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**Subject:** Verification and Quantification of Buck’s Recommended Changes

At PBGC’s request, Buck Consultants (Buck) conducted an independent review of PBGC’s Multiemployer Pension Insurance Modeling System (ME-PIMS) and, in its September 2012 report, recommended a number of changes to ME-PIMS to improve the quality of the model’s projections. This memo focuses on Buck’s recommended changes to the way ME-PIMS models (1) employer contribution increases and (2) the steps employers will take when a plan is or is projected to be in endangered or critical status.<sup>1</sup>

After receiving the Buck recommendations, PBGC took steps to validate these recommendations by comparing them with calculations based on administrative data available to PBGC and to review them with practitioners in the multiemployer field before implementing them. The Policy, Research and Analysis Department (PRAD) of PBGC conducted this research.

The material below provides brief descriptions of these recommendations, PBGC’s verification of them, and (when available) their impact on the mean present value of PBGC’s projected 2023 multiemployer net position (“mean 10-year net deficit”).<sup>2</sup>

#### **A. Aggregate contribution limit**

For the FY 2012 Exposure Report<sup>3</sup>, ME-PIMS did not limit overall increases in employer contributions. Buck noted that without such limits the model produced larger cumulative aggregate contribution increases than were likely to actually occur, especially when rehabilitation plans were

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<sup>1</sup> Buck also made recommendations in the same report as to how ME-PIMS projects its active population and determines the probability of mass withdrawal from a multiemployer pension plan. The former is discussed in a separate memo by Steve Boyce, while changes to the mass withdrawal assumptions were deferred until the FY 2014 Projections Report. Further, PBGC adopted for the 2013 Report the Buck recommendation that PBGC reflect in its projections more recent data available at the time we run the model.

<sup>2</sup> More detailed information about the changes to ME-PIMS and the quantitative effects of those changes are detailed in the FY 2013 Projections Report.

<sup>3</sup> The FY 2013 Exposure Report was renamed the FY 2013 Projections Report.

implemented. Buck recommended,<sup>4</sup> in terms of an aggregate dollar limit, that cumulative increases no more than double the contribution after 6-8 years and no more than triple it after 10-12 years.<sup>5</sup>

PRAD investigated the rehabilitation plans of the 70 largest critical status plans<sup>6</sup> and confirmed that Buck’s rule of thumb is reasonable. Below is a summary of PRAD’s findings on the aggregate contribution limit. For more detail, please refer to Appendix C-1.

Table 1: Limits on Cumulative Aggregate Contribution Increase Factors

	Cumulative Aggregate Contribution Increase Factor		
	After ~6 Years <sup>7</sup>	After ~12 Years <sup>8</sup>	Ultimate
Buck recommendation	2.0	3.0	N/A
PRAD study – conservative <sup>9</sup>	1.8	2.3	N/A
PRAD study – aggressive	2.3	3.0	N/A
Adopted assumption	2.0	3.0	3.5

PRAD also performed sensitivity analysis on this assumption as summarized below:

Table 2: Sensitivity of Results to Limits to Increases in the Aggregate Contribution

	Sensitivity Testing	
	Adopted Assumption	Alternative Assumption
Assumption Set:		
Limit on 6-year cumulative aggregate contribution increases	2.0	1.0
Limit on 12-year cumulative aggregate contribution increases	3.0	1.5
Ultimate limit on cumulative aggregate contribution increases <sup>10</sup>	3.5	1.75
Result:		
Mean 10-year net deficit (reflects all other changes to model, data and assumptions)	\$49.6 billion	\$59.0 billion

<sup>4</sup> Many of Buck’s quantitative recommendations occurred in communications subsequent to the initial report.

<sup>5</sup> These horizons are measured from the beginning of the most recent Schedule MB data. For the FY 2013 Projections Report, the base year corresponded to the 2011 Schedule MB. For the FY 2014 Projections Report, the base year will correspond to the 2012 Schedule MB.

