June-04	2.584	1.233	1.068	1.026	1.009	1.001	1.002	1.001	1.001	1.000	1.000																						
June-05	2.138	1.066	1.005	1.002	1.000	1.002	1.015	1.001	1.002	1.001																							
June-06	1.939	1.146	1.174	1.018	1.028	1.048	1.063	1.045	1.041																								
June-07	1.559	1.117	1.002	1.002	1.000	1.000	1.000	1.000																									
June-08	2.172	1.312	1.041	1.031	1.008	1.009	1.008																										
June-09	1.604	1.204	1.020	1.072	1.059	1.037																											
June-10	1.666	1.053	1.027	1.017	1.012																												
June-11	1.478	1.036	1.014	1.013																													
June-12	1.589	1.137	1.073																														
June-13	1.753	1.146																															
June-14	2.076																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.393	1.260	1.108	1.080	1.063	1.052	1.040	1.030	1.028	1.041	1.017	1.019	1.007	1.004	1.002	1.002	1.003	1.002	1.000	1.001	1.001	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5	1.712	1.115	1.035	1.027	1.021	1.019	1.018	1.014	1.032	1.019	1.013	1.024	1.007	1.003	1.002	1.004	1.006	1.001	1.000	1.000	1.001	1.000	1.003	1.001	1.000	1.000	1.000	1.000	1.000				
Latest 3	1.806	1.107	1.038	1.034	1.026	1.016	1.024	1.015	1.015	1.007	1.021	1.025	1.009	1.002	1.003	1.006	1.009	1.001	1.001	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Volume Wtd																																	
All Yrs	2.064	1.177	1.063	1.049	1.032	1.033	1.020	1.017	1.007	1.015	1.009	1.013	1.006	1.003	1.002	1.002	1.003	1.001	1.000	1.000	1.002	1.001	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Latest 5	1.669	1.109	1.035	1.028	1.021	1.021	1.018	1.016	1.030	1.018	1.012	1.021	1.006	1.004	1.003	1.005	1.006	1.000	1.000	1.000	1.002	1.000	1.002	1.001	1.000	1.000	1.000	1.000	1.000				
Latest 3	1.778	1.099	1.036	1.033	1.024	1.016	1.023	1.021	1.019	1.006	1.018	1.025	1.009	1.003	1.005	1.009	1.012	1.001	1.000	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				

Dev Factor Selection

Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*1.876*	*1.167*	*1.043*	*1.029*	*1.033*	*1.019*	*1.022*	*1.042*	*1.027*	*1.005*	*1.013*	*1.025*	*1.002*	*1.001*	*1.003*	*1.004*	*1.001*	*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*	*1.002*	
Selected	1.971	1.143	1.049	1.028	1.022	1.021	1.020	1.016	1.028	1.005	1.012	1.025	1.009	1.001	1.002	1.004	1.003	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	1.002
FacToUlt	2.889	1.466	1.282	1.223	1.189	1.163	1.139	1.117	1.099	1.069	1.064	1.051	1.026	1.017	1.016	1.014	1.010	1.007	1.006	1.005	1.004	1.003	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002
Percent of Ult	34.6%	68.2%	78.0%	81.8%	84.1%	86.0%	87.8%	89.6%	91.0%	93.5%	94.0%	95.1%	97.5%	98.3%	98.4%	98.7%	99.0%	99.3%	99.4%	99.5%	99.6%	99.7%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	126,400	126,400	126,400	126,400	0	0.0%	0	0.0%
6/30/82-83	21,332	21,651	21,332	21,651	0	0.0%	0	0.0%
6/30/83-84	51,216	51,980	51,216	51,980	0	0.0%	0	0.0%
6/30/84-85	163,539	165,980	163,539	165,980	0	0.0%	0	0.0%
6/30/85-86	216,432	219,662	216,432	219,662	0	0.0%	0	0.0%
6/30/86-87	398,000	399,000	398,000	398,000	0	0.0%	(1,000)	-0.3%
6/30/87-88	349,000	349,000	349,000	349,000	0	0.0%	0	0.0%
6/30/88-89	491,230	513,225	491,230	498,562	0	0.0%	(14,664)	-2.9%
6/30/89-90	556,732	581,660	556,732	565,041	0	0.0%	(16,619)	-2.9%
6/30/90-91	303,205	316,782	303,205	307,731	0	0.0%	(9,051)	-2.9%
6/30/91-92	672,534	702,647	672,534	682,572	0	0.0%	(20,076)	-2.9%
6/30/92-93	397,172	414,956	397,172	403,100	0	0.0%	(11,856)	-2.9%
6/30/93-94	698,000	698,000	701,000	701,000	3,000	0.4%	3,000	0.4%
6/30/94-95	420,000	420,000	420,000	420,000	0	0.0%	0	0.0%
6/30/95-96	384,867	402,100	384,867	390,611	0	0.0%	(11,489)	-2.9%
6/30/96-97	198,000	207,900	198,000	201,960	0	0.0%	(5,940)	-2.9%
6/30/97-98	474,000	497,700	486,000	495,720	12,000	2.5%	(1,980)	-0.4%
6/30/98-99	313,000	313,000	312,000	312,000	(1,000)	-0.3%	(1,000)	-0.3%
6/30/99-00	188,000	188,000	188,000	188,000	0	0.0%	0	0.0%
6/30/00-01	209,000	209,000	209,000	209,000	0	0.0%	0	0.0%
6/30/01-02	219,000	219,000	223,000	227,460	4,000	1.8%	8,460	3.9%
6/30/02-03	214,000	214,000	219,000	223,380	5,000	2.3%	9,380	4.4%
6/30/03-04	313,000	328,650	311,000	327,600	(2,000)	-0.6%	(1,050)	-0.3%
6/30/04-05	176,000	190,050	176,000	190,050	0	0.0%	0	0.0%
6/30/05-06	380,000	405,300	389,000	413,700	9,000	2.4%	8,400	2.1%
6/30/06-07	269,000	288,750	260,000	278,250	(9,000)	-3.3%	(10,500)	-3.6%
6/30/07-08	556,000	620,550	548,000	600,600	(8,000)	-1.4%	(19,950)	-3.2%
6/30/08-09	385,000	410,550	386,000	409,500	1,000	0.3%	(1,050)	-0.3%
6/30/09-10	339,000	364,350	326,000	350,700	(13,000)	-3.8%	(13,650)	-3.7%
6/30/10-11	404,000	426,300	388,000	408,450	(16,000)	-4.0%	(17,850)	-4.2%
6/30/11-12	331,000	360,150	330,000	357,000	(1,000)	-0.3%	(3,150)	-0.9%
6/30/12-13	343,000	374,850	328,000	358,050	(15,000)	-4.4%	(16,800)	-4.5%
6/30/13-14	286,000	353,850	303,000	339,150	17,000	5.9%	(14,700)	-4.2%
6/30/14-15								
Total	10,846,658	11,354,992	10,832,658	11,191,859	(14,000)	-0.1%	(163,133)	-1.4%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 6, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.2%	0.0%	0.1%	0.0%	1.000	1.000
396	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
384	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
372	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
360	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
348	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
336	99.8%	0.0%	0.2%	0.0%	0.0%	0.806	0.726
324	99.8%	0.0%	0.2%	0.0%	0.0%	0.775	0.685
312	99.8%	0.0%	0.2%	0.0%	0.0%	0.745	0.646
300	99.8%	0.0%	0.2%	0.0%	0.0%	0.717	0.609
288	99.8%	0.0%	0.2%	0.0%	0.0%	0.689	0.575
276	99.8%	0.1%	0.2%	0.0%	0.0%	0.662	0.542
264	99.7%	0.1%	0.3%	0.0%	0.0%	0.756	0.671
252	99.6%	0.1%	0.4%	0.0%	0.0%	0.792	0.720
240	99.5%	0.1%	0.5%	0.0%	0.0%	0.806	0.739
228	99.4%	0.1%	0.6%	0.0%	0.0%	0.810	0.744
216	99.3%	0.3%	0.7%	0.1%	0.1%	0.808	0.741
204	99.0%	0.4%	1.0%	0.2%	0.1%	0.834	0.775
192	98.7%	0.2%	1.3%	0.1%	0.1%	0.853	0.800
180	98.4%	0.1%	1.6%	0.1%	0.0%	0.845	0.788
168	98.3%	0.9%	1.7%	0.5%	0.4%	0.823	0.757
156	97.5%	2.3%	2.5%	1.4%	1.1%	0.855	0.801
144	95.1%	1.1%	4.9%	0.7%	0.6%	0.898	0.859
132	94.0%	0.5%	6.0%	0.3%	0.3%	0.885	0.840
120	93.5%	2.5%	6.5%	1.7%	1.4%	0.861	0.806
108	91.0%	1.5%	9.0%	1.0%	0.9%	0.870	0.819
96	89.6%	1.8%	10.4%	1.3%	1.2%	0.857	0.801
84	87.8%	1.8%	12.2%	1.4%	1.2%	0.847	0.787
72	86.0%	1.9%	14.0%	1.5%	1.4%	0.836	0.772
60	84.1%	2.3%	15.9%	1.9%	1.8%	0.824	0.757
48	81.8%	3.8%	18.2%	3.3%	3.1%	0.816	0.746
36	78.0%	9.8%	22.0%	8.9%	8.4%	0.819	0.751
24	68.2%	33.6%	31.8%	31.7%	30.8%	0.847	0.789
12	34.6%	34.6%	65.4%	33.9%	33.6%	0.900	0.861
Total		100.0%					

NOTES:

(2) = 1 / Section 6, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
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University of Massachusetts (Medical Center) - Cluster 4
Medical

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	0	0		0	0
6/30/82-83	106	425	1.000	106	425
6/30/83-84	255	1,019	1.000	255	1,019
6/30/84-85	814	3,255	1.000	814	3,255
6/30/85-86	1,077	4,307	1.000	1,077	4,307
6/30/86-87	644	644	1.000	644	644
6/30/87-88	1,071	1,071	0.806	863	863
6/30/88-89	2,444	9,776	0.775	1,894	7,576
6/30/89-90	2,770	11,079	0.745	2,064	8,256
6/30/90-91	1,508	6,034	0.717	1,081	4,323
6/30/91-92	3,346	13,384	0.689	2,305	9,221
6/30/92-93	1,976	7,904	0.662	1,309	5,236
6/30/93-94	2,146	2,146	0.756	1,622	1,622
6/30/94-95	1,815	1,815	0.792	1,438	1,438
6/30/95-96	1,915	7,659	0.806	1,544	6,176
6/30/96-97	1,235	5,195	0.810	1,001	4,209
6/30/97-98	3,492	13,212	0.808	2,822	10,678
6/30/98-99	2,778	2,778	0.834	2,318	2,318
6/30/99-00	2,834	2,834	0.853	2,418	2,418
6/30/00-01	3,585	3,585	0.845	3,031	3,031
6/30/01-02	3,296	7,756	0.823	2,711	6,380
6/30/02-03	5,948	10,328	0.855	5,087	8,832
6/30/03-04	14,595	31,195	0.898	13,110	28,022
6/30/04-05	10,140	24,190	0.885	8,978	21,417
6/30/05-06	20,395	45,095	0.861	17,553	38,812
6/30/06-07	23,574	41,824	0.870	20,519	36,405
6/30/07-08	35,595	88,195	0.857	30,507	75,588
6/30/08-09	43,538	67,038	0.847	36,877	56,782
6/30/09-10	45,793	70,493	0.836	38,267	58,907
6/30/10-11	61,516	81,966	0.824	50,717	67,578
6/30/11-12	59,794	86,794	0.816	48,820	70,865
6/30/12-13	71,961	102,011	0.819	58,936	83,547
6/30/13-14	96,377	132,527	0.847	81,615	112,228
6/30/14-15	130,238	242,238	0.900	117,176	217,943
Total	658,571	1,129,771		559,480	960,321
			(7) Total Discount Factor:	0.850	0.850

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	0	0
(9) Projected Number of Years:	2	2
(10) Projected Paid Loss per Year:	0	0
(11) Discounted Value at 4%:	0	0

NOTES:
(2), (3) From Section 6, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 6, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

University of Massachusetts (Medical Center) - Cluster 4
Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	0	0		0	0
6/30/82-83	106	425	1.000	106	425
6/30/83-84	255	1,019	1.000	255	1,019
6/30/84-85	814	3,255	1.000	814	3,255
6/30/85-86	1,077	4,307	1.000	1,077	4,307
6/30/86-87	644	644	1.000	644	644
6/30/87-88	1,071	1,071	0.726	777	777
6/30/88-89	2,444	9,776	0.685	1,673	6,694
6/30/89-90	2,770	11,079	0.646	1,789	7,157
6/30/90-91	1,508	6,034	0.609	919	3,677
6/30/91-92	3,346	13,384	0.575	1,924	7,694
6/30/92-93	1,976	7,904	0.542	1,072	4,287
6/30/93-94	2,146	2,146	0.671	1,440	1,440
6/30/94-95	1,815	1,815	0.720	1,307	1,307
6/30/95-96	1,915	7,659	0.739	1,415	5,659
6/30/96-97	1,235	5,195	0.744	919	3,863
6/30/97-98	3,492	13,212	0.741	2,586	9,784
6/30/98-99	2,778	2,778	0.775	2,154	2,154
6/30/99-00	2,834	2,834	0.800	2,267	2,267
6/30/00-01	3,585	3,585	0.788	2,827	2,827
6/30/01-02	3,296	7,756	0.757	2,495	5,872
6/30/02-03	5,948	10,328	0.801	4,766	8,275
6/30/03-04	14,595	31,195	0.859	12,542	26,806
6/30/04-05	10,140	24,190	0.840	8,522	20,330
6/30/05-06	20,395	45,095	0.806	16,433	36,335
6/30/06-07	23,574	41,824	0.819	19,314	34,266
6/30/07-08	35,595	88,195	0.801	28,500	70,616
6/30/08-09	43,538	67,038	0.787	34,263	52,757
6/30/09-10	45,793	70,493	0.772	35,336	54,396
6/30/10-11	61,516	81,966	0.757	46,553	62,029
6/30/11-12	59,794	86,794	0.746	44,633	64,787
6/30/12-13	71,961	102,011	0.751	54,010	76,563
6/30/13-14	96,377	132,527	0.789	76,036	104,556
6/30/14-15	130,238	242,238	0.861	112,123	208,544
Total	658,571	1,129,771		521,488	895,367
			(7) Total Discount Factor:	0.792	0.793

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	0	0
(9) Projected Number of Years:	2	2
(10) Projected Paid Loss per Year:	0	0
(11) Discounted Value at 6%:	0	0

NOTES:
(2), (3) From Section 6, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 6, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		3,019,826			3,071,846	3,184,383	52,020	164,557		
6/30/82-83		743,272	744,478		758,137	773,003	14,865	29,731		
6/30/83-84		917,731	919,141		936,086	954,440	18,355	36,709		
6/30/84-85	357,749	1,492,038	1,494,383	1,495,562	1,521,879	1,551,720	29,841	59,682	0.425	0.434
6/30/85-86	380,112	1,868,907	1,871,995	1,873,053	1,906,285	1,943,663	37,378	74,756	0.502	0.511
6/30/86-87	423,770	2,711,611	2,975,419	2,716,191	2,716,000	2,975,000	4,389	263,389	0.641	0.702
6/30/87-88	480,405	4,344,518	5,167,503	4,355,364	4,431,408	4,778,970	86,890	434,452	0.922	0.995
6/30/88-89	495,261	1,515,210	1,525,241	1,530,988	1,545,514	1,590,971	30,304	75,761	0.312	0.321
6/30/89-90	502,691	3,850,424	4,214,297	3,877,238	3,927,432	4,042,945	77,008	192,521	0.781	0.804
6/30/90-91	482,143	1,393,607	1,404,878	1,404,830	1,405,000	1,405,000	11,393	11,393	0.291	0.291
6/30/91-92	492,539	1,392,982	1,527,109	1,413,297	1,413,000	1,527,000	20,018	134,018	0.287	0.310
6/30/92-93	524,541	1,147,496	1,163,597	1,163,457	1,170,446	1,204,871	22,950	57,375	0.223	0.230
6/30/93-94	584,853	1,133,192	1,150,078	1,149,926	1,150,000	1,189,851	16,808	56,660	0.197	0.203
6/30/94-95	587,701	1,636,969	1,665,571	1,665,150	1,665,000	1,666,000	28,031	29,031	0.283	0.283
6/30/95-96	614,868	1,269,047	1,296,466	1,296,251	1,294,428	1,332,499	25,381	63,452	0.211	0.217
6/30/96-97	700,686	1,178,539	1,213,138	1,213,022	1,213,000	1,273,650	34,461	95,111	0.173	0.182
6/30/97-98	684,415	2,125,045	2,219,782	2,216,122	2,216,000	2,220,000	90,955	94,955	0.324	0.324
6/30/98-99	707,796	1,385,456	1,470,230	1,468,605	1,469,000	1,485,000	83,544	99,544	0.208	0.210
6/30/99-00	760,477	1,182,336	1,277,276	1,278,592	1,277,000	1,279,000	94,664	96,664	0.168	0.168
6/30/00-01	811,600	1,614,352	1,795,849	1,792,336	1,792,000	1,796,000	177,649	181,649	0.221	0.221
6/30/01-02	835,038	2,356,594	2,685,837	2,672,684	2,673,000	2,686,000	316,406	329,406	0.320	0.322
6/30/02-03	825,340	1,260,064	1,479,045	1,479,059	1,479,000	1,516,000	218,936	255,936	0.179	0.184
6/30/03-04	849,216	1,490,601	1,766,042	1,764,861	1,765,000	1,854,000	274,399	363,399	0.208	0.218
6/30/04-05	992,508	1,023,563	1,244,850	1,367,277	1,245,000	1,367,000	221,437	343,437	0.125	0.138
6/30/05-06	962,878	1,364,757	1,718,988	1,748,486	1,719,000	1,836,000	354,243	471,243	0.179	0.191
6/30/06-07	1,032,930	968,708	1,248,054	1,440,529	1,248,000	1,441,000	279,292	472,292	0.121	0.140
6/30/07-08	1,063,597	2,326,868	3,018,106	2,924,739	2,925,000	3,018,000	598,132	691,132	0.275	0.284
6/30/08-09	1,073,805	1,617,159	2,285,960	2,297,676	2,171,700	2,298,000	554,541	680,841	0.202	0.214
6/30/09-10	1,084,749	2,650,319	3,998,724	3,611,160	3,430,450	3,999,000	780,131	1,348,681	0.316	0.369
6/30/10-11	1,134,164	2,090,243	3,405,910	3,273,896	3,110,300	3,406,000	1,020,057	1,315,757	0.274	0.300
6/30/11-12	1,202,674	1,843,506	3,476,915	3,240,164	3,078,000	3,477,000	1,234,494	1,633,494	0.256	0.289
6/30/12-13	1,284,741	1,181,073	2,809,940	3,083,997	2,669,500	3,084,000	1,488,427	1,902,927	0.208	0.240
6/30/13-14	1,346,902	1,069,487	3,860,961	3,763,450	3,574,850	3,861,000	2,505,363	2,791,513	0.265	0.287
6/30/14-15	1,404,093	513,416	4,194,546	3,795,076	3,795,000	4,195,000	3,281,584	3,681,584	0.270	0.299
Total	24,684,241	57,678,917	72,290,311	68,373,039	71,763,262	76,211,966	14,084,344	18,533,049		
Tot 6/30/84-15	24,684,241	52,998,088	70,626,691	68,373,039	66,997,192	71,300,139	13,999,104	18,302,051	0.271	0.289

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 7, Exhibit 1, Page 2, Column 3 and Section 7, Exhibit 1, Page 9, Column 8

(4) From Section 7, Exhibit 1, Page 2, Column 8

(5) From Section 7, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		3,004,076							1	0		
6/30/82-83		716,272	1.002	1.000	717,478	27,000	744,478		0	0		
6/30/83-84		837,731	1.002	1.000	839,141	80,000	919,141		0	0		
6/30/84-85	357,749	1,393,062	1.002	1.000	1,395,407	98,976	1,494,383	0.418	0	0		
6/30/85-86	380,112	1,833,907	1.002	1.000	1,836,995	35,000	1,871,995	0.492	0	0		
6/30/86-87	423,770	2,590,111	1.002	1.100	2,853,919	121,500	2,975,419	0.702	1	1	263,808	88
6/30/87-88	480,405	4,049,675	1.003	1.200	4,872,660	294,843	5,167,503	1.076	2	2	411,492	74
6/30/88-89	495,261	1,302,910	1.008	1.000	1,312,941	212,300	1,525,241	0.308	0	0		
6/30/89-90	502,691	3,320,712	1.009	1.100	3,684,585	529,712	4,214,297	0.838	2	1	363,874	82
6/30/90-91	482,143	1,160,107	1.010	1.000	1,171,378	233,500	1,404,878	0.291	0	0		
6/30/91-92	492,539	1,136,799	1.011	1.100	1,263,890	263,220	1,527,109	0.310	0	1	127,091	54
6/30/92-93	524,541	986,496	1.012	1.000	998,073	165,524	1,163,597	0.222	0	0		
6/30/93-94	584,853	974,192	1.013	1.000	986,610	163,468	1,150,078	0.197	1	1	12,418	55
6/30/94-95	587,701	1,267,764	1.015	1.000	1,286,493	379,078	1,665,571	0.283	1	1	18,728	77
6/30/95-96	614,868	927,586	1.020	1.000	945,995	350,471	1,296,466	0.211	0	0		
6/30/96-97	700,686	923,657	1.030	1.000	951,409	261,730	1,213,138	0.173	1	1	27,751	66
6/30/97-98	684,415	1,860,045	1.046	1.000	1,945,380	274,403	2,219,782	0.324	2	2	42,667	81
6/30/98-99	707,796	1,180,206	1.066	1.000	1,257,713	212,517	1,470,230	0.208	1	1	77,507	68
6/30/99-00	760,477	844,236	1.098	1.000	926,954	350,322	1,277,276	0.168	0	0		
6/30/00-01	811,600	1,340,850	1.127	1.000	1,511,407	284,442	1,795,849	0.221	1	1	170,557	64
6/30/01-02	835,038	1,913,344	1.163	1.000	2,224,608	461,229	2,685,837	0.322	1	1	311,264	70
6/30/02-03	825,340	1,087,564	1.194	1.000	1,298,838	180,207	1,479,045	0.179	2	1	211,274	64
6/30/03-04	849,216	1,167,101	1.224	1.000	1,428,574	337,468	1,766,042	0.208	0	2	130,737	45
6/30/04-05	992,508	825,463	1.257	1.000	1,037,626	207,224	1,244,850	0.125	0	0		
6/30/05-06	962,878	1,164,085	1.294	1.000	1,506,128	212,860	1,718,988	0.179	3	2	171,022	61
6/30/06-07	1,032,930	783,708	1.339	1.000	1,049,210	198,844	1,248,054	0.121	2	0		
6/30/07-08	1,063,597	1,628,952	1.386	1.000	2,257,201	760,905	3,018,106	0.284	6	3	209,416	63
6/30/08-09	1,073,805	1,367,159	1.436	1.000	1,963,511	322,448	2,285,960	0.213	7	5	119,270	63
6/30/09-10	1,084,749	2,102,819	1.522	1.000	3,200,886	797,838	3,998,724	0.369	11	8	137,258	60
6/30/10-11	1,134,164	1,533,060	1.656	1.000	2,539,038	866,872	3,405,910	0.300	16	7	143,711	59
6/30/11-12	1,202,674	1,604,006	1.824	1.000	2,925,810	551,105	3,476,915	0.289	18	15	88,120	60
6/30/12-13	1,284,741	979,073	2.180	1.000	2,134,142	675,798	2,809,940	0.219	34	17	67,945	55
6/30/13-14	1,346,902	972,487	3.064	1.000	2,979,640	881,321	3,860,961	0.287	92	43	46,678	51
6/30/14-15	1,404,093	513,416	6.811	1.000	3,496,655	697,891	4,194,546	0.299		90	33,147	49
Total	24,684,241	49,292,631			60,800,296	11,490,015	72,290,311		205	206		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 7, Exhibit 1, Page 7

(5) Based on information from the MA WCRIB

(6) = (3) x (4) x (5)

(7) From Section 7, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	357,749	0.586	1,393,062	1.002	1,396,586	98,976	1,495,562	0.418	0.390
6/30/85-86	380,112	0.649	1,833,907	1.002	1,838,053	35,000	1,873,053	0.493	0.484
6/30/86-87	423,770	0.643	2,590,111	1.002	2,594,691	121,500	2,716,191	0.641	0.612
6/30/87-88	480,405	0.843	4,049,675	1.003	4,060,521	294,843	4,355,364	0.907	0.845
6/30/88-89	495,261	0.417	1,302,910	1.008	1,318,688	212,300	1,530,988	0.309	0.266
6/30/89-90	502,691	0.618	3,320,712	1.009	3,347,526	529,712	3,877,238	0.771	0.666
6/30/90-91	482,143	0.242	1,160,107	1.010	1,171,330	233,500	1,404,830	0.291	0.243
6/30/91-92	492,539	0.254	1,136,799	1.011	1,150,077	263,220	1,413,297	0.287	0.233
6/30/92-93	524,541	0.188	986,496	1.012	997,933	165,524	1,163,457	0.222	0.190
6/30/93-94	584,853	0.167	974,192	1.013	986,458	163,468	1,149,926	0.197	0.169
6/30/94-95	587,701	0.214	1,267,764	1.015	1,286,072	379,078	1,665,150	0.283	0.219
6/30/95-96	614,868	0.152	927,586	1.020	945,780	350,471	1,296,251	0.211	0.154
6/30/96-97	700,686	0.135	923,657	1.030	951,292	261,730	1,213,022	0.173	0.136
6/30/97-98	684,415	0.272	1,860,045	1.046	1,941,720	274,403	2,216,122	0.324	0.284
6/30/98-99	707,796	0.174	1,180,206	1.066	1,256,088	212,517	1,468,605	0.207	0.177
6/30/99-00	760,477	0.124	844,236	1.098	928,270	350,322	1,278,592	0.168	0.122
6/30/00-01	811,600	0.182	1,340,850	1.127	1,507,894	284,442	1,792,336	0.221	0.186
6/30/01-02	835,038	0.255	1,913,344	1.163	2,211,455	461,229	2,672,684	0.320	0.265
6/30/02-03	825,340	0.157	1,087,564	1.194	1,298,852	180,207	1,479,059	0.179	0.157
6/30/03-04	849,216	0.167	1,167,101	1.224	1,427,393	337,468	1,764,861	0.208	0.168
6/30/04-05	992,508	0.165	825,463	1.257	1,160,053	207,224	1,367,277	0.138	0.117
6/30/05-06	962,878	0.170	1,164,085	1.294	1,535,626	212,860	1,748,486	0.182	0.159
6/30/06-07	1,032,930	0.175	783,708	1.339	1,241,685	198,844	1,440,529	0.139	0.120
6/30/07-08	1,063,597	0.181	1,628,952	1.386	2,163,834	760,905	2,924,739	0.275	0.203
6/30/08-09	1,073,805	0.186	1,367,159	1.436	1,975,228	322,448	2,297,676	0.214	0.184
6/30/09-10	1,084,749	0.191	2,102,819	1.522	2,813,322	797,838	3,611,160	0.333	0.259
6/30/10-11	1,134,164	0.194	1,533,060	1.656	2,407,024	866,872	3,273,896	0.289	0.212
6/30/11-12	1,202,674	0.200	1,604,006	1.824	2,689,059	551,105	3,240,164	0.269	0.224
6/30/12-13	1,284,741	0.206	979,073	2.180	2,408,199	675,798	3,083,997	0.240	0.187
6/30/13-14	1,346,902	0.210	972,487	3.064	2,882,130	881,321	3,763,450	0.279	0.214
6/30/14-15	1,404,093	0.216	513,416	6.811	3,097,185	697,891	3,795,076	0.270	0.221
Total	24,684,241		44,734,552		56,990,024	11,383,015	68,373,039		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 7, Exhibit 1, Page 4, Column 11

(4) From Section 7, Exhibit 1, Page 2, Column 3

(5) From Section 7, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 7, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.586	0.586
6/30/85-86									0.649	0.649
6/30/86-87									0.643	0.643
6/30/87-88									0.843	0.843
6/30/88-89									0.417	0.417
6/30/89-90									0.618	0.618
6/30/90-91	482,143	1,171,378	0.243	0.963	0.234	1.641	0.384	0.139	0.242	0.242
6/30/91-92	492,539	1,263,890	0.257	1.056	0.271	1.608	0.436	0.129	0.322	0.254
6/30/92-93	524,541	998,073	0.190	1.232	0.234	1.577	0.370	0.113	0.188	0.188
6/30/93-94	584,853	986,610	0.169	1.216	0.205	1.546	0.317	0.117	0.227	0.167
6/30/94-95	587,701	1,286,493	0.219	1.205	0.264	1.516	0.400	0.120	0.209	0.214
6/30/95-96	614,868	945,995	0.154	1.195	0.184	1.486	0.273	0.124	0.155	0.152
6/30/96-97	700,686	951,409	0.136	1.183	0.161	1.457	0.234	0.128	0.139	0.135
6/30/97-98	684,415	1,945,380	0.284	1.168	0.332	1.428	0.474	0.132	0.270	0.272
6/30/98-99	707,796	1,257,713	0.178	1.153	0.205	1.400	0.287	0.136	0.177	0.174
6/30/99-00	760,477	926,954	0.122	1.134	0.138	1.373	0.190	0.141	0.130	0.124
6/30/00-01	811,600	1,511,407	0.186	1.105	0.206	1.346	0.277	0.148	0.187	0.182
6/30/01-02	835,038	2,224,608	0.266	1.084	0.289	1.319	0.381	0.154	0.258	0.255
6/30/02-03	825,340	1,298,838	0.157	1.080	0.170	1.294	0.220	0.157	0.161	0.157
6/30/03-04	849,216	1,428,574	0.168	1.080	0.182	1.268	0.230	0.161	0.175	0.167
6/30/04-05	992,508	1,037,626	0.105	1.073	0.112	1.243	0.140	0.165	0.187	0.165
6/30/05-06	962,878	1,506,128	0.156	1.062	0.166	1.219	0.203	0.170	0.190	0.170
6/30/06-07	1,032,930	1,049,210	0.102	1.051	0.107	1.195	0.128	0.175	0.194	0.175
6/30/07-08	1,063,597	2,257,201	0.212	1.039	0.221	1.172	0.258	0.181	0.199	0.181
6/30/08-09	1,073,805	1,963,511	0.183	1.027	0.188	1.149	0.216	0.186	0.203	0.186
6/30/09-10	1,084,749	3,200,886	0.295	1.023	0.302	1.126	0.340	0.191	0.206	0.191
6/30/10-11	1,134,164	2,539,038	0.224	1.025	0.229	1.104	0.253	0.194	0.208	0.194
6/30/11-12	1,202,674	2,925,810	0.243	1.018	0.248	1.082	0.268	0.200	0.211	0.200
6/30/12-13	1,284,741	2,134,142	0.166	1.009	0.168	1.061	0.178	0.206	0.215	0.206
6/30/13-14	1,346,902	2,979,640	0.221	1.005	0.222	1.040	0.231	0.210	0.218	0.210
6/30/14-15	1,404,093	3,496,655	0.249	1.000	0.249	1.020	0.254	0.216		0.216
Total	22,044,253	43,287,169								

Trend Last 4 (ex 14-15):	-4.7%	Avg 3 (ex 14-15):	0.226
Trend Last 8 (ex 14-15):	5.3%	Avg 5 (ex 14-15):	0.254
Trend Last 12 (ex 14-15):	4.4%	Avg 10 (ex 14-15):	0.221
Prior Selected Trend:	1.0%	Prior Sel Avg:	0.220
Selected Trend:	2.0%	Sel. Loss Cost:	0.220

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 7, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.950	
(2)	Credibility		17%	
(3)	Average Pmt Trend Statewide		0.960	
(4)	Credibility Weighted Trend		0.958	
		(Low)		(High)
(5)	Selected Range	0.949		0.968
(6)	Incremental Paid for 2015	0		0
(7)	Estimated Reserve	0		0
(8)	Paid to Date (82 & Prior)	3,004,076		3,004,076
(9)	Est Ult Paid for 1982 & Prior	3,004,076		3,004,076

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	17,340	31,344
(11)	Projected Number of Years	4	7
(12)	Estimated Reserve	69,360	219,410
(13)	Paid to Date (82 & Prior)	3,004,076	3,004,076
(14)	Est Ult Paid for 1982 & Prior	3,073,436	3,223,486
(14a)	Paid Counts During Fiscal Year	0	1
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	3,056,096	3,168,633
(16)	Lump Sum Ultimates	15,750	15,750
(17)	Ult Loss Including Lump Sums	**3,071,846**	**3,184,383**
(18)	Implied Tail	1.017	1.055
(19)	Ult Loss Inc Lump Sums @ 6/14	3,219,784	3,353,215

NOTES:

(1) From Section 7, Exhibit 1, Page 6
(2) = (Average of Section 7, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 7, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 7, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 7, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	96,383	11.476			
1993	2	98,686	11.500	1.024		
1994	3	90,507	11.413	0.917		
1995	4	91,599	11.425	1.012		
1996	5	82,524	11.321	0.901		
1997	6	95,179	11.464	1.153		
1998	7	100,117	11.514	1.052		
1999	8	101,445	11.527	1.013		
2000	9	91,541	11.425	0.902	n =	23
2001	10	95,087	11.463	1.039	S(x) =	46,069
2002	11	101,860	11.531	1.071	S(x-sq) =	92,277,219
2003	12	103,466	11.547	1.016	S(xy) =	519,929
2004	13	103,217	11.545	0.998	S(y) =	260
2005	14	106,270	11.574	1.030	D =	23,276
2006	15	111,087	11.618	1.045	slope =	-0.045
2007	16	115,666	11.658	1.041	Avg Trend =	0.955
2008	17	120,810	11.702	1.044		
2009	18	85,560	11.357	0.708		
2010	19	71,175	11.173	0.832		
2011	20	70,876	11.169	0.996		
2012	21	42,013	10.646	0.593		
2013	22	45,160	10.718	1.075		
2014	23	6,860	8.833	0.152		
2015	24	0				
					Selected Trend:	**0.950**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2014: 0.152 = 6860 / 45160

Commonwealth of Massachusetts Workers Compensation
Massachusetts Colleges & Universities - Cluster 4
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	54,010	142,576	208,148	264,888	314,931	357,219	371,053	469,928	488,830	527,760	553,935	571,859	597,183	632,418	652,652	668,547	668,547	676,026	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272	716,272
June-84	99,917	266,707	383,604	485,764	576,711	646,670	708,919	756,240	783,256	798,348	807,607	799,910	809,636	819,761	830,411	841,202	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	837,731	
June-85	145,363	376,000	561,409	702,017	806,337	944,094	1,041,045	1,113,616	1,165,340	1,204,638	1,251,307	1,274,495	1,298,633	1,324,024	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062	1,393,062		
June-86	146,844	393,892	560,427	714,824	852,275	1,013,300	1,126,822	1,223,737	1,303,796	1,350,669	1,397,048	1,447,454	1,502,391	1,555,201	1,632,671	1,697,735	1,756,102	1,781,294	1,805,911	1,830,855	1,833,907	1,833,907	1,833,907	1,833,907	1,833,907	1,833,907	1,833,907	1,833,907	1,833,907	1,833,907			
June-87	205,350	542,065	782,031	964,915	1,140,809	1,261,213	1,366,787	1,443,695	1,510,844	1,568,560	1,627,834	1,689,585	1,754,007	1,801,170	1,862,691	1,928,482	1,995,204	2,043,636	2,086,293	2,127,530	2,170,638	2,215,734	2,269,157	2,341,746	2,389,183	2,436,751	2,486,729	2,537,563	2,590,111				
June-88	264,730	647,871	957,840	1,332,415	1,600,031	1,789,064	2,016,553	2,143,780	2,273,154	2,384,070	2,485,765	2,581,511	2,687,118	2,803,766	2,927,359	3,052,144	3,156,171	3,229,466	3,302,225	3,377,918	3,456,925	3,541,131	3,624,626	3,707,957	3,794,835	3,883,619	3,973,595	4,049,675					
June-89	203,700	458,930	663,759	873,071	1,047,827	1,143,271	1,198,464	1,232,178	1,250,874	1,282,165	1,292,717	1,298,047	1,302,239	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910	1,302,910						
June-90	251,034	593,345	877,389	1,070,415	1,170,169	1,310,507	1,405,772	1,541,316	1,646,975	1,785,002	1,902,032	2,022,921	2,130,629	2,240,435	2,354,155	2,465,796	2,583,494	2,694,389	2,807,976	2,928,761	3,000,834	3,057,656	3,117,154	3,198,892	3,277,762	3,320,712							
June-91	210,725	476,992	661,310	747,971	826,820	877,501	964,982	1,043,288	1,062,987	1,078,493	1,092,473	1,107,416	1,121,900	1,136,365	1,154,741	1,159,007	1,160,107	1,160,107	1,160,107	1,160,107	1,160,107	1,160,107	1,160,107	1,160,107	1,160,107	1,160,107							
June-92	230,185	473,793	612,524	709,857	752,262	788,923	831,701	862,151	886,987	914,044	968,299	997,727	1,032,093	1,067,423	1,093,472	1,120,923	1,133,758	1,133,853	1,135,353	1,135,353	1,135,353	1,136,695	1,136,695	1,136,799									
June-93	250,714	541,198	609,220	695,349	761,795	896,967	969,498	986,209	986,209	986,209	986,496	986,496	986,496	986,496	986,496	986,496	986,496	986,496	986,496	986,496	986,496	986,496	986,496										
June-94	142,078	335,638	434,332	540,452	602,360	665,759	700,338	683,894	702,764	722,297	742,006	760,225	779,419	799,569	819,773	841,452	863,666	885,787	907,933	930,019	952,106	974,192											
June-95	115,982	327,962	450,743	510,570	656,919	704,734	751,757	811,410	863,231	899,192	899,252	902,615	916,017	958,344	1,001,523	1,046,791	1,090,356	1,133,473	1,179,286	1,223,263	1,267,764												
June-96	206,256	426,449	543,267	632,734	711,202	763,750	825,421	867,895	906,744	927,586	927,586	927,586	927,586	927,586	927,586	927,586	927,586	927,586	927,586	927,586													
June-97	184,229	328,446	444,786	555,024	612,566	653,987	680,550	699,551	720,522	739,692	759,525	784,015	805,205	826,592	851,586	873,746	896,010	918,427	923,657														
June-98	204,733	326,969	438,428	556,503	656,266	750,818	946,526	1,035,878	1,116,871	1,200,899	1,288,861	1,378,390	1,471,075	1,560,882	1,640,371	1,713,867	1,786,522	1,860,045															
June-99	178,965	393,824	642,327	727,290	775,010	801,143	828,610	857,804	888,093	943,651	979,256	1,011,764	1,044,136	1,077,612	1,111,519	1,145,659	1,180,206																
June-00	277,497	570,937	719,211	779,101	816,241	839,009	844,236	844,236	844,236	844,236	844,236	844,236	844,236	844,236	844,236	844,236																	
June-01	211,269	540,991	786,054	907,942	982,546	1,034,355	1,086,105	1,123,788	1,153,822	1,184,076	1,214,203	1,245,356	1,276,910	1,308,682	1,340,850																		
June-02	189,348	645,495	949,546	1,190,744	1,315,603	1,438,839	1,509,596	1,578,992	1,633,082	1,686,943	1,742,639	1,799,055	1,855,859	1,913,344																			
June-03	291,166	554,149	689,280	758,177	839,325	895,935	923,456	950,915	977,016	1,004,005	1,031,413	1,059,708	1,087,564																				
June-04	217,692	487,010	658,712	817,060	1,008,366	1,101,139	1,150,675	1,163,453	1,163,453	1,163,453	1,163,453	1,167,101																					
June-05	230,521	418,799	624,539	726,139	780,814	805,681	824,654	825,393	825,463	825,463	825,463																						
June-06	295,643	638,840	855,565	960,239	1,005,254	1,031,933	1,059,134	1,097,733	1,118,317	1,164,085																							
June-07	271,385	517,910	631,652	710,911	719,279	741,612	769,416	783,708	783,708																								
June-08	266,597	683,370	951,226	1,163,168	1,327,356	1,479,040	1,567,518	1,628,952																									
June-09	286,738	569,698	809,591	1,006,874	1,150,080	1,267,290	1,367,159																										
June-10	418,176	997,028	1,315,276	1,658,156	1,884,889	2,102,819																											
June-11	441,106	954,293	1,366,571	1,466,786	1,533,060																												
June-12	412,473	870,425	1,295,826	1,604,006																													
June-13	360,464	710,865	979,073																														
June-14	466,274	972,487																															
June-15	513,416																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.640	1.460	1.273	1.189	1.134	1.039	1.266	1.040	1.080	1.050	1.032	1.044	1.059	1.032	1.024	1.000	1.011	1.060	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	
June-84	2.669	1.438	1.266	1.187	1.121	1.096	1.067	1.036	1.019	1.012	0.990	1.012	1.013	1.013	1.013	0.996	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	1.000		
June-85	2.587	1.493	1.250	1.149	1.171	1.103	1.070	1.046	1.034	1.039	1.019	1.019	1.020	1.052	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	1.000	1.000			
June-86	2.682	1.423	1.275	1.192	1.189	1.112	1.086	1.065	1.036	1.034	1.036	1.038	1.035	1.050	1.040	1.034	1.014	1.014	1.014	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
June-87	2.640	1.443	1.234	1.182	1.106	1.084	1.056	1.047	1.038	1.038	1.038	1.038	1.027	1.034	1.035	1.035	1.024	1.021	1.020	1.020	1.021	1.024	1.032	1.020	1.020	1.021	1.020	1.021					
June-88	2.447	1.478	1.391	1.201	1.118	1.127	1.063	1.060	1.049	1.043	1.039	1.041	1.043	1.044	1.043	1.034	1.023	1.023	1.023	1.023	1.024	1.024	1.023	1.023	1.023	1.023	1.019						
June-89	2.253	1.446	1.315	1.200	1.091	1.048	1.028	1.015	1.025	1.008	1.004	1.003	1.001	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							
June-90	2.364	1.479	1.220	1.093	1.120	1.073	1.096	1.069	1.084	1.066	1.064	1.053	1.052	1.051	1.047	1.048	1.043	1.042	1.043	1.025	1.019	1.019	1.026	1.025	1.013								
June-91	2.264	1.386	1.131	1.105	1.061	1.100	1.081	1.019	1.015	1.013	1.014	1.013	1.013	1.016	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
June-92	2.058	1.293	1.159	1.060	1.049	1.054	1.037	1.029	1.031	1.059	1.030	1.034	1.034	1.024	1.025	1.011	1.000	1.001	1.000	1.000	1.001	1.000	1.000										
June-93	2.159	1.126	1.141	1.096	1.177	1.081	1.017	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	1.000											
June-94	2.362	1.294	1.244	1.115	1.105	1.052	0.977	1.028	1.028	1.027	1.025	1.025	1.026	1.025	1.026	1.026	1.026	1.025	1.024	1.024	1.023												
June-95	2.828	1.374	1.133	1.287	1.073	1.067	1.079	1.064	1.042	1.000	1.004	1.015	1.046	1.045	1.045	1.042	1.040	1.040	1.037	1.036													
June-96	2.068	1.274	1.165	1.124	1.074	1.081	1.051	1.045	1.023	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-97	1.783	1.354	1.248	1.104	1.068	1.041	1.028	1.030	1.027	1.027	1.032	1.027	1.027	1.030	1.026	1.025	1.025	1.006															
June-98	1.597	1.341	1.269	1.179	1.144	1.261	1.094	1.078	1.075	1.073	1.069	1.067	1.061	1.051	1.045	1.042	1.041																
June-99	2.201	1.631	1.132	1.066	1.034	1.034	1.035	1.035	1.063	1.038	1.033	1.032	1.032	1.031	1.031	1.030																	
June-00	2.057	1.260	1.083	1.048	1.028	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																		
June-01	2.561	1.453	1.155	1.082	1.053	1.050	1.035	1.027	1.026	1.025	1.026	1.025	1.025	1.025																			
June-02	3.409	1.471	1.254	1.105	1.094	1.049	1.046	1.034	1.033	1.033	1.032	1.032	1.031																				
June-03	1.903	1.244	1.100	1.107	1.067	1.031	1.030	1.027	1.028	1.027	1.027	1.026																					
June-04	2.237	1.353	1.240	1.234	1.092	1.045	1.011	1.000	1.000	1.000	1.003																						
June-05	1.817	1.491	1.163	1.075	1.032	1.024	1.001	1.000	1.000	1.000																							
June-06	2.161	1.339	1.122	1.047	1.027	1.026	1.036	1.019	1.041																								
June-07	1.908	1.220	1.125	1.012	1.031	1.037	1.019	1.000																									
June-08	2.563	1.392	1.223	1.141	1.114	1.060	1.039																										
June-09	1.987	1.421	1.244	1.142	1.102	1.079																											
June-10	2.384	1.319	1.261	1.137	1.116																												
June-11	2.163	1.432	1.073	1.045																													
June-12	2.110	1.489	1.238																														
June-13	1.972	1.377																															
June-14	2.086																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.279	1.387	1.204	1.128	1.092	1.069	1.052	1.033	1.033	1.027	1.024	1.026	1.027	1.028	1.022	1.019	1.015	1.015	1.012	1.010	1.007	1.006	1.008	1.008	1.007	1.006	1.007	1.004	1.000	1.000	1.000		
Latest 5	2.143	1.408	1.208	1.095	1.078	1.045	1.021	1.009	1.020	1.017	1.018	1.023	1.030	1.027	1.020	1.028	1.026	1.014	1.012	1.012	1.009	1.004	1.010	1.014	1.011	1.009	1.008	1.004					
Latest 3	2.056	1.433	1.191	1.108	1.111	1.059	1.031	1.006	1.014	1.009	1.021	1.028	1.019	1.019	1.025	1.033	1.022	1.015	1.021	1.020	1.008	1.000	1.009	1.008	1.012	1.015	1.013	1.007	1.000	1.000			
Volume Wtd																																	
All Yrs	2.223	1.386	1.202	1.124	1.094	1.070	1.049	1.035	1.035	1.029	1.027	1.029	1.030	1.031	1.027	1.024	1.019	1.017	1.016	1.013	1.011	1.011	1.014	1.013	1.012	1.011	1.011	1.007	1.000	1.000	1.000	1.000	
Latest 5	2.147	1.406	1.202	1.101	1.088	1.049	1.024	1.010	1.022	1.019	1.020	1.025	1.033	1.030	1.024	1.030	1.029	1.015	1.013	1.012	1.011	1.008	1.016	1.018	1.014	1.013	1.012	1.007					
Latest 3	2.061	1.436	1.189	1.106	1.112	1.062	1.034	1.008	1.015	1.009	1.022	1.028	1.022	1.020	1.030	1.035	1.027	1.017	1.022	1.021	1.008	1.000	1.015	1.014	1.016	1.018	1.015	1.009	1.000	1.000			

