



HOOKER & HOLCOMBE, INC.
Benefit Consultants and Actuaries

65 LaSalle Road
West Hartford, CT 06107-2397

860-521-8400 tel
860-521-3742 fax
www.hhconsultants.com

**Town of
Simsbury
Retirement
Plans Cost
Benefit Analysis
and Redesign
Study**

Timothy A. Ryor, FSPA, FCA, EA
Senior Vice President &
Consulting Actuary

Elizabeth J. Churney, FSA, EA
Senior Vice President &
Consulting Actuary

Ellen Kucenski, ASA, EA
Actuarial Specialist

Yelena Pelletier, ASA
Actuarial Specialist

January 10, 2012

Table of Contents

Scope of Project	1
Discussion and Analysis	4
Actuarial Certification	7
Exhibits	
Exhibit 1	8
Exhibit 2	9
Exhibit 3	10
Exhibit 4	11
Exhibit 5a – 5l	12
Exhibit 6a – 6l	24
Exhibit 7a – 7l	36
Assumptions and Methods	
Key Actuarial Assumptions and Methods	48
Key Asset Assumptions and Methods	49
New Entrant Assumptions	50

Scope of the Project

The purpose of this study is to give the Town of Simsbury a better understanding of the future costs and volatility associated with its defined benefit pension plans. The Town recognizes that future budget challenges are significant and wants to explore ways in which it can manage future plan costs and liabilities. To help the Town better understand and plan for future costs, we were asked to forecast estimated costs and volatility over a 20 year period.

Stochastic Modeling Process

There are two main types of forecasting typically used to project future costs: deterministic and stochastic. Deterministic forecasting incorporates a single set of assumptions for future activity. While this approach may be appropriate for short term or baseline results, it does not take into account the significant variations in future results that are inherent in a typical pension fund's long-term asset allocation. Using a stochastic forecast, we are able to model the Town's costs under different future economic scenarios based on the pension fund's expected asset allocation and the associated long-term capital market expectations.

This forecast was developed using the long-term capital market assumptions for each asset class provided by the pension funds' investment advisor, Fiduciary Investment Advisors, LLC (FIA). The projections also assume that the asset allocation proposed by FIA in its October 2011 Asset Allocation Study will be adopted and that allocation will remain constant for the forecast period.

In order to determine the likelihood of a particular result, 10,000 stochastic trials were run for each year into the future. These trials produce a stream of investment return scenarios that utilize the expected return, standard deviations and asset class correlations of each asset class in the pension funds' allocation. The investment return scenarios in turn produce contribution and funded status results. Those results are used to estimate the probability of future results (i.e. 25% chance the combined plan contributions will be larger than \$4.4 million in 2021). Results were analyzed and compiled to develop graphs showing the Town's probable future contributions and funded status for each of the three plans. The executive summary provides summary information related to the results for the combined plans.

Steps followed in process

Step 1: The first step of the process was to code the Town's defined benefit pension plans on our valuation software to match the actual July 1, 2010 valuation results. Since these initial results were used as the baseline for preparing the 20 year forecasts, it was important we were able to match the liabilities and methods currently being used to develop the Town's costs. For this step, we relied on July 1, 2010 participant data provided by Milliman as well as the plan provisions outlined in their reports. A summary of our findings is shown in the Discussion & Analysis section of this report. The details are shown in Exhibit I.

Step 2: Next we ran 20 year deterministic forecasts for each of Simsbury's three plans. For this step, we held all of Simsbury's current valuation assumptions constant. Under deterministic forecasting, it's assumed that each assumption is exactly realized. This allowed us to view and analyze the baseline results of the projections with no variation in economic assumptions considered.

Step 3: Our analysis of the deterministic forecast results allowed us to develop alternative valuation methods and assumptions for comparison. For example, we prepared results assuming an alternative method for amortizing the unfunded liability.

Step 4: Stochastic projections were run for each of the three plans. Stochastic forecasting allows many possible future economic scenarios to be considered. We ran forecasts assuming alternative valuation methods and assumptions. In the following pages are graphs showing the Town's probable costs over the 20 year forecast period under each alternative scenario considered. These alternative scenarios are further described in the next section.

Projection Scenarios Considered

For each of the Town's three plans we ran the following stochastic scenarios:

1. Liability discount rate (7.75%) and current method for amortizing the unfunded liability (23 year amortization grading down each year to an ultimate period of 10 years beginning in the year 2023).
2. Same as 1. with a liability discount rate of 7.25%
3. Same as 1. with a constant 20 year amortization period each year
4. Liability discount rate of 7.25% and a constant 20 year amortization period.

We first ran the above four scenarios assuming the current asset allocation will produce a mean return over the long-term of 7.75%. This is based on the recommendation from FIA that the proposed allocation is likely to produce such a return. Since the asset allocation has a 7.42% mean return, there is an implicit assumption that 0.33% in excess return (or alpha) will be earned through active management.

As a result, in addition to running the scenarios assuming 0.33% in alpha, we also ran the asset allocation assuming no alpha to illustrate the impact that the added value of active management is expected to add. The results of these projections are outlined in the following pages of this report.

Each of the eight projection scenarios described above was run two different ways for each of the three plans. We first assumed an open population. For these runs, we assumed that new entrants were hired as active employees were assumed to terminate or retire so as to maintain a level population. Next, we ran the forecasts with a closed population, or no new entrants as of July 1, 2010. In the closed population forecasts, we assumed any newly hired employees would instead participate in a new defined contribution plan. The defined contribution plan design was chosen to produce a modest cost savings. More importantly, it was introduced to illustrate the impact on contribution volatility that results from transferring investment risk to the participants.

Assumption Basis

Asset Growth

Investment returns for 2010-2011 were fixed (not subject to stochastic trials) at 20% to reflect the approximate return of plan assets for the period. Asset growth after July 1, 2011 is based on the results of stochastic trials under the two assumption sets (with 0.33 % “alpha” - 7.75% mean return, and no “alpha” - 7.42% mean return) and the asset allocation, long-term capital market expectations and asset class correlation provided by FIA.

Population

For the open group projections, we assumed new entrants come into the plan so that the active payroll would increase at a rate of approximately 3% per year. We analyzed new entrants over a 10 year period to develop “average” new hire profiles. In doing so, we looked at average age at hire, sex, and inflation adjusted salary at hire. Analysis was performed separately for the Town, each Board of Education subgroup and Police, so that individual employee characteristics were maintained for each plan.

The closed group projections assume that no new entrants after July 1, 2010 will enter the plan. Instead, a defined contribution plan was assumed as a replacement plan. We assumed the Town will contribute 6% of payroll for Police employees and 4% of payroll for General Government and Board of Education employees. The defined contribution percentages were selected to be comparable to other municipal plan designs for each group. There is no recommendation implicit in the selection of these contribution percentages. They are intended to serve as a baseline to assess potential future cost savings.

For purposes of projecting changes in the population from year to year during the forecast period it was assumed that the demographic assumptions (turnover, retirement, mortality, etc.) were exactly realized.

Liability Assumptions

The same demographic assumptions that were used in the July 1, 2010 valuations were also used in the projections.

Salary growth takes into account stochastic inflation rates and the merit assumptions used in the July 1, 2010 Actuarial Valuation (2% Police, 1% all other participants).

Town Contributions

In each scenario modeled, we assumed the Town contributes the actuarially recommended contribution. Contributions were developed using the Entry Age Normal cost method, consistent with the July 1, 2010 valuation. The amortization period was left closed and run down to 10 years. Contributions were also calculated using an alternative level dollar amortization over a fixed 20 year period.

Discussion & Analysis

Matching Milliman's Results

All of our results use as a baseline the July 1, 2010 Actuarial Valuation Reports for each plan prepared by Milliman. We reviewed the actuarial assumptions for reasonableness but it was beyond the scope of this project to analyze in detail any specific assumption. As a result, we used Milliman's assumption for all calculations. We also used the established actuarial methods for determining the Annual Required Contribution (ARC), including the practice of using the valuation results without adjustment for the ARC year. A more common approach would be to roll forward the calculation to the ARC year with salary scale. This would increase the ARC by about 4% or approximately \$85,000.

Milliman also provided the data used in the 2010 valuation so that we could replicate their results. We would like to acknowledge Milliman's prompt and thorough responses to our requests for information as it was instrumental in the timely completion of this project.

In general, we were able to replicate Milliman's results within 2%. Our results compared to Milliman's are shown in Exhibit 1. The exhibit compares both the actuarial accrued liability and the contribution calculation. The notable exception to our close alignment with their results was the Board of Education plan. We were able to match within 2% of Milliman's figures when the disability benefit was valued after eligibility for early retirement and no early retirement benefit was provided. We discussed this issue with Milliman and they agree that eligibility for disability benefit stops at eligibility for early retirement. Their subsequent valuations will reflect this change.

As shown in Exhibit 1, in total our July 1, 2010 actuarial valuation liabilities were about **\$320,000** (0.6%) higher and our 2011-2012 ARC calculation was about **\$80,000** (3.7%) higher than shown in the published July 1, 2010 Actuarial Valuation reports.

Current Plan Costs

The Town has a consistent history of contributing the ARC. The ARC calculation consists of two components: an amortization of unfunded actuarial accrued liability and a current service cost referred to as the "normal cost". The normal cost component is the value of the benefits assigned to the current year under the actuarial cost method less any employee contributions plus any administrative costs paid from plan assets. Since new entrants come into the plan without any unfunded past service liability, the appropriate comparison for the "cost of the plan" is the normal cost expressed as a % of pay. If all actuarial assumptions are exactly realized then a pension plan with an X% of pay normal cost is comparable in cost to an X% of pay defined contribution (DC) plan. However, since the normal cost is a present value calculation of a future benefit, the assumed future investment return used to discount the value of that benefit has an impact on the value of X.

For the Town of Simsbury plans under the current actuarial assumptions, the normal cost is approximately **12.5%** of pay for Police and **7.5%** of pay for all other employees (Town & BOE). It is critical to understand that those costs are dependent on the plan's assets actually earning the

Current Plan Costs (continued)

assumed rate of return of 7.75%. If the actual rate of return is 7.25% then the normal cost %s increase to about **14.5%** of pay for Police and **8.5%** of pay for all other employees.

In addition to the normal cost, because the Town's plans do not have assets sufficient to cover the actuarial accrued liability, there is a component of the ARC related to the amortization of the unfunded liability. The Town currently amortizes that liability over a closed 23 year period as a level % of payroll (assumed to grow at 4%). The total amortization cost for all plans is about \$785,000 or roughly **4.5%** of covered payroll. This amount is dependent both on the investment return assumption and the amortization method/period. For example, if 7.25% were used instead of 7.75% the amortization payment would increase to about \$925,000 or **5.4%** of covered payroll. Alternatively, if the assumptions were left unchanged but the amortization method was changed from level % of pay to level \$ over 23 years (as would be appropriate for a soft frozen plan), the amortization payment would increase to about \$1.1 million or **6.4%** of pay.

There are a range of appropriate selections for both the investment return assumptions and the amortization period. The selections have an impact both on the short-term and long-term cost of the plan. An evaluation that only looks at the impact on next year's ARC calculation will miss the impact over the long-term with regard to both cost and volatility. The results of the stochastic forecast are key to understanding these implications.

Stochastic Forecast Results

Exhibits 2-4 summarize the likely range of contribution results (50% confidence interval) for the combined plans after 10, 15 and 20 years under the various projection scenarios described in the project scope. Exhibits 5, 6 & 7 (Town, Police & BOE, respectively) show 12 graphs for each plan. The graphs show a box and whisker plot where the "whiskers" show a 90% confidence interval (5% of results outside of each end) and the "box" shows a 50% confidence interval (25% of results outside of each end). The expected or mean result for each year shown is indicated with a yellow dot and the value is shown below it.

The graphs provide a visual representation of the potential volatility inherent in a typical long-term pension fund asset allocation. While the expected return of the portfolio is 7.75% it also has a standard deviation of 11.4% which means that there is a significant probability of returns both above and below the 7.75% mean. That variation in expected investment return produces a wide range of expected outcomes for the contribution.

For example, Exhibit 2 shows a likely contribution range of \$580,000 to \$5.62 million for the combined pension plans resulting from the 2031 valuation. This means that based on the projections, there is a 25% chance the calculated contribution in 2031 will be less than \$580,000 and by the same odds it will be greater than \$5.62 million. This highlights both the up and the down side to a defined benefit pension plan. Since the plan sponsor bears 100% of the investment risk, it is the beneficiary on the upside (potential for lower, even \$0 contribution requirements) but also on the hook for the downside (potential for 20+% of pay contributions).

Exhibit 2 also shows the impact at 20 years if the existing plans are closed off to new entrants and moved to a DC plan. This transfers the investment risk for new hires from the Town to the employees. It is important to note that it transfers both upside and downside investment

Stochastic Forecast Results (continued)

performance. As a result, while the “high-end” contribution is notably lower at \$4.33 million (vs. \$5.62 million) the “low-end” contribution estimate is also notably higher due to the fixed dollar costs of the DC plan. The asymmetry of this result (bigger increase in low-end than reduction in the high-end) is due to the fact that excess returns in the DB plan cannot be used to pay the DC contributions. On the other hand, the expected contribution under the “new hires to DC” scenario will continue to trend down as the pension plan liability is settled and will eventually be a fixed % of covered payroll tied to the DC plan design (4% of pay DC plan will cost 4% of pay).

Exhibits 3 & 4 show information related to the impact on future contribution levels and volatility of changing the plan’s amortization policy and investment return assumption. Selecting a lower investment return assumption does not necessarily mean that the view of the expected return of the assets is lower but rather a rate is being selected with a higher than 50% probability of being attained over the long-term. Both changes (lower interest rate assumption & shorter amortization period) have the impact of increasing short-term contributions but lowering long-term costs and decreasing future contribution volatility.

Conclusions

- A wide range of possible outcomes is inherent in funding a defined benefit pension plan with a traditional long-term asset allocation. The Town needs to assess its tolerance for the size of the range of probable outcomes.
- Current underfunding drives a significant portion of the future variability in contributions such that only addressing benefits for new entrants (lower formula, move to DC, etc.) will not eliminate the wide range of possible outcomes in the foreseeable future.
- There is no easy answer to the problem of underfunding. Changes that could help address and reduce contribution volatility include:
 1. Increase employer contributions (shorter amortization period, lower ROI assumption)
 2. Increase employee contributions
 3. Move to less volatile asset allocation (implications for higher ARC)
 4. Lower benefits
 5. Move investment risk to participants (new hires to DC plan)
- Moving new hires to a DC plan off loads positive & negative investment experience, thus eliminating both the possibility of \$0 contributions as well as contributions significantly in excess of the budgeted % of payroll cost for pension benefits.
- In addition to assessing risk tolerance, the Town needs to determine the appropriate benefit cost as a % of payroll for each group. This combination will provide the necessary foundation for designing the appropriate retirement program (DB vs. DC, benefit multipliers, etc.).
- The Town also needs to set goals related to the funded status of the existing pension plans. The amortization policy should be changed to be consistent with the Town’s goals.

Certification

This purpose of this report is outlined in the *Scope of Project* section of this report (see page 1). The report is intended as tool to assist the Town in understanding the amount and variability of future pension plan costs. It is not intended to determine the Annual Required Contribution for any of the plans for any plan year and is not intended to satisfy the requirements of Connecticut General Statute 7-450a.

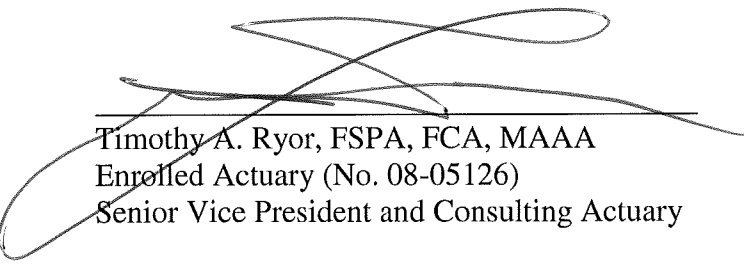
The actuarial valuation and projection results presented in this report have been performed in accordance with generally accepted actuarial principles and practices. They are intended to comply with all applicable Actuarial Standards of Practice.

I certify that the actuarial assumptions and methods that were selected by me represent my best estimate of anticipated actuarial experience under the Plan. The assumptions selected by me are disclosed in this report. All other assumption and methods are those disclosed in Milliman's July 1, 2010 Actuarial Valuation report for each plan.

The results in this valuation report are based on the Plan as summarized in Milliman's July 1, 2010 Actuarial Valuation report for each plan.

In preparing this valuation and projections, I have relied on employee data provided by the Plan Sponsor, and on asset and contribution information provided by the Trustee. I have audited neither the employee data nor the financial information, although I have reviewed them for reasonableness.

I am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.



Timothy A. Ryor, FSPA, FCA, MAAA
Enrolled Actuary (No. 08-05126)
Senior Vice President and Consulting Actuary

January 10, 2012

Exhibit 1

<u>Milliman Results*</u>		<u>H&H Results</u>					
Actuarial		Actuarial		2011-2012		2011-2012	
Accrued	2011-2012	Accrued	ARC	Liability	\$ Difference	% Difference	ARC
Town -	\$20,365,000	\$722,500		\$20,203,000	(\$162,000)	-0.8%	\$714,200
Police -	\$15,864,000	\$497,600		\$15,639,000	(\$225,000)	-1.4%	\$503,100
BOE -	\$17,196,000	\$910,600		\$17,906,300	\$710,300	4.1%	\$992,800
Total	\$53,425,000	\$2,130,700		\$53,748,300	\$323,300	0.6%	\$2,210,100

Exhibit 2

Assuming Asset Mix Yields 7.75% Average Return (0.33% Alpha):

	<u>10 Years (2021)</u>		<u>15 Years (2026)</u>		<u>20 Years (2031)</u>	
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
<i>Current Plan - No Changes:</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$2,038,000	8.5%	\$1,329,000	4.9%	\$580,000	1.9%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,326,000	13.9%	\$3,484,000	13.0%	\$3,422,000	11.1%
High-End Contribution Estimate (25% of results are higher) -	\$4,416,000	18.5%	\$5,180,000	19.3%	\$5,615,000	18.2%
<i>Current Plan - New Hires to DC*:</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$1,642,000	6.9%	\$910,000	3.4%	\$1,124,000	3.6%
Expected Contribution (50% of results are higher & 50% are lower) -	\$2,892,000	12.1%	\$2,753,000	10.2%	\$2,427,000	7.9%
High-End Contribution Estimate (25% of results are higher) -	\$3,950,000	16.5%	\$4,310,000	16.0%	\$4,330,000	14.1%

Assuming Asset Mix Yields 7.42% Average Return (No Alpha):

	<u>10 Years (2021)</u>		<u>15 Years (2026)</u>		<u>20 Years (2031)</u>	
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
<i>Current Plan - No Changes:</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$2,270,000	9.5%	\$1,749,000	6.5%	\$1,005,000	3.3%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,534,000	14.8%	\$3,797,000	14.1%	\$3,910,000	12.7%
High-End Contribution Estimate (25% of results are higher) -	\$4,543,000	19.0%	\$5,411,000	20.1%	\$6,012,000	19.5%
<i>Current Plan - New Hires to DC*:</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$1,869,000	7.8%	\$1,118,000	4.2%	\$1,124,000	3.6%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,098,000	12.9%	\$3,052,000	11.4%	\$2,873,000	9.3%
High-End Contribution Estimate (25% of results are higher) -	\$4,082,000	17.1%	\$4,528,000	16.8%	\$4,651,000	15.1%

* "New hires to DC scenarios" assume new Town & BOE employees will go into a 4% of pay DC plan & new Police employee will go into a 6% of pay DC Plan.

Exhibit 3

Assuming Asset Mix Yields 7.75% Average Return (0.33% Alpha):

	<u>10 Years (2021)</u>		<u>15 Years (2026)</u>		<u>20 Years (2031)</u>	
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
<i>Current Plan - No Changes:</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$2,038,000	8.5%	\$1,329,000	4.9%	\$580,000	1.9%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,326,000	13.9%	\$3,484,000	13.0%	\$3,422,000	11.1%
High-End Contribution Estimate (25% of results are higher) -	\$4,416,000	18.5%	\$5,180,000	19.3%	\$5,615,000	18.2%
<i>A) Change Amortization Policy to 20 Year level \$ open</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$1,774,000	7.4%	\$1,232,000	4.6%	\$644,000	2.1%
Expected Contribution (50% of results are higher & 50% are lower) -	\$2,972,000	12.4%	\$3,126,000	11.6%	\$3,281,000	10.7%
High-End Contribution Estimate (25% of results are higher) -	\$3,987,000	16.7%	\$4,602,000	17.1%	\$5,290,000	17.2%
<i>B) Change Amortization & Lower Assumed Return to 7.25%</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$1,931,000	8.1%	\$1,156,000	4.3%	\$482,000	1.6%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,148,000	13.2%	\$3,122,000	11.6%	\$3,080,000	10.0%
High-End Contribution Estimate (25% of results are higher) -	\$4,177,000	17.5%	\$4,662,000	17.3%	\$5,206,000	16.9%
<i>Item B Above Plus New Hires to DC*</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$1,421,000	5.9%	\$826,000	3.1%	\$1,124,000	3.6%
Expected Contribution (50% of results are higher & 50% are lower) -	\$2,600,000	10.9%	\$2,209,000	8.2%	\$1,879,000	6.1%
High-End Contribution Estimate (25% of results are higher) -	\$3,598,000	15.0%	\$3,625,000	13.5%	\$3,733,000	12.1%

* "New hires to DC scenarios" assume new Town & BOE employees will go into a 4% of pay DC plan & new Police employee will go into a 6% of pay DC Plan.

