



# Analysis of Benefit Suspension Designs *continued*

Iron Workers Local 17 Pension Fund

October 1, 2015

*Presented by: Megan K. Kelly, CEBS, Vice President and Benefits Consultant  
Harold S. Cooper, FSA, MAAA, EA, Vice President and Actuary*

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## Developments Since Last Presentation

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- Significant volatility in financial markets during August and September
- Fund lost arbitration hearing regarding Stevens Painton withdrawal liability
- Fund Office provided additional service data for non-retired participants to be used for benefit suspension analysis
- Fund Office also provided census data for the May 1, 2015 actuarial valuation
  - We are still in the process of reconciling the 2015 valuation data. The projections presented in this report are still based on the 2014 valuation data with the additional service data used for this analysis.

## Updated Projection Scenarios

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- The updated projections reflect the following:
  - Based on the value of invested assets as of mid-September and the value of non-invested assets as of August 31, 2015, the estimated rate of return for period beginning May 1, 2015 and ending September 30, 2015 is -2.5%.
    - Assuming a 6.5% annual effective interest assumption for the remaining seven months, the estimated rate of return for the Plan year ending April 30, 2016 is 1.1% and is used for deterministic projections for that year and 6.5% thereafter.
    - Stochastic return for the year ending April 30, 2016 has also been adjusted to reflect the estimated return through September 30, 2015.
  - No future withdrawal liability payments from Stevens Painton.
  - Estimated refund of approximately \$500,000 to Stevens Painton during the Plan year ending April 30, 2016 for the quarterly payments paid plus interest.
  - Refined suspension calculations for non-retired participants based on the additional service data provided by the Fund Office.
  - Other actuarial assumptions are those used in previous projections and are described in the appendix.

## Updated Projection Scenarios *continued*

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- We have developed two suspension designs (M and N) that will allow the Plan to remain solvent over 50% of the time over a 50-year projection period. These are variations on the designs discussed at the August meeting.
- M. Reduce average accrual rate to \$75 (item 1), reduce benefits by 2% per year from age 62 for current pensioners who retired on Service Pension prior to age 62 (item 2B), adjust credited service to not more than one credited service per year (item 3), and reflect lump sum previously paid (item 5)
- N. Reduce average accrual rate to \$72 (item 1), no early retirement reduction for current pensioners who retired on Service Pension, adjust credited service to not more than one credited service per year (item 3), and reflect lump sum previously paid (item 5)

*Note: See the following slide for description of “items”*

# Potential Benefit Adjustments

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1. Adjust benefits downward so that all average accrual rates are not more than \$x
2. Adjust early retirement benefits so that all benefits are calculated using the current early retirement factors (with further reduction prior to age 58)
  - A. Adjust early retirement benefits so that all benefits are calculated based on an average of actual early retirement factor used and current early retirement factors *(not actively being considered)*
  - B. Adjust the unreduced portion of the early retirement benefits for current pensioners who retired prior to age 62 (Service Pension)
3. Adjust credited service to not more than one year earned per year
4. Adjust credited service so that those with < 1,900 hours, but at least 1,200 hours, get full service *(not actively being considered)*
5. For each possible adjustment (1-4) above, reflect the fact that 10% of the benefit was already paid as a lump sum to certain pensioners

# Benefits for Sample Participants

	Current Benefit	Scenario M (\$75 Average Accrual Rate, 2.0% ERF from 62 and CS 1/Year)		Scenario N (\$72 Average Accrual Rate, ERF Unchanged and CS 1/Year)	
	Amount	Amount	% of current	Amount	% of current
Retiree 1	\$4,050	\$2,223	55%	\$2,304	57%
Retiree 2	\$1,163	\$996	86%	\$956	82%
Retiree 3	\$938	\$745	79%	\$711	76%
Retiree 4	\$4,165	\$2,063	50%	\$2,168	52%
Retiree 5	\$3,050	\$2,288	75%	\$2,196	72%
Retiree 6	\$624	\$560	90%	\$560	90%
Retiree 7	\$3,665	\$2,359	64%	\$2,628	72%
Retiree 8	\$4,025	\$2,198	55%	\$2,430	60%
Retiree 9	\$546	\$546	100%	\$546	100%
Retiree 10	\$4,813	\$3,150	65%	\$3,024	63%
Retiree 11	\$993	\$698	70%	\$698	70%
Retiree 12	\$1,105	\$913	83%	\$871	79%
Retiree 13	\$929	\$672	72%	\$641	69%
Retiree 14	\$1,048	\$751	72%	\$721	69%
Retiree 15	\$2,126	\$1,380	65%	\$1,318	62%
Retiree 16	\$858	\$777	91%	\$777	91%
Retiree 17	\$3,456	\$2,131	62%	\$2,224	64%
Retiree 18	\$1,343	\$919	68%	\$876	65%
Retiree 19	\$3,430	\$2,206	64%	\$2,448	71%
Retiree 20	\$3,815	\$1,776	47%	\$1,972	52%
Retiree 21	\$751	\$726	97%	\$726	97%
Retiree 22	\$1,302	\$941	72%	\$904	69%
Retiree 23	\$843	\$718	85%	\$718	85%
Retiree 24	\$337	\$326	97%	\$326	97%
Retiree 25	\$878	\$731	83%	\$702	80%
Retiree 26	\$696	\$504	72%	\$484	70%
Retiree 27	\$4,242	\$2,605	61%	\$2,482	59%
Retiree 28	\$553	\$536	97%	\$536	97%
Retiree 29	\$3,494	\$2,539	73%	\$2,437	70%
IV	\$1,488	\$1,181	79%	\$1,134	76%
Active	\$1,175	\$1,175	100%	\$1,175	100%
Min. %			47%		52%
Max. %			100%		100%

Note: Under all scenarios, the benefit has been reduced by the partial lump sum if applicable. Benefits were calculated before any QDRO adjustment. Final benefits payable to the participant and alternate payee will be adjusted proportionally.

