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MEMORANDUM

TO: Evelyn Honea
Mary Mannix

FROM: Mike Zwiener

DATE: March 6, 2008

RE: *Police & Fire Retirement Fund – Funded Ratio Projections – Second Set*

As a follow-up to the March 3 pension board meeting, in which our February 27 analysis was discussed, Milliman was requested to analyze additional funding scenarios.

This analysis is a supplement to our earlier analysis dated February 27, 2008. It is limited to an analysis of the additional scenarios; the following sections in our February 27 report are equally applicable here and are incorporated by reference:

- Funded Ratio – Defined
- Additional Funding Sources – Proposed
- Closed Group/Open Group
- Demographic Data
- Assumptions

Specific Scenarios

The specific scenarios modeled under both closed group and open group assumptions are:

- 0.50% for 5 years, then 0.25%/Assumptions Met
Black diamonds line on graphs
- 0.50% for 5 years, then 0.25%/Poor Experience
Pink squares line on graphs
- 0.50% for 5 years, then 0.375%/Assumptions Met
Yellow triangles line on graphs
- 0.50% for 5 years, then 0.375%/Poor Experience
Blue X's line on graphs

- 0.375%/Assumptions-Met
Purple asterisks line on graphs
- 0.375%/ Poor Experience
Brown circles line on graph

“Poor Experience” was arbitrarily defined as a 3% annual return on investments for each of the first 10 years and 7.5% thereafter. In addition, annual actuarial losses of 1% of accrued liability were assumed from non-investment sources. If actual investment experience turns out to fall between the assumed 7.5% rate and what we have defined as “Poor Experience” the resulting funded ratios would fall between these two extremes.

Closed Group Analysis (Exhibits 3-1 and 4-1)

Under the closed group scenarios, all post June 30, 2008 hires are assumed to be covered by LAGERS. Thus, the headcount of covered members will slowly decline over time, as will covered payroll.

Exhibit 3-1

This exhibit is a summary in graph form of the plan’s funded ratios under all 6 scenarios, assuming that the sales tax revenue will cease once an 80% funded ratio is achieved.

Several observations are of note:

- If assumptions are met, the 0.375% tax and both versions using the 0.50% tax for 5 years will reach the 80% target inside of 10 years. (black, yellow and purple lines).
- If the plan has “Poor Experience” all three such scenarios shown will eventually reach 80% but it will take 15-20 years.
- Under “Assumptions are Met” scenarios, cutting the sales tax off upon reaching 80% is premature as the ratios immediately start to drift downward.
- The “Poor Experience” scenarios appear more favorable when looking at the ratios 15+ years and out. This can be misleading. Consider that these scenarios required that the sales tax revenue was being paid in several more years than under the “Assumptions Met” scenarios. Also, the “Poor Experience” ends after the first 10 years. The conclusion that should be drawn, in our opinion, is that the sales tax cutoff target should be set higher than 80%.

Exhibit 3-2

This exhibit is simply a summary in table format of the funded ratios displayed in the graph on exhibit 3-2.

Exhibit 4-1

This exhibit is a summary in graph form of the plan's funded ratios under all 6 scenarios, assuming that the sales tax revenue will cease once a 90% funded ratio is achieved.

Observations of Note:

- If the tax does not sunset until a 90% ratio is met, the ratios under all tested scenarios do not decrease thereafter.
- In our February 27 analysis, the 90% target was reached in 2016 with a 0.50% tax rate; reducing the rate to 0.375% after 5 years does not change this timeframe (yellow triangles); reducing the tax rate to 0.25% after 5 years extends attainment of 90% by 2 years (black diamonds).
- This exhibit emphasizes the overriding importance of investment experience. The 3 scenarios where assumptions are met are all grouped close together and to the left, indicating relatively quick progress toward the funded ratio goal. The exact same 3 scenarios except for Poor Experience are all grouped far to the right indicating much slower progress towards the goal.

Exhibit 4-2

This exhibit is a summary in table format of the funded ratios displayed in Exhibit 4-1.

Open Group Analysis (Exhibits 5-1 and 6-1)

The exhibits for the open group scenarios are arranged in the same manner as the closed group exhibits. Exhibits 5-1 and 5-2 summarize the funded ratios with an 80% target for all scenarios in graph form and table form, respectively. Exhibits 6-1 and 6-2 are the same except with a 90% target.

Note that under the open group analysis, there are no LAGERS Differential Contributions.

Observations Regarding the Open Group Scenarios

- The ratios do not deteriorate if the sales tax is cut off at the 80% target, as they do under the closed group. This is a function of the payroll under the closed group decreasing over time.
- While the funded ratio patterns are very similar when comparing the open and closed group scenarios, note that the absolute size of the assets and liabilities grows much faster under the open group scenarios and the absolute *difference* in the size of the fund grows over time. Thus, the impact of investment experience (good and bad) will have a greater absolute impact on the plan if it remains open to new entrants.

Contributing Actuarially Required Contribution (ARC)

Milliman was also requested to model the impact on the funded ratios if the actuarially required amount was contributed each year and there was no sales tax revenue.