Exhibit 4

Assuming Asset Mix Yields 7.42% Average Return (No Alpha):

	<u>10 Years (2021)</u>		<u>15 Years (2026)</u>		<u>20 Years (2031)</u>	
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
<i>Current Plan - No Changes:</i>						
Low-End Contribution Estimate (25% of results are lower) -	\$2,270,000	9.5%	\$1,749,000	6.5%	\$1,005,000	3.3%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,534,000	14.8%	\$3,797,000	14.1%	\$3,910,000	12.7%
High-End Contribution Estimate (25% of results are higher) -	\$4,543,000	19.0%	\$5,411,000	20.1%	\$6,012,000	19.5%
<i>A) Change Amortization Policy to 20 Year level \$ open</i>						
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
Low-End Contribution Estimate (25% of results are lower) -	\$1,992,000	8.3%	\$1,600,000	6.0%	\$1,137,000	3.7%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,173,000	13.3%	\$3,391,000	12.6%	\$3,736,000	12.1%
High-End Contribution Estimate (25% of results are higher) -	\$4,107,000	17.2%	\$4,813,000	17.9%	\$5,621,000	18.3%
<i>B) Change Amortization & Lower Assumed Return to 7.25%</i>						
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
Low-End Contribution Estimate (25% of results are lower) -	\$2,152,000	9.0%	\$1,543,000	5.7%	\$799,000	2.6%
Expected Contribution (50% of results are higher & 50% are lower) -	\$3,352,000	14.0%	\$3,400,000	12.6%	\$3,555,000	11.5%
High-End Contribution Estimate (25% of results are higher) -	\$4,302,000	18.0%	\$4,878,000	18.1%	\$5,556,000	18.0%
<i>Item B Above Plus New Hires to DC*</i>						
	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll	Dollar Amount	% of Payroll
Low-End Contribution Estimate (25% of results are lower) -	\$1,635,000	6.8%	\$845,000	3.1%	\$1,124,000	3.6%
Expected Contribution (50% of results are higher & 50% are lower) -	\$2,800,000	11.7%	\$2,467,000	9.2%	\$2,305,000	7.5%
High-End Contribution Estimate (25% of results are higher) -	\$3,722,000	15.6%	\$3,828,000	14.2%	\$4,026,000	13.1%

* "New hires to DC scenarios" assume new Town & BOE employees will go into a 4% of pay DC plan & new Police employee will go into a 6% of pay DC Plan.

Exhibit 5a

Gen Gov - Baseline Scenario 1 - w/ New Entrants
Employer Contribution (thousands)

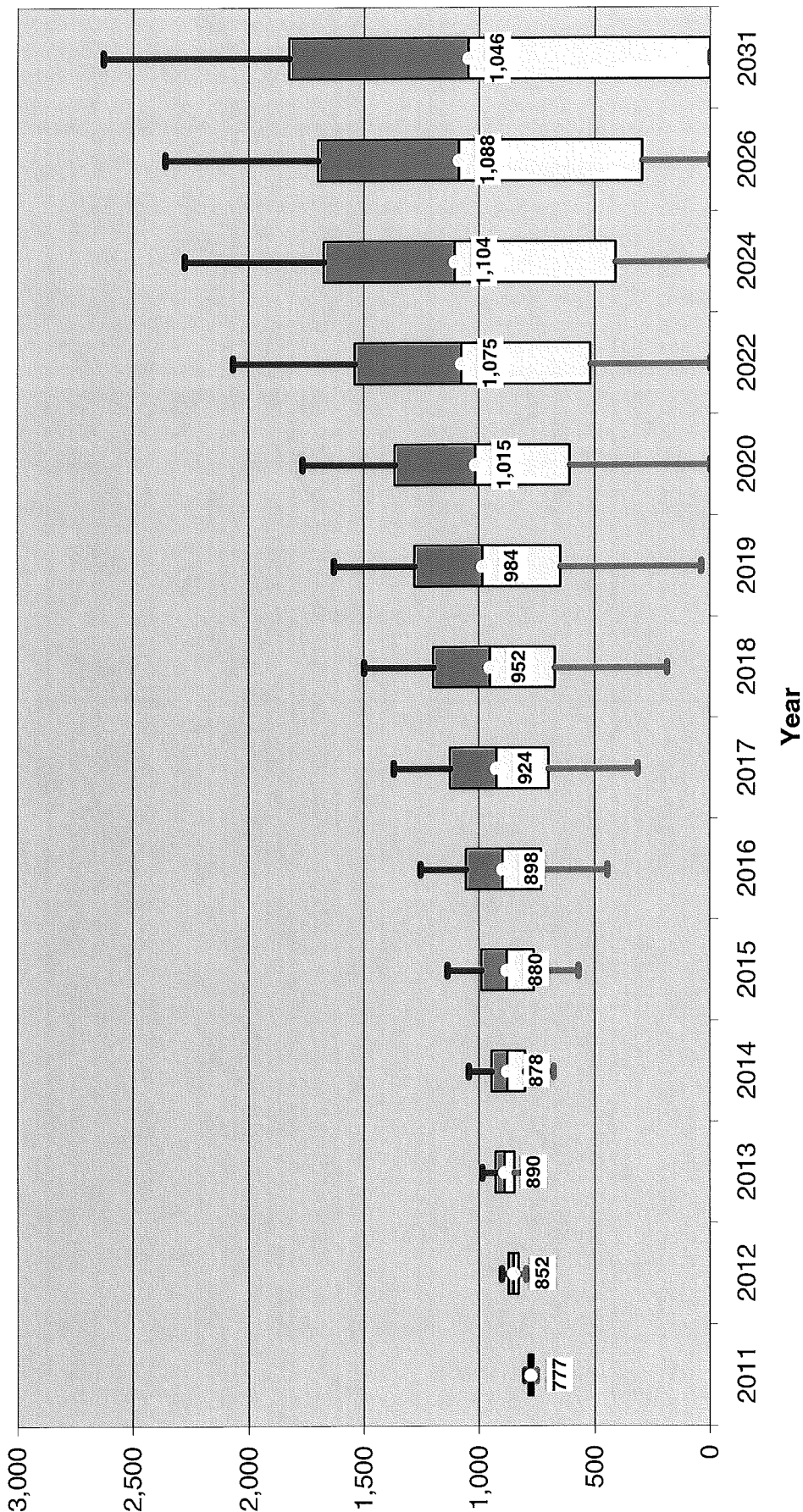


Exhibit 5b

Gen Gov - Baseline Scenario 2 - No New Entrants Employer Contribution (including 4% DC for new entrants) (thousands)

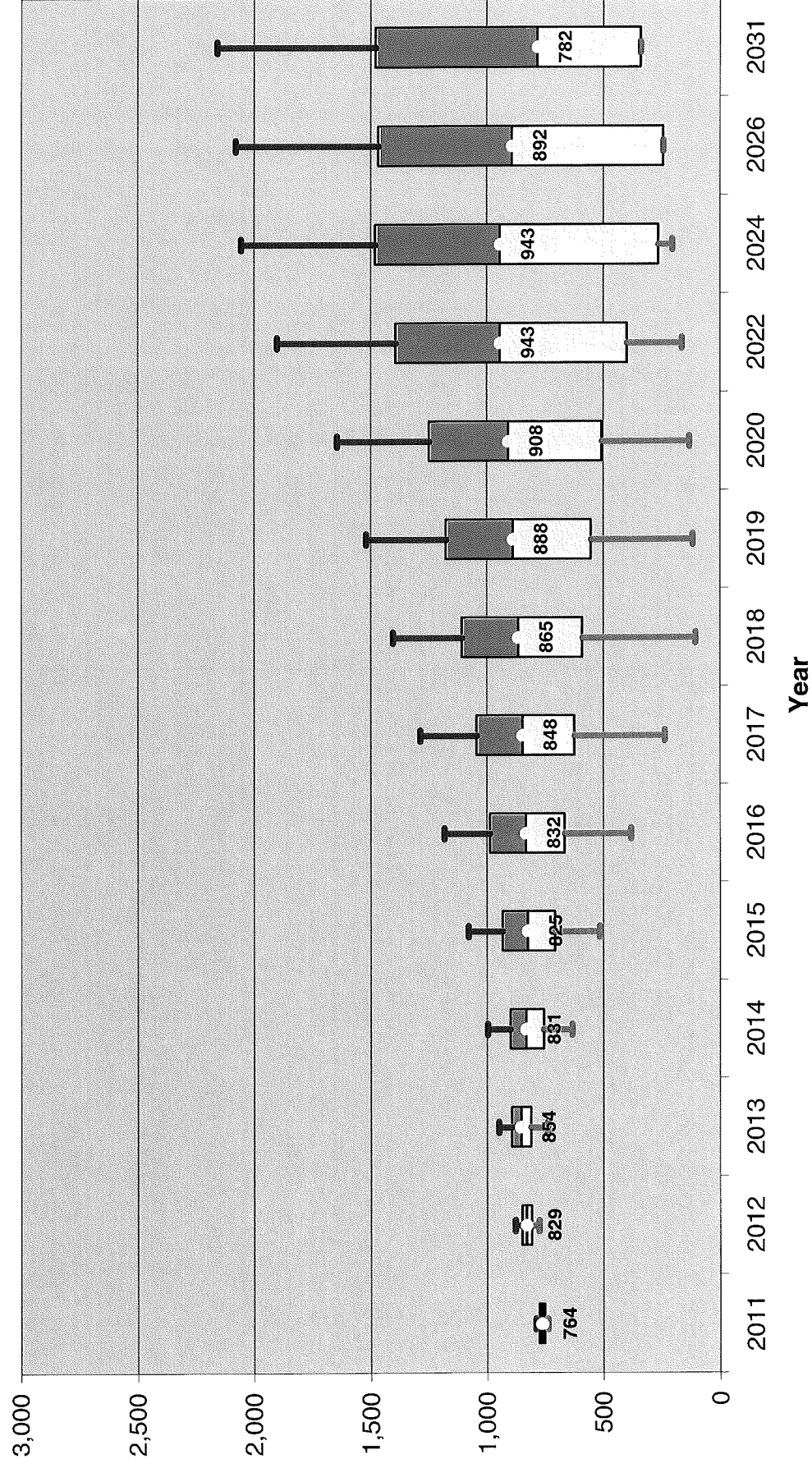


Exhibit 5c

Gen Gov - Baseline Scenario 1 - w/ New Entrants

Liability (millions)

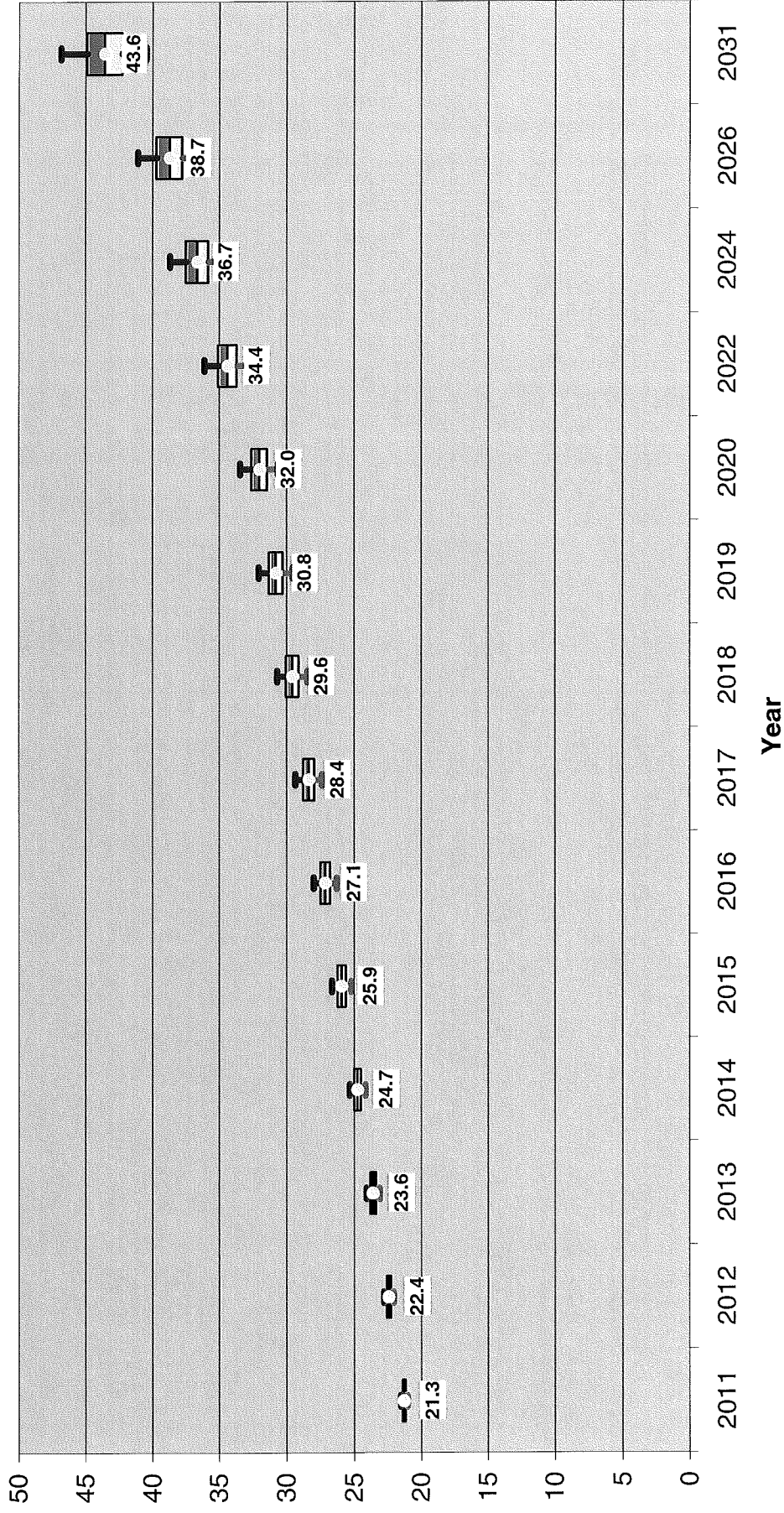


Exhibit 5d

Gen Gov - Baseline Scenario 2 - No New Entrants Liability (millions)

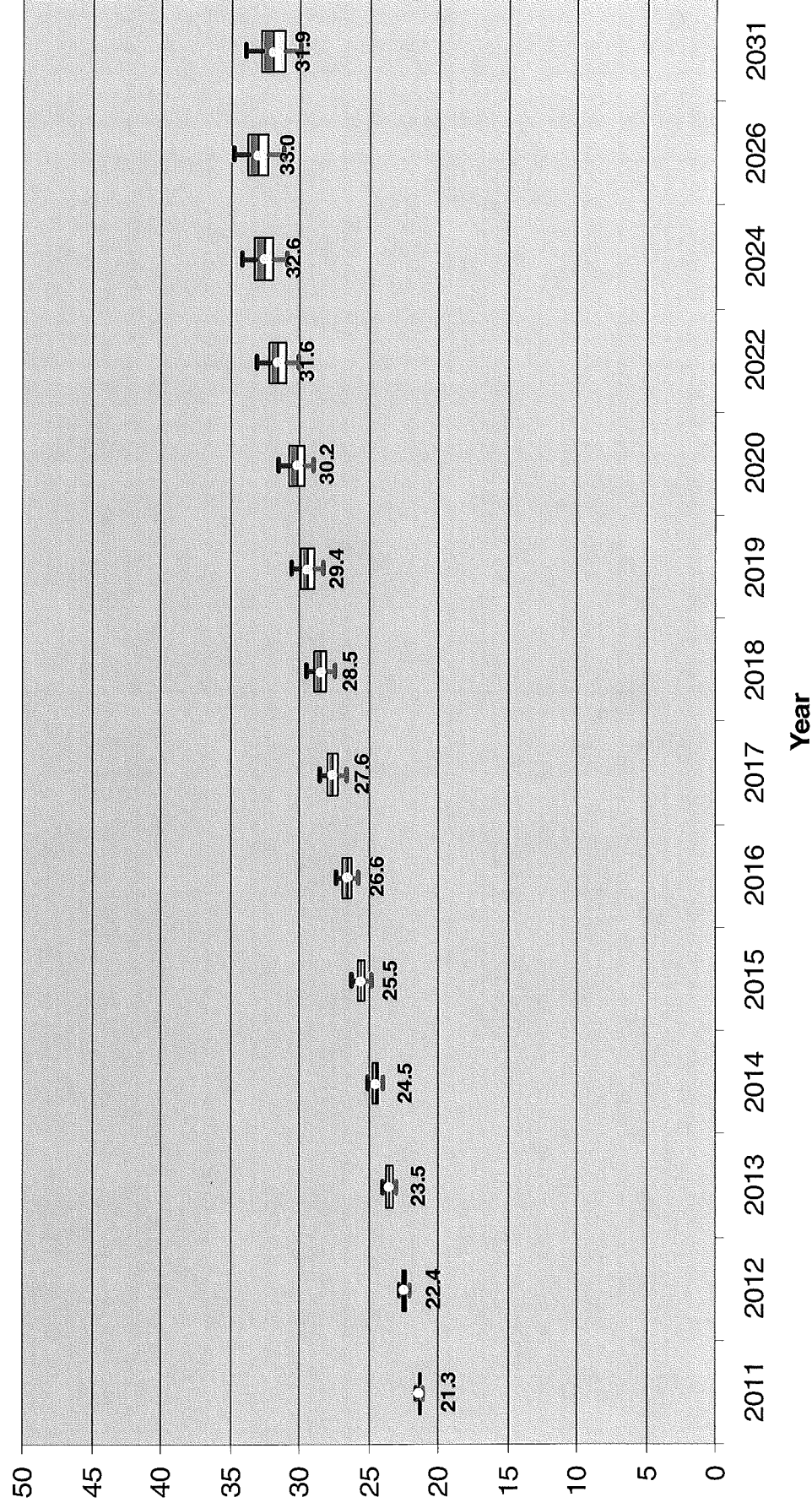


Exhibit 5e

Gen Gov - Baseline Scenario 1 - w/ New Entrants Funded Percentage (Actuarial Value Basis)

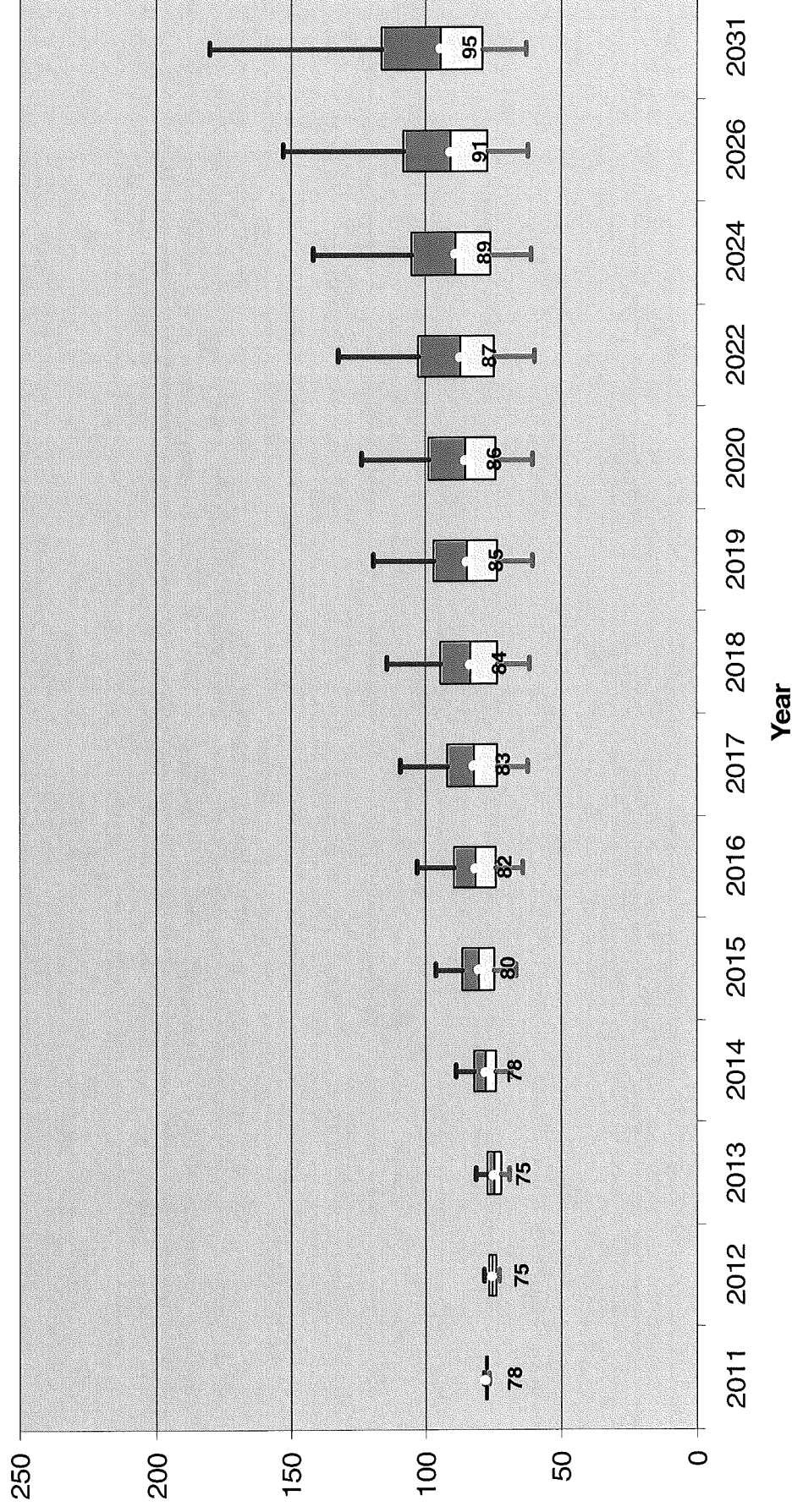


Exhibit 5f

Gen Gov - Baseline Scenario 2 - No New Entrants Funded Percentage (Actuarial Value Basis)

