

**ACTUARIAL ANALYSIS OF THE  
MISSISSIPPI STATE AGENCIES  
EMPLOYMENT COMPENSATION  
REVOLVING FUND  
AS OF JUNE 30, 2018**





# MADISON CONSULTING GROUP

Actuaries • Property/Casualty Consulting Services

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August 30, 2018

Mr. Richard D. Self  
Administrator  
Department of Finance and Administration  
901 Woolfolk Building, Suite B  
501 North West Street  
Jackson, Mississippi 39201

RE: Actuarial Analysis of the Mississippi State Agencies  
Employment Compensation Revolving Fund  
as of June 30, 2018

Dear Mr. Self:

Madison Consulting Group, Inc. is pleased to enclose a copy of the above captioned report. We have enjoyed working on this project and hope you find it satisfactory. Please call if you have any questions or comments.

Sincerely,

Brian Sullivan, ACAS, MAAA

Mark Crawshaw, Ph.D., FCAS, MAAA

MC/bs  
Attachments

**ACTUARIAL ANALYSIS OF THE MISSISSIPPI STATE AGENCIES  
EMPLOYMENT COMPENSATION REVOLVING FUND  
AS OF JUNE 30, 2018**

At the request of the State of Mississippi, Department of Finance and Administration (DFA), Madison Consulting Group, Inc. has performed an analysis of the State Agencies Employment Compensation Revolving Fund as of June 30, 2018. This report describes that analysis.

**DISTRIBUTION AND USE**

This report has been prepared for DFA to assist in their management of the Employment Compensation Revolving Fund. It is our understanding that this report may be provided to other state agencies, the state's auditors and may become a public document. It is requested that all distributions of this report be in its entirety including the attached exhibits.

**ACKNOWLEDGEMENT OF QUALIFICATION**

This report was prepared by Mark Crawshaw, Ph.D., FCAS, MAAA, and Brian Sullivan, ACAS, MAAA. Both Dr. Crawshaw and Mr. Sullivan are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

## **CONDITIONS AND LIMITATIONS**

### **Background**

The Employment Compensation Revolving Fund (the Fund) exists in order to provide a mechanism for state agencies to fund and budget for the costs of providing unemployment compensation benefits to their eligible former employees. The Fund does not pay benefits directly to former employees. Rather, it reimburses the Mississippi Department of Employment Security for benefits it pays directly to former state employees.

The Fund has two major categories of revenue, i.e., "premium" and "interest." The Fund has two major categories of expense, i.e., "benefits" and "administration." Benefit expenses consist of reimbursements to the Mississippi Department of Employment Security for unemployment benefits paid to former state employees. Administrative expenses consist of an allocation of expenses intended to reflect the cost of administering the Fund.

Prior to July 1, 2007, there existed a statutory requirement (section 71-5-359(2)(c)) that required the DFA to maintain a fund balance based on a percentage of payroll. During 2007, Senate Bill 2645 was passed which now allows the Fund to maintain a reserve that is actuarially determined rather than a percentage of payroll. As a result of this change in funding methodology and prior actuarial projections, the DFA was able to waive the collection of premium for the 2007-08 fiscal year, as well as the 2008-09 fiscal year. Funding was reinstated in 2009-10. The cash balance in the Fund through June of 2018 is \$3.122 million.

For the 2018-19 fiscal year, we understand that management has decided to collect an annual employment premium of \$1.2 million. The \$1.2 million premium approximately corresponds to a 0.10% rate applied to an estimated \$1.201 billion payroll base (equal to actual

payroll for fiscal year 2017-18). We estimate that this funding level will maintain a Fund balance of about \$2.7 million through the end of the 2018-19 fiscal period (see Exhibit A, Sheet 3) under the “expected” scenario. During the 2010-11 fiscal period, when claims had increased substantially, the Fund was able to avoid a negative cash balance (starting cash balance at 7/1/2010 = \$2.7 million, ending cash balance at 6/30/2011 = \$1.5 million, see Exhibit A, Sheet 1). Similarly, the estimated balance of \$2.7 million at 6/30/19 should allow the Fund to avoid a negative cash balance while potentially experiencing a higher claim level.

### **Scope of Analysis**

The objectives of this analysis were defined by DFA as follows:

- a. development of the Fund's financial position as of June 30, 2018; and
- b. development of projected future Fund balances and premium charges.

### **Data Sources**

Data was provided by DFA and was accepted for analysis without audit or verification. This included:

- data already in our possession described and incorporated into our previous report "Actuarial Analysis of the Mississippi State Agencies Employment Compensation Revolving Fund as of June 30, 2017";
- the 7/1/17 through 6/30/18 monthly statements of Cash Receipts, Disbursements, Balance and Estimated Unobligated Cash; and
- actual total payroll for fiscal year 7/1/17-6/30/18.

## **Variability**

Any projection of funding amounts for unemployment benefits involves the projection of future contingent events. Therefore, variations from the projections contained in this report are likely.