<sup>6</sup> As measured by Current Liability. Most of the rehabilitation plans were from the 2010 Form 5500 attachments, but a few were from the 2011 Form 5500.

<sup>7</sup> Buck’s recommendation was 6 to 8 years; the PRAD study used 7 years; and 6 years was adopted for ME-PIMS.

<sup>8</sup> Buck’s recommendation was 10 to 12 years; the PRAD study used 13 years; and 12 years was adopted for ME-PIMS.

<sup>9</sup> Details of conservative versus aggressive assumptions are in Appendix C-1.

<sup>10</sup> Once one of these limits is exceeded, the aggregate contributions can still increase with wage growth.

## **B. Implementation of the “Exhaustion of All Reasonable Measures” Clause**

For the FY 2012 Exposure Report, ME-PIMS assumed all critical status plans would develop rehabilitation plans to emerge from critical status by the end of the rehabilitation period. Available data have begun to make clear that many critical status plans would not be expected to emerge from critical status by the end of the rehabilitation period, based on reasonable assumptions and reasonable measures. These critical status plans did not adopt the full range of options available to them because they considered themselves to have “exhausted all reasonable measures” (referred to as “ERM” plans). Several years of post-PPA experience have produced sufficient data to enable PBGC to develop a more refined assumption.<sup>11</sup>

Based on PRAD’s review of the 70 largest critical status plans,<sup>12</sup> 22 plans (roughly 30%) are in the ERM category. A metric was developed to help PIMS predict which plans will be classified as having exhausted all reasonable measures. This metric reproduced the target 30% average when applied to all 349 critical status plans in our database; it reflects the ratio of inactive to active participants as well as whether the current employer contribution is sustainable. Please refer to Appendix B for more detail on the metric developed.

## **C. Steps for Funding Improvement Plans/Rehabilitation Plans (FIP/RP)**

For the FY 2012 Exposure Report, ME-PIMS assumed plans would implement a series of remedial steps as part of their funding improvement or rehabilitation plans. These steps include per capita contribution increases as well as cuts to benefit accruals and subsidies as permitted under the Pension Protection Act of 2006 as amended (PPA). These steps, listed in Appendix A, were developed for ME-PIMS at a time when there was little or no FIP/RP experience available. Several years of post-PPA experience have produced sufficient data to enable PBGC to develop a more refined assumption.<sup>13</sup>

In particular, as with the aggregate contribution, post-PPA experience has shown that the per capita contribution increases in critical plans assumed for the FY 2012 Exposure Report were quite aggressive. In addition, plans have not implemented all of the PPA tools available to critical status plans to help reduce liabilities (e.g., elimination of early retirement subsidies, five-year rollback of benefits). We summarize in the table below PRAD’s finding for the average rate of per capita contribution increases. For more detail about the contributions for critical status plans in our study, please refer to Appendix C-2.

For the FY 2012 Exposure Report, ME-PIMS assumed that the plan would immediately bump the per capita contribution increase rate to 240% of the historical level.<sup>14</sup> For the 2013 Projections Report, the per capita contribution increase rate in a critical plan is the lesser of 240% of the historical level and the “rate cap” (i.e., 8%/12% annual increase limit in per capita contributions for

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<sup>11</sup> The 2010 Form 5500 was the most recent available when PRAD investigated this issue.

<sup>12</sup> As measured by Current Liability.

<sup>13</sup> The 2010 Form 5500 was the most recent available when PRAD investigated this issue.

<sup>14</sup> E.g., if the historical per capita annual rate of increase was 3%, the plan would immediately bump per capita contribution increases to 7.2% (3 x 2.4).

non-ERM critical status plans and 7% annual increase limit in per capita contributions for ERM plans).

Table 3: Rate of Annual Per Capita Contribution Increase

	<b>Rate of Annual Per Capita Contribution Increase<sup>15</sup></b>
PRAD study – long term <sup>16</sup>	Average 8.5% (3% to 24%)
PRAD study – short term <sup>17</sup>	Average 12.6% (5% to 24%)
ME-PIMS assumption to be used in FY 2013 Projections Report	Initial rate at 8% increased to 12% if needed (7% for ERM plans <sup>18</sup> )

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<sup>15</sup> These are aggregate contribution increases since per capita rates were not available.