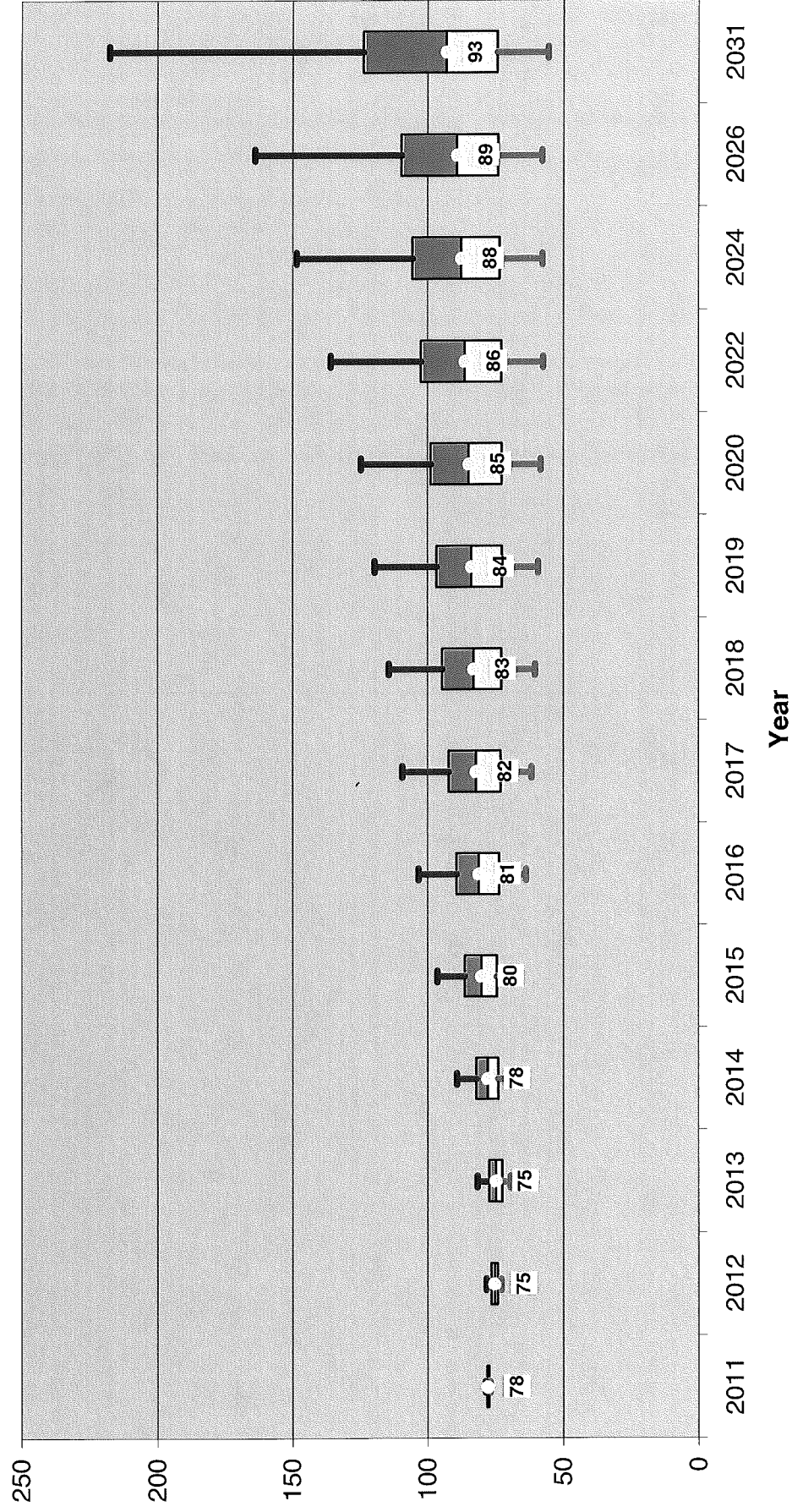


Exhibit 5g

Gen Gov - Baseline Scenario 1 vs. No Alpha Employer Contribution (thousands)

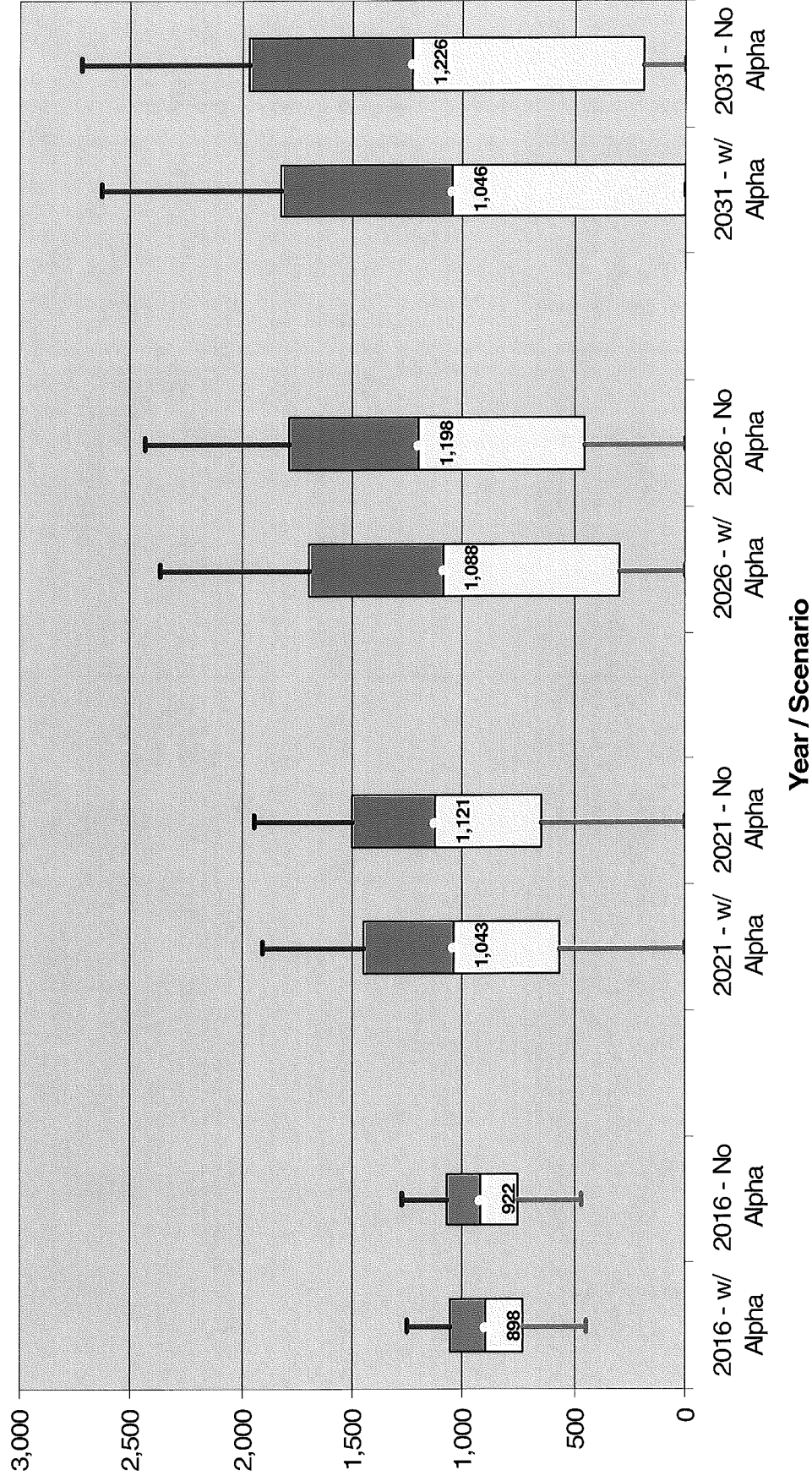


Exhibit 5h

Gen Gov - Baseline Scenario 1 vs. No Alpha Funded Percentage (Actuarial Value Basis)

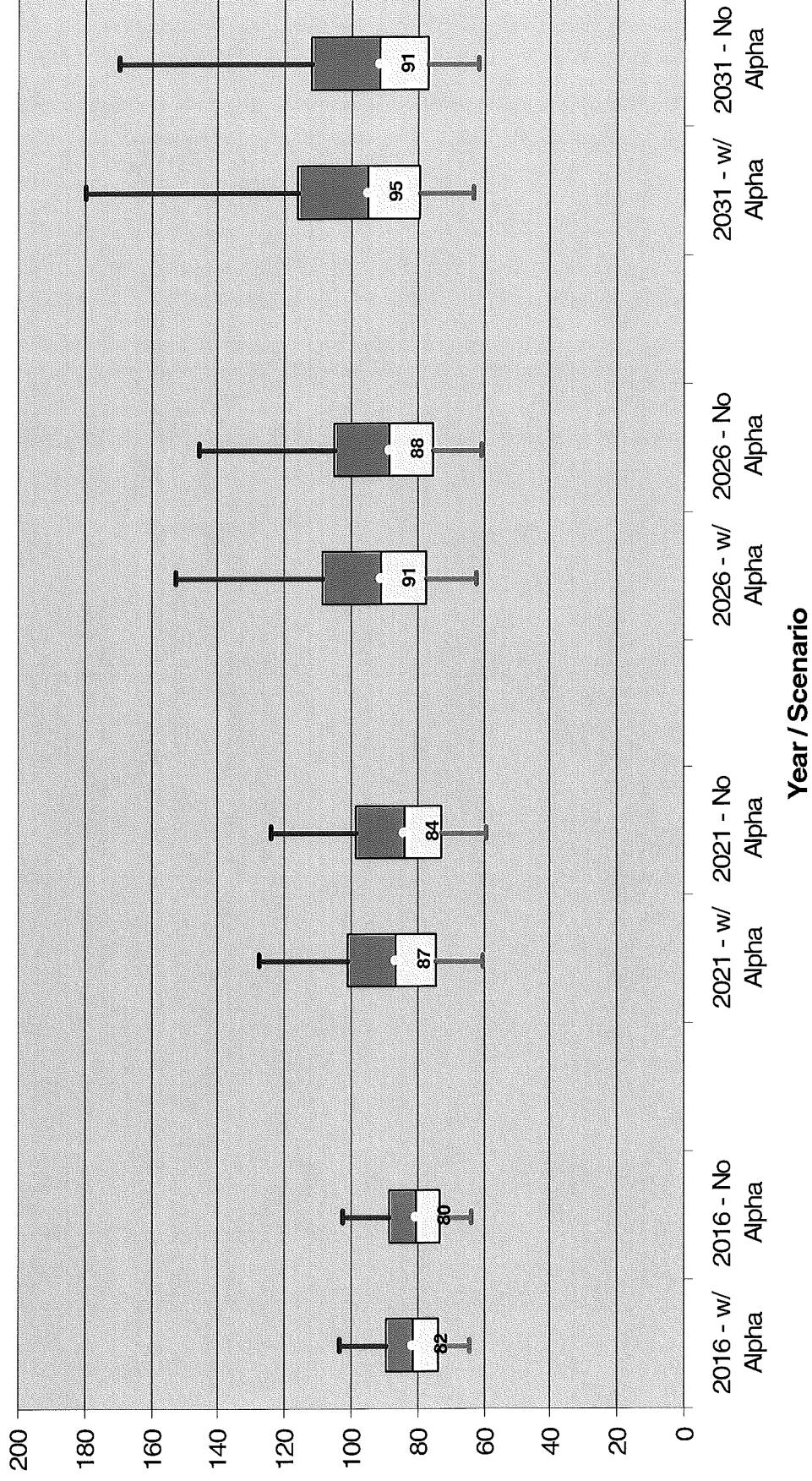


Exhibit 5i

Gen Gov - Baseline Scenario 1 vs. 7.25% Return Assumption Employer Contribution (thousands)

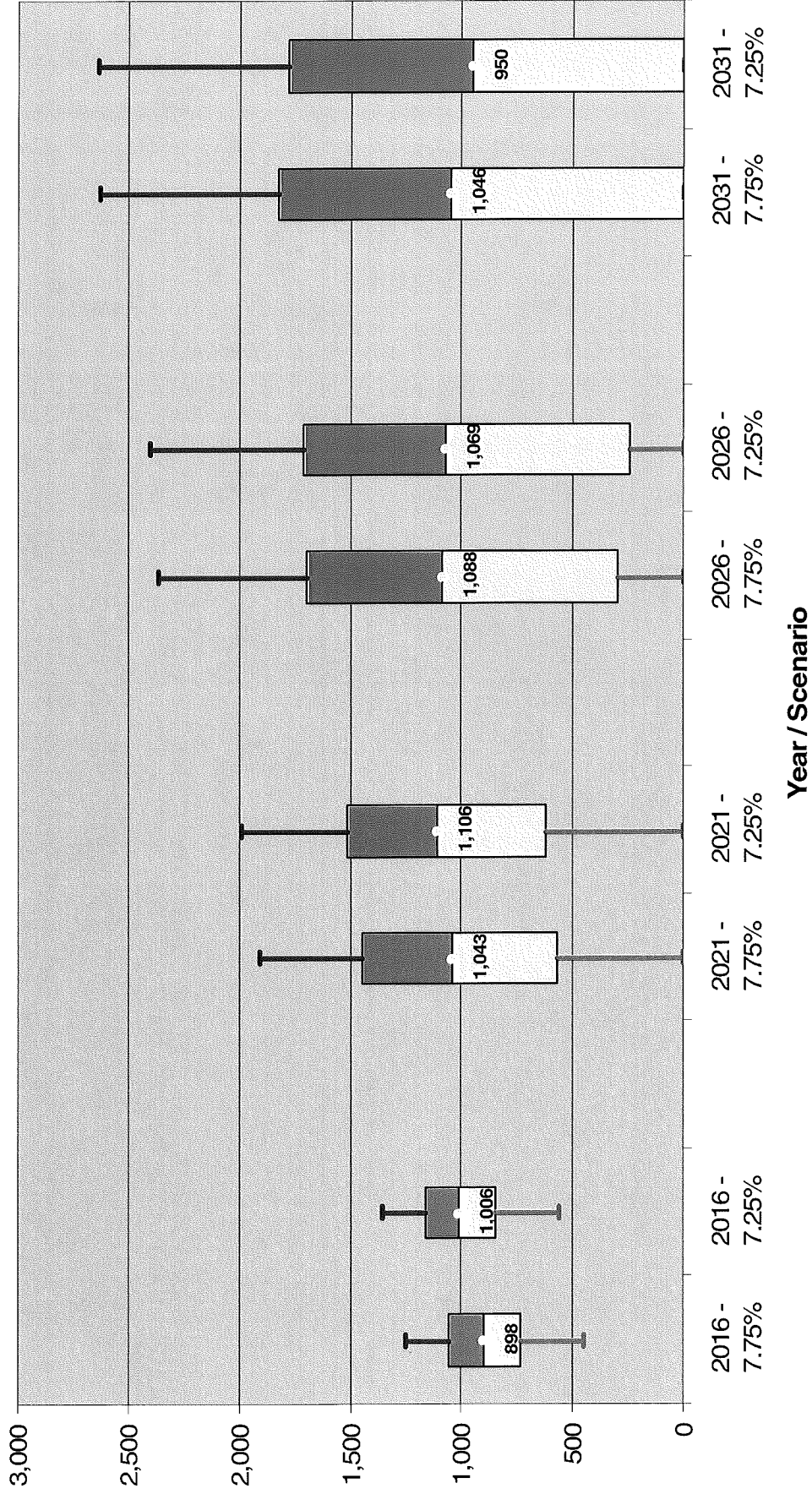


Exhibit 5j

Gen Gov - Baseline Scenario 1 vs. 7.25% Return Assumption
Funded Percentage (Actuarial Value Basis)

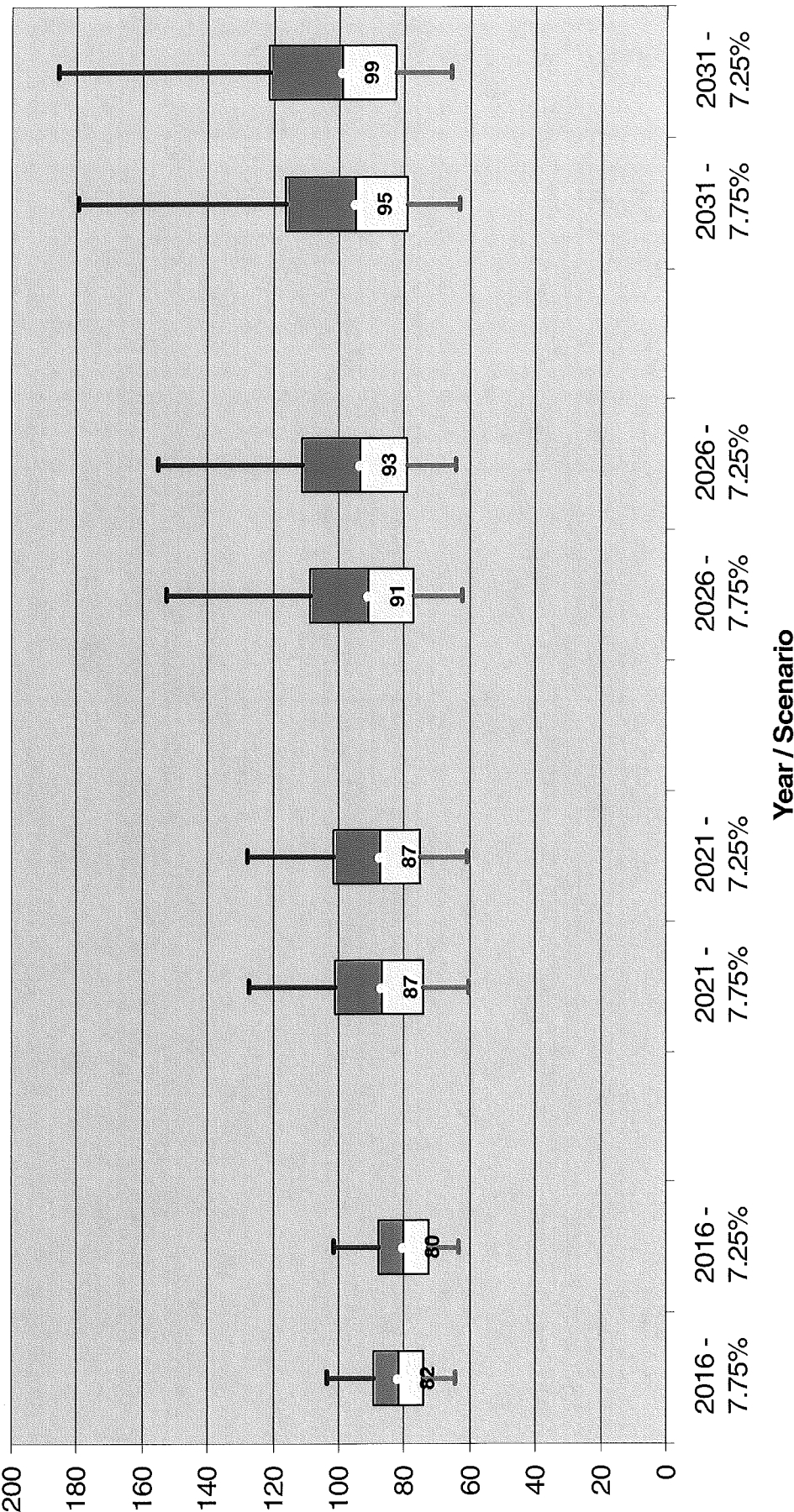


Exhibit 5k

Gen Gov - Baseline Scenario 1 vs. 20 Year Level \$ Amortization Employer Contribution (thousands)