## RECOMMENDATIONS AND CONCLUSIONS

### **Actual Fund Balance at 6/30/18 and Projected Fund Balances**

Exhibit A shows the development of the actual Fund balance through June 30, 2018 and the projected Fund balances through the next fiscal year end (i.e. June 30, 2019). We have also included projected Fund balances for the first two months of the 2019/20 fiscal period. The projected Fund balances are based on an estimated \$1.2 million in premium in fiscal year 2018/2019, provided by the DFA, and offer three different scenarios for the future claims level. Scenario 1 is the expected level and utilizes an annual benefit amount of \$1.65 million. This amount was estimated by MCG based on data for recent years provided by the DFA. This level of claims will result in an estimated cash balance at June 30, 2019 of approximately \$2.7 million. Scenario 2 shows claims at 75% of the expected level (annual benefits of \$1.238 million) and Scenario 3 shows claims at 125% of the expected level (annual benefits of \$2.063 million). The following table shows the projected Fund balance at June 30, 2019 under each scenario:

<b>Scenario</b>	<b>Claims at</b>	<b>Projected Fund Balance at June 30, 2019 (\$000's)</b>
1	Expected Level	\$2,694
2	75% of Expected Level	\$3,108
3	125% of Expected Level	\$2,280

In all the scenarios, it is assumed that annual investment income will be 0.1% per month of the cash balance of the Fund for months subsequent to June 2018. This 0.1% reflects the historical average interest earned per month. For June 2018 and prior, investment income was provided by DFA. When reviewing the attached exhibits, it is stressed that the scenarios are illustrations of possible outcomes. In particular, there is no guarantee that actual outcomes will lie within the range of outcomes illustrated.

### **Historical Fund Balances through June 30, 2018**

The Fund balance has changed as follows (\$000's omitted):

<b><u>Evaluation Date</u></b>	<b><u>Fund Balance</u></b>
12/31/92	\$7,539
06/30/93	\$8,080
06/30/94	\$7,407
06/30/95	\$7,503
06/30/96	\$7,640
06/30/97	\$6,676
06/30/98	\$6,198
06/30/99	\$5,730
06/30/00	\$5,215
06/30/01	\$4,668
06/30/02	\$2,746
06/30/03	\$3,984
06/30/04	\$3,909
06/30/05	\$4,767
06/30/06	\$4,251
06/30/07	\$5,368
06/30/08	\$4,265
06/30/09	\$2,827
06/30/10	\$2,663
06/30/11	\$1,540
06/30/12	\$2,252
06/30/13	\$2,723
06/30/14	\$2,593



**Evaluation Date****Fund Balance**

06/30/15	\$3,109
06/30/16	\$3,086
06/30/17	\$3,315
06/30/18	\$3.122

**Changes to the Program**

The analysis is based on the assumption that the payroll base, benefit levels, benefit eligibility and other features of the program remain unchanged. Should any revisions be made to the program, these should be reported immediately to us so that appropriate modifications to our results can be made.

Finally, in order to keep this report concise, we have not included any of the source documents. We would be pleased to provide this information as requested.

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

#### DEVELOPMENT OF PROJECTED FUND BALANCE

#### SCENARIO 1: CLAIMS AT EXPECTED LEVEL

(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a)      \$    1,238  
 Projected Annual Premium 2018/19 (a)      \$    1,200  
 Projected Annual Benefits 2018/19 (a)      \$    (1,650)

Month	Start Cash (b)	Cash Flows				Rounding Adjustment (g)	Ending Cash (h)
(1)	(2)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	(7)	(8)
2010.07	\$ 2,663	\$ -	\$ 3	\$ (704)	\$ -	\$ -	\$ 1,962
2010.08	1,962	1,087	5	-	-	1	3,055
2010.09	3,055	321	5	-	-	-	3,381
2010.10	3,381	97	6	(1,056)	-	1	2,429
2010.11	2,429	-	5	-	(10)	-	2,424
2010.12	2,424	3	4	-	-	-	2,431
2011.01	2,431	160	3	(1,077)	-	-	1,517
2011.02	1,517	626	4	-	(10)	-	2,137
2011.03	2,137	193	3	-	-	1	2,334
2011.04	2,334	-	3	(803)	-	-	1,534
2011.05	1,534	1	3	-	-	-	1,538
2011.06	1,538	-	2	-	-	-	1,540
2011.07	1,540	-	1	(749)	(1)	1	792
2011.08	792	2,253	3	-	(1)	(1)	3,046
2011.09	3,046	141	4	-	(1)	-	3,190
2011.10	3,190	10	3	(714)	(2)	-	2,487
2011.11	2,487	-	2	-	(3)	-	2,486
2011.12	2,486	-	2	-	(1)	1	2,488
2012.01	2,488	1,069	1	(824)	(1)	(1)	2,732
2012.02	2,732	185	3	-	(1)	-	2,919
2012.03	2,919	1	3	-	(2)	-	2,921
2012.04	2,921	-	3	(673)	(1)	-	2,250
2012.05	2,250	-	3	-	(1)	-	2,252
2012.06	2,252	-	2	-	(2)	-	2,252
2012.07	2,252	-	1	-	(1)	-	2,252
2012.08	2,252	56	2	(663)	(1)	-	1,646
2012.09	1,646	1,401	3	-	(1)	(1)	3,048
2012.10	3,048	256	3	-	(3)	-	3,304
2012.11	3,304	61	3	(670)	(1)	(1)	2,696
2012.12	2,696	1	4	-	(1)	-	2,700
2013.01	2,700	186	3	-	(1)	-	2,888
2013.02	2,888	1,040	2	-	(2)	-	3,928
2013.03	3,928	81	5	(701)	(2)	(1)	3,310
2013.04	3,310	-	3	-	(1)	(1)	3,311
2013.05	3,311	-	3	-	(1)	-	3,313
2013.06	3,313	-	2	(589)	(3)	-	2,723
2013.07	2,723	-	3	-	(1)	-	2,725
2013.08	2,725	1,042	2	(686)	(2)	(1)	3,080
2013.09	3,080	564	3	-	(1)	-	3,646
2013.10	3,646	162	2	(831)	(4)	1	2,976
2013.11	2,976	-	3	-	(1)	-	2,978
2013.12	2,978	-	2	-	(1)	-	2,979
2014.01	2,979	695	3	(804)	(1)	-	2,872
2014.02	2,872	333	2	-	(2)	-	3,205
2014.03	3,205	13	2	-	(1)	(1)	3,218
2014.04	3,218	-	1	-	(1)	1	3,219
2014.05	3,219	-	2	(626)	(1)	(1)	2,593
2014.06	2,593	-	2	-	(2)	-	2,593