<sup>16</sup> Includes all plans.

<sup>17</sup> Includes only plans with rehabilitation periods of less than 10 years.

<sup>18</sup> We did not have enough data to develop a credible estimate of ERM increases but the data did clearly show that ERM plans have lower increases.

## APPENDIX A – STEPS FOR FIP/RP

Below is a summary of the remedial measures that ME-PIMS assumed for the FY 2012 Exposure Report.<sup>19</sup> The steps are implemented in order until the plan is projected to emerge from critical status.

### 2012 FIP or RP adoption steps (in sequence)

- (0) Extend all amortization charge bases by 5 years (but cap the extended period at 30 years).
- (1)\* Eliminate early retirement subsidies on entire benefit and, prospectively, temporary supplements.
- (2) Increase the per capita contribution by a factor of 187% of plan-specific historical per capita increase.
- (3) Reduce future accruals to a floor accrual of 1% of the per capita contribution.
- (4) Increase the per capita contribution by a factor of 240% of the historical per capita increase.
- (5)\* Completely eliminate future accruals.
- (6)\* 5-year roll-back of benefits, including those in pay status.

\* For critical status plans only.

### New (2013) steps for ERM plans

It appears that the vast majority of ERM plans did NOT eliminate the early retirement subsidy on accrued benefits.<sup>20</sup> Thus the new hierarchy uses only steps 0, 3, and a modified step 4:

- (0) **Implement** Step 0 but do not extend bases if a plan starts out in non-green status.
- (1) **Skip** step 1.
- (2) **Skip** step 2 and capture any per capita contribution increases exclusively in step 4, after step 3 is taken.
- (3) **Implement** step 3 (i.e., no change to current code).
- (4) **Modify** step 4 to apply a cap of 7% to the per capita contribution increase rate.<sup>21</sup>
- (5) **Skip** step 5
- (6) **Skip** step 6

### New (2013) steps for non-ERM plans

- (0) **Implement** step 0 but do not extend bases if a plan starts out in non-green status.
- (1) **Implement** step 1 (i.e., no change to current code).
- (2) **Modify** step 2 to apply a cap of 8% to the per capita contribution increase rate.<sup>22</sup>
- (3) **Implement** step 3 (i.e., no change to current code).
- (4) **Modify** step 4 to apply a cap of 12% to the per capita contribution increase rate.<sup>23</sup>
- (5) **Skip** step 5
- (6) **Skip** step 6

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<sup>19</sup> Based on Buck's interim recommendation of steps to use while waiting for post-PPA experience to emerge.

<sup>20</sup> If the subsidy was modified, the change generally applied to prospective accruals only and/or for Terminated Vested Participants who are assumed by ME-PIMS to retire at NRA anyway.

<sup>21</sup> The per capita contributions are increased to 240% of the historical increase rate, and the result is capped at 7%.

<sup>22</sup> The per capita contributions are increased to 187% of the historical increase rate, and the result is capped at 8%.

<sup>23</sup> The per capita contributions are increased to 240% of the historical increase rate, and the result is capped at 12%.

## APPENDIX B – EXHAUSTION OF REASONABLE MEASURES

Of the 70 critical status plans that we researched,<sup>24</sup> 22 (or roughly 30%) considered themselves to have “exhausted all reasonable measures” (ERM). The goal was to develop an unbiased metric to predict which plans will consider themselves ERM plans. We reviewed several plan statistics to determine if there were certain ones that were closely correlated with the plans that had ERM status.

After some trial and error, we noted that the product of: (i) the ratio of inactive participants to active participants; and (ii) the ratio of the modified “required” contribution to the actual contribution, seemed to demarcate which plans were ERM plans. The modified required contribution was calculated as the plan’s normal cost (NC) plus interest on the plan’s unfunded accrued liability (UAL).