Dev Factor Selection

Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	*2.232*	*1.408*	*1.195*	*1.107*	*1.069*	*1.056*	*1.035*	*1.036*	*1.034*	*1.030*	*1.024*	*1.031*	*1.027*	*1.032*	*1.028*	*1.030*	*1.017*	*1.022*	*1.012*	*1.008*	*1.002*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.001*	*1.000*	*1.000*	*1.000*	*1.002*	
Selected	2.223	1.406	1.195	1.101	1.088	1.060	1.036	1.035	1.035	1.029	1.027	1.025	1.027	1.031	1.027	1.030	1.019	1.015	1.010	1.005	1.002	1.001	1.001	1.001	1.001	1.001	1.005	1.001	1.000	1.000	1.000	1.000	1.002
FacToUlt	6.811	3.064	2.180	1.824	1.656	1.522	1.436	1.386	1.339	1.294	1.257	1.224	1.194	1.163	1.127	1.098	1.066	1.046	1.030	1.020	1.015	1.013	1.012	1.011	1.010	1.009	1.008	1.003	1.002	1.002	1.002	1.002	1.002
Percent of Ult	14.7%	32.6%	45.9%	54.8%	60.4%	65.7%	69.6%	72.2%	74.7%	77.3%	79.6%	81.7%	83.7%	86.0%	88.7%	91.1%	93.8%	95.6%	97.1%	98.1%	98.5%	98.7%	98.8%	98.9%	99.0%	99.1%	99.2%	99.7%	99.8%	99.8%	99.8%	99.8%	99.8%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	3,219,784	3,353,215	3,071,846	3,184,383	(147,938)	-4.6%	(168,832)	-5.0%
6/30/82-83	758,137	773,003	758,137	773,003	0	0.0%	0	0.0%
6/30/83-84	936,086	954,440	936,086	954,440	0	0.0%	0	0.0%
6/30/84-85	1,521,879	1,551,720	1,521,879	1,551,720	0	0.0%	0	0.0%
6/30/85-86	1,872,000	1,873,000	1,906,285	1,943,663	34,285	1.8%	70,663	3.8%
6/30/86-87	2,667,000	2,921,000	2,716,000	2,975,000	49,000	1.8%	54,000	1.8%
6/30/87-88	4,353,807	4,481,860	4,431,408	4,778,970	77,602	1.8%	297,110	6.6%
6/30/88-89	1,545,514	1,590,971	1,545,514	1,590,971	0	0.0%	0	0.0%
6/30/89-90	3,883,624	3,997,848	3,927,432	4,042,945	43,808	1.1%	45,097	1.1%
6/30/90-91	1,408,000	1,408,000	1,405,000	1,405,000	(3,000)	-0.2%	(3,000)	-0.2%
6/30/91-92	1,475,779	1,639,755	1,413,000	1,527,000	(62,779)	-4.3%	(112,755)	-6.9%
6/30/92-93	1,170,446	1,204,871	1,170,446	1,204,871	0	0.0%	0	0.0%
6/30/93-94	1,130,000	1,511,000	1,150,000	1,189,851	20,000	1.8%	(321,149)	-21.3%
6/30/94-95	1,625,000	1,625,000	1,665,000	1,666,000	40,000	2.5%	41,000	2.5%
6/30/95-96	1,294,428	1,332,499	1,294,428	1,332,499	0	0.0%	0	0.0%
6/30/96-97	1,199,000	1,199,000	1,213,000	1,273,650	14,000	1.2%	74,650	6.2%
6/30/97-98	2,183,000	2,188,000	2,216,000	2,220,000	33,000	1.5%	32,000	1.5%
6/30/98-99	1,476,000	1,550,000	1,469,000	1,485,000	(7,000)	-0.5%	(65,000)	-4.2%
6/30/99-00	1,306,000	1,310,000	1,277,000	1,279,000	(29,000)	-2.2%	(31,000)	-2.4%
6/30/00-01	1,813,000	1,814,000	1,792,000	1,796,000	(21,000)	-1.2%	(18,000)	-1.0%
6/30/01-02	2,677,000	2,689,000	2,673,000	2,686,000	(4,000)	-0.1%	(3,000)	-0.1%
6/30/02-03	1,493,000	1,496,000	1,479,000	1,516,000	(14,000)	-0.9%	20,000	1.3%
6/30/03-04	1,813,000	1,906,000	1,765,000	1,854,000	(48,000)	-2.6%	(52,000)	-2.7%
6/30/04-05	1,288,000	1,470,000	1,245,000	1,367,000	(43,000)	-3.3%	(103,000)	-7.0%
6/30/05-06	1,729,000	1,903,000	1,719,000	1,836,000	(10,000)	-0.6%	(67,000)	-3.5%
6/30/06-07	1,303,000	1,564,000	1,248,000	1,441,000	(55,000)	-4.2%	(123,000)	-7.9%
6/30/07-08	2,898,000	2,948,000	2,925,000	3,018,000	27,000	0.9%	70,000	2.4%
6/30/08-09	2,246,000	2,329,000	2,171,700	2,298,000	(74,300)	-3.3%	(31,000)	-1.3%
6/30/09-10	3,445,000	3,777,000	3,430,450	3,999,000	(14,550)	-0.4%	222,000	5.9%
6/30/10-11	3,328,000	3,464,000	3,110,300	3,406,000	(217,700)	-6.5%	(58,000)	-1.7%
6/30/11-12	2,999,000	3,143,000	3,078,000	3,477,000	79,000	2.6%	334,000	10.6%
6/30/12-13	2,870,000	3,266,000	2,669,500	3,084,000	(200,500)	-7.0%	(182,000)	-5.6%
6/30/13-14	3,861,000	4,064,000	3,574,850	3,861,000	(286,150)	-7.4%	(203,000)	-5.0%
6/30/14-15								
Total	68,788,483	72,298,181	67,968,262	72,016,966	(820,222)	-1.2%	(281,215)	-0.4%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 7, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	3,004,076	1.036	3,112,365	0.0%	0.0%	0	15,750	15,750	0.5%	1.000	15,750	15,750	15,750
6/30/82-83	716,272	1.002	717,478	0.0%	0.0%	0	27,000	27,000	3.8%	1.000	27,000	27,000	27,000
6/30/83-84	837,731	1.002	839,141	0.0%	0.0%	0	80,000	80,000	9.5%	1.000	80,000	80,000	80,000
6/30/84-85	1,393,062	1.002	1,395,407	0.0%	0.0%	0	98,976	98,976	7.1%	1.000	98,976	98,976	98,976
6/30/85-86	1,833,907	1.002	1,836,995	0.0%	0.0%	0	35,000	35,000	1.9%	1.000	35,000	35,000	35,000
6/30/86-87	2,590,111	1.102	2,853,919	0.0%	0.0%	0	121,500	121,500	4.3%	1.000	121,500	121,500	121,500
6/30/87-88	4,049,675	1.203	4,872,660	0.0%	0.0%	0	294,843	294,843	6.1%	1.000	294,843	294,843	294,843
6/30/88-89	1,302,910	1.008	1,312,941	0.0%	0.0%	0	212,300	212,300	16.2%	1.000	212,300	212,300	212,300
6/30/89-90	3,320,712	1.110	3,684,585	0.0%	0.0%	0	529,712	529,712	14.4%	1.000	529,712	529,712	529,712
6/30/90-91	1,160,107	1.010	1,171,378	0.0%	0.0%	0	233,500	233,500	19.9%	1.000	233,500	233,500	239,921
6/30/91-92	1,136,799	1.112	1,263,890	0.1%	0.1%	1,264	256,183	257,447	20.4%	1.050	268,992	263,220	263,389
6/30/92-93	986,496	1.012	998,073	0.0%	0.1%	998	161,000	161,998	16.2%	1.050	169,050	165,524	165,523
6/30/93-94	974,192	1.013	986,610	0.0%	0.1%	987	159,000	159,987	16.2%	1.050	166,950	163,468	163,649
6/30/94-95	1,267,764	1.015	1,286,493	0.0%	0.1%	1,286	369,205	370,491	28.8%	1.050	387,665	379,078	379,058
6/30/95-96	927,586	1.020	945,995	0.0%	0.1%	946	341,461	342,407	36.2%	1.050	358,534	350,471	350,476
6/30/96-97	923,657	1.030	951,409	0.0%	0.1%	951	254,882	255,833	26.9%	1.050	267,626	261,730	231,106
6/30/97-98	1,860,045	1.046	1,945,380	0.0%	0.1%	1,945	265,000	266,945	13.7%	1.064	281,860	274,403	272,861
6/30/98-99	1,180,206	1.066	1,257,713	0.0%	0.1%	1,258	205,250	206,508	16.4%	1.065	218,527	212,517	212,077
6/30/99-00	844,236	1.098	926,954	0.1%	0.2%	1,854	338,100	339,954	36.7%	1.067	360,690	350,322	348,577
6/30/00-01	1,340,850	1.127	1,511,407	0.0%	0.2%	3,023	273,502	276,525	18.3%	1.069	292,359	284,442	283,023
6/30/01-02	1,913,344	1.163	2,224,608	0.0%	0.2%	4,449	443,250	447,699	20.1%	1.071	474,759	461,229	459,133
6/30/02-03	1,087,564	1.194	1,298,838	0.0%	0.2%	2,598	172,500	175,098	13.5%	1.074	185,317	180,207	179,401
6/30/03-04	1,167,101	1.224	1,428,574	0.0%	0.2%	2,857	323,500	326,357	22.8%	1.078	348,578	337,468	336,164
6/30/04-05	825,463	1.257	1,037,626	0.0%	0.2%	2,075	198,100	200,175	19.3%	1.082	214,273	207,224	208,147
6/30/05-06	1,164,085	1.294	1,506,128	0.2%	0.4%	5,387	200,673	206,059	13.7%	1.095	219,660	212,860	215,822
6/30/06-07	783,708	1.339	1,049,210	0.3%	0.7%	7,419	185,000	192,419	18.3%	1.110	205,270	198,844	204,145
6/30/07-08	1,628,952	1.386	2,257,201	0.6%	1.3%	29,673	697,917	727,590	32.2%	1.138	794,220	760,905	673,709
6/30/08-09	1,367,159	1.436	1,963,511	2.5%	3.8%	74,371	250,000	324,371	16.5%	1.282	320,526	322,448	305,703
6/30/09-10	2,102,819	1.522	3,200,886	3.0%	6.8%	217,624	547,500	765,124	23.9%	1.517	830,552	797,838	691,448
6/30/10-11	1,533,060	1.656	2,539,038	1.5%	8.3%	210,541	557,183	767,724	30.2%	1.734	966,020	866,872	806,658
6/30/11-12	1,604,006	1.824	2,925,810	2.4%	10.6%	311,483	239,500	550,983	18.8%	2.302	551,227	551,105	337,463
6/30/12-13	979,073	2.180	2,134,142	4.4%	15.0%	321,073	202,000	523,073	24.5%	4.102	828,522	675,798	702,554
6/30/13-14	972,487	3.064	2,979,640	5.0%	20.1%	598,526	97,000	695,526	23.3%	11.001	1,067,115	881,321	891,920
6/30/14-15	513,416	6.811	3,496,655	2.1%	22.2%	775,435	0	775,435	22.2%	24.154	0	697,891	
Total	49,292,631		63,912,661			2,578,022	8,386,286	10,964,308	17.2%		11,426,873	11,505,765	10,337,010

NOTES:
(2) From Section 7, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 7, Exhibit 1, Page 2, Column 6
(5) From Section 7, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 7, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 7, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From Aon analysis as of June 30, 2013

Commonwealth of Massachusetts Workers Compensation
Massachusetts Colleges & Universities - Cluster 4
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0	0	0	0	0	0	0	0	0	0	0	0	0	2,750	13,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun-83	0	0	0	0	0	0	0	0	12,000	0	0	0	0	0	15,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	0	46,500	16,000	0	0	17,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jun-85	0	0	0	19,976	0	5,000	0	7,500	15,000	51,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Jun-86	0	0	0	0	0	0	0	0	35,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Jun-87	0	0	0	0	0	27,500	0	20,000	30,000	0	0	0	0	44,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Jun-88	0	0	22,500	0	37,000	30,000	82,000	43,343	15,000	31,000	0	0	0	0	0	0	0	17,000	17,000	0	0	0	0	0	0	0	0	0						
Jun-89	0	33,000	0	6,800	0	67,500	0	30,000	0	0	75,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Jun-90	0	0	25,211	30,000	35,001	76,500	30,000	0	53,000	0	0	0	0	0	0	0	0	0	0	0	33,333	33,333	33,333	0	180,000	0								
Jun-91	0	0	48,000	32,500	0	0	0	73,000	0	0	0	0	0	0	0	25,000	30,000	25,000	0	0	0	0	0	0	0									
Jun-92	0	0	15,000	89,500	0	0	0	12,000	0	20,000	9,683	0	0	0	0	0	75,000	35,000	0	0	0	0	0	0										
Jun-93	0	62,500	18,000	31,500	37,000	0	0	12,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
Jun-94	3,000	0	25,000	15,000	16,000	65,000	0	35,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0												
Jun-95	0	105,500	102,500	54,800	40,405	22,500	0	0	20,625	22,875	0	0	0	0	0	0	0	0	0	0	0													
Jun-96	22,500	97,000	10,000	15,500	70,461	20,000	0	0	40,000	66,000	0	0	0	0	0	0	0	0	0	0														
Jun-97	0	49,500	113,000	12,382	20,000	30,000	0	0	0	0	0	0	0	0	0	0	0	0	30,000															
Jun-98	0	80,000	90,000	25,000	25,000	0	0	40,000	0	0	0	0	5,000	0	0	0	0	0																
Jun-99	0	6,250	10,000	92,000	65,000	0	0	0	0	0	32,000	0	0	0	0	0	0																	
Jun-00	0	95,000	136,850	12,000	44,250	20,000	30,000	0	0	0	0	0	0	0	0	0																		
Jun-01	27,500	2,500	62,500	74,001	47,000	0	10,001	50,000	0	0	0	0	0	0	0																			
Jun-02	48,000	18,250	64,500	112,500	75,000	105,000	20,000	0	0	0	0	0	0	0																				
Jun-03	0	52,500	30,000	45,000	0	35,000	0	10,000	0	0	0	0	0																					
Jun-04	0	7,000	0	22,000	87,500	32,000	100,000	75,000	0	0	0	0																						
Jun-05	0	15,000	38,600	45,000	49,500	20,000	30,000	0	0	0	0																							
Jun-06	0	30,000	20,000	75,000	75,673	0	0	0	0	0																								
Jun-07	0	40,000	75,000	35,000	0	0	20,000	15,000	0																									
Jun-08	0	33,000	183,500	27,500	74,750	82,500	168,333	128,333																										
Jun-09	0	35,000	30,000	60,000	70,000	0	55,000																											
Jun-10	0	71,500	174,000	140,000	40,000	122,000																												
Jun-11	0	25,000	293,500	146,183	92,500																													
Jun-12	0	0	17,500	222,000																														
Jun-13	72,000	0	130,000																															
Jun-14	87,000	10,000																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	0	0	0	0	0	2,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750
Jun-83	0	0	0	0	0	0	0	0	12,000	12,000	12,000	12,000	12,000	12,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	
Jun-84	0	0	0	0	0	0	0	46,500	62,500	62,500	62,500	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000		
Jun-85	0	0	0	19,976	19,976	24,976	24,976	32,476	47,476	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976			
Jun-86	0	0	0	0	0	0	0	0	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000				
Jun-87	0	0	0	0	0	27,500	27,500	47,500	77,500	77,500	77,500	77,500	77,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500				
Jun-88	0	0	22,500	22,500	59,500	89,500	171,500	214,843	229,843	260,843	260,843	260,843	260,843	260,843	260,843	260,843	260,843	277,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843					
Jun-89	0	33,000	33,000	39,800	39,800	107,300	107,300	137,300	137,300	137,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300							
Jun-90	0	0	25,211	55,211	90,212	166,712	196,712	196,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	283,045	316,379	349,712	349,712	529,712	529,712								
Jun-91	0	0	48,000	80,500	80,500	80,500	80,500	153,500	153,500	153,500	153,500	153,500	153,500	153,500	153,500	178,500	208,500	233,500	233,500	233,500	233,500	233,500	233,500	233,500	233,500									
Jun-92	0	0	15,000	104,500	104,500	104,500	104,500	116,500	116,500	136,500	146,183	146,183	146,183	146,183	146,183	146,183	221,183	256,183	256,183	256,183	256,183	256,183	256,183	256,183										
Jun-93	0	62,500	80,500	112,000	149,000	149,000	149,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000											
Jun-94	3,000	3,000	28,000	43,000	59,000	124,000	124,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000												
Jun-95	0	105,500	208,000	262,800	303,205	325,705	325,705	325,705	346,330	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205													
Jun-96	22,500	119,500	129,500	145,000	215,461	235,461	235,461	235,461	275,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461														
Jun-97	0	49,500	162,500	174,882	194,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	254,882															
Jun-98	0	80,000	170,000	195,000	220,000	220,000	220,000	260,000	260,000	260,000	260,000	260,000	265,000	265,000	265,000	265,000	265,000	265,000																
Jun-99	0	6,250	16,250	108,250	173,250	173,250	173,250	173,250	173,250	173,250	205,250	205,250	205,250	205,250	205,250	205,250	205,250																	
Jun-00	0	95,000	231,850	243,850	288,100	308,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100																		
Jun-01	27,500	30,000	92,500	166,501	213,501	213,501	223,502	273,502	273,502	273,502	273,502	273,502	273,502	273,502	273,502																			
Jun-02	48,000	66,250	130,750	243,250	318,250	423,250	443,250	443,250	443,250	443,250	443,250	443,250	443,250	443,250																				
Jun-03	0	52,500	82,500	127,500	127,500	162,500	162,500	172,500	172,500	172,500	172,500	172,500	172,500																					
Jun-04	0	7,000	7,000	29,000	116,500	148,500	248,500	323,500	323,500	323,500	323,500	323,500																						
Jun-05	0	15,000	53,600	98,600	148,100	168,100	198,100	198,100	198,100	198,100	198,100																							
Jun-06	0	30,000	50,000	125,000	200,673	200,673	200,673	200,673	200,673	200,673																								
Jun-07	0	40,000	115,000	150,000	150,000	150,000	170,000	185,000	185,000																									
Jun-08	0	33,000	216,500	244,000	318,750	401,250	569,583	697,917																										
Jun-09	0	35,000	65,000	125,000	195,000	195,000	250,000																											
Jun-10	0	71,500	245,500	385,500	425,500	547,500																												
Jun-11	0	25,000	318,500	464,683	557,183																													
Jun-12	0	0	17,500	239,500																														
Jun-13	72,000	72,000	202,000																															
Jun-14	87,000	97,000																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
Massachusetts Colleges & Universities - Cluster 4
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	0-12	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.019	0.000	0.000	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.014	0.000	0.004	0.000	0.005	0.011	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Jun-86	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.007	0.011	0.000	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.000	0.005	0.000	0.008	0.006	0.017	0.009	0.003	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
Jun-89	0.000	0.025	0.000	0.005	0.000	0.051	0.000	0.023	0.000	0.000	0.057	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.000	0.007	0.008	0.009	0.021	0.008	0.000	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.009	0.009	0.000	0.049	0.000								
Jun-91	0.000	0.000	0.041	0.028	0.000	0.000	0.000	0.062	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.026	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000									
Jun-92	0.000	0.000	0.012	0.071	0.000	0.000	0.000	0.009	0.000	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.059	0.028	0.000	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.000	0.063	0.018	0.032	0.037	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000											
Jun-94	0.003	0.000	0.025	0.015	0.016	0.066	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.000	0.082	0.080	0.043	0.031	0.017	0.000	0.000	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.024	0.103	0.011	0.016	0.074	0.021	0.000	0.000	0.042	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000														
Jun-97	0.000	0.052	0.119	0.013	0.021	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.032															
Jun-98	0.000	0.041	0.046	0.013	0.013	0.000	0.000	0.021	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000																
Jun-99	0.000	0.005	0.008	0.073	0.052	0.000	0.000	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.000																	
Jun-00	0.000	0.102	0.148	0.013	0.048	0.022	0.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																		
Jun-01	0.018	0.002	0.041	0.049	0.031	0.000	0.007	0.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000																			
Jun-02	0.022	0.008	0.029	0.051	0.034	0.047	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000																				
Jun-03	0.000	0.040	0.023	0.035	0.000	0.027	0.000	0.008	0.000	0.000	0.000	0.000	0.000																					
Jun-04	0.000	0.005	0.000	0.015	0.061	0.022	0.070	0.052	0.000	0.000	0.000	0.000																						
Jun-05	0.000	0.014	0.037	0.043	0.048	0.019	0.029	0.000	0.000	0.000	0.000																							
Jun-06	0.000	0.020	0.013	0.050	0.050	0.000	0.000	0.000	0.000	0.000																								
Jun-07	0.000	0.038	0.071	0.033	0.000	0.000	0.019	0.014	0.000																									
Jun-08	0.000	0.015	0.081	0.012	0.033	0.037	0.075	0.057																										
Jun-09	0.000	0.018	0.015	0.031	0.036	0.000	0.028																											
Jun-10	0.000	0.022	0.054	0.044	0.012	0.038																												
Jun-11	0.000	0.010	0.116	0.058	0.036																													
Jun-12	0.000	0.000	0.006	0.076																														
Jun-13	0.034	0.000	0.061																															
Jun-14	0.029	0.003																																
Jun-15	0.000																																	

Averages		12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408
Simple Avg																																		
All Yrs (ex P)	0.004	0.021	0.034	0.028	0.022	0.016	0.011	0.016	0.006	0.006	0.004	0.001	0.000	0.001	0.001	0.001	0.005	0.003	0.002	0.000	0.001	0.001	0.001	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Latest 5	0.013	0.007	0.050	0.044	0.024	0.015	0.030	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000	0.000	0.002	0.002	0.000	0.010	0.000	0.000	0.000	0.000					
Latest 3	0.021	0.001	0.061	0.059	0.028	0.025	0.041	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.016	0.000	0.000	0.000	0.000	0.000				
Olympic Avg																																		
All Yrs (ex P)	0.003	0.019	0.032	0.027	0.021	0.014	0.009	0.014	0.005	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Latest 10	0.004	0.013	0.042	0.039	0.031	0.018	0.024	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
Latest 5	0.010	0.004	0.044	0.044	0.027	0.012	0.025	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						

Dev Factor Selection																																		
Prior	NA	0.021	0.054	0.035	0.026	0.011	0.038	0.014	0.006	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Selected	NA	0.021	0.050	0.044	0.024	0.015	0.030	0.025	0.006	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.222	0.201	0.150	0.106	0.083	0.068	0.038	0.013	0.007	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
Massachusetts Colleges & Universities - Cluster 4
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	0	0	0	0	0	0	2,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750
Jun-83	0	0	0	0	0	0	0	0	12,000	12,000	12,000	12,000	12,000	12,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	
Jun-84	0	0	0	0	0	0	0	46,500	62,500	62,500	62,500	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000		
Jun-85	0	0	0	19,976	19,976	24,976	24,976	32,476	47,476	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976	98,976			
Jun-86	0	0	0	0	0	0	0	0	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000				
Jun-87	0	0	0	0	0	27,500	27,500	47,500	77,500	77,500	77,500	77,500	77,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500	121,500					
Jun-88	0	0	22,500	22,500	59,500	89,500	171,500	214,843	229,843	260,843	260,843	260,843	260,843	260,843	260,843	260,843	260,843	277,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843	294,843						
Jun-89	0	33,000	33,000	39,800	39,800	107,300	107,300	137,300	137,300	137,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300	212,300							
Jun-90	0	0	25,211	55,211	90,212	166,712	196,712	196,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	249,712	283,045	316,379	349,712	349,712	529,712	529,712								
Jun-91	0	0	48,000	80,500	80,500	80,500	80,500	153,500	153,500	153,500	153,500	153,500	153,500	153,500	153,500	178,500	208,500	233,500	233,500	233,500	233,500	233,500	233,500	233,500	233,500									
Jun-92	0	0	15,000	104,500	104,500	104,500	104,500	116,500	116,500	136,500	146,183	146,183	146,183	146,183	146,183	146,183	221,183	256,183	256,183	256,183	256,183	256,183	256,183	256,183										
Jun-93	0	62,500	80,500	112,000	149,000	149,000	149,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000											
Jun-94	3,000	3,000	28,000	43,000	59,000	124,000	124,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000	159,000												
Jun-95	0	105,500	208,000	262,800	303,205	325,705	325,705	325,705	346,330	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205	369,205													
Jun-96	22,500	119,500	129,500	145,000	215,461	235,461	235,461	235,461	275,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461	341,461														
Jun-97	0	49,500	162,500	174,882	194,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	224,882	254,882															
Jun-98	0	80,000	170,000	195,000	220,000	220,000	220,000	260,000	260,000	260,000	260,000	260,000	265,000	265,000	265,000	265,000	265,000	265,000																
Jun-99	0	6,250	16,250	108,250	173,250	173,250	173,250	173,250	173,250	173,250	205,250	205,250	205,250	205,250	205,250	205,250	205,250																	
Jun-00	0	95,000	231,850	243,850	288,100	308,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100	338,100																		
Jun-01	27,500	30,000	92,500	166,501	213,501	213,501	223,502	273,502	273,502	273,502	273,502	273,502	273,502	273,502	273,502																			
Jun-02	48,000	66,250	130,750	243,250	318,250	423,250	443,250	443,250	443,250	443,250	443,250	443,250	443,250	443,250																				
Jun-03	0	52,500	82,500	127,500	127,500	162,500	162,500	172,500	172,500	172,500	172,500	172,500	172,500																					
Jun-04	0	7,000	7,000	29,000	116,500	148,500	248,500	323,500	323,500	323,500	323,500	323,500																						
Jun-05	0	15,000	53,600	98,600	148,100	168,100	198,100	198,100	198,100	198,100	198,100																							
Jun-06	0	30,000	50,000	125,000	200,673	200,673	200,673	200,673	200,673	200,673																								
Jun-07	0	40,000	115,000	150,000	150,000	150,000	170,000	185,000	185,000																									
Jun-08	0	33,000	216,500	244,000	318,750	401,250	569,583	697,917																										
Jun-09	0	35,000	65,000	125,000	195,000	195,000	250,000																											
Jun-10	0	71,500	245,500	385,500	425,500	547,500																												
Jun-11	0	25,000	318,500	464,683	557,183																													
Jun-12	0	0	17,500	239,500																														
Jun-13	72,000	72,000	202,000																															
Jun-14	87,000	97,000																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs														5.727	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	1.000	1.000	1.000	1.000	1.000	
Jun-83									1.000	1.000	1.000	1.000	1.000	2.250	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	1.000	1.000	1.000	1.000		
Jun-84								1.344	1.000	1.000	1.280	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	1.000	1.000	1.000	1.000	1.000	1.000			
Jun-85				1.000	1.250	1.000	1.300	1.462	2.085	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Jun-86									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	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Jun-87						1.000	1.727	1.632	1.000	1.000	1.000	1.000	1.568	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	1.000						
Jun-88			1.000	2.644	1.504	1.916	1.253	1.070	1.135	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.065	1.061	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
Jun-89		1.000	1.206	1.000	2.696	1.000	1.280	1.000	1.000	1.546	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	1.000	1.000								
Jun-90			2.190	1.634	1.848	1.180	1.000	1.269	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.133	1.118	1.105	1.000	1.515	1.000										
Jun-91			1.677	1.000	1.000	1.000	1.907	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.163	1.168	1.120	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
Jun-92			6.967	1.000	1.000	1.000	1.115	1.000	1.172	1.071	1.000	1.000	1.000	1.000	1.000	1.513	1.158	1.000	1.000	1.000	1.000	1.000	1.000											
Jun-93		1.288	1.391	1.330	1.000	1.000	1.081	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	1.000	1.000											
Jun-94	1.000	9.333	1.536	1.372	2.102	1.000	1.282	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													
Jun-95		1.972	1.263	1.154	1.074	1.000	1.000	1.063	1.066	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
Jun-96	5.311	1.084	1.120	1.486	1.093	1.000	1.000	1.170	1.240	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000															
Jun-97		3.283	1.076	1.114	1.154	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.133																
Jun-98		2.125	1.147	1.128	1.000	1.000	1.182	1.000	1.000	1.000	1.000	1.019	1.000	1.000	1.000	1.000	1.000																	
Jun-99		2.600	6.662	1.600	1.000	1.000	1.000	1.000	1.000	1.185	1.000	1.000	1.000	1.000	1.000	1.000																		
Jun-00		2.441	1.052	1.181	1.069	1.097	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000																			
Jun-01	1.091	3.083	1.800	1.282	1.000	1.047	1.224	1.000	1.000	1.000	1.000	1.000	1.000	1.000																				
Jun-02	1.380	1.974	1.860	1.308	1.330	1.047	1.000	1.000	1.000	1.000	1.000	1.000	1.000																					
Jun-03		1.571	1.545	1.000	1.275	1.000	1.062	1.000	1.000	1.000	1.000	1.000																						
Jun-04		1.000	4.143	4.017	1.275	1.673	1.302	1.000	1.000	1.000	1.000																							
Jun-05		3.573	1.840	1.502	1.135	1.178	1.000	1.000	1.000	1.000																								
Jun-06		1.667	2.500	1.605	1.000	1.000	1.000	1.000	1.000																									
Jun-07		2.875	1.304	1.000	1.000	1.133	1.088	1.000																										
Jun-08		6.561	1.127	1.306	1.259	1.420	1.225																											
Jun-09		1.857	1.923	1.560	1.000	1.282																												
Jun-10		3.434	1.570	1.104	1.287																													
Jun-11		12.740	1.459	1.199																														
Jun-12			13.686																															
Jun-13	1.000	2.806																																
Jun-14	1.115																																	

Averages *12-24 24-36 36-48 48-60 60-72 72-84 84-96 96-108 108-120 120-132 132-144 144-156 156-168 168-180 180-192 192-204 204-216 216-228 228-240 240-252 252-264 264-276 276-288 288-300 300-312 312-324 324-336 336-348 348-360 360-372 372-384 384-396 396-408 To Ult*

Simple Avg																																		
All Yrs (ex P)	1.816	3.251	2.522	1.421	1.265	1.124	1.175	1.087	1.071	1.035	1.013	1.001	1.028	1.066	1.009	1.040	1.021	1.013	1.000	1.010	1.010	1.010	1.000	1.057	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		5.209	3.953	1.234	1.109	1.203	1.123	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.027	1.000	1.000	1.024	1.021	1.000	1.103	1.000	1.000	1.000	1.000						
Latest 3			5.572	1.288	1.182	1.278	1.105	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.044	1.000	1.000	1.000	1.000	1.000	1.172	1.000	1.000	1.000	1.000	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.682	1.562	1.266	1.181	1.123	1.127	1.051	1.041	1.025	1.004	1.001	1.011	1.004	1.007	1.033	1.025	1.017	1.000	1.015	1.017	1.018	1.000	1.124	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		4.170	1.690	1.202	1.159	1.245	1.157	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.024	1.000	1.000	1.031	1.028	1.000	1.149	1.000	1.000	1.000	1.000	1.000					
Latest 3		5.546	1.874	1.208	1.218	1.326	1.152	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.032	1.000	1.000	1.000	1.000	1.000	1.226	1.000	1.000	1.000	1.000	1.000	1.000				

Dev Factor Selection

Prior	2.196	2.673	1.728	1.373	1.143	1.183	1.113	1.027	1.014	1.012	1.004	1.003	1.003	1.002	1.002	1.002	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.050	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Selected	2.196	2.682	1.782	1.328	1.143	1.183	1.127	1.026	1.014	1.012	1.004	1.003	1.003	1.002	1.002	1.002	1.001	1.013	1.000	1.000	1.000	1.000	1.000	1.050	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
FacToUlt	24.154	11.001	4.102	2.302	1.734	1.517	1.282	1.138	1.110	1.095	1.082	1.078	1.074	1.071	1.069	1.067	1.065	1.064	1.050	1.050	1.050	1.050	1.050	1.050	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Percent of Ult	4.1%	9.1%	24.4%	43.4%	57.7%	65.9%	78.0%	87.9%	90.1%	91.4%	92.5%	92.8%	93.1%	93.4%	93.5%	93.7%	93.9%	94.0%	95.2%	95.2%	95.2%	95.2%	95.2%	95.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.2%	0.0%	0.0%	0.0%	1.000	1.000
396	99.8%	0.0%	0.2%	0.0%	0.0%	0.981	0.971
384	99.8%	0.0%	0.2%	0.0%	0.0%	0.943	0.916
372	99.8%	0.0%	0.2%	0.0%	0.0%	0.907	0.864
360	99.8%	0.0%	0.2%	0.0%	0.0%	0.872	0.816
348	99.8%	0.1%	0.2%	0.0%	0.0%	0.838	0.769
336	99.7%	0.5%	0.3%	0.2%	0.1%	0.871	0.817
324	99.2%	0.1%	0.8%	0.0%	0.0%	0.930	0.901
312	99.1%	0.1%	0.9%	0.0%	0.0%	0.905	0.864
300	99.0%	0.1%	1.0%	0.0%	0.0%	0.881	0.831
288	98.9%	0.1%	1.1%	0.0%	0.0%	0.860	0.802
276	98.8%	0.1%	1.2%	0.0%	0.0%	0.840	0.775
264	98.7%	0.2%	1.3%	0.1%	0.1%	0.821	0.750
252	98.5%	0.5%	1.5%	0.2%	0.1%	0.815	0.743
240	98.1%	1.0%	1.9%	0.5%	0.3%	0.833	0.769
228	97.1%	1.5%	2.9%	0.7%	0.5%	0.861	0.807
216	95.6%	1.8%	4.4%	0.9%	0.6%	0.879	0.832
204	93.8%	2.8%	6.2%	1.4%	1.1%	0.884	0.839
192	91.1%	2.4%	8.9%	1.3%	1.0%	0.891	0.847
180	88.7%	2.7%	11.3%	1.5%	1.2%	0.882	0.835
168	86.0%	2.3%	14.0%	1.3%	1.0%	0.874	0.823
156	83.7%	2.0%	16.3%	1.2%	1.0%	0.860	0.804
144	81.7%	2.1%	18.3%	1.4%	1.1%	0.844	0.782
132	79.6%	2.3%	20.4%	1.5%	1.2%	0.829	0.762
120	77.3%	2.6%	22.7%	1.8%	1.5%	0.816	0.744
108	74.7%	2.5%	25.3%	1.8%	1.5%	0.804	0.730
96	72.2%	2.5%	27.8%	1.9%	1.6%	0.792	0.714
84	69.6%	3.9%	30.4%	3.0%	2.7%	0.780	0.699
72	65.7%	5.3%	34.3%	4.3%	3.9%	0.777	0.695
60	60.4%	5.6%	39.6%	4.7%	4.3%	0.778	0.698
48	54.8%	8.9%	45.2%	7.8%	7.3%	0.777	0.697
36	45.9%	13.2%	54.1%	12.0%	11.4%	0.785	0.709
24	32.6%	18.0%	67.4%	16.9%	16.5%	0.800	0.729
12	14.7%	14.7%	85.3%	14.4%	14.3%	0.813	0.747
Total		100.0%					

NOTES:

(2) = 1 / Section 7, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	52,020	164,557		48,151	152,318
6/30/82-83	14,865	29,731	0.981	14,577	29,154
6/30/83-84	18,355	36,709	0.943	17,306	34,612
6/30/84-85	29,841	59,682	0.907	27,054	54,107
6/30/85-86	37,378	74,756	0.872	32,584	65,167
6/30/86-87	4,389	263,389	0.838	3,679	220,774
6/30/87-88	86,890	434,452	0.871	75,681	378,404
6/30/88-89	30,304	75,761	0.930	28,196	70,489
6/30/89-90	77,008	192,521	0.905	69,655	174,137
6/30/90-91	11,393	11,393	0.881	10,038	10,038
6/30/91-92	20,018	134,018	0.860	17,209	115,212
6/30/92-93	22,950	57,375	0.840	19,272	48,179
6/30/93-94	16,808	56,660	0.821	13,800	46,518
6/30/94-95	28,031	29,031	0.815	22,854	23,669
6/30/95-96	25,381	63,452	0.833	21,155	52,887
6/30/96-97	34,461	95,111	0.861	29,673	81,896
6/30/97-98	90,955	94,955	0.879	79,957	83,473
6/30/98-99	83,544	99,544	0.884	73,875	88,024
6/30/99-00	94,664	96,664	0.891	84,306	86,087
6/30/00-01	177,649	181,649	0.882	156,744	160,273
6/30/01-02	316,406	329,406	0.874	276,528	287,890
6/30/02-03	218,936	255,936	0.860	188,276	220,095
6/30/03-04	274,399	363,399	0.844	231,589	306,704
6/30/04-05	221,437	343,437	0.829	183,627	284,795
6/30/05-06	354,243	471,243	0.816	288,926	384,353
6/30/06-07	279,292	472,292	0.804	224,656	379,901
6/30/07-08	598,132	691,132	0.792	473,874	547,554
6/30/08-09	554,541	680,841	0.780	432,582	531,105
6/30/09-10	780,131	1,348,681	0.777	605,772	1,047,251
6/30/10-11	1,020,057	1,315,757	0.778	793,625	1,023,685
6/30/11-12	1,234,494	1,633,494	0.777	958,822	1,268,722
6/30/12-13	1,488,427	1,902,927	0.785	1,169,097	1,494,669
6/30/13-14	2,505,363	2,791,513	0.800	2,003,121	2,231,907
6/30/14-15	3,281,584	3,681,584	0.813	2,669,091	2,994,432
Total	14,084,344	18,533,049		11,345,349	14,978,485
			(7) Total Discount Factor:	0.806	0.808