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

#### DEVELOPMENT OF PROJECTED FUND BALANCE

#### SCENARIO 1: CLAIMS AT EXPECTED LEVEL

(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a)      \$    1,238  
 Projected Annual Premium 2018/19 (a)      \$    1,200  
 Projected Annual Benefits 2018/19 (a)      \$    (1,650)

Month	Start Cash (b)	Cash Flows				Rounding Adjustment (g)	Ending Cash (h)
(1)	(2)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	(7)	(8)
2014.07	2,593	-	-	(589)	(1)	-	2,003
2014.08	2,003	-	-	-	(1)	-	2,002
2014.09	2,002	224	-	-	(1)	-	2,225
2014.10	2,225	619	-	-	(4)	-	2,840
2014.11	2,840	808	-	(605)	(1)	-	3,042
2014.12	3,042	190	-	3	(1)	-	3,234
2015.01	3,234	319	-	(584)	(1)	1	2,969
2015.02	2,969	207	-	-	(1)	-	3,175
2015.03	3,175	231	-	-	(1)	-	3,405
2015.04	3,405	-	-	(410)	(1)	-	2,994
2015.05	2,994	-	4	-	(1)	(1)	2,996
2015.06	2,996	92	22	-	(1)	-	3,109
2015.07	3,109	-	-	(393)	(1)	-	2,715
2015.08	2,715	1,089	2	2	(1)	-	3,807
2015.09	3,807	102	-	-	(4)	-	3,905
2015.10	3,905	91	7	(507)	(1)	-	3,495
2015.11	3,495	-	5	1	-	-	3,501
2015.12	3,501	-	3	-	(1)	-	3,503
2016.01	3,503	67	-	(487)	(1)	-	3,082
2016.02	3,082	233	2	-	(1)	-	3,316
2016.03	3,316	81	6	1	(1)	-	3,403
2016.04	3,403	76	-	(403)	(1)	(1)	3,074
2016.05	3,074	4	4	1	(2)	1	3,082
2016.06	3,082	1	5	-	(1)	(1)	3,086
2016.07	3,086	404	-	(416)	(1)	-	3,073
2016.08	3,073	783	3	-	(1)	-	3,858
2016.09	3,858	168	3	-	(4)	-	4,025
2016.10	4,025	131	-	(460)	-	-	3,696
2016.11	3,696	-	5	(1)	-	-	3,700
2016.12	3,700	-	5	1	-	-	3,706
2017.01	3,706	47	5	(435)	-	-	3,323
2017.02	3,323	262	3	-	(6)	-	3,582
2017.03	3,582	77	2	-	(1)	-	3,660
2017.04	3,660	2	2	(359)	(1)	-	3,304
2017.05	3,304	-	4	3	(1)	-	3,310
2017.06	3,310	-	6	-	(1)	-	3,315
2017.07	3,315	-	-	(382)	(1)	-	2,932
2017.08	2,932	780	5	3	(1)	1	3,720
2017.09	3,720	93	2	-	(1)	-	3,814
2017.10	3,814	46	3	(454)	(4)	(1)	3,404
2017.11	3,404	-	5	-	(1)	-	3,408
2017.12	3,408	-	4	-	(1)	1	3,412
2018.01	3,412	185	4	-	(1)	-	3,600
2018.02	3,600	129	5	(353)	(1)	-	3,380
2018.03	3,380	5	2	-	(1)	-	3,386
2018.04	3,386	-	3	-	(1)	-	3,388
2018.05	3,388	-	3	(274)	(1)	-	3,116
2018.06	3,116	-	6	-	(1)	1	3,122