When the product of (i) times (ii) above was greater than 4.0, we correctly identified 13 of the 22 sampled ERM plans (or, a 59% ‘hit rate’). All 48 of the non-ERM plans sampled had products that fell below the 4.0 threshold.

<b>Contribution Statistic</b>	<b>Considered ERM</b>	<b>NOT Considered ERM</b>
Average inactive to active participant ratio for researched plans.	4.4 (22 plans)	2.23 (48 plans)
Average ratio of {actuarial NC + interest * UAL} to {current contribution} for researched plans (2010 only).	2.52	1.16

We applied a threshold of 4.0 to the product of (i) and (ii) above for all 349 critical plans from the 2012 Form 5500 Schedule MB filings. This test identified 105 critical status plans as being ERM plans. The 30% figure comported with our actual 30% of plans identified as ERM and also aligned with anecdotal feedback we received from practitioners.

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<sup>24</sup> Most of the research was based on the 2010 Form 5500 and attachments.

## APPENDIX C-1 – AGGREGATE CONTRIBUTION LIMIT

Below are highlights from PRAD’s aggregate contribution limit study:

- Breakdown of plans:
  - Of the 70 rehabilitation plans studied,<sup>25</sup> 32 provided information on the planned aggregate contribution increases over the rehabilitation period. Please refer to Appendix C-2 for the list of 32 plans.
  - Of those, 18 plans had rehabilitation periods less than 10 years<sup>26</sup> and 14 had rehabilitation periods greater than or equal to 10 years.
- For plans with rehabilitation periods less than 10 years:
  - The average annual aggregate contribution increase was 12.6% over the rehabilitation periods.
  - To put the plans on a common basis, we projected the plans to year 7 (the midpoint of Buck’s 6-8 years period).
    - Conservative: If aggregate contributions are projected from the end of the rehabilitation period to year 7 using wage growth of 4.3% (to be consistent with 2013 PIMS), the cumulative increase factor at year 7 is 1.8. This is close to Buck’s rule of thumb of 2.0 (i.e., double).
    - Aggressive: If aggregate contributions are projected from the end of the rehabilitation period to year 7 using the average increase of 12.6%, the cumulative increase factor at year 7 is 2.3. This is also close to Buck’s rule of thumb of 2.0 (i.e. double).
  - Next we projected the year 7 results to year 13 to calculate a long-term limit.
    - Projecting the 1.8 figure from above using wage growth of 4.3%, we get 2.3, which is shy of Buck’s recommendation of 3.0.
    - Projecting the 2.3 figure from above using wage growth of 4.3%, we get 3.0, which matches Buck’s recommendation.
    - It follows that if plan sponsors are willing to increase aggregate contributions by a factor of 1.8 to 2.3 after 7 years, they should be willing to increase aggregate contributions by 2.3 to 3.0 after 13 years. Buck’s recommendation of 3.0 is within this range. In addition, plans may be willing to sustain aggregate contribution increases more than wage growth for years 8 to 13.
  - Stress testing:
    - The conservative approach did not materially change by including plans with rehabilitation periods  $\geq$  10 years. The aggressive approach was more sensitive as can be seen in Appendix C-2.
    - The results did not materially change when plans that have declared exhaustion of all reasonable measures were excluded.
    - We did not have a way of comparing the ultimate limit of 3.5 against the data. However, it does not have a large impact on results.

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<sup>25</sup> The 70 largest plans, as measured by Current Liability, were chosen. For most plans, the 2010 Form 5500 was used.

<sup>26</sup> For a few plans, we had only the negotiated contribution increases per the collective bargaining agreement.