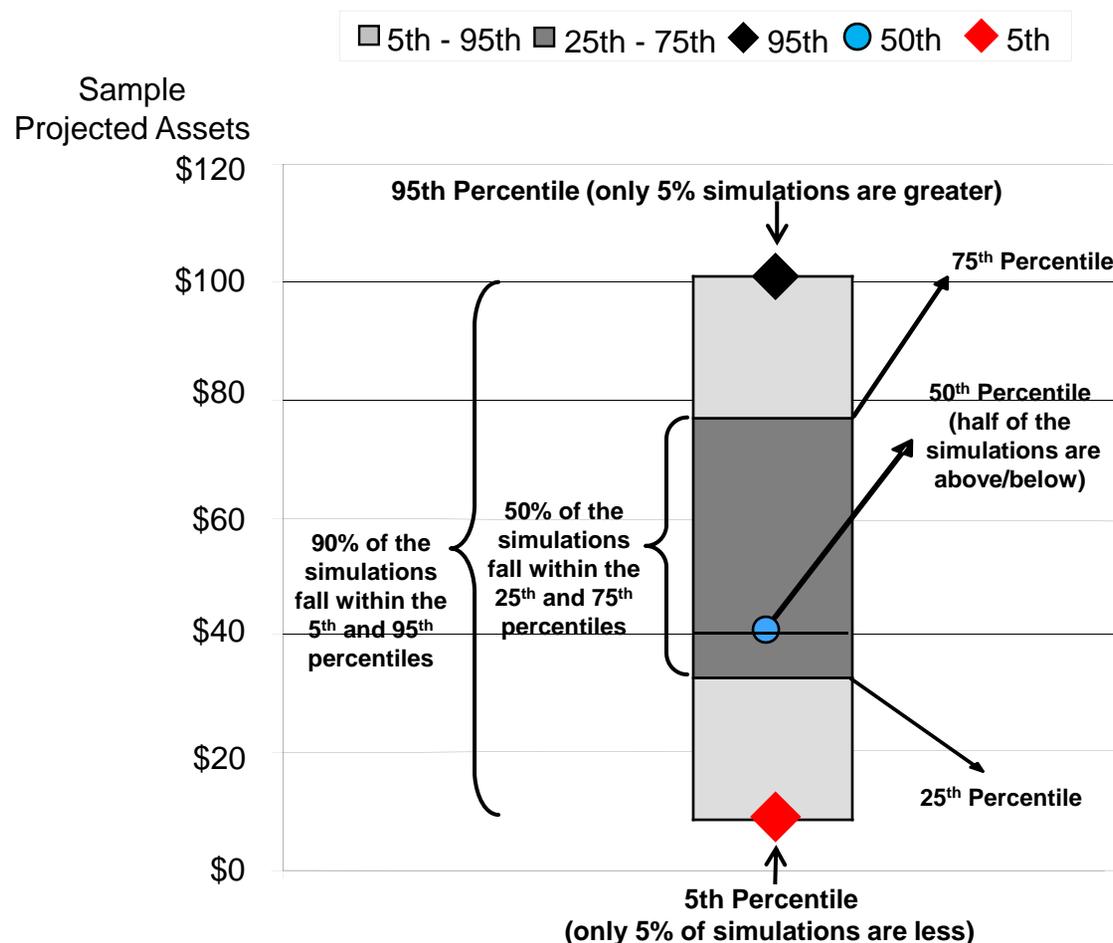
# Stochastic Analysis Overview

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- **Deterministic modeling** assumes a fixed asset return (6.5% used in this presentation) each year and does not reflect the impact of asset volatility
- **Stochastic modeling** looks at a range of possible asset return scenarios over time and is based on capital market assumptions of expected returns/standard deviations for various asset classes and correlations between asset classes
  - Creates thousands of scenarios (10,000 simulations in this analysis) for rates of return (based on current asset mix) over projection period
  - Shows how the plan would perform in each of these scenarios
  - Determines distribution of outcomes for Plan assets
  - Provides both the best estimate value (50<sup>th</sup> percentile or median) and a range of other possible values, including probabilities of outcomes

# Stochastic Analysis Overview

➤ The data is grouped into percentiles and summarized as a range



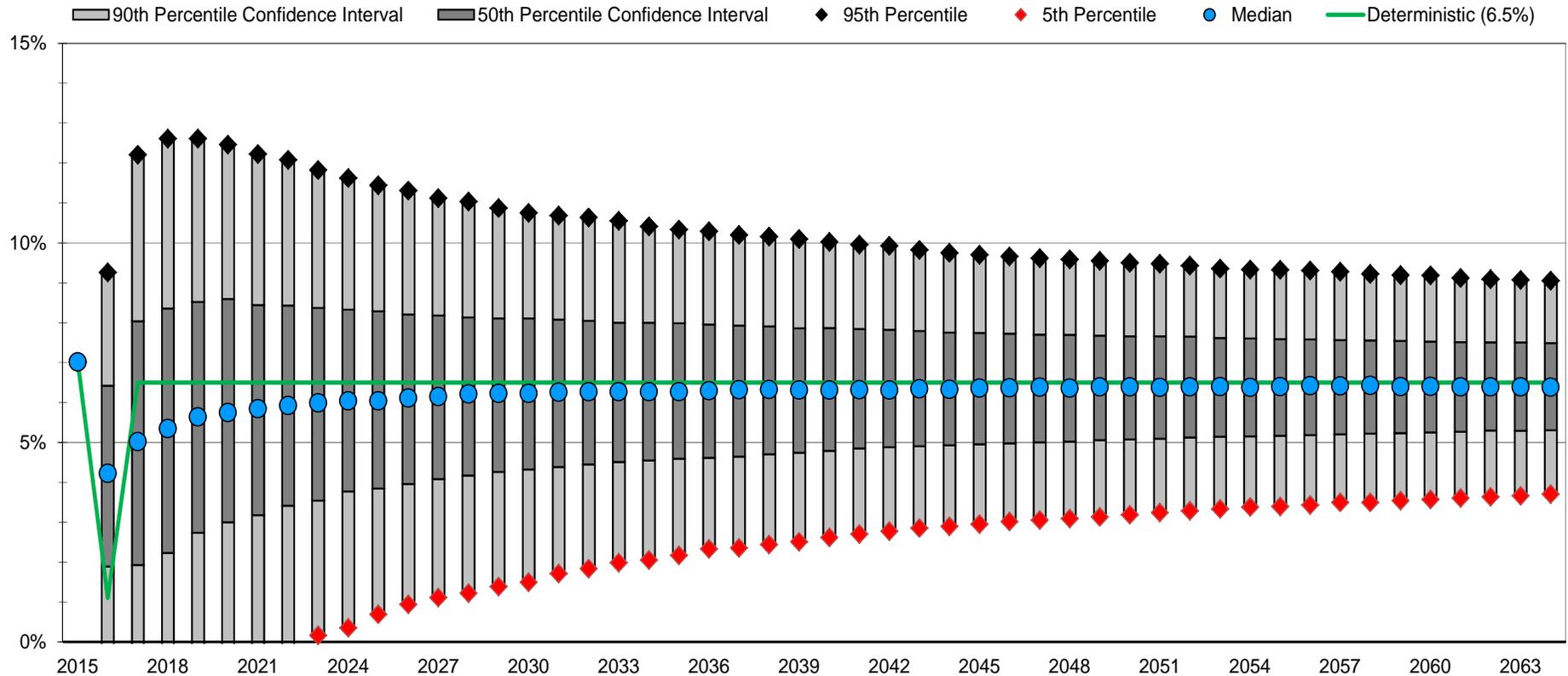
➤ Summarize results as a range:

- **Best Case**—Better cases would occur only 5% of the time (above 95<sup>th</sup> percentile in this example)
- **Worst Case**—Worse cases would occur only 5% of the time (below 5<sup>th</sup> percentile in this example)
- **Most Likely**—Cases better or worse (50<sup>th</sup> percentile) are equally likely