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

#### DEVELOPMENT OF PROJECTED FUND BALANCE

#### SCENARIO 1: CLAIMS AT EXPECTED LEVEL

(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a) \$ 1,238  
 Projected Annual Premium 2018/19 (a) \$ 1,200  
 Projected Annual Benefits 2018/19 (a) \$ (1,650)

Month	Start Cash (b)	Cash Flows				Rounding Adjustment (g)	Ending Cash (h)
(1)	(2)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	(7)	(8)
2018.07	3,122	-	3	(413)	(1)	-	2,711
2018.08	2,711	720	3	-	(1)	-	3,433
2018.09	3,433	60	3	-	(1)	-	3,495
2018.10	3,495	60	3	(413)	(1)	-	3,144
2018.11	3,144	-	3	-	(1)	-	3,146
2018.12	3,146	-	3	-	(1)	-	3,148
2019.01	3,148	120	3	(413)	(1)	-	2,857
2019.02	2,857	180	3	-	(1)	-	3,039
2019.03	3,039	36	3	-	(1)	-	3,077
2019.04	3,077	24	3	(413)	(1)	-	2,690
2019.05	2,690	-	3	-	(1)	-	2,692
2019.06	2,692	-	3	-	(1)	-	2,694
2019.07	2,694	-	3	(413)	(1)	-	2,283
2019.08	2,283	720	2	-	(1)	-	3,004
2010-2011	\$ 2,663	\$ 2,488	\$ 46	\$ (3,640)	\$ (20)	\$ 3	\$ 1,540
2011-2012	\$ 1,540	\$ 3,659	\$ 30	\$ (2,960)	\$ (17)	\$ -	\$ 2,252
2012-2013	\$ 2,252	\$ 3,082	\$ 34	\$ (2,623)	\$ (18)	\$ (4)	\$ 2,723
2013-2014	\$ 2,723	\$ 2,809	\$ 27	\$ (2,947)	\$ (18)	\$ (1)	\$ 2,593
2014-2015	\$ 2,593	\$ 2,690	\$ 26	\$ (2,185)	\$ (15)	\$ -	\$ 3,109
2015-2016	\$ 3,109	\$ 1,744	\$ 34	\$ (1,785)	\$ (15)	\$ (1)	\$ 3,086
2016-2017	\$ 3,086	\$ 1,874	\$ 38	\$ (1,667)	\$ (16)	\$ -	\$ 3,315
2017-2018	\$ 3,315	\$ 1,238	\$ 42	\$ (1,460)	\$ (15)	\$ 2	\$ 3,122
2018-2019	\$ 3,122	\$ 1,200	\$ 36	\$ (1,652)	\$ (12)	\$ -	\$ 2,694

- Notes: (a) Based on discussions with management.  
 (b) Starting cash of \$2,663,000 at 7/1/2010 based on data provided by DFA.  
 Other amounts equal to prior month's ending cash.  
 (c) Through 2018.06, actual premium collected provided by DFA.  
 Other amounts estimated based on prior year's premium collected.  
 (d) Through 2018.06, actual interest earned provided by DFA.  
 Other amounts estimated based on 0.1% of starting cash where 0.1% reflects historical average interest earned per month.  
 (e) Based on monthly financial statements through 2018.06.  
 Other amounts estimated based on annual benefits assumption.  
 (f) Through 2018.06, actual administrative expense provided by DFA.  
 Other amounts estimated based on prior year's administration expenses incurred.  
 (g) Rounding adjustment.  
 (h) Sum of Columns (2) through (7).  
 Matches financial statement as of 2018.06. Interim months during FY 2017 do not all match monthly cash balances due to inconsistencies in DFA financial statements.

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

DEVELOPMENT OF PROJECTED FUND BALANCE  
SCENARIO 2: CLAIMS AT 75% OF EXPECTED LEVEL  
(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a) \$ 1,238  
Projected Annual Premium 2018/19 (a) \$ 1,200  
Projected Annual Benefits 2018/19 (a) \$ (1,238)