**APPENDIX C-2  
RESEARCH ON CONTRIBUTION INCREASES**

	Declaring exhaustion of reasonable measures?	Start date	End date	Cumulative contribution increase	Years of increases	Average annual increase	Cumulative factor per rehab plan	Years at National Wage Increase (NWI) <sup>1</sup>	Cumulative factor to fill up to 7th year w/ NWI	Total years	7-Year cumulative factor
Plan A	No	01/01/2009	01/01/2010	49%	1	49%	1.4875	6	1.0000	7	1.4875
Plan B	Yes	04/01/2009	04/01/2011	9%	2	4%	1.0900	5	1.0000	7	1.0900
Plan C	Yes	07/01/2009	07/01/2011	26%	2	12%	1.2578	5	1.0000	7	1.2578
Plan D	Yes	01/01/2013	01/01/2016	16%	3	5%	1.1550	4	1.0000	7	1.1550
Plan E	No	01/01/2008	01/01/2011	24%	3	7%	1.2375	4	1.0000	7	1.2375
Plan F	No	08/01/2009	08/01/2012	32%	3	10%	1.3152	4	1.0000	7	1.3152
Plan G	No	01/01/2009	01/01/2012	24%	3	7%	1.2380	4	1.0000	7	1.2380
Plan H	No	12/01/2008	11/30/2012	134%	4	24%	2.3407	3	1.0000	7	2.3407
Plan I	No	01/01/2008	01/01/2012	97%	4	18%	1.9655	3	1.0000	7	1.9655
Plan J	No	08/01/2010	07/31/2014	34%	4	8%	1.3377	3	1.0000	7	1.3377
Plan K	No	05/01/2008	05/01/2012	56%	4	12%	1.5612	3	1.0000	7	1.5612
Plan L	Yes	01/01/2008	01/01/2012	55%	4	12%	1.5477	3	1.0000	7	1.5477
Plan M	No	01/01/2010	01/01/2015	74%	5	12%	1.7387	2	1.0000	7	1.7387
Plan N	No	01/01/2008	01/01/2013	113%	5	16%	2.1296	2	1.0000	7	2.1296
Plan O	No	01/01/2012	12/31/2016	125%	5	18%	2.2500	2	1.0000	7	2.2500
Plan P	No	06/30/2009	06/30/2015	123%	6	14%	2.2299	1	1.0000	7	2.2299
Plan Q	No	09/01/2008	09/01/2014	63%	6	8%	1.6279	1	1.0000	7	1.6279
Plan R	No	01/01/2010	12/31/2016	117%	7	12%	2.1667	0	1.0000	7	2.1667
Plan S	Yes	01/01/2008	12/31/2017	82%	10	6%	1.8200	-3	1.0000	7	1.8200
Plan T	No	01/01/2008	12/31/2017	97%	10	7%	1.9672	-3	1.0000	7	1.9672
Plan U	No	01/01/2012	12/31/2021	71%	10	6%	1.7093	-3	1.0000	7	1.7093
Plan V	No	01/01/2010	12/31/2019	88%	10	6%	1.8771	-3	1.0000	7	1.8771
Plan W	Yes	01/01/2010	12/31/2019	40%	10	3%	1.3977	-3	1.0000	7	1.3977
Plan X	No	01/01/2013	12/31/2022	128%	10	9%	2.2800	-3	1.0000	7	2.2800
Plan Y	No	01/01/2011	12/31/2020	63%	10	5%	1.6289	-3	1.0000	7	1.6289
Plan Z	No	01/01/2011	12/31/2020	159%	10	10%	2.5937	-3	1.0000	7	2.5937
Plan AA	No	06/01/2010	06/30/2020	177%	10	11%	2.7692	-3	1.0000	7	2.7692
Plan BB	No	08/01/2007	08/01/2017	99%	10	7%	1.9940	-3	1.0000	7	1.9940
Plan CC	No	01/01/2010	12/31/2019	89%	10	7%	1.8948	-3	1.0000	7	1.8948
Plan DD	No	01/01/2008	01/01/2020	108%	12	6%	2.0791	-5	1.0000	7	2.0791
Plan EE	No	01/01/2011	12/31/2023	58%	13	4%	1.5801	-6	1.0000	7	1.5801
Plan FF	No	01/01/2011	12/31/2023	123%	13	6%	2.2264	-6	1.0000	7	2.2264
<b>TOTAL/AVERAGE [ALL PLANS]</b>					<b>219</b>		<b>8.5%</b>			<b>224</b>	<b>8.3%</b>
<b>CUMULATIVE FACTOR TO 7 YEARS [ALL PLANS]</b>							<b>1.767</b>				<b>1.745</b>
<b>CUMULATIVE FACTOR TO 13 YEARS [ALL PLANS]</b>							<b>1.767</b>				<b>1.745</b>
<b>TOTAL/AVERAGE [PLANS WITH PERIOD &lt; 10 YEARS]</b>					<b>71</b>		<b>12.6%</b>			<b>126</b>	<b>6.9%</b>
<b>CUMULATIVE FACTOR TO 7 YEARS [PLANS W/ PERIOD &lt; 10 YEARS]</b>							<b>2.298</b>				<b>1.598</b>
<b>CUMULATIVE FACTOR TO 13 YEARS [PLANS W/ PERIOD &lt; 10 YEARS]</b>							<b>2.298</b>				<b>1.598</b>

