
Utah Retirement Systems

Important Updates Concerning the URS Investment Earnings Assumption and Impact on the Net Pension Liability

AGA Spring Conference
May 9 and 10, 2017

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Finance Director



URS earnings assumption

- Effective January 1, 2016, the URS Board approved lowering the investment return assumption (discount rate) from the 7.50% to 7.20%



Historical earnings assumption

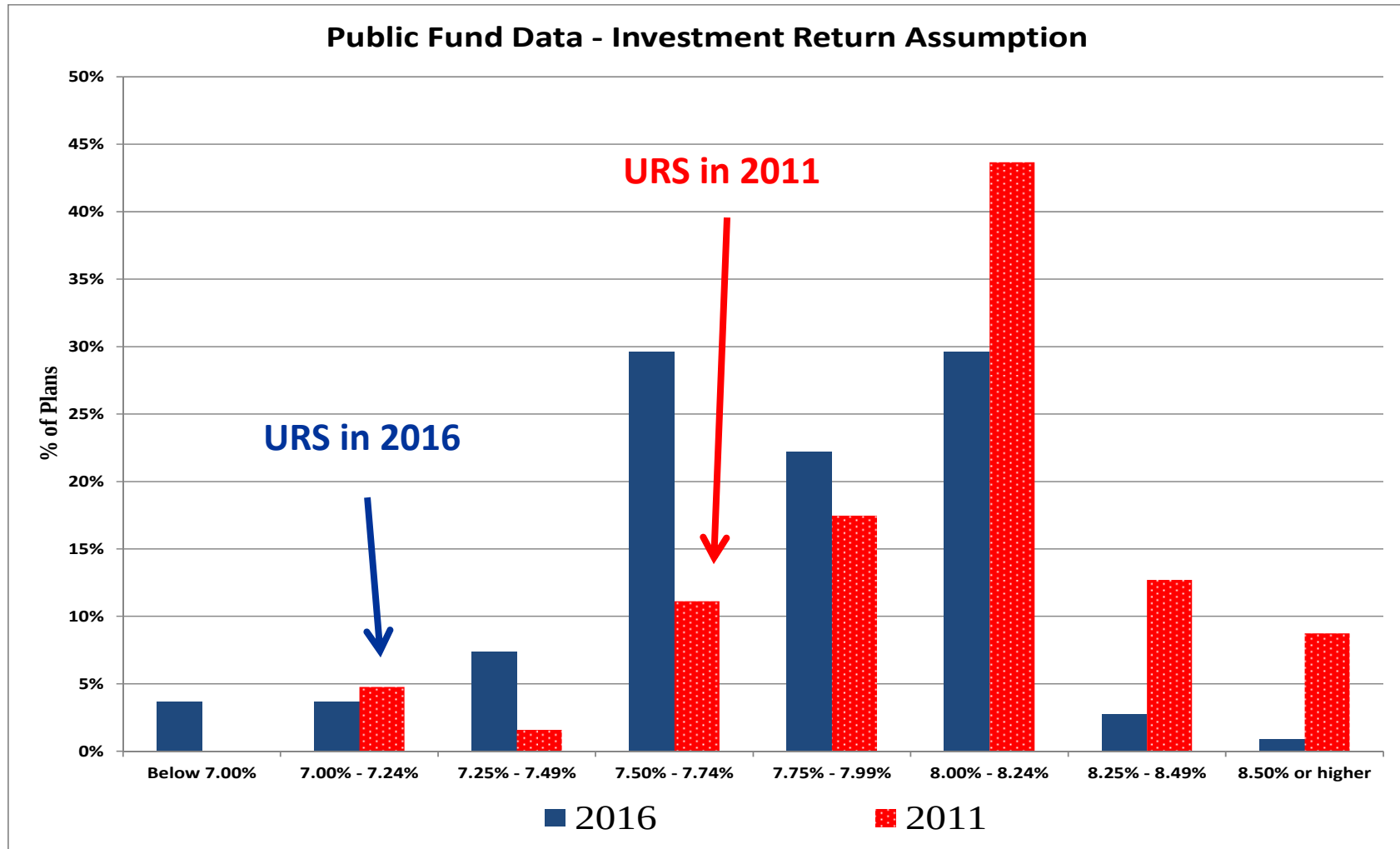
- This is the third time in the last 10-years the rate has been lowered:
 - **2008 from 8.0% to 7.75%**
 - **2011 from 7.75% to 7.50%**
 - **2016 from 7.50% to 7.20%**
- The URS actuary looks at current economic assumptions and will recommend decreases or increases when necessary.