Month	Start	Cash Flows				Rounding	Ending
	Cash (b)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	Adjustment (g)	Cash (h)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2010.07	\$ 2,663	\$ -	\$ 3	\$ (704)	\$ -	\$ -	\$ 1,962
2010.08	1,962	1,087	5	-	-	1	3,055
2010.09	3,055	321	5	-	-	-	3,381
2010.10	3,381	97	6	(1,056)	-	1	2,429
2010.11	2,429	-	5	-	(10)	-	2,424
2010.12	2,424	3	4	-	-	-	2,431
2011.01	2,431	160	3	(1,077)	-	-	1,517
2011.02	1,517	626	4	-	(10)	-	2,137
2011.03	2,137	193	3	-	-	1	2,334
2011.04	2,334	-	3	(803)	-	-	1,534
2011.05	1,534	1	3	-	-	-	1,538
2011.06	1,538	-	2	-	-	-	1,540
2011.07	1,540	-	1	(749)	(1)	1	792
2011.08	792	2,253	3	-	(1)	(1)	3,046
2011.09	3,046	141	4	-	(1)	-	3,190
2011.10	3,190	10	3	(714)	(2)	-	2,487
2011.11	2,487	-	2	-	(3)	-	2,486
2011.12	2,486	-	2	-	(1)	1	2,488
2012.01	2,488	1,069	1	(824)	(1)	(1)	2,732
2012.02	2,732	185	3	-	(1)	-	2,919
2012.03	2,919	1	3	-	(2)	-	2,921
2012.04	2,921	-	3	(673)	(1)	-	2,250
2012.05	2,250	-	3	-	(1)	-	2,252
2012.06	2,252	-	2	-	(2)	-	2,252
2012.07	2,252	-	1	-	(1)	-	2,252
2012.08	2,252	56	2	(663)	(1)	-	1,646
2012.09	1,646	1,401	3	-	(1)	(1)	3,048
2012.10	3,048	256	3	-	(3)	-	3,304
2012.11	3,304	61	3	(670)	(1)	(1)	2,696
2012.12	2,696	1	4	-	(1)	-	2,700
2013.01	2,700	186	3	-	(1)	-	2,888
2013.02	2,888	1,040	2	-	(2)	-	3,928
2013.03	3,928	81	5	(701)	(2)	(1)	3,310
2013.04	3,310	-	3	-	(1)	(1)	3,311
2013.05	3,311	-	3	-	(1)	-	3,313
2013.06	3,313	-	2	(589)	(3)	-	2,723
2013.07	2,723	-	3	-	(1)	-	2,725
2013.08	2,725	1,042	2	(686)	(2)	(1)	3,080
2013.09	3,080	564	3	-	(1)	-	3,646
2013.10	3,646	162	2	(831)	(4)	1	2,976
2013.11	2,976	-	3	-	(1)	-	2,978
2013.12	2,978	-	2	-	(1)	-	2,979
2014.01	2,979	695	3	(804)	(1)	-	2,872
2014.02	2,872	333	2	-	(2)	-	3,205
2014.03	3,205	13	2	-	(1)	(1)	3,218
2014.04	3,218	-	1	-	(1)	1	3,219
2014.05	3,219	-	2	(626)	(1)	(1)	2,593
2014.06	2,593	-	2	-	(2)	-	2,593

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

DEVELOPMENT OF PROJECTED FUND BALANCE  
SCENARIO 2: CLAIMS AT 75% OF EXPECTED LEVEL  
(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a) \$ 1,238  
Projected Annual Premium 2018/19 (a) \$ 1,200  
Projected Annual Benefits 2018/19 (a) \$ (1,238)

Month	Start	Cash Flows				Rounding	Ending
	Cash (b)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	Adjustment (g)	Cash (h)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2014.07	2,593	-	-	(589)	(1)	-	2,003
2014.08	2,003	-	-	-	(1)	-	2,002
2014.09	2,002	224	-	-	(1)	-	2,225
2014.10	2,225	619	-	-	(4)	-	2,840
2014.11	2,840	808	-	(605)	(1)	-	3,042
2014.12	3,042	190	-	3	(1)	-	3,234
2015.01	3,234	319	-	(584)	(1)	1	2,969
2015.02	2,969	207	-	-	(1)	-	3,175
2015.03	3,175	231	-	-	(1)	-	3,405
2015.04	3,405	-	-	(410)	(1)	-	2,994
2015.05	2,994	-	4	-	(1)	(1)	2,996
2015.06	2,996	92	22	-	(1)	-	3,109
2015.07	3,109	-	-	(393)	(1)	-	2,715
2015.08	2,715	1,089	2	2	(1)	-	3,807
2015.09	3,807	102	-	-	(4)	-	3,905
2015.10	3,905	91	7	(507)	(1)	-	3,495
2015.11	3,495	-	5	1	-	-	3,501
2015.12	3,501	-	3	-	(1)	-	3,503
2016.01	3,503	67	-	(487)	(1)	-	3,082
2016.02	3,082	233	2	-	(1)	-	3,316
2016.03	3,316	81	6	1	(1)	-	3,403
2016.04	3,403	76	-	(403)	(1)	(1)	3,074
2016.05	3,074	4	4	1	(2)	1	3,082
2016.06	3,082	1	5	-	(1)	(1)	3,086
2016.07	3,086	404	-	(416)	(1)	-	3,073
2016.08	3,073	783	3	-	(1)	-	3,858
2016.09	3,858	168	3	-	(4)	-	4,025
2016.10	4,025	131	-	(460)	-	-	3,696
2016.11	3,696	-	5	(1)	-	-	3,700
2016.12	3,700	-	5	1	-	-	3,706
2017.01	3,706	47	5	(435)	-	-	3,323
2017.02	3,323	262	3	-	(6)	-	3,582
2017.03	3,582	77	2	-	(1)	-	3,660
2017.04	3,660	2	2	(359)	(1)	-	3,304
2017.05	3,304	-	4	3	(1)	-	3,310
2017.06	3,310	-	6	-	(1)	-	3,315
2017.07	3,315	-	-	(382)	(1)	-	2,932
2017.08	2,932	780	5	3	(1)	1	3,720
2017.09	3,720	93	2	-	(1)	-	3,814
2017.10	3,814	46	3	(454)	(4)	(1)	3,404
2017.11	3,404	-	5	-	(1)	-	3,408
2017.12	3,408	-	4	-	(1)	1	3,412
2018.01	3,412	185	4	-	(1)	-	3,600
2018.02	3,600	129	5	(353)	(1)	-	3,380
2018.03	3,380	5	2	-	(1)	-	3,386
2018.04	3,386	-	3	-	(1)	-	3,388
2018.05	3,388	-	3	(274)	(1)	-	3,116
2018.06	3,116	-	6	-	(1)	1	3,122