The ARC was assumed to be calculated as it is currently with these exceptions:

- The amortization period on the unfunded actuarial accrued liability is decreased by 1 each year until it reaches 20 years (and then reamortized each year thereafter using 20 years).
- The amortization method is switched from a level percentage of payroll to a level dollar amount – this is especially appropriate under a closed group scenario.

Exhibit 7-1

This exhibit is a summary in graph form if the ARC is contributed each year. We looked at 4 scenarios.

- Closed Group/Assumptions Met – black diamonds
- Closed Group/Poor Experience – pink squares
- Open Group/Assumptions Met – yellow triangles
- Open Group/Poor Experience – blue X's

The following observations can be made:

- While the 90% targets are eventually reached, it takes much longer than when there is an explicit sales tax. This is because the sales tax is “front loaded” into the earliest years, providing for a quicker build-up of plan assets which, in turn, allows for the generation of more investment earnings.

- While it does not display on the graph, the pattern of annual contribution requirements will differ from the contribution pattern for sales tax scenarios. Recall that the ARC currently requires a contribution of about 50% of payroll and that a contribution of this amount is still several million dollars less than a contribution of 28.88% of payroll plus 0.25% sales tax revenue. Thus, over time, the amount of the ARC will increase both as a dollar amount and as a percentage of payroll. The scenarios with a sales tax component have contribution dollars loaded in the first few years with the payroll component fixed over time (28.88%).

Exhibit 7-2

This exhibit is a summary in table format of the funded ratios displayed in exhibit 7-1.

Certification and Disclaimers

In preparing this analysis we relied, without audit, on information (some oral and some in writing) supplied by the City. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this analysis is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

Actuarial computations presented in this report are for purposes of projecting funded ratios under a variety of alternative scenarios. Determinations for purposes other than this analysis may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

The results will vary from those presented in this analysis to the extent actual experience differs from that projected by the actuarial assumptions.

Milliman is not a law firm and cannot render legal opinions. Our analysis is limited to the actuarial computations involved with the projection of the funding ratios. We can offer no advice or opinion on the practical or legal considerations of implementing a sales tax increase.

Milliman's work product was prepared exclusively for the City of Springfield for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning the City of Springfield's operations, and uses the City of Springfield's data, which



Milliman has not audited. It is not for the use or benefit of any third party for any purpose. The analysis, including the exhibits, should be referenced as a whole. Consideration of only subparts or excerpts could lead the user to incorrect conclusions. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

We respectfully submit the above analysis, and we look forward to discussing it with you. We are consulting actuaries for Milliman, Inc. We 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.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael J. Zwiener'.

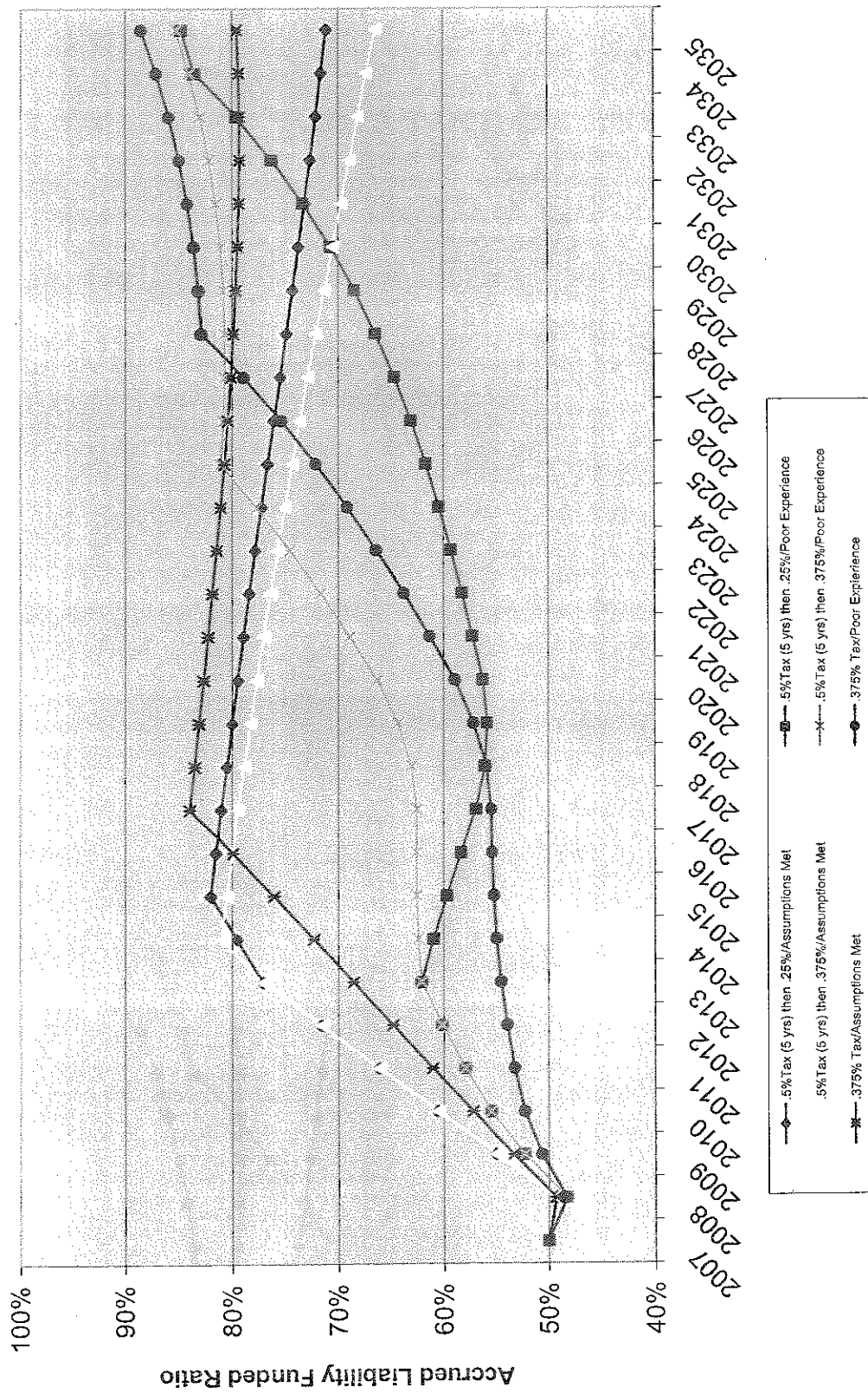
Michael J. Zwiener, FSA
Consulting Actuary