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	52,020	164,557
(9) Projected Number of Years:	4	4
(10) Projected Paid Loss per Year:	13,005	41,139
(11) Discounted Value at 4%:	48,151	152,318

NOTES:
(2), (3) From Section 7, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 7, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4

Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	52,020	164,557		46,416	146,829
6/30/82-83	14,865	29,731	0.971	14,439	28,877
6/30/83-84	18,355	36,709	0.916	16,818	33,637
6/30/84-85	29,841	59,682	0.864	25,796	51,591
6/30/85-86	37,378	74,756	0.816	30,482	60,965
6/30/86-87	4,389	263,389	0.769	3,376	202,638
6/30/87-88	86,890	434,452	0.817	71,008	355,042
6/30/88-89	30,304	75,761	0.901	27,306	68,265
6/30/89-90	77,008	192,521	0.864	66,534	166,335
6/30/90-91	11,393	11,393	0.831	9,469	9,469
6/30/91-92	20,018	134,018	0.802	16,046	107,424
6/30/92-93	22,950	57,375	0.775	17,775	44,438
6/30/93-94	16,808	56,660	0.750	12,599	42,469
6/30/94-95	28,031	29,031	0.743	20,824	21,567
6/30/95-96	25,381	63,452	0.769	19,517	48,793
6/30/96-97	34,461	95,111	0.807	27,819	76,780
6/30/97-98	90,955	94,955	0.832	75,660	78,987
6/30/98-99	83,544	99,544	0.839	70,053	83,469
6/30/99-00	94,664	96,664	0.847	80,163	81,856
6/30/00-01	177,649	181,649	0.835	148,328	151,668
6/30/01-02	316,406	329,406	0.823	260,470	271,172
6/30/02-03	218,936	255,936	0.804	175,989	205,731
6/30/03-04	274,399	363,399	0.782	214,589	284,190
6/30/04-05	221,437	343,437	0.762	168,791	261,785
6/30/05-06	354,243	471,243	0.744	263,640	350,716
6/30/06-07	279,292	472,292	0.730	203,802	344,637
6/30/07-08	598,132	691,132	0.714	427,127	493,539
6/30/08-09	554,541	680,841	0.699	387,378	475,606
6/30/09-10	780,131	1,348,681	0.695	542,051	937,091
6/30/10-11	1,020,057	1,315,757	0.698	711,853	918,209
6/30/11-12	1,234,494	1,633,494	0.697	860,253	1,138,294
6/30/12-13	1,488,427	1,902,927	0.709	1,055,717	1,349,715
6/30/13-14	2,505,363	2,791,513	0.729	1,825,202	2,033,668
6/30/14-15	3,281,584	3,681,584	0.747	2,451,505	2,750,324
Total	14,084,344	18,533,049		10,348,795	13,675,777
			(7) Total Discount Factor:	0.735	0.738

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	52,020	164,557
(9) Projected Number of Years:	4	4
(10) Projected Paid Loss per Year:	13,005	41,139
(11) Discounted Value at 6%:	46,416	146,829

NOTES:
(2), (3) From Section 7, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 7, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior yrs	3,411,152	3,528,695	3,358,281	52,871	170,414				0	0	0.0%	0.0%
6/30/82-83	811,448	826,578	796,317	15,131	30,261	97.2%	1.0%	36.1%	5,460	10,920	36.1%	36.1%
6/30/83-84	963,997	982,491	945,504	18,493	36,987	97.1%	1.0%	35.1%	6,488	12,977	35.1%	35.1%
6/30/84-85	1,635,334	1,665,739	1,604,929	30,405	60,810	97.2%	1.0%	36.2%	11,004	22,007	36.2%	36.2%
6/30/85-86	2,292,554	2,331,854	2,253,254	39,300	78,600	97.5%	1.0%	39.2%	15,415	30,829	39.2%	39.2%
6/30/86-87	2,955,246	3,215,437	2,949,667	5,579	265,769	95.6%	1.0%	22.7%	1,269	60,438	22.7%	22.7%
6/30/87-88	5,098,408	5,445,970	5,010,056	88,352	435,914	95.0%	1.0%	20.1%	17,770	87,674	20.1%	20.1%
6/30/88-89	1,972,514	2,017,971	1,941,224	31,290	76,746	97.3%	1.0%	36.9%	11,557	28,347	36.9%	36.9%
6/30/89-90	4,476,432	4,591,945	4,397,880	78,552	194,065	97.0%	1.0%	33.3%	26,130	64,554	33.3%	33.3%
6/30/90-91	1,879,000	1,879,000	1,866,079	12,921	12,921	99.3%	0.2%	29.1%	3,758	3,758	29.1%	29.1%
6/30/91-92	2,207,000	2,321,000	2,183,228	23,772	137,772	96.4%	1.0%	28.0%	6,663	38,617	28.0%	28.0%
6/30/92-93	1,679,326	1,716,282	1,653,844	25,482	62,438	97.4%	1.0%	38.6%	9,841	24,115	38.6%	38.6%
6/30/93-94	1,778,000	1,817,851	1,755,216	22,784	62,636	97.6%	1.0%	42.1%	9,591	26,367	42.1%	42.1%
6/30/94-95	2,226,000	2,227,000	2,190,236	35,764	36,764	98.4%	1.0%	61.4%	21,958	22,572	61.4%	61.4%
6/30/95-96	1,879,180	1,920,160	1,850,889	28,290	69,271	97.4%	2.0%	77.9%	22,034	53,953	77.9%	77.9%
6/30/96-97	2,021,020	2,085,690	1,962,930	58,090	122,760	95.6%	2.0%	45.4%	26,382	55,752	45.4%	45.4%
6/30/97-98	2,663,000	2,672,480	2,556,994	106,006	115,486	95.8%	2.0%	48.2%	51,071	55,638	48.2%	48.2%
6/30/98-99	1,845,000	1,865,770	1,744,881	100,119	120,889	94.0%	3.0%	50.4%	50,431	60,893	50.4%	50.4%
6/30/99-00	1,791,000	1,794,000	1,668,934	122,066	125,066	93.1%	3.0%	43.5%	53,122	54,428	43.5%	43.5%
6/30/00-01	2,394,000	2,399,000	2,178,651	215,349	220,349	90.9%	4.0%	44.0%	94,760	96,960	44.0%	44.0%
6/30/01-02	3,248,000	3,262,000	2,890,395	357,605	371,605	88.8%	4.0%	35.7%	127,700	132,700	35.7%	35.7%
6/30/02-03	2,124,000	2,162,000	1,852,512	271,488	309,488	86.4%	4.0%	29.5%	80,113	91,327	29.5%	29.5%
6/30/03-04	2,528,000	2,617,000	2,181,200	346,800	435,800	84.8%	4.0%	26.3%	91,198	114,602	26.3%	26.3%
6/30/04-05	1,976,000	2,120,000	1,681,969	294,031	438,031	82.1%	4.0%	22.4%	65,806	98,034	22.4%	22.4%
6/30/05-06	2,581,000	2,705,000	2,137,309	443,691	567,691	80.9%	4.0%	20.9%	92,758	118,682	20.9%	20.9%
6/30/06-07	1,985,000	2,209,000	1,619,655	365,345	589,345	77.2%	4.0%	17.6%	64,199	103,561	17.6%	17.6%
6/30/07-08	3,931,460	4,034,730	3,224,706	706,754	810,024	81.0%	4.0%	21.0%	148,476	170,171	21.0%	21.0%
6/30/08-09	3,255,580	3,401,850	2,580,398	675,182	821,452	77.5%	3.4%	15.3%	103,330	125,715	15.3%	15.3%
6/30/09-10	4,580,970	5,178,090	3,653,901	927,069	1,524,189	74.9%	4.0%	15.9%	147,636	242,727	15.9%	15.9%
6/30/10-11	4,319,620	4,649,440	3,117,885	1,201,735	1,531,555	69.5%	5.4%	17.6%	211,243	269,219	17.6%	17.6%
6/30/11-12	4,131,500	4,568,970	2,684,954	1,446,546	1,884,016	61.7%	7.8%	20.4%	294,960	384,163	20.4%	20.4%
6/30/12-13	3,557,380	4,081,920	1,843,866	1,713,514	2,238,054	48.3%	9.0%	17.4%	298,136	389,401	17.4%	17.4%
6/30/13-14	4,841,010	5,160,870	1,870,071	2,970,939	3,290,799	37.4%	10.9%	17.4%	516,251	571,833	17.4%	17.4%
6/30/14-15	5,161,100	5,720,000	939,136	4,221,964	4,780,864	17.3%	20.1%	24.3%	1,027,326	1,163,323	24.3%	24.3%
Total	94,200,232	99,175,783	77,146,952	17,053,280	22,028,832				3,713,837	4,786,256	21.8%	21.7%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		338,455			339,306	344,312	851	5,857		
6/30/82-83		53,045	53,145		53,310	53,575	265	530		
6/30/83-84		27,773	27,825		27,912	28,051	139	278		
6/30/84-85	357,749	112,891	113,104	113,221	113,455	114,020	564	1,129	0.032	0.032
6/30/85-86	380,112	384,347	385,071	385,312	386,269	388,190	1,922	3,843	0.102	0.102
6/30/86-87	423,770	238,056	238,505	238,710	239,246	240,437	1,190	2,381	0.056	0.057
6/30/87-88	480,405	665,538	666,793	667,093	667,000	667,000	1,462	1,462	0.139	0.139
6/30/88-89	495,261	426,014	426,817	427,142	427,000	427,000	986	986	0.086	0.086
6/30/89-90	502,691	547,456	548,888	549,436	549,000	549,000	1,544	1,544	0.109	0.109
6/30/90-91	482,143	472,472	473,707	473,706	474,000	474,000	1,528	1,528	0.098	0.098
6/30/91-92	492,539	790,246	793,667	793,634	794,000	794,000	3,754	3,754	0.161	0.161
6/30/92-93	524,541	506,348	509,811	509,797	508,880	511,411	2,532	5,063	0.097	0.097
6/30/93-94	584,853	622,024	628,455	628,401	628,000	628,000	5,976	5,976	0.107	0.107
6/30/94-95	587,701	553,266	561,242	561,200	561,000	561,000	7,734	7,734	0.095	0.095
6/30/95-96	614,868	581,842	592,825	592,758	584,752	587,661	2,909	5,818	0.095	0.096
6/30/96-97	700,686	784,391	804,034	803,713	808,020	812,040	23,629	27,649	0.115	0.116
6/30/97-98	684,415	431,949	447,206	447,631	447,000	452,480	15,051	20,531	0.065	0.066
6/30/98-99	707,796	359,425	375,842	376,816	376,000	380,770	16,575	21,345	0.053	0.054
6/30/99-00	760,477	486,598	513,912	514,741	514,000	515,000	27,402	28,402	0.068	0.068
6/30/00-01	811,600	564,300	601,935	602,746	602,000	603,000	37,700	38,700	0.074	0.074
6/30/01-02	835,038	533,801	575,096	576,413	575,000	576,000	41,199	42,199	0.069	0.069
6/30/02-03	825,340	592,448	644,662	645,671	645,000	646,000	52,552	53,552	0.078	0.078
6/30/03-04	849,216	690,599	762,736	763,197	763,000	763,000	72,401	72,401	0.090	0.090
6/30/04-05	992,508	658,406	730,816	753,367	731,000	753,000	72,594	94,594	0.074	0.076
6/30/05-06	962,878	772,551	861,795	869,171	862,000	869,000	89,449	96,449	0.090	0.090
6/30/06-07	1,032,930	650,946	737,035	767,855	737,000	768,000	86,054	117,054	0.071	0.074
6/30/07-08	1,063,597	897,837	1,026,743	1,027,230	1,006,460	1,016,730	108,623	118,893	0.095	0.096
6/30/08-09	1,073,805	963,239	1,115,034	1,105,644	1,083,880	1,103,850	120,641	140,611	0.101	0.103
6/30/09-10	1,084,749	1,003,582	1,190,778	1,174,110	1,150,520	1,179,090	146,938	175,508	0.106	0.109
6/30/10-11	1,134,164	1,027,642	1,255,905	1,233,778	1,209,320	1,243,440	181,678	215,798	0.107	0.110
6/30/11-12	1,202,674	841,448	1,075,115	1,102,838	1,053,500	1,091,970	212,052	250,522	0.088	0.091
6/30/12-13	1,284,741	662,793	906,127	1,007,801	887,880	997,920	225,087	335,127	0.069	0.078
6/30/13-14	1,346,902	800,583	1,291,516	1,312,569	1,266,160	1,299,870	465,577	499,287	0.094	0.097
6/30/14-15	1,404,093	425,720	1,524,648	1,437,755	1,366,100	1,525,000	940,380	1,099,280	0.097	0.109
Total	24,684,241	19,468,035	22,460,790	22,463,457	22,436,970	22,963,817	2,968,935	3,495,783		
Tot 6/30/84-15	24,684,241	19,048,762	22,379,819	22,463,457	22,016,442	22,537,879	2,967,680	3,489,118	0.089	0.091

NOTES:

(2) Provided by Commonwealth of Massachusetts
(3) From Section 7, Exhibit 2, Page 2, Column 3
(4) From Section 7, Exhibit 2, Page 2, Column 8
(5) From Section 7, Exhibit 2, Page 3, Column 8
(6), (7) Selected based on (3), (4), and (5)
(8) = (6) - (3)
(9) = (7) - (3)
(10) = (6) / (2) / 10
(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		338,455							0	0	
6/30/82-83		53,045	1.002	1.000	53,145	N/A	53,145		0	0	
6/30/83-84		27,773	1.002	1.000	27,825	N/A	27,825		0	0	
6/30/84-85	357,749	112,891	1.002	1.000	113,104	N/A	113,104	0.032	0	0	
6/30/85-86	380,112	384,347	1.002	1.000	385,071	N/A	385,071	0.101	0	0	
6/30/86-87	423,770	238,056	1.002	1.000	238,505	N/A	238,505	0.056	0	0	
6/30/87-88	480,405	665,538	1.002	1.000	666,793	N/A	666,793	0.139	1	1	1,254
6/30/88-89	495,261	426,014	1.002	1.000	426,817	N/A	426,817	0.086	0	0	
6/30/89-90	502,691	547,456	1.003	1.000	548,888	N/A	548,888	0.109	2	0	
6/30/90-91	482,143	472,472	1.003	1.000	473,707	N/A	473,707	0.098	0	0	
6/30/91-92	492,539	790,246	1.004	1.000	793,667	N/A	793,667	0.161	1	1	3,421
6/30/92-93	524,541	506,348	1.007	1.000	509,811	N/A	509,811	0.097	0	0	
6/30/93-94	584,853	622,024	1.010	1.000	628,455	N/A	628,455	0.107	2	2	3,216
6/30/94-95	587,701	553,266	1.014	1.000	561,242	N/A	561,242	0.095	1	2	3,988
6/30/95-96	614,868	581,842	1.019	1.000	592,825	N/A	592,825	0.096	0	0	
6/30/96-97	700,686	784,391	1.025	1.000	804,034	N/A	804,034	0.115	4	3	6,548
6/30/97-98	684,415	431,949	1.035	1.000	447,206	N/A	447,206	0.065	0	1	15,257
6/30/98-99	707,796	359,425	1.046	1.000	375,842	N/A	375,842	0.053	1	2	8,208
6/30/99-00	760,477	486,598	1.056	1.000	513,912	N/A	513,912	0.068	1	0	
6/30/00-01	811,600	564,300	1.067	1.000	601,935	N/A	601,935	0.074	0	0	
6/30/01-02	835,038	533,801	1.077	1.000	575,096	N/A	575,096	0.069	2	1	41,295
6/30/02-03	825,340	592,448	1.088	1.000	644,662	N/A	644,662	0.078	2	3	17,405
6/30/03-04	849,216	690,599	1.104	1.000	762,736	N/A	762,736	0.090	0	0	
6/30/04-05	992,508	658,406	1.110	1.000	730,816	N/A	730,816	0.074	4	2	36,205
6/30/05-06	962,878	772,551	1.116	1.000	861,795	N/A	861,795	0.090	8	4	22,311
6/30/06-07	1,032,930	650,946	1.132	1.000	737,035	N/A	737,035	0.071	3	3	28,696
6/30/07-08	1,063,597	897,837	1.144	1.000	1,026,743	N/A	1,026,743	0.097	10	5	25,781
6/30/08-09	1,073,805	963,239	1.158	1.000	1,115,034	N/A	1,115,034	0.104	9	8	18,974
6/30/09-10	1,084,749	1,003,582	1.187	1.000	1,190,778	N/A	1,190,778	0.110	19	15	12,480
6/30/10-11	1,134,164	1,027,642	1.222	1.000	1,255,905	N/A	1,255,905	0.111	28	13	17,559
6/30/11-12	1,202,674	841,448	1.278	1.000	1,075,115	N/A	1,075,115	0.089	37	26	8,987
6/30/12-13	1,284,741	662,793	1.367	1.000	906,127	N/A	906,127	0.071	189	52	4,679
6/30/13-14	1,346,902	800,583	1.613	1.000	1,291,516	N/A	1,291,516	0.096	262	184	2,668
6/30/14-15	1,404,093	425,720	3.581	1.000	1,524,648	N/A	1,524,648	0.109		257	4,276
Total	24,684,241	19,468,035			22,460,790		22,460,790		586	585	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 7, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	357,749	0.049	112,891	1.002	113,221	N/A	113,221	0.032	0.032
6/30/85-86	380,112	0.135	384,347	1.002	385,312	N/A	385,312	0.101	0.101
6/30/86-87	423,770	0.082	238,056	1.002	238,710	N/A	238,710	0.056	0.056
6/30/87-88	480,405	0.172	665,538	1.002	667,093	N/A	667,093	0.139	0.139
6/30/88-89	495,261	0.121	426,014	1.002	427,142	N/A	427,142	0.086	0.086
6/30/89-90	502,691	0.151	547,456	1.003	549,436	N/A	549,436	0.109	0.109
6/30/90-91	482,143	0.098	472,472	1.003	473,706	N/A	473,706	0.098	0.098
6/30/91-92	492,539	0.160	790,246	1.004	793,634	N/A	793,634	0.161	0.161
6/30/92-93	524,541	0.097	506,348	1.007	509,797	N/A	509,797	0.097	0.097
6/30/93-94	584,853	0.107	622,024	1.010	628,401	N/A	628,401	0.107	0.107
6/30/94-95	587,701	0.095	553,266	1.014	561,200	N/A	561,200	0.095	0.095
6/30/95-96	614,868	0.096	581,842	1.019	592,758	N/A	592,758	0.096	0.096
6/30/96-97	700,686	0.113	784,391	1.025	803,713	N/A	803,713	0.115	0.115
6/30/97-98	684,415	0.067	431,949	1.035	447,631	N/A	447,631	0.065	0.065
6/30/98-99	707,796	0.056	359,425	1.046	376,816	N/A	376,816	0.053	0.053
6/30/99-00	760,477	0.070	486,598	1.056	514,741	N/A	514,741	0.068	0.068
6/30/00-01	811,600	0.076	564,300	1.067	602,746	N/A	602,746	0.074	0.074
6/30/01-02	835,038	0.071	533,801	1.077	576,413	N/A	576,413	0.069	0.069
6/30/02-03	825,340	0.080	592,448	1.088	645,671	N/A	645,671	0.078	0.078
6/30/03-04	849,216	0.090	690,599	1.104	763,197	N/A	763,197	0.090	0.090
6/30/04-05	992,508	0.097	658,406	1.110	753,367	N/A	753,367	0.076	0.076
6/30/05-06	962,878	0.097	772,551	1.116	869,171	N/A	869,171	0.090	0.090
6/30/06-07	1,032,930	0.097	650,946	1.132	767,855	N/A	767,855	0.074	0.074
6/30/07-08	1,063,597	0.097	897,837	1.144	1,027,230	N/A	1,027,230	0.097	0.097
6/30/08-09	1,073,805	0.097	963,239	1.158	1,105,644	N/A	1,105,644	0.103	0.103
6/30/09-10	1,084,749	0.100	1,003,582	1.187	1,174,110	N/A	1,174,110	0.108	0.108
6/30/10-11	1,134,164	0.100	1,027,642	1.222	1,233,778	N/A	1,233,778	0.109	0.109
6/30/11-12	1,202,674	0.100	841,448	1.278	1,102,838	N/A	1,102,838	0.092	0.092
6/30/12-13	1,284,741	0.100	662,793	1.367	1,007,801	N/A	1,007,801	0.078	0.078
6/30/13-14	1,346,902	0.100	800,583	1.613	1,312,569	N/A	1,312,569	0.097	0.097
6/30/14-15	1,404,093	0.100	425,720	3.581	1,437,755	N/A	1,437,755	0.102	0.102
Total	24,684,241		19,048,762		22,463,457		22,463,457		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 7, Exhibit 2, Page 4, Column 11

(4) From Section 7, Exhibit 2, Page 2, Column 3

(5) From Section 7, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.049	0.049
6/30/85-86									0.135	0.135
6/30/86-87									0.082	0.082
6/30/87-88									0.172	0.172
6/30/88-89									0.121	0.121
6/30/89-90									0.151	0.151
6/30/90-91	482,143	473,707	0.098	1.194	0.117	1.000	0.117	0.084	0.098	0.098
6/30/91-92	492,539	793,667	0.161	1.189	0.192	1.000	0.192	0.084	0.157	0.160
6/30/92-93	524,541	509,811	0.097	1.189	0.116	1.000	0.116	0.084	0.097	0.097
6/30/93-94	584,853	628,455	0.107	1.178	0.127	1.000	0.127	0.085	0.104	0.107
6/30/94-95	587,701	561,242	0.095	1.170	0.112	1.000	0.112	0.085	0.095	0.095
6/30/95-96	614,868	592,825	0.096	1.155	0.111	1.000	0.111	0.087	0.096	0.096
6/30/96-97	700,686	804,034	0.115	1.137	0.130	1.000	0.130	0.088	0.108	0.113
6/30/97-98	684,415	447,206	0.065	1.135	0.074	1.000	0.074	0.088	0.067	0.067
6/30/98-99	707,796	375,842	0.053	1.135	0.060	1.000	0.060	0.088	0.056	0.056
6/30/99-00	760,477	513,912	0.068	1.135	0.077	1.000	0.077	0.088	0.070	0.070
6/30/00-01	811,600	601,935	0.074	1.109	0.082	1.000	0.082	0.090	0.077	0.076
6/30/01-02	835,038	575,096	0.069	1.101	0.076	1.000	0.076	0.091	0.072	0.071
6/30/02-03	825,340	644,662	0.078	1.073	0.084	1.000	0.084	0.093	0.080	0.080
6/30/03-04	849,216	762,736	0.090	1.046	0.094	1.000	0.094	0.096	0.091	0.090
6/30/04-05	992,508	730,816	0.074	1.036	0.076	1.000	0.076	0.097	0.097	0.097
6/30/05-06	962,878	861,795	0.090	1.032	0.092	1.000	0.092	0.097	0.097	0.097
6/30/06-07	1,032,930	737,035	0.071	1.032	0.074	1.000	0.074	0.097	0.097	0.097
6/30/07-08	1,063,597	1,026,743	0.097	1.032	0.100	1.000	0.100	0.097	0.097	0.097
6/30/08-09	1,073,805	1,115,034	0.104	1.027	0.107	1.000	0.107	0.097	0.097	0.097
6/30/09-10	1,084,749	1,190,778	0.110	1.000	0.110	1.000	0.110	0.100	0.100	0.100
6/30/10-11	1,134,164	1,255,905	0.111	1.000	0.111	1.000	0.111	0.100	0.100	0.100
6/30/11-12	1,202,674	1,075,115	0.089	1.000	0.089	1.000	0.089	0.100	0.100	0.100
6/30/12-13	1,284,741	906,127	0.071	1.000	0.071	1.000	0.071	0.100	0.100	0.100
6/30/13-14	1,346,902	1,291,516	0.096	1.000	0.096	1.000	0.096	0.100	0.100	0.100
6/30/14-15	1,404,093	1,524,648	0.109	1.000	0.109	1.000	0.109	0.100		0.100
Total	22,044,253	20,000,642								

Trend Last 4 (ex 14-15):	-6.5%	Avg 3 (ex 14-15):	0.085
Trend Last 8 (ex 14-15):	-0.5%	Avg 5 (ex 14-15):	0.095
Trend Last 12 (ex 14-15):	0.8%	Avg 10 (ex 14-15):	0.092
Prior Selected Trend:	0.0%	Prior Sel Avg:	0.100
Selected Trend:	0.0%	Sel. Loss Cost:	0.100

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 7, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend		0.970	
(2)	Credibility		22%	
(3)	Average Pmt Trend Statewide		0.950	
(4)	Credibility Weighted Trend		0.954	
		(Low)		(High)
(5)	Selected Range	0.945		0.964
(6)	Incremental Paid for 2015	0		0
(7)	Estimated Reserve	0		0
(8)	Paid to Date (82 & Prior)	338,455		338,455
(9)	Est Ult Paid for 1982 & Prior	338,455		338,455

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	567	1,673
(11)	Projected Number of Years	3	7
(12)	Estimated Reserve	1,702	11,714
(13)	Paid to Date (82 & Prior)	338,455	338,455
(14)	Est Ult Paid for 1982 & Prior	340,157	350,169
(14a)	Paid Counts During Fiscal Year	0	0
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	339,306	344,312
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**339,306**	**344,312**
(18)	Implied Tail	1.003	1.017
(19)	Ult Loss Inc Lump Sums @ 6/14	344,312	356,444

NOTES:

(1) From Section 7, Exhibit 2, Page 6
(2) = (Average of Section 7, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 7, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 7, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	31,197	10.348			
1993	2	17,697	9.781	0.567		
1994	3	8,752	9.077	0.495		
1995	4	6,932	8.844	0.792		
1996	5	3,727	8.223	0.538		
1997	6	2,222	7.706	0.596		
1998	7	9,087	9.115	4.090		
1999	8	5,853	8.675	0.644		
2000	9	12,069	9.398	2.062	n =	22
2001	10	7,279	8.893	0.603	S(x) =	44,055
2002	11	8,308	9.025	1.141	S(x-sq) =	88,221,023
2003	12	8,142	9.005	0.980	S(xy) =	395,139
2004	13	19,519	9.879	2.397	S(y) =	197
2005	14	7,873	8.971	0.403	D =	19,481
2006	15	11,471	9.348	1.457	slope =	-0.032
2007	16	10,042	9.215	0.875	Avg Trend =	0.968
2008	17	8,213	9.014	0.818		
2009	18	9,432	9.152	1.148		
2010	19	7,136	8.873	0.757		
2011	20	10,399	9.249	1.457		
2012	21	3,318	8.107	0.319		
2013	22	1,702	7.440	0.513		
2014	23	0				
2015	24	0				
					Selected Trend:	**0.970**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2013: 0.513 = 1702 / 3318

Commonwealth of Massachusetts Workers Compensation
Massachusetts Colleges & Universities - Cluster 4
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	5,425	13,479	21,113	27,654	30,220	32,596	38,756	40,003	49,390	49,452	49,902	49,902	49,902	52,680	52,680	52,680	52,680	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045	53,045
June-84	3,642	9,520	14,025	17,952	20,550	23,119	24,788	27,281	27,458	27,458	27,458	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	27,773	
June-85	13,476	35,975	51,552	65,364	72,959	79,579	86,331	95,092	106,398	110,557	111,969	111,969	112,255	112,573	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891	112,891		
June-86	33,919	90,663	130,143	159,111	250,739	286,799	294,926	297,883	299,398	302,212	307,822	320,541	325,361	342,239	344,332	347,860	364,047	376,849	380,765	383,694	384,347	384,347	384,347	384,347	384,347	384,347	384,347	384,347	384,347	384,347			
June-87	33,322	88,558	133,068	167,433	202,414	217,655	221,836	226,928	230,316	231,634	233,141	233,163	235,329	236,440	236,440	236,440	236,440	237,211	237,211	237,211	237,211	237,211	237,211	238,056	238,056	238,056	238,056	238,056	238,056	238,056			
June-88	59,518	204,414	290,147	350,533	381,836	423,661	513,908	554,667	558,927	578,241	580,791	582,947	585,666	587,383	588,760	590,429	611,904	620,480	621,465	623,581	623,951	627,240	627,525	631,767	636,396	638,704	641,961	665,538					
June-89	62,198	211,475	294,554	322,576	356,178	387,366	391,897	394,643	397,103	398,291	400,332	413,505	414,824	415,958	415,958	424,869	425,154	425,154	425,154	425,154	425,154	425,154	425,840	425,973	426,014	426,014	426,014						
June-90	50,219	295,860	408,825	438,277	465,544	487,856	501,254	508,956	511,410	519,157	521,054	521,523	523,073	526,415	531,243	532,370	532,613	534,177	535,910	537,636	540,156	540,156	541,381	543,131	547,456	547,456							
June-91	73,392	311,241	360,552	400,955	419,114	437,552	445,905	451,717	456,911	463,872	466,034	467,206	468,330	470,247	472,258	472,472	472,472	472,472	472,472	472,472	472,472	472,472	472,472	472,472	472,472								
June-92	221,188	477,478	560,364	598,339	631,891	641,232	646,926	650,216	653,117	658,289	666,600	671,991	681,366	690,612	701,403	710,623	719,185	728,531	738,270	747,976	759,027	768,431	778,806	790,246									
June-93	150,073	407,193	449,884	478,264	489,794	496,554	498,030	498,889	501,701	503,184	504,152	505,509	506,348	506,348	506,348	506,348	506,348	506,348	506,348	506,348	506,348	506,348	506,348										
June-94	156,060	302,215	335,354	369,121	403,159	421,734	441,218	452,877	461,708	470,189	479,925	489,958	504,404	513,367	522,984	528,697	539,677	552,169	567,707	583,321	603,468	622,024											
June-95	109,792	244,835	298,417	304,966	313,919	317,775	323,966	336,940	345,737	404,548	417,872	419,186	507,915	517,682	526,590	533,675	537,590	548,842	549,714	552,788	553,266												
June-96	187,362	423,531	463,708	493,442	512,072	523,060	559,979	563,249	572,255	575,372	578,197	581,714	581,842	581,842	581,842	581,842	581,842	581,842	581,842	581,842													
June-97	169,255	306,866	359,926	403,511	440,040	450,988	458,674	483,346	503,475	519,848	535,734	556,260	578,975	602,453	632,460	672,797	707,292	751,693	784,391														
June-98	130,372	302,957	339,295	363,480	383,927	388,726	391,919	417,459	417,733	418,585	421,666	427,310	427,449	428,766	428,839	429,419	429,419	431,949															
June-99	97,937	205,527	246,679	296,667	310,533	318,692	324,215	326,063	327,858	331,461	334,241	334,867	336,644	336,644	338,914	356,188	359,425																
June-00	149,711	324,594	408,387	446,980	464,695	474,595	478,979	480,612	480,853	482,147	483,486	483,486	483,486	485,189	486,598	486,598																	
June-01	146,796	329,001	398,588	483,338	524,021	540,381	553,789	559,032	562,148	562,831	562,932	563,168	564,300	564,300	564,300																		
June-02	113,531	244,127	383,389	485,433	511,686	522,029	525,064	528,876	530,895	532,387	533,222	533,611	533,769	533,801																			
June-03	68,006	374,633	451,946	472,102	486,597	492,733	520,395	535,451	548,996	558,702	571,378	580,801	592,448																				
June-04	226,665	540,314	613,339	657,569	676,213	687,448	689,931	690,265	690,426	690,599	690,599	690,599																					
June-05	267,264	502,730	569,792	616,429	634,553	643,543	651,061	654,330	656,278	658,062	658,406																						
June-06	266,086	533,067	604,845	688,237	700,485	712,078	725,521	746,165	766,110	772,551																							
June-07	237,774	472,669	580,019	596,123	625,421	633,211	640,381	648,441	650,946																								
June-08	254,702	609,536	722,745	829,701	850,544	872,814	886,112	897,837																									
June-09	295,106	650,179	756,525	816,761	864,784	890,799	963,239																										
June-10	419,730	775,749	865,851	909,378	969,822	1,003,582																											
June-11	454,614	843,137	950,680	997,564	1,027,642																												
June-12	330,317	676,973	804,310	841,448																													
June-13	291,036	557,666	662,793																														
June-14	380,527	800,583																															
June-15	425,720																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.485	1.566	1.310	1.093	1.079	1.189	1.032	1.235	1.001	1.009	1.000	1.000	1.056	1.000	1.000	1.000	1.007	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	1.000	
June-84	2.614	1.473	1.280	1.145	1.125	1.072	1.101	1.006	1.000	1.000	1.011	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	1.000	1.000	1.000	1.000	1.000	1.000		
June-85	2.670	1.433	1.268	1.116	1.091	1.085	1.101	1.119	1.039	1.013	1.000	1.003	1.003	1.003	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	1.000	1.000			
June-86	2.673	1.435	1.223	1.576	1.144	1.028	1.010	1.005	1.009	1.019	1.041	1.015	1.052	1.006	1.010	1.047	1.035	1.010	1.008	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
June-87	2.658	1.503	1.258	1.209	1.075	1.019	1.023	1.015	1.006	1.007	1.000	1.009	1.005	1.000	1.000	1.000	1.003	1.000	1.000	1.000	1.000	1.004	1.000	1.000	1.000	1.000	1.000	1.000					
June-88	3.434	1.419	1.208	1.089	1.110	1.213	1.079	1.008	1.035	1.004	1.004	1.005	1.003	1.002	1.003	1.036	1.014	1.002	1.003	1.001	1.005	1.000	1.007	1.007	1.004	1.005	1.037						
June-89	3.400	1.393	1.095	1.104	1.088	1.012	1.007	1.006	1.003	1.005	1.033	1.003	1.003	1.000	1.021	1.001	1.000	1.000	1.000	1.000	1.000	1.002	1.000	1.000	1.000	1.000							
June-90	5.891	1.382	1.072	1.062	1.048	1.027	1.015	1.005	1.015	1.004	1.001	1.003	1.006	1.009	1.002	1.000	1.003	1.003	1.003	1.005	1.000	1.002	1.003	1.008	1.000								
June-91	4.241	1.158	1.112	1.045	1.044	1.019	1.013	1.011	1.015	1.005	1.003	1.002	1.004	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
June-92	2.159	1.174	1.068	1.056	1.015	1.009	1.005	1.004	1.008	1.013	1.008	1.014	1.014	1.016	1.013	1.012	1.013	1.013	1.013	1.015	1.012	1.014	1.015										
June-93	2.713	1.105	1.063	1.024	1.014	1.003	1.002	1.006	1.003	1.002	1.003	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000											
June-94	1.937	1.110	1.101	1.092	1.046	1.046	1.026	1.019	1.018	1.021	1.021	1.029	1.018	1.019	1.011	1.021	1.023	1.028	1.028	1.035	1.031												
June-95	2.230	1.219	1.022	1.029	1.012	1.019	1.040	1.026	1.170	1.033	1.003	1.212	1.019	1.017	1.013	1.007	1.021	1.002	1.006	1.001													
June-96	2.260	1.095	1.064	1.038	1.021	1.071	1.006	1.016	1.005	1.005	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
June-97	1.813	1.173	1.121	1.091	1.025	1.017	1.054	1.042	1.033	1.031	1.038	1.041	1.041	1.050	1.064	1.051	1.063	1.043															
June-98	2.324	1.120	1.071	1.056	1.012	1.008	1.065	1.001	1.002	1.007	1.013	1.000	1.003	1.000	1.001	1.000	1.006																
June-99	2.099	1.200	1.203	1.047	1.026	1.017	1.006	1.006	1.011	1.008	1.002	1.005	1.000	1.007	1.051	1.009																	
June-00	2.168	1.258	1.095	1.040	1.021	1.009	1.003	1.001	1.003	1.003	1.000	1.000	1.004	1.003	1.000																		
June-01	2.241	1.212	1.213	1.084	1.031	1.025	1.009	1.006	1.001	1.000	1.000	1.002	1.000	1.000																			
June-02	2.150	1.570	1.266	1.054	1.020	1.006	1.007	1.004	1.003	1.002	1.001	1.000	1.000																				
June-03	5.509	1.206	1.045	1.031	1.013	1.056	1.029	1.025	1.018	1.023	1.016	1.020																					
June-04	2.384	1.135	1.072	1.028	1.017	1.004	1.000	1.000	1.000	1.000	1.000																						
June-05	1.881	1.133	1.082	1.029	1.014	1.012	1.005	1.003	1.003	1.001																							
June-06	2.003	1.135	1.138	1.018	1.017	1.019	1.028	1.027	1.008																								
June-07	1.988	1.227	1.028	1.049	1.012	1.011	1.013	1.004																									
June-08	2.393	1.186	1.148	1.025	1.026	1.015	1.013																										
June-09	2.203	1.164	1.080	1.059	1.030	1.081																											
June-10	1.848	1.116	1.050	1.066	1.035																												
June-11	1.855	1.128	1.049	1.030																													
June-12	2.049	1.188	1.046																														
June-13	1.916	1.189																															
June-14	2.104																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.572	1.252	1.128	1.082	1.043	1.041	1.027	1.024	1.017	1.009	1.009	1.017	1.011	1.007	1.011	1.011	1.012	1.007	1.004	1.004	1.004	1.002	1.002	1.002	1.000	1.001	1.006	1.000	1.000	1.000	1.000		
Latest 5	1.954	1.157	1.075	1.046	1.024	1.028	1.012	1.012	1.006	1.005	1.004	1.006	1.001	1.012	1.023	1.014	1.023	1.015	1.009	1.010	1.009	1.003	1.005	1.003	1.001	1.001	1.007	1.000					
Latest 3	2.023	1.168	1.049	1.052	1.030	1.036	1.018	1.011	1.004	1.008	1.006	1.007	1.001	1.003	1.017	1.020	1.023	1.015	1.011	1.012	1.014	1.005	1.006	1.003	1.001	1.002	1.012	1.000	1.000	1.000			
Volume Wtd																																	
All Yrs	2.229	1.190	1.096	1.058	1.032	1.032	1.020	1.012	1.015	1.009	1.009	1.019	1.010	1.009	1.013	1.014	1.015	1.010	1.006	1.007	1.007	1.003	1.005	1.003	1.001	1.002	1.016	1.000	1.000	1.000	1.000	1.000	
Latest 5	1.948	1.153	1.072	1.045	1.025	1.030	1.012	1.012	1.006	1.005	1.004	1.006	1.001	1.014	1.024	1.016	1.025	1.017	1.010	1.011	1.010	1.005	1.006	1.004	1.001	1.002	1.017	1.000					
Latest 3	2.031	1.164	1.049	1.051	1.031	1.039	1.018	1.012	1.004	1.007	1.005	1.008	1.001	1.003	1.014	1.026	1.027	1.018	1.011	1.013	1.015	1.006	1.007	1.003	1.001	1.003	1.019	1.000	1.000	1.000			