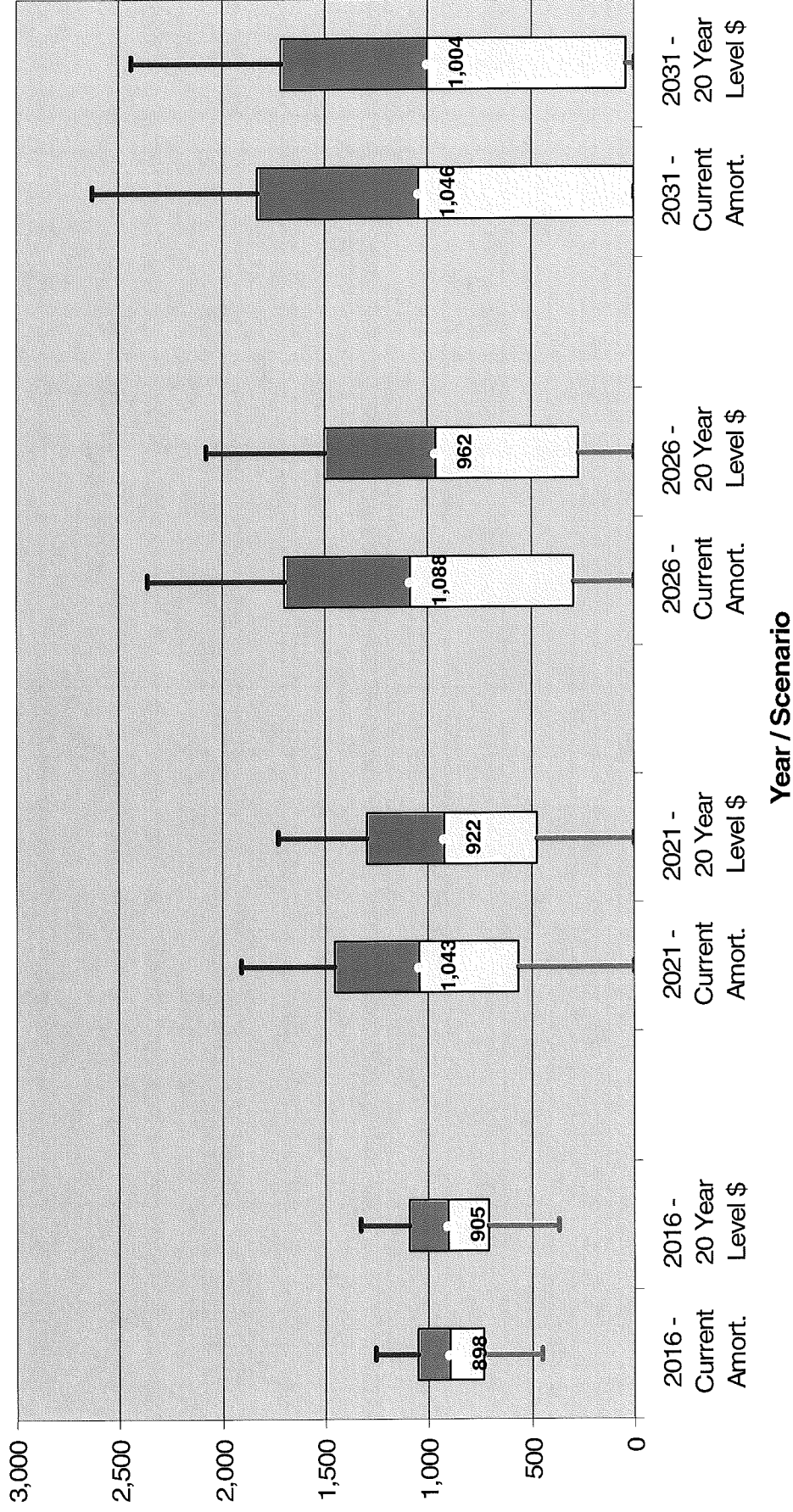


Exhibit 51

Gen Gov - Baseline Scenario 1 vs. 20 Year Level \$ Amortization Funded Percentage (Actuarial Value Basis)

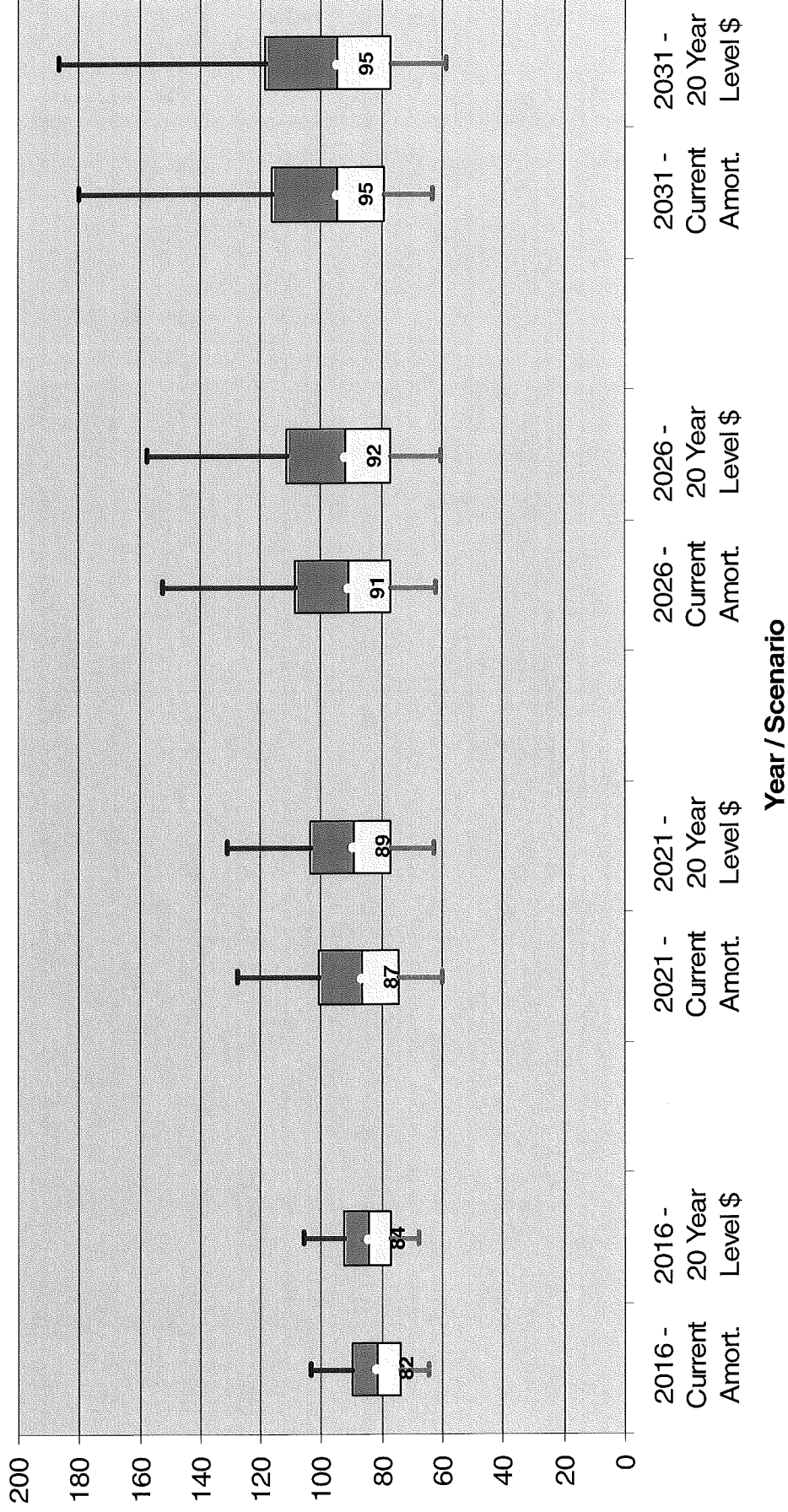


Exhibit 6a

Police - Baseline Scenario 1 - w/ New Entrants Employer Contribution (thousands)

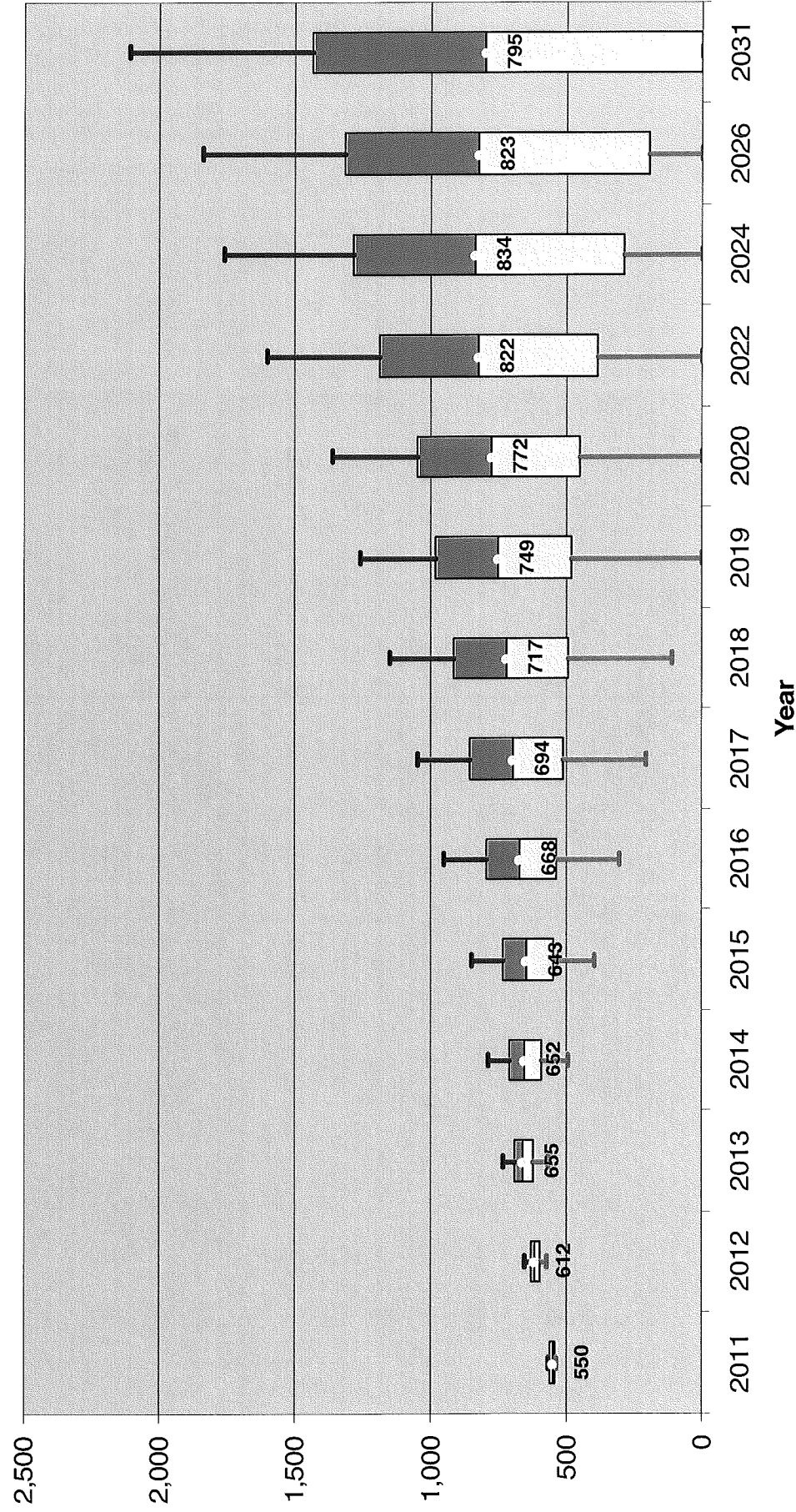


Exhibit 6b

Police - Baseline Scenario 2 - No New Entrants Employer Contribution (including 6% DC for new entrants) (thousands)

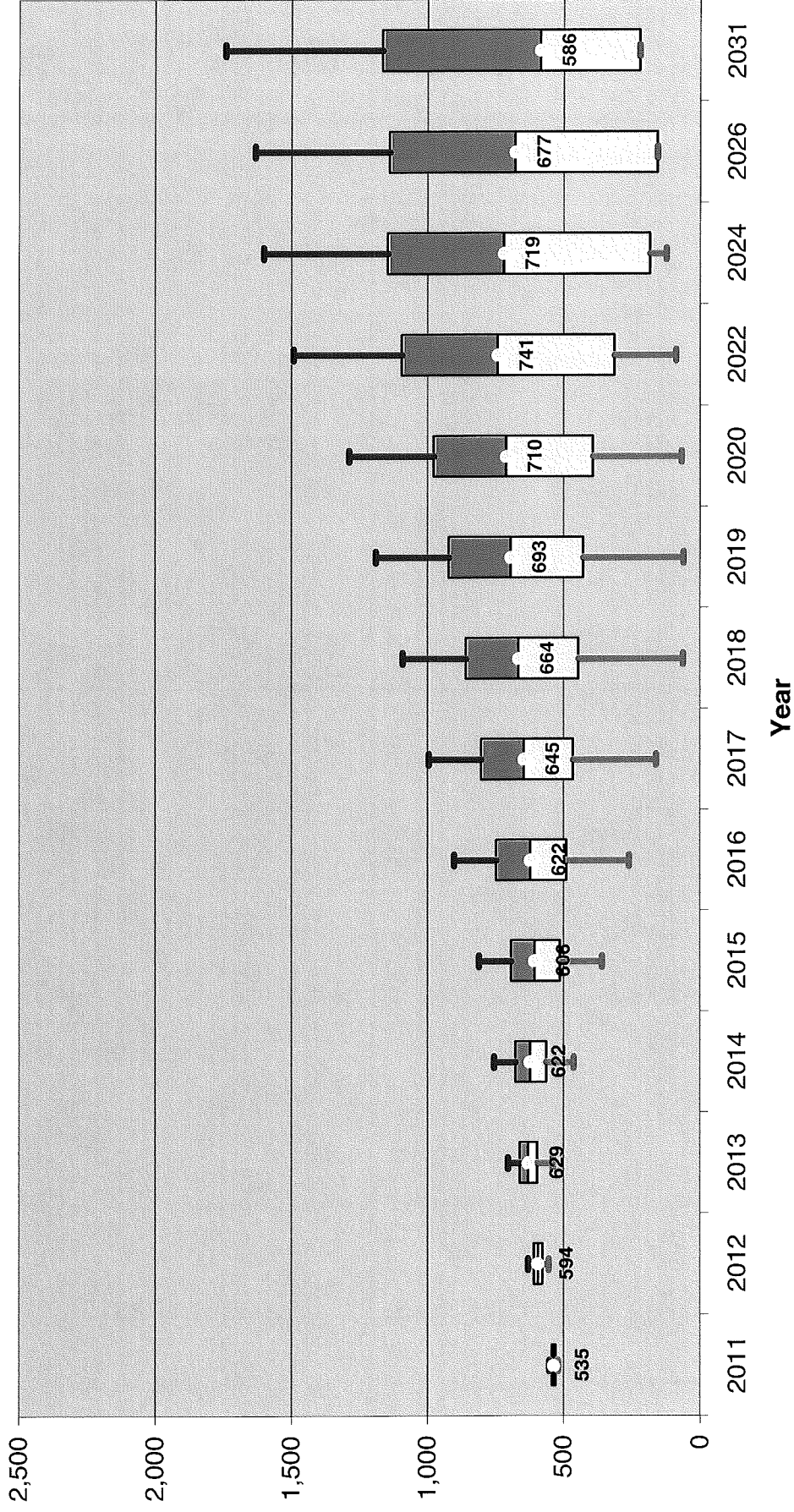


Exhibit 6c

Police - Baseline Scenario 1 - w/ New Entrants Liability (millions)

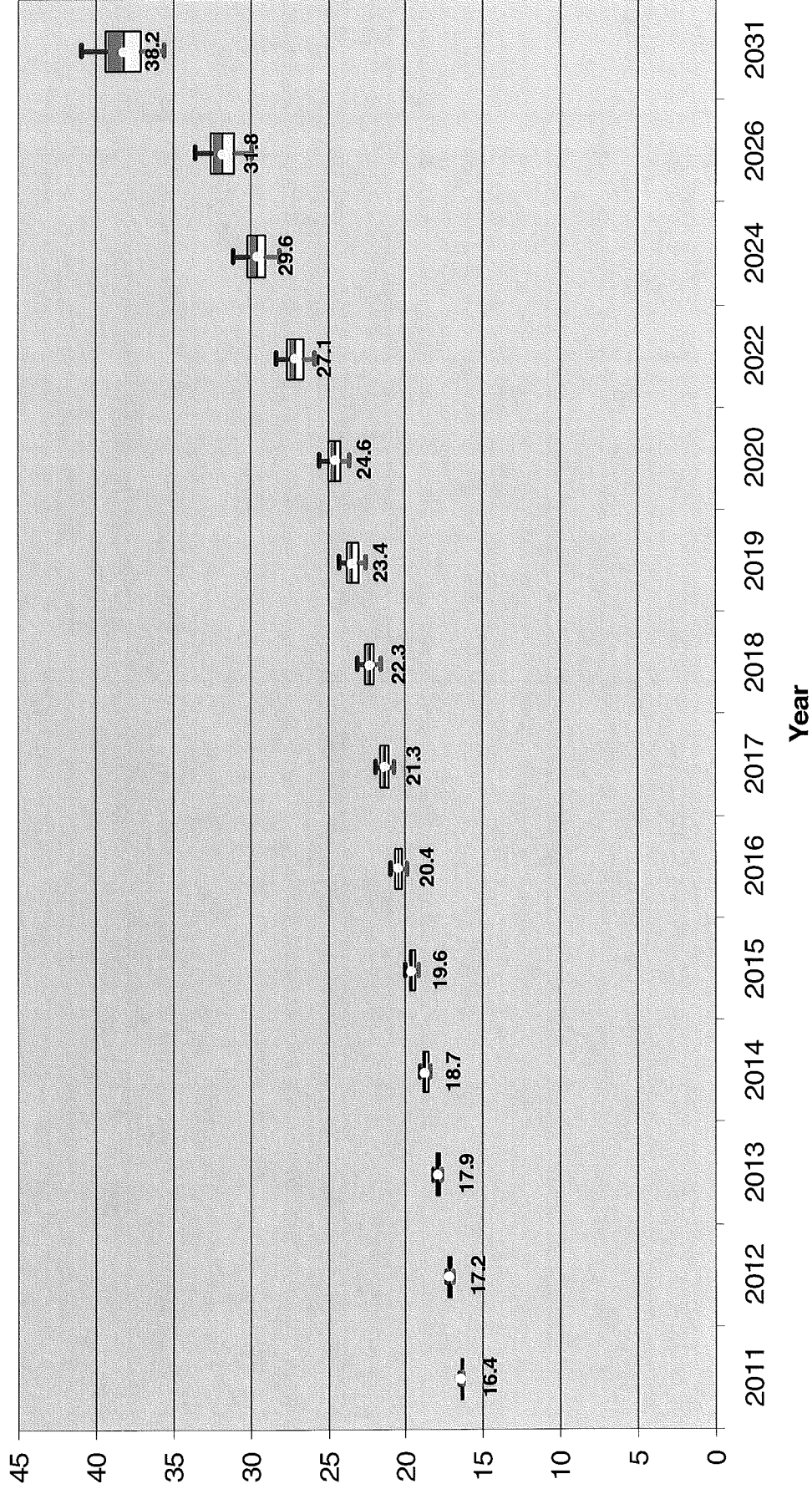


Exhibit 6d

Police - Baseline Scenario 2 - No New Entrants Liability (millions)

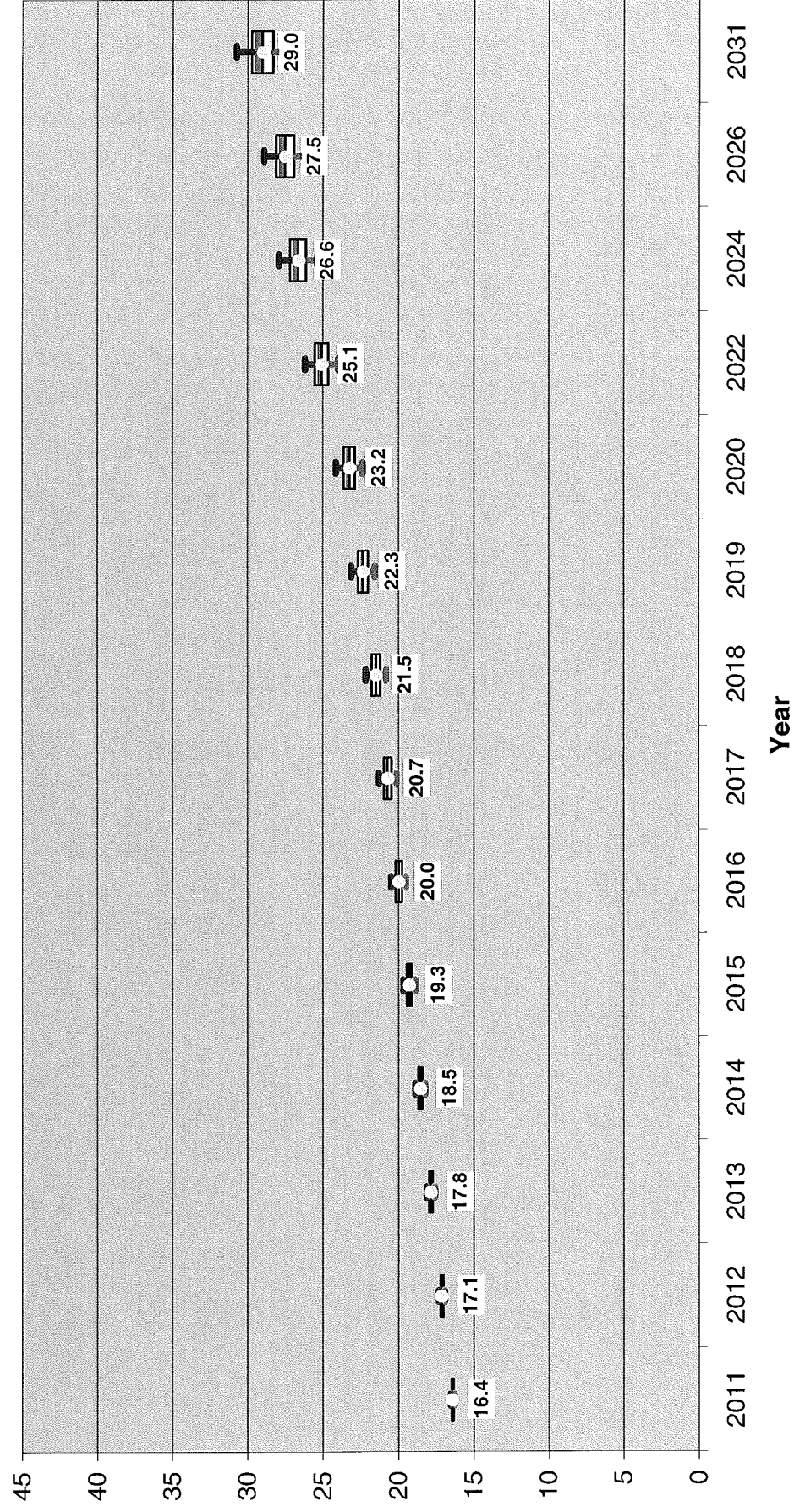


Exhibit 6e

Police - Baseline Scenario 1 - w/ New Entrants Funded Percentage (Actuarial Value Basis)