A handwritten signature in black ink, appearing to read 'Michael A. Sudduth'.

Michael A. Sudduth, FSA
Actuary

MJZ/MAS/giy

City of Springfield Police Officers and Fire Fighters Retirement Fund Closed Group - Tax Sunsets When 80% Funded Ratio Achieved

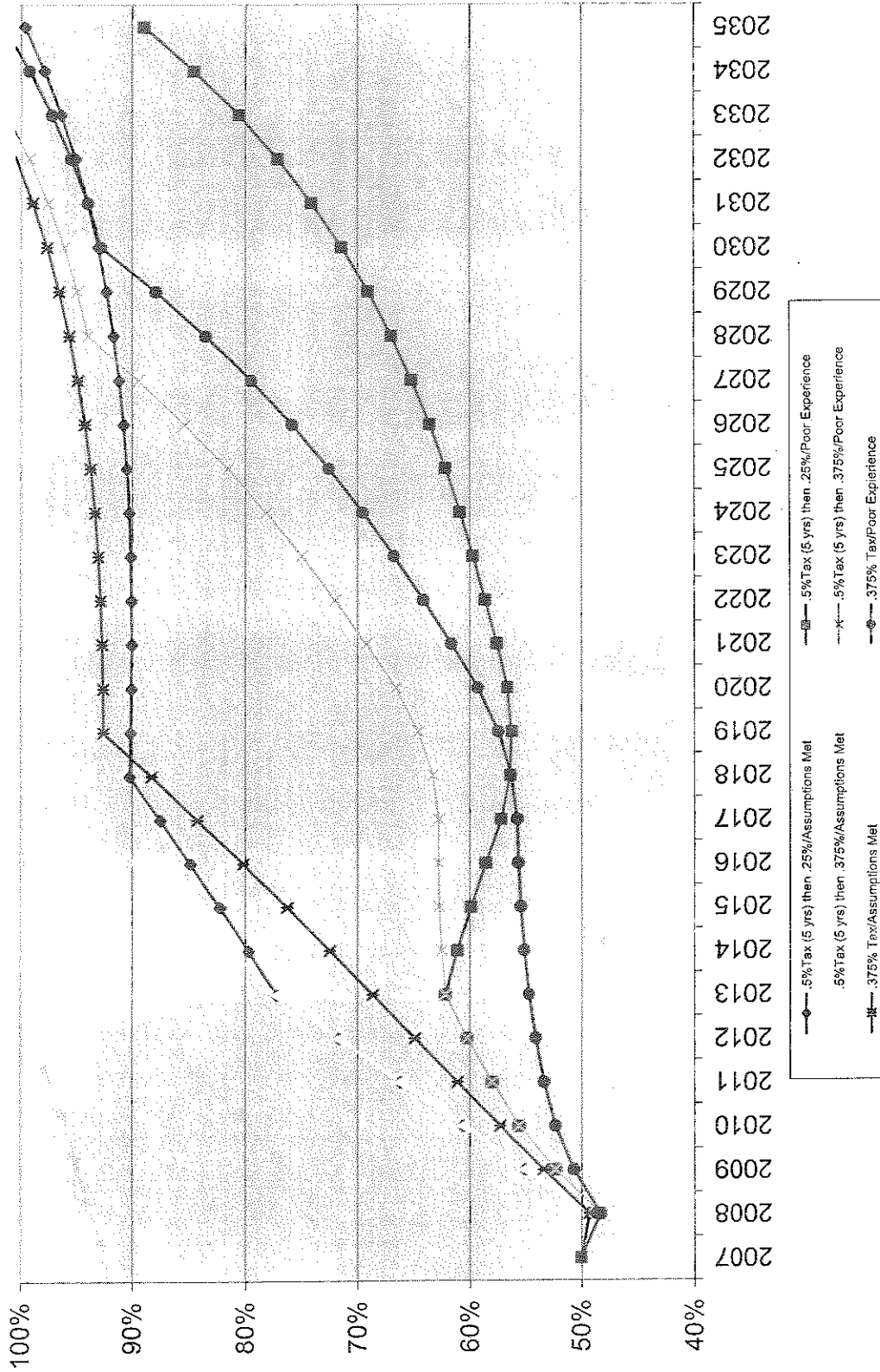


City of Springfield Police Officers and Fire Fighters Retirement Fund

Summary of Projected Closed Group Funded Ratios Tax Sunsets When 80% Funded Ratio Achieved

Valuation Date July 1	.5% Tax 5 Yrs. Then .25%		.5% Tax 5 Yrs. Then .375%		.5% Tax 5 Yrs. Then .375%		.375% Tax Assumptions		.375% Tax Experience	
	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience
2007	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
2008	49%	48%	49%	48%	49%	48%	49%	48%	49%	48%
2009	55%	52%	55%	52%	55%	52%	53%	51%	53%	51%
2010	61%	55%	61%	55%	61%	55%	57%	52%	57%	52%
2011	66%	58%	66%	58%	66%	58%	61%	53%	61%	53%
2012	72%	60%	72%	60%	72%	60%	65%	54%	65%	54%
2013	77%	62%	77%	62%	77%	62%	68%	54%	68%	54%
2014	79%	61%	81%	62%	81%	62%	72%	55%	72%	55%