Dev Factor Selection

Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*2.238*	*1.172*	*1.076*	*1.050*	*1.023*	*1.015*	*1.015*	*1.013*	*1.017*	*1.005*	*1.006*	*1.017*	*1.012*	*1.010*	*1.011*	*1.020*	*1.012*	*1.003*	*1.003*	*1.007*	*1.002*	*1.004*	*1.000*	*1.002*	*1.000*	*1.001*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*1.002*	
Selected	2.220	1.180	1.070	1.045	1.030	1.025	1.012	1.010	1.015	1.005	1.005	1.015	1.010	1.010	1.010	1.010	1.010	1.010	1.006	1.004	1.004	1.003	1.002	1.002	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.002
FacToUlt	3.581	1.613	1.367	1.278	1.222	1.187	1.158	1.144	1.132	1.116	1.110	1.104	1.088	1.077	1.067	1.056	1.046	1.035	1.025	1.019	1.014	1.010	1.007	1.004	1.003	1.003	1.002	1.002	1.002	1.002	1.002	1.002	1.002
Percent of Ult	27.9%	62.0%	73.1%	78.3%	81.8%	84.3%	86.4%	87.4%	88.3%	89.6%	90.1%	90.5%	91.9%	92.8%	93.7%	94.7%	95.6%	96.6%	97.6%	98.1%	98.6%	99.0%	99.3%	99.6%	99.7%	99.7%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	344,312	356,444	339,306	344,312	(5,006)	-1.5%	(12,132)	-3.4%
6/30/82-83	53,310	53,575	53,310	53,575	0	0.0%	0	0.0%
6/30/83-84	27,912	28,051	27,912	28,051	0	0.0%	0	0.0%
6/30/84-85	113,455	114,020	113,455	114,020	0	0.0%	0	0.0%
6/30/85-86	386,269	388,190	386,269	388,190	0	0.0%	0	0.0%
6/30/86-87	239,246	240,437	239,246	240,437	0	0.0%	0	0.0%
6/30/87-88	643,000	644,000	667,000	667,000	24,000	3.7%	23,000	3.6%
6/30/88-89	427,000	428,000	427,000	427,000	0	0.0%	(1,000)	-0.2%
6/30/89-90	549,000	550,000	549,000	549,000	0	0.0%	(1,000)	-0.2%
6/30/90-91	475,000	475,000	474,000	474,000	(1,000)	-0.2%	(1,000)	-0.2%
6/30/91-92	783,000	783,000	794,000	794,000	11,000	1.4%	11,000	1.4%
6/30/92-93	508,880	511,411	508,880	511,411	0	0.0%	0	0.0%
6/30/93-94	610,000	610,000	628,000	628,000	18,000	3.0%	18,000	3.0%
6/30/94-95	563,000	563,000	561,000	561,000	(2,000)	-0.4%	(2,000)	-0.4%
6/30/95-96	584,752	587,661	584,752	587,661	0	0.0%	0	0.0%
6/30/96-97	770,000	770,000	808,020	812,040	38,020	4.9%	42,040	5.5%
6/30/97-98	445,000	446,000	447,000	452,480	2,000	0.4%	6,480	1.5%
6/30/98-99	377,000	378,000	376,000	380,770	(1,000)	-0.3%	2,770	0.7%
6/30/99-00	521,000	522,000	514,000	515,000	(7,000)	-1.3%	(7,000)	-1.3%
6/30/00-01	610,000	611,000	602,000	603,000	(8,000)	-1.3%	(8,000)	-1.3%
6/30/01-02	584,000	585,000	575,000	576,000	(9,000)	-1.5%	(9,000)	-1.5%
6/30/02-03	646,000	648,000	645,000	646,000	(1,000)	-0.2%	(2,000)	-0.3%
6/30/03-04	773,000	773,000	763,000	763,000	(10,000)	-1.3%	(10,000)	-1.3%
6/30/04-05	741,000	765,000	731,000	753,000	(10,000)	-1.3%	(12,000)	-1.6%
6/30/05-06	877,000	884,000	862,000	869,000	(15,000)	-1.7%	(15,000)	-1.7%
6/30/06-07	752,000	786,000	737,000	768,000	(15,000)	-2.0%	(18,000)	-2.3%
6/30/07-08	1,042,000	1,043,000	1,006,460	1,016,730	(35,540)	-3.4%	(26,270)	-2.5%
6/30/08-09	1,062,000	1,065,000	1,083,880	1,103,850	21,880	2.1%	38,850	3.6%
6/30/09-10	1,167,000	1,186,000	1,150,520	1,179,090	(16,480)	-1.4%	(6,910)	-0.6%
6/30/10-11	1,248,000	1,281,000	1,209,320	1,243,440	(38,680)	-3.1%	(37,560)	-2.9%
6/30/11-12	1,111,000	1,137,000	1,053,500	1,091,970	(57,500)	-5.2%	(45,030)	-4.0%
6/30/12-13	903,000	1,000,000	887,880	997,920	(15,120)	-1.7%	(2,080)	-0.2%
6/30/13-14	1,356,000	1,379,000	1,266,160	1,299,870	(89,840)	-6.6%	(79,130)	-5.7%
6/30/14-15								
Total	21,293,136	21,591,790	21,070,870	21,438,817	(222,266)	-1.0%	(152,972)	-0.7%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 7, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.2%	0.0%	0.1%	0.0%	1.000	1.000
396	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
384	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
372	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
360	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
348	99.8%	0.0%	0.2%	0.0%	0.0%	1.000	1.000
336	99.8%	0.0%	0.2%	0.0%	0.0%	0.806	0.726
324	99.8%	0.1%	0.2%	0.0%	0.0%	0.775	0.685
312	99.7%	0.0%	0.3%	0.0%	0.0%	0.811	0.737
300	99.7%	0.2%	0.3%	0.1%	0.0%	0.780	0.695
288	99.6%	0.2%	0.4%	0.1%	0.1%	0.841	0.780
276	99.3%	0.3%	0.7%	0.1%	0.1%	0.871	0.822
264	99.0%	0.4%	1.0%	0.2%	0.1%	0.886	0.841
252	98.6%	0.4%	1.4%	0.2%	0.1%	0.888	0.843
240	98.1%	0.6%	1.9%	0.3%	0.2%	0.883	0.837
228	97.6%	1.0%	2.4%	0.5%	0.3%	0.881	0.833
216	96.6%	1.0%	3.4%	0.5%	0.3%	0.885	0.839
204	95.6%	0.9%	4.4%	0.5%	0.4%	0.879	0.831
192	94.7%	0.9%	5.3%	0.5%	0.4%	0.870	0.817
180	93.7%	0.9%	6.3%	0.5%	0.4%	0.858	0.801
168	92.8%	0.9%	7.2%	0.5%	0.4%	0.845	0.783
156	91.9%	1.4%	8.1%	0.8%	0.7%	0.832	0.765
144	90.5%	0.5%	9.5%	0.3%	0.2%	0.826	0.758
132	90.1%	0.4%	9.9%	0.3%	0.2%	0.802	0.727
120	89.6%	1.3%	10.4%	0.9%	0.8%	0.780	0.698
108	88.3%	0.9%	11.7%	0.6%	0.5%	0.777	0.694
96	87.4%	1.1%	12.6%	0.8%	0.7%	0.763	0.677
84	86.4%	2.1%	13.6%	1.6%	1.4%	0.753	0.664
72	84.3%	2.5%	15.7%	2.0%	1.8%	0.758	0.673
60	81.8%	3.6%	18.2%	3.0%	2.7%	0.763	0.680
48	78.3%	5.1%	21.7%	4.5%	4.2%	0.774	0.696
36	73.1%	11.2%	26.9%	10.1%	9.6%	0.789	0.716
24	62.0%	34.1%	38.0%	32.1%	31.2%	0.824	0.763
12	27.9%	27.9%	72.1%	27.4%	27.1%	0.881	0.838
Total		100.0%					

NOTES:

(2) = 1 / Section 7, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	851	5,857		803	5,526
6/30/82-83	265	530	1.000	265	530
6/30/83-84	139	278	1.000	139	278
6/30/84-85	564	1,129	1.000	564	1,129
6/30/85-86	1,922	3,843	1.000	1,922	3,843
6/30/86-87	1,190	2,381	1.000	1,190	2,381
6/30/87-88	1,462	1,462	0.806	1,178	1,178
6/30/88-89	986	986	0.775	764	764
6/30/89-90	1,544	1,544	0.811	1,251	1,251
6/30/90-91	1,528	1,528	0.780	1,191	1,191
6/30/91-92	3,754	3,754	0.841	3,157	3,157
6/30/92-93	2,532	5,063	0.871	2,206	4,412
6/30/93-94	5,976	5,976	0.886	5,294	5,294
6/30/94-95	7,734	7,734	0.888	6,866	6,866
6/30/95-96	2,909	5,818	0.883	2,570	5,139
6/30/96-97	23,629	27,649	0.881	20,817	24,359
6/30/97-98	15,051	20,531	0.885	13,320	18,170
6/30/98-99	16,575	21,345	0.879	14,575	18,770
6/30/99-00	27,402	28,402	0.870	23,828	24,698
6/30/00-01	37,700	38,700	0.858	32,339	33,197
6/30/01-02	41,199	42,199	0.845	34,811	35,655
6/30/02-03	52,552	53,552	0.832	43,698	44,530
6/30/03-04	72,401	72,401	0.826	59,770	59,770
6/30/04-05	72,594	94,594	0.802	58,241	75,891
6/30/05-06	89,449	96,449	0.780	69,811	75,274
6/30/06-07	86,054	117,054	0.777	66,825	90,898
6/30/07-08	108,623	118,893	0.763	82,876	90,711
6/30/08-09	120,641	140,611	0.753	90,822	105,856
6/30/09-10	146,938	175,508	0.758	111,420	133,084
6/30/10-11	181,678	215,798	0.763	138,635	164,671
6/30/11-12	212,052	250,522	0.774	164,160	193,941
6/30/12-13	225,087	335,127	0.789	177,686	264,553
6/30/13-14	465,577	499,287	0.824	383,671	411,450
6/30/14-15	940,380	1,099,280	0.881	828,784	968,827
Total	2,968,935	3,495,783		2,445,449	2,877,245
			(7) Total Discount Factor:	0.824	0.823

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	851	5,857
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	284	1,952
(11) Discounted Value at 4%:	803	5,526

NOTES:
(2), (3) From Section 7, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 7, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

Massachusetts Colleges & Universities - Cluster 4
Medical

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	851	5,857		781	5,375
6/30/82-83	265	530	1.000	265	530
6/30/83-84	139	278	1.000	139	278
6/30/84-85	564	1,129	1.000	564	1,129
6/30/85-86	1,922	3,843	1.000	1,922	3,843
6/30/86-87	1,190	2,381	1.000	1,190	2,381
6/30/87-88	1,462	1,462	0.726	1,061	1,061
6/30/88-89	986	986	0.685	675	675
6/30/89-90	1,544	1,544	0.737	1,137	1,137
6/30/90-91	1,528	1,528	0.695	1,062	1,062
6/30/91-92	3,754	3,754	0.780	2,929	2,929
6/30/92-93	2,532	5,063	0.822	2,081	4,162
6/30/93-94	5,976	5,976	0.841	5,028	5,028
6/30/94-95	7,734	7,734	0.843	6,523	6,523
6/30/95-96	2,909	5,818	0.837	2,434	4,868
6/30/96-97	23,629	27,649	0.833	19,688	23,038
6/30/97-98	15,051	20,531	0.839	12,623	17,218
6/30/98-99	16,575	21,345	0.831	13,767	17,729
6/30/99-00	27,402	28,402	0.817	22,388	23,205
6/30/00-01	37,700	38,700	0.801	30,192	30,993
6/30/01-02	41,199	42,199	0.783	32,275	33,059
6/30/02-03	52,552	53,552	0.765	40,224	40,990
6/30/03-04	72,401	72,401	0.758	54,871	54,871
6/30/04-05	72,594	94,594	0.727	52,749	68,735
6/30/05-06	89,449	96,449	0.698	62,422	67,306
6/30/06-07	86,054	117,054	0.694	59,708	81,217
6/30/07-08	108,623	118,893	0.677	73,497	80,446
6/30/08-09	120,641	140,611	0.664	80,132	93,397
6/30/09-10	146,938	175,508	0.673	98,863	118,085
6/30/10-11	181,678	215,798	0.680	123,575	146,783
6/30/11-12	212,052	250,522	0.696	147,515	174,277
6/30/12-13	225,087	335,127	0.716	161,239	240,065
6/30/13-14	465,577	499,287	0.763	355,016	380,721
6/30/14-15	940,380	1,099,280	0.838	788,443	921,670
Total	2,968,935	3,495,783		2,256,979	2,654,786
			(7) Total Discount Factor:	0.760	0.759

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	851	5,857
(9) Projected Number of Years:	3	3
(10) Projected Paid Loss per Year:	284	1,952
(11) Discounted Value at 6%:	781	5,375

NOTES:
(2), (3) From Section 7, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 7, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95

Indemnity

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Pd Loss Including Lump Sum	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		44,332,427			50,188,598	54,601,930	5,856,170	10,269,502		
6/30/82-83		5,610,779	5,816,921		5,671,498	6,107,767	60,719	496,988		
6/30/83-84		8,004,220	8,349,336		8,140,603	8,766,803	136,383	762,583		
6/30/84-85	732,729	16,709,864	17,573,093	17,282,323	17,282,000	17,573,000	572,136	863,136	2.359	2.398
6/30/85-86	787,208	19,799,584	20,970,309	20,609,841	20,610,000	20,970,000	810,416	1,170,416	2.618	2.664
6/30/86-87	902,483	20,434,283	21,809,535	21,437,174	21,437,000	21,810,000	1,002,717	1,375,717	2.375	2.417
6/30/87-88	1,366,586	27,822,601	30,036,586	29,698,761	29,699,000	30,788,000	1,876,399	2,965,399	2.173	2.253
6/30/88-89	1,486,478	25,576,693	27,863,991	27,303,617	27,304,000	28,561,000	1,727,307	2,984,307	1.837	1.921
6/30/89-90	1,494,463	24,141,049	26,648,518	26,333,180	26,333,000	27,315,000	2,191,951	3,173,951	1.762	1.828
6/30/90-91	1,405,560	21,074,655	23,581,490	23,377,706	23,378,000	24,171,000	2,303,345	3,096,345	1.663	1.720
6/30/91-92	1,364,510	12,820,189	14,573,614	14,436,566	14,437,000	15,302,000	1,616,811	2,481,811	1.058	1.121
6/30/92-93	1,347,359	9,655,051	11,995,359	11,123,420	11,123,000	12,595,000	1,467,949	2,939,949	0.826	0.935
6/30/93-94	1,424,410	10,579,125	12,274,021	12,232,233	12,232,000	12,888,000	1,652,875	2,308,875	0.859	0.905
6/30/94-95	1,497,829	9,514,418	11,168,880	11,125,938	11,126,000	11,727,000	1,611,582	2,212,582	0.743	0.783
6/30/95-96	1,582,635	9,830,137	11,811,859	11,750,524	11,751,000	12,402,000	1,920,863	2,571,863	0.742	0.784
6/30/96-97	1,979,748	10,114,020	12,300,103	12,245,929	12,246,000	12,915,000	2,131,980	2,800,980	0.619	0.652
6/30/97-98	1,917,994	8,765,116	10,664,660	10,638,257	10,638,000	11,198,000	1,872,884	2,432,884	0.555	0.584
6/30/98-99	2,081,524	9,023,147	11,226,635	11,196,948	11,197,000	11,788,000	2,173,853	2,764,853	0.538	0.566
6/30/99-00	2,207,243	10,396,879	13,285,407	13,217,529	13,218,000	13,950,000	2,821,121	3,553,121	0.599	0.632
6/30/00-01	2,201,008	9,792,849	12,800,420	12,747,986	12,748,000	13,440,000	2,955,151	3,647,151	0.579	0.611
6/30/01-02	2,292,592	10,310,795	13,662,766	13,621,711	13,622,000	14,346,000	3,311,205	4,035,205	0.594	0.626
6/30/02-03	2,260,534	9,959,991	13,528,132	13,491,436	13,491,000	14,205,000	3,531,009	4,245,009	0.597	0.628
6/30/03-04	2,255,942	8,964,571	12,453,696	12,456,417	12,454,000	13,079,000	3,489,429	4,114,429	0.552	0.580
6/30/04-05	2,309,083	10,449,274	14,728,787	14,505,555	14,506,000	14,729,000	4,056,727	4,279,727	0.628	0.638
6/30/05-06	2,480,693	9,780,241	14,090,205	14,575,381	14,090,000	14,575,000	4,309,759	4,794,759	0.568	0.588
6/30/06-07	2,612,577	8,800,790	13,154,259	14,351,499	13,154,000	14,351,000	4,353,210	5,550,210	0.503	0.549
6/30/07-08	2,783,717	12,396,429	19,165,042	19,125,372	18,169,000	19,165,000	5,772,571	6,768,571	0.653	0.688
6/30/08-09	2,750,907	12,666,911	20,668,102	20,252,916	20,050,470	20,688,668	7,383,559	8,021,757	0.729	0.752
6/30/09-10	2,806,048	12,049,654	20,828,172	20,951,014	19,786,600	20,971,951	7,736,946	8,922,297	0.705	0.747
6/30/10-11	2,942,638	13,184,682	25,051,338	24,267,192	24,024,330	25,076,051	10,839,648	11,891,369	0.816	0.852
6/30/11-12	3,006,849	12,284,488	27,227,761	25,973,300	25,713,270	27,255,228	13,428,782	14,970,740	0.855	0.906
6/30/12-13	3,138,905	8,602,697	23,733,834	24,884,486	22,547,300	24,933,768	13,944,603	16,331,071	0.718	0.794
6/30/13-14	3,311,947	7,327,616	29,633,582	29,151,819	27,694,400	29,693,268	20,366,784	22,365,652	0.836	0.897
6/30/14-15	3,511,622	3,469,231	30,634,758	31,914,178	29,103,250	31,977,828	25,634,019	28,508,597	0.829	0.911
Total	64,243,819	454,244,455	583,311,171	566,280,209	619,165,318	653,916,262	164,920,864	199,671,807		
Tot 6/30/84-15	64,243,819	396,297,028	569,144,914	566,280,209	555,164,620	584,439,762	158,867,592	188,142,734	0.864	0.910

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) Sum of Section 8, Exhibit 1, Page 2, Column 3 and Section 8, Exhibit 1, Page 9, Column 8

(4) From Section 8, Exhibit 1, Page 2, Column 8

(5) From Section 8, Exhibit 1, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Accident Year	Payroll (000's)	Paid Loss Excluding Lump Sum	Paid LDF	Adjstmnt for Extra Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim	Average Age
All Prior Yrs		42,672,213							14	14		82
6/30/82-83		5,567,029	1.027	1.010	5,772,734	44,188	5,816,921		2	1	205,704	76
6/30/83-84		7,520,670	1.035	1.010	7,860,951	488,386	8,349,336		1	1	340,281	68
6/30/84-85	732,729	15,963,360	1.043	1.010	16,819,124	753,969	17,573,093	2.398	3	1	855,764	
6/30/85-86	787,208	18,693,051	1.052	1.010	19,852,710	1,117,599	20,970,309	2.664	3	3	386,553	78
6/30/86-87	902,483	18,914,419	1.061	1.010	20,274,472	1,535,063	21,809,535	2.417	6	6	226,675	73
6/30/87-88	1,366,586	25,751,197	1.074	1.010	27,944,468	2,092,118	30,036,586	2.198	7	8	274,159	69
6/30/88-89	1,486,478	22,650,460	1.089	1.010	24,907,003	2,956,988	27,863,991	1.874	10	9	250,727	73
6/30/89-90	1,494,463	21,425,424	1.105	1.010	23,902,966	2,745,553	26,648,518	1.783	7	7	353,934	66
6/30/90-91	1,405,560	18,577,053	1.122	1.010	21,052,534	2,528,956	23,581,490	1.678	7	6	412,580	75
6/30/91-92	1,364,510	11,478,454	1.140	1.010	13,212,972	1,360,642	14,573,614	1.068	5	5	346,904	68
6/30/92-93	1,347,359	8,427,178	1.159	1.100	10,742,918	1,252,440	11,995,359	0.890	6	4	578,935	66
6/30/93-94	1,424,410	9,272,603	1.179	1.000	10,932,772	1,341,249	12,274,021	0.862	6	7	237,167	68
6/30/94-95	1,497,829	7,982,201	1.202	1.000	9,591,798	1,577,082	11,168,880	0.746	5	6	268,266	71
6/30/95-96	1,582,635	8,584,454	1.225	1.000	10,517,515	1,294,344	11,811,859	0.746	5	4	483,265	69
6/30/96-97	1,979,748	8,205,201	1.256	1.000	10,306,875	1,993,228	12,300,103	0.621	4	4	525,418	60
6/30/97-98	1,917,994	6,362,921	1.281	1.000	8,150,724	2,513,936	10,664,660	0.556	1	1	1,787,803	72
6/30/98-99	2,081,524	6,925,083	1.303	1.000	9,020,949	2,205,686	11,226,635	0.539	4	4	523,966	51
6/30/99-00	2,207,243	8,503,330	1.326	1.000	11,278,421	2,006,986	13,285,407	0.602	5	5	555,018	63
6/30/00-01	2,201,008	8,190,421	1.352	1.000	11,077,486	1,722,934	12,800,420	0.582	8	7	412,438	57
6/30/01-02	2,292,592	8,305,377	1.384	1.000	11,495,476	2,167,291	13,662,766	0.596	7	8	398,762	53
6/30/02-03	2,260,534	8,162,493	1.416	1.000	11,557,348	1,970,783	13,528,132	0.598	5	7	484,979	50
6/30/03-04	2,255,942	7,302,807	1.453	1.000	10,611,340	1,842,355	12,453,696	0.552	5	5	661,707	54
6/30/04-05	2,309,083	8,127,072	1.493	1.000	12,136,539	2,592,248	14,728,787	0.638	5	6	668,244	61
6/30/05-06	2,480,693	7,519,741	1.535	1.000	11,546,173	2,544,032	14,090,205	0.568	7	6	671,072	58
6/30/06-07	2,612,577	6,991,701	1.585	1.000	11,082,852	2,071,407	13,154,259	0.503	12	8	511,394	48
6/30/07-08	2,783,717	9,850,781	1.640	1.000	16,151,510	3,013,533	19,165,042	0.688	23	13	484,671	53
6/30/08-09	2,750,907	10,332,984	1.712	1.000	17,686,179	2,981,923	20,668,102	0.751	34	22	334,236	55
6/30/09-10	2,806,048	9,682,440	1.807	1.000	17,498,161	3,330,011	20,828,172	0.742	42	28	279,133	52
6/30/10-11	2,942,638	10,723,507	1.955	1.000	20,963,346	4,087,992	25,051,338	0.851	65	43	238,136	50
6/30/11-12	3,006,849	10,508,623	2.190	1.000	23,017,034	4,210,727	27,227,761	0.906	111	76	164,584	50
6/30/12-13	3,138,905	8,032,100	2.591	1.000	20,811,192	2,922,641	23,733,834	0.756	235	99	129,082	49
6/30/13-14	3,311,947	7,306,365	3.513	1.000	25,665,878	3,967,704	29,633,582	0.895	500	242	75,866	47
6/30/14-15	3,511,622	3,469,231	7.556	1.000	26,213,215	4,421,543	30,634,758	0.872		562	40,470	44
Total	64,243,819	397,981,943			509,655,636	73,655,535	583,311,171		1,160	1,228		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 8, Exhibit 1, Page 7

(5) Based on information from the MA WCRIB

(6) = (3) x (4) x (5)

(7) From Section 8, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss Excluding Lump Sum	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	732,729	1.863	15,963,360	1.043	16,528,354	753,969	17,282,323	2.359	2.256
6/30/85-86	787,208	2.072	18,693,051	1.052	19,492,242	1,117,599	20,609,841	2.618	2.476
6/30/86-87	902,483	1.895	18,914,419	1.061	19,902,111	1,535,063	21,437,174	2.375	2.205
6/30/87-88	1,366,586	1.960	25,751,197	1.074	27,606,643	2,092,118	29,698,761	2.173	2.020
6/30/88-89	1,486,478	1.400	22,650,460	1.089	24,346,630	2,956,988	27,303,617	1.837	1.638
6/30/89-90	1,494,463	1.528	21,425,424	1.105	23,587,627	2,745,553	26,333,180	1.762	1.578
6/30/90-91	1,405,560	1.486	18,577,053	1.122	20,848,750	2,528,956	23,377,706	1.663	1.483
6/30/91-92	1,364,510	0.955	11,478,454	1.140	13,075,924	1,360,642	14,436,566	1.058	0.958
6/30/92-93	1,347,359	0.782	8,427,178	1.159	9,870,979	1,252,440	11,123,420	0.826	0.733
6/30/93-94	1,424,410	0.748	9,272,603	1.179	10,890,984	1,341,249	12,232,233	0.859	0.765
6/30/94-95	1,497,829	0.623	7,982,201	1.202	9,548,856	1,577,082	11,125,938	0.743	0.638
6/30/95-96	1,582,635	0.643	8,584,454	1.225	10,456,180	1,294,344	11,750,524	0.742	0.661
6/30/96-97	1,979,748	0.507	8,205,201	1.256	10,252,700	1,993,228	12,245,929	0.619	0.518
6/30/97-98	1,917,994	0.419	6,362,921	1.281	8,124,321	2,513,936	10,638,257	0.555	0.424
6/30/98-99	2,081,524	0.427	6,925,083	1.303	8,991,262	2,205,686	11,196,948	0.538	0.432
6/30/99-00	2,207,243	0.498	8,503,330	1.326	11,210,543	2,006,986	13,217,529	0.599	0.508
6/30/00-01	2,201,008	0.494	8,190,421	1.352	11,025,052	1,722,934	12,747,986	0.579	0.501
6/30/01-02	2,292,592	0.495	8,305,377	1.384	11,454,420	2,167,291	13,621,711	0.594	0.500
6/30/02-03	2,260,534	0.506	8,162,493	1.416	11,520,653	1,970,783	13,491,436	0.597	0.510
6/30/03-04	2,255,942	0.471	7,302,807	1.453	10,614,062	1,842,355	12,456,417	0.552	0.470
6/30/04-05	2,309,083	0.496	8,127,072	1.493	11,913,307	2,592,248	14,505,555	0.628	0.516
6/30/05-06	2,480,693	0.522	7,519,741	1.535	12,031,349	2,544,032	14,575,381	0.588	0.485
6/30/06-07	2,612,577	0.548	6,991,701	1.585	12,280,093	2,071,407	14,351,499	0.549	0.470
6/30/07-08	2,783,717	0.577	9,850,781	1.640	16,111,839	3,013,533	19,125,372	0.687	0.579
6/30/08-09	2,750,907	0.607	10,332,984	1.712	17,270,992	2,981,923	20,252,916	0.736	0.628
6/30/09-10	2,806,048	0.633	9,682,440	1.807	17,621,004	3,330,011	20,951,014	0.747	0.628
6/30/10-11	2,942,638	0.658	10,723,507	1.955	20,179,200	4,087,992	24,267,192	0.825	0.686
6/30/11-12	3,006,849	0.689	10,508,623	2.190	21,762,573	4,210,727	25,973,300	0.864	0.724
6/30/12-13	3,138,905	0.723	8,032,100	2.591	21,961,844	2,922,641	24,884,486	0.793	0.700
6/30/13-14	3,311,947	0.755	7,306,365	3.513	25,184,115	3,967,704	29,151,819	0.880	0.760
6/30/14-15	3,511,622	0.788	3,469,231	7.556	27,492,636	4,421,543	31,914,178	0.909	0.783
Total	64,243,819		342,222,030		493,157,247	73,122,962	566,280,209		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 8, Exhibit 1, Page 4, Column 11

(4) From Section 8, Exhibit 1, Page 2, Column 3

(5) From Section 8, Exhibit 1, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) From Section 8, Exhibit 1, Page 9, Column 13

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Exp Ult Loss Excluding Lump Sum	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									1.863	1.863
6/30/85-86									2.072	2.072
6/30/86-87									1.895	1.895
6/30/87-88									1.960	1.960
6/30/88-89									1.400	1.400
6/30/89-90									1.528	1.528
6/30/90-91	1,405,560	21,052,534	1.498	0.963	1.442	2.666	3.845	0.319	1.465	1.486
6/30/91-92	1,364,510	13,212,972	0.968	1.056	1.023	2.563	2.622	0.303	0.939	0.955
6/30/92-93	1,347,359	10,742,918	0.797	1.232	0.982	2.465	2.421	0.270	0.777	0.782
6/30/93-94	1,424,410	10,932,772	0.768	1.216	0.933	2.370	2.212	0.285	0.742	0.748
6/30/94-95	1,497,829	9,591,798	0.640	1.205	0.771	2.279	1.758	0.299	0.621	0.623
6/30/95-96	1,582,635	10,517,515	0.665	1.195	0.794	2.191	1.740	0.313	0.634	0.643
6/30/96-97	1,979,748	10,306,875	0.521	1.183	0.616	2.107	1.298	0.329	0.508	0.507
6/30/97-98	1,917,994	8,150,724	0.425	1.168	0.496	2.026	1.006	0.347	0.421	0.419
6/30/98-99	2,081,524	9,020,949	0.433	1.153	0.500	1.948	0.973	0.365	0.425	0.427
6/30/99-00	2,207,243	11,278,421	0.511	1.134	0.580	1.873	1.086	0.386	0.498	0.498
6/30/00-01	2,201,008	11,077,486	0.503	1.105	0.556	1.801	1.002	0.412	0.495	0.494
6/30/01-02	2,292,592	11,495,476	0.501	1.084	0.543	1.732	0.941	0.437	0.502	0.495
6/30/02-03	2,260,534	11,557,348	0.511	1.080	0.552	1.665	0.919	0.456	0.512	0.506
6/30/03-04	2,255,942	10,611,340	0.470	1.080	0.508	1.601	0.813	0.474	0.476	0.471
6/30/04-05	2,309,083	12,136,539	0.526	1.073	0.564	1.539	0.868	0.496	0.506	0.496
6/30/05-06	2,480,693	11,546,173	0.465	1.062	0.494	1.480	0.732	0.522	0.532	0.522
6/30/06-07	2,612,577	11,082,852	0.424	1.051	0.446	1.423	0.634	0.548	0.560	0.548
6/30/07-08	2,783,717	16,151,510	0.580	1.039	0.603	1.369	0.825	0.577	0.588	0.577
6/30/08-09	2,750,907	17,686,179	0.643	1.027	0.660	1.316	0.869	0.607	0.619	0.607
6/30/09-10	2,806,048	17,498,161	0.624	1.023	0.638	1.265	0.807	0.633	0.646	0.633
6/30/10-11	2,942,638	20,963,346	0.712	1.025	0.730	1.217	0.888	0.658	0.671	0.658
6/30/11-12	3,006,849	23,017,034	0.765	1.018	0.779	1.170	0.911	0.689	0.703	0.689
6/30/12-13	3,138,905	20,811,192	0.663	1.009	0.669	1.125	0.752	0.723	0.736	0.723
6/30/13-14	3,311,947	25,665,878	0.775	1.005	0.779	1.082	0.842	0.755	0.769	0.755
6/30/14-15	3,511,622	26,213,215	0.746	1.000	0.746	1.040	0.776	0.788		0.788
Total	57,473,873	362,321,210								

Trend Last 4 (ex 14-15):	0.4%	Avg 3 (ex 14-15):	0.835
Trend Last 8 (ex 14-15):	6.2%	Avg 5 (ex 14-15):	0.840
Trend Last 12 (ex 14-15):	4.2%	Avg 10 (ex 14-15):	0.813
Prior Selected Trend:	4.0%	Prior Sel Avg:	0.800
Selected Trend:	4.0%	Sel. Loss Cost:	0.820

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 8, Exhibit 1, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCRIB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend	0.950	
(2)	Credibility	60%	
(3)	Average Pmt Trend Statewide	0.960	
(4)	Credibility Weighted Trend	0.954	
		(Low)	(High)
(5)	Selected Range	0.949	0.973
(6)	Incremental Paid for 2015	586,996	586,996
(7)	Estimated Reserve	10,967,498	21,153,592
(8)	Paid to Date (82 & Prior)	42,672,213	42,672,213
(9)	Est Ult Paid for 1982 & Prior	53,639,711	63,825,805

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	590,037	614,212
(11)	Projected Number of Years	7	7
(12)	Estimated Reserve	4,130,258	4,299,481
(13)	Paid to Date (82 & Prior)	42,672,213	42,085,218
(14)	Est Ult Paid for 1982 & Prior	46,802,472	46,384,699
(14a)	Paid Counts During Fiscal Year	14	14
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	48,511,781	52,925,114
(16)	Lump Sum Ultimates	1,676,816	1,676,816
(17)	Ult Loss Including Lump Sums	**50,188,598**	**54,601,930**
(18)	Implied Tail	1.137	1.240
(19)	Ult Loss Inc Lump Sums @ 6/14	49,660,072	53,989,457

NOTES:

(1) From Section 8, Exhibit 1, Page 6
(2) = (Average of Section 8, Exhibit 1, Page 6, Column 3 / 3,000,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 8, Exhibit 1, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 8, Exhibit 1, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) From Section 8, Exhibit 1, Page 9, Column 13
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	1,836,769	14.424			
1993	2	1,798,132	14.402	0.979		
1994	3	1,805,622	14.406	1.004		
1995	4	1,547,567	14.252	0.857		
1996	5	1,421,249	14.167	0.918		
1997	6	1,347,840	14.114	0.948		
1998	7	1,296,821	14.075	0.962		
1999	8	1,188,256	13.988	0.916		
2000	9	1,366,125	14.127	1.150	n =	24
2001	10	1,385,608	14.142	1.014	S(x) =	48,084
2002	11	1,127,515	13.936	0.814	S(x-sq) =	96,337,444
2003	12	1,046,115	13.861	0.928	S(xy) =	665,278
2004	13	1,007,259	13.823	0.963	S(y) =	332
2005	14	889,985	13.699	0.884	D =	27,600
2006	15	854,725	13.659	0.960	slope =	-0.052
2007	16	901,012	13.711	1.054	Avg Trend =	0.948
2008	17	757,677	13.538	0.841		
2009	18	716,898	13.483	0.946		
2010	19	794,268	13.585	1.108		
2011	20	682,924	13.434	0.860		
2012	21	659,520	13.399	0.966		
2013	22	610,950	13.323	0.926		
2014	23	572,165	13.257	0.937		
2015	24	586,996	13.283	1.026		
					Selected Trend:	**0.950**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 1.026 = 586996 / 572165

Commonwealth of Massachusetts Workers Compensation
All Other - Clusters 5-17 & 95
INDEMNITY
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	231,024	575,253	850,794	1,079,038	1,313,630	1,547,045	1,752,282	2,008,011	2,253,139	2,495,680	2,697,289	2,900,500	3,128,719	3,307,827	3,431,589	3,539,243	3,710,205	3,863,378	3,993,953	4,130,963	4,277,923	4,408,084	4,548,681	4,684,745	4,831,991	4,987,790	5,125,598	5,253,262	5,365,011	5,438,336	5,513,211	5,568,431	5,567,029
June-84	474,232	1,177,837	1,738,838	2,206,285	2,688,699	3,194,391	3,593,923	3,979,171	4,253,324	4,483,497	4,692,563	4,887,962	5,105,946	5,268,212	5,510,171	5,713,715	5,953,029	6,114,581	6,330,589	6,551,091	6,749,135	6,911,821	7,056,179	7,158,846	7,234,716	7,305,169	7,339,786	7,374,258	7,408,772	7,445,202	7,482,504	7,520,670	
June-85	977,090	2,372,578	3,464,586	4,349,747	5,275,439	6,134,761	6,920,369	7,655,499	8,408,427	8,983,219	9,607,477	10,145,930	10,640,204	11,178,862	11,641,664	12,100,236	12,599,733	13,016,766	13,426,358	13,778,892	14,131,892	14,427,029	14,710,082	14,949,032	15,141,235	15,309,397	15,476,853	15,650,018	15,828,834	15,902,384	15,963,360		
June-86	1,346,949	3,307,907	4,829,702	6,090,487	7,340,375	8,352,083	9,113,471	9,830,455	10,384,747	11,054,823	11,652,485	12,298,057	12,995,823	13,464,328	13,904,681	14,437,279	14,899,857	15,315,399	15,687,156	16,043,093	16,396,498	16,749,018	17,081,069	17,430,688	17,722,515	17,979,439	18,192,658	18,367,288	18,528,274	18,693,051			
June-87	1,601,233	3,880,011	5,503,885	7,082,566	8,405,662	9,270,533	9,956,299	10,556,456	11,085,673	11,623,420	12,106,294	12,632,595	13,327,657	13,820,597	14,335,672	14,795,690	15,267,959	15,661,703	15,953,801	16,321,920	16,607,046	16,861,857	17,127,747	17,450,228	17,735,296	18,028,041	18,331,993	18,621,372	18,914,419				
June-88	2,137,513	5,007,777	7,745,041	10,041,912	12,075,717	13,478,064	14,314,633	15,200,521	15,990,897	16,687,795	17,326,343	17,991,163	18,710,472	19,340,236	19,962,128	20,594,429	21,200,720	21,738,131	22,267,656	22,756,365	23,248,699	23,645,371	23,973,193	24,351,090	24,721,300	25,061,227	25,402,296	25,751,197					
June-89	1,712,857	5,080,303	7,663,780	9,679,037	11,203,387	12,173,513	13,105,806	13,862,567	14,433,962	15,035,025	15,605,979	16,156,892	16,752,699	17,314,807	17,864,824	18,333,675	18,761,144	19,180,530	19,588,446	20,011,654	20,402,670	20,798,618	21,197,603	21,577,022	21,928,411	22,287,434	22,650,460						
June-90	2,296,897	5,721,042	8,298,538	10,219,139	11,305,744	12,281,818	13,134,163	13,878,235	14,556,408	15,345,419	15,898,180	16,435,568	16,919,598	17,383,167	17,777,202	18,153,288	18,514,019	18,829,999	19,129,560	19,445,117	19,770,540	20,083,209	20,405,842	20,740,230	21,078,475	21,425,424							
June-91	1,963,238	4,739,981	6,742,583	8,047,589	9,308,882	10,318,373	10,933,284	11,411,152	12,022,048	12,546,665	13,141,453	13,738,283	14,329,913	14,888,135	15,354,127	15,837,750	16,311,134	16,689,475	17,129,945	17,375,269	17,615,173	17,862,598	18,129,844	18,364,459	18,577,053								
June-92	1,567,027	3,199,073	4,248,177	5,126,895	5,548,304	5,823,625	6,278,092	6,617,495	6,955,659	7,247,236	7,617,889	7,987,140	8,298,781	8,572,496	8,940,354	9,365,337	9,715,209	10,024,920	10,338,595	10,607,880	10,865,629	11,121,672	11,298,499	11,478,454									
June-93	1,093,248	2,645,187	3,492,766	4,149,352	4,610,531	4,966,351	5,148,147	5,423,620	5,783,566	6,064,338	6,275,882	6,484,665	6,664,357	6,833,263	7,010,090	7,177,333	7,331,914	7,520,747	7,748,152	7,957,233	8,148,509	8,300,461	8,427,178										
June-94	1,108,341	2,442,329	3,499,107	4,117,213	4,786,813	5,345,023	5,784,388	6,350,297	6,596,878	6,855,808	7,108,040	7,401,172	7,629,538	7,841,336	8,036,532	8,208,058	8,388,758	8,566,268	8,735,517	8,920,103	9,094,927	9,272,603											
June-95	1,320,706	2,682,119	3,617,627	4,377,145	4,799,858	5,146,590	5,470,951	5,690,639	5,928,230	6,125,266	6,322,277	6,510,106	6,695,050	6,862,701	7,023,885	7,185,394	7,342,550	7,524,723	7,689,350	7,855,113	7,982,201												
June-96	1,108,821	2,267,039	3,245,140	3,817,977	4,427,598	4,928,644	5,324,160	5,709,230	6,066,925	6,359,154	6,633,555	6,919,769	7,184,823	7,415,770	7,649,372	7,874,542	8,065,046	8,199,310	8,329,411	8,584,454													
June-97	1,085,126	2,350,834	3,458,998	4,440,774	5,289,243	5,991,102	6,443,225	6,730,818	6,877,491	7,036,406	7,147,793	7,354,650	7,473,882	7,593,508	7,713,847	7,874,055	7,998,711	8,115,077	8,205,201														
June-98	760,353	2,208,225	3,319,672	3,933,784	4,535,498	4,913,580	5,187,189	5,377,292	5,538,593	5,683,480	5,803,895	5,909,062	5,992,596	6,108,804	6,223,326	6,269,462	6,315,915	6,362,921															
June-99	1,160,394	2,519,810	3,441,432	4,263,196	4,763,871	5,080,496	5,423,838	5,694,351	5,858,039	6,093,043	6,235,873	6,377,337	6,494,424	6,587,838	6,682,288	6,778,115	6,925,083																
June-00	1,478,087	3,369,760	4,601,283	5,433,894	6,170,827	6,679,071	7,051,320	7,313,676	7,476,289	7,629,742	7,749,526	7,893,815	8,042,197	8,192,773	8,347,186	8,503,330																	
June-01	1,609,875	3,605,278	4,700,879	5,525,999	6,126,399	6,527,511	6,768,096	7,002,422	7,073,145	7,226,294	7,426,582	7,654,033	7,849,861	8,020,910	8,190,421																		
June-02	1,821,131	4,134,238	5,441,659	6,321,376	6,748,539	7,056,349	7,305,019	7,488,627	7,707,068	7,893,060	8,009,207	8,123,218	8,235,728	8,305,377																			
June-03	2,185,619	4,646,586	6,055,662	6,651,765	7,013,996	7,231,292	7,459,850	7,624,463	7,742,363	7,842,222	7,917,384	8,045,457	8,162,493																				
June-04	1,753,076	3,756,461	4,930,176	5,714,500	6,081,077	6,318,306	6,512,915	6,733,332	6,893,294	7,027,971	7,170,376	7,302,807																					
June-05	1,819,778	3,933,297	5,289,170	6,002,168	6,318,763	6,666,265	7,108,767	7,449,646	7,676,782	7,893,608	8,127,072																						
June-06	1,788,326	3,829,026	4,910,437	5,443,647	5,995,523	6,675,753	7,041,075	7,199,757	7,277,714	7,519,741																							
June-07	1,734,963	3,632,388	4,091,097	4,999,633	5,805,615	6,236,124	6,546,082	6,722,055	6,991,701																								
June-08	2,020,827	4,505,431	6,126,330	7,479,871	8,430,592	9,094,716	9,567,218	9,850,781																									
June-09	1,952,179	4,646,609	6,562,837	7,998,181	8,997,984	9,939,858	10,332,984																										
June-10	2,633,117	5,635,921	7,589,725	8,649,349	9,377,427	9,682,440																											
June-11	3,051,305	6,236,233	8,335,371	9,693,865	10,723,507																												
June-12	3,091,255	6,520,051	8,927,094	10,508,623																													
June-13	3,164,952	6,219,894	8,032,100																														
June-14	3,352,283	7,306,365																															
June-15	3,469,231																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	
June-83	2.490	1.479	1.268	1.217	1.178	1.133	1.146	1.122	1.108	1.081	1.075	1.079	1.057	1.037	1.031	1.048	1.041	1.034	1.034	1.036	1.030	1.032	1.030	1.031	1.032	1.028	1.025	1.021	1.014	1.014	1.010	1.000	
June-84	2.484	1.476	1.269	1.219	1.188	1.125	1.107	1.069	1.054	1.047	1.042	1.045	1.032	1.046	1.037	1.042	1.027	1.035	1.035	1.030	1.024	1.021	1.015	1.011	1.010	1.005	1.005	1.005	1.005	1.005	1.005		
June-85	2.428	1.460	1.255	1.213	1.163	1.128	1.106	1.098	1.068	1.069	1.056	1.049	1.051	1.041	1.039	1.041	1.033	1.031	1.026	1.026	1.021	1.020	1.016	1.013	1.011	1.011	1.011	1.011	1.005	1.004			
June-86	2.456	1.460	1.261	1.205	1.138	1.091	1.079	1.056	1.065	1.054	1.055	1.057	1.036	1.033	1.038	1.032	1.028	1.024	1.023	1.022	1.021	1.020	1.020	1.017	1.014	1.012	1.010	1.009	1.009				
June-87	2.423	1.419	1.287	1.187	1.103	1.074	1.060	1.050	1.049	1.042	1.043	1.055	1.037	1.037	1.032	1.032	1.026	1.019	1.023	1.017	1.015	1.016	1.019	1.016	1.017	1.017	1.016	1.016					
June-88	2.343	1.547	1.297	1.203	1.116	1.062	1.062	1.052	1.044	1.038	1.038	1.040	1.034	1.032	1.032	1.029	1.025	1.024	1.022	1.022	1.017	1.014	1.016	1.015	1.014	1.014	1.014						
June-89	2.966	1.509	1.263	1.157	1.087	1.077	1.058	1.041	1.042	1.038	1.035	1.037	1.034	1.032	1.026	1.023	1.022	1.021	1.022	1.020	1.019	1.019	1.018	1.016	1.016	1.016							
June-90	2.491	1.451	1.231	1.106	1.086	1.069	1.057	1.049	1.054	1.036	1.034	1.029	1.027	1.023	1.021	1.020	1.017	1.016	1.016	1.017	1.016	1.016	1.016	1.016	1.016								
June-91	2.414	1.422	1.194	1.157	1.108	1.060	1.044	1.054	1.044	1.047	1.045	1.043	1.039	1.031	1.031	1.030	1.023	1.026	1.014	1.014	1.014	1.015	1.013	1.012									
June-92	2.041	1.328	1.207	1.082	1.050	1.078	1.054	1.051	1.042	1.051	1.048	1.039	1.033	1.043	1.048	1.037	1.032	1.031	1.026	1.024	1.024	1.016	1.016										
June-93	2.420	1.320	1.188	1.111	1.077	1.037	1.054	1.066	1.049	1.035	1.033	1.028	1.025	1.026	1.024	1.022	1.026	1.030	1.027	1.024	1.019	1.015											
June-94	2.204	1.433	1.177	1.163	1.117	1.082	1.098	1.039	1.039	1.037	1.041	1.031	1.028	1.025	1.021	1.022	1.021	1.020	1.021	1.020	1.020												
June-95	2.031	1.349	1.210	1.097	1.072	1.063	1.040	1.042	1.033	1.032	1.030	1.028	1.025	1.023	1.023	1.022	1.025	1.022	1.022	1.016													
June-96	2.045	1.431	1.177	1.160	1.113	1.080	1.072	1.063	1.048	1.043	1.043	1.038	1.032	1.032	1.029	1.024	1.017	1.016	1.031														
June-97	2.166	1.471	1.284	1.191	1.133	1.075	1.045	1.022	1.023	1.016	1.029	1.016	1.016	1.016	1.021	1.016	1.015	1.011															
June-98	2.904	1.503	1.185	1.153	1.083	1.056	1.037	1.030	1.026	1.021	1.018	1.014	1.019	1.019	1.007	1.007	1.007																
June-99	2.172	1.366	1.239	1.117	1.066	1.068	1.050	1.029	1.040	1.023	1.023	1.018	1.014	1.014	1.014	1.022																	
June-00	2.280	1.365	1.181	1.136	1.082	1.056	1.037	1.022	1.021	1.016	1.019	1.019	1.019	1.013	1.019																		
June-01	2.239	1.304	1.176	1.109	1.065	1.037	1.035	1.010	1.022	1.028	1.031	1.026	1.022	1.021																			
June-02	2.270	1.316	1.162	1.068	1.046	1.035	1.025	1.029	1.024	1.015	1.014	1.014	1.008																				
June-03	2.126	1.303	1.098	1.054	1.031	1.032	1.022	1.015	1.013	1.010	1.016	1.015																					
June-04	2.143	1.312	1.159	1.064	1.039	1.031	1.034	1.024	1.020	1.020	1.018																						
June-05	2.161	1.345	1.135	1.053	1.055	1.066	1.048	1.030	1.028	1.030																							
June-06	2.141	1.282	1.109	1.101	1.113	1.055	1.023	1.011	1.033																								
June-07	2.094	1.126	1.222	1.161	1.072	1.051	1.027	1.040																									
June-08	2.229	1.360	1.221	1.127	1.079	1.052	1.030																										
June-09	2.380	1.412	1.219	1.125	1.105	1.040																											
June-10	2.140	1.347	1.140	1.084	1.033																												
June-11	2.044	1.337	1.163	1.106																													
June-12	2.109	1.369	1.177																														
June-13	1.965	1.291																															
June-14	2.180																																