# Stochastic Projections

## Expected Investment Return Based on Current Allocations and Segal Rogercasey's Capital Market Assumptions

Projected Cumulative Investment Return for Plan Years Ending April 30

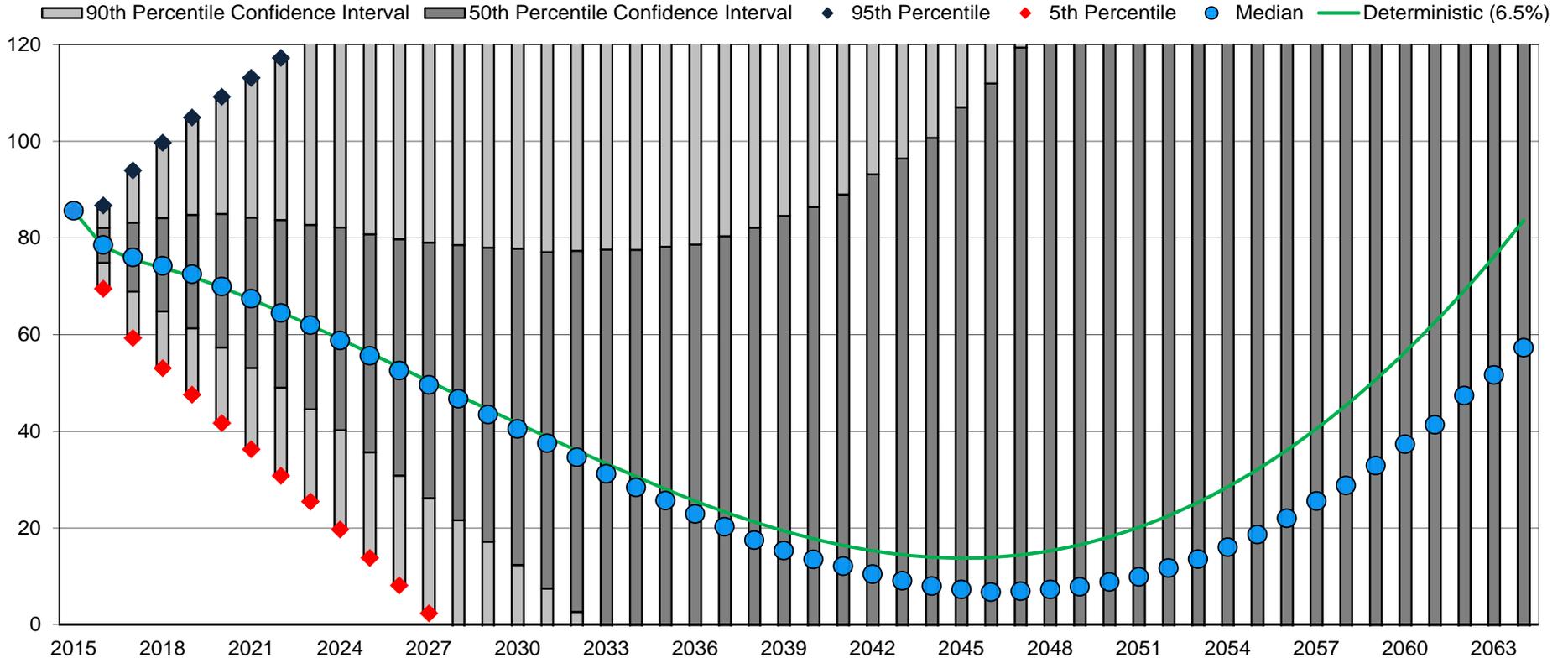


95 <sup>th</sup>	7.0%	12.6%	12.2%	11.6%	11.1%	10.7%	10.5%	10.3%	10.1%	9.9%	9.7%	9.6%	9.5%	9.3%	9.3%	9.2%	9.1%
75 <sup>th</sup>	7.0%	8.4%	8.4%	8.3%	8.2%	8.1%	8.0%	8.0%	7.9%	7.8%	7.7%	7.7%	7.7%	7.6%	7.6%	7.5%	7.5%
50 <sup>th</sup>	7.0%	5.3%	5.8%	6.0%	6.1%	6.2%	6.3%	6.3%	6.3%	6.3%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%
25 <sup>th</sup>	7.0%	2.2%	3.2%	3.8%	4.1%	4.3%	4.5%	4.6%	4.7%	4.9%	5.0%	5.0%	5.1%	5.2%	5.2%	5.3%	5.3%
5 <sup>th</sup>	7.0%	-2.1%	-0.6%	0.3%	1.1%	1.5%	2.0%	2.3%	2.5%	2.8%	2.9%	3.1%	3.2%	3.4%	3.5%	3.6%	3.7%
Det.	7.0%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%

# Stochastic Projections

Scenario M (\$75 Average Accrual Rate; 2% ERF from 62, Reduce Credited Service)