2015	82%	60%	81%	63%	81%	63%	76%	55%	76%	55%
2016	82%	58%	80%	63%	80%	63%	80%	55%	80%	55%
2017	81%	57%	79%	63%	79%	63%	84%	55%	84%	55%
2018	80%	56%	79%	63%	79%	63%	83%	56%	83%	56%
2019	80%	56%	78%	64%	78%	64%	83%	57%	83%	57%
2020	79%	56%	78%	66%	78%	66%	83%	59%	83%	59%
2021	79%	57%	77%	69%	77%	69%	82%	61%	82%	61%
2022	78%	58%	76%	72%	76%	72%	82%	64%	82%	64%
2023	78%	59%	76%	75%	76%	75%	81%	66%	81%	66%
2024	77%	60%	75%	78%	75%	78%	81%	69%	81%	69%
2025	77%	62%	74%	81%	74%	81%	81%	72%	81%	72%
2026	76%	63%	74%	81%	74%	81%	80%	75%	80%	75%
2027	75%	65%	73%	81%	73%	81%	80%	79%	80%	79%
2028	75%	66%	72%	81%	72%	81%	80%	83%	80%	83%
2029	74%	68%	71%	81%	71%	81%	80%	83%	80%	83%
2030	74%	71%	71%	81%	71%	81%	79%	83%	79%	83%
2031	73%	73%	70%	82%	70%	82%	79%	84%	79%	84%
2032	73%	76%	69%	82%	69%	82%	79%	85%	79%	85%
2033	72%	80%	68%	83%	68%	83%	79%	86%	79%	86%
2034	72%	83%	67%	84%	67%	84%	79%	87%	79%	87%
2035	71%	85%	66%	85%	66%	85%	80%	88%	80%	88%

City of Springfield Police Officers and Fire Fighters Retirement Fund
 Closed Group - Tax Sunsets When 90% Funded Ratio Achieved