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.281	1.384	1.205	1.135	1.093	1.067	1.056	1.045	1.041	1.036	1.036	1.034	1.029	1.029	1.028	1.028	1.024	1.024	1.024	1.022	1.020	1.018	1.018	1.016	1.016	1.015	1.013	1.012	1.008	1.008	1.008		
Latest 5	2.088	1.351	1.184	1.121	1.080	1.053	1.032	1.024	1.024	1.020	1.020	1.018	1.017	1.018	1.018	1.018	1.017	1.020	1.025	1.020	1.018	1.016	1.016	1.015	1.016	1.014	1.011	1.012					
Latest 3	2.085	1.332	1.160	1.105	1.072	1.048	1.026	1.027	1.027	1.020	1.016	1.018	1.016	1.018	1.013	1.015	1.013	1.016	1.024	1.020	1.021	1.015	1.015	1.015	1.016	1.016	1.013	1.012	1.006	1.008			
Volume Wtd																																	
All Yrs	2.241	1.376	1.201	1.130	1.088	1.064	1.052	1.043	1.041	1.036	1.036	1.035	1.030	1.029	1.028	1.027	1.024	1.023	1.023	1.021	1.019	1.017	1.017	1.015	1.015	1.014	1.013	1.012	1.007	1.006	1.007	1.000	
Latest 5	2.087	1.348	1.181	1.116	1.078	1.052	1.032	1.024	1.024	1.020	1.019	1.018	1.016	1.018	1.019	1.019	1.017	1.020	1.025	1.019	1.017	1.017	1.016	1.015	1.015	1.014	1.012	1.012					
Latest 3	2.086	1.333	1.161	1.105	1.071	1.047	1.027	1.027	1.027	1.020	1.016	1.018	1.016	1.018	1.014	1.015	1.013	1.016	1.024	1.020	1.021	1.015	1.015	1.015	1.015	1.015	1.013	1.012	1.007	1.006			

Dev Factor Selection

Industry 1	2.911	1.551	1.228	1.109	1.049	1.025	1.019																										
Industry 2		1.813	1.291	1.118	1.066	1.025	1.021	1.011	1.007	1.003	1.008	1.005	1.005	1.003	1.003	1.004	1.006	1.002	1.004	1.004													
Prior	2.128	1.368	1.191	1.123	1.088	1.057	1.044	1.033	1.031	1.027	1.029	1.027	1.024	1.025	1.020	1.018	1.021	1.024	1.022	1.020	1.019	1.017	1.017	1.017	1.015	1.014	1.013	1.012	1.009	1.008	1.008	1.027	
Selected	2.151	1.356	1.183	1.120	1.082	1.056	1.044	1.034	1.032	1.028	1.028	1.026	1.023	1.023	1.020	1.018	1.017	1.020	1.025	1.020	1.019	1.017	1.017	1.016	1.016	1.015	1.013	1.012	1.009	1.008	1.008	1.008	1.027
FacToUlt	7.556	3.513	2.591	2.190	1.955	1.807	1.712	1.640	1.585	1.535	1.493	1.453	1.416	1.384	1.352	1.326	1.303	1.281	1.256	1.225	1.202	1.179	1.159	1.140	1.122	1.105	1.089	1.074	1.061	1.052	1.043	1.035	1.027
Percent of Ult	13.2%	28.5%	38.6%	45.7%	51.2%	55.3%	58.4%	61.0%	63.1%	65.1%	67.0%	68.8%	70.6%	72.2%	73.9%	75.4%	76.8%	78.1%	79.6%	81.6%	83.2%	84.8%	86.3%	87.7%	89.1%	90.5%	91.8%	93.1%	94.2%	95.1%	95.9%	96.6%	97.4%

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	49,660,072	53,989,457	50,188,598	54,601,930	528,525	1.1%	612,473	1.1%
6/30/82-83	5,896,427	6,349,998	5,671,498	6,107,767	(224,928)	-3.8%	(242,231)	-3.8%
6/30/83-84	8,405,485	9,052,060	8,140,603	8,766,803	(264,882)	-3.2%	(285,258)	-3.2%
6/30/84-85	17,224,000	18,176,000	17,282,000	17,573,000	58,000	0.3%	(603,000)	-3.3%
6/30/85-86	20,469,000	21,215,000	20,610,000	20,970,000	141,000	0.7%	(245,000)	-1.2%
6/30/86-87	21,205,000	21,967,000	21,437,000	21,810,000	232,000	1.1%	(157,000)	-0.7%
6/30/87-88	29,466,000	30,250,000	29,699,000	30,788,000	233,000	0.8%	538,000	1.8%
6/30/88-89	27,052,000	28,046,000	27,304,000	28,561,000	252,000	0.9%	515,000	1.8%
6/30/89-90	26,126,000	26,840,000	26,333,000	27,315,000	207,000	0.8%	475,000	1.8%
6/30/90-91	23,271,000	23,872,000	23,378,000	24,171,000	107,000	0.5%	299,000	1.3%
6/30/91-92	14,336,000	15,077,000	14,437,000	15,302,000	101,000	0.7%	225,000	1.5%
6/30/92-93	11,067,000	12,524,000	11,123,000	12,595,000	56,000	0.5%	71,000	0.6%
6/30/93-94	12,148,000	12,801,000	12,232,000	12,888,000	84,000	0.7%	87,000	0.7%
6/30/94-95	11,092,000	11,693,000	11,126,000	11,727,000	34,000	0.3%	34,000	0.3%
6/30/95-96	11,596,000	12,241,000	11,751,000	12,402,000	155,000	1.3%	161,000	1.3%
6/30/96-97	12,273,000	12,944,000	12,246,000	12,915,000	(27,000)	-0.2%	(29,000)	-0.2%
6/30/97-98	10,696,000	11,258,000	10,638,000	11,198,000	(58,000)	-0.5%	(60,000)	-0.5%
6/30/98-99	11,146,000	11,730,000	11,197,000	11,788,000	51,000	0.5%	58,000	0.5%
6/30/99-00	13,219,000	13,950,000	13,218,000	13,950,000	(1,000)	0.0%	0	0.0%
6/30/00-01	12,778,000	13,470,000	12,748,000	13,440,000	(30,000)	-0.2%	(30,000)	-0.2%
6/30/01-02	13,805,000	14,539,000	13,622,000	14,346,000	(183,000)	-1.3%	(193,000)	-1.3%
6/30/02-03	13,660,000	14,382,000	13,491,000	14,205,000	(169,000)	-1.2%	(177,000)	-1.2%
6/30/03-04	12,638,000	13,277,000	12,454,000	13,079,000	(184,000)	-1.5%	(198,000)	-1.5%
6/30/04-05	14,652,000	14,799,000	14,506,000	14,729,000	(146,000)	-1.0%	(70,000)	-0.5%
6/30/05-06	14,159,000	14,778,000	14,090,000	14,575,000	(69,000)	-0.5%	(203,000)	-1.4%
6/30/06-07	13,167,000	14,575,000	13,154,000	14,351,000	(13,000)	-0.1%	(224,000)	-1.5%
6/30/07-08	18,593,000	19,590,000	18,169,000	19,165,000	(424,000)	-2.3%	(425,000)	-2.2%
6/30/08-09	20,532,600	21,169,148	20,050,470	20,688,668	(482,130)	-2.3%	(480,480)	-2.3%
6/30/09-10	20,648,250	21,896,875	19,786,600	20,971,951	(861,650)	-4.2%	(924,924)	-4.2%
6/30/10-11	24,056,010	25,214,189	24,024,330	25,076,051	(31,680)	-0.1%	(138,138)	-0.5%
6/30/11-12	25,030,170	26,745,719	25,713,270	27,255,228	683,100	2.7%	509,509	1.9%
6/30/12-13	24,161,350	26,032,962	22,547,300	24,933,768	(1,614,050)	-6.7%	(1,099,194)	-4.2%
6/30/13-14	27,574,700	29,210,304	27,694,400	29,693,268	119,700	0.4%	482,964	1.7%
6/30/14-15								
Total	591,803,063	623,654,712	590,062,068	621,938,434	(1,740,995)	-0.3%	(1,716,278)	-0.3%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 8, Exhibit 1, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Calculation of Ultimate Lump Sum Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Accident Year	Paid Loss Excluding Lump Sum	Implied Cumulative LDF	Ult Loss Excluding Lump Sum	Selected Incr Lump Sum % Outstdg	Cumulative Lump Sum % Outstdg	Total Lump Sum Outstdg	Paid Lump Sum to Date	Est Ult Lump Sum - Incr Method	Ultimate Lump Sum Percentage	Lump Sum LDF	Est Ult Lump Sum - Paid Method	Selected Est Ultimate Lump Sums	Prior Est Ultimate Lump Sums
All Prior Yrs	42,672,213	1.189	50,718,448	0.0%	0.0%	0	1,660,214	1,660,214	3.3%	1.020	1,693,418	1,676,816	1,680,967
6/30/82-83	5,567,029	1.037	5,772,734	0.0%	0.0%	0	43,750	43,750	0.8%	1.020	44,625	44,188	44,297
6/30/83-84	7,520,670	1.045	7,860,951	0.0%	0.0%	0	483,550	483,550	6.2%	1.020	493,221	488,386	489,594
6/30/84-85	15,963,360	1.054	16,819,124	0.0%	0.0%	0	746,504	746,504	4.4%	1.020	761,434	753,969	755,835
6/30/85-86	18,693,051	1.062	19,852,710	0.0%	0.0%	0	1,106,534	1,106,534	5.6%	1.020	1,128,664	1,117,599	1,120,365
6/30/86-87	18,914,419	1.072	20,274,472	0.0%	0.0%	0	1,519,864	1,519,864	7.5%	1.020	1,550,261	1,535,063	1,538,862
6/30/87-88	25,751,197	1.085	27,944,468	0.0%	0.0%	0	2,071,404	2,071,404	7.4%	1.020	2,112,832	2,092,118	2,098,358
6/30/88-89	22,650,460	1.100	24,907,003	0.0%	0.0%	0	2,926,233	2,926,233	11.7%	1.021	2,987,742	2,956,988	2,965,812
6/30/89-90	21,425,424	1.116	23,902,966	0.0%	0.0%	0	2,715,625	2,715,625	11.4%	1.022	2,775,480	2,745,553	2,756,539
6/30/90-91	18,577,053	1.133	21,052,534	0.0%	0.0%	0	2,497,602	2,497,602	11.9%	1.025	2,560,310	2,528,956	2,539,090
6/30/91-92	11,478,454	1.151	13,212,972	0.0%	0.0%	0	1,341,736	1,341,736	10.2%	1.028	1,379,549	1,360,642	1,372,596
6/30/92-93	8,427,178	1.275	10,742,918	0.1%	0.1%	10,743	1,227,873	1,238,616	11.5%	1.031	1,266,265	1,252,440	1,250,251
6/30/93-94	9,272,603	1.179	10,932,772	0.1%	0.2%	21,866	1,306,522	1,328,388	12.2%	1.036	1,354,110	1,341,249	1,351,717
6/30/94-95	7,982,201	1.202	9,591,798	0.1%	0.3%	25,982	1,532,217	1,558,199	16.2%	1.042	1,595,966	1,577,082	1,589,715
6/30/95-96	8,584,454	1.225	10,517,515	0.1%	0.4%	39,007	1,245,683	1,284,690	12.2%	1.047	1,303,998	1,294,344	1,312,701
6/30/96-97	8,205,201	1.256	10,306,875	0.1%	0.5%	49,488	1,908,819	1,958,307	19.0%	1.063	2,028,150	1,993,228	2,008,618
6/30/97-98	6,362,921	1.281	8,150,724	0.1%	0.6%	47,286	2,402,195	2,449,481	30.1%	1.073	2,578,391	2,513,936	2,525,675
6/30/98-99	6,925,083	1.303	9,020,949	0.1%	0.7%	61,355	2,098,064	2,159,419	23.9%	1.073	2,251,952	2,205,686	2,214,706
6/30/99-00	8,503,330	1.326	11,278,421	0.1%	0.8%	87,988	1,893,548	1,981,536	17.6%	1.073	2,032,436	2,006,986	2,029,880
6/30/00-01	8,190,421	1.352	11,077,486	0.2%	1.0%	108,575	1,602,428	1,711,003	15.4%	1.083	1,734,865	1,722,934	1,746,379
6/30/01-02	8,305,377	1.384	11,495,476	0.2%	1.2%	135,663	2,005,418	2,141,081	18.6%	1.094	2,193,501	2,167,291	2,191,641
6/30/02-03	8,162,493	1.416	11,557,348	0.2%	1.4%	158,015	1,797,499	1,955,514	16.9%	1.105	1,986,053	1,970,783	2,007,095
6/30/03-04	7,302,807	1.453	10,611,340	0.2%	1.6%	165,193	1,661,764	1,826,957	17.2%	1.118	1,857,754	1,842,355	1,921,833
6/30/04-05	8,127,072	1.493	12,136,539	0.2%	1.8%	213,210	2,322,201	2,535,411	20.9%	1.141	2,649,084	2,592,248	2,683,988
6/30/05-06	7,519,741	1.535	11,546,173	0.1%	1.9%	219,151	2,260,500	2,479,651	21.5%	1.154	2,608,414	2,544,032	2,639,021
6/30/06-07	6,991,701	1.585	11,082,852	0.1%	2.0%	221,148	1,809,089	2,030,237	18.3%	1.168	2,112,576	2,071,407	2,172,129
6/30/07-08	9,850,781	1.640	16,151,510	0.5%	2.5%	396,501	2,545,648	2,942,149	18.2%	1.212	3,084,916	3,013,533	3,239,010
6/30/08-09	10,332,984	1.712	17,686,179	1.1%	3.6%	633,544	2,333,927	2,967,471	16.8%	1.284	2,996,376	2,981,923	3,206,760
6/30/09-10	9,682,440	1.807	17,498,161	1.3%	4.9%	854,069	2,367,214	3,221,283	18.4%	1.453	3,438,739	3,330,011	3,453,181
6/30/10-11	10,723,507	1.955	20,963,346	1.9%	6.8%	1,420,842	2,461,175	3,882,016	18.5%	1.745	4,293,967	4,087,992	3,807,570
6/30/11-12	10,508,623	2.190	23,017,034	3.1%	9.8%	2,264,443	1,775,865	4,040,308	17.6%	2.467	4,381,146	4,210,727	3,269,725
6/30/12-13	8,032,100	2.591	20,811,192	3.2%	13.0%	2,715,034	570,596	3,285,630	15.8%	4.486	2,559,652	2,922,641	3,091,294
6/30/13-14	7,306,365	3.513	25,665,878	2.3%	15.4%	3,946,453	21,251	3,967,704	15.5%	12.362	262,703	3,967,704	3,530,865
6/30/14-15	3,469,231	7.556	26,213,215	1.5%	16.9%	4,421,543	0	4,421,543	16.9%	54.257	0	4,421,543	
Total	397,981,943		560,374,084			18,217,097	56,262,512	74,479,608	13.3%		68,058,550	75,332,351	70,606,070

NOTES:
(2) From Section 8, Exhibit 1, Page 2, Column 3
(3) = (4) / (2)
(4) From Section 8, Exhibit 1, Page 2, Column 6
(5) From Section 8, Exhibit 1, Page 11
(6) Downward sum of (5)
(7) = (6) x (4)
(8) From Section 8, Exhibit 1, Page 10
(9) = (7) + (8)
(10) = (9) / (4)
(11) From Section 8, Exhibit 1, Page 12
(12) = (8) x (11)
(13) Selected based on (9) and (12)
(14) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts Workers Compensation
All Other - Clusters 5-17 & 95
INDEMNITY
Lump Sum Development
Incremental Lump Sum Payments

Acc Yr Ending	*0-12*	*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
All Prior Yrs	0	0	0	0	0	0	0	22,500	0	0	137,500	40,000	80,500	250,234	367,000	139,604	85,000	0	57,500	55,001	30,000	12,250	84,000	140,000	66,000	0	78,125	0	0	7,500	7,500	0	0	0
Jun-83	0	0	0	0	0	0	0	0	0	0	35,000	7,750	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Jun-84	0	0	0	0	0	0	91,600	53,250	15,000	55,000	59,700	57,000	0	57,000	0	0	0	85,000	0	0	0	0	0	10,000	0	0	0	0	0	0	0	0		
Jun-85	0	0	0	30,000	3,000	52,500	34,554	34,000	58,000	215,750	30,200	92,500	50,000	40,000	0	49,000	32,000	0	25,000	0	0	0	0	0	0	0	0	0	0	0	0			
Jun-86	0	0	12,000	40,559	73,500	32,500	75,000	175,399	179,500	0	92,000	20,000	50,000	0	0	0	0	30,000	55,000	64,000	16,000	45,000	58,275	87,801	0	0	0	0	0	0				
Jun-87	0	25,000	130,000	100,666	150,501	60,866	192,525	168,500	91,501	59,806	28,000	0	12,500	65,000	50,000	164,999	50,000	80,000	80,000	10,000	0	0	0	0	0	0	0	0	0					
Jun-88	0	49,000	40,808	39,958	205,752	408,847	243,000	223,039	268,000	62,000	75,000	30,000	61,000	0	0	0	155,000	20,000	0	100,000	90,000	0	0	0	0	0	0	0						
Jun-89	0	69,855	143,500	275,776	374,100	341,500	255,000	238,502	222,500	170,500	146,000	30,000	123,000	40,000	25,000	0	63,500	185,000	50,000	110,000	62,500	0	0	0	0	0								
Jun-90	0	114,301	281,968	342,440	535,751	231,565	150,800	494,500	46,300	140,000	0	157,000	0	15,000	0	25,000	106,000	60,000	0	15,000	0	0	0	0	0	0								
Jun-91	3,500	73,750	373,500	399,501	281,850	319,500	203,500	25,001	143,000	0	10,000	54,000	0	0	10,000	153,000	72,500	255,000	120,000	0	0	0	0	0	0								
Jun-92	12,000	110,012	182,635	135,586	76,000	151,001	0	112,000	76,500	98,000	105,000	20,000	13,500	86,268	20,867	20,867	86,500	35,000	0	0	0	0	0	0										
Jun-93	6,000	137,948	181,424	231,001	158,000	58,000	49,000	16,000	77,000	85,000	0	55,000	0	0	0	0	50,000	40,000	35,000	35,000	0	0	13,500											
Jun-94	9,500	273,155	204,001	189,365	168,500	29,001	28,000	96,000	0	14,000	0	230,000	65,000	0	0	0	0	0	0	0	0	0												
Jun-95	185,350	223,402	371,000	281,000	90,965	116,600	17,000	0	0	62,000	58,400	34,000	0	80,000	0	12,500	0	0	0	0	0													
Jun-96	6,000	246,050	463,500	224,701	104,430	25,501	3,000	40,000	0	1	35,000	62,500	0	18,400	16,600	0	0	0	0	0														
Jun-97	23,365	498,701	322,500	317,501	204,000	108,251	0	105,000	106,501	60,000	83,000	0	0	0	40,000	40,000	0	0	0															
Jun-98	287,037	356,948	285,460	504,000	281,500	83,000	69,535	88,965	20,000	0	10,000	202,750	75,000	69,000	69,000	0	0	0																
Jun-99	203,500	124,500	487,181	242,900	185,982	168,001	201,000	120,000	65,000	170,000	20,000	65,000	0	0	0	45,000	0																	
Jun-00	97,731	486,478	307,037	269,800	93,500	190,999	184,884	110,118	53,001	76,000	24,000	0	0	0	0	0																		
Jun-01	10,000	182,428	335,500	71,500	244,500	251,000	145,000	220,000	80,000	0	0	0	62,500	0	0																			
Jun-02	0	114,545	362,081	283,539	440,001	286,251	109,000	265,000	25,001	50,000	50,000	15,000	0	5,000																				
Jun-03	0	77,201	596,801	430,835	218,160	255,001	75,000	65,000	6,000	6,000	7,500	60,000	1																					
Jun-04	47,500	25,277	294,987	520,000	358,000	189,000	27,000	100,000	100,000	0	0	0																						
Jun-05	6,157	60,866	417,500	949,001	378,677	150,000	105,000	105,000	150,000	0	0																							
Jun-06	0	159,500	370,000	715,000	208,000	359,500	359,500	89,000	0	0																								
Jun-07	26,000	238,583	574,002	426,500	153,002	153,002	120,000	90,000	28,000																									
Jun-08	0	282,500	346,648	610,000	610,000	174,962	459,538	62,000																										
Jun-09	250,000	140,000	501,500	501,500	370,926	384,000	186,001																											
Jun-10	0	385,501	385,501	536,711	679,197	380,304																												
Jun-11	307,191	319,191	604,218	357,283	873,292																													
Jun-12	0	294,800	409,461	1,071,604																														
Jun-13	37,000	127,500	406,096																															
Jun-14	15,000	6,251																																
Jun-15	0																																	

Cumulative Lump Sum Payments

Acc Yr Ending	*12*	*24*	*36*	*48*	*60*	*72*	*84*	*96*	*108*	*120*	*132*	*144*	*156*	*168*	*180*	*192*	*204*	*216*	*228*	*240*	*252*	*264*	*276*	*288*	*300*	*312*	*324*	*336*	*348*	*360*	*372*	*384*	*396*	*408*
All Prior Yrs	0	0	0	0	0	0	0	22,500	22,500	22,500	160,000	200,000	280,500	530,734	897,734	1,037,338	1,122,338	1,122,338	1,179,838	1,234,839	1,264,839	1,277,089	1,361,089	1,501,089	1,567,089	1,567,089	1,645,214	1,645,214	1,645,214	1,652,714	1,660,214	1,660,214	1,660,214	1,660,214
Jun-83	0	0	0	0	0	0	0	0	0	0	35,000	42,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750		
Jun-84	0	0	0	0	0	0	91,600	144,850	159,850	214,850	274,550	331,550	331,550	388,550	388,550	388,550	388,550	473,550	473,550	473,550	473,550	473,550	473,550	483,550	483,550	483,550	483,550	483,550	483,550	483,550	483,550	483,550		
Jun-85	0	0	0	30,000	33,000	85,500	120,054	154,054	212,054	427,804	458,004	550,504	600,504	640,504	640,504	689,504	721,504	721,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504		
Jun-86	0	0	12,000	52,559	126,059	158,559	233,559	408,958	588,458	588,458	680,458	700,458	750,458	750,458	750,458	750,458	750,458	780,458	835,458	899,458	915,458	960,458	1,018,733	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534			
Jun-87	0	25,000	155,000	255,666	406,167	467,033	659,558	828,058	919,559	979,365	1,007,365	1,007,365	1,019,865	1,084,865	1,134,865	1,299,864	1,349,864	1,429,864	1,509,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864						
Jun-88	0	49,000	89,808	129,766	335,518	744,365	987,365	1,210,404	1,478,404	1,540,404	1,615,404	1,645,404	1,706,404	1,706,404	1,706,404	1,706,404	1,861,404	1,881,404	1,881,404	1,981,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404							
Jun-89	0	69,855	213,355	489,131	863,231	1,204,731	1,459,731	1,698,233	1,920,733	2,091,233	2,237,233	2,267,233	2,390,233	2,430,233	2,455,233	2,455,233	2,518,733	2,703,733	2,753,733	2,863,733	2,926,233	2,926,233	2,926,233	2,926,233	2,926,233	2,926,233	2,926,233								
Jun-90	0	114,301	396,269	738,709	1,274,460	1,506,025	1,656,825	2,151,325	2,197,625	2,337,625	2,337,625	2,494,625	2,494,625	2,509,625	2,509,625	2,534,625	2,640,625	2,700,625	2,700,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625								
Jun-91	3,500	77,250	450,750	850,251	1,132,101	1,451,601	1,655,101	1,680,102	1,823,102	1,823,102	1,833,102	1,887,102	1,887,102	1,887,102	1,897,102	2,050,102	2,122,602	2,377,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602								
Jun-92	12,000	122,012	304,647	440,233	516,233	667,234	667,234	779,234	855,734	953,734	1,058,734	1,078,734	1,092,234	1,178,502	1,199,369	1,220,236	1,306,736	1,341,736	1,341,736	1,341,736	1,341,736	1,341,736	1,341,736	1,341,736										
Jun-93	6,000	143,948	325,372	556,373	714,373	772,373	821,373	837,373	914,373	999,373	999,373	1,054,373	1,054,373	1,054,373	1,054,373	1,054,373	1,104,373	1,144,373	1,179,373	1,214,373	1,214,373	1,214,373	1,227,873											
Jun-94	9,500	282,655	486,656	676,021	844,521	873,522	901,522	997,522	997,522	1,011,522	1,011,522	1,241,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522												
Jun-95	185,350	408,752	779,752	1,060,752	1,151,717	1,268,317	1,285,317	1,285,317	1,285,317	1,347,317	1,405,717	1,439,717	1,439,717	1,519,717	1,519,717	1,532,217	1,532,217	1,532,217	1,532,217	1,532,217	1,532,217	1,532,217												
Jun-96	6,000	252,050	715,550	940,251	1,044,681	1,070,182	1,073,182	1,113,182	1,113,182	1,113,183	1,148,183	1,210,683	1,210,683	1,229,083	1,245,683	1,245,683	1,245,683	1,245,683	1,245,683	1,245,683														
Jun-97	23,365	522,066	844,566	1,162,067	1,366,067	1,474,318	1,474,318	1,579,318	1,685,819	1,745,819	1,828,819	1,828,819	1,828,819	1,828,819	1,868,819	1,908,819	1,908,819	1,908,819	1,908,819															
Jun-98	287,037	643,985	929,445	1,433,445	1,714,945	1,797,945	1,867,480	1,956,445	1,976,445	1,976,445	1,986,445	2,189,195	2,264,195	2,333,195	2,402,195	2,402,195	2,402,195	2,402,195																
Jun-99	203,500	328,000	815,181	1,058,081	1,244,063	1,412,064	1,613,064	1,733,064	1,798,064	1,968,064	1,988,064	2,053,064	2,053,064	2,053,064	2,053,064	2,098,064	2,098,064																	
Jun-00	97,731	584,209	891,246	1,161,046	1,254,546	1,445,545	1,630,429	1,740,547	1,793,548	1,869,548	1,893,548	1,893,548	1,893,548	1,893,548	1,893,548	1,893,548																		
Jun-01	10,000	192,428	527,928	599,428	843,928	1,094,928	1,239,928	1,459,928	1,539,928	1,539,928	1,539,928	1,539,928	1,602,428	1,602,428	1,602,428																			
Jun-02	0	114,545	476,626	760,165	1,200,166	1,486,417	1,595,417	1,860,417	1,885,418	1,935,418	1,985,418	2,000,418	2,000,418	2,005,418																				
Jun-03	0	77,201	674,002	1,104,837	1,322,997	1,577,998	1,652,998	1,717,998	1,723,998	1,729,998	1,737,498	1,797,498	1,797,499																					
Jun-04	47,500	72,777	367,764	887,764	1,245,764	1,434,764	1,461,764	1,561,764	1,661,764	1,661,764	1,661,764	1,661,764																						
Jun-05	6,157	67,023	484,523	1,433,524	1,812,201	1,962,201	2,067,201	2,172,201	2,322,201	2,322,201	2,322,201																							
Jun-06	0	159,500	529,500	1,244,500	1,452,500	1,812,000	2,171,500	2,260,500	2,260,500	2,260,500																								
Jun-07	26,000	264,583	838,585	1,265,085	1,418,087	1,571,089	1,691,089	1,781,089	1,809,089																									
Jun-08	0	282,500	629,148	1,239,148	1,849,148	2,024,110	2,483,648	2,545,648																										
Jun-09	250,000	390,000	891,500	1,393,000	1,763,926	2,147,926	2,333,927																											
Jun-10	0	385,501	771,002	1,307,713	1,986,910	2,367,214																												
Jun-11	307,191	626,381	1,230,599	1,587,882	2,461,175																													
Jun-12	0	294,800	704,261	1,775,865																														
Jun-13	37,000	164,500	570,596																															
Jun-14	15,000	21,251																																
Jun-15	0																																	

Commonwealth of Massachusetts Workers Compensation
All Other - Clusters 5-17 & 95
INDEMNITY
Lump Sum Development
Incremental Lump Sums as a % of Ultimate Losses Excluding Lump Sums

Acc Yr Ending	*0-12*	*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
All Prior Yrs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.001	0.002	0.005	0.007	0.003	0.002	0.000	0.001	0.001	0.001	0.000	0.002	0.003	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-83	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Jun-84	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.007	0.002	0.007	0.008	0.007	0.000	0.007	0.000	0.000	0.000	0.011	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Jun-85	0.000	0.000	0.000	0.002	0.000	0.003	0.002	0.002	0.003	0.013	0.002	0.005	0.003	0.002	0.000	0.003	0.002	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
Jun-86	0.000	0.000	0.001	0.002	0.004	0.002	0.004	0.009	0.009	0.000	0.005	0.001	0.003	0.000	0.000	0.000	0.000	0.002	0.003	0.003	0.001	0.002	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000				
Jun-87	0.000	0.001	0.006	0.005	0.007	0.003	0.009	0.008	0.005	0.003	0.001	0.000	0.001	0.003	0.002	0.008	0.002	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
Jun-88	0.000	0.002	0.001	0.001	0.007	0.015	0.009	0.008	0.010	0.002	0.003	0.001	0.002	0.000	0.000	0.000	0.006	0.001	0.000	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
Jun-89	0.000	0.003	0.006	0.011	0.015	0.014	0.010	0.010	0.009	0.007	0.006	0.001	0.005	0.002	0.001	0.000	0.003	0.007	0.002	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000							
Jun-90	0.000	0.005	0.012	0.014	0.022	0.010	0.006	0.021	0.002	0.006	0.000	0.007	0.000	0.001	0.000	0.001	0.004	0.003	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000								
Jun-91	0.000	0.004	0.018	0.019	0.013	0.015	0.010	0.001	0.007	0.000	0.000	0.003	0.000	0.000	0.000	0.007	0.003	0.012	0.006	0.000	0.000	0.000	0.000	0.000	0.000									
Jun-92	0.001	0.008	0.014	0.010	0.006	0.011	0.000	0.008	0.006	0.007	0.008	0.002	0.001	0.007	0.002	0.002	0.007	0.003	0.000	0.000	0.000	0.000	0.000	0.000										
Jun-93	0.001	0.013	0.017	0.022	0.015	0.005	0.005	0.001	0.007	0.008	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.004	0.003	0.003	0.000	0.000	0.001											
Jun-94	0.001	0.025	0.019	0.017	0.015	0.003	0.003	0.009	0.000	0.001	0.000	0.021	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000												
Jun-95	0.019	0.023	0.039	0.029	0.009	0.012	0.002	0.000	0.000	0.006	0.006	0.004	0.000	0.008	0.000	0.001	0.000	0.000	0.000	0.000	0.000													
Jun-96	0.001	0.023	0.044	0.021	0.010	0.002	0.000	0.004	0.000	0.000	0.003	0.006	0.000	0.002	0.002	0.000	0.000	0.000	0.000	0.000														
Jun-97	0.002	0.048	0.031	0.031	0.020	0.011	0.000	0.010	0.010	0.006	0.008	0.000	0.000	0.000	0.004	0.004	0.000	0.000	0.000															
Jun-98	0.035	0.044	0.035	0.062	0.035	0.010	0.009	0.011	0.002	0.000	0.001	0.025	0.009	0.008	0.008	0.000	0.000	0.000																
Jun-99	0.023	0.014	0.054	0.027	0.021	0.019	0.022	0.013	0.007	0.019	0.002	0.007	0.000	0.000	0.000	0.005	0.000																	
Jun-00	0.009	0.043	0.027	0.024	0.008	0.017	0.016	0.010	0.005	0.007	0.002	0.000	0.000	0.000	0.000	0.000																		
Jun-01	0.001	0.016	0.030	0.006	0.022	0.023	0.013	0.020	0.007	0.000	0.000	0.000	0.006	0.000	0.000																			
Jun-02	0.000	0.010	0.031	0.025	0.038	0.025	0.009	0.023	0.002	0.004	0.004	0.001	0.000	0.000																				
Jun-03	0.000	0.007	0.052	0.037	0.019	0.022	0.006	0.006	0.001	0.001	0.001	0.005	0.000																					
Jun-04	0.004	0.002	0.028	0.049	0.034	0.018	0.003	0.009	0.009	0.000	0.000	0.000																						
Jun-05	0.001	0.005	0.034	0.078	0.031	0.012	0.009	0.009	0.012	0.000	0.000																							
Jun-06	0.000	0.014	0.032	0.062	0.018	0.031	0.031	0.008	0.000	0.000																								
Jun-07	0.002	0.022	0.052	0.038	0.014	0.014	0.011	0.008	0.003																									
Jun-08	0.000	0.017	0.021	0.038	0.038	0.011	0.028	0.004																										
Jun-09	0.014	0.008	0.028	0.028	0.021	0.022	0.011																											
Jun-10	0.000	0.022	0.022	0.031	0.039	0.022																												
Jun-11	0.015	0.015	0.029	0.017	0.042																													
Jun-12	0.000	0.013	0.018	0.047																														
Jun-13	0.002	0.006	0.020																															
Jun-14	0.001	0.000																																
Jun-15	0.000																																	

Averages		*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
Simple Avg																																		
All Yrs (ex P)	0.004	0.013	0.023	0.025	0.018	0.013	0.009	0.008	0.005	0.004	0.003	0.005	0.002	0.002	0.001	0.002	0.002	0.003	0.001	0.001	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
Latest 5	0.003	0.011	0.023	0.032	0.031	0.020	0.018	0.008	0.005	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Latest 3	0.001	0.006	0.022	0.031	0.034	0.018	0.017	0.007	0.005	0.000	0.000	0.002	0.002	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Olympic Avg																																		
All Yrs (ex P)	0.003	0.012	0.023	0.024	0.018	0.012	0.008	0.008	0.005	0.004	0.003	0.004	0.001	0.002	0.001	0.001	0.002	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Latest 10	0.002	0.012	0.027	0.041	0.030	0.020	0.013	0.010	0.005	0.002	0.002	0.003	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.001	0.000	0.000	0.000	0.000										
Latest 5	0.001	0.011	0.023	0.032	0.033	0.019	0.017	0.008	0.004	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					

Dev Factor Selection		*12-24*	*24-36*	*36-48*	*48-60*	*60-72*	*72-84*	*84-96*	*96-108*	*108-120*	*120-132*	*132-144*	*144-156*	*156-168*	*168-180*	*180-192*	*192-204*	*204-216*	*216-228*	*228-240*	*240-252*	*252-264*	*264-276*	*276-288*	*288-300*	*300-312*	*312-324*	*324-336*	*336-348*	*348-360*	*360-372*	*372-384*	*384-396*	*396-408*
Prior	*NA*	*0.015*	*0.026*	*0.031*	*0.025*	*0.017*	*0.014*	*0.011*	*0.005*	*0.002*	*0.001*	*0.004*	*0.002*	*0.002*	*0.002*	*0.002*	*0.001*	*0.000*	*0.000*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	
Selected	NA	0.015	0.023	0.032	0.031	0.019	0.013	0.011	0.005	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FacToUlt	NA	0.169	0.154	0.130	0.098	0.068	0.049	0.036	0.025	0.020	0.019	0.018	0.016	0.014	0.012	0.010	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Commonwealth of Massachusetts Workers Compensation
All Other - Clusters 5-17 & 95
INDEMNITY
Paid Loss Development
Paid Loss - Lump Sum only