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

DEVELOPMENT OF PROJECTED FUND BALANCE  
SCENARIO 2: CLAIMS AT 75% OF EXPECTED LEVEL  
(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a) \$ 1,238  
Projected Annual Premium 2018/19 (a) \$ 1,200  
Projected Annual Benefits 2018/19 (a) \$ (1,238)

Month	Start	Cash Flows				Rounding	Ending
	Cash (b)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	Adjustment (g)	Cash (h)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2018.07	3,122	-	3	(310)	(1)	-	2,814
2018.08	2,814	720	3	-	(1)	-	3,536
2018.09	3,536	60	4	-	(1)	-	3,599
2018.10	3,599	60	4	(310)	(1)	-	3,352
2018.11	3,352	-	3	-	(1)	-	3,354
2018.12	3,354	-	3	-	(1)	-	3,356
2019.01	3,356	120	3	(310)	(1)	-	3,168
2019.02	3,168	180	3	-	(1)	-	3,350
2019.03	3,350	36	3	-	(1)	-	3,388
2019.04	3,388	24	3	(310)	(1)	-	3,104
2019.05	3,104	-	3	-	(1)	-	3,106
2019.06	3,106	-	3	-	(1)	-	3,108
2019.07	3,108	-	3	(310)	(1)	-	2,800
2019.08	2,800	720	3	-	(1)	-	3,522
2010-2011	\$ 2,663	\$ 2,488	\$ 46	\$ (3,640)	\$ (20)	\$ 3	\$ 1,540
2011-2012	\$ 1,540	\$ 3,659	\$ 30	\$ (2,960)	\$ (17)	\$ -	\$ 2,252
2012-2013	\$ 2,252	\$ 3,082	\$ 34	\$ (2,623)	\$ (18)	\$ (4)	\$ 2,723
2013-2014	\$ 2,723	\$ 2,809	\$ 27	\$ (2,947)	\$ (18)	\$ (1)	\$ 2,593
2014-2015	\$ 2,593	\$ 2,690	\$ 26	\$ (2,185)	\$ (15)	\$ -	\$ 3,109
2015-2016	\$ 3,109	\$ 1,744	\$ 34	\$ (1,785)	\$ (15)	\$ (1)	\$ 3,086
2016-2017	\$ 3,086	\$ 1,874	\$ 38	\$ (1,667)	\$ (16)	\$ -	\$ 3,315
2017-2018	\$ 3,315	\$ 1,238	\$ 42	\$ (1,460)	\$ (15)	\$ 2	\$ 3,122
2018-2019	\$ 3,122	\$ 1,200	\$ 38	\$ (1,240)	\$ (12)	\$ -	\$ 3,108

- Notes: (a) Based on discussions with management.  
(b) Starting cash of \$2,663,000 at 7/1/2010 based on data provided by DFA.  
Other amounts equal to prior month's ending cash.  
(c) Through 2018.06, actual premium collected provided by DFA.  
Other amounts estimated based on prior year's premium collected.  
(d) Through 2018.06, actual interest earned provided by DFA.  
Other amounts estimated based on 0.1% of starting cash where 0.1% reflects historical average interest earned per month.  
(e) Based on monthly financial statements through 2018.06.  
Other amounts estimated based on annual benefits assumption.  
(f) Through 2018.06, actual administrative expense provided by DFA.  
Other amounts estimated based on prior year's administration expenses incurred.  
(g) Rounding adjustment.  
(h) Sum of Columns (2) through (7).  
Matches financial statement as of 2018.06. Interim months during FY 2017 do not all match monthly cash balances due to inconsistencies in DFA financial statements.

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

DEVELOPMENT OF PROJECTED FUND BALANCE  
SCENARIO 3: CLAIMS AT 125% OF EXPECTED LEVEL  
(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a)      \$    1,238  
Projected Annual Premium 2018/19 (a)      \$    1,200  
Projected Annual Benefits 2018/19 (a)      \$    (2,063)