How URS earning assumption compares to other state plans

- A February 2017 NASRA brief of the largest 127 public pension plans showed 105 plans have a higher rate than URS. The average of the 127 plans is 7.52% compared to URS 7.20%
- Of the 19 plans are lower
 - o 9 plans use 7.00%
 - o 1 plans use 6.90%
 - o 2 plans use 6.875%
 - o 5 plans use 6.75%
 - o 2 plans use 6.50%



Investment return assumption- Comparison to Peers



Source: Public Plans Database (2016).

Median nominal return: 7.67%, Median inflation: 3.00%, Median real return: 4.58%

Investment return expectations

Long-Term (30-Year Assumptions)

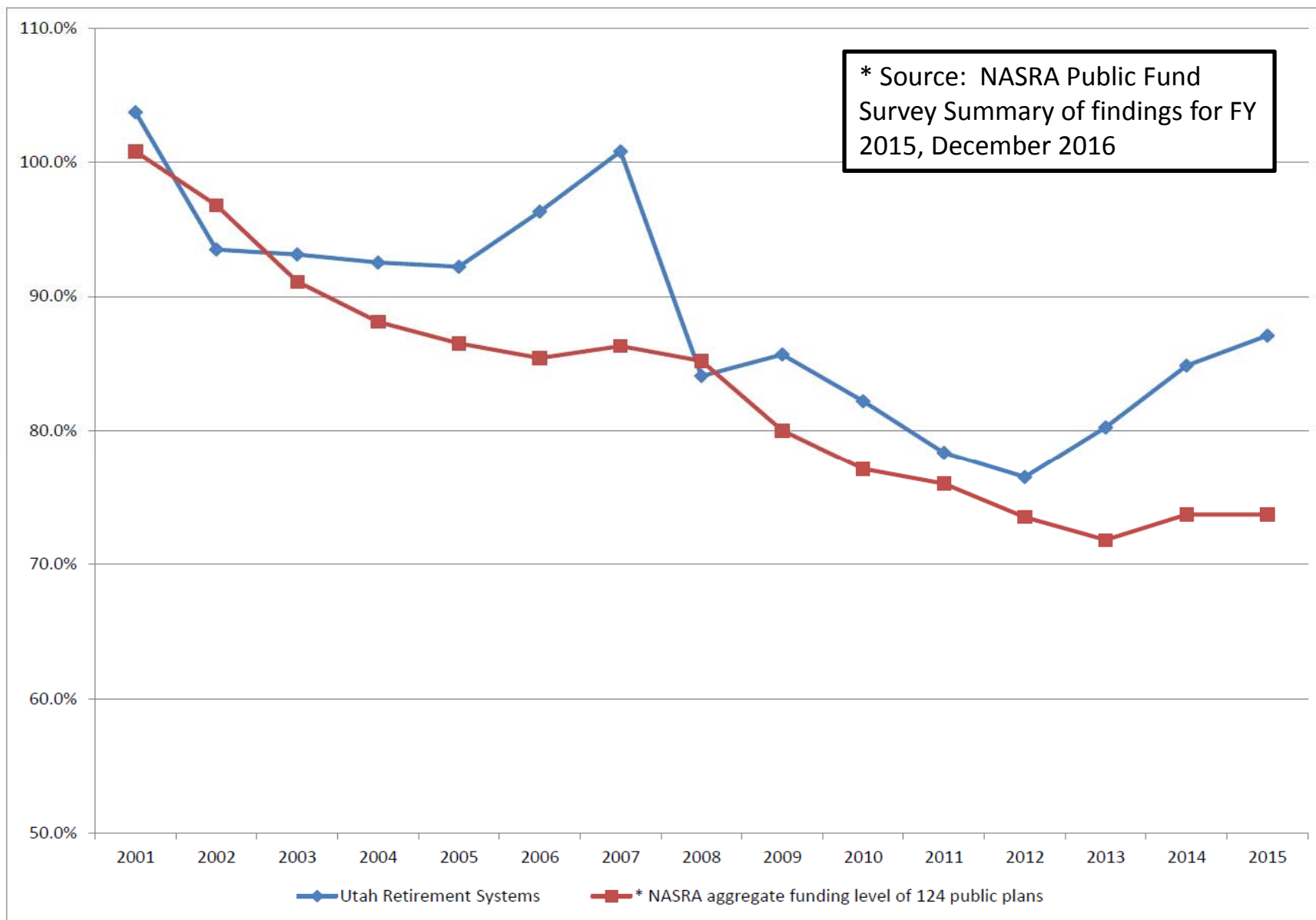
Average real return for the assumptions from the three consulting firms is 7.4%