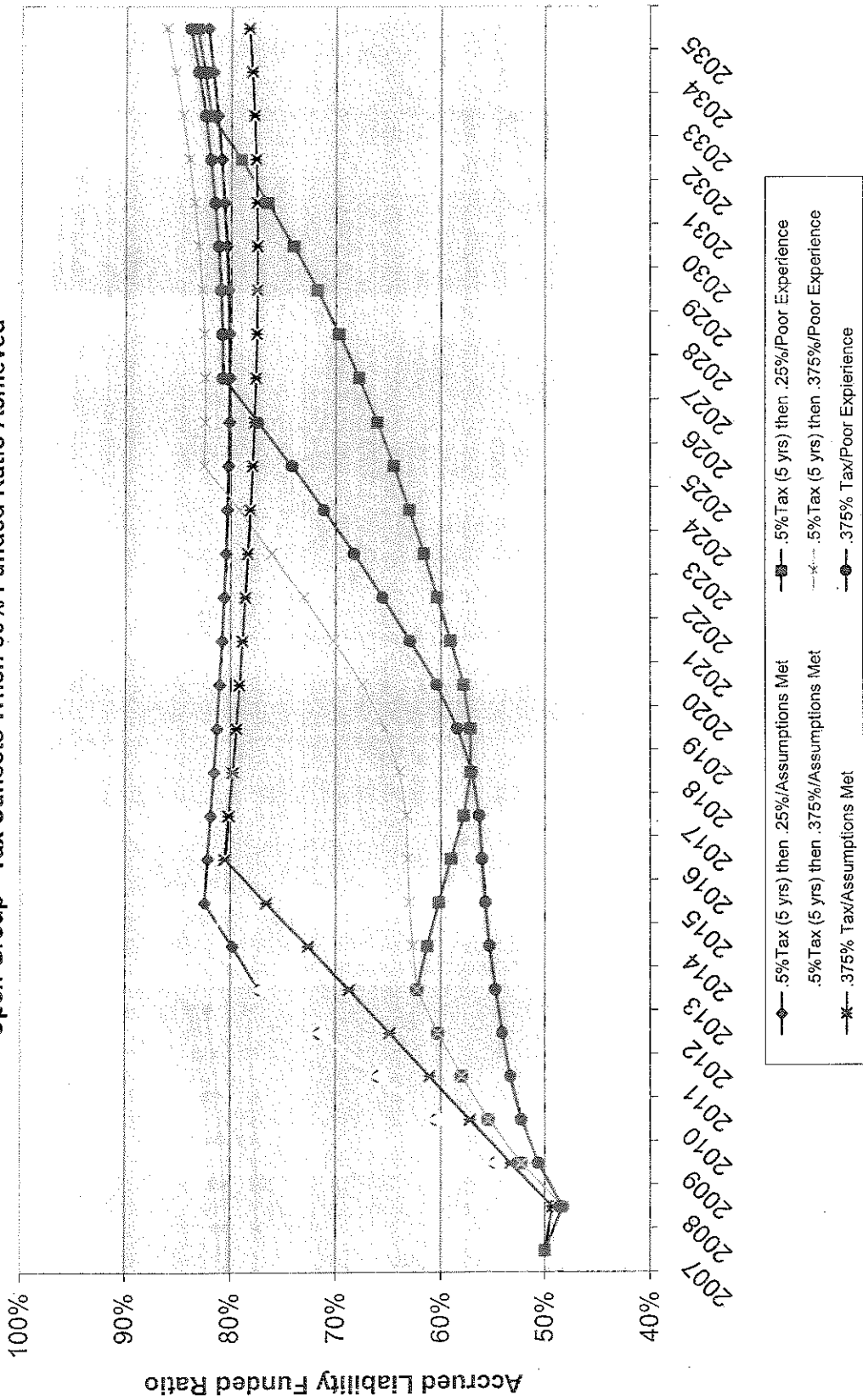
City of Springfield Police Officers and Fire Fighters Retirement Fund

Summary of Projected Closed Group Funded Ratios Tax Sunsets When 90% Funded Ratio Achieved

Valuation Date July 1	.5% Tax 5 Yrs.		.5% Tax 5 Yrs.		.5% Tax 5 Yrs.		.5% Tax 5 Yrs.		.375% Tax	
	Then	Assumptions	Then	Assumptions	Then	Assumptions	Then	Assumptions	Assumptions	Experience
	25%	Met	375%	Met	375%	Met	375%	Met	Assumptions	Experience
2007	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
2008	49%	48%	49%	49%	48%	48%	49%	49%	48%	48%
2009	55%	52%	55%	55%	52%	52%	53%	53%	51%	51%
2010	61%	55%	61%	61%	55%	55%	57%	57%	51%	52%
2011	66%	58%	66%	66%	58%	58%	61%	61%	53%	53%
2012	72%	60%	72%	72%	60%	60%	65%	65%	54%	54%
2013	77%	62%	77%	77%	62%	62%	69%	69%	55%	55%
2014	80%	61%	81%	81%	63%	63%	72%	72%	55%	55%
2015	82%	60%	85%	85%	63%	63%	76%	76%	55%	55%
2016	85%	59%	90%	90%	63%	63%	80%	80%	56%	56%
2017	87%	57%	94%	94%	63%	63%	84%	84%	56%	56%
2018	90%	56%	94%	94%	63%	63%	88%	88%	56%	56%
2019	90%	56%	94%	94%	65%	65%	93%	93%	57%	57%
2020	90%	57%	94%	94%	67%	67%	93%	93%	59%	59%
2021	90%	58%	94%	94%	69%	69%	93%	93%	62%	62%
2022	90%	59%	94%	94%	72%	72%	93%	93%	64%	64%
2023	90%	60%	95%	95%	75%	75%	93%	93%	67%	67%
2024	90%	61%	95%	95%	78%	78%	93%	93%	70%	70%
2025	90%	62%	96%	96%	82%	82%	94%	94%	73%	73%
2026	91%	64%	96%	96%	85%	85%	94%	94%	76%	76%
2027	91%	65%	97%	97%	89%	89%	95%	95%	79%	79%
2028	92%	67%	98%	98%	94%	94%	96%	96%	83%	83%
2029	92%	69%	99%	99%	95%	95%	97%	97%	88%	88%
2030	93%	71%	100%	100%	96%	96%	98%	98%	93%	93%
2031	94%	74%	102%	102%	98%	98%	99%	99%	94%	94%
2032	95%	77%	103%	103%	99%	99%	100%	100%	95%	95%
2033	96%	81%	105%	105%	101%	101%	102%	102%	97%	97%
2034	98%	84%	108%	108%	104%	104%	104%	104%	99%	99%
2035	100%	89%	110%	110%	106%	106%	106%	106%	102%	102%