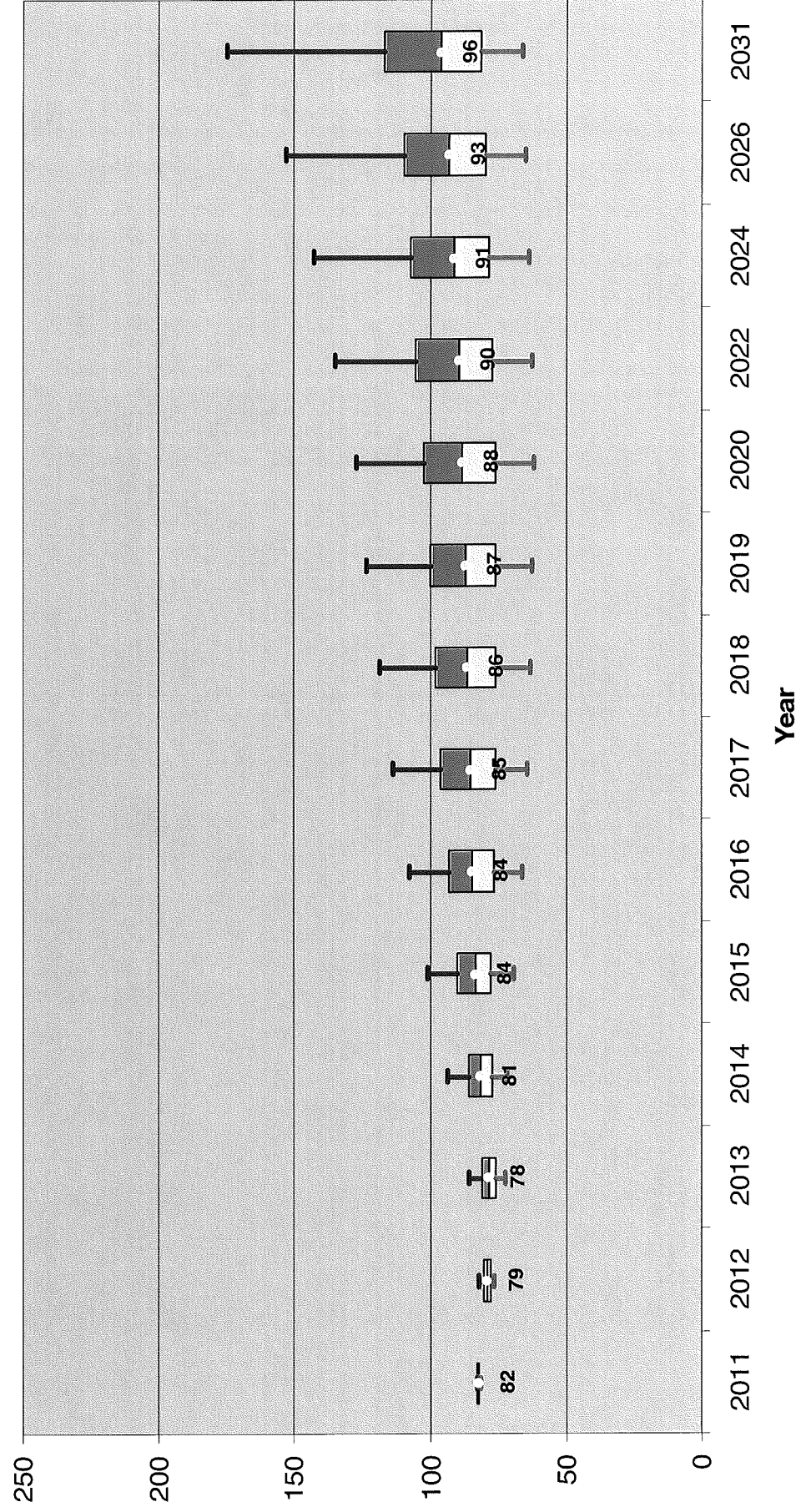


Exhibit 6f

Police - Baseline Scenario 2 - No New Entrants Funded Percentage (Actuarial Value Basis)

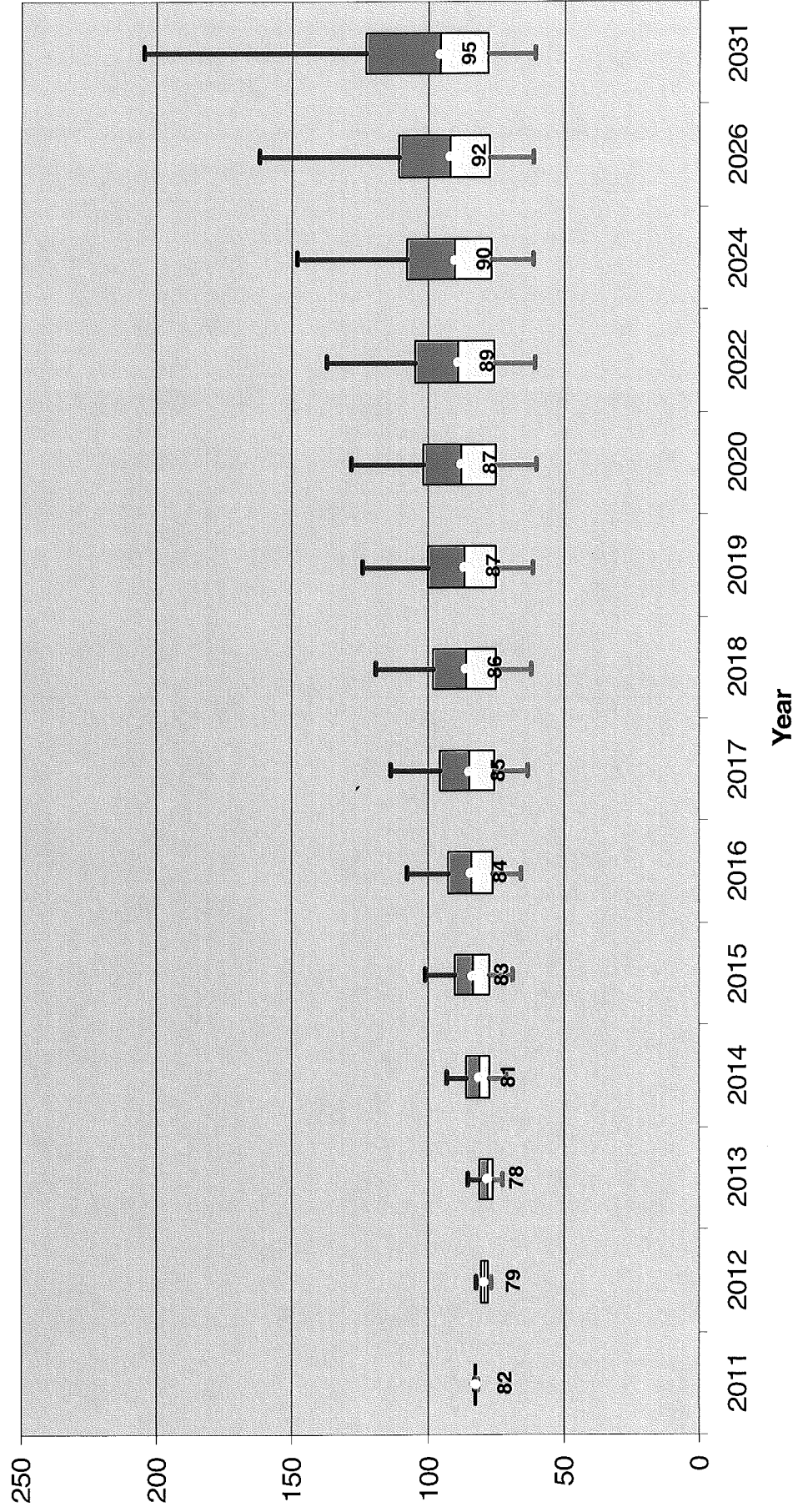


Exhibit 6g

Police - Baseline Scenario 1 vs. No Alpha Employer Contribution (thousands)

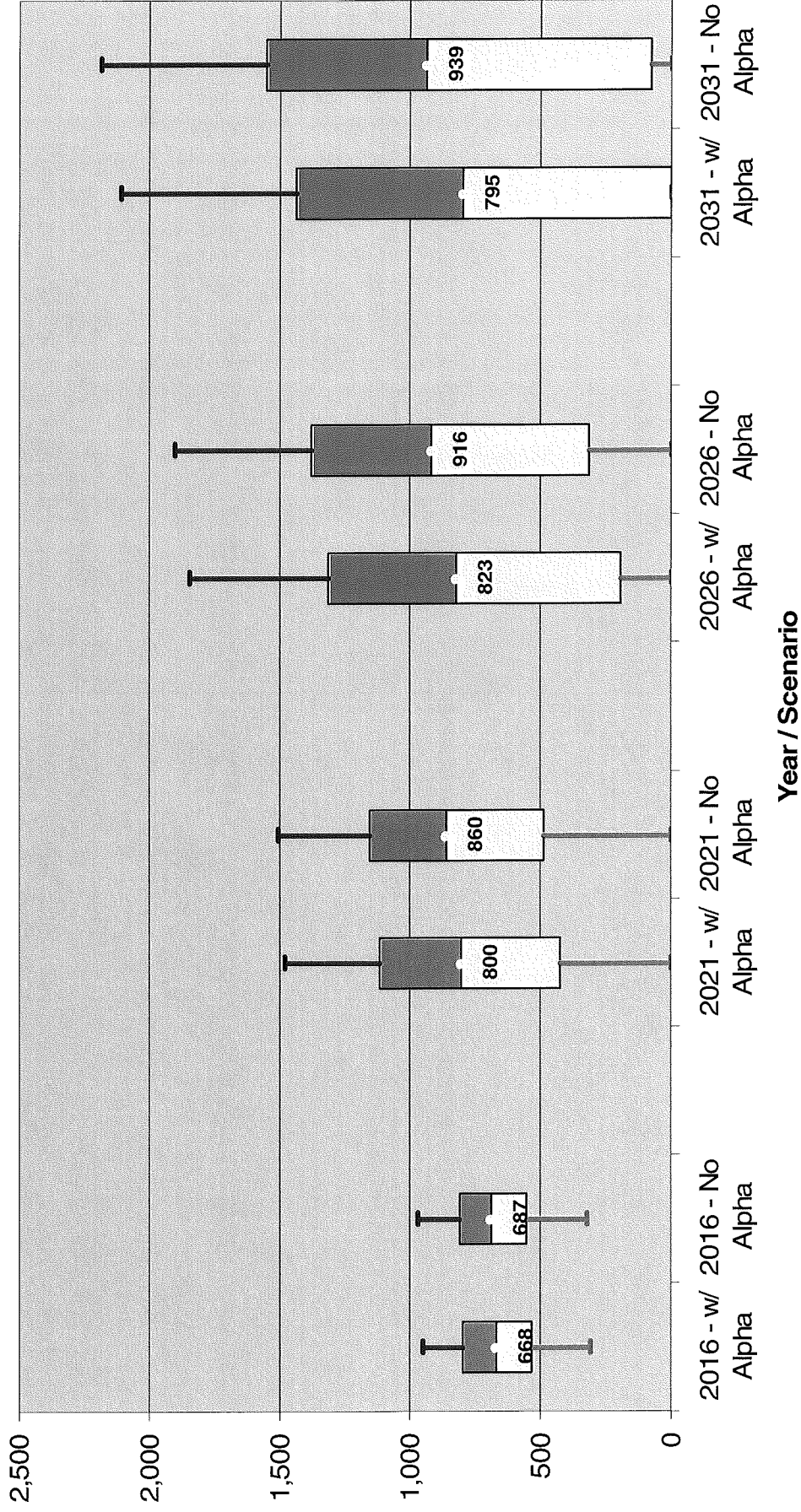


Exhibit 6h

Police - Baseline Scenario 1 vs. No Alpha
Funded Percentage (Actuarial Value Basis)

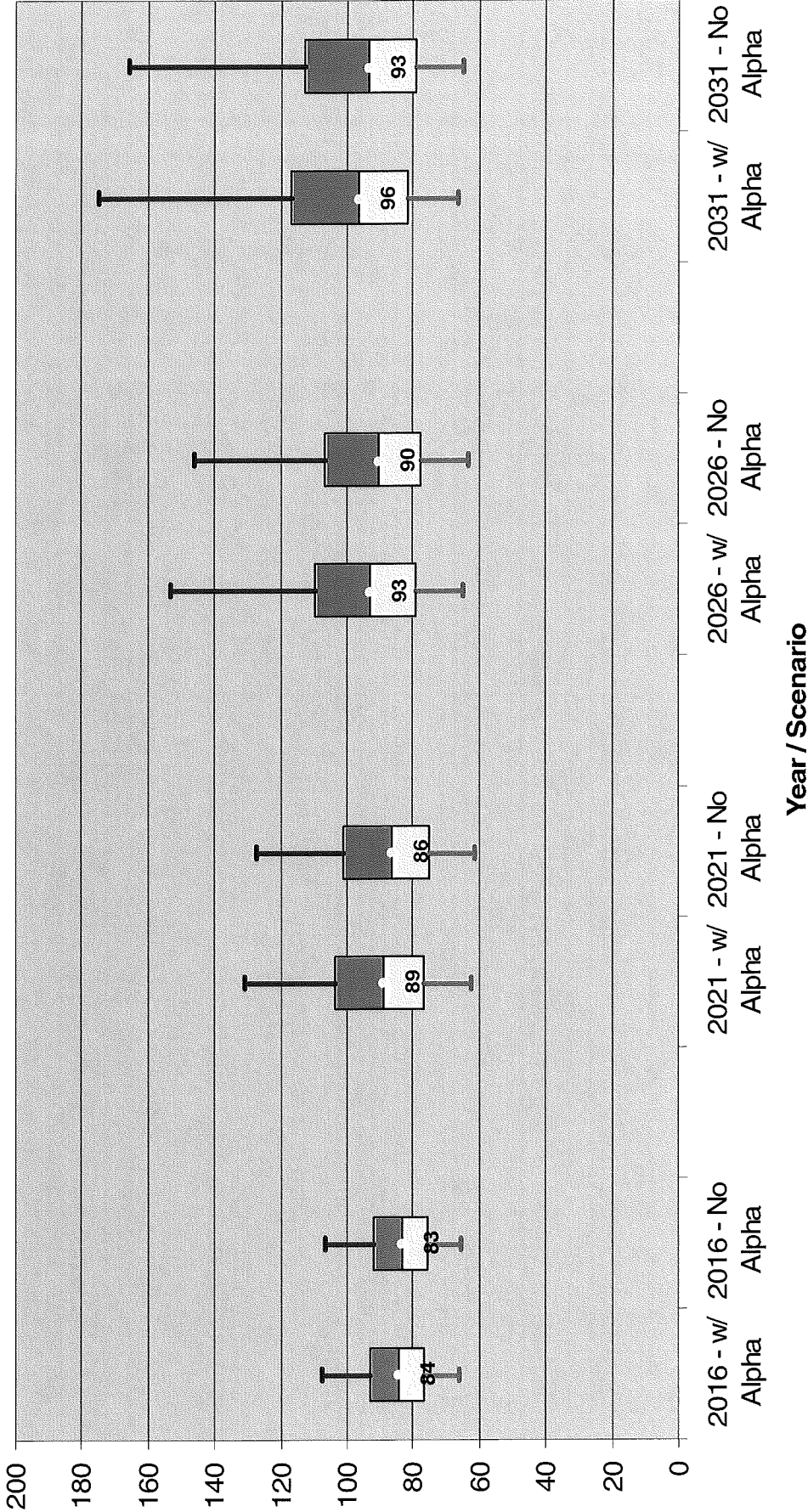


Exhibit 6i

Police - Baseline Scenario 1 vs. 7.25% Return Assumption Employer Contribution (thousands)

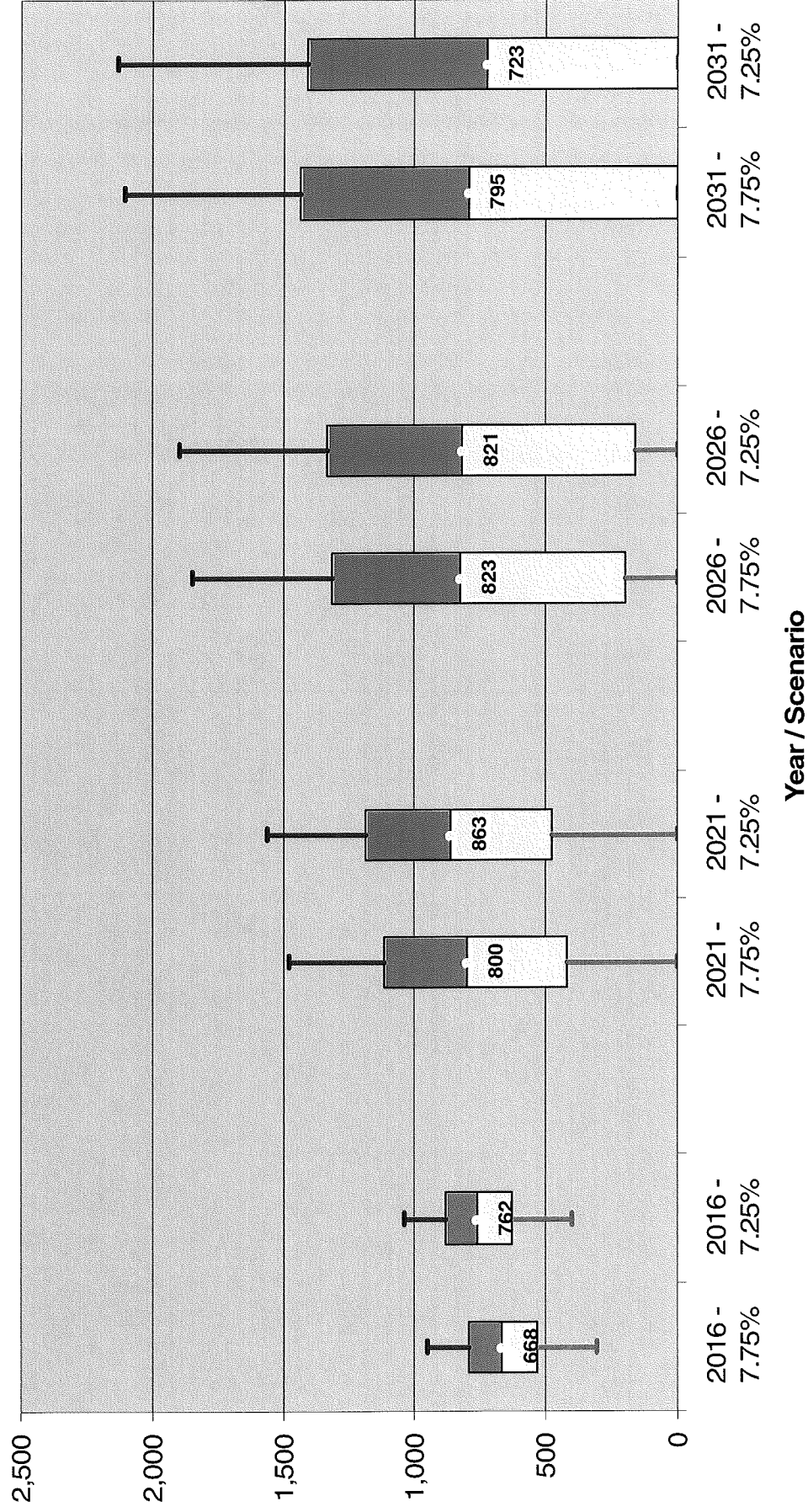


Exhibit 6j

Police - Baseline Scenario 1 vs. 7.25% Return Assumption Funded Percentage (Actuarial Value Basis)