Projected Value of Assets (\$ millions) as of April 30



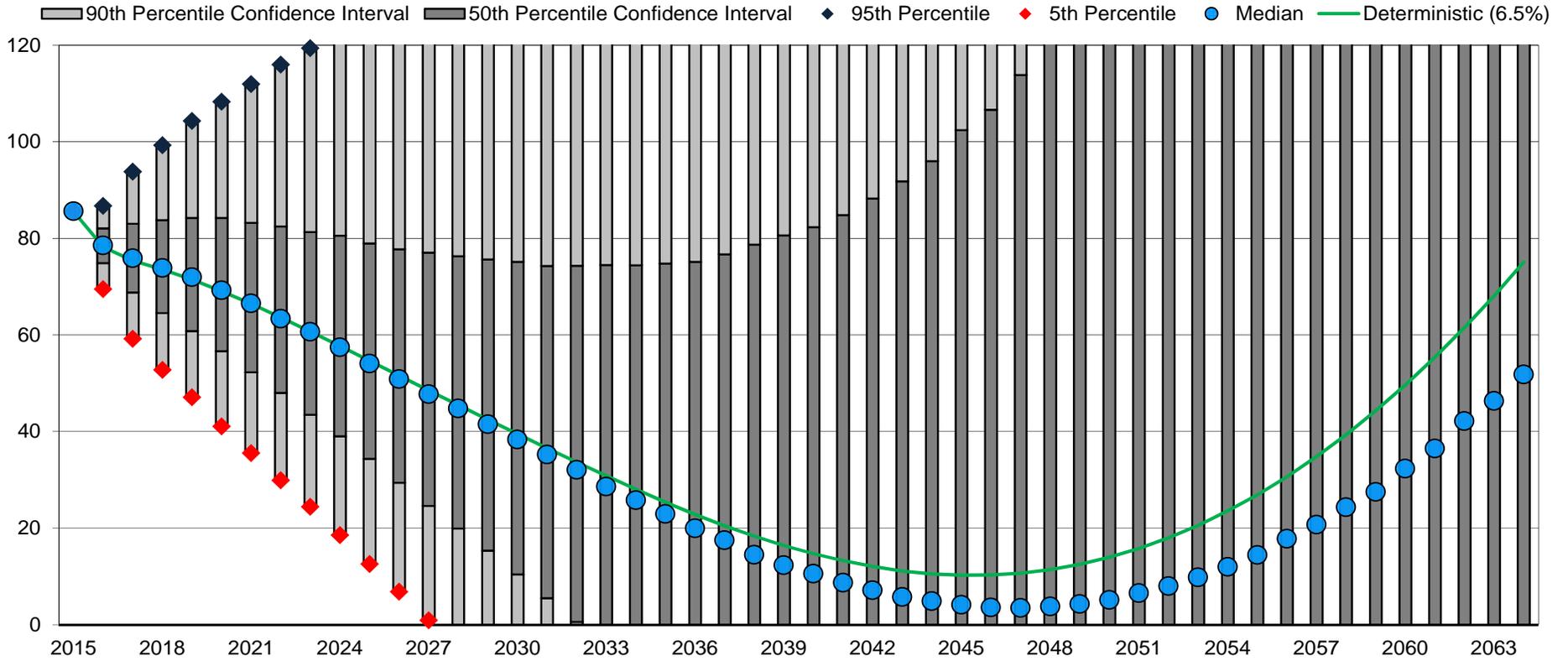
95 <sup>th</sup>	86	100	113	125	138	153	176	208	246	300	355	439	542	682	845	1,053	1,313
75 <sup>th</sup>	86	84	84	82	79	78	78	79	85	93	107	126	154	189	233	290	357
50 <sup>th</sup>	86	74	67	59	50	40	31	23	15	10	7	7	10	16	26	37	52
25 <sup>th</sup>	86	65	53	40	26	12	--	--	--	--	--	--	--	--	--	--	--
5 <sup>th</sup>	86	53	36	20	2	--	--	--	--	--	--	--	--	--	--	--	--
Det.	86	74	67	59	50	42	33	26	19	15	14	15	20	28	41	56	76

The Stochastic projections show that there is a 47.8% probability that the Plan will become insolvent over the next 50 years under this scenario.

# Stochastic Projections

Scenario N (\$72 Average Accrual Rate; ERF Unchanged, Reduce Credited Service)

Projected Value of Assets (\$ millions) as of April 30



95 <sup>th</sup>	86	99	112	123	135	150	172	203	240	292	346	430	531	666	821	1,028	1,283
75 <sup>th</sup>	86	84	83	81	77	75	74	75	81	88	102	121	148	182	225	280	344
50 <sup>th</sup>	86	74	67	57	48	38	29	20	12	7	4	4	6	12	21	32	46
25 <sup>th</sup>	86	64	52	39	25	10	--	--	--	--	--	--	--	--	--	--	--
5 <sup>th</sup>	86	53	35	18	1	--	--	--	--	--	--	--	--	--	--	--	--
Det.	86	74	66	58	48	39	31	23	16	12	10	11	16	24	35	50	68

The Stochastic projections show that there is a 48.8% probability that the Plan will become insolvent over the next 50 years under this scenario.

# Appendix

## Assumptions Used in Projections

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- The projections shown are based on the May 1, 2014 actuarial valuation and the following additional assumptions:
  - Value of Plan assets as of April 30, 2015 was \$85.6 million (excluding withdrawal liability receivable) as reported in the unaudited financial statement provided by the Fund Administrator for purposes of the 2015 Zone Certification.
    - Contribution income, benefit payments, and administrative expenses for the Plan year ended April 30, 2015 used for the projections also match the amounts reported in that statement.
  - Value of Plan assets as of September 30, 2015 was estimated to be \$80.3 million based on the value of invested assets as of mid-September as provided by the Investment Consultant and the value of non-invested assets as of August 31, 2015 as provided by the Fund Administrator.
  - Deterministic projections are based on 1.1% market return for Plan year ending April 30, 2016 and 6.5% thereafter.
  - Stochastic projections of market returns are based on the Plan's investment allocations as provided by the Plan's Investment Manager (45% U.S. Equities, 15% International Equities, 27% Fixed Income, and 13% Equity Oriented Real State) and Segal Rogercasey's capital market assumptions over a 15-year time horizon (described in slide 14).
  - Stochastically modeled market return for the Plan year ending April 30, 2016 was adjusted to reflect the estimated market return through September 30, 2015 of -2.5%.
  - No future withdrawal liability payments and a refund of approximately \$500,000 will be made to Stevens Painton during the Plan year ending April 30, 2016.
  - Number of active participants in future years is based on 1.20 million hours (706 actives) for the Plan year beginning May 1, 2015, 1.06 million hours (624 actives) for the Plan year beginning May 1, 2017, and then 607 actives each year thereafter. Each active is assumed to work an average of 1,700 hours each year.

# Appendix

## Assumptions Used in Projections *continued*

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- Benefits will be suspended based on the designs described in presentation or 110% of the PBGC guaranteed amount, whichever is greater, taking into consideration the following:
  - Any suspension in benefits occurs on November 1, 2016
  - No suspension for pensioners over age 80 as of the effective date and disabled retirees
  - Pro-rated suspension for pensioners between ages 75 and 80 as of the effective date
  - No suspension for current beneficiaries since service is unknown
  - Participants with unknown service were reduced without consideration of their PBGC guaranteed amount as it cannot be determined
- Future benefit accrual rate remains at \$50 per benefit credit.
- Contribution rate remains at \$10.00 per hour.
- Mortality assumptions change to RP-2014 Blue Collar Mortality Tables with generational projection using Scale MP-2014 for non-disabled participants, RP-2014 Disabled Retire Mortality Tables with generational projection using Scale MP-2014 for participants disabled on and after May 1, 1997, and a 50/50 blend of the two preceding mortality assumptions for participants disabled prior to May 1, 1997.
- Effective May 1, 2016, the following assumptions will change:
  - Inactive vested participants will retire at age 60 if eligible.
  - 40% of future retirees will elect the 50% joint and survivor form of payment and 60% will elect the single life annuity; this is based on the Plan's experience during 2004–2014.
- Administrative expenses are assumed to be \$575,000 for the Plan year beginning May 1, 2015, \$425,000 for the Plan year beginning May 1, 2016, and increased by 3% per year thereafter.