City of Springfield Police Officers and Fire Fighters Retirement Fund

Open Group - Tax Sunsets When 80% Funded Ratio Achieved

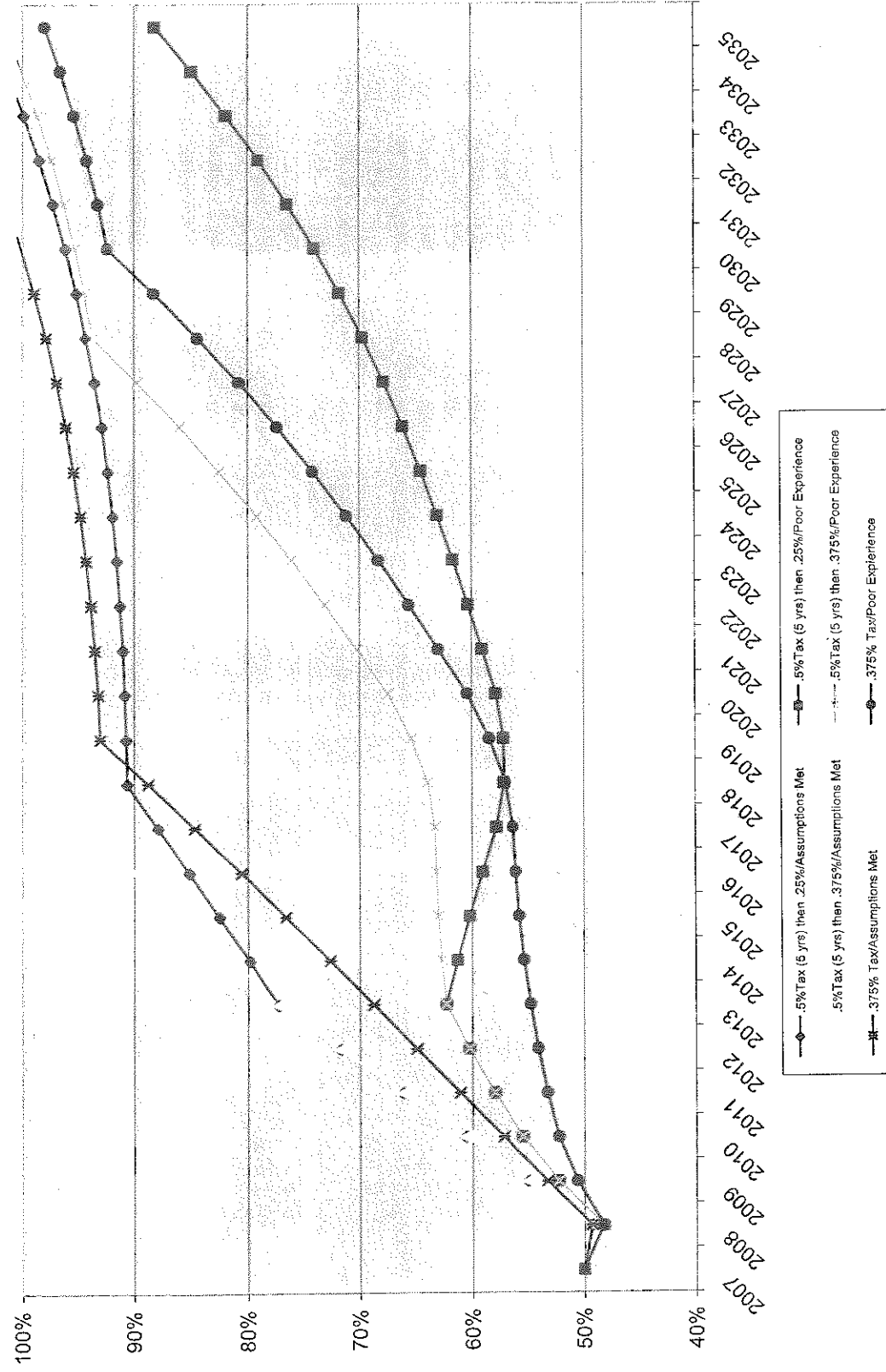


City of Springfield Police Officers and Fire Fighters Retirement Fund

Summary of Projected Open Group Funded Ratios Tax Sunsets When 80% Funded Ratio Achieved