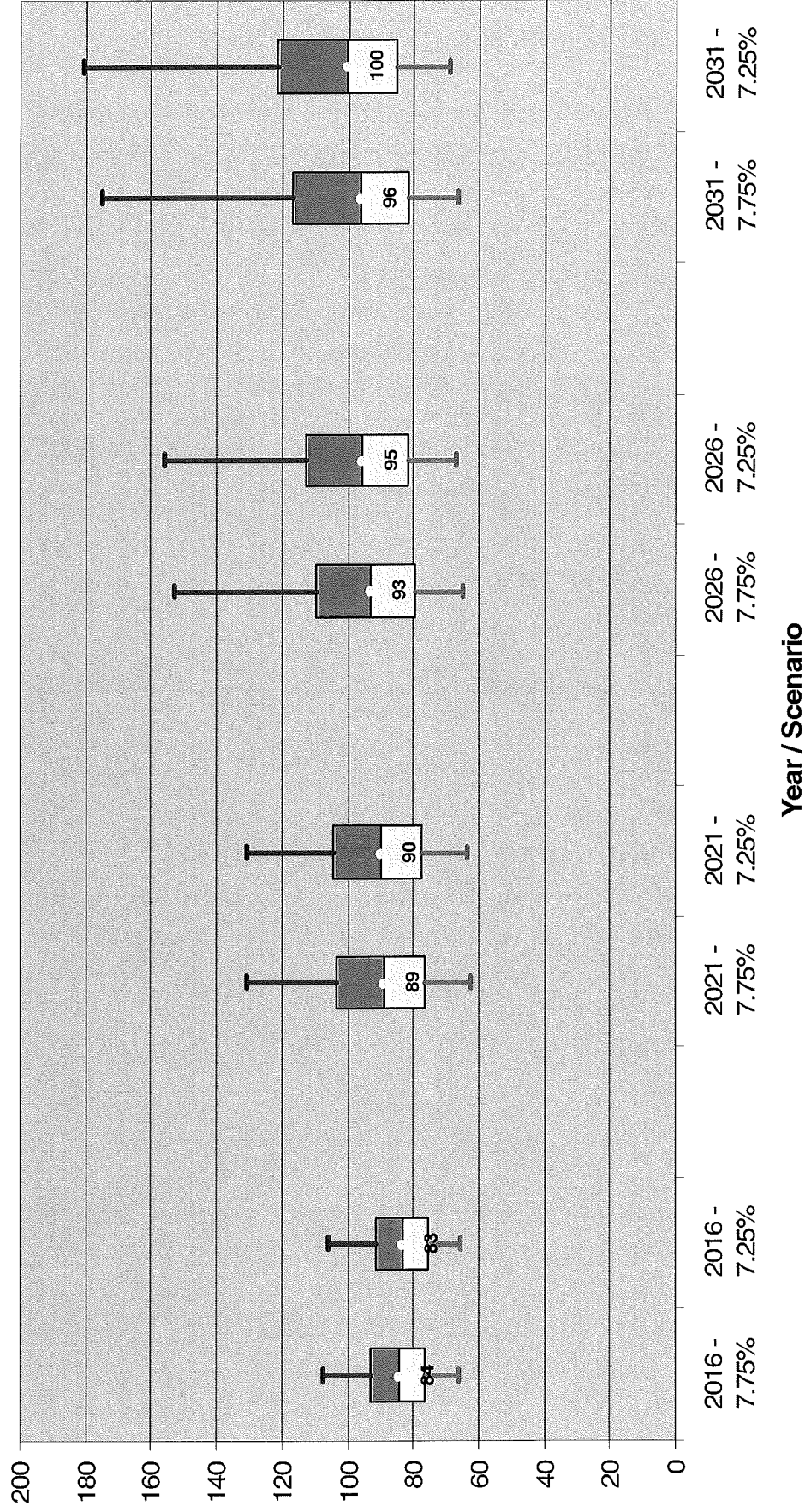


Exhibit 6k

Police - Baseline Scenario 1 vs. 20 Year Level \$ Amortization Employer Contribution (thousands)

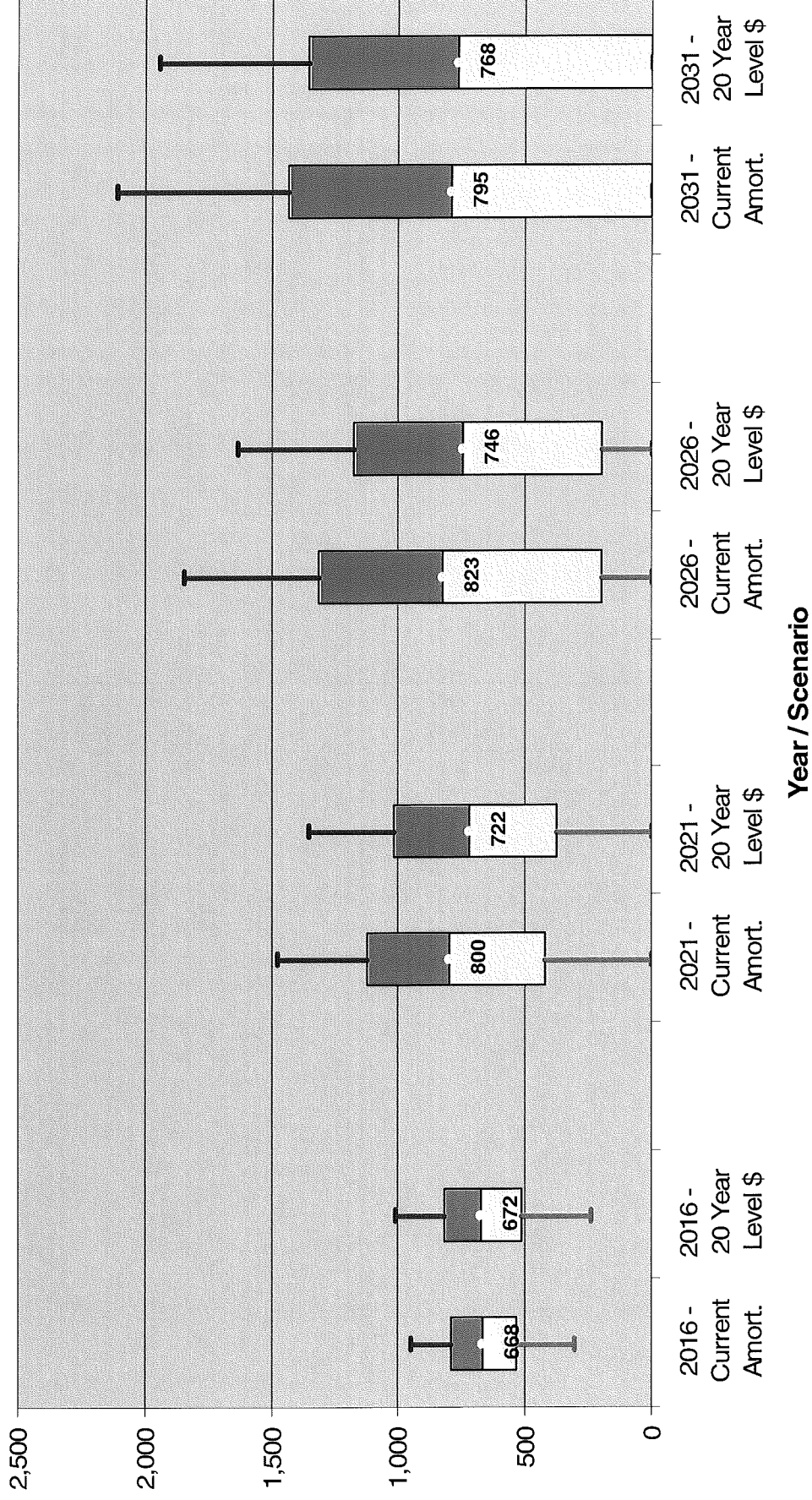


Exhibit 6I

Police - Baseline Scenario 1 vs. 20 Year Level \$ Amortization Funded Percentage (Actuarial Value Basis)

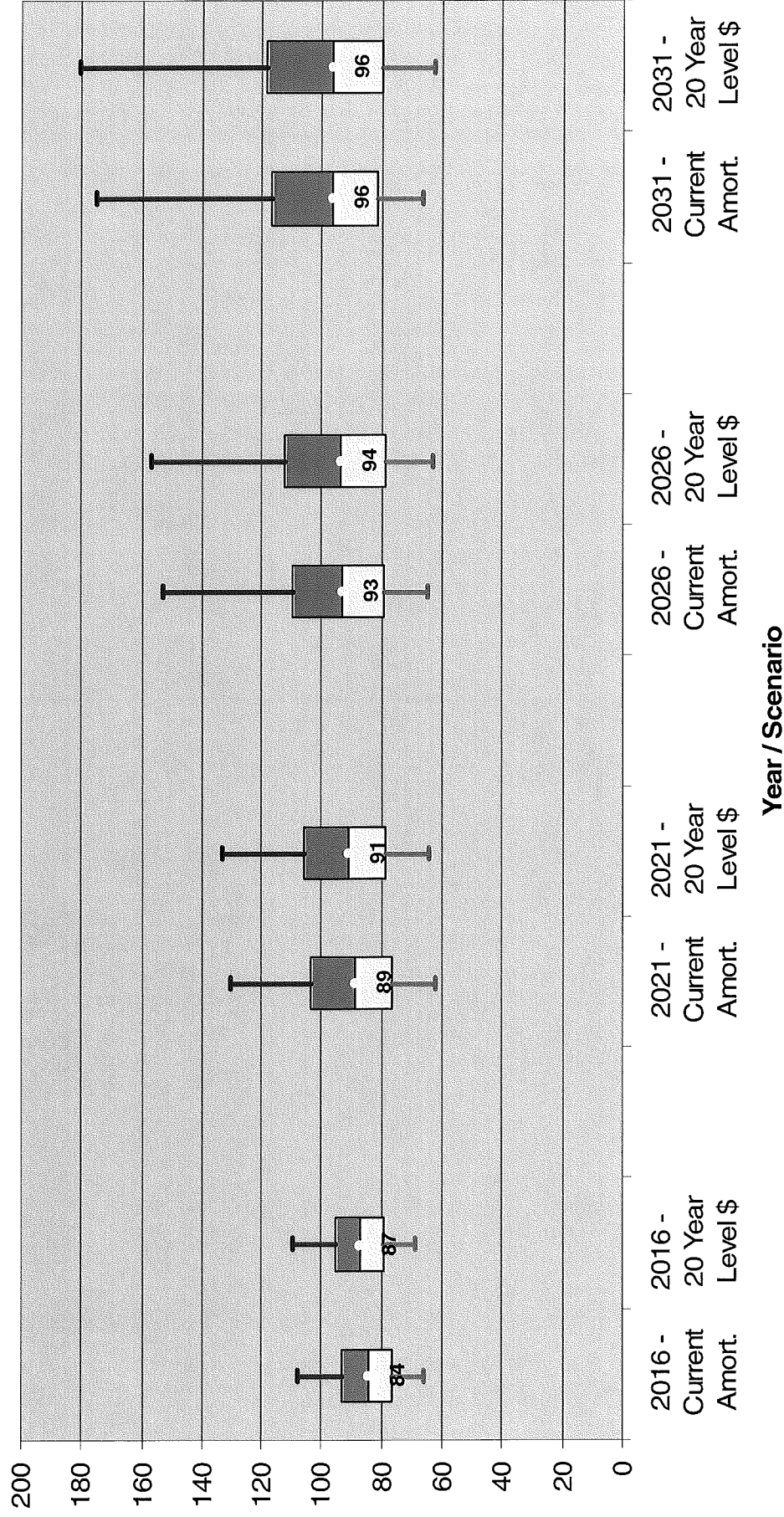


Exhibit 7a

BOE - Baseline Scenario 1 - w/ New Entrants Employer Contribution (thousands)

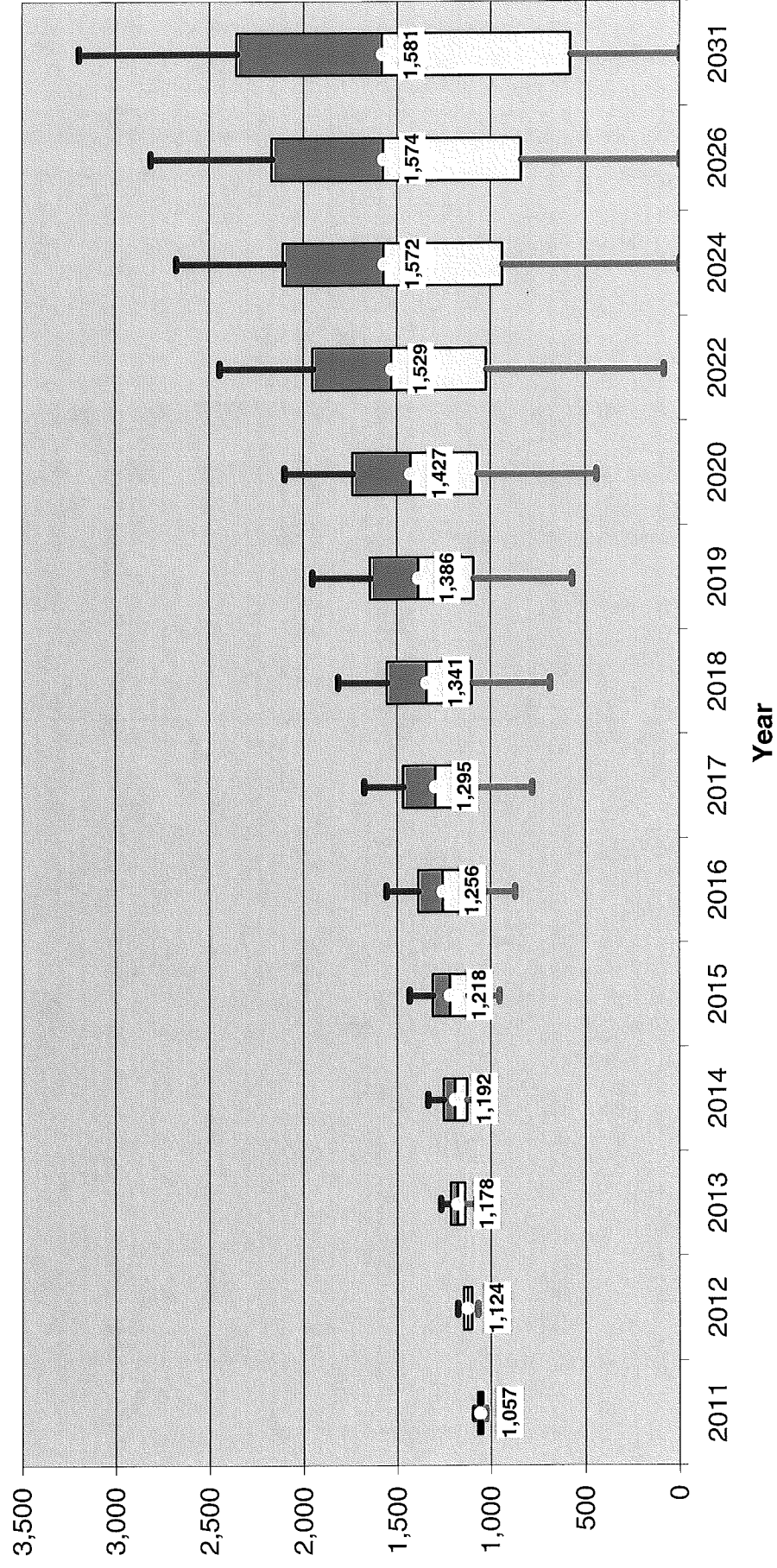


Exhibit 7b

BOE - Baseline Scenario 2 - No New Entrants Employer Contribution (including 4% DC for new entrants) (thousands)

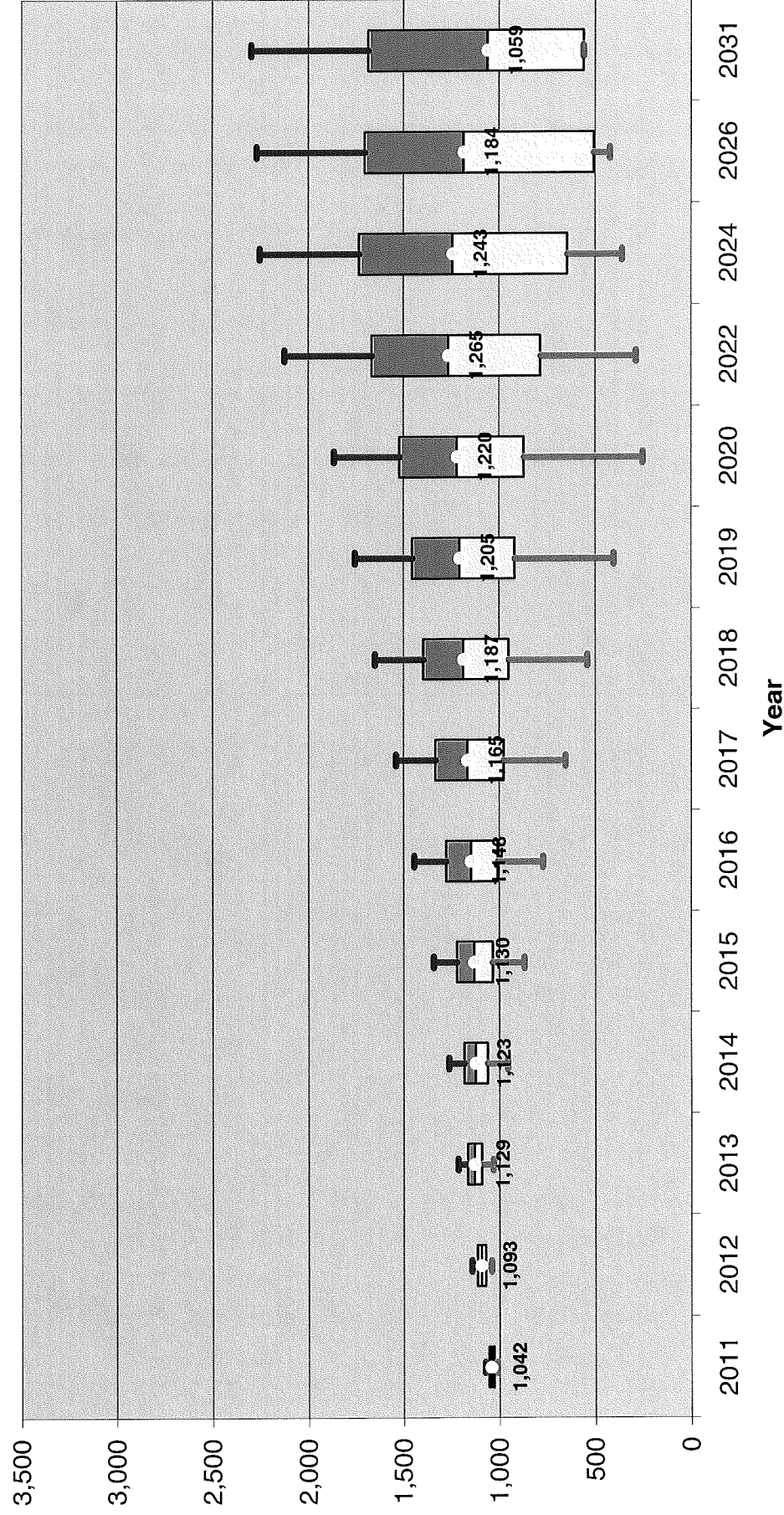


Exhibit 7c

BOE - Baseline Scenario 1 - w/ New Entrants
Liability (millions)