**Caveat regarding projections:** *Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.*

**Caveat regarding legal interpretations:** *Segal does not practice law and, therefore, cannot and does not provide legal advice. Any statutory interpretations of PPA 2006, PRA 2010, and MPRA 2014, including related IRS regulations and guidance presented or reflected in the presentations are subject to the review and opinion of Fund Counsel. Design of benefit suspension is solely the responsibility of the Trustees. Any sample designs contained in this presentation are intended to assist the Trustees and do not imply any recommendation by Segal.*

# Appendix

## Segal Rogercasey's Capital Market Assumptions – Expected Return, Volatility, and Correlation Between Investment Categories

Investment Category	Allocation	Expected Return (15-Year Time Horizon)	Volatility (Standard Deviation)
U.S. Equities	45%	8.7%	18.5%
International Equities (Developed)	15%	9.4%	21.0%
Fixed Income	27%	3.6%	5.0%
Equity Oriented Real Estate	13%	6.5%	12.0%

### Correlation Between Investment Categories

Investment Category	U.S. Equities	International Equities (Developed)	Fixed Income	Equity Oriented Real Estate
U.S. Equities	1.00			
International Equities (Developed)	0.88	1.00		
Fixed Income	0.06	0.14	1.00	
Equity Oriented Real Estate	0.26	0.19	-0.25	1.00

**MEMORANDUM**

**VIA E-MAIL**

**To:** Board of Trustees  
*Iron Workers Local 17 Pension Fund*

**From:** Harold S. Cooper, FSA, MAAA, EA  
 Vice President and Actuary

**Date:** October 14, 2015

**Re:** Updated Suspension Projections Based on September 30<sup>th</sup> Asset Values

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Based on the asset values and income statement as of 9/30/15 provided by the Fund Office and Investment Manager, the estimated rate of return through 9/30/15 is -5.2%. Assuming a 6.5% return for the remaining seven months, the estimated rate of return for the PYE 4/30/2016 is -1.7%. This is 2.8% lower than shown in the October 1<sup>st</sup> presentation. As of the time that this memo, the S&P 500 Index is up over 4% from September 30<sup>th</sup> and up over 1% from September 15<sup>th</sup>, the date used in the prior projections.

Total hours of contributions during the first five months of the year are estimated to be 572,000 hours, which exceeds the assumed 500,000 hours (1.2 million hours for the full year) by 14.4%.

The updated stochastic projections indicate that either (a) \$70 average accrual rate with no ERF or (b) \$73 average accrual rate with a 2% ERF would satisfy the solvency requirement. These amounts are both \$2 lower than in the October 1<sup>st</sup> presentation.

Below is a chart with some additional statistics:

	<u>\$70 Avg. Accrual Rate, No ERF</u>	<u>\$73 Avg. Accrual Rate, 2% ERF</u>
Probability of insolvency	47.89%	47.20%
Minimum value of 50 <sup>th</sup> percentile of projected assets (stochastic)	\$5.8M	\$8.3M
Minimum value of projected assets (deterministic, assuming -1.7% return for PYE 4/30/16 and 6.5% thereafter)	\$12.3M	\$14.8M

October 14, 2015  
Page 2

The assumptions used in these projections are the same as those used in our October 1 presentation, except for the updated asset return described above and a December 1, 2016 effective date for the suspension.

cc: Ed Fox  
Teresa Pofok  
Megan K. Kelly  
Henry Wong

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# Analysis of Benefit Suspension Designs *continued*

Iron Workers Local 17 Pension Fund

October 20, 2015

*Presented by: Megan K. Kelly, CEBS, Vice President and Benefits Consultant  
Harold S. Cooper, FSA, MAAA, EA, Vice President and Actuary*

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# Updates Since October 1 Presentation and October 14 Memorandum

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- Received updated asset values for two funds on 10/16/2015 from Investment Consultant.
  - The estimated rate of return through 9/30/2015 is -4.9% (compared to -5.2% used in 10/14 memo).
  - The estimated rate of return for the Plan year ending 4/30/2016 is -1.3% (compared to -1.7% used in 10/14 memo). This estimate assumes 6.5% return for the remaining seven months of the year.
  
- Trustees agreed on final suspension design, described below:
  - Reduce average accrual rate to \$72 (item 1), reduce benefits by 1.5% per year from age 62 for current pensioners who retired on Service Pension prior to age 62 (item 2B), adjust credited service to not more than one credit per year (item 3), and reflect lump sum previously paid (item 5).
  - Suspension will be based on participants' credited service as of 4/30/2016.
  - Participants who have commenced benefits prior to December 1, 2016 may work and get paid for not more than 39.5 hours per month without having their benefit be fully suspended.
  
- Will apply for suspension by 12/11/2015

*Note: See the following slide for description of "items"*

## Potential Benefit Adjustments

---

1. Adjust benefits downward so that all average accrual rates are not more than \$x
2. Adjust early retirement benefits so that all benefits are calculated using the current early retirement factors (with further reduction prior to age 58)
  - A. Adjust early retirement benefits so that all benefits are calculated based on an average of actual early retirement factor used and current early retirement factors *(not actively being considered)*
  - B. Adjust the unreduced portion of the early retirement benefits for current pensioners who retired prior to age 62 (Service Pension)
3. Adjust credited service to not more than one year earned annually
4. Adjust credited service so that those with < 1,900 hours, but at least 1,200 hours, get full service *(not actively being considered)*
5. For each possible adjustment (1-4) above, reflect the fact that 10% of the benefit was already paid as a lump sum to certain pensioners

# Benefits for Sample Participants

\$72 Average Accrual Rate, 1.5% Early Retirement from 62 for Service Pension and Credited Service Limited to One per Year								
	Current Amount	Age at Retirement	Year of Retirement	Total Service	Reduced Service	ERF (1.5% from 62)	Reduced Amount	Reduced Amount as % of Current Amount
Retiree 1	\$4,050	59	2001	45.00	38.25	94.9%	\$2,163	53%
Retiree 2	\$1,163	55	2004	21.25	20.75	64.0%	\$956	82%
Retiree 3	\$938	59	2007	15.00	15.00	86.0%	\$711	76%
Retiree 4	\$4,165	58	2005	46.50	36.50	94.1%	\$2,014	48%
Retiree 5	\$3,050	65	2014	35.50	30.50	100.0%	\$2,196	72%
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Retiree 9	\$546	61	2009	17.75	17.75	95.5%	\$546	100%
Retiree 10	\$4,813	63	2011	52.00	42.00	100.0%	\$3,024	63%
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							Min. %	46%
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Note: Under all scenarios, the benefit has been reduced by the partial lump sum if applicable. Benefits were calculated before any QDRO adjustment. Final benefits payable to the participant and alternate payee will be adjusted proportionally.