Month	Start	Cash Flows				Rounding	Ending
	Cash (b)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	Adjustment (g)	Cash (h)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2010.07	\$ 2,663	\$ -	\$ 3	\$ (704)	\$ -	\$ -	\$ 1,962
2010.08	1,962	1,087	5	-	-	1	3,055
2010.09	3,055	321	5	-	-	-	3,381
2010.10	3,381	97	6	(1,056)	-	1	2,429
2010.11	2,429	-	5	-	(10)	-	2,424
2010.12	2,424	3	4	-	-	-	2,431
2011.01	2,431	160	3	(1,077)	-	-	1,517
2011.02	1,517	626	4	-	(10)	-	2,137
2011.03	2,137	193	3	-	-	1	2,334
2011.04	2,334	-	3	(803)	-	-	1,534
2011.05	1,534	1	3	-	-	-	1,538
2011.06	1,538	-	2	-	-	-	1,540
2011.07	1,540	-	1	(749)	(1)	1	792
2011.08	792	2,253	3	-	(1)	(1)	3,046
2011.09	3,046	141	4	-	(1)	-	3,190
2011.10	3,190	10	3	(714)	(2)	-	2,487
2011.11	2,487	-	2	-	(3)	-	2,486
2011.12	2,486	-	2	-	(1)	1	2,488
2012.01	2,488	1,069	1	(824)	(1)	(1)	2,732
2012.02	2,732	185	3	-	(1)	-	2,919
2012.03	2,919	1	3	-	(2)	-	2,921
2012.04	2,921	-	3	(673)	(1)	-	2,250
2012.05	2,250	-	3	-	(1)	-	2,252
2012.06	2,252	-	2	-	(2)	-	2,252
2012.07	2,252	-	1	-	(1)	-	2,252
2012.08	2,252	56	2	(663)	(1)	-	1,646
2012.09	1,646	1,401	3	-	(1)	(1)	3,048
2012.10	3,048	256	3	-	(3)	-	3,304
2012.11	3,304	61	3	(670)	(1)	(1)	2,696
2012.12	2,696	1	4	-	(1)	-	2,700
2013.01	2,700	186	3	-	(1)	-	2,888
2013.02	2,888	1,040	2	-	(2)	-	3,928
2013.03	3,928	81	5	(701)	(2)	(1)	3,310
2013.04	3,310	-	3	-	(1)	(1)	3,311
2013.05	3,311	-	3	-	(1)	-	3,313
2013.06	3,313	-	2	(589)	(3)	-	2,723
2013.07	2,723	-	3	-	(1)	-	2,725
2013.08	2,725	1,042	2	(686)	(2)	(1)	3,080
2013.09	3,080	564	3	-	(1)	-	3,646
2013.10	3,646	162	2	(831)	(4)	1	2,976
2013.11	2,976	-	3	-	(1)	-	2,978
2013.12	2,978	-	2	-	(1)	-	2,979
2014.01	2,979	695	3	(804)	(1)	-	2,872
2014.02	2,872	333	2	-	(2)	-	3,205
2014.03	3,205	13	2	-	(1)	(1)	3,218
2014.04	3,218	-	1	-	(1)	1	3,219
2014.05	3,219	-	2	(626)	(1)	(1)	2,593
2014.06	2,593	-	2	-	(2)	-	2,593



## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

DEVELOPMENT OF PROJECTED FUND BALANCE  
SCENARIO 3: CLAIMS AT 125% OF EXPECTED LEVEL  
(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a)      \$    1,238  
Projected Annual Premium 2018/19 (a)      \$    1,200  
Projected Annual Benefits 2018/19 (a)      \$    (2,063)

Month	Start	Cash Flows				Rounding	Ending
	Cash (b)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	Adjustment (g)	Cash (h)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2014.07	2,593	-	-	(589)	(1)	-	2,003
2014.08	2,003	-	-	-	(1)	-	2,002
2014.09	2,002	224	-	-	(1)	-	2,225
2014.10	2,225	619	-	-	(4)	-	2,840
2014.11	2,840	808	-	(605)	(1)	-	3,042
2014.12	3,042	190	-	3	(1)	-	3,234
2015.01	3,234	319	-	(584)	(1)	1	2,969
2015.02	2,969	207	-	-	(1)	-	3,175
2015.03	3,175	231	-	-	(1)	-	3,405
2015.04	3,405	-	-	(410)	(1)	-	2,994
2015.05	2,994	-	4	-	(1)	(1)	2,996
2015.06	2,996	92	22	-	(1)	-	3,109
2015.07	3,109	-	-	(393)	(1)	-	2,715
2015.08	2,715	1,089	2	2	(1)	-	3,807
2015.09	3,807	102	-	-	(4)	-	3,905
2015.10	3,905	91	7	(507)	(1)	-	3,495
2015.11	3,495	-	5	1	-	-	3,501
2015.12	3,501	-	3	-	(1)	-	3,503
2016.01	3,503	67	-	(487)	(1)	-	3,082
2016.02	3,082	233	2	-	(1)	-	3,316
2016.03	3,316	81	6	1	(1)	-	3,403
2016.04	3,403	76	-	(403)	(1)	(1)	3,074
2016.05	3,074	4	4	1	(2)	1	3,082
2016.06	3,082	1	5	-	(1)	(1)	3,086
2016.07	3,086	404	-	(416)	(1)	-	3,073
2016.08	3,073	783	3	-	(1)	-	3,858
2016.09	3,858	168	3	-	(4)	-	4,025
2016.10	4,025	131	-	(460)	-	-	3,696
2016.11	3,696	-	5	(1)	-	-	3,700
2016.12	3,700	-	5	1	-	-	3,706
2017.01	3,706	47	5	(435)	-	-	3,323
2017.02	3,323	262	3	-	(6)	-	3,582
2017.03	3,582	77	2	-	(1)	-	3,660
2017.04	3,660	2	2	(359)	(1)	-	3,304
2017.05	3,304	-	4	3	(1)	-	3,310
2017.06	3,310	-	6	-	(1)	-	3,315
2017.07	3,315	-	-	(382)	(1)	-	2,932
2017.08	2,932	780	5	3	(1)	1	3,720
2017.09	3,720	93	2	-	(1)	-	3,814
2017.10	3,814	46	3	(454)	(4)	(1)	3,404
2017.11	3,404	-	5	-	(1)	-	3,408
2017.12	3,408	-	4	-	(1)	1	3,412
2018.01	3,412	185	4	-	(1)	-	3,600
2018.02	3,600	129	5	(353)	(1)	-	3,380
2018.03	3,380	5	2	-	(1)	-	3,386
2018.04	3,386	-	3	-	(1)	-	3,388
2018.05	3,388	-	3	(274)	(1)	-	3,116
2018.06	3,116	-	6	-	(1)	1	3,122