<sup>1</sup> Assumed National Wage Increase = 0.0%

**APPENDIX D**

**ILLUSTRATION OF HOW PIMS APPLIES AGGREGATE CONTRIBUTION LIMIT AND PER CAPITA CONTRIBUTION (PCC) RATE INCREASE CAP**

2011 aggregate contribution	\$ 1,000,000
Historical increase rate ("H") <sup>1</sup>	6.0%
"H" x 1.87 (i.e. step 2 per capita contribution increase rate) <sup>2</sup>	11.2%
"H" x 2.4 (i.e. step 4 per capita contribution increase rate) <sup>2</sup>	14.4%
FY13 active count	900
FY13 hours worked [illustration based on 1500 hours per active]	1,350,000
FY13 per capita contribution rate	\$1.00/hr
FY13 aggregate contribution	\$ 1,350,000
FY13 wage growth <sup>3</sup>	4.30%

(i)	(ii)	(iii)	Aggregate contribution <i>before</i> PCC rate increase cap and <i>before</i> aggregate dollar limit			Aggregate contribution <i>after</i> PCC rate increase cap but <i>before</i> aggregate dollar limit				Aggregate contribution <i>after</i> PCC rate increase cap and <i>after</i> aggregate dollar limit			
			(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	(xi)	(xii)	(xiii)	(xiv)
Fiscal year	PIMS FIP/RP step reached <sup>4</sup>	Total hours worked <sup>5</sup>	Uncapped PCC rate increase	Uncapped PCC rate	Uncapped aggregate contribution [(iii) x (v)] <sup>6</sup>	PCC rate increase cap <sup>7</sup>	Capped PCC rate increase [lesser of (iv) and (vii)]	Capped PCC rate	Aggregate contribution reflecting PCC rate increase cap [(iii) x (ix)]	Years from 2011 <sup>8</sup>	Aggregate dollar limit before reflecting wage growth <sup>9</sup>	Indexed aggregate contribution dollar limit <sup>10</sup>	Aggregate contribution reflecting dollar limit [lesser of (x) and (xii)]
2014	Non-ERM 2	1,350,000	11.2%	\$1.11/hr	\$ 1,501,470	8.0%	8.0%	\$1.08/hr	\$ 1,458,000	3	\$ 2,000,000	\$ 1,458,000	\$ 1,458,000
2015	Non-ERM 4	1,350,000	14.4%	\$1.27/hr	\$ 1,717,682	12.0%	12.0%	\$1.21/hr	\$ 1,632,960	4	\$ 2,000,000	\$ 1,632,960	\$ 1,632,960
2016	Non-ERM 4	1,350,000	14.4%	\$1.46/hr	\$ 1,965,028	12.0%	12.0%	\$1.35/hr	\$ 1,828,915	5	\$ 2,000,000	\$ 1,828,915	\$ 1,828,915
2017	Non-ERM 4	1,350,000	14.4%	\$1.67/hr	\$ 2,247,992	12.0%	12.0%	\$1.52/hr	\$ 2,048,385	6	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000
2018	Non-ERM 4	1,350,000	14.4%	\$1.90/hr	\$ 2,571,703	12.0%	12.0%	\$1.70/hr	\$ 2,294,191	7	\$ 3,000,000	\$ 2,086,000	\$ 2,086,000
2019	ERM 4	1,350,000	14.4%	\$2.18/hr	\$ 2,942,028	7.0%	7.0%	\$1.82/hr	\$ 2,454,785	8	\$ 3,000,000	\$ 2,175,698	\$ 2,175,698
2020	ERM 4	1,350,000	14.4%	\$2.49/hr	\$ 3,365,680	7.0%	7.0%	\$1.95/hr	\$ 2,626,620	9	\$ 3,000,000	\$ 2,269,253	\$ 2,269,253