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408
All Prior Yrs	0	0	0	0	0	0	0	22,500	22,500	22,500	160,000	200,000	280,500	530,734	897,734	1,037,338	1,122,338	1,122,338	1,179,838	1,234,839	1,264,839	1,277,089	1,361,089	1,501,089	1,567,089	1,567,089	1,645,214	1,645,214	1,645,214	1,652,714	1,660,214	1,660,214	1,660,214	1,660,214
Jun-83	0	0	0	0	0	0	0	0	0	0	35,000	42,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	43,750	
Jun-84	0	0	0	0	0	0	91,600	144,850	159,850	214,850	274,550	331,550	331,550	388,550	388,550	388,550	388,550	473,550	473,550	473,550	473,550	473,550	473,550	483,550	483,550	483,550	483,550	483,550	483,550	483,550	483,550	483,550		
Jun-85	0	0	0	30,000	33,000	85,500	120,054	154,054	212,054	427,804	458,004	550,504	600,504	640,504	640,504	689,504	721,504	721,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504	746,504			
Jun-86	0	0	12,000	52,559	126,059	158,559	233,559	408,958	588,458	588,458	680,458	700,458	750,458	750,458	750,458	750,458	750,458	780,458	835,458	899,458	915,458	960,458	1,018,733	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534	1,106,534				
Jun-87	0	25,000	155,000	255,666	406,167	467,033	659,558	828,058	919,559	979,365	1,007,365	1,007,365	1,019,865	1,084,865	1,134,865	1,299,864	1,349,864	1,429,864	1,509,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864	1,519,864					
Jun-88	0	49,000	89,808	129,766	335,518	744,365	987,365	1,210,404	1,478,404	1,540,404	1,615,404	1,645,404	1,706,404	1,706,404	1,706,404	1,706,404	1,861,404	1,881,404	1,881,404	1,981,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404	2,071,404						
Jun-89	0	69,855	213,355	489,131	863,231	1,204,731	1,459,731	1,698,233	1,920,733	2,091,233	2,237,233	2,267,233	2,390,233	2,430,233	2,455,233	2,455,233	2,518,733	2,703,733	2,753,733	2,863,733	2,926,233	2,926,233	2,926,233	2,926,233	2,926,233	2,926,233	2,926,233							
Jun-90	0	114,301	396,269	738,709	1,274,460	1,506,025	1,656,825	2,151,325	2,197,625	2,337,625	2,337,625	2,494,625	2,494,625	2,509,625	2,509,625	2,534,625	2,640,625	2,700,625	2,700,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625	2,715,625							
Jun-91	3,500	77,250	450,750	850,251	1,132,101	1,451,601	1,655,101	1,680,102	1,823,102	1,823,102	1,833,102	1,887,102	1,887,102	1,887,102	1,897,102	2,050,102	2,122,602	2,377,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602	2,497,602								
Jun-92	12,000	122,012	304,647	440,233	516,233	667,234	667,234	779,234	855,734	953,734	1,058,734	1,078,734	1,092,234	1,178,502	1,199,369	1,220,236	1,306,736	1,341,736	1,341,736	1,341,736	1,341,736	1,341,736	1,341,736	1,341,736										
Jun-93	6,000	143,948	325,372	556,373	714,373	772,373	821,373	837,373	914,373	999,373	999,373	1,054,373	1,054,373	1,054,373	1,054,373	1,054,373	1,104,373	1,144,373	1,179,373	1,214,373	1,214,373	1,214,373	1,227,873										
Jun-94	9,500	282,655	486,656	676,021	844,521	873,522	901,522	997,522	997,522	1,011,522	1,011,522	1,241,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522	1,306,522												
Jun-95	185,350	408,752	779,752	1,060,752	1,151,717	1,268,317	1,285,317	1,285,317	1,285,317	1,347,317	1,405,717	1,439,717	1,439,717	1,519,717	1,519,717	1,532,217	1,532,217	1,532,217	1,532,217	1,532,217	1,532,217													
Jun-96	6,000	252,050	715,550	940,251	1,044,681	1,070,182	1,073,182	1,113,182	1,113,182	1,113,183	1,148,183	1,210,683	1,210,683	1,229,083	1,245,683	1,245,683	1,245,683	1,245,683	1,245,683	1,245,683														
Jun-97	23,365	522,066	844,566	1,162,067	1,366,067	1,474,318	1,474,318	1,579,318	1,685,819	1,745,819	1,828,819	1,828,819	1,828,819	1,828,819	1,868,819	1,908,819	1,908,819	1,908,819	1,908,819															
Jun-98	287,037	643,985	929,445	1,433,445	1,714,945	1,797,945	1,867,480	1,956,445	1,976,445	1,976,445	1,986,445	2,189,195	2,264,195	2,333,195	2,402,195	2,402,195	2,402,195	2,402,195																
Jun-99	203,500	328,000	815,181	1,058,081	1,244,063	1,412,064	1,613,064	1,733,064	1,798,064	1,968,064	1,988,064	2,053,064	2,053,064	2,053,064	2,053,064	2,098,064	2,098,064																	
Jun-00	97,731	584,209	891,246	1,161,046	1,254,546	1,445,545	1,630,429	1,740,547	1,793,548	1,869,548	1,893,548	1,893,548	1,893,548	1,893,548	1,893,548	1,893,548																		
Jun-01	10,000	192,428	527,928	599,428	843,928	1,094,928	1,239,928	1,459,928	1,539,928	1,539,928	1,539,928	1,539,928	1,602,428	1,602,428	1,602,428																			
Jun-02	0	114,545	476,626	760,165	1,200,166	1,486,417	1,595,417	1,860,417	1,885,418	1,935,418	1,985,418	2,000,418	2,000,418	2,005,418																				
Jun-03	0	77,201	674,002	1,104,837	1,322,997	1,577,998	1,652,998	1,717,998	1,723,998	1,729,998	1,737,498	1,797,498	1,797,499																					
Jun-04	47,500	72,777	367,764	887,764	1,245,764	1,434,764	1,461,764	1,561,764	1,661,764	1,661,764	1,661,764	1,661,764																						
Jun-05	6,157	67,023	484,523	1,433,524	1,812,201	1,962,201	2,067,201	2,172,201	2,322,201	2,322,201	2,322,201																							
Jun-06	0	159,500	529,500	1,244,500	1,452,500	1,812,000	2,171,500	2,260,500	2,260,500	2,260,500																								
Jun-07	26,000	264,583	838,585	1,265,085	1,418,087	1,571,089	1,691,089	1,781,089	1,809,089																									
Jun-08	0	282,500	629,148	1,239,148	1,849,148	2,024,110	2,483,648	2,545,648																										
Jun-09	250,000	390,000	891,500	1,393,000	1,763,926	2,147,926	2,333,927																											
Jun-10	0	385,501	771,002	1,307,713	1,986,910	2,367,214																												
Jun-11	307,191	626,381	1,230,599	1,587,882	2,461,175																													
Jun-12	0	294,800	704,261	1,775,865																														
Jun-13	37,000	164,500	570,596																															
Jun-14	15,000	21,251																																
Jun-15	0																																	

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
All Prior Yrs								1.000	1.000	7.111	1.250	1.403	1.892	1.691	1.156	1.082	1.000	1.051	1.047	1.024	1.010	1.066	1.103	1.044	1.000	1.050	1.000	1.000	1.005	1.005	1.000	1.000	1.000	
Jun-83											1.221	1.023	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	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Jun-84							1.581	1.104	1.344	1.278	1.208	1.000	1.172	1.000	1.000	1.000	1.219	1.000	1.000	1.000	1.000	1.000	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Jun-85				1.100	2.591	1.404	1.283	1.376	2.017	1.071	1.202	1.091	1.067	1.000	1.077	1.046	1.000	1.035	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Jun-86			4.380	2.398	1.258	1.473	1.751	1.439	1.000	1.156	1.029	1.071	1.000	1.000	1.000	1.000	1.040	1.070	1.077	1.018	1.049	1.061	1.086	1.000	1.000	1.000	1.000	1.000	1.000					
Jun-87		6.200	1.649	1.589	1.150	1.412	1.255	1.111	1.065	1.029	1.000	1.012	1.064	1.046	1.145	1.038	1.059	1.056	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
Jun-88		1.833	1.445	2.586	2.219	1.326	1.226	1.221	1.042	1.049	1.019	1.037	1.000	1.000	1.000	1.091	1.011	1.000	1.053	1.045	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
Jun-89		3.054	2.293	1.765	1.396	1.212	1.163	1.131	1.089	1.070	1.013	1.054	1.017	1.010	1.000	1.026	1.073	1.018	1.040	1.022	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
Jun-90		3.467	1.864	1.725	1.182	1.100	1.298	1.022	1.064	1.000	1.067	1.000	1.006	1.000	1.010	1.042	1.023	1.000	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
Jun-91	22.071	5.835	1.886	1.331	1.282	1.140	1.015	1.085	1.000	1.005	1.029	1.000	1.000	1.005	1.081	1.035	1.120	1.050	1.000	1.000	1.000	1.000	1.000	1.000										
Jun-92	10.168	2.497	1.445	1.173	1.293	1.000	1.168	1.098	1.115	1.110	1.019	1.013	1.079	1.018	1.017	1.071	1.027	1.000	1.000	1.000	1.000	1.000	1.000											
Jun-93	23.991	2.260	1.710	1.284	1.081	1.063	1.019	1.092	1.093	1.000	1.055	1.000	1.000	1.000	1.000	1.047	1.036	1.031	1.030	1.000	1.000	1.011												
Jun-94	29.753	1.722	1.389	1.249	1.034	1.032	1.106	1.000	1.014	1.000	1.227	1.052	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000													
Jun-95	2.205	1.908	1.360	1.086	1.101	1.013	1.000	1.000	1.048	1.043	1.024	1.000	1.056	1.000	1.008	1.000	1.000	1.000	1.000	1.000														
Jun-96	42.008	2.839	1.314	1.111	1.024	1.003	1.037	1.000	1.000	1.031	1.054	1.000	1.015	1.014	1.000	1.000	1.000	1.000	1.000															
Jun-97	22.344	1.618	1.376	1.176	1.079	1.000	1.071	1.067	1.036	1.048	1.000	1.000	1.000	1.022	1.021	1.000	1.000	1.000																
Jun-98	2.244	1.443	1.542	1.196	1.048	1.039	1.048	1.010	1.000	1.005	1.102	1.034	1.030	1.030	1.000	1.000	1.000																	
Jun-99	1.612	2.485	1.298	1.176	1.135	1.142	1.074	1.038	1.095	1.010	1.033	1.000	1.000	1.000	1.022	1.000																		
Jun-00	5.978	1.526	1.303	1.081	1.152	1.128	1.068	1.030	1.042	1.013	1.000	1.000	1.000	1.000	1.000																			
Jun-01	19.243	2.744	1.135	1.408	1.297	1.132	1.177	1.055	1.000	1.000	1.000	1.041	1.000	1.000																				
Jun-02		4.161	1.595	1.579	1.239	1.073	1.166	1.013	1.027	1.026	1.008	1.000	1.002																					
Jun-03		8.730	1.639	1.197	1.193	1.048	1.039	1.003	1.003	1.004	1.035	1.000																						
Jun-04	1.532	5.053	2.414	1.403	1.152	1.019	1.068	1.064	1.000	1.000	1.000																							
Jun-05	10.886	7.229	2.959	1.264	1.083	1.054	1.051	1.069	1.000	1.000																								
Jun-06		3.320	2.350	1.167	1.248	1.198	1.041	1.000	1.000																									
Jun-07	10.176	3.169	1.509	1.121	1.108	1.076	1.053	1.016																										
Jun-08		2.227	1.970	1.492	1.095	1.227	1.025																											
Jun-09	1.560	2.286	1.563	1.266	1.218	1.087																												
Jun-10		2.000	1.696	1.519	1.191																													
Jun-11	2.039	1.965	1.290	1.550																														
Jun-12		2.389	2.522																															
Jun-13	4.446	3.469																																
Jun-14	1.417																																	

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	396-408	To Ult
Simple Avg																																		
All Yrs (ex P)	11.871	3.238	1.811	1.407	1.263	1.136	1.151	1.085	1.091	1.043	1.061	1.020	1.025	1.008	1.021	1.023	1.038	1.017	1.015	1.007	1.004	1.007	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		2.422	1.808	1.390	1.172	1.128	1.048	1.030	1.006	1.006	1.008	1.008	1.007	1.010	1.009	1.000	1.000	1.006	1.006	1.000	1.000	1.002	1.000	1.000	1.000	1.000	1.000	1.000						
Latest 3		2.607	1.836	1.445	1.168	1.130	1.040	1.028	1.000	1.001	1.014	1.014	1.001	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Volume Wtd																																		
All Yrs (ex P)		2.399	1.650	1.315	1.172	1.107	1.095	1.055	1.040	1.027	1.039	1.017	1.016	1.008	1.020	1.025	1.034	1.017	1.017	1.009	1.003	1.004	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
Latest 5		2.239	1.728	1.395	1.171	1.129	1.045	1.030	1.006	1.006	1.009	1.007	1.008	1.011	1.009	1.000	1.000	1.005	1.005	1.000	1.000	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Latest 3		2.308	1.726	1.448	1.168	1.133	1.038	1.029	1.000	1.001	1.014	1.012	1.001	1.000	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				

Dev Factor Selection																																		
Prior	4.389	2.701	1.635	1.380	1.185	1.140	1.066	1.043	1.012	1.011	1.047	1.019	1.010	1.013	1.010	1.000	1.007	1.010	1.015	1.005	1.005	1.005	1.003	1.003	1.003	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.025	
Selected	4.389	2.756	1.818	1.414	1.201	1.131	1.059	1.038	1.012	1.012	1.020	1.012	1.010	1.010	1.009	1.000	1.000	1.010	1.015	1.005	1.005	1.005	1.003	1.003	1.003	1.001	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.020
FacToUlt	54.257	12.362	4.486	2.467	1.745	1.453	1.284	1.212	1.168	1.154	1.141	1.118	1.105	1.094	1.083	1.073	1.073	1.063	1.047	1.042	1.036	1.031	1.028	1.025	1.022	1.021	1.020	1.020	1.020	1.020	1.020	1.020	1.020	
Percent of Ult	1.8%	8.1%	22.3%	40.5%	57.3%	68.8%	77.9%	82.5%	85.6%	86.7%	87.7%	89.5%	90.5%	91.4%	92.4%	93.2%	93.2%	93.2%	94.1%	95.5%	96.0%	96.5%	97.0%	97.3%	97.6%	97.8%	97.9%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	2.6%	0.0%	0.7%	0.4%	1.000	1.000
396	97.4%	0.8%	2.6%	0.2%	0.1%	0.981	0.971
384	96.6%	0.8%	3.4%	0.2%	0.1%	0.952	0.929
372	95.9%	0.8%	4.1%	0.2%	0.1%	0.927	0.894
360	95.1%	0.9%	4.9%	0.3%	0.2%	0.905	0.863
348	94.2%	1.2%	5.8%	0.4%	0.2%	0.887	0.838
336	93.1%	1.2%	6.9%	0.4%	0.2%	0.874	0.821
324	91.8%	1.3%	8.2%	0.5%	0.3%	0.862	0.804
312	90.5%	1.4%	9.5%	0.5%	0.3%	0.850	0.788
300	89.1%	1.4%	10.9%	0.5%	0.3%	0.838	0.773
288	87.7%	1.5%	12.3%	0.6%	0.4%	0.826	0.756
276	86.3%	1.5%	13.7%	0.6%	0.4%	0.814	0.741
264	84.8%	1.6%	15.2%	0.7%	0.5%	0.802	0.725
252	83.2%	1.6%	16.8%	0.7%	0.5%	0.791	0.712
240	81.6%	2.0%	18.4%	0.9%	0.6%	0.779	0.697
228	79.6%	1.5%	20.4%	0.7%	0.5%	0.772	0.689
216	78.1%	1.3%	21.9%	0.7%	0.5%	0.759	0.672
204	76.8%	1.4%	23.2%	0.7%	0.5%	0.744	0.653
192	75.4%	1.5%	24.6%	0.8%	0.6%	0.730	0.636
180	73.9%	1.7%	26.1%	1.0%	0.7%	0.718	0.621
168	72.2%	1.6%	27.8%	1.0%	0.7%	0.708	0.609
156	70.6%	1.8%	29.4%	1.1%	0.9%	0.697	0.597
144	68.8%	1.9%	31.2%	1.2%	1.0%	0.688	0.586
132	67.0%	1.8%	33.0%	1.2%	1.0%	0.680	0.577
120	65.1%	2.0%	34.9%	1.4%	1.2%	0.671	0.567
108	63.1%	2.1%	36.9%	1.5%	1.3%	0.664	0.559
96	61.0%	2.6%	39.0%	1.9%	1.7%	0.656	0.551
84	58.4%	3.1%	41.6%	2.4%	2.1%	0.653	0.548
72	55.3%	4.2%	44.7%	3.4%	3.0%	0.652	0.548
60	51.2%	5.5%	48.8%	4.6%	4.2%	0.657	0.556
48	45.7%	7.1%	54.3%	6.2%	5.8%	0.667	0.570
36	38.6%	10.1%	61.4%	9.2%	8.8%	0.681	0.587
24	28.5%	15.2%	71.5%	14.4%	14.0%	0.701	0.613
12	13.2%	13.2%	86.8%	13.0%	12.9%	0.728	0.647
Total		100.0%					

NOTES:

(2) = 1 / Section 8, Exhibit 1, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	5,856,170	10,269,502		5,121,719	8,981,554
6/30/82-83	60,719	496,988	0.981	59,540	487,337
6/30/83-84	136,383	762,583	0.952	129,770	725,607
6/30/84-85	572,136	863,136	0.927	530,417	800,198
6/30/85-86	810,416	1,170,416	0.905	733,644	1,059,541
6/30/86-87	1,002,717	1,375,717	0.887	889,557	1,220,463
6/30/87-88	1,876,399	2,965,399	0.874	1,640,416	2,592,459
6/30/88-89	1,727,307	2,984,307	0.862	1,488,282	2,571,338
6/30/89-90	2,191,951	3,173,951	0.850	1,862,402	2,696,763
6/30/90-91	2,303,345	3,096,345	0.838	1,930,546	2,595,198
6/30/91-92	1,616,811	2,481,811	0.826	1,334,856	2,049,010
6/30/92-93	1,467,949	2,939,949	0.814	1,194,385	2,392,067
6/30/93-94	1,652,875	2,308,875	0.802	1,324,922	1,850,763
6/30/94-95	1,611,582	2,212,582	0.791	1,274,291	1,749,507
6/30/95-96	1,920,863	2,571,863	0.779	1,497,226	2,004,651
6/30/96-97	2,131,980	2,800,980	0.772	1,646,473	2,163,124
6/30/97-98	1,872,884	2,432,884	0.759	1,422,113	1,847,331
6/30/98-99	2,173,853	2,764,853	0.744	1,617,601	2,057,375
6/30/99-00	2,821,121	3,553,121	0.730	2,060,204	2,594,768
6/30/00-01	2,955,151	3,647,151	0.718	2,121,076	2,617,762
6/30/01-02	3,311,205	4,035,205	0.708	2,343,738	2,856,200
6/30/02-03	3,531,009	4,245,009	0.697	2,461,721	2,959,502
6/30/03-04	3,489,429	4,114,429	0.688	2,401,842	2,832,041
6/30/04-05	4,056,727	4,279,727	0.680	2,757,612	2,909,199
6/30/05-06	4,309,759	4,794,759	0.671	2,891,130	3,216,485
6/30/06-07	4,353,210	5,550,210	0.664	2,888,756	3,683,076
6/30/07-08	5,772,571	6,768,571	0.656	3,789,529	4,443,374
6/30/08-09	7,383,559	8,021,757	0.653	4,819,859	5,236,464
6/30/09-10	7,736,946	8,922,297	0.652	5,045,184	5,818,139
6/30/10-11	10,839,648	11,891,369	0.657	7,124,567	7,815,831
6/30/11-12	13,428,782	14,970,740	0.667	8,960,422	9,989,301
6/30/12-13	13,944,603	16,331,071	0.681	9,490,288	11,114,448
6/30/13-14	20,366,784	22,365,652	0.701	14,268,509	15,668,871
6/30/14-15	25,634,019	28,508,597	0.728	18,649,267	20,740,580
Total	164,920,864	199,671,807		117,771,865	144,340,327
			(7) Total Discount Factor:	0.714	0.723

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	5,856,170	10,269,502
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	836,596	1,467,072
(11) Discounted Value at 4%:	5,121,719	8,981,554

NOTES:
(2), (3) From Section 8, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 8, Exhibit 1, Page 13, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	5,856,170	10,269,502		4,810,302	8,435,447
6/30/82-83	60,719	496,988	0.971	58,975	482,717
6/30/83-84	136,383	762,583	0.929	126,688	708,372
6/30/84-85	572,136	863,136	0.894	511,447	771,579
6/30/85-86	810,416	1,170,416	0.863	699,546	1,010,296
6/30/86-87	1,002,717	1,375,717	0.838	840,406	1,153,028
6/30/87-88	1,876,399	2,965,399	0.821	1,539,995	2,433,757
6/30/88-89	1,727,307	2,984,307	0.804	1,388,468	2,398,887
6/30/89-90	2,191,951	3,173,951	0.788	1,727,213	2,501,009
6/30/90-91	2,303,345	3,096,345	0.773	1,780,191	2,393,078
6/30/91-92	1,616,811	2,481,811	0.756	1,223,011	1,877,327
6/30/92-93	1,467,949	2,939,949	0.741	1,087,634	2,178,269
6/30/93-94	1,652,875	2,308,875	0.725	1,199,009	1,674,877
6/30/94-95	1,611,582	2,212,582	0.712	1,146,854	1,574,545
6/30/95-96	1,920,863	2,571,863	0.697	1,339,681	1,793,712
6/30/96-97	2,131,980	2,800,980	0.689	1,468,654	1,929,507
6/30/97-98	1,872,884	2,432,884	0.672	1,259,496	1,636,091
6/30/98-99	2,173,853	2,764,853	0.653	1,420,090	1,806,167
6/30/99-00	2,821,121	3,553,121	0.636	1,794,452	2,260,061
6/30/00-01	2,955,151	3,647,151	0.621	1,834,639	2,264,252
6/30/01-02	3,311,205	4,035,205	0.609	2,017,012	2,458,035
6/30/02-03	3,531,009	4,245,009	0.597	2,106,540	2,532,500
6/30/03-04	3,489,429	4,114,429	0.586	2,046,425	2,412,965
6/30/04-05	4,056,727	4,279,727	0.577	2,339,783	2,468,402
6/30/05-06	4,309,759	4,794,759	0.567	2,441,954	2,716,760
6/30/06-07	4,353,210	5,550,210	0.559	2,432,120	3,100,879
6/30/07-08	5,772,571	6,768,571	0.551	3,180,328	3,729,062
6/30/08-09	7,383,559	8,021,757	0.548	4,043,371	4,392,860
6/30/09-10	7,736,946	8,922,297	0.548	4,240,427	4,890,088
6/30/10-11	10,839,648	11,891,369	0.556	6,026,050	6,610,730
6/30/11-12	13,428,782	14,970,740	0.570	7,649,875	8,528,271
6/30/12-13	13,944,603	16,331,071	0.587	8,189,759	9,591,347
6/30/13-14	20,366,784	22,365,652	0.613	12,487,585	13,713,161
6/30/14-15	25,634,019	28,508,597	0.647	16,595,445	18,456,444
Total	164,920,864	199,671,807		103,053,425	126,884,481
			(7) Total Discount Factor:	0.625	0.635

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	5,856,170	10,269,502
(9) Projected Number of Years:	7	7
(10) Projected Paid Loss per Year:	836,596	1,467,072
(11) Discounted Value at 6%:	4,810,302	8,435,447

NOTES:
(2), (3) From Section 8, Exhibit 1, Page 1, Columns 8, 9
(4) From Section 8, Exhibit 1, Page 13, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Total Indemnity (Including Lump Sums) + Medical

Calculation of Fiscal Year 7/01/15 - 16 Payments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
						Cumulative	Incremental Paid		Estimated Payments from		FY 07/01/15 - 06/30/16	
Accident	Est Ult Losses	Est Ult Losses	Paid Losses	Reserves	Reserves	Percent	as a % of	as a % of	07/01/15 - 06/30/16		as a % of Reserves	
Year	(Low)	(High)	to Date	(Low)	(High)	Paid	Ultimates	Reserves	(Low)	(High)	(Low)	(High)
All Prior Yrs	53,498,875	58,150,069	47,372,066	6,126,809	10,778,002				557,646	613,411	9.1%	5.7%
6/30/82-83	6,183,638	6,629,883	6,122,919	60,719	506,964	95.6%	1.5%	33.9%	20,558	171,645	33.9%	33.9%
6/30/83-84	8,931,416	9,575,438	8,795,033	136,383	780,406	95.0%	1.5%	30.3%	41,297	236,306	30.3%	30.3%
6/30/84-85	18,405,821	18,725,596	17,833,685	572,136	891,911	96.1%	1.5%	38.0%	217,659	339,312	38.0%	38.0%
6/30/85-86	22,522,390	22,911,220	21,686,702	835,688	1,224,518	95.5%	1.5%	33.1%	276,441	405,063	33.1%	33.1%
6/30/86-87	23,145,415	23,544,170	22,114,652	1,030,763	1,429,518	94.7%	1.5%	28.5%	293,417	406,927	28.5%	28.5%
6/30/87-88	32,925,785	34,066,460	30,987,577	1,938,208	3,078,883	92.5%	1.5%	20.0%	388,208	616,676	20.0%	20.0%
6/30/88-89	30,966,000	32,263,660	29,131,982	1,834,018	3,131,678	92.1%	1.5%	19.1%	350,296	598,149	19.1%	19.1%
6/30/89-90	30,307,000	31,333,790	27,980,057	2,326,943	3,353,733	90.8%	1.5%	16.3%	378,744	545,868	16.3%	16.3%
6/30/90-91	26,994,000	27,824,170	24,551,653	2,442,347	3,272,517	89.6%	1.2%	11.6%	283,321	379,623	11.6%	11.6%
6/30/91-92	17,342,000	18,237,060	15,600,138	1,741,862	2,636,922	87.7%	1.9%	15.3%	266,373	403,250	15.3%	15.3%
6/30/92-93	13,732,000	15,231,100	12,138,967	1,593,033	3,092,133	83.8%	1.5%	9.3%	147,719	286,728	9.3%	9.3%
6/30/93-94	15,298,000	15,986,680	13,484,716	1,813,284	2,501,964	86.2%	1.5%	10.9%	197,189	272,081	10.9%	10.9%
6/30/94-95	13,769,000	14,397,440	12,003,446	1,765,554	2,393,994	85.2%	1.5%	10.2%	179,332	243,164	10.2%	10.2%
6/30/95-96	13,973,000	14,646,220	11,905,256	2,067,744	2,740,964	83.2%	1.5%	8.9%	184,594	244,694	8.9%	8.9%
6/30/96-97	15,213,000	15,911,670	12,862,694	2,350,306	3,048,976	82.7%	0.5%	3.1%	73,827	95,773	3.1%	3.1%
6/30/97-98	12,821,000	13,407,880	10,775,512	2,045,488	2,632,368	82.2%	0.5%	2.7%	55,910	71,951	2.7%	2.7%
6/30/98-99	14,004,000	14,626,100	11,575,315	2,428,685	3,050,785	80.9%	1.3%	6.8%	165,487	207,875	6.8%	6.8%
6/30/99-00	16,582,000	17,349,660	13,407,199	3,174,801	3,942,461	79.0%	1.8%	8.8%	277,962	345,172	8.8%	8.8%
6/30/00-01	16,044,000	16,773,000	12,686,086	3,357,914	4,086,914	77.3%	1.7%	7.5%	253,200	308,170	7.5%	7.5%
6/30/01-02	16,761,000	17,527,500	13,025,577	3,735,423	4,501,923	76.0%	2.0%	8.3%	310,979	374,791	8.3%	8.3%
6/30/02-03	17,122,000	17,879,380	13,024,234	4,097,766	4,855,146	74.4%	1.6%	6.1%	249,131	295,177	6.1%	6.1%
6/30/03-04	16,137,000	16,808,930	12,011,871	4,125,129	4,797,059	72.9%	1.5%	5.5%	228,876	266,157	5.5%	5.5%
6/30/04-05	19,506,000	20,220,000	14,802,607	4,703,393	5,417,393	74.5%	2.0%	7.9%	369,234	425,286	7.9%	7.9%
6/30/05-06	18,190,000	19,120,000	13,191,037	4,998,963	5,928,963	70.7%	2.0%	6.8%	341,348	404,852	6.8%	6.8%
6/30/06-07	18,954,000	20,865,000	13,725,374	5,228,626	7,139,626	68.9%	1.8%	5.7%	298,226	407,225	5.7%	5.7%
6/30/07-08	23,169,000	24,660,000	16,352,233	6,816,767	8,307,767	68.4%	0.6%	1.8%	120,917	147,364	1.8%	1.8%
6/30/08-09	25,550,470	26,564,668	16,856,192	8,694,278	9,708,476	64.7%	3.7%	10.4%	908,441	1,014,412	10.4%	10.4%
6/30/09-10	25,386,600	27,047,951	16,187,683	9,198,917	10,860,268	61.7%	2.9%	7.7%	707,897	835,745	7.7%	7.7%
6/30/10-11	30,424,330	31,954,051	17,795,761	12,628,570	14,158,291	57.1%	4.7%	10.9%	1,378,319	1,545,277	10.9%	10.9%
6/30/11-12	32,313,270	34,329,228	16,770,441	15,542,829	17,558,787	50.3%	6.7%	13.5%	2,105,286	2,378,349	13.5%	13.5%
6/30/12-13	28,847,300	31,722,768	12,263,129	16,584,171	19,459,639	40.5%	9.8%	16.5%	2,741,527	3,216,870	16.5%	16.5%
6/30/13-14	34,894,400	37,393,268	10,717,873	24,176,527	26,675,395	29.7%	10.8%	15.4%	3,725,111	4,110,136	15.4%	15.4%
6/30/14-15	37,403,250	41,277,828	5,349,032	32,054,218	35,928,796	13.6%	16.1%	18.6%	5,956,758	6,676,785	18.6%	18.6%
Total	747,316,960	788,961,838	555,088,699	192,228,261	233,873,139				24,051,229	28,890,266	12.5%	12.4%

NOTES:

(2) Exhibit 1, Page 1, Column (4) + Exhibit 2, Page 1, Column (4)
(3) Exhibit 1, Page 1, Column (5) + Exhibit 2, Page 1, Column (5)
(4) Exhibit 1, Page 1, Column (2) + Exhibit 2, Page 1, Column (2)
(5) = (2) - (4)
(6) = (3) - (4)
(7) = (4) / Average of Columns (2), (3)
(8) = (7) - Prior Year's (7)
(9) = (8) / (1.00 - (7))
(10) = (5) * (9)
(11) = (6) * (9)
(12) = (10) / (5)
(13) = (11) / (6)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2014

All Other - Clusters 5-17 & 95
Indemnity

Allocation of Outstanding Reserve to MassDOT Agencies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
						MassDOT Allocation - Method 1					**MassDOT Allocation - Method 2**					**MassDOT Allocation - Method 3**								
Accident Year	Paid Loss	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Paid Counts 7/1/13-14	MassDOT 7/1/13-14	MassDOT / Paid Counts	MassDOT OS (Low)	MassDOT OS (High)	Total Paid 7/1/13-14	MassDOT 7/1/13-14	MassDOT / Total Paid	MassDOT OS (Low)	MassDOT OS (High)	Total Payroll ($000)	MassDOT ($000)	MassDOT / Total Payroll	MassDOT OS (Low)	MassDOT OS (High)	MassDOT Outstanding (Low)	MassDOT Outstanding (High)	All Other Outstanding (Low)	All Other Outstanding (High)
All Prior Yrs	43,745,432	49,660,072	53,989,457	5,914,641	10,244,025	14					572,165	0	0.0%	0	0				386,199	668,889	128,733	222,963	5,785,907	10,021,062
6/30/82-83	5,612,181	5,896,427	6,349,998	284,245	737,817	2					55,220								18,560	48,176	6,187	16,059	278,059	721,758
6/30/83-84	7,966,054	8,405,485	9,052,060	439,430	1,086,006	1					37,303								28,693	70,911	9,564	23,637	429,866	1,062,369
6/30/84-85	16,648,888	17,224,000	18,176,000	575,112	1,527,112	3	1	33.3%	191,704	509,037	73,550	59,597	81.0%	466,010	1,237,411				37,552	99,714	114,628	304,375	460,484	1,222,737
6/30/85-86	19,634,808	20,469,000	21,215,000	834,192	1,580,192	3	1	33.3%	278,064	526,731	160,986	61,026	37.9%	316,224	599,016				54,469	103,179	216,252	409,642	617,940	1,170,550
6/30/86-87	20,141,236	21,205,000	21,967,000	1,063,764	1,825,764	6	1	16.7%	177,294	304,294	289,379	61,026	21.1%	224,333	385,028				69,459	119,214	157,029	269,512	906,735	1,556,252
6/30/87-88	27,473,700	29,466,000	30,250,000	1,992,300	2,776,300	7	1	14.3%	284,614	396,614	341,069	46,090	13.5%	269,229	375,174				130,088	181,280	227,977	317,689	1,764,323	2,458,611
6/30/88-89	25,213,667	27,052,000	28,046,000	1,838,333	2,832,333	10	2	20.0%	367,667	566,467	359,023	37,897	10.6%	194,048	298,971				120,035	184,939	227,250	350,125	1,611,083	2,482,207
6/30/89-90	23,794,100	26,126,000	26,840,000	2,331,900	3,045,900	7	1	14.3%	333,129	435,129	338,245	53,207	15.7%	366,818	479,133				152,263	198,884	284,070	371,048	2,047,830	2,674,852
6/30/90-91	20,862,061	23,271,000	23,872,000	2,408,939	3,009,939	7	1	14.3%	344,134	429,991	234,615	37,905	16.2%	389,200	486,300				157,293	196,535	296,876	370,942	2,112,063	2,638,997
6/30/91-92	12,640,235	14,336,000	15,077,000	1,695,765	2,436,765	5					176,827								110,726	159,110	36,909	53,037	1,658,857	2,383,729
6/30/92-93	9,514,834	11,067,000	12,524,000	1,552,166	3,009,166	6	1	16.7%	258,694	501,528	151,952	31,267	20.6%	319,384	619,186				101,349	196,485	226,476	439,066	1,325,690	2,570,100
6/30/93-94	10,401,449	12,148,000	12,801,000	1,746,551	2,399,551	6	2	33.3%	582,184	799,850	174,824	41,150	23.5%	411,099	564,801				114,042	156,680	262,571	360,740	1,483,980	2,038,811
6/30/94-95	9,387,330	11,092,000	11,693,000	1,704,670	2,305,670	5	1	20.0%	340,934	461,134	165,763	22,704	13.7%	233,483	315,800				111,307	150,550	228,575	309,161	1,476,096	1,996,509
6/30/95-96	9,575,094	11,596,000	12,241,000	2,020,906	2,665,906	5					130,101								131,956	174,072	43,985	58,024	1,976,921	2,607,882
6/30/96-97	10,023,896	12,273,000	12,944,000	2,249,104	2,920,104	4					116,366								146,856	190,670	48,952	63,557	2,200,152	2,856,548
6/30/97-98	8,718,110	10,696,000	11,258,000	1,977,890	2,539,890	1					46,453					1,917,994	137,500	7.2%	141,794	182,083	141,794	182,083	1,836,097	2,357,807
6/30/98-99	8,876,179	11,146,000	11,730,000	2,269,821	2,853,821	4					140,827	45,000	32.0%	725,301	911,913	2,081,524	136,688	6.6%	149,053	187,403	74,527	93,701	2,195,294	2,760,120
6/30/99-00	10,240,734	13,219,000	13,950,000	2,978,266	3,709,266	5	1	20.0%	595,653	741,853	154,413	430	0.3%	8,302	10,339	2,207,243	137,892	6.2%	186,060	231,728	186,060	231,728	2,792,206	3,477,538
6/30/00-01	9,623,338	12,778,000	13,470,000	3,154,662	3,846,662	8	1	12.5%	394,333	480,833	171,049	21,358	12.5%	393,913	480,321	2,201,008	145,149	6.6%	208,039	253,674	332,095	404,942	2,822,568	3,441,720
6/30/01-02	10,236,146	13,805,000	14,539,000	3,568,854	4,302,854	7	1	14.3%	509,836	614,693	112,509	107	0.1%	3,390	4,088	2,292,592	140,223	6.1%	218,284	263,178	110,837	133,633	3,458,017	4,169,221
6/30/02-03	9,842,955	13,660,000	14,382,000	3,817,045	4,539,045	5					188,073					2,260,534	140,250	6.2%	236,821	281,616	78,940	93,872	3,738,105	4,445,173
6/30/03-04	8,832,140	12,638,000	13,277,000	3,805,860	4,444,860	5					142,406					2,255,942	137,408	6.1%	231,812	270,733	231,812	270,733	3,574,048	4,174,127
6/30/04-05	10,215,809	14,652,000	14,799,000	4,436,191	4,583,191	5					216,826					2,309,083	145,033	6.3%	278,636	287,869	92,879	95,956	4,343,312	4,487,235
6/30/05-06	9,538,214	14,159,000	14,778,000	4,620,786	5,239,786	7	1	14.3%	660,112	748,541	77,957	2,781	3.6%	164,837	186,918	2,480,693	156,390	6.3%	291,308	330,332	249,151	282,527	4,371,635	4,957,259
6/30/06-07	8,503,144	13,167,000	14,575,000	4,663,856	6,071,856	12	4	33.3%	1,554,619	2,023,952	265,973	65,087	24.5%	1,141,314	1,485,873	2,612,577	157,146	6.0%	280,529	365,220	567,458	738,771	4,096,398	5,333,085
6/30/07-08	12,050,866	18,593,000	19,590,000	6,542,134	7,539,134	23	2	8.7%	568,881	655,577	932,041	93,181	10.0%	654,048	753,723	2,783,717	168,663	6.1%	396,381	456,788	539,770	622,029	6,002,363	6,917,104
6/30/08-09	12,087,784	20,532,600	21,169,148	8,444,816	9,081,364	34	4	11.8%	993,508	1,068,396	1,325,874	132,972	10.0%	846,934	910,773	2,750,907	180,456	6.6%	553,968	595,725	798,136	858,298	7,646,679	8,223,066
6/30/09-10	11,364,337	20,648,250	21,896,875	9,283,913	10,532,538	42	2	4.8%	442,091	501,549	1,407,275	6,925	0.5%	45,684	51,828	2,806,048	203,138	7.2%	672,088	762,479	386,621	438,619	8,897,292	10,093,919
6/30/10-11	11,281,747	24,056,010	25,214,189	12,774,263	13,932,442	65	3	4.6%	589,581	643,036	1,715,777	105,175	6.1%	783,043	854,038	2,942,638	197,766	6.7%	858,523	936,361	743,716	811,145	12,030,547	13,121,297
6/30/11-12	9,631,355	25,030,170	26,745,719	15,398,815	17,114,364	111	11	9.9%	1,526,009	1,696,018	2,816,504	220,805	7.8%	1,207,216	1,341,709	3,006,849	207,447	6.9%	1,062,388	1,180,747	1,265,204	1,406,158	14,133,610	15,708,206
6/30/12-13	6,384,394	24,161,350	26,032,962	17,776,956	19,648,568	235	26	11.1%	1,966,812	2,173,884	3,182,442	210,743	6.6%	1,177,200	1,301,140	3,138,905	217,415	6.9%	1,231,315	1,360,951	1,458,442	1,611,992	16,318,514	18,036,576
6/30/13-14	3,367,283	27,574,700	29,210,304	24,207,417	25,843,021	500	35	7.0%	1,694,519	1,809,011	3,367,283	278,964	8.3%	2,005,476	2,140,978	3,311,947	232,120	7.0%	1,696,593	1,811,226	1,696,593	1,811,226	22,510,824	24,031,796
Total	433,429,500	591,803,063	623,654,712	158,373,563	190,225,212	1,160	103	8.9%	14,654,372	18,088,118	19,641,070	1,635,398	8.3%	12,346,484	15,794,459						11,470,067	14,026,991	146,903,496	176,198,221

Sel. FY97 & Prior	0.0%

NOTES:

(2), (7), (8), (12), (13), (17). (18) Provided by Commonwealth of Massachusetts
(3) From Prior Analysis - Section 8, Exhibit 2, Page 1, Column 6
(4) From Prior Analysis - Section 8, Exhibit 2, Page 1, Column 7
(5) = (3) - (2)
(6) = (4) - (2)
(9) = (8) / (7)
(10) = (9) * (5)
(11) = (9) * (6)

(14) = (13) / (12)
(15) = (14) * (5)
(16) = (14) * (6)
(19) = (18) / (17)
(20) = (19) * (5)
(21) = (19) * (6)

(22) Selected judgementally based on (10), (15), (20)
(23) Selected judgementally based on (11), (16). (21)
(24) = (5) - (22)
(25) = (6) - (23)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Indemnity