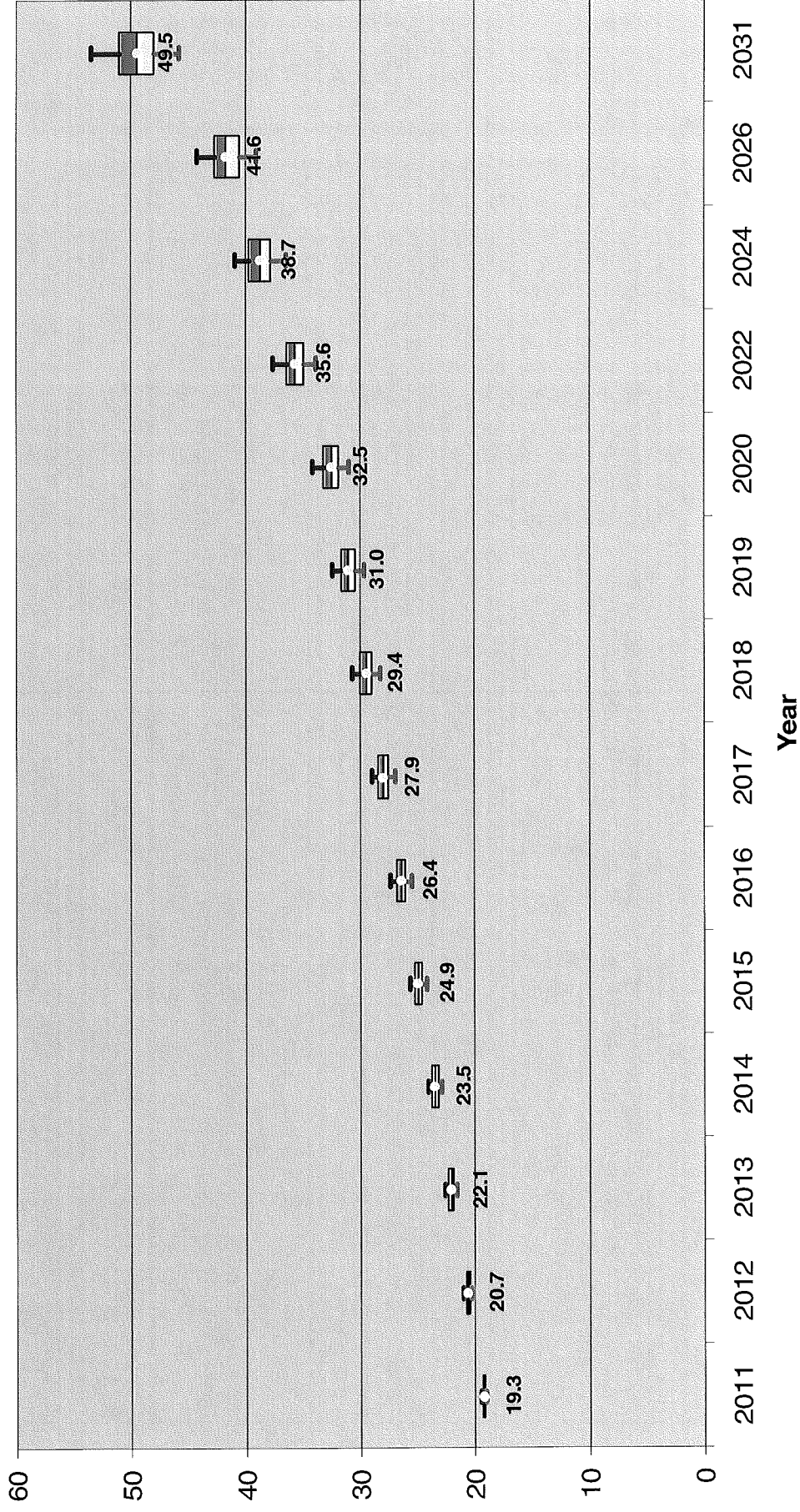


Exhibit 7d

BOE - Baseline Scenario 2 - No New Entrants
Liability (millions)

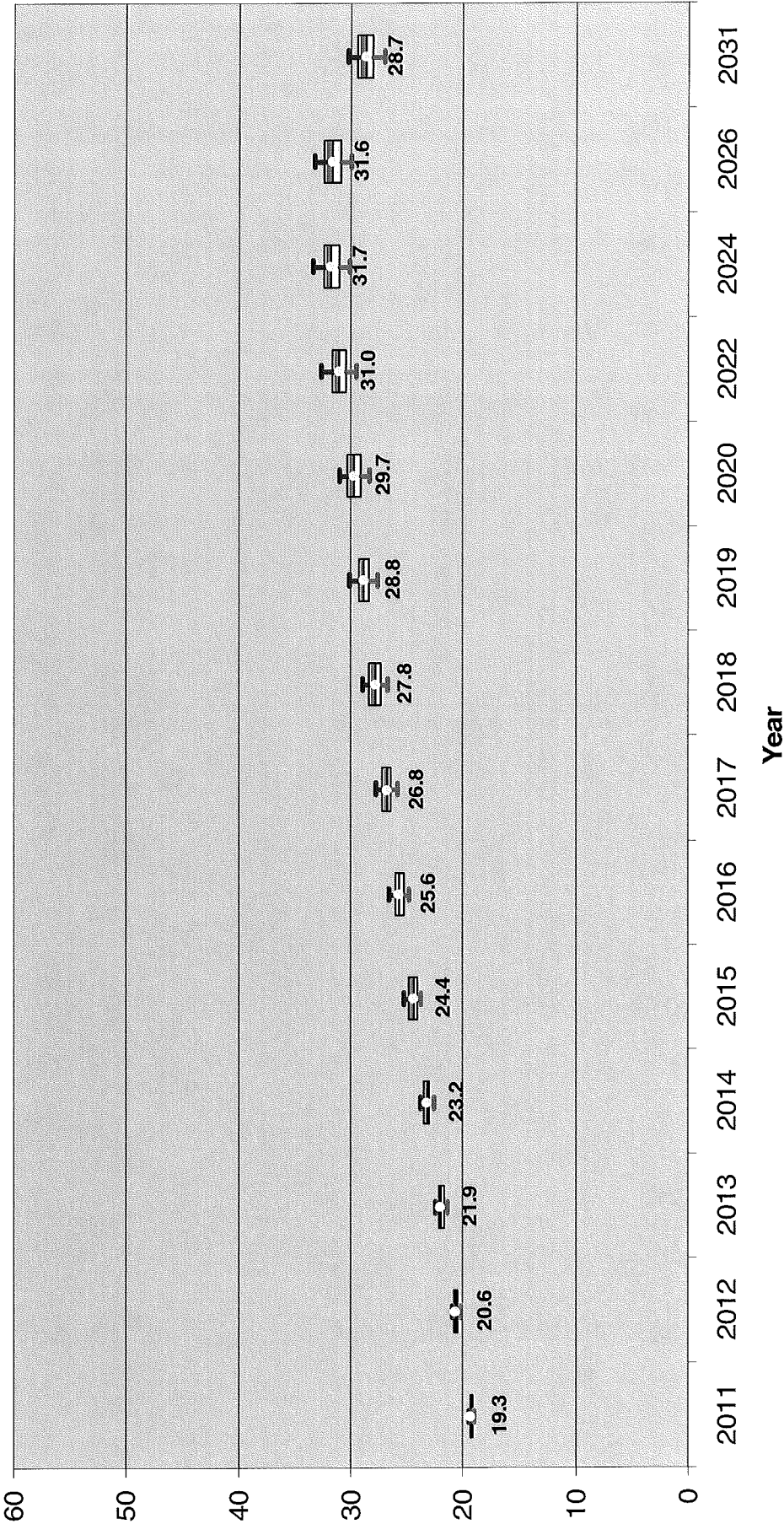


Exhibit 7e

BOE - Baseline Scenario 1 - w/ New Entrants Funded Percentage (Actuarial Value Basis)

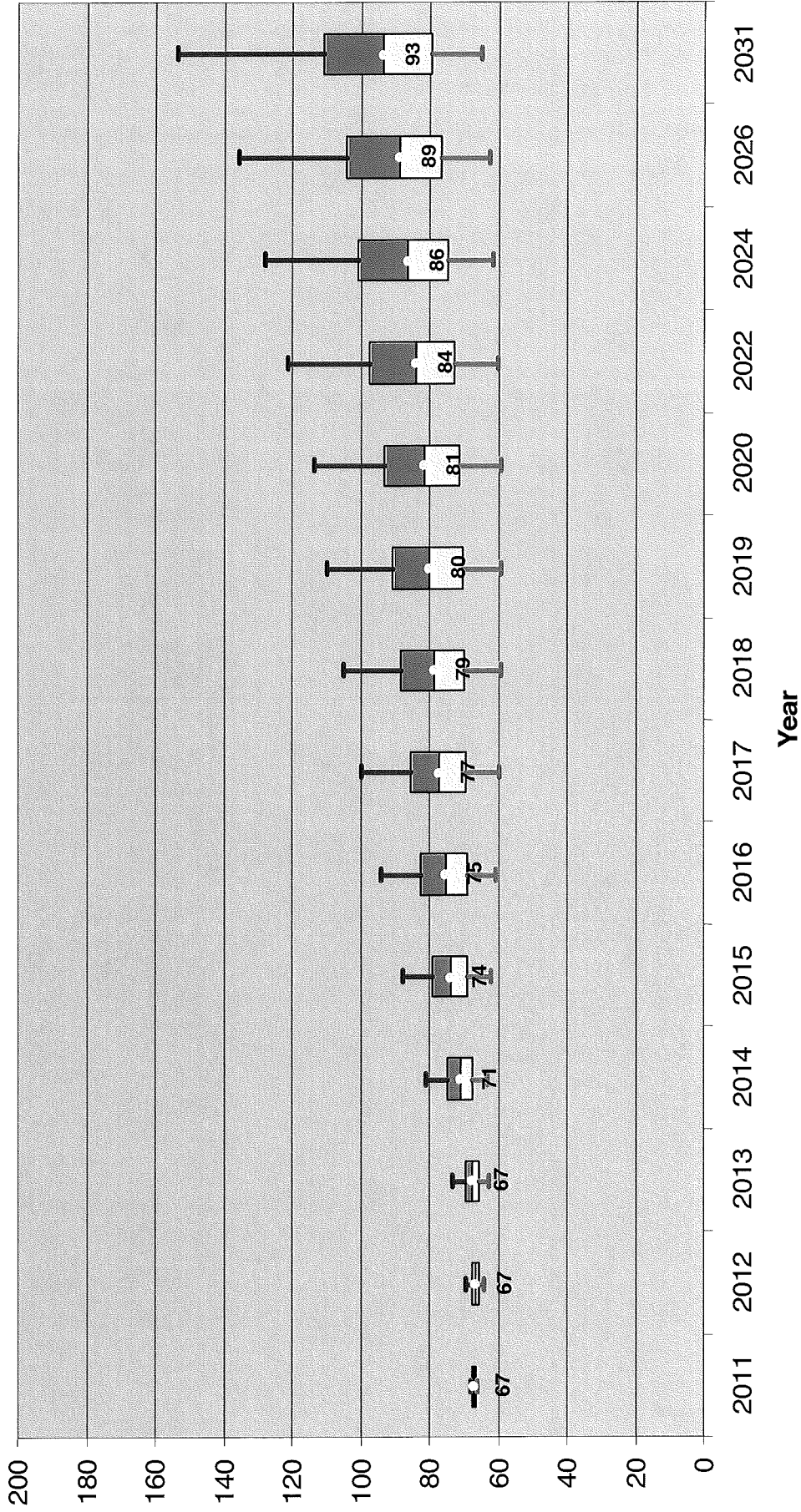


Exhibit 7f

BOE - Baseline Scenario 2 - No New Entrants Funded Percentage (Actuarial Value Basis)

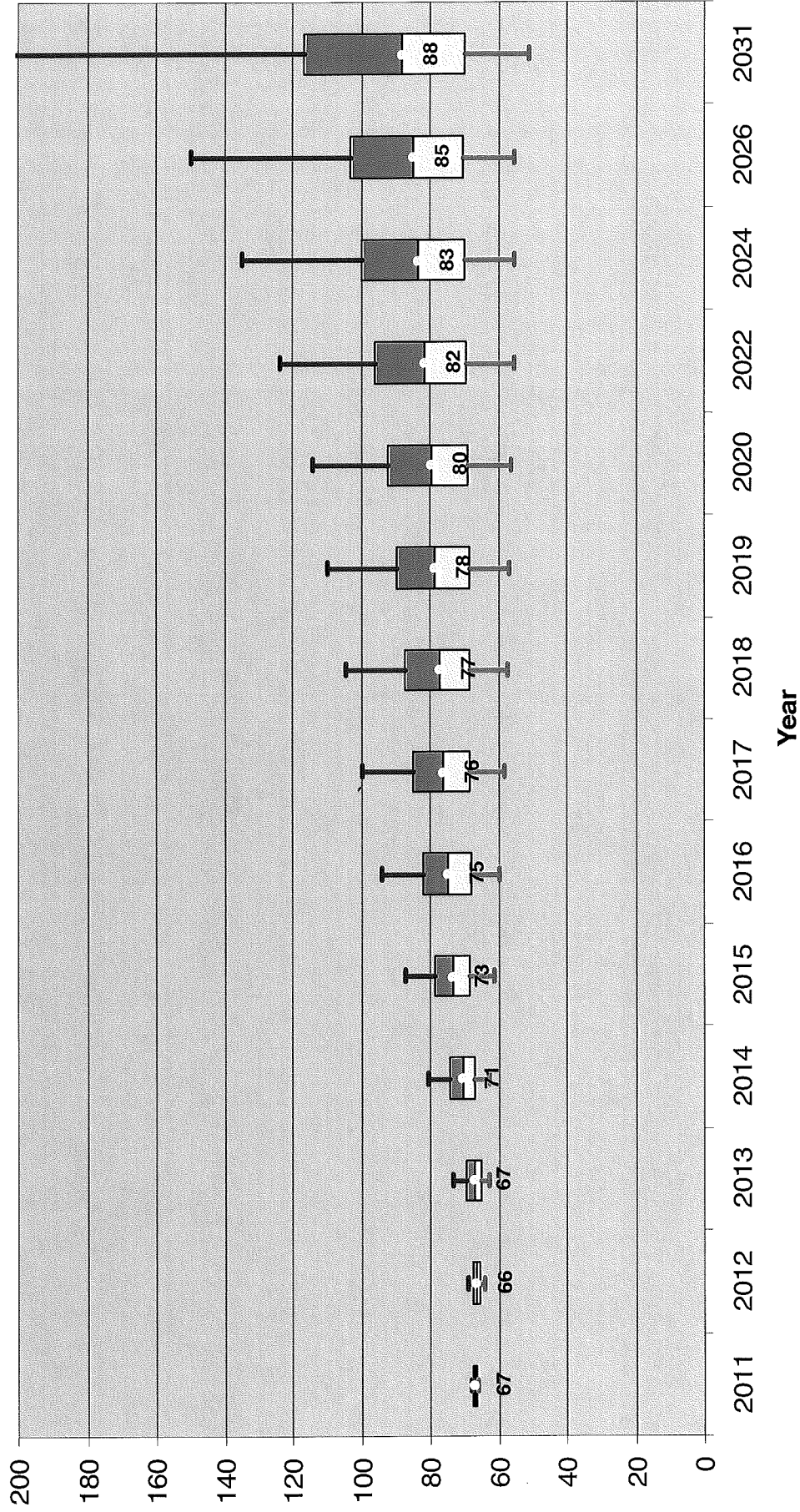


Exhibit 7g

BOE - Baseline Scenario 1 vs. No Alpha Employer Contribution (thousands)

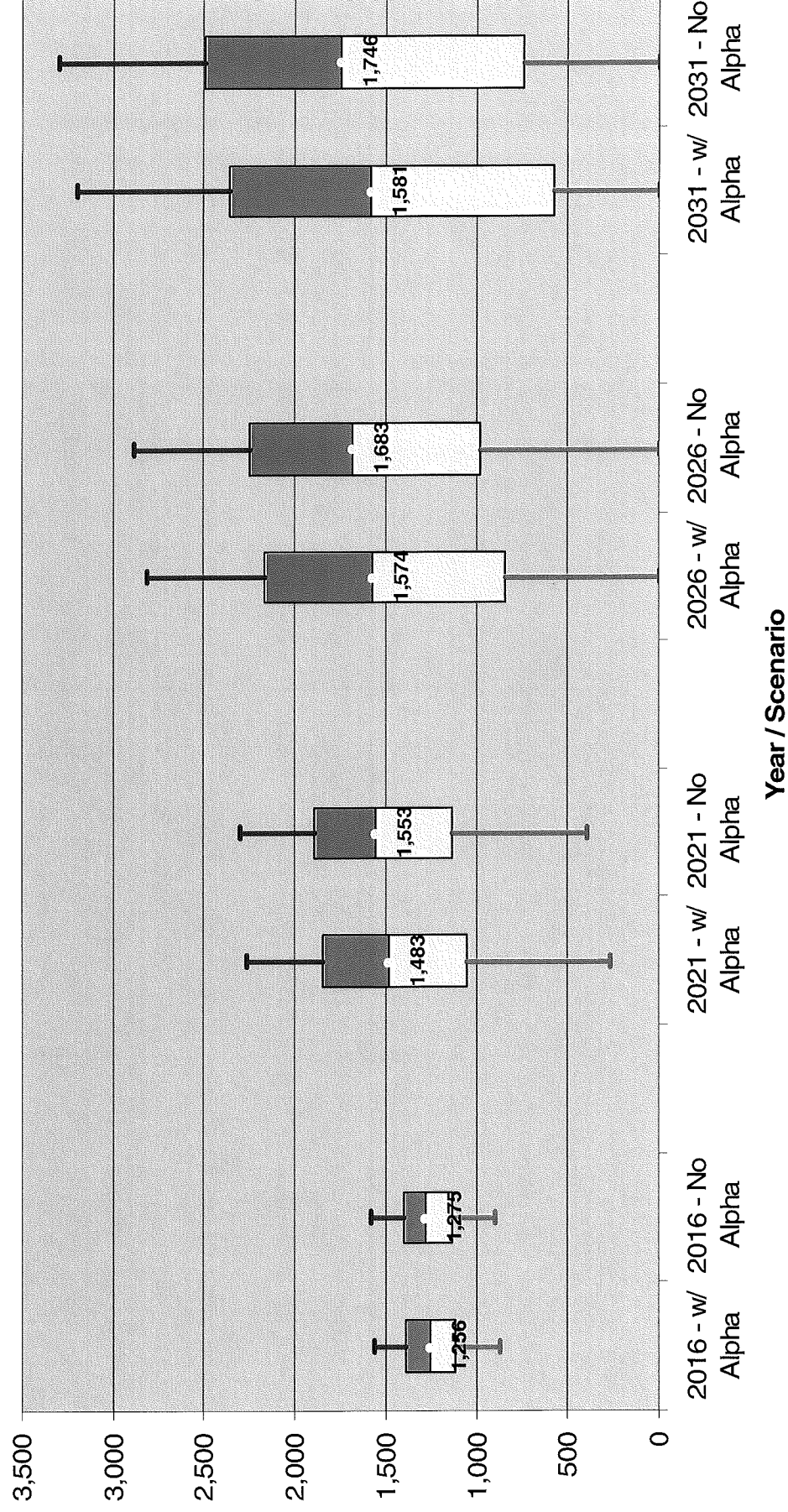


Exhibit 7h

BOE - Baseline Scenario 1 vs. No Alpha Funded Percentage (Actuarial Value Basis)

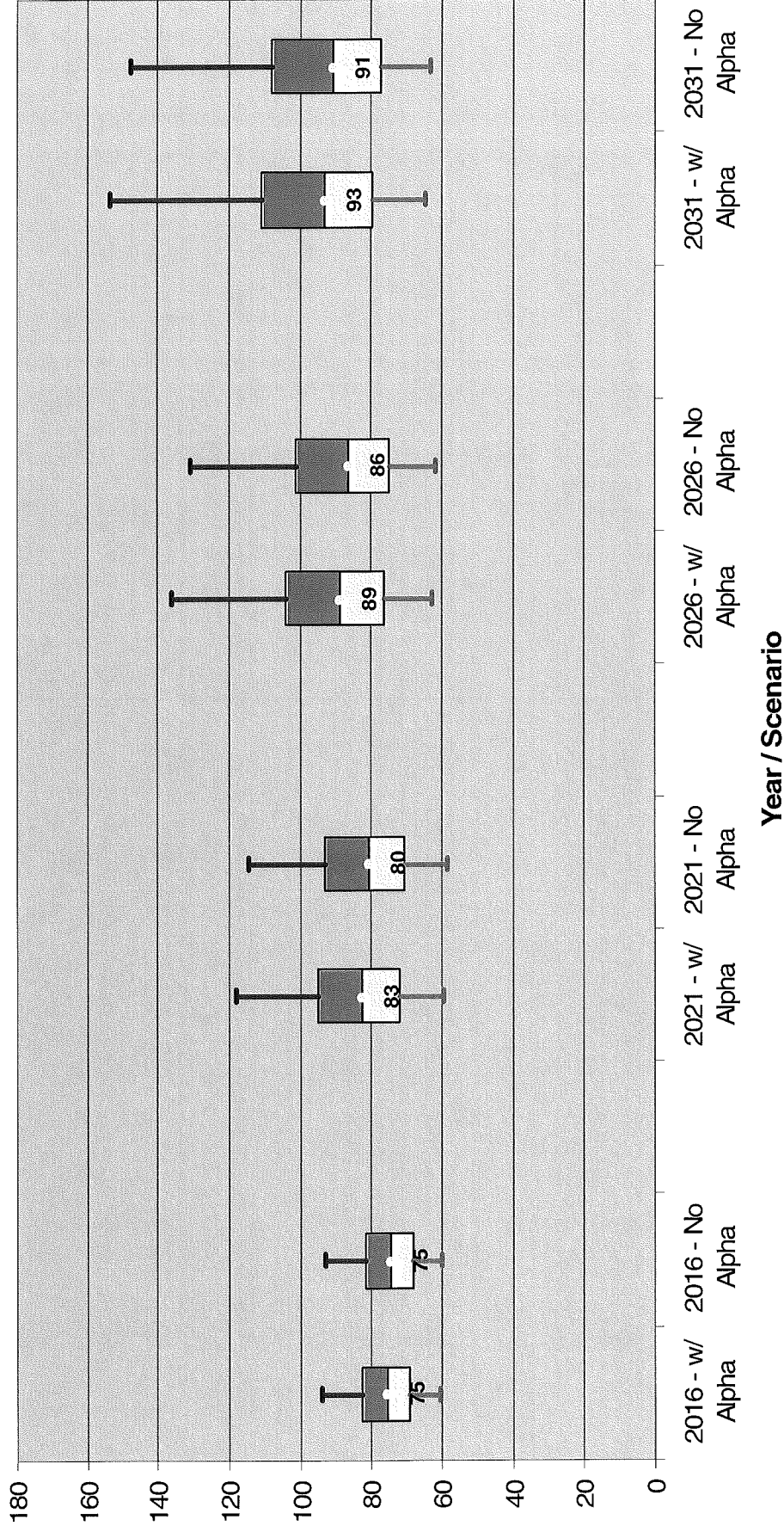


Exhibit 7i

BOE - Baseline Scenario 1 vs. 7.25% Return Assumption Employer Contribution (thousands)