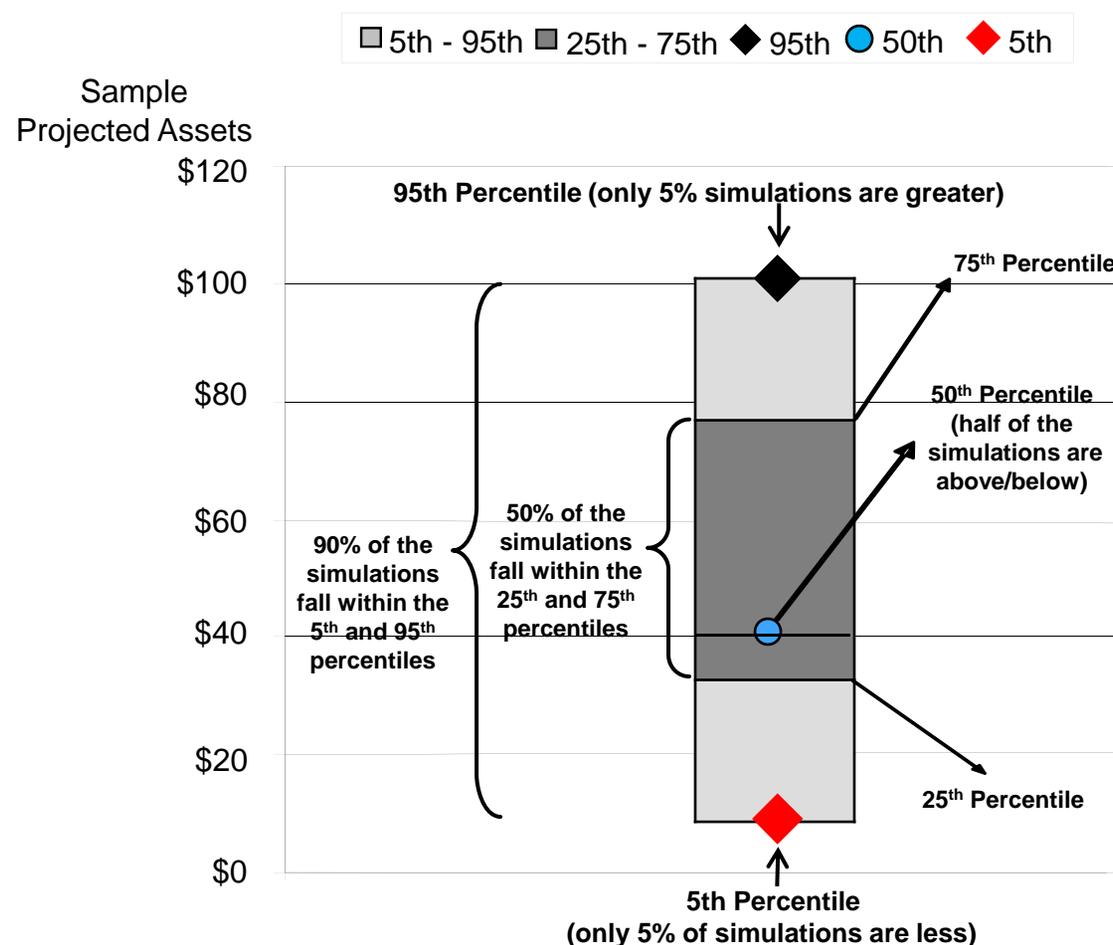
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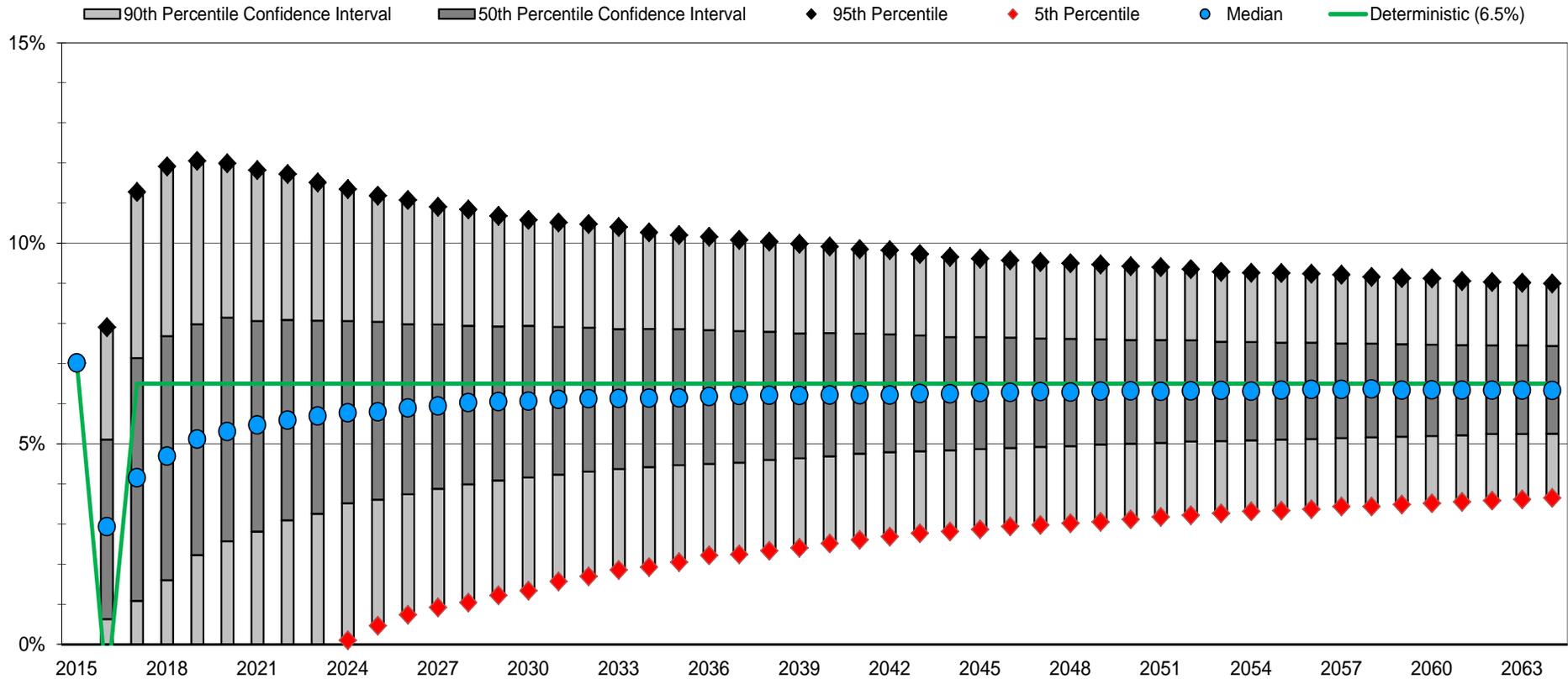
- Summarize results as a range:

- **Best Case**—Better cases would occur only 5% of the time (above 95<sup>th</sup> percentile in this example)
- **Worst Case**—Worse cases would occur only 5% of the time (below 5<sup>th</sup> percentile in this example)
- **Most Likely**—Cases better or worse (50<sup>th</sup> percentile) are equally likely