Investment Consultant	Consultant 1	Consultant 2	Consultant 3	Horizon's Survey Average
40 th Percentile	6.5%	6.7%	7.3%	7.0%
50 th Percentile	7.1%	7.3%	7.9%	7.7%
60 th Percentile	8.0%	8.0%	8.5%	8.3%

Earnings assumption and net pension liability

- The change in the investment return assumption increased the collective Net Pension Liability by \$734 million.
- The “Plan Fiduciary Net Position as a Percentage of the total Pension Liability” (old funded ratio) went from 85.7% to 83.8% (a 1.9% decrease).
- With the 2016 pension earnings, we expect the funded ratio be somewhere around 86% funded.

How URS compares to the aggregate public pensions fiscal year 2001 - 2015



Lowering the earnings rate assumption from 7.50% to 7.20%

Will

- Increase your proportionate share of the NPL
- Decrease your proportionate share of the plan net position
- Increase your deferred outflows of resources and changes in assumptions

Will not

- increase retirement contributions (except one employer).
- Require you to increase their budgets

64% of what is needed to fund the retirement benefits comes from investment earnings.



UTAH RETIREMENT SYSTEMS

Schedule of Changes in the Employers' Net Pension Liability

Year ended December 31,

Change in the Net Pension Liability	Total Defined Benefit Pension Plans			
	2016	2015	2014	2013
Service Cost	\$ 604,021	567,368	569,382	599,736
Interest	2,210,400	2,219,616	2,121,357	2,056,481
Benefit Changes	3,343	-	-	23,718
Difference between actual and expected experience	(2,890)	(233,572)	(269,582)	(276,487)
Assumption Changes	734,391	-	(236,578)	-
Benefit Payments	(1,497,988)	(1,423,763)	(1,325,556)	(1,242,156)
Refunds	(6,715)	(4,772)	(5,129)	(4,949)
Net Change in Total Pension Liability	2,044,562	1,124,877	853,894	1,156,343
Total Pension Liability - Beginning	31,150,334	30,025,458	29,171,564	28,015,221
Total Pension Liability - Ending (a)	\$ 33,194,896	31,150,335	30,025,458	29,171,564
Plan Fiduciary Net Position				
Contributions - Member	\$ 39,287	40,871	38,500	40,167
Contributions - Employer	1,073,225	1,035,724	974,178	889,481
Court Fees and Fire Insurance Tax	12,039	18,871	15,640	12,783
Net Investment Income	2,248,696	461,772	1,786,431	3,260,548
Benefit Payments	(1,497,988)	(1,423,762)	(1,325,556)	(1,242,156)
Refunds	(6,715)	(4,772)	(5,129)	(4,949)
Administrative Expense	(11,067)	(10,988)	(11,012)	(10,401)
Net transfers with affiliated systems	0	-	-	-
Other	0	-	-	-
Net Change in Plan Fiduciary Net Position	1,857,477	117,716	1,473,052	2,945,473
Plan Fiduciary Net Position - Beginning	26,686,840	26,569,124	25,096,072	22,150,599
Plan Fiduciary Net Position - Ending (b)	28,544,317	26,686,840	26,569,124	25,096,072
Net Pension Liability (Asset) - Ending (a) - (b)	\$ 4,650,579	4,463,495	3,456,334	4,075,492
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability				
	86.00%	85.70%	88.50%	86.00%
Covered Employee Payroll	\$ 4,839,496	4,714,628	4,678,491	4,669,560
Net Pension Liability (Asset) as a Percentage of Covered Employee Payroll				
	96.10%	94.70%	73.90%	87.30%