Valuation Date July 1	.5% Tax 5 Yrs. Then .25%		.5% Tax 5 Yrs. Then .375%		.5% Tax 5 Yrs. Then .375%		.375% Tax Experience	
	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience	Assumptions Met	Poor Experience
2007	50%	50%	50%	50%	50%	50%	50%	50%
2008	49%	48%	49%	48%	49%	48%	49%	48%
2009	55%	52%	55%	52%	55%	52%	53%	51%
2010	61%	55%	61%	55%	61%	55%	57%	52%
2011	66%	58%	66%	58%	66%	58%	61%	53%
2012	72%	60%	72%	60%	72%	60%	65%	54%
2013	77%	62%	77%	62%	77%	62%	69%	55%
2014	80%	61%	81%	63%	81%	63%	73%	55%
2015	82%	60%	81%	63%	81%	63%	77%	56%
2016	82%	59%	81%	63%	81%	63%	80%	56%
2017	82%	58%	80%	63%	80%	63%	80%	56%
2018	81%	57%	80%	64%	80%	64%	80%	57%
2019	81%	57%	80%	65%	80%	65%	79%	58%
2020	81%	58%	79%	67%	79%	67%	79%	60%
2021	81%	59%	79%	70%	79%	70%	79%	63%
2022	81%	60%	79%	73%	79%	73%	79%	66%
2023	80%	62%	78%	76%	78%	76%	78%	68%
2024	80%	63%	78%	79%	78%	79%	78%	71%
2025	80%	65%	78%	82%	78%	82%	78%	74%
2026	80%	66%	78%	82%	78%	82%	78%	77%
2027	80%	68%	78%	82%	78%	82%	78%	81%
2028	80%	70%	78%	82%	78%	82%	77%	81%
2029	80%	72%	78%	83%	78%	83%	77%	81%
2030	80%	74%	78%	83%	78%	83%	77%	81%
2031	81%	76%	78%	83%	78%	83%	77%	81%
2032	81%	79%	78%	84%	78%	84%	78%	82%
2033	81%	82%	78%	85%	78%	85%	78%	82%
2034	82%	82%	78%	85%	78%	85%	78%	83%
2035	82%	83%	79%	86%	79%	86%	78%	84%

City of Springfield Police Officers and Fire Fighters Retirement Fund Open Group - Tax Sunsets When 90% Funded Ratio Achieved

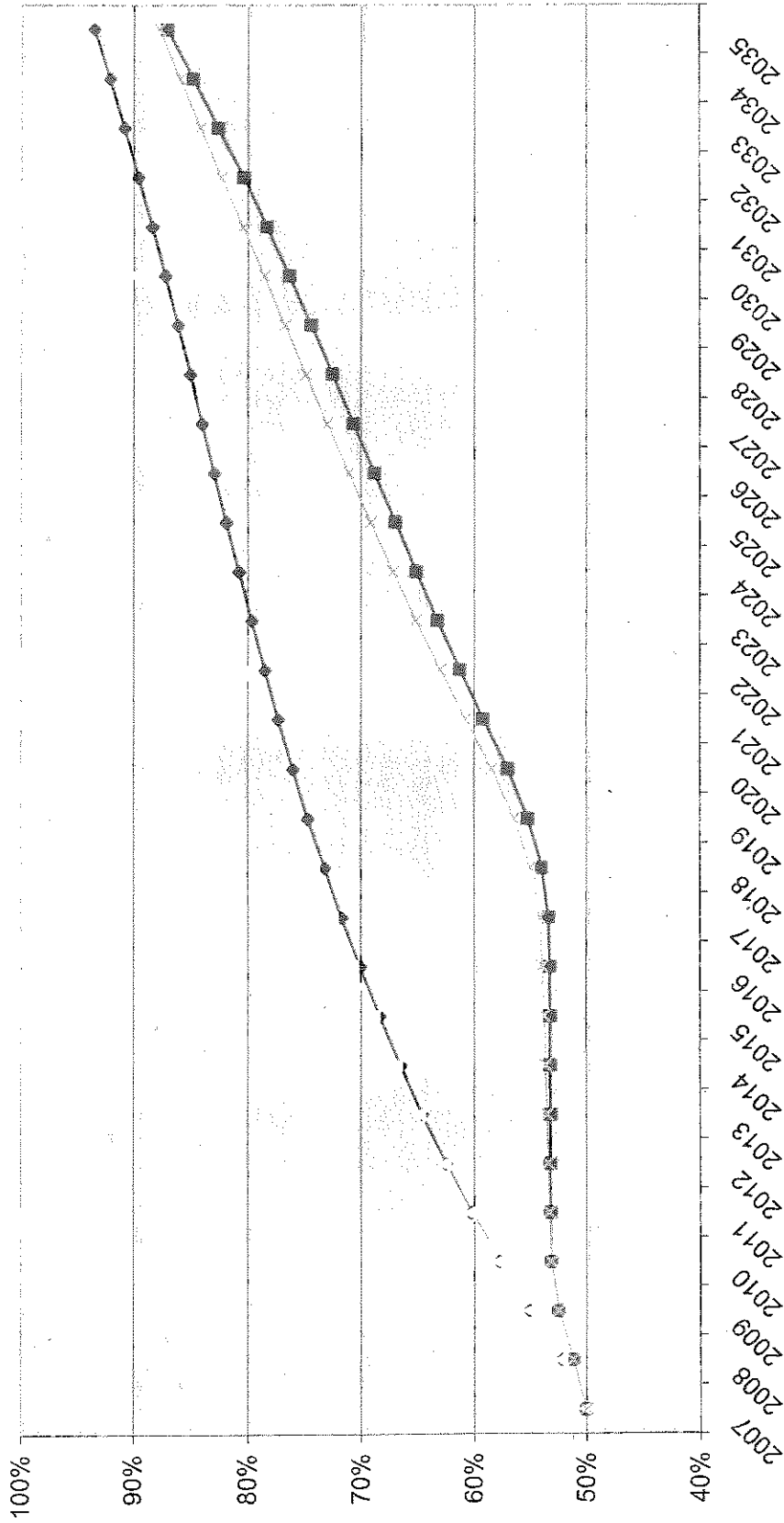


City of Springfield Police Officers and Fire Fighters Retirement Fund

Summary of Projected Open Group Funded Ratios Tax Sunsets When 90% Funded Ratio Achieved