# Stochastic Projections

## Expected Investment Return Based on Current Allocations and Segal Rogercasey's Capital Market Assumptions

Projected Cumulative Investment Return for Plan Years Ending April 30

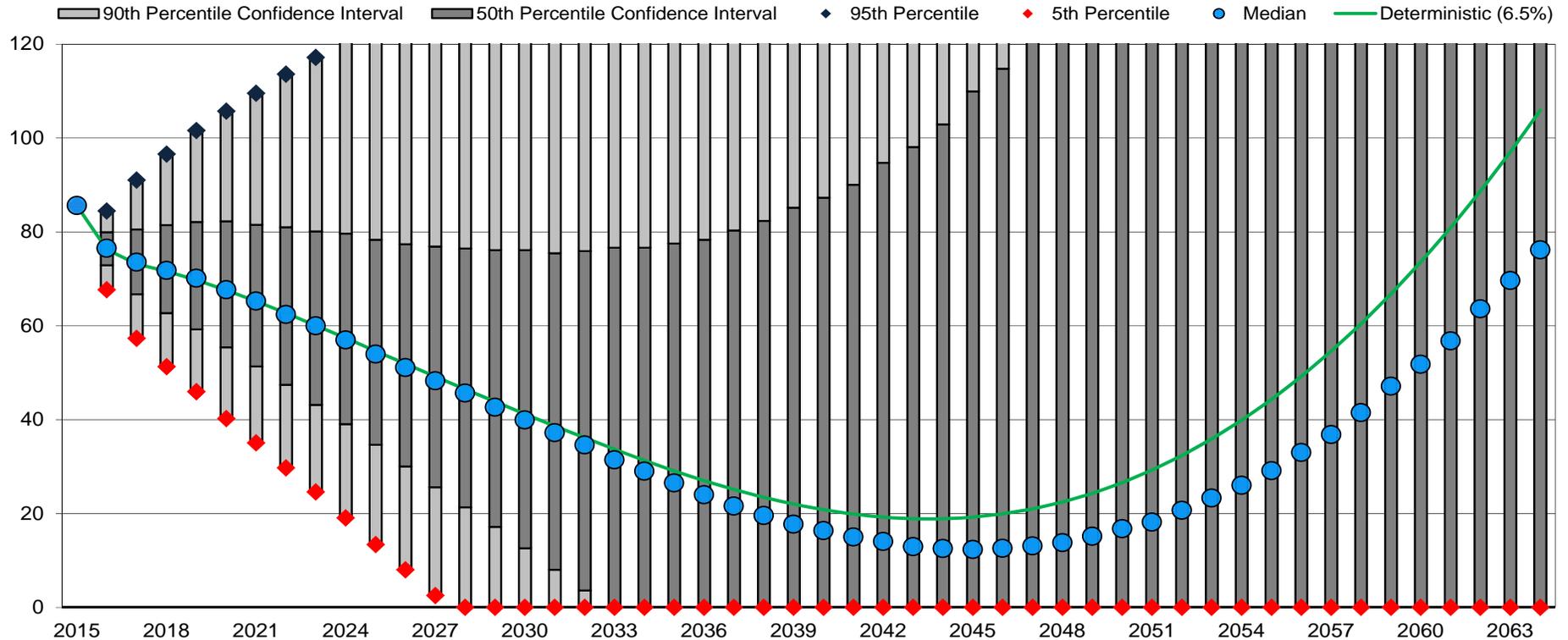


95 <sup>th</sup>	7.0%	11.9%	11.8%	11.3%	10.9%	10.6%	10.4%	10.2%	10.0%	9.8%	9.6%	9.5%	9.4%	9.3%	9.2%	9.1%	9.0%
75 <sup>th</sup>	7.0%	7.7%	8.1%	8.1%	8.0%	7.9%	7.9%	7.8%	7.7%	7.7%	7.7%	7.6%	7.6%	7.5%	7.5%	7.5%	7.4%
50 <sup>th</sup>	7.0%	4.7%	5.5%	5.8%	5.9%	6.1%	6.1%	6.2%	6.2%	6.2%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%
25 <sup>th</sup>	7.0%	1.6%	2.8%	3.5%	3.9%	4.2%	4.4%	4.5%	4.6%	4.8%	4.9%	4.9%	5.0%	5.1%	5.1%	5.2%	5.2%
5 <sup>th</sup>	7.0%	-2.7%	-0.9%	0.1%	0.9%	1.3%	1.8%	2.2%	2.4%	2.7%	2.9%	3.0%	3.2%	3.3%	3.4%	3.5%	3.6%
Det.	7.0%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%

# Stochastic Projections

**\$72 Average Accrual Rate; 1.5% ERF from 62, Reduce Credited Service**

**Projected Value of Assets (\$ millions) as of April 30**



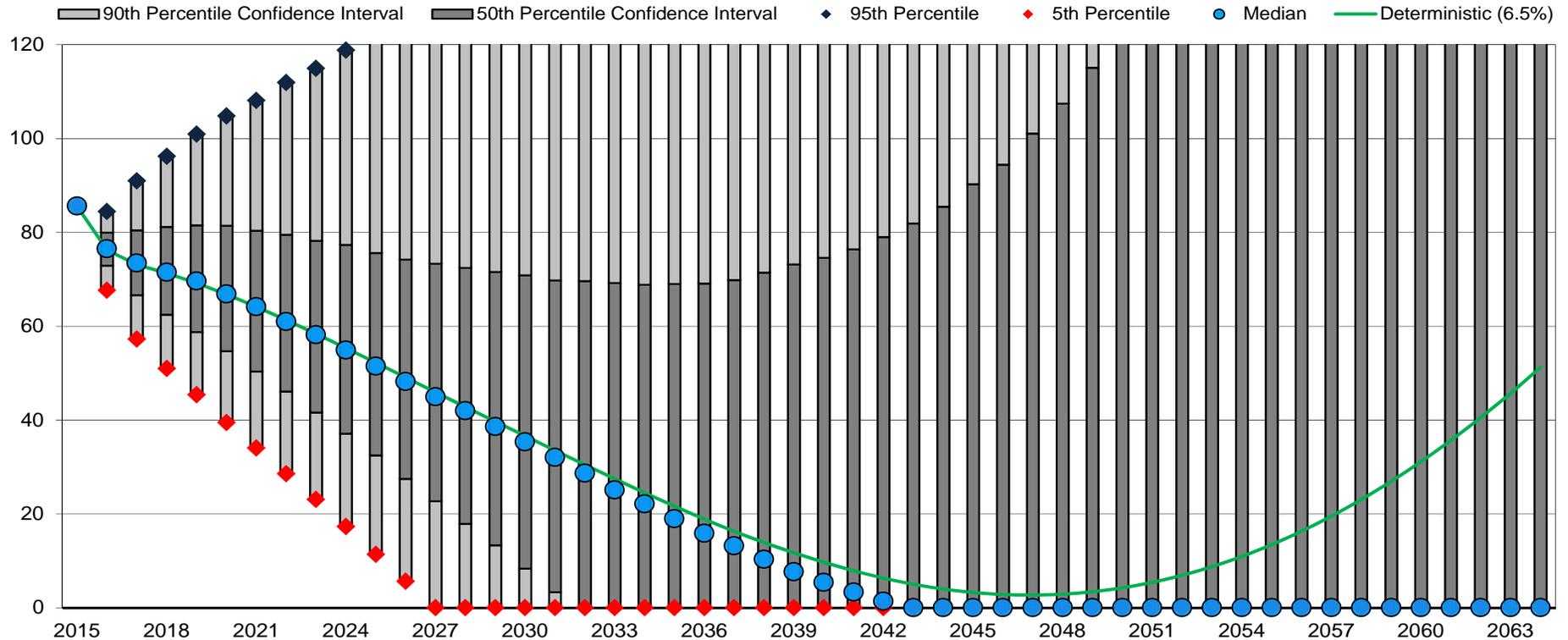
95 <sup>th</sup>	86	97	110	121	134	150	172	204	242	296	351	436	537	676	846	1,053	1,306
75 <sup>th</sup>	86	81	82	80	77	76	77	78	85	95	110	129	159	195	242	301	370
50 <sup>th</sup>	86	72	65	57	48	40	31	24	18	14	12	14	18	26	37	52	70
25 <sup>th</sup>	86	63	51	39	26	13	--	--	--	--	--	--	--	---	--	--	--
5 <sup>th</sup>	86	51	35	19	3	--	--	--	--	--	--	--	--	--	--	--	--
Det.	86	72	65	57	49	41	34	27	22	19	19	22	29	40	55	74	97