## STATE OF MISSISSIPPI

### Employment Compensation Revolving Fund

DEVELOPMENT OF PROJECTED FUND BALANCE  
SCENARIO 3: CLAIMS AT 125% OF EXPECTED LEVEL  
(\$000'S OMITTED)

Assumptions: Actual Annual Premium 2017/18 (a) \$ 1,238  
Projected Annual Premium 2018/19 (a) \$ 1,200  
Projected Annual Benefits 2018/19 (a) \$ (2,063)

Month	Start	Cash Flows				Rounding	Ending
	Cash (b)	Premium (c)	Interest (d)	Benefits (e)	Admin (f)	Adjustment (g)	Cash (h)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2018.07	3,122	-	3	(516)	(1)	-	2,608
2018.08	2,608	720	3	-	(1)	-	3,330
2018.09	3,330	60	3	-	(1)	-	3,392
2018.10	3,392	60	3	(516)	(1)	-	2,938
2018.11	2,938	-	3	-	(1)	-	2,940
2018.12	2,940	-	3	-	(1)	-	2,942
2019.01	2,942	120	3	(516)	(1)	-	2,548
2019.02	2,548	180	3	-	(1)	-	2,730
2019.03	2,730	36	3	-	(1)	-	2,768
2019.04	2,768	24	3	(516)	(1)	-	2,278
2019.05	2,278	-	2	-	(1)	-	2,279
2019.06	2,279	-	2	-	(1)	-	2,280
2019.07	2,280	-	2	(516)	(1)	-	1,765
2019.08	1,765	720	2	-	(1)	-	2,486
2010-2011	\$ 2,663	\$ 2,488	\$ 46	\$ (3,640)	\$ (20)	\$ 3	\$ 1,540
2011-2012	\$ 1,540	\$ 3,659	\$ 30	\$ (2,960)	\$ (17)	\$ -	\$ 2,252
2012-2013	\$ 2,252	\$ 3,082	\$ 34	\$ (2,623)	\$ (18)	\$ (4)	\$ 2,723
2013-2014	\$ 2,723	\$ 2,809	\$ 27	\$ (2,947)	\$ (18)	\$ (1)	\$ 2,593
2014-2015	\$ 2,593	\$ 2,690	\$ 26	\$ (2,185)	\$ (15)	\$ -	\$ 3,109
2015-2016	\$ 3,109	\$ 1,744	\$ 34	\$ (1,785)	\$ (15)	\$ (1)	\$ 3,086
2016-2017	\$ 3,086	\$ 1,874	\$ 38	\$ (1,667)	\$ (16)	\$ -	\$ 3,315
2017-2018	\$ 3,315	\$ 1,238	\$ 42	\$ (1,460)	\$ (15)	\$ 2	\$ 3,122
2018-2019	\$ 3,122	\$ 1,200	\$ 34	\$ (2,064)	\$ (12)	\$ -	\$ 2,280

- Notes: (a) Based on discussions with management.  
 (b) Starting cash of \$2,663,000 at 7/1/2010 based on data provided by DFA.  
 Other amounts equal to prior month's ending cash.  
 (c) Through 2018.06, actual premium collected provided by DFA.  
 Other amounts estimated based on prior year's premium collected.  
 (d) Through 2018.06, actual interest earned provided by DFA.  
 Other amounts estimated based on 0.1% of starting cash where 0.1% reflects historical average interest earned per month.  
 (e) Based on monthly financial statements through 2018.06.  
 Other amounts estimated based on annual benefits assumption.  
 (f) Through 2018.06, actual administrative expense provided by DFA.  
 Other amounts estimated based on prior year's administration expenses incurred.  
 (g) Rounding adjustment.  
 (h) Sum of Columns (2) through (7).  
 Matches financial statement as of 2018.06. Interim months during FY 2017 do not all match monthly cash balances due to inconsistencies in DFA financial statements.