Valuation Date	.5% Tax 5 Yrs.		.5% Tax 5 Yrs.		.5% Tax 5 Yrs.		.375% Tax		.375% Tax	
	Then	Assumptions	Then	Assumptions	Then	Assumptions	Assumptions	Met	Assumptions	Met
July 1	Met	Experience	Met	Experience	Met	Experience	Met	Experience	Met	Experience
2007	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
2008	49%	48%	49%	48%	49%	48%	49%	48%	49%	48%
2009	55%	52%	55%	52%	55%	52%	55%	52%	55%	52%
2010	61%	55%	61%	55%	61%	55%	61%	55%	61%	55%
2011	66%	58%	66%	58%	66%	58%	66%	58%	66%	58%
2012	72%	60%	72%	60%	72%	60%	72%	60%	72%	60%
2013	77%	62%	77%	62%	77%	62%	77%	62%	77%	62%
2014	80%	61%	80%	61%	80%	61%	80%	61%	80%	61%
2015	82%	60%	82%	60%	82%	60%	82%	60%	82%	60%
2016	85%	59%	85%	59%	85%	59%	85%	59%	85%	59%
2017	88%	58%	88%	58%	88%	58%	88%	58%	88%	58%
2018	91%	57%	91%	57%	91%	57%	91%	57%	91%	57%
2019	91%	57%	91%	57%	91%	57%	91%	57%	91%	57%
2020	91%	58%	91%	58%	91%	58%	91%	58%	91%	58%
2021	91%	59%	91%	59%	91%	59%	91%	59%	91%	59%
2022	91%	60%	91%	60%	91%	60%	91%	60%	91%	60%
2023	92%	62%	92%	62%	92%	62%	92%	62%	92%	62%
2024	92%	63%	92%	63%	92%	63%	92%	63%	92%	63%
2025	92%	65%	92%	65%	92%	65%	92%	65%	92%	65%
2026	93%	66%	93%	66%	93%	66%	93%	66%	93%	66%
2027	94%	68%	94%	68%	94%	68%	94%	68%	94%	68%
2028	94%	70%	94%	70%	94%	70%	94%	70%	94%	70%
2029	95%	72%	95%	72%	95%	72%	95%	72%	95%	72%
2030	96%	74%	96%	74%	96%	74%	96%	74%	96%	74%
2031	97%	76%	97%	76%	97%	76%	97%	76%	97%	76%
2032	99%	79%	99%	79%	99%	79%	99%	79%	99%	79%
2033	100%	82%	100%	82%	100%	82%	100%	82%	100%	82%
2034	101%	85%	101%	85%	101%	85%	101%	85%	101%	85%
2035	103%	88%	103%	88%	103%	88%	103%	88%	103%	88%

City of Springfield Police Officers and Fire Fighters Retirement Fund City Contributed Recommended Contribution



Cont. ARC/Assumptions Met/Closed Group
 Cont. ARC/Poor Experience/Closed Group
 Cont. ARC/Assumptions Met/Open Group
 Cont. ARC/Poor Experience/Open Group

City of Springfield Police Officers and Fire Fighters Retirement Fund

Summary of Projected Funded Ratios City Contributed Actuarially Recommended Contribution

Valuation Date	Closed Group Assumptions		Closed Group Poor Experience		Open Group Assumptions		Open Group Poor Experience	
	Met		Met		Met		Met	
July 1								
2007	50%		50%		50%		50%	
2008	52%		51%		52%		51%	
2009	55%		52%		55%		52%	
2010	58%		53%		58%		53%	
2011	60%		53%		60%		53%	
2012	62%		53%		63%		53%	
2013	65%		53%		65%		53%	
2014	67%		53%		67%		54%	
2015	68%		53%		69%		54%	
2016	70%		53%		71%		54%	
2017	72%		53%		73%		54%	
2018	73%		54%		74%		55%	
2019	75%		55%		76%		56%	
2020	76%		57%		77%		58%	
2021	77%		59%		79%		61%	
2022	78%		61%		80%		63%	
2023	80%		63%		81%		65%	
2024	81%		65%		83%		67%	
2025	82%		67%		84%		69%	
2026	83%		69%		85%		71%	
2027	84%		71%		86%		73%	
2028	85%		72%		88%		75%	
2029	86%		74%		89%		77%	
2030	87%		76%		90%		79%	
2031	88%		78%		91%		80%	
2032	90%		80%		92%		82%	
2033	91%		82%		94%		84%	
2034	92%		85%		95%		86%	
2035	94%		87%		96%		88%	