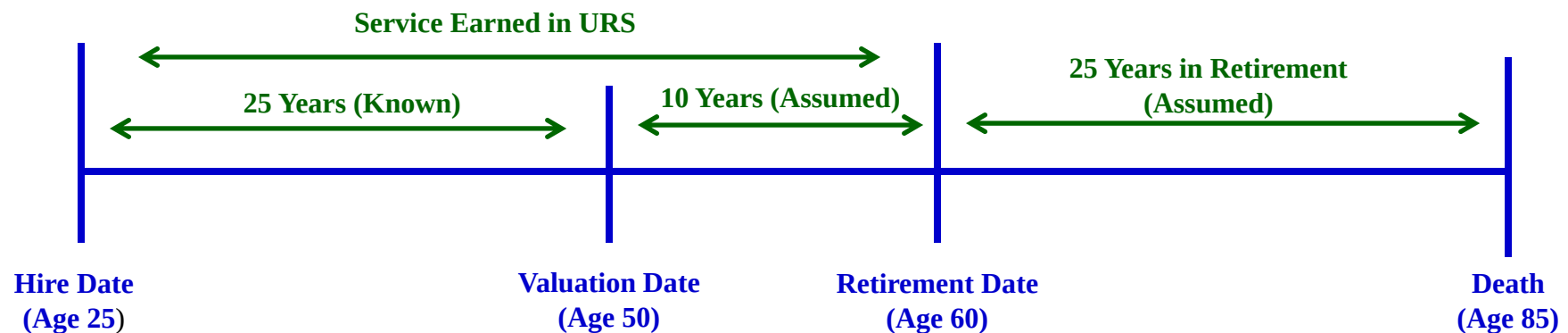
Actuarial Valuation Calculations

Known at Valuation Date

- Age
- Gender
- Salary
- Service to date
- Occupation

Assumed at Valuation Date

- Future salary increases
- Retirement age(s)
- Disability/Termination
- Life expectancy
- Investment return



Source: Gabriel, Roeder, Smith & Company, May 2016

Variation of Life Expectancy by State – from Age 65

*Utah ranks 9th with an average life expectancy of 19.8 years
(18.9 years for males and 20.7 years for females)*

States with the Longest Life Expectancy			States with the Shortest Life Expectancy		
1	Hawaii	21.3	41	South Carolina	18.5
2	Florida	20.4	42	Georgia	18.2
3	California	20.3	43	Arkansas	18.1
4	Arizona	20.2	44	Tennessee	18.0
5	Connecticut	20.2	45	Louisiana	17.9
6	Minnesota	20.1	46	Oklahoma	17.7
7	New York	20.0	47	Alabama	17.6
8	North Dakota	19.9	48	Kentucky	17.6
9	Utah	19.8	49	Mississippi	17.5
10	Colorado	19.8	50	West Virginia	17.5

Source: CDC Morbidity and Mortality Report – July 19, 2013.

Service Cost Calculation Example
Current Year Service Only

7.2%
Investment
Return Rate
Example

Employee current age	48	
Employee retirement age	63	
Current pay	\$50,000	
Annual pay increases	3.35%	
Years of pay increases	15	63 - 48 = 15
Future pay	<u>\$81,965</u>	FV(3.35%,15,\$50,000)
Plan multiplier per year of service	2%	
Future benefit for current year of service	\$1,639	\$81,965 * 2% = \$1,639
Mortality	84	
Years to mortality (from retirement)	21	84 - 63 = 21
Interest/discount rate	7.20%	
Present value of annuity = needed at retirement	\$17,478	PV(7.20%,21,\$1,639)
Number of years until retirement	15	63 - 48 = 15
Present Value of future value = needed now	\$6,160	PV(7.20%,15,\$17,478)
Normal Cost as a percent of payroll	12.32%	\$6,160 / \$50,000
Annual benefit payments	\$34,419	\$1,639 * 21 years

Years in Retirement	PV of Ret Benefit	Investment Earnings	Benefit Payment	Balance
1	17,478	1,258	(1,639)	17,097
2	17,097	1,231	(1,639)	16,689
3	16,689	1,202	(1,639)	16,252
4	16,252	1,170	(1,639)	15,783
5	15,783	1,136	(1,639)	15,280
6	15,280	1,100	(1,639)	14,741
7	14,741	1,061	(1,639)	14,164
8	14,164	1,020	(1,639)	13,544
9	13,544	975	(1,639)	12,881
10	12,881	927	(1,639)	12,169
11	12,169	876	(1,639)	11,406
12	11,406	821	(1,639)	10,588
13	10,588	762	(1,639)	9,712
14	9,712	699	(1,639)	8,772
15	8,772	632	(1,639)	7,765
16	7,765	559	(1,639)	6,685
17	6,685	481	(1,639)	5,527
18	5,527	398	(1,639)	4,286
19	4,286	309	(1,639)	2,955
20	2,955	213	(1,639)	1,529
21	1,529	110	(1,639)	-
Total benefit payments paid			(34,419)	