Allocation of Outstanding Reserve to MassDOT Agencies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
		Aon	Aon	Outstanding	Outstanding	**MassDOT Allocation - Method 1**					**MassDOT Allocation - Method 2**					**MassDOT Allocation - Method 3**					MassDOT	MassDOT	All Other	All Other
Accident		Selected Ult	Selected Ult	Losses	Losses	Paid Counts	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Total Paid	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Total Payroll	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Outstanding	Outstanding	Outstanding	Outstanding
Year	Paid Loss	(Low)	(High)	(Low)	(High)	7/1/14-15	7/1/14-15	Paid Counts	(Low)	(High)	7/1/14-15	7/1/14-15	Total Paid	(Low)	(High)	($000)	($000)	Total Payroll	(Low)	(High)	(Low)	(High)	(Low)	(High)
All Prior Yrs	44,332,427	50,188,598	54,601,930	5,856,170	10,269,502	14					586,996								384,190	673,724	128,063	224,575	5,728,107	10,044,928
6/30/82-83	5,610,779	5,671,498	6,107,767	60,719	496,988	1					-1,402								3,983	32,605	1,328	10,868	59,391	486,120
6/30/83-84	8,004,220	8,140,603	8,766,803	136,383	762,583	1					38,165								8,947	50,029	2,982	16,676	133,400	745,907
6/30/84-85	16,709,864	17,282,000	17,573,000	572,136	863,136	1	1	100.0%	572,136	863,136	60,976	60,976	100.0%	572,136	863,136				37,535	56,625	215,735	325,462	356,401	537,674
6/30/85-86	19,799,584	20,610,000	20,970,000	810,416	1,170,416	3	1	33.3%	270,139	390,139	164,776	62,438	37.9%	307,087	443,500				53,167	76,784	210,131	303,474	600,285	866,941
6/30/86-87	20,434,283	21,437,000	21,810,000	1,002,717	1,375,717	6	1	16.7%	167,119	229,286	293,047	62,438	21.3%	213,643	293,116				65,783	90,253	148,848	204,218	853,868	1,171,498
6/30/87-88	27,822,601	29,699,000	30,788,000	1,876,399	2,965,399	8	1	12.5%	234,550	370,675	348,901	47,157	13.5%	253,609	400,796				123,100	194,543	203,753	322,005	1,672,646	2,643,394
6/30/88-89	25,576,693	27,304,000	28,561,000	1,727,307	2,984,307	9	2	22.2%	383,846	663,179	363,025	36,354	10.0%	172,976	298,855				113,319	195,783	223,380	385,939	1,503,927	2,598,368
6/30/89-90	24,141,049	26,333,000	27,315,000	2,191,951	3,173,951	7	1	14.3%	313,136	453,422	346,949	54,439	15.7%	343,931	498,013				143,801	208,225	266,956	386,553	1,924,995	2,787,398
6/30/90-91	21,074,655	23,378,000	24,171,000	2,303,345	3,096,345	6	1	16.7%	383,891	516,058	212,593	38,782	18.2%	420,188	564,851				151,109	203,134	318,396	428,014	1,984,949	2,668,331
6/30/91-92	12,820,189	14,437,000	15,302,000	1,616,811	2,481,811	5					179,955								106,070	162,817	35,357	54,272	1,581,454	2,427,538
6/30/92-93	9,655,051	11,123,000	12,595,000	1,467,949	2,939,949	4	1	25.0%	366,987	734,987	140,217	31,641	22.6%	331,250	663,414				96,304	192,873	264,847	530,425	1,203,102	2,409,524
6/30/93-94	10,579,125	12,232,000	12,888,000	1,652,875	2,308,875	7	2	28.6%	472,250	659,679	177,675	41,635	23.4%	387,319	541,040				108,436	151,472	247,878	346,256	1,404,998	1,962,619
6/30/94-95	9,514,418	11,126,000	11,727,000	1,611,582	2,212,582	6	1	16.7%	268,597	368,764	127,088	2,492	2.0%	31,606	43,393				105,727	145,155	135,310	185,771	1,476,272	2,026,811
6/30/95-96	9,830,137	11,751,000	12,402,000	1,920,863	2,571,863	4					255,043								126,017	168,725	42,006	56,242	1,878,857	2,515,621
6/30/96-97	10,114,020	12,246,000	12,915,000	2,131,980	2,800,980	4					90,124								139,867	183,756	46,622	61,252	2,085,358	2,739,728
6/30/97-98	8,765,116	10,638,000	11,198,000	1,872,884	2,432,884	1					47,007					1,917,994	137,500	7.2%	134,266	174,412	134,266	174,412	1,738,618	2,258,472
6/30/98-99	9,023,147	11,197,000	11,788,000	2,173,853	2,764,853	4					146,968					2,081,524	136,688	6.6%	142,751	181,561	71,376	90,780	2,102,477	2,674,073
6/30/99-00	10,396,879	13,218,000	13,950,000	2,821,121	3,553,121	5	1	20.0%	564,224	710,624	156,145	259	0.2%	4,675	5,888	2,207,243	137,892	6.2%	176,243	221,973	176,243	221,973	2,644,878	3,331,148
6/30/00-01	9,792,849	12,748,000	13,440,000	2,955,151	3,647,151	7	1	14.3%	422,164	521,022	169,511	21,613	12.8%	376,787	465,018	2,201,008	145,149	6.6%	194,882	240,517	331,278	408,852	2,623,873	3,238,299
6/30/01-02	10,310,795	13,622,000	14,346,000	3,311,205	4,035,205	8	1	12.5%	413,901	504,401	74,649	69	0.1%	3,066	3,736	2,292,592	140,223	6.1%	202,525	246,808	102,796	125,272	3,208,409	3,909,933
6/30/02-03	9,959,991	13,491,000	14,205,000	3,531,009	4,245,009	7					117,037					2,260,534	140,250	6.2%	219,074	263,373	73,025	87,791	3,457,984	4,157,218
6/30/03-04	8,964,571	12,454,000	13,079,000	3,489,429	4,114,429	5	1	20.0%	697,886	822,886	132,430	840	0.6%	22,126	26,090	2,255,942	137,408	6.1%	212,538	250,607	212,538	250,607	3,276,891	3,863,823
6/30/04-05	10,449,274	14,506,000	14,729,000	4,056,727	4,279,727	6					233,465					2,309,083	145,033	6.3%	254,802	268,809	84,934	89,603	3,971,792	4,190,124
6/30/05-06	9,780,241	14,090,000	14,575,000	4,309,759	4,794,759	6					242,027					2,480,693	156,390	6.3%	271,700	302,276	181,133	201,517	4,128,625	4,593,241
6/30/06-07	8,800,790	13,154,000	14,351,000	4,353,210	5,550,210	8	2	25.0%	1,088,303	1,387,553	297,646	56,454	19.0%	825,670	1,052,704	2,612,577	157,146	6.0%	261,844	333,843	449,786	573,464	3,903,424	4,976,747
6/30/07-08	12,396,429	18,169,000	19,165,000	5,772,571	6,768,571	13	3	23.1%	1,332,132	1,561,978	345,563	102,977	29.8%	1,720,221	2,017,028	2,783,717	168,663	6.1%	349,754	410,101	677,213	794,060	5,095,358	5,974,511
6/30/08-09	12,666,911	20,050,470	20,688,668	7,383,559	8,021,757	22	2	9.1%	671,233	729,251	579,127	64,949	11.2%	828,064	899,638	2,750,907	180,456	6.6%	484,351	526,216	661,216	718,368	6,722,343	7,303,389
6/30/09-10	12,049,654	19,786,600	20,971,951	7,736,946	8,922,297	28	2	7.1%	552,639	637,307	685,317	30,713	4.5%	346,740	399,863	2,806,048	203,138	7.2%	560,099	645,910	486,493	561,027	7,250,453	8,361,271
6/30/10-11	13,184,682	24,024,330	25,076,051	10,839,648	11,891,369	43	5	11.6%	1,260,424	1,382,717	1,902,935	109,394	5.7%	623,136	683,596	2,942,638	197,766	6.7%	728,503	799,186	870,688	955,167	9,968,961	10,936,203
6/30/11-12	12,284,488	25,713,270	27,255,228	13,428,782	14,970,740	76	4	5.3%	706,778	787,934	2,653,133	224,451	8.5%	1,136,053	1,266,500	3,006,849	207,447	6.9%	926,473	1,032,855	923,101	1,029,096	12,505,680	13,941,643
6/30/12-13	8,602,697	22,547,300	24,933,768	13,944,603	16,331,071	99	11	11.1%	1,549,400	1,814,563	2,218,303	170,333	7.7%	1,070,738	1,253,983	3,138,905	217,415	6.9%	965,868	1,131,166	1,195,335	1,399,904	12,749,268	14,931,167
6/30/13-14	7,327,616	27,694,400	29,693,268	20,366,784	22,365,652	242	23	9.5%	1,935,686	2,125,661	3,960,333	357,360	9.0%	1,837,792	2,018,160	3,311,947	232,120	7.0%	1,427,420	1,567,512	1,733,633	1,903,778	18,633,151	20,461,875
6/30/14-15	3,469,231	29,103,250	31,977,828	25,634,019	28,508,597	562	34	6.0%	1,550,813	1,724,719	3,469,231	245,361	7.1%	1,812,964	2,016,269	3,511,622	248,813	7.1%	1,816,278	2,019,953	1,550,813	1,724,719	24,083,207	26,783,878
Total	454,244,455	619,165,318	653,916,262	164,920,864	199,671,807	1,228	102	8.3%	16,178,234	19,959,939	20,814,955	1,823,123	8.8%	13,641,781	16,718,589						12,407,459	15,152,393	152,513,405	184,519,415

Sel. FY97 & Prior	6.6%

NOTES:

(2), (7), (8), (12), (13), (17). (18) Provided by Commonwealth of Massachusetts
(3) From Section 8, Exhibit 1, Page 1, Column 6
(4) From Section 8, Exhibit 1, Page 1, Column 7
(5) = (3) - (2)
(6) = (4) - (2)
(9) = (8) / (7)
(10) = (9) * (5)
(11) = (9) * (6)

(14) = (13) / (12)
(15) = (14) * (5)
(16) = (14) * (6)
(19) = (18) / (17)
(20) = (19) * (5)
(21) = (19) * (6)

(22) Selected judgementally based on (10), (15), (20)
(23) Selected judgementally based on (11), (16). (21)
(24) = (5) - (22)
(25) = (6) - (23)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Summary of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Paid Loss	Ult Loss - Paid Loss Method	Ult Loss - Paid BF Method	Aon Selected Ult (Low)	Aon Selected Ult (High)	Outstanding Losses (Low)	Outstanding Losses (High)	Ult Loss Cost (Low)	Ult Loss Cost (High)
All Prior Yrs		3,039,639			3,310,277	3,548,139	270,639	508,500		
6/30/82-83		512,140	516,946		512,140	522,115	0	9,976		
6/30/83-84		790,813	800,629		790,813	808,636	0	17,823		
6/30/84-85	732,729	1,123,821	1,141,185	1,141,548	1,123,821	1,152,596	0	28,775	0.153	0.157
6/30/85-86	787,208	1,887,118	1,922,023	1,922,144	1,912,390	1,941,220	25,272	54,102	0.243	0.247
6/30/86-87	902,483	1,680,369	1,716,584	1,716,544	1,708,415	1,734,170	28,046	53,801	0.189	0.192
6/30/87-88	1,366,586	3,164,976	3,242,887	3,246,072	3,226,785	3,278,460	61,809	113,484	0.236	0.240
6/30/88-89	1,486,478	3,555,290	3,661,816	3,665,560	3,662,000	3,702,660	106,710	147,370	0.246	0.249
6/30/89-90	1,494,463	3,839,007	3,973,805	3,978,924	3,974,000	4,018,790	134,993	179,783	0.266	0.269
6/30/90-91	1,405,560	3,476,999	3,617,081	3,616,374	3,616,000	3,653,170	139,001	176,171	0.257	0.260
6/30/91-92	1,364,510	2,779,948	2,906,407	2,905,431	2,905,000	2,935,060	125,052	155,112	0.213	0.215
6/30/92-93	1,347,359	2,483,916	2,609,893	2,608,715	2,609,000	2,636,100	125,084	152,184	0.194	0.196
6/30/93-94	1,424,410	2,905,592	3,068,220	3,065,859	3,066,000	3,098,680	160,408	193,088	0.215	0.218
6/30/94-95	1,497,829	2,489,028	2,644,111	2,642,549	2,643,000	2,670,440	153,972	181,412	0.176	0.178
6/30/95-96	1,582,635	2,075,119	2,222,048	2,222,375	2,222,000	2,244,220	146,881	169,101	0.140	0.142
6/30/96-97	1,979,748	2,748,674	2,966,840	2,966,953	2,967,000	2,996,670	218,326	247,996	0.150	0.151
6/30/97-98	1,917,994	2,010,395	2,183,028	2,187,930	2,183,000	2,209,880	172,605	199,485	0.114	0.115
6/30/98-99	2,081,524	2,552,168	2,806,518	2,810,334	2,807,000	2,838,100	254,832	285,932	0.135	0.136
6/30/99-00	2,207,243	3,010,320	3,363,975	3,365,842	3,364,000	3,399,660	353,680	389,340	0.152	0.154
6/30/00-01	2,201,008	2,893,237	3,295,520	3,300,286	3,296,000	3,333,000	402,763	439,763	0.150	0.151
6/30/01-02	2,292,592	2,714,782	3,138,637	3,149,537	3,139,000	3,181,500	424,218	466,718	0.137	0.139
6/30/02-03	2,260,534	3,064,242	3,631,224	3,638,100	3,631,000	3,674,380	566,758	610,138	0.161	0.163
6/30/03-04	2,255,942	3,047,300	3,683,371	3,693,149	3,683,000	3,729,930	635,700	682,630	0.163	0.165
6/30/04-05	2,309,083	4,353,333	5,383,605	5,211,309	5,000,000	5,491,000	646,667	1,137,667	0.217	0.238
6/30/05-06	2,480,693	3,410,796	4,328,138	4,455,665	4,100,000	4,545,000	689,204	1,134,204	0.165	0.183
6/30/06-07	2,612,577	4,924,584	6,386,624	6,136,900	5,800,000	6,514,000	875,416	1,589,416	0.222	0.249
6/30/07-08	2,783,717	3,955,805	5,265,688	5,387,536	5,000,000	5,495,000	1,044,195	1,539,195	0.180	0.197
6/30/08-09	2,750,907	4,189,281	5,733,746	5,760,312	5,500,000	5,876,000	1,310,719	1,686,719	0.200	0.214
6/30/09-10	2,806,048	4,138,029	5,844,873	5,957,113	5,600,000	6,076,000	1,461,971	1,937,971	0.200	0.217
6/30/10-11	2,942,638	4,611,079	6,742,690	6,717,527	6,400,000	6,878,000	1,788,921	2,266,921	0.217	0.234
6/30/11-12	3,006,849	4,485,953	6,929,567	6,934,889	6,600,000	7,074,000	2,114,047	2,588,047	0.219	0.235
6/30/12-13	3,138,905	3,660,432	6,152,674	6,655,757	6,300,000	6,789,000	2,639,568	3,128,568	0.201	0.216
6/30/13-14	3,311,947	3,390,257	7,101,346	7,549,208	7,200,000	7,700,000	3,809,743	4,309,743	0.217	0.232
6/30/14-15	3,511,622	1,879,802	9,117,321	8,712,152	8,300,000	9,300,000	6,420,198	7,420,198	0.236	0.265
Total	64,243,819	100,844,244	128,099,016	127,322,592	128,151,641	135,045,576	27,307,397	34,201,332		
Tot 6/30/84-15	64,243,819	96,501,652	126,781,441	127,322,592	123,538,411	130,166,686	27,036,759	33,665,034	0.192	0.203

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 8, Exhibit 2, Page 2, Column 3

(4) From Section 8, Exhibit 2, Page 2, Column 8

(5) From Section 8, Exhibit 2, Page 3, Column 8

(6), (7) Selected based on (3), (4), and (5)

(8) = (6) - (3)

(9) = (7) - (3)

(10) = (6) / (2) / 10

(11) = (7) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Paid Loss Development Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Accident Year	Payroll (000's)	Paid Loss	Paid LDF	Adjustment for Tail	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Paid Counts 7/1/13-14	Paid Counts 7/1/14-15	Average Outstanding Claim
All Prior Yrs		3,039,639							5	3	
6/30/82-83		512,140	1.009	1.000	516,946	N/A	516,946		1	0	
6/30/83-84		790,813	1.012	1.000	800,629	N/A	800,629		0	0	
6/30/84-85	732,729	1,123,821	1.015	1.000	1,141,185	N/A	1,141,185	0.156	0	0	
6/30/85-86	787,208	1,887,118	1.018	1.000	1,922,023	N/A	1,922,023	0.244	1	1	34,905
6/30/86-87	902,483	1,680,369	1.022	1.000	1,716,584	N/A	1,716,584	0.190	2	2	18,108
6/30/87-88	1,366,586	3,164,976	1.025	1.000	3,242,887	N/A	3,242,887	0.237	6	7	11,130
6/30/88-89	1,486,478	3,555,290	1.030	1.000	3,661,816	N/A	3,661,816	0.246	6	6	17,754
6/30/89-90	1,494,463	3,839,007	1.035	1.000	3,973,805	N/A	3,973,805	0.266	5	6	22,466
6/30/90-91	1,405,560	3,476,999	1.040	1.000	3,617,081	N/A	3,617,081	0.257	7	6	23,347
6/30/91-92	1,364,510	2,779,948	1.045	1.000	2,906,407	N/A	2,906,407	0.213	4	2	63,229
6/30/92-93	1,347,359	2,483,916	1.051	1.000	2,609,893	N/A	2,609,893	0.194	6	5	25,195
6/30/93-94	1,424,410	2,905,592	1.056	1.000	3,068,220	N/A	3,068,220	0.215	6	6	27,105
6/30/94-95	1,497,829	2,489,028	1.062	1.000	2,644,111	N/A	2,644,111	0.177	9	10	15,508
6/30/95-96	1,582,635	2,075,119	1.071	1.000	2,222,048	N/A	2,222,048	0.140	4	3	48,976
6/30/96-97	1,979,748	2,748,674	1.079	1.000	2,966,840	N/A	2,966,840	0.150	3	6	36,361
6/30/97-98	1,917,994	2,010,395	1.086	1.000	2,183,028	N/A	2,183,028	0.114	6	6	28,772
6/30/98-99	2,081,524	2,552,168	1.100	1.000	2,806,518	N/A	2,806,518	0.135	7	9	28,261
6/30/99-00	2,207,243	3,010,320	1.117	1.000	3,363,975	N/A	3,363,975	0.152	11	11	32,150
6/30/00-01	2,201,008	2,893,237	1.139	1.000	3,295,520	N/A	3,295,520	0.150	13	11	36,571
6/30/01-02	2,292,592	2,714,782	1.156	1.000	3,138,637	N/A	3,138,637	0.137	17	15	28,257
6/30/02-03	2,260,534	3,064,242	1.185	1.000	3,631,224	N/A	3,631,224	0.161	20	18	31,499
6/30/03-04	2,255,942	3,047,300	1.209	1.000	3,683,371	N/A	3,683,371	0.163	22	20	31,804
6/30/04-05	2,309,083	4,353,333	1.237	1.000	5,383,605	N/A	5,383,605	0.233	23	16	64,392
6/30/05-06	2,480,693	3,410,796	1.269	1.000	4,328,138	N/A	4,328,138	0.174	29	23	39,884
6/30/06-07	2,612,577	4,924,584	1.297	1.000	6,386,624	N/A	6,386,624	0.244	29	23	63,567
6/30/07-08	2,783,717	3,955,805	1.331	1.000	5,265,688	N/A	5,265,688	0.189	37	30	43,663
6/30/08-09	2,750,907	4,189,281	1.369	1.000	5,733,746	N/A	5,733,746	0.208	52	39	39,602
6/30/09-10	2,806,048	4,138,029	1.412	1.000	5,844,873	N/A	5,844,873	0.208	62	44	38,792
6/30/10-11	2,942,638	4,611,079	1.462	1.000	6,742,690	N/A	6,742,690	0.229	105	71	30,023
6/30/11-12	3,006,849	4,485,953	1.545	1.000	6,929,567	N/A	6,929,567	0.230	218	113	21,625
6/30/12-13	3,138,905	3,660,432	1.681	1.000	6,152,674	N/A	6,152,674	0.196	689	204	12,217
6/30/13-14	3,311,947	3,390,257	2.095	1.000	7,101,346	N/A	7,101,346	0.214	909	716	5,183
6/30/14-15	3,511,622	1,879,802	4.850	1.000	9,117,321	N/A	9,117,321	0.260		1,047	6,913
Total	64,243,819	100,844,244			128,099,016		128,099,016		2,314	2,479	

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3), (4) From Section 8, Exhibit 2, Page 7

(5) Based on information from the MA WCRIB 4/1/14 filing. Consideration for development beyond 252 months made in selection of LDF's.

(6) = (3) x (4) x (5)

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10), (11) Provided by Commonwealth of Massachusetts

(12) = Maximum of [{(6) - (3)} / (11)] and 0

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Paid Bornhuetter-Ferguson Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Accident Year	Payroll (000's)	A Priori Loss Rate	Paid Loss	Paid LDF	Ultimate Loss Excluding Lump Sum	Est Ult Lump Sum Payments	Ultimate Loss Including Lump Sum	Ultimate Loss Cost	Ultimate Loss Cost Excluding Lump Sum
All Prior Yrs									
6/30/82-83									
6/30/83-84									
6/30/84-85	732,729	0.159	1,123,821	1.015	1,141,548	N/A	1,141,548	0.156	0.156
6/30/85-86	787,208	0.245	1,887,118	1.018	1,922,144	N/A	1,922,144	0.244	0.244
6/30/86-87	902,483	0.190	1,680,369	1.022	1,716,544	N/A	1,716,544	0.190	0.190
6/30/87-88	1,366,586	0.247	3,164,976	1.025	3,246,072	N/A	3,246,072	0.238	0.238
6/30/88-89	1,486,478	0.255	3,555,290	1.030	3,665,560	N/A	3,665,560	0.247	0.247
6/30/89-90	1,494,463	0.276	3,839,007	1.035	3,978,924	N/A	3,978,924	0.266	0.266
6/30/90-91	1,405,560	0.256	3,476,999	1.040	3,616,374	N/A	3,616,374	0.257	0.257
6/30/91-92	1,364,510	0.211	2,779,948	1.045	2,905,431	N/A	2,905,431	0.213	0.213
6/30/92-93	1,347,359	0.192	2,483,916	1.051	2,608,715	N/A	2,608,715	0.194	0.194
6/30/93-94	1,424,410	0.212	2,905,592	1.056	3,065,859	N/A	3,065,859	0.215	0.215
6/30/94-95	1,497,829	0.175	2,489,028	1.062	2,642,549	N/A	2,642,549	0.176	0.176
6/30/95-96	1,582,635	0.141	2,075,119	1.071	2,222,375	N/A	2,222,375	0.140	0.140
6/30/96-97	1,979,748	0.150	2,748,674	1.079	2,966,953	N/A	2,966,953	0.150	0.150
6/30/97-98	1,917,994	0.117	2,010,395	1.086	2,187,930	N/A	2,187,930	0.114	0.114
6/30/98-99	2,081,524	0.137	2,552,168	1.100	2,810,334	N/A	2,810,334	0.135	0.135
6/30/99-00	2,207,243	0.153	3,010,320	1.117	3,365,842	N/A	3,365,842	0.152	0.152
6/30/00-01	2,201,008	0.152	2,893,237	1.139	3,300,286	N/A	3,300,286	0.150	0.150
6/30/01-02	2,292,592	0.140	2,714,782	1.156	3,149,537	N/A	3,149,537	0.137	0.137
6/30/02-03	2,260,534	0.163	3,064,242	1.185	3,638,100	N/A	3,638,100	0.161	0.161
6/30/03-04	2,255,942	0.166	3,047,300	1.209	3,693,149	N/A	3,693,149	0.164	0.164
6/30/04-05	2,309,083	0.194	4,353,333	1.237	5,211,309	N/A	5,211,309	0.226	0.226
6/30/05-06	2,480,693	0.199	3,410,796	1.269	4,455,665	N/A	4,455,665	0.180	0.180
6/30/06-07	2,612,577	0.203	4,924,584	1.297	6,136,900	N/A	6,136,900	0.235	0.235
6/30/07-08	2,783,717	0.207	3,955,805	1.331	5,387,536	N/A	5,387,536	0.194	0.194
6/30/08-09	2,750,907	0.212	4,189,281	1.369	5,760,312	N/A	5,760,312	0.209	0.209
6/30/09-10	2,806,048	0.222	4,138,029	1.412	5,957,113	N/A	5,957,113	0.212	0.212
6/30/10-11	2,942,638	0.226	4,611,079	1.462	6,717,527	N/A	6,717,527	0.228	0.228
6/30/11-12	3,006,849	0.231	4,485,953	1.545	6,934,889	N/A	6,934,889	0.231	0.231
6/30/12-13	3,138,905	0.236	3,660,432	1.681	6,655,757	N/A	6,655,757	0.212	0.212
6/30/13-14	3,311,947	0.240	3,390,257	2.095	7,549,208	N/A	7,549,208	0.228	0.228
6/30/14-15	3,511,622	0.245	1,879,802	4.850	8,712,152	N/A	8,712,152	0.248	0.248
Total	64,243,819		96,501,652		127,322,592		127,322,592		

NOTES:

(2) Provided by Commonwealth of Massachusetts

(3) From Section 8, Exhibit 2, Page 4, Column 11

(4) From Section 8, Exhibit 2, Page 2, Column 3

(5) From Section 8, Exhibit 2, Page 2, Column 4

(6) = (4) + [{1 - {1 / (5)}} x (3) x (2) x 10]

(7) Lump Sum Payments are considered in the Indemnity analysis (Section 1)

(8) = (6) + (7)

(9) = (8) / (2) / 10

(10) = (6) / (2) / 10

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Calculation of Initial Expected Loss Rate

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Accident Year	Payroll (000's)	Expected Ult Loss	Unadjusted Loss Cost	Benefit Level Factor	Adjusted Loss Cost	Trend Factor	Trended Adjusted Loss Cost	Detrended Selected Loss Cost	Prior Selected Loss Cost	Current Selected Loss Cost
All Prior Yrs										
6/30/82-83										
6/30/83-84										
6/30/84-85									0.159	0.159
6/30/85-86									0.245	0.245
6/30/86-87									0.190	0.190
6/30/87-88									0.247	0.247
6/30/88-89									0.255	0.255
6/30/89-90									0.276	0.276
6/30/90-91	1,405,560	3,617,081	0.257	1.194	0.307	1.641	0.504	0.128	0.258	0.256
6/30/91-92	1,364,510	2,906,407	0.213	1.189	0.253	1.608	0.407	0.131	0.214	0.211
6/30/92-93	1,347,359	2,609,893	0.194	1.189	0.230	1.577	0.363	0.133	0.193	0.192
6/30/93-94	1,424,410	3,068,220	0.215	1.178	0.254	1.546	0.392	0.137	0.214	0.212
6/30/94-95	1,497,829	2,644,111	0.177	1.170	0.207	1.516	0.313	0.141	0.176	0.175
6/30/95-96	1,582,635	2,222,048	0.140	1.155	0.162	1.486	0.241	0.146	0.142	0.141
6/30/96-97	1,979,748	2,966,840	0.150	1.137	0.170	1.457	0.248	0.151	0.152	0.150
6/30/97-98	1,917,994	2,183,028	0.114	1.135	0.129	1.428	0.185	0.154	0.119	0.117
6/30/98-99	2,081,524	2,806,518	0.135	1.135	0.153	1.400	0.214	0.157	0.139	0.137
6/30/99-00	2,207,243	3,363,975	0.152	1.135	0.173	1.373	0.237	0.160	0.153	0.153
6/30/00-01	2,201,008	3,295,520	0.150	1.109	0.166	1.346	0.224	0.167	0.152	0.152
6/30/01-02	2,292,592	3,138,637	0.137	1.101	0.151	1.319	0.199	0.172	0.142	0.140
6/30/02-03	2,260,534	3,631,224	0.161	1.073	0.172	1.294	0.223	0.180	0.164	0.163
6/30/03-04	2,255,942	3,683,371	0.163	1.046	0.171	1.268	0.217	0.188	0.170	0.166
6/30/04-05	2,309,083	5,383,605	0.233	1.036	0.241	1.243	0.300	0.194	0.198	0.194
6/30/05-06	2,480,693	4,328,138	0.174	1.032	0.180	1.219	0.219	0.199	0.203	0.199
6/30/06-07	2,612,577	6,386,624	0.244	1.032	0.252	1.195	0.301	0.203	0.207	0.203
6/30/07-08	2,783,717	5,265,688	0.189	1.032	0.195	1.172	0.229	0.207	0.211	0.207
6/30/08-09	2,750,907	5,733,746	0.208	1.027	0.214	1.149	0.246	0.212	0.216	0.212
6/30/09-10	2,806,048	5,844,873	0.208	1.000	0.208	1.126	0.235	0.222	0.226	0.222
6/30/10-11	2,942,638	6,742,690	0.229	1.000	0.229	1.104	0.253	0.226	0.231	0.226
6/30/11-12	3,006,849	6,929,567	0.230	1.000	0.230	1.082	0.249	0.231	0.236	0.231
6/30/12-13	3,138,905	6,152,674	0.196	1.000	0.196	1.061	0.208	0.236	0.240	0.236
6/30/13-14	3,311,947	7,101,346	0.214	1.000	0.214	1.040	0.223	0.240	0.245	0.240
6/30/14-15	3,511,622	9,117,321	0.260	1.000	0.260	1.020	0.265	0.245		0.245
Total	57,473,873	111,123,142								

Trend Last 4 (ex 14-15):	-3.5%	Avg 3 (ex 14-15):	0.227
Trend Last 8 (ex 14-15):	-0.9%	Avg 5 (ex 14-15):	0.234
Trend Last 12 (ex 14-15):	1.4%	Avg 10 (ex 14-15):	0.246
Prior Selected Trend:	2.0%	Prior Sel Avg:	0.250
Selected Trend:	2.0%	Sel. Loss Cost:	0.250

NOTES:
(2) Provided by Commonwealth of Massachusetts
(3) From Section 8, Exhibit 2, Page 2, Column 6
(4) = (3) / (2) / 10
(5) Based on information from the MA WCIRB
(6) = (4) x (5)
(7) Based on Selected Trend from (6)
(8) = (6) x (7)
(9) = Sel. Loss Cost / [(5) * (7)]
(10) From prior Aon analysis as of June 30, 2014
(11) Selected based on (9) and (4)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Calculation of 1982 & Prior Reserves (Page 1)

Method 1

(1)	Average Payment Trend	0.925	
(2)	Credibility	58%	
(3)	Average Pmt Trend Statewide	0.950	
(4)	Credibility Weighted Trend	0.936	
		(Low)	(High)
(5)	Selected Range	0.898	0.954
(6)	Incremental Paid for 2015	38,942	38,942
(7)	Estimated Reserve	343,408	812,896
(8)	Paid to Date (82 & Prior)	3,039,639	3,039,639
(9)	Est Ult Paid for 1982 & Prior	3,383,046	3,852,535

Method 2

		(Current)	(Prior)
(10)	Avg Incremental Paid (3 yrs)	39,574	34,721
(11)	Projected Number of Years	5	7
(12)	Estimated Reserve	197,869	243,045
(13)	Paid to Date (82 & Prior)	3,039,639	3,000,696
(14)	Est Ult Paid for 1982 & Prior	3,237,508	3,243,742
(14a)	Paid Counts During Fiscal Year	3	5
		(Low)	(High)
(15)	Sel Ult Excluding Lump Sums	3,310,277	3,548,139
(16)	Lump Sum Ultimates	N/A	N/A
(17)	Ult Loss Including Lump Sums	**3,310,277**	**3,548,139**
(18)	Implied Tail	1.089	1.167
(19)	Ult Loss Inc Lump Sums @ 6/14	3,314,823	3,572,594

NOTES:

(1) From Section 8, Exhibit 2, Page 6
(2) = (Average of Section 8, Exhibit 2, Page 6, Column 3 / 175,000) ^ 0.5
(3) Average Statewide Trend
(4) = (1) x (2) + (4) x {1 - (2)}
(5) Selected judgmentally based on (4)
(6), (14a) Provided by Commonwealth of Massachusetts
(7) = (6) x (5) / {1 - (5)}
(8), (16) From Section 8, Exhibit 2, Page 2, Column 3
(9) = (7) + (8)
(10) Avg of 3 latest years from Section 8, Exhibit 2, Page 6, Column 3
(11) Selected judgmentally
(12) = (10 x (11)
(14) = (12) + (13)
(15) = Average of (9) and (14)
(16) Lump Sums are considered in Indemnity analysis (Section 1)
(17) = (15) + (16)
(18) = (15) / (8)
(19) From prior Aon analysis as of June 30, 2014

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Calculation of 1982 & Prior Reserves (Page 2)

(1)	(2)	(3)	(4)	(5)		
Year	X	Incremental Paids	LN	Average Observed Trend		Trend Calculations
1992	1	206,798	12.239			
1993	2	153,285	11.940	0.741		
1994	3	146,363	11.894	0.955		
1995	4	120,472	11.699	0.823		
1996	5	130,279	11.777	1.081		
1997	6	37,349	10.528	0.287		
1998	7	24,406	10.103	0.653		
1999	8	85,275	11.354	3.494		
2000	9	30,381	10.322	0.356	n =	24
2001	10	26,076	10.169	0.858	S(x) =	48,084
2002	11	28,013	10.240	1.074	S(x-sq) =	96,337,444
2003	12	24,232	10.095	0.865	S(xy) =	514,006
2004	13	32,198	10.380	1.329	S(y) =	257
2005	14	42,136	10.649	1.309	D =	27,600
2006	15	33,882	10.431	0.804	slope =	-0.067
2007	16	22,266	10.011	0.657	Avg Trend =	0.933
2008	17	32,986	10.404	1.481		
2009	18	25,370	10.141	0.769		
2010	19	25,142	10.132	0.991		
2011	20	28,691	10.264	1.141		
2012	21	24,383	10.102	0.850		
2013	22	32,108	10.377	1.317		
2014	23	47,672	10.772	1.485		
2015	24	38,942	10.570	0.817		
					Selected Trend:	**0.925**

NOTES:

(3) 2015 provided by Commonwealth of Massachusetts. Prior years from Aon analysis as of June 30, 2014

(4) LN [(3)]

(5) Eg. 2015: 0.817 = 38942 / 47672

Commonwealth of Massachusetts Workers Compensation
All Other - Clusters 5-17 & 95
MEDICAL
Paid Loss Development
Paid Loss (Excluding Lump Sum)

Acc Yr Ending	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	372	384	396
June-83	27,370	65,800	95,928	121,026	146,374	172,082	195,518	223,519	270,937	291,319	312,256	316,614	336,461	401,393	453,214	453,179	457,283	457,468	457,468	457,468	458,118	472,628	476,174	480,561	485,930	491,063	495,741	498,237	501,473	504,586	508,182	512,140	512,140
June-84	73,019	172,377	253,637	324,243	391,630	438,262	505,877	586,886	610,938	636,458	664,679	683,784	693,120	716,886	724,043	734,862	745,334	749,852	758,667	762,583	783,107	784,865	788,687	788,743	790,813	790,813	790,813	790,813	790,813	790,813	790,813	790,813	
June-85	91,462	222,608	324,021	409,170	488,686	592,053	702,853	747,423	785,283	911,116	929,832	957,391	968,422	980,992	1,009,751	1,031,712	1,051,061	1,066,218	1,077,726	1,088,791	1,096,356	1,103,232	1,110,832	1,116,052	1,122,649	1,123,312	1,123,581	1,123,581	1,123,821	1,123,821	1,123,821		
June-86	197,516	482,005	708,037	875,864	1,053,127	1,211,316	1,370,683	1,467,692	1,572,492	1,608,200	1,631,069	1,655,833	1,672,723	1,699,156	1,716,974	1,724,323	1,731,547	1,743,355	1,755,277	1,764,089	1,780,012	1,796,528	1,802,048	1,808,935	1,832,489	1,867,039	1,872,692	1,877,988	1,882,106	1,887,118				
June-87	199,777	488,687	761,278	928,992	1,116,174	1,247,272	1,326,215	1,394,678	1,416,827	1,433,554	1,451,102	1,461,072	1,470,676	1,482,961	1,498,691	1,507,156	1,517,732	1,527,729	1,533,186	1,539,237	1,545,443	1,554,224	1,564,621	1,590,009	1,608,659	1,628,722	1,648,308	1,667,330	1,680,369					
June-88	390,619	1,150,212	1,830,796	2,204,311	2,429,489	2,580,235	2,679,602	2,758,965	2,816,870	2,872,713	2,895,135	2,917,336	2,938,306	2,953,260	2,965,159	2,980,478	3,005,909	3,019,968	3,040,247	3,060,774	3,075,967	3,084,408	3,098,971	3,111,109	3,123,843	3,135,852	3,148,456	3,164,976						
June-89	348,632	1,379,611	1,965,598	2,380,914	2,616,790	2,882,836	2,988,159	3,078,524	3,143,724	3,188,707	3,222,672	3,251,157	3,271,467	3,290,603	3,312,237	3,338,112	3,358,373	3,385,594	3,459,727	3,477,288	3,487,596	3,504,078	3,526,921	3,535,629	3,542,709	3,552,709	3,555,290							
June-90	597,392	1,787,214	2,367,627	2,727,013	2,917,488	3,052,042	3,170,650	3,294,118	3,385,084	3,460,338	3,498,784	3,525,521	3,559,539	3,594,665	3,616,129	3,673,092	3,699,660	3,720,191	3,743,464	3,756,545	3,772,853	3,783,930	3,792,543	3,806,458	3,820,503	3,839,007								
June-91	708,625	1,924,338	2,444,979	2,785,515	2,902,296	3,018,419	3,064,528	3,074,954	3,092,506	3,113,710	3,131,050	3,142,716	3,165,865	3,200,123	3,230,691	3,265,408	3,303,782	3,334,465	3,363,420	3,385,556	3,405,270	3,425,312	3,448,838	3,464,204	3,476,999									
June-92	588,418	1,588,370	1,986,839	2,229,495	2,290,208	2,325,875	2,375,312	2,430,547	2,462,691	2,497,761	2,542,769	2,553,772	2,574,534	2,586,268	2,593,937	2,607,986	2,617,238	2,623,319	2,642,357	2,693,544	2,703,064	2,761,452	2,777,670	2,779,948										
June-93	415,674	1,315,738	1,611,871	1,719,235	1,836,642	1,871,759	1,907,504	1,930,526	1,977,226	2,009,894	2,048,320	2,106,226	2,144,269	2,190,485	2,240,879	2,296,700	2,349,467	2,390,884	2,414,691	2,428,953	2,450,534	2,469,958	2,483,916											
June-94	598,740	1,383,736	1,705,173	1,941,862	2,012,247	2,200,199	2,290,696	2,346,328	2,406,956	2,509,745	2,549,583	2,601,202	2,677,455	2,727,826	2,785,899	2,804,943	2,822,448	2,841,619	2,860,084	2,875,638	2,893,152	2,905,592											
June-95	625,005	1,262,191	1,500,916	1,627,990	1,716,166	1,770,565	1,843,652	1,919,317	2,018,626	2,068,939	2,105,461	2,177,442	2,207,352	2,235,130	2,265,454	2,289,441	2,313,135	2,411,441	2,435,367	2,459,756	2,489,028													
June-96	442,026	1,106,672	1,298,637	1,506,086	1,588,152	1,626,688	1,672,734	1,723,992	1,784,200	1,838,291	1,904,595	1,938,999	1,973,969	1,990,646	2,023,635	2,041,150	2,054,604	2,061,273	2,065,137	2,075,119														
June-97	490,343	1,177,901	1,656,955	1,851,037	1,939,610	2,054,998	2,100,197	2,157,406	2,207,438	2,247,927	2,302,138	2,315,796	2,338,520	2,350,446	2,367,170	2,457,338	2,600,718	2,743,595	2,748,674															
June-98	326,869	974,658	1,226,365	1,350,342	1,476,983	1,551,929	1,637,433	1,716,707	1,747,491	1,769,878	1,797,150	1,821,161	1,842,103	1,916,231	1,958,225	1,973,933	1,982,909	2,010,395																
June-99	484,930	1,204,187	1,456,433	1,645,438	1,757,364	1,866,452	1,932,933	2,065,834	2,135,187	2,187,567	2,264,558	2,353,171	2,390,481	2,459,300	2,488,986	2,506,545	2,552,168																	
June-00	687,002	1,407,750	1,709,714	1,905,283	2,094,421	2,260,264	2,375,651	2,506,812	2,566,510	2,618,716	2,644,619	2,679,121	2,756,324	2,834,813	2,909,495	3,010,320																		
June-01	555,924	1,355,841	1,668,220	1,965,335	2,137,275	2,265,629	2,333,456	2,389,586	2,477,500	2,581,034	2,640,810	2,693,375	2,747,068	2,824,207	2,893,237																			
June-02	456,844	1,259,496	1,683,493	1,908,166	2,029,871	2,101,432	2,140,880	2,212,890	2,279,178	2,337,107	2,491,961	2,573,704	2,652,321	2,714,782																				
June-03	314,443	1,423,035	2,006,147	2,291,763	2,403,958	2,513,521	2,608,269	2,678,105	2,752,202	2,844,031	2,880,263	2,981,766	3,064,242																				
June-04	598,148	1,733,246	2,216,316	2,434,141	2,548,142	2,669,710	2,729,591	2,840,027	2,905,967	2,953,758	3,003,620	3,047,300																					
June-05	744,557	2,314,627	3,030,458	3,409,706	3,640,720	3,806,314	3,993,880	4,101,306	4,226,019	4,303,783	4,353,333																						
June-06	971,841	2,207,952	2,611,952	2,837,745	3,016,501	3,153,780	3,240,647	3,314,422	3,376,156	3,410,796																							
June-07	1,118,370	3,111,007	3,990,645	4,226,540	4,465,130	4,612,091	4,787,482	4,860,001	4,924,584																								
June-08	1,399,818	2,842,788	3,291,021	3,540,051	3,665,019	3,833,245	3,900,241	3,955,805																									
June-09	1,326,874	2,783,994	3,440,192	3,757,225	3,955,223	4,076,333	4,189,281																										
June-10	1,396,833	3,068,894	3,532,579	3,829,758	4,051,519	4,138,029																											
June-11	1,591,468	3,339,318	3,962,771	4,360,928	4,611,079																												
June-12	1,578,463	3,469,608	4,122,296	4,485,953																													
June-13	1,503,155	3,061,873	3,660,432																														
June-14	1,466,358	3,390,257																															
June-15	1,879,802																																