The stochastic projections show that there is a 45.9% probability that the Plan will become insolvent over the next 50 years under this scenario.

# Stochastic Projections

\$72 Average Accrual Rate; 1.5% ERF from 62, Reduce Credited Service - 5% Test

Projected Value of Assets (\$ millions) as of April 30



95 <sup>th</sup>	86	96	108	119	129	143	163	191	227	274	324	401	498	619	768	961	1,205
75 <sup>th</sup>	86	81	80	77	73	71	69	69	73	79	90	107	131	163	201	248	307
50 <sup>th</sup>	86	71	64	55	45	35	25	16	8	1	--	--	--	--	--	--	--
25 <sup>th</sup>	86	62	50	37	23	8	--	--	--	--	--	--	--	--	--	--	--
5 <sup>th</sup>	86	51	34	17	--	--	--	--	--	--	--	--	--	--	--	--	--
Det.	86	71	64	55	46	37	27	19	12	6	3	3	5	11	20	31	46

This scenario passes the 5% test on a stochastic basis as the 50<sup>th</sup> percentile shows insolvency.

# Appendix

## Assumptions Used in Projections

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- The projections shown are based on the May 1, 2014 actuarial valuation and the following additional assumptions:
  - Value of Plan assets as of April 30, 2015 was \$85.6 million (excluding withdrawal liability receivable) as reported in the unaudited financial statement provided by the Fund Administrator for purposes of the 2015 Zone Certification.
    - Contribution income, benefit payments, and administrative expenses for the Plan year ended April 30, 2015 used for the projections also match the amounts reported in that statement.
  - Value of Plan assets as of September 30, 2015 was estimated to be \$79.0 million based on information provided by the Investment Manager and Fund Administrator.
  - Deterministic projections are based on -1.3% market return for Plan year ending April 30, 2016 and 6.5% thereafter.
  - Stochastic projections of market returns are based on the Plan's investment allocations as provided by the Plan's Investment Manager (45% U.S. Equities, 15% International Equities, 27% Fixed Income, and 13% Equity Oriented Real State) and Segal Rogercasey's capital market assumptions over a 15-year time horizon (described in slide 12).
  - Stochastically modeled market return for the Plan year ending April 30, 2016 was adjusted to reflect the estimated market return through September 30, 2015 of -1.3%.
  - No future withdrawal liability payments and a refund of approximately \$500,000 will be made to Stevens Painton between October 1, 2015 and April 30, 2016.
  - Number of active participants in future years is based on 1.20 million hours (706 actives) for the Plan year beginning May 1, 2015, 1.06 million hours (624 actives) for the Plan year beginning May 1, 2017, and then 607 actives each year thereafter. Each active is assumed to work an average of 1,700 hours each year.
  - Contribution rate remains at \$10.00 per hour.

# Appendix

## Assumptions Used in Projections *continued*

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- Benefits will be suspended based on the designs described in presentation or 110% of the PBGC guaranteed amount, whichever is greater, taking into consideration the following:
  - Any suspension in benefits occurs on December 1, 2016.
    - » Reduced amount is calculated based on participants' credited service as of April 30, 2016.
  - No suspension for pensioners over age 80 as of the effective date and disabled retirees.
  - Pro-rated suspension for pensioners between ages 75 and 80 as of the effective date.
  - No suspension for current beneficiaries since service is unknown.
  - Participants with unknown service were reduced without consideration of their PBGC guaranteed amount as it cannot be determined.
  - Future benefit accrual rate on and after May 1, 2016 remains at \$50 per benefit credit.
- Effective May 1, 2015, mortality assumptions will change to RP-2014 Blue Collar Mortality Tables with generational projection using Scale MP-2014 for non-disabled participants, RP-2014 Disabled Retire Mortality Tables with generational projection using Scale MP-2014 for participants disabled on and after May 1, 1997, and a 50/50 blend of the two preceding mortality assumptions for participants disabled prior to May 1, 1997.
- Effective May 1, 2016, the following assumptions will change:
  - Inactive vested participants will retire at age 60 if eligible.
  - 40% of future retirees will elect the 50% joint and survivor form of payment and 60% will elect the single life annuity; this is based on the Plan's experience during 2004–2014.
- Administrative expenses are assumed to be \$575,000 for the Plan year beginning May 1, 2015, \$425,000 for the Plan year beginning May 1, 2016, and increased by 3% per year thereafter.

**Caveat regarding projections:** *Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.*

**Caveat regarding legal interpretations:** *Segal does not practice law and, therefore, cannot and does not provide legal advice. Any statutory interpretations of PPA 2006, PRA 2010, and MPRA 2014, including related IRS regulations and guidance presented or reflected in the presentations are subject to the review and opinion of Fund Counsel. Design of benefit suspension is solely the responsibility of the Trustees. Any sample designs contained in this presentation are intended to assist the Trustees and do not imply any recommendation by Segal.*

# Appendix

## Segal Rogercasey's Capital Market Assumptions – Expected Return, Volatility, and Correlation Between Investment Categories

Investment Category	Allocation	Expected Return (15-Year Time Horizon)	Volatility (Standard Deviation)
U.S. Equities	45%	8.7%	18.5%
International Equities (Developed)	15%	9.4%	21.0%
Fixed Income	27%	3.6%	5.0%
Equity Oriented Real Estate	13%	6.5%	12.0%

### Correlation Between Investment Categories

Investment Category	U.S. Equities	International Equities (Developed)	Fixed Income	Equity Oriented Real Estate
U.S. Equities	1.00			
International Equities (Developed)	0.88	1.00		
Fixed Income	0.06	0.14	1.00	
Equity Oriented Real Estate	0.26	0.19	-0.25	1.00