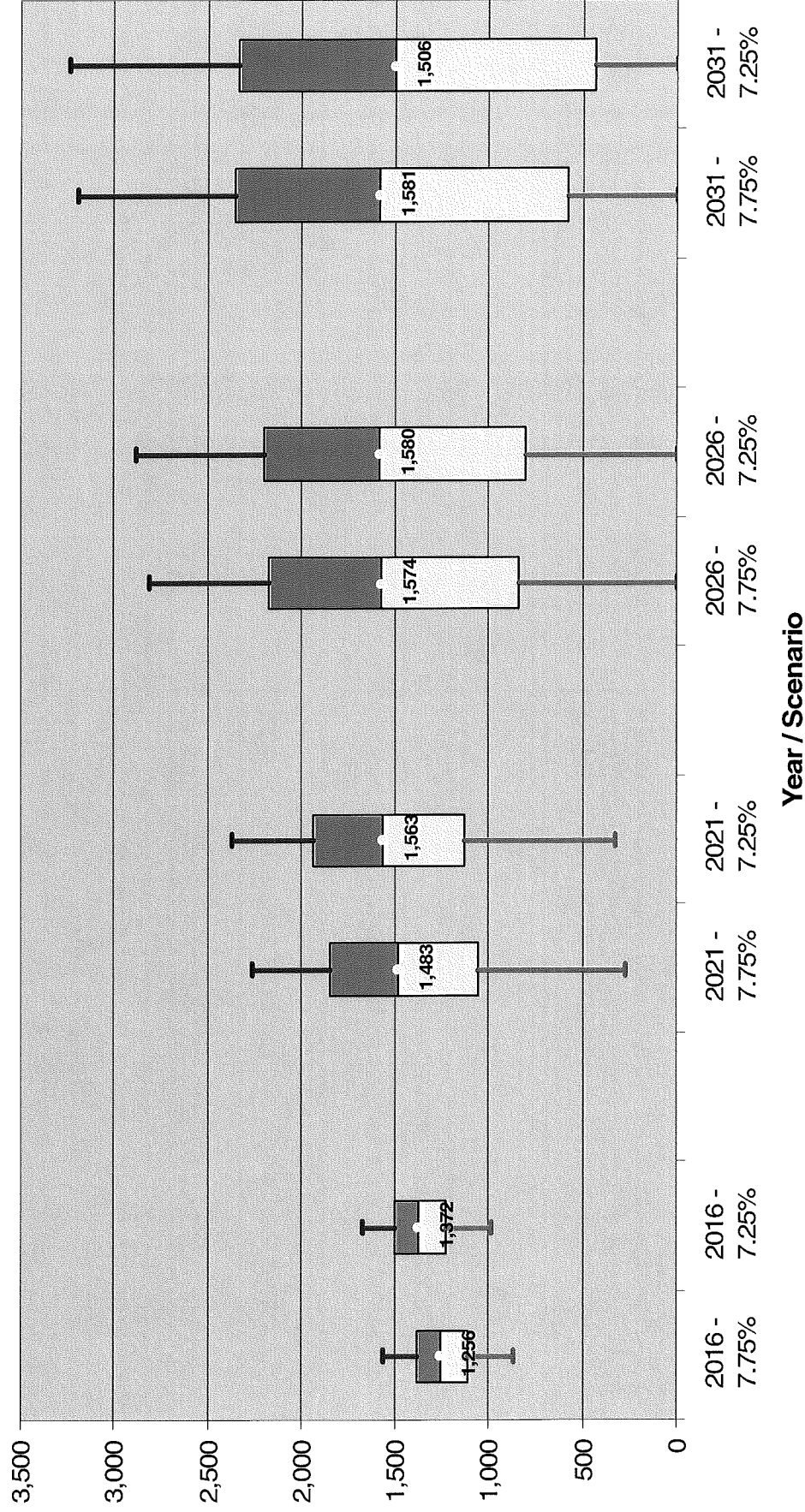


Exhibit 7j

BOE - Baseline Scenario 1 vs. 7.25% Return Assumption
Funded Percentage (Actuarial Value Basis)

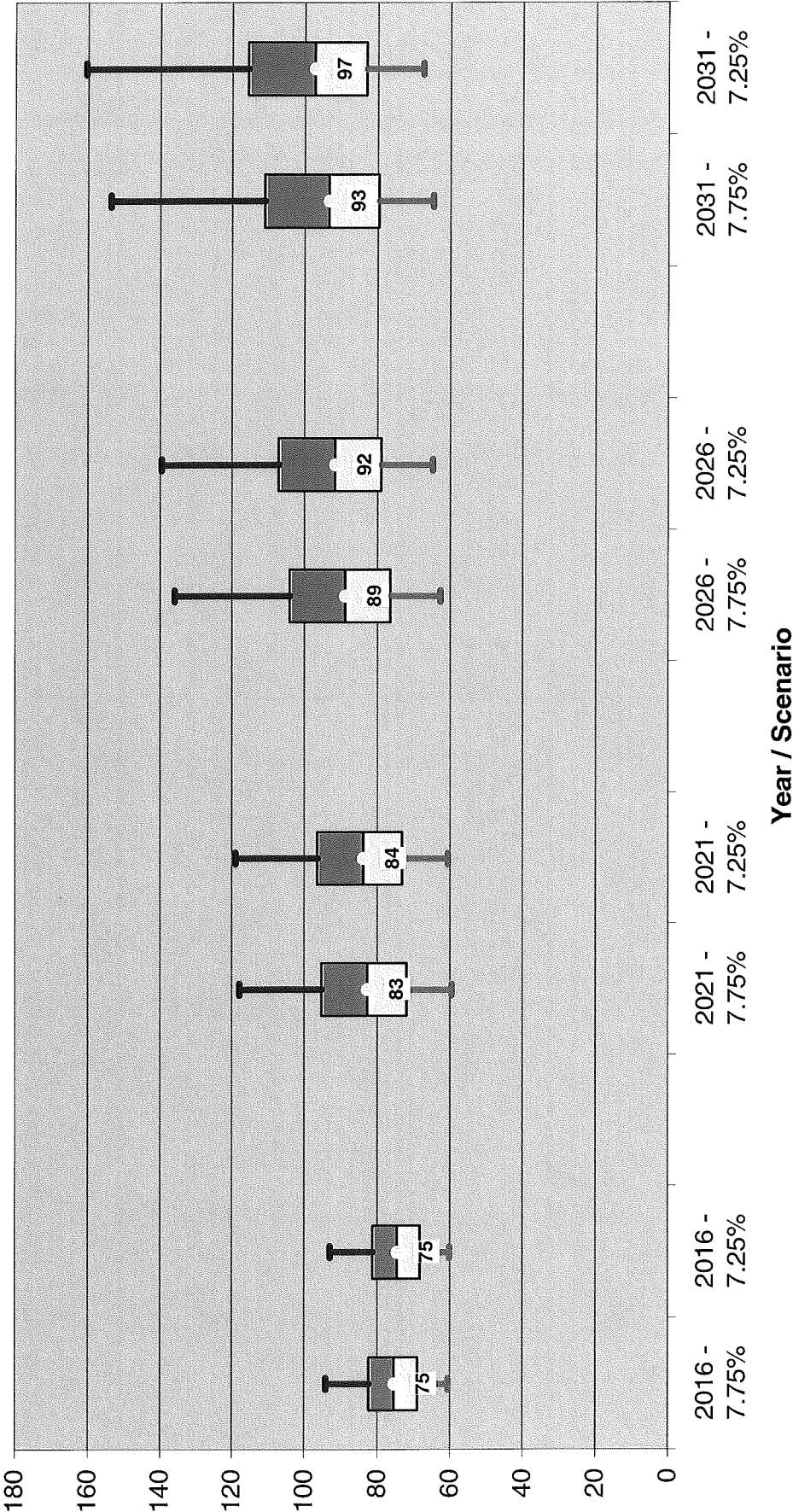


Exhibit 7k

BOE - Baseline Scenario 1 vs. 20 Year Level \$ Amortization Employer Contribution (thousands)

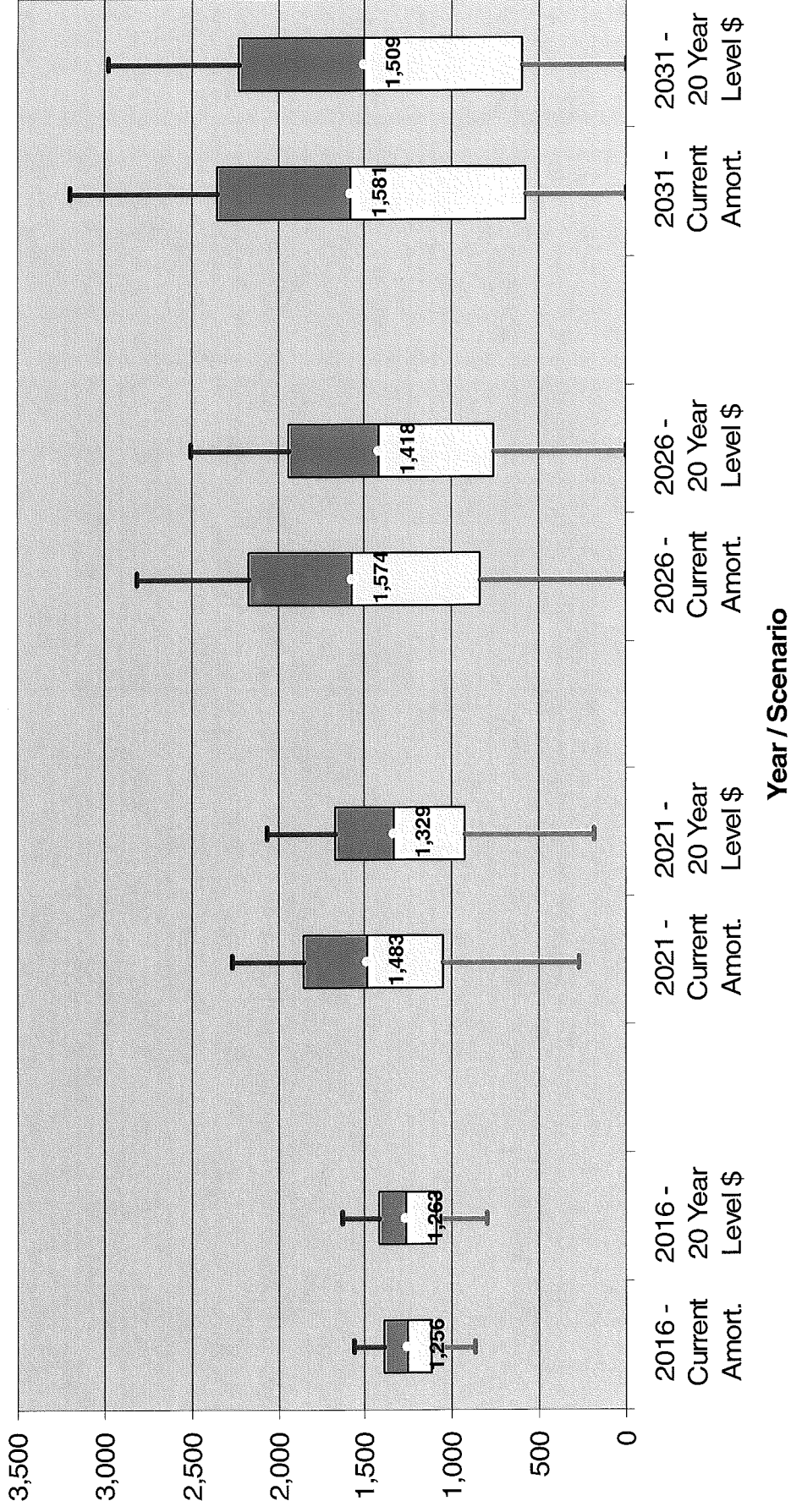
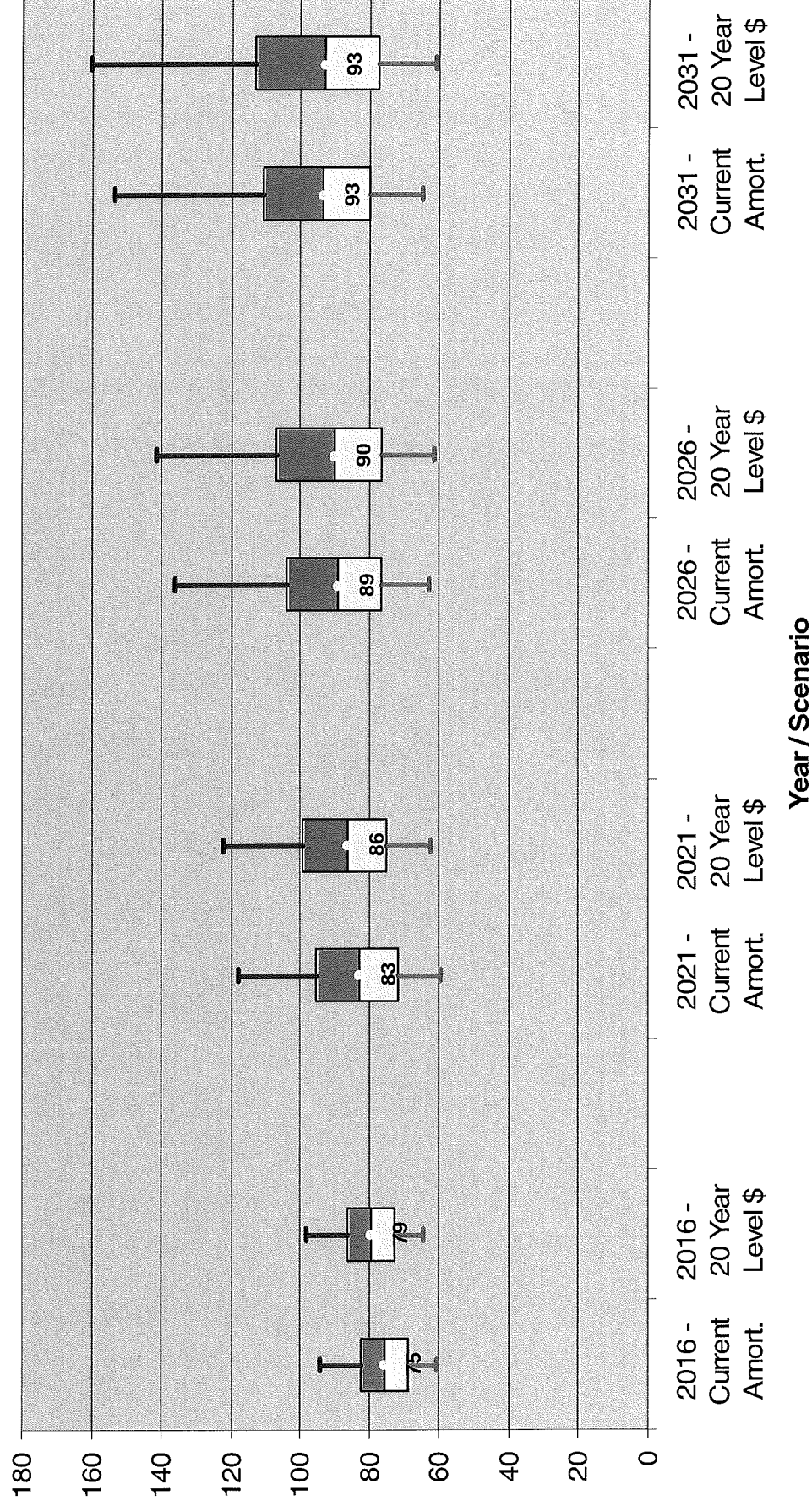


Exhibit 71

BOE - Baseline Scenario 1 vs. 20 Year Level \$ Amortization Funded Percentage (Actuarial Value Basis)



Key Actuarial Assumptions and Methods:

- Liability Discount Rate 7.75% and 7.25%
- Inflation: 3.0%
- Mortality RP2000 Combined Healthy Mortality Table, male and female Rates with generational projection scale (Scale AA to decrement age)
- Salary Scale
Police: 5.0%
General Government: 4.0%
Board of Education: 4.0%
- Payroll Growth 3% (for projections), 4% (for amortization)
- Actuarial Funding Method Entry Age Normal Method
- Actuarial Value of Assets Difference between expected and actual asset values are recognized over a 5 year period
- Town Contributions Town is assumed to contribute the actuarially recommended contribution in each year of the forecast
- Administrative Expenses Administrative expenses paid in the prior year increased by 3.0%
- All other assumptions & methods See July 1, 2010 actuarial valuation report

Key Asset Assumptions:

Assumed Investment Return for 2010-2011: 20.0%

Assumed Asset Allocation*:

Large Cap U.S. Equity	Small Cap U.S. Equity	International Developed Equity	International Emerging Market Equity	Fixed Income	U.S Treasury Inflation Protected Securities	Commodities	Real Estate
29%	6%	17%	6%	34%	2%	2%	5%

Asset Class Nominal Mean Returns & Standard Deviations*:

Asset Class	Expected Annual Mean Return	Expected Annual Standard Deviation
Large Cap US Equity	8.75%	16.24%
Small Cap US Equity	9.25%	21.39%
International Developed Equity	9.00%	18.26%
International Emerging Market Equity	11.00%	32.00%
Mixed Duration Fixed Income	4.75%	5.47%
US Treas Inflation Protected Securities	4.25%	4.70%
Commodities	7.00%	17.00%
Real Estate	7.00%	8.75%
US Inflation	2.50%	1.50%

Asset Correlations*:

Asset Class	U.S Inflation	Large Cap US Equity	Small Cap US Equity	International Developed Equity	International Emerging Market Equity	Mixed Duration Fixed Income	US Treas Inflation Protected Securities	Commodities	Real Estate	Short Term Investment Fund
U.S Inflation	1.000	0.143	0.139	0.111	0.120	0.270	0.150	0.275	0.141	0.319
Large Cap US Equity	0.143	1.000	0.940	0.920	0.840	0.130	0.250	0.540	0.350	-0.320
Small Cap US Equity	0.139	0.940	1.000	0.830	0.760	0.040	0.150	0.440	0.410	-0.380
International Developed Equity	0.111	0.920	0.830	1.000	0.910	0.220	0.300	0.620	0.350	-0.230
International Emerging Market Equity	0.120	0.840	0.760	0.910	1.000	0.180	0.330	0.660	0.300	-0.260
Mixed Duration Fixed Income	0.270	0.130	0.040	0.220	0.180	1.000	0.730	0.130	0.130	0.590
US Treas Inflation Protected Securities	0.150	0.250	0.150	0.300	0.330	0.730	1.000	0.420	0.280	0.390
Commodities	0.275	0.540	0.440	0.620	0.660	0.130	0.420	1.000	0.470	-0.130
Real Estate	0.141	0.350	0.410	0.350	0.300	0.130	0.280	0.470	1.000	-0.210

* Per Asset Allocation Study – October 2011 prepared by Fiduciary Investment Advisors, LLC.

New Entrant Assumptions:

General Government

Age at Hire	Percent Male	Starting Salary (2010 \$s, inflation adjusted)	% of new entrant population	Union	Dispatcher (Y/N)
27	80%	\$46,000	17%	Union	No
36	60%	\$48,000	34%	Union	No
44	50%	\$48,000	32%	Union	No
53	50%	\$60,000	13%	Union	No
61	50%	\$70,000	4%	Union	No

Police

Age at Hire	Percent Male	Starting Salary (2010 \$s, inflation adjusted)	% of new entrant population	Plan
24	85%	\$59,000	55%	Plan 000
35	85%	\$60,000	35%	Plan 000
48	85%	\$62,000	10%	Plan 000

Board of Education: School Nurses Association

Age at Hire	Percent Male	Starting Salary (2010 \$s, inflation adjusted)	% of new entrant population
44	0%	\$45,000	80%
51	0%	\$47,000	20%

Board of Education: Federation of Education Employees

Age at Hire	Percent Male	Starting Salary (2010 \$s, inflation adjusted)	% of new entrant population
26	10%	\$26,000	4%
36	10%	\$26,000	24%
44	0%	\$28,000	63%
53	0%	\$28,000	9%

Board of Education: National Association of Municipal Employees

Age at Hire	Percent Male	Starting Salary (2010 \$s, inflation adjusted)	% of new entrant population
22	100%	\$49,000	15%
31	100%	\$51,000	20%
43	100%	\$55,000	50%
50	100%	\$55,000	25%

Board of Education: Unaffiliated Employees

Age at Hire	Percent Male	Starting Salary (2010 \$s, inflation adjusted)	% of new entrant population
26	25%	\$46,000	19%
34	25%	\$47,000	22%
45	25%	\$48,000	37%
55	25%	\$48,000	22%