Age-to-Age Factors

Acc Yr Ending	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396
June-83	2.404	1.458	1.262	1.209	1.176	1.136	1.143	1.212	1.075	1.072	1.014	1.063	1.193	1.129	1.000	1.009	1.000	1.000	1.000	1.001	1.032	1.008	1.009	1.011	1.011	1.010	1.005	1.006	1.006	1.007	1.008	1.000
June-84	2.361	1.471	1.278	1.208	1.119	1.154	1.160	1.041	1.042	1.044	1.029	1.014	1.034	1.010	1.015	1.014	1.006	1.012	1.005	1.027	1.002	1.005	1.000	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
June-85	2.434	1.456	1.263	1.194	1.212	1.187	1.063	1.051	1.160	1.021	1.030	1.012	1.013	1.029	1.022	1.019	1.014	1.011	1.010	1.007	1.006	1.007	1.005	1.006	1.001	1.000	1.000	1.000	1.000	1.000		
June-86	2.440	1.469	1.237	1.202	1.150	1.132	1.071	1.071	1.023	1.014	1.015	1.010	1.016	1.010	1.004	1.004	1.007	1.007	1.005	1.009	1.009	1.003	1.004	1.013	1.019	1.003	1.003	1.002	1.003			
June-87	2.446	1.558	1.220	1.201	1.117	1.063	1.052	1.016	1.012	1.012	1.007	1.007	1.008	1.011	1.006	1.007	1.007	1.004	1.004	1.004	1.006	1.007	1.016	1.012	1.012	1.012	1.012	1.008				
June-88	2.945	1.592	1.204	1.102	1.062	1.039	1.030	1.021	1.020	1.008	1.008	1.007	1.005	1.004	1.005	1.009	1.005	1.007	1.007	1.005	1.003	1.005	1.004	1.004	1.004	1.004	1.005					
June-89	3.957	1.425	1.211	1.099	1.102	1.037	1.030	1.021	1.014	1.011	1.009	1.006	1.006	1.007	1.008	1.006	1.008	1.022	1.005	1.003	1.005	1.007	1.002	1.002	1.003	1.001						
June-90	2.992	1.325	1.152	1.070	1.046	1.039	1.039	1.028	1.022	1.011	1.008	1.010	1.010	1.006	1.016	1.007	1.006	1.006	1.003	1.004	1.003	1.002	1.004	1.004	1.005							
June-91	2.716	1.271	1.139	1.042	1.040	1.015	1.003	1.006	1.007	1.006	1.004	1.007	1.011	1.010	1.011	1.012	1.009	1.009	1.007	1.006	1.006	1.007	1.004	1.004								
June-92	2.699	1.251	1.122	1.027	1.016	1.021	1.023	1.013	1.014	1.018	1.004	1.008	1.005	1.003	1.005	1.004	1.002	1.007	1.019	1.004	1.022	1.006	1.001									
June-93	3.165	1.225	1.067	1.068	1.019	1.019	1.012	1.024	1.017	1.019	1.028	1.018	1.022	1.023	1.025	1.023	1.018	1.010	1.006	1.009	1.008	1.006										
June-94	2.311	1.232	1.139	1.036	1.093	1.041	1.024	1.026	1.043	1.016	1.020	1.029	1.019	1.021	1.007	1.006	1.007	1.006	1.005	1.006	1.004											
June-95	2.019	1.189	1.085	1.054	1.032	1.041	1.041	1.052	1.025	1.018	1.034	1.014	1.013	1.014	1.011	1.010	1.042	1.010	1.010	1.012												
June-96	2.504	1.173	1.160	1.054	1.024	1.028	1.031	1.035	1.030	1.036	1.018	1.018	1.008	1.017	1.009	1.007	1.003	1.002	1.005													
June-97	2.402	1.407	1.117	1.048	1.059	1.022	1.027	1.023	1.018	1.024	1.006	1.010	1.005	1.007	1.038	1.058	1.055	1.002														
June-98	2.982	1.258	1.101	1.094	1.051	1.055	1.048	1.018	1.013	1.015	1.013	1.011	1.040	1.022	1.008	1.005	1.014															
June-99	2.483	1.209	1.130	1.068	1.062	1.036	1.069	1.034	1.025	1.035	1.039	1.016	1.029	1.012	1.007	1.018																
June-00	2.049	1.215	1.114	1.099	1.079	1.051	1.055	1.024	1.020	1.010	1.013	1.029	1.028	1.026	1.035																	
June-01	2.439	1.230	1.178	1.087	1.060	1.030	1.024	1.037	1.042	1.023	1.020	1.020	1.028	1.024																		
June-02	2.757	1.337	1.133	1.064	1.035	1.019	1.034	1.030	1.025	1.066	1.033	1.031	1.024																			
June-03	4.526	1.410	1.142	1.049	1.046	1.038	1.027	1.028	1.033	1.013	1.035	1.028																				
June-04	2.898	1.279	1.098	1.047	1.048	1.022	1.040	1.023	1.016	1.017	1.015																					
June-05	3.109	1.309	1.125	1.068	1.045	1.049	1.027	1.030	1.018	1.012																						
June-06	2.272	1.183	1.086	1.063	1.046	1.028	1.023	1.019	1.010																							
June-07	2.782	1.283	1.059	1.056	1.033	1.038	1.015	1.013																								
June-08	2.031	1.158	1.076	1.035	1.046	1.017	1.014																									
June-09	2.098	1.236	1.092	1.053	1.031	1.028																										
June-10	2.197	1.151	1.084	1.058	1.021																											
June-11	2.098	1.187	1.100	1.057																												
June-12	2.198	1.188	1.088																													
June-13	2.037	1.195																														
June-14	2.312																															

Averages	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336	336-348	348-360	360-372	372-384	384-396	To Ult
Simple Avg																																	
All Yrs	2.596	1.301	1.142	1.087	1.067	1.051	1.043	1.036	1.030	1.023	1.018	1.017	1.026	1.020	1.013	1.013	1.013	1.008	1.007	1.007	1.009	1.006	1.005	1.006	1.007	1.004	1.004	1.003	1.002	1.002	1.004		
Latest 5	2.168	1.191	1.088	1.052	1.035	1.032	1.024	1.023	1.021	1.026	1.023	1.025	1.030	1.018	1.019	1.020	1.024	1.006	1.009	1.007	1.009	1.005	1.003	1.005	1.009	1.004	1.004	1.003					
Latest 3	2.182	1.190	1.091	1.056	1.033	1.028	1.017	1.021	1.015	1.014	1.028	1.026	1.027	1.021	1.017	1.027	1.024	1.005	1.007	1.009	1.011	1.006	1.003	1.003	1.004	1.006	1.007	1.003	1.001	1.002			
Volume Wtd																																	
All Yrs	2.440	1.256	1.118	1.067	1.051	1.037	1.032	1.026	1.023	1.019	1.017	1.016	1.017	1.015	1.013	1.013	1.013	1.008	1.007	1.006	1.007	1.005	1.004	1.005	1.006	1.004	1.005	1.003	1.002	1.001	1.003	1.000	
Latest 5	2.167	1.190	1.089	1.052	1.034	1.032	1.023	1.022	1.020	1.023	1.023	1.025	1.029	1.019	1.021	1.021	1.025	1.006	1.009	1.007	1.008	1.005	1.003	1.004	1.007	1.004	1.005	1.003					
Latest 3	2.182	1.190	1.091	1.056	1.032	1.028	1.017	1.020	1.015	1.013	1.027	1.026	1.027	1.021	1.018	1.029	1.027	1.005	1.007	1.009	1.011	1.006	1.003	1.003	1.004	1.004	1.006	1.004	1.001	1.001			

Dev Factor Selection																																	
Industry 1	1.962	1.143	1.057	1.029	1.019	1.013	1.012																										
Industry 2		1.271	1.076	1.031	1.019	1.013	1.010	1.010	1.011	1.009	1.010	1.014	1.012	1.008	1.007	1.008	1.006	1.005	1.005	1.006													
Prior	*2.605*	*1.260*	*1.087*	*1.056*	*1.040*	*1.037*	*1.031*	*1.029*	*1.027*	*1.026*	*1.028*	*1.020*	*1.025*	*1.015*	*1.014*	*1.018*	*1.019*	*1.007*	*1.008*	*1.008*	*1.006*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.005*	*1.012*	
Selected	2.316	1.246	1.088	1.056	1.035	1.032	1.028	1.026	1.022	1.026	1.023	1.020	1.025	1.015	1.019	1.016	1.013	1.006	1.008	1.008	1.006	1.005	1.005	1.005	1.005	1.005	1.005	1.003	1.003	1.003	1.003	1.003	1.009
FacToUlt	4.850	2.095	1.681	1.545	1.462	1.412	1.369	1.331	1.297	1.269	1.237	1.209	1.185	1.156	1.139	1.117	1.100	1.086	1.079	1.071	1.062	1.056	1.051	1.045	1.040	1.035	1.030	1.025	1.022	1.018	1.015	1.012	1.009
Percent of Ult	20.6%	47.7%	59.5%	64.7%	68.4%	70.8%	73.1%	75.1%	77.1%	78.8%	80.9%	82.7%	84.4%	86.5%	87.8%	89.5%	90.9%	92.1%	92.6%	93.4%	94.1%	94.7%	95.2%	95.6%	96.1%	96.6%	97.1%	97.6%	97.9%	98.2%	98.5%	98.8%	99.1%

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Comparison of Ultimate Losses

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ultimate Loss		Ultimate Loss		Change in Ultimate Loss		Change in Ultimate Loss	
Accident	As of 6/14		As of 6/15		(Dollar)	(Percent)	(Dollar)	(Percent)
Year	Low	High	Low	High	Low	Low	High	High
All Prior Yrs	3,314,823	3,572,594	3,310,277	3,548,139	(4,546)	-0.1%	(24,456)	-0.7%
6/30/82-83	512,140	528,754	512,140	522,115	0	0.0%	(6,638)	-1.3%
6/30/83-84	790,813	812,505	790,813	808,636	0	0.0%	(3,869)	-0.5%
6/30/84-85	1,149,000	1,149,000	1,123,821	1,152,596	(25,179)	-2.2%	3,596	0.3%
6/30/85-86	1,914,660	1,934,000	1,912,390	1,941,220	(2,270)	-0.1%	7,220	0.4%
6/30/86-87	1,721,000	1,722,000	1,708,415	1,734,170	(12,585)	-0.7%	12,170	0.7%
6/30/87-88	3,267,000	3,271,000	3,226,785	3,278,460	(40,215)	-1.2%	7,460	0.2%
6/30/88-89	3,705,000	3,709,000	3,662,000	3,702,660	(43,000)	-1.2%	(6,340)	-0.2%
6/30/89-90	4,004,000	4,010,000	3,974,000	4,018,790	(30,000)	-0.7%	8,790	0.2%
6/30/90-91	3,611,520	3,649,000	3,616,000	3,653,170	4,480	0.1%	4,170	0.1%
6/30/91-92	2,939,000	2,941,000	2,905,000	2,935,060	(34,000)	-1.2%	(5,940)	-0.2%
6/30/92-93	2,627,000	2,628,000	2,609,000	2,636,100	(18,000)	-0.7%	8,100	0.3%
6/30/93-94	3,094,000	3,097,000	3,066,000	3,098,680	(28,000)	-0.9%	1,680	0.1%
6/30/94-95	2,652,000	2,654,000	2,643,000	2,670,440	(9,000)	-0.3%	16,440	0.6%
6/30/95-96	2,246,000	2,246,000	2,222,000	2,244,220	(24,000)	-1.1%	(1,780)	-0.1%
6/30/96-97	3,005,000	3,005,000	2,967,000	2,996,670	(38,000)	-1.3%	(8,330)	-0.3%
6/30/97-98	2,214,000	2,221,000	2,183,000	2,209,880	(31,000)	-1.4%	(11,120)	-0.5%
6/30/98-99	2,849,000	2,854,000	2,807,000	2,838,100	(42,000)	-1.5%	(15,900)	-0.6%
6/30/99-00	3,354,000	3,358,000	3,364,000	3,399,660	10,000	0.3%	41,660	1.2%
6/30/00-01	3,305,000	3,312,000	3,296,000	3,333,000	(9,000)	-0.3%	21,000	0.6%
6/30/01-02	3,181,000	3,195,000	3,139,000	3,181,500	(42,000)	-1.3%	(13,500)	-0.4%
6/30/02-03	3,648,000	3,657,000	3,631,000	3,674,380	(17,000)	-0.5%	17,380	0.5%
6/30/03-04	3,778,000	3,789,000	3,683,000	3,729,930	(95,000)	-2.5%	(59,070)	-1.6%
6/30/04-05	4,800,000	5,553,000	5,000,000	5,491,000	200,000	4.2%	(62,000)	-1.1%
6/30/05-06	4,000,000	4,609,000	4,100,000	4,545,000	100,000	2.5%	(64,000)	-1.4%
6/30/06-07	5,700,000	6,626,000	5,800,000	6,514,000	100,000	1.8%	(112,000)	-1.7%
6/30/07-08	4,900,000	5,594,000	5,000,000	5,495,000	100,000	2.0%	(99,000)	-1.8%
6/30/08-09	5,300,000	5,943,000	5,500,000	5,876,000	200,000	3.8%	(67,000)	-1.1%
6/30/09-10	5,500,000	6,213,000	5,600,000	6,076,000	100,000	1.8%	(137,000)	-2.2%
6/30/10-11	6,200,000	6,982,000	6,400,000	6,878,000	200,000	3.2%	(104,000)	-1.5%
6/30/11-12	6,800,000	7,177,000	6,600,000	7,074,000	(200,000)	-2.9%	(103,000)	-1.4%
6/30/12-13	6,400,000	7,236,000	6,300,000	6,789,000	(100,000)	-1.6%	(447,000)	-6.2%
6/30/13-14	7,800,000	8,460,000	7,200,000	7,700,000	(600,000)	-7.7%	(760,000)	-9.0%
6/30/14-15								
Total	120,281,956	127,707,852	119,851,641	125,745,576	(430,315)	-0.4%	(1,962,276)	-1.5%

NOTES:

(2), (3) From prior Aon analysis as of June 30, 2014

(4), (5) From Section 8, Exhibit 2, Page 1, Columns 6, 7

(6) = (4) - (2)

(7) = (4) / (2) - 1

(8) = (5) - (3)

(9) = (5) / (3) - 1

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Calculation of Discount Factors

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cumulative Paid Loss	Incremental Paid Loss	Percent	Pres Value of Increm.	Pres Value of Increm.	Discount Factor At:	
Maturity	Development	Development	Unpaid	Pmts (4%)	Pmts (6%)	4%	6%
408	100.0%	0.9%	0.0%	0.2%	0.1%	1.000	1.000
396	99.1%	0.3%	0.9%	0.1%	0.0%	0.981	0.971
384	98.8%	0.3%	1.2%	0.1%	0.0%	0.952	0.930
372	98.5%	0.3%	1.5%	0.1%	0.0%	0.928	0.895
360	98.2%	0.3%	1.8%	0.1%	0.1%	0.907	0.865
348	97.9%	0.3%	2.1%	0.1%	0.1%	0.887	0.838
336	97.6%	0.5%	2.4%	0.2%	0.1%	0.868	0.812
324	97.1%	0.5%	2.9%	0.2%	0.1%	0.860	0.802
312	96.6%	0.5%	3.4%	0.2%	0.1%	0.849	0.787
300	96.1%	0.5%	3.9%	0.2%	0.1%	0.837	0.771
288	95.6%	0.5%	4.4%	0.2%	0.1%	0.824	0.754
276	95.2%	0.5%	4.8%	0.2%	0.1%	0.811	0.737
264	94.7%	0.6%	5.3%	0.2%	0.2%	0.798	0.720
252	94.1%	0.7%	5.9%	0.3%	0.2%	0.787	0.707
240	93.4%	0.7%	6.6%	0.3%	0.2%	0.782	0.702
228	92.6%	0.6%	7.4%	0.3%	0.2%	0.775	0.693
216	92.1%	1.2%	7.9%	0.6%	0.4%	0.762	0.676
204	90.9%	1.5%	9.1%	0.8%	0.6%	0.764	0.680
192	89.5%	1.7%	10.5%	0.9%	0.7%	0.769	0.687
180	87.8%	1.3%	12.2%	0.7%	0.6%	0.773	0.693
168	86.5%	2.1%	13.5%	1.2%	1.0%	0.766	0.684
156	84.4%	1.7%	15.6%	1.0%	0.8%	0.769	0.690
144	82.7%	1.9%	17.3%	1.2%	1.0%	0.763	0.681
132	80.9%	2.1%	19.1%	1.4%	1.1%	0.758	0.675
120	78.8%	1.7%	21.2%	1.2%	1.0%	0.753	0.669
108	77.1%	2.0%	22.9%	1.4%	1.2%	0.743	0.657
96	75.1%	2.1%	24.9%	1.5%	1.3%	0.736	0.647
84	73.1%	2.3%	26.9%	1.8%	1.6%	0.728	0.638
72	70.8%	2.4%	29.2%	1.9%	1.8%	0.722	0.631
60	68.4%	3.6%	31.6%	3.1%	2.8%	0.716	0.624
48	64.7%	5.2%	35.3%	4.6%	4.3%	0.719	0.628
36	59.5%	11.8%	40.5%	10.7%	10.2%	0.729	0.642
24	47.7%	27.1%	52.3%	25.6%	24.9%	0.764	0.688
12	20.6%	20.6%	79.4%	20.2%	20.0%	0.818	0.759
Total		100.0%					

NOTES:

(2) = 1 / Section 8, Exhibit 2, Page 2, Column 4

(3) Incremental % based on (2)

(4) = 1 - (2)

(5) = [(3) / 1.04] ^ {[(1) - 6] / 12}

(6) = [(3) / 1.06] ^ {[(1) - 6] / 12}

(7), (8) Discount factor based on (5), (6)

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Outstanding Loss Discounting - 4.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	4.0%	(Low)	(High)
All Prior Yrs	270,639	508,500		245,786	461,805
6/30/82-83	0	9,976	0.981	0	9,782
6/30/83-84	0	17,823	0.952	0	16,967
6/30/84-85	0	28,775	0.928	0	26,704
6/30/85-86	25,272	54,102	0.907	22,913	49,051
6/30/86-87	28,046	53,801	0.887	24,875	47,718
6/30/87-88	61,809	113,484	0.868	53,674	98,548
6/30/88-89	106,710	147,370	0.860	91,807	126,788
6/30/89-90	134,993	179,783	0.849	114,620	152,650
6/30/90-91	139,001	176,171	0.837	116,316	147,420
6/30/91-92	125,052	155,112	0.824	103,037	127,805
6/30/92-93	125,084	152,184	0.811	101,422	123,395
6/30/93-94	160,408	193,088	0.798	127,940	154,006
6/30/94-95	153,972	181,412	0.787	121,252	142,860
6/30/95-96	146,881	169,101	0.782	114,926	132,312
6/30/96-97	218,326	247,996	0.775	169,280	192,284
6/30/97-98	172,605	199,485	0.762	131,527	152,010
6/30/98-99	254,832	285,932	0.764	194,766	218,536
6/30/99-00	353,680	389,340	0.769	271,904	299,319
6/30/00-01	402,763	439,763	0.773	311,220	339,810
6/30/01-02	424,218	466,718	0.766	324,874	357,421
6/30/02-03	566,758	610,138	0.769	436,041	469,416
6/30/03-04	635,700	682,630	0.763	484,939	520,739
6/30/04-05	646,667	1,137,667	0.758	489,932	861,927
6/30/05-06	689,204	1,134,204	0.753	518,944	854,012
6/30/06-07	875,416	1,589,416	0.743	650,456	1,180,976
6/30/07-08	1,044,195	1,539,195	0.736	768,182	1,132,339
6/30/08-09	1,310,719	1,686,719	0.728	954,562	1,228,393
6/30/09-10	1,461,971	1,937,971	0.722	1,055,565	1,399,244
6/30/10-11	1,788,921	2,266,921	0.716	1,281,019	1,623,308
6/30/11-12	2,114,047	2,588,047	0.719	1,519,514	1,860,211
6/30/12-13	2,639,568	3,128,568	0.729	1,923,166	2,279,447
6/30/13-14	3,809,743	4,309,743	0.764	2,908,889	3,290,659
6/30/14-15	6,420,198	7,420,198	0.818	5,254,064	6,072,429
Total	27,307,397	34,201,332		20,887,411	26,150,290
			(7) Total Discount Factor:	0.765	0.765

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	270,639	508,500
(9) Projected Number of Years:	5	5
(10) Projected Paid Loss per Year:	54,128	101,700
(11) Discounted Value at 4%:	245,786	461,805

NOTES:
(2), (3) From Section 8, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 8, Exhibit 2, Page 9, Column 7
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

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Outstanding Loss Discounting - 6.0%

(1)	(2)	(3)	(4)	(5)	(6)
	Undiscounted		Discount	Discounted	
Accident	Outstanding Losses		Factor at	Outstanding Losses	
Year	(Low)	(High)	6.0%	(Low)	(High)
All Prior Yrs	270,639	508,500		234,846	441,249
6/30/82-83	0	9,976	0.971	0	9,689
6/30/83-84	0	17,823	0.930	0	16,568
6/30/84-85	0	28,775	0.895	0	25,762
6/30/85-86	25,272	54,102	0.865	21,864	46,807
6/30/86-87	28,046	53,801	0.838	23,497	45,074
6/30/87-88	61,809	113,484	0.812	50,214	92,195
6/30/88-89	106,710	147,370	0.802	85,592	118,205
6/30/89-90	134,993	179,783	0.787	106,273	141,534
6/30/90-91	139,001	176,171	0.771	107,178	135,839
6/30/91-92	125,052	155,112	0.754	94,316	116,988
6/30/92-93	125,084	152,184	0.737	92,204	112,181
6/30/93-94	160,408	193,088	0.720	115,503	139,034
6/30/94-95	153,972	181,412	0.707	108,922	128,334
6/30/95-96	146,881	169,101	0.702	103,068	118,660
6/30/96-97	218,326	247,996	0.693	151,336	171,903
6/30/97-98	172,605	199,485	0.676	116,712	134,888
6/30/98-99	254,832	285,932	0.680	173,386	194,546
6/30/99-00	353,680	389,340	0.687	243,090	267,600
6/30/00-01	402,763	439,763	0.693	279,203	304,852
6/30/01-02	424,218	466,718	0.684	290,362	319,452
6/30/02-03	566,758	610,138	0.690	390,898	420,817
6/30/03-04	635,700	682,630	0.681	433,159	465,136
6/30/04-05	646,667	1,137,667	0.675	436,429	767,801
6/30/05-06	689,204	1,134,204	0.669	461,197	758,978
6/30/06-07	875,416	1,589,416	0.657	574,714	1,043,457
6/30/07-08	1,044,195	1,539,195	0.647	676,020	996,486
6/30/08-09	1,310,719	1,686,719	0.638	836,685	1,076,701
6/30/09-10	1,461,971	1,937,971	0.631	922,281	1,222,564
6/30/10-11	1,788,921	2,266,921	0.624	1,115,981	1,414,171
6/30/11-12	2,114,047	2,588,047	0.628	1,327,909	1,625,645
6/30/12-13	2,639,568	3,128,568	0.642	1,693,545	2,007,287
6/30/13-14	3,809,743	4,309,743	0.688	2,619,547	2,963,343
6/30/14-15	6,420,198	7,420,198	0.759	4,872,299	5,631,200
Total	27,307,397	34,201,332		18,758,228	23,474,945
			(7) Total Discount Factor:	0.687	0.686

	Discount Calculation for All Prior Years	
	(Low)	(High)
(8) Estimated Total Reserve:	270,639	508,500
(9) Projected Number of Years:	5	5
(10) Projected Paid Loss per Year:	54,128	101,700
(11) Discounted Value at 6%:	234,846	441,249

NOTES:
(2), (3) From Section 8, Exhibit 2, Page 1, Columns 8, 9
(4) From Section 8, Exhibit 2, Page 9, Column 8
(5) = (2) x (4)
(6) = (3) x (4)
(7) = Sum of (5) / Sum of (2) and Sum of (6) / Sum of (3)
(10) = (8) / (9)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2014

All Other - Clusters 5-17 & 95
Medical

Allocation of Outstanding Reserve to MassDOT Agencies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
							MassDOT Allocation - Method 1					**MassDOT Allocation - Method 2**					**MassDOT Allocation - Method 3**							
		Aon	Aon	Outstanding	Outstanding																MassDOT	MassDOT	All Other	All Other
Accident		Selected Ult	Selected Ult	Losses	Losses	Paid Counts	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Total Paid	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Total Payroll	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Outstanding	Outstanding	Outstanding	Outstanding
Year	Paid Loss	(Low)	(High)	(Low)	(High)	7/1/13-14	7/1/13-14	Paid Counts	(Low)	(High)	7/1/13-14	7/1/13-14	Total Paid	(Low)	(High)	($000)	($000)	Total Payroll	(Low)	(High)	(Low)	(High)	(Low)	(High)
All Prior Yrs	3,000,696	3,314,823	3,572,594	314,127	571,898	5					47,672								20,511	37,342	20,511	37,342	293,616	534,555
6/30/82-83	512,140	512,140	528,754	0	16,614	1					3,958								0	1,085	0	1,085	0	15,529
6/30/83-84	790,813	790,813	812,505	0	21,692	0					0								0	1,416	0	472	0	21,220
6/30/84-85	1,123,821	1,149,000	1,149,000	25,179	25,179	0					0								1,644	1,644	548	548	24,631	24,631
6/30/85-86	1,882,106	1,914,660	1,934,000	32,554	51,894	1					4,117								2,126	3,388	709	1,129	31,846	50,765
6/30/86-87	1,667,330	1,721,000	1,722,000	53,670	54,670	2					19,021								3,504	3,570	1,168	1,190	52,502	53,480
6/30/87-88	3,148,456	3,267,000	3,271,000	118,544	122,544	6					12,605								7,740	8,002	2,580	2,667	115,964	119,877
6/30/88-89	3,552,709	3,705,000	3,709,000	152,291	156,291	6					10,000								9,944	10,205	3,315	3,402	148,977	152,889
6/30/89-90	3,820,503	4,004,000	4,010,000	183,497	189,497	5					14,045								11,982	12,373	3,994	4,124	179,503	185,373
6/30/90-91	3,464,204	3,611,520	3,649,000	147,316	184,796	7					15,366								9,619	12,066	3,206	4,022	144,110	180,774
6/30/91-92	2,777,670	2,939,000	2,941,000	161,330	163,330	4					16,218								10,534	10,665	3,511	3,555	157,819	159,775
6/30/92-93	2,469,958	2,627,000	2,628,000	157,042	158,042	6	1	16.7%	26,174	26,340	19,424	241	1.2%	1,951	1,964				10,254	10,319	12,793	12,875	144,249	145,168
6/30/93-94	2,893,152	3,094,000	3,097,000	200,848	203,848	6	3	50.0%	100,424	101,924	17,514	2,281	13.0%	26,160	26,551				13,114	13,310	13,114	13,310	187,734	190,538
6/30/94-95	2,459,756	2,652,000	2,654,000	192,244	194,244	9	1	11.1%	21,360	21,583	24,388	2,500	10.3%	19,707	19,912				12,553	12,683	17,873	18,059	174,371	176,185
6/30/95-96	2,065,137	2,246,000	2,246,000	180,863	180,863	4					3,864								11,810	11,810	3,937	3,937	176,926	176,926
6/30/96-97	2,743,595	3,005,000	3,005,000	261,405	261,405	3					142,877								17,069	17,069	8,534	8,534	252,871	252,871
6/30/97-98	1,982,909	2,214,000	2,221,000	231,092	238,092	6	2	33.3%	77,031	79,364	8,975	382	4.3%	9,838	10,135	1,917,994	137,500	7.2%	16,567	17,069	16,567	17,069	214,525	221,023
6/30/98-99	2,506,545	2,849,000	2,854,000	342,455	347,455	7	1	14.3%	48,922	49,636	17,559	3,068	17.5%	59,834	60,707	2,081,524	136,688	6.6%	22,488	22,816	35,705	36,226	306,750	311,229
6/30/99-00	2,909,495	3,354,000	3,358,000	444,505	448,505	11	2	18.2%	80,819	81,546	74,683	32,184	43.1%	191,558	193,282	2,207,243	137,892	6.2%	27,769	28,019	27,769	28,019	416,735	420,485
6/30/00-01	2,824,207	3,305,000	3,312,000	480,793	487,793	13	4	30.8%	147,936	150,090	77,139	2,484	3.2%	15,482	15,707	2,201,008	145,149	6.6%	31,707	32,168	65,042	65,989	415,751	421,804
6/30/01-02	2,652,321	3,181,000	3,195,000	528,679	542,679	17	2	11.8%	62,197	63,845	78,618	904	1.2%	6,081	6,242	2,292,592	140,223	6.1%	32,336	33,192	33,538	34,426	495,141	508,252
6/30/02-03	2,981,766	3,648,000	3,657,000	666,234	675,234	20	2	10.0%	66,623	67,523	101,503	13,704	13.5%	89,947	91,162	2,260,534	140,250	6.2%	41,335	41,893	65,969	66,860	600,265	608,374
6/30/03-04	3,003,620	3,778,000	3,789,000	774,380	785,380	22	4	18.2%	140,796	142,796	49,862	17,807	35.7%	276,555	280,483	2,255,942	137,408	6.1%	47,167	47,837	93,982	95,317	680,398	690,063
6/30/04-05	4,303,783	4,800,000	5,553,000	496,217	1,249,217	23	3	13.0%	64,724	162,941	77,764	4,594	5.9%	29,317	73,805	2,309,083	145,033	6.3%	31,167	78,463	41,736	105,070	454,481	1,144,147
6/30/05-06	3,376,156	4,000,000	4,609,000	623,844	1,232,844	29	3	10.3%	64,536	127,536	61,733	14,040	22.7%	141,879	280,383	2,480,693	156,390	6.3%	39,329	77,722	51,932	102,629	571,912	1,130,215
6/30/06-07	4,860,001	5,700,000	6,626,000	839,999	1,765,999	29	7	24.1%	202,758	426,276	72,519	25,970	35.8%	300,816	632,431	2,612,577	157,146	6.0%	50,526	106,224	50,526	106,224	789,473	1,659,775
6/30/07-08	3,900,241	4,900,000	5,594,000	999,759	1,693,759	37	3	8.1%	81,062	137,332	66,995	18,250	27.2%	272,336	461,383	2,783,717	168,663	6.1%	60,574	102,623	70,818	119,978	928,941	1,573,782
6/30/08-09	4,076,333	5,300,000	5,943,000	1,223,667	1,866,667	52	7	13.5%	164,724	251,282	121,111	12,785	10.6%	129,175	197,052	2,750,907	180,456	6.6%	80,271	122,451	122,498	186,866	1,101,169	1,679,800
6/30/09-10	4,051,519	5,500,000	6,213,000	1,448,481	2,161,481	62	5	8.1%	116,813	174,313	221,761	18,408	8.3%	120,234	179,418	2,806,048	203,138	7.2%	104,860	156,476	113,969	170,069	1,334,512	1,991,412
6/30/10-11	4,360,928	6,200,000	6,982,000	1,839,072	2,621,072	105	8	7.6%	140,120	199,701	398,156	14,359	3.6%	66,324	94,526	2,942,638	197,766	6.7%	123,599	176,155	110,014	156,794	1,729,058	2,464,278
6/30/11-12	4,122,296	6,800,000	7,177,000	2,677,704	3,054,704	218	25	11.5%	307,076	350,310	652,687	52,815	8.1%	216,677	247,184	3,006,849	207,447	6.9%	184,739	210,749	236,164	269,414	2,441,540	2,785,290
6/30/12-13	3,061,873	6,400,000	7,236,000	3,338,127	4,174,127	689	67	9.7%	324,607	405,902	1,558,718	167,941	10.8%	359,661	449,734	3,138,905	217,415	6.9%	231,214	289,119	305,161	381,585	3,032,966	3,792,542
6/30/13-14	1,466,358	7,800,000	8,460,000	6,333,643	6,993,643	909	83	9.1%	578,319	638,583	1,466,358	101,638	6.9%	439,005	484,751	3,311,947	232,120	7.0%	443,898	490,154	487,074	537,830	5,846,569	6,455,813
Total	94,812,394	120,281,956	127,707,852	25,469,562	32,895,458	2,314	233	10.1%	2,817,023	3,658,824	5,457,209	506,356	9.3%	2,772,537	3,806,813						2,024,257	2,596,616	23,445,305	30,298,842

Sel. FY97 & Prior	6.5%

NOTES:

(2), (7), (8), (12), (13), (17). (18) Provided by Commonwealth of Massachusetts
(3) From Prior Analysis - Section 8, Exhibit 2, Page 1, Column 6
(4) From Prior Analysis - Section 8, Exhibit 2, Page 1, Column 7
(5) = (3) - (2)
(6) = (4) - (2)
(9) = (8) / (7)
(10) = (9) * (5)
(11) = (9) * (6)

(14) = (13) / (12)
(15) = (14) * (5)
(16) = (14) * (6)
(19) = (18) / (17)
(20) = (19) * (5)
(21) = (19) * (6)

(22) Selected judgementally based on (10), (15), (20)
(23) Selected judgementally based on (11), (16). (21)
(24) = (5) - (22)
(25) = (6) - (23)

Commonwealth of Massachusetts
Workers Compensation
Reserve Analysis at June 30, 2015

All Other - Clusters 5-17 & 95
Medical

Allocation of Outstanding Reserve to MassDOT Agencies

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
		Aon	Aon	Outstanding	Outstanding	**MassDOT Allocation - Method 1**					**MassDOT Allocation - Method 2**					**MassDOT Allocation - Method 3**					MassDOT	MassDOT	All Other	All Other
Accident		Selected Ult	Selected Ult	Losses	Losses	Paid Counts	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Total Paid	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Total Payroll	MassDOT	MassDOT /	MassDOT OS	MassDOT OS	Outstanding	Outstanding	Outstanding	Outstanding
Year	Paid Loss	(Low)	(High)	(Low)	(High)	7/1/14-15	7/1/14-15	Paid Counts	(Low)	(High)	7/1/14-15	7/1/14-15	Total Paid	(Low)	(High)	($000)	($000)	Total Payroll	(Low)	(High)	(Low)	(High)	(Low)	(High)
All Prior Yrs	3,039,639	3,310,277	3,548,139	270,639	508,500	3					38,942								17,755	33,360	17,755	33,360	252,883	475,140
6/30/82-83	512,140	512,140	522,115	0	9,976	0					0								0	654	0	654	0	9,321
6/30/83-84	790,813	790,813	808,636	0	17,823	0					0								0	1,169	0	390	0	17,433
6/30/84-85	1,123,821	1,123,821	1,152,596	0	28,775	0					0								0	1,888	0	629	0	28,146
6/30/85-86	1,887,118	1,912,390	1,941,220	25,272	54,102	1					5,013								1,658	3,549	553	1,183	24,719	52,919
6/30/86-87	1,680,369	1,708,415	1,734,170	28,046	53,801	2					13,039								1,840	3,530	613	1,177	27,433	52,625
6/30/87-88	3,164,976	3,226,785	3,278,460	61,809	113,484	7					16,519								4,055	7,445	1,352	2,482	60,458	111,003
6/30/88-89	3,555,290	3,662,000	3,702,660	106,710	147,370	6	1	16.7%	17,785	24,562	2,581	240	9.3%	9,923	13,703				7,001	9,668	11,569	15,978	95,141	131,392
6/30/89-90	3,839,007	3,974,000	4,018,790	134,993	179,783	6					18,504								8,856	11,795	2,952	3,932	132,041	175,851
6/30/90-91	3,476,999	3,616,000	3,653,170	139,001	176,171	6					12,795								9,119	11,558	3,040	3,853	135,962	172,319
6/30/91-92	2,779,948	2,905,000	2,935,060	125,052	155,112	2					2,279								8,204	10,176	2,735	3,392	122,317	151,720
6/30/92-93	2,483,916	2,609,000	2,636,100	125,084	152,184	5	1	20.0%	25,017	30,437	13,958	370	2.6%	3,313	4,031				8,206	9,984	12,179	14,817	112,905	137,367
6/30/93-94	2,905,592	3,066,000	3,098,680	160,408	193,088	6	3	50.0%	80,204	96,544	12,440	2,227	17.9%	28,714	34,564				10,523	12,667	10,523	12,667	149,885	180,421
6/30/94-95	2,489,028	2,643,000	2,670,440	153,972	181,412	10	2	20.0%	30,794	36,282	29,273	3,294	11.3%	17,324	20,412				10,101	11,901	19,407	22,865	134,565	158,547
6/30/95-96	2,075,119	2,222,000	2,244,220	146,881	169,101	3					9,982								9,636	11,094	3,212	3,698	143,669	165,403
6/30/96-97	2,748,674	2,967,000	2,996,670	218,326	247,996	6					5,079								14,323	16,270	7,162	8,135	211,165	239,861
6/30/97-98	2,010,395	2,183,000	2,209,880	172,605	199,485	6	2	33.3%	57,535	66,495	27,487	1,018	3.7%	6,393	7,388	1,917,994	137,500	7.2%	12,374	14,301	12,374	14,301	160,231	185,184
6/30/98-99	2,552,168	2,807,000	2,838,100	254,832	285,932	9	1	11.1%	28,315	31,770	45,623	611	1.3%	3,413	3,829	2,081,524	136,688	6.6%	16,734	18,776	22,524	25,273	232,308	260,659
6/30/99-00	3,010,320	3,364,000	3,399,660	353,680	389,340	11	2	18.2%	64,305	70,789	100,825	46,857	46.5%	164,368	180,941	2,207,243	137,892	6.2%	22,095	24,323	22,095	24,323	331,584	365,017
6/30/00-01	2,893,237	3,296,000	3,333,000	402,763	439,763	11	3	27.3%	109,845	119,935	69,030	2,008	2.9%	11,717	12,793	2,201,008	145,149	6.6%	26,561	29,001	49,374	53,910	353,389	385,853
6/30/01-02	2,714,782	3,139,000	3,181,500	424,218	466,718	15	2	13.3%	56,562	62,229	62,461	1,001	1.6%	6,800	7,482	2,292,592	140,223	6.1%	25,947	28,546	29,770	32,752	394,448	433,965
6/30/02-03	3,064,242	3,631,000	3,674,380	566,758	610,138	18	1	5.6%	31,487	33,897	82,476	12,138	14.7%	83,410	89,794	2,260,534	140,250	6.2%	35,163	37,855	50,020	53,848	516,738	556,290
6/30/03-04	3,047,300	3,683,000	3,729,930	635,700	682,630	20	4	20.0%	127,140	136,526	43,680	18,017	41.2%	262,209	281,566	2,255,942	137,408	6.1%	38,720	41,578	82,930	89,052	552,770	593,577
6/30/04-05	4,353,333	5,000,000	5,491,000	646,667	1,137,667	16	2	12.5%	80,833	142,208	49,550	5,077	10.2%	66,260	116,569	2,309,083	145,033	6.3%	40,617	71,457	62,570	110,078	584,097	1,027,589
6/30/05-06	3,410,796	4,100,000	4,545,000	689,204	1,134,204	23	2	8.7%	59,931	98,626	34,640	7,920	22.9%	157,588	259,339	2,480,693	156,390	6.3%	43,450	71,504	51,690	85,065	637,514	1,049,139
6/30/06-07	4,924,584	5,800,000	6,514,000	875,416	1,589,416	23	6	26.1%	228,369	414,630	64,583	22,244	34.4%	301,512	547,428	2,612,577	157,146	6.0%	52,656	95,603	52,656	95,603	822,760	1,493,813
6/30/07-08	3,955,805	5,000,000	5,495,000	1,044,195	1,539,195	30	3	10.0%	104,420	153,920	55,564	9,919	17.9%	186,412	274,781	2,783,717	168,663	6.1%	63,267	93,258	83,843	123,589	960,352	1,415,607
6/30/08-09	4,189,281	5,500,000	5,876,000	1,310,719	1,686,719	39	6	15.4%	201,649	259,495	112,948	10,928	9.7%	126,814	163,193	2,750,907	180,456	6.6%	85,981	110,646	143,815	185,071	1,166,903	1,501,648
6/30/09-10	4,138,029	5,600,000	6,076,000	1,461,971	1,937,971	44	2	4.5%	66,453	88,090	86,510	7,717	8.9%	130,417	172,880	2,806,048	203,138	7.2%	105,836	140,295	100,902	133,755	1,361,069	1,804,216
6/30/10-11	4,611,079	6,400,000	6,878,000	1,788,921	2,266,921	71	4	5.6%	100,784	127,714	250,151	2,560	1.0%	18,306	23,197	2,942,638	197,766	6.7%	120,228	152,353	110,506	140,034	1,678,415	2,126,888
6/30/11-12	4,485,953	6,600,000	7,074,000	2,114,047	2,588,047	113	17	15.0%	318,042	389,352	363,657	66,032	18.2%	383,861	469,928	3,006,849	207,447	6.9%	145,851	178,553	145,851	178,553	1,968,196	2,409,494
6/30/12-13	3,660,432	6,300,000	6,789,000	2,639,568	3,128,568	204	21	10.3%	271,720	322,058	598,559	83,433	13.9%	367,930	436,092	3,138,905	217,415	6.9%	182,829	216,699	182,829	216,699	2,456,739	2,911,868
6/30/13-14	3,390,257	7,200,000	7,700,000	3,809,743	4,309,743	716	63	8.8%	335,215	379,209	1,923,899	236,826	12.3%	468,968	530,516	3,311,947	232,120	7.0%	267,008	302,051	334,550	378,457	3,475,193	3,931,286
6/30/14-15	1,879,802	8,300,000	9,300,000	6,420,198	7,420,198	1,047	82	7.8%	502,824	581,143	1,879,802	165,928	8.8%	566,704	654,973	3,511,622	248,813	7.1%	454,898	525,752	494,831	571,905	5,925,367	6,848,293
Total	100,844,244	128,151,641	135,045,576	27,307,397	34,201,332	2,479	230	9.3%	2,899,229	3,665,912	6,031,849	706,366	11.7%	3,372,356	4,305,400						2,126,182	2,641,480	25,181,215	31,559,852

Sel. FY97 & Prior	6.6%

NOTES:

(2), (7), (8), (12), (13), (17). (18) Provided by Commonwealth of Massachusetts
(3) From Section 8, Exhibit 2, Page 1, Column 6
(4) From Section 8, Exhibit 2, Page 1, Column 7
(5) = (3) - (2)
(6) = (4) - (2)
(9) = (8) / (7)
(10) = (9) * (5)
(11) = (9) * (6)
(14) = (13) / (12)
(15) = (14) * (5)
(16) = (14) * (6)
(19) = (18) / (17)
(20) = (19) * (5)
(21) = (19) * (6)
(22) Selected judgementally based on (10), (15), (20)
(23) Selected judgementally based on (11), (16). (21)
(24) = (5) - (22)
(25) = (6) - (23)