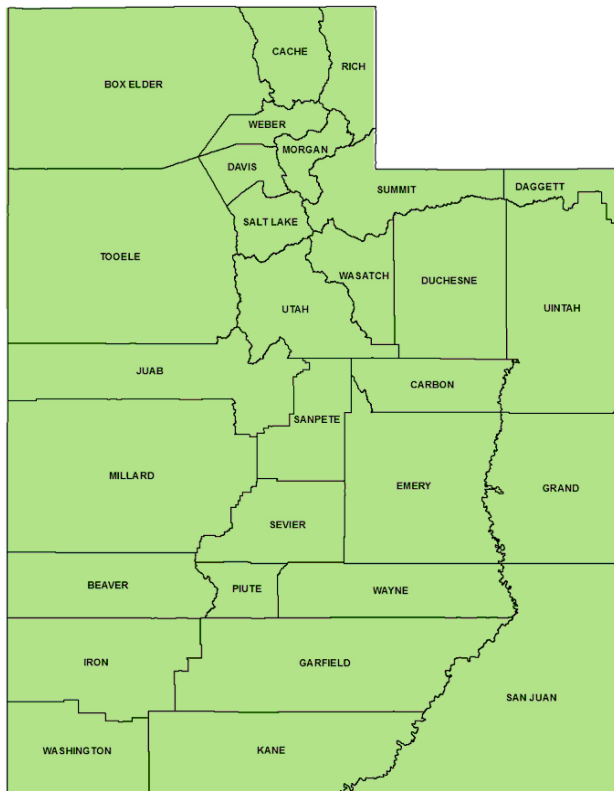
Service Cost Calculation Example Current Year Service Only	Assumption Change	
	7.5% Investment Return Rate Example	7.2% Investment Return Rate Example
Employee current age	48	48
Employee retirement age	63	63
Current pay	\$50,000	\$50,000
Annual pay increases	3.35%	3.35%
Years of pay increases	15	15
Future pay	\$81,965	\$81,965
Plan multiplier per year of service	2%	2%
Future benefit for current year of service	\$1,639	\$1,639
Mortality	84	84
Years to mortality (from retirement)	21	21
Interest/discount rate	7.50%	7.20%
Present value of annuity = needed at retirement	\$17,069	\$17,478
Number of years until retirement	15	15
Present value of future value = needed now	\$5,769	\$6,160
Normal Cost as a percent of payroll	11.54%	12.32%
		\$391
		~Loss to System ~Systems earnings less than original assumption \$0

Service Cost Calculation Example Current Year Service Only	7.5% Investment Return Rate Example	Assumption Change	Differences between actual and expected experience
		7.2% Investment Return Rate Example	7.2% Investment Early Retirement
Employee current age	48	48	48
Employee retirement age	63	63	60
Current pay	\$50,000	\$50,000	\$50,000
Annual pay increases	3.35%	3.35%	3.35%
Years of pay increases	15	15	12
Future pay	\$81,965	\$81,965	\$74,250
Plan multiplier per year of service	2%	2%	2%
Future benefit for current year of service	\$1,639	\$1,639	\$1,485
Mortality	84	84	84
Years to mortality (from retirement)	21	21	24
Interest/discount rate	7.50%	7.20%	7.20%
Present value of annuity = needed at retirement	\$17,069	\$17,478	\$16,735
Number of years until retirement	15	15	12
Present value of future value = needed now	\$5,769	\$6,160	\$7,266
Normal Cost as a percent of payroll	11.54%	12.32%	14.53%
		\$391	\$1,106
		~Loss to System ~Systems earnings less than original assumption	~Loss to System ~Pay benefits 3 years more than assumed ~Received contributions 3 years less than assumed

Service Cost Calculation Example Current Year Service Only	Assumption Change		Differences between actual and expected experience	
	7.5% Investment Return Rate Example	7.2% Investment Return Rate Example	7.2% Investment Early Retirement	7.2% Investment Work Longer
Employee current