2021	ERM 4	1,350,000	14.4%	\$2.85/hr	\$ 3,850,338	7.0%	7.0%	\$2.08/hr	\$ 2,810,483	10	\$ 3,000,000	\$ 2,366,831	\$ 2,366,831
2022	ERM 4	1,350,000	14.4%	\$3.26/hr	\$ 4,404,786	7.0%	7.0%	\$2.23/hr	\$ 3,007,217	11	\$ 3,000,000	\$ 2,468,605	\$ 2,468,605
2023	ERM 4	1,350,000	14.4%	\$3.73/hr	\$ 5,039,076	7.0%	7.0%	\$2.38/hr	\$ 3,217,722	12	\$ 3,000,000	\$ 2,574,755	\$ 2,574,755
2024	ERM 4	1,350,000	14.4%	\$4.27/hr	\$ 5,764,703	7.0%	7.0%	\$2.55/hr	\$ 3,442,962	13	\$ 3,500,000	\$ 2,685,469	\$ 2,685,469
2025	ERM 4	1,350,000	14.4%	\$4.89/hr	\$ 6,594,820	7.0%	7.0%	\$2.73/hr	\$ 3,683,970	14	\$ 3,500,000	\$ 2,800,944	\$ 2,800,944
2026	ERM 4	1,350,000	14.4%	\$5.59/hr	\$ 7,544,474	7.0%	7.0%	\$2.92/hr	\$ 3,941,848	15	\$ 3,500,000	\$ 2,921,385	\$ 2,921,385

<sup>1</sup> "H" is calculated just as it was for the FY12 Exposure Report (i.e. the limits and caps are layered on top of the existing logic). Technically "H" is 3/4 of the historical increase (similar to the FY12 Exposure Report).

<sup>2</sup> The per capita contribution increases are calculated just as they were for the FY12 Exposure Report.

<sup>3</sup> Technically this varies stochastically, but the example is using a mean value for simplicity.

<sup>4</sup> The PIMS Funding Improvement Plan/Rehabilitation Plan (FIP/RP) steps are described in Appendix A.

<sup>5</sup> Technically this varies stochastically, but the example is using level hours for simplicity.

<sup>6</sup> In other words, the contribution that would have been calculated if Buck recommendations were not implemented.

<sup>7</sup> For non-ERM, 8% after step 2 and 12% after step 4. For ERM, 7% cap at step 4. ERM= Exhausted (all) Reasonable Measures

<sup>8</sup> In general, the base year is from the most recent available Form 5500, which was generally 2011 for the FY13 Projections Report.

<sup>9</sup> For non-ERM, no more than double for years 1 to 6, no more than triple for years 7 to 12, and no more than 3.5 times for years 13+. For ERM, no more than 1.5 times.

<sup>10</sup> The dollar limit grows with wage growth once (x) exceeds (xii). For example, in the illustration above, the 3x limit is not used because the 2x limit is exceeded before year 7.

This example does not reflect the additional contributions "boosters" (30% in initial year if critical and missing actual contributions data and 15% when step 6 failed to satisfy the RP requirement). It also does not reflect the additional per capita contribution increases from the projected bargaining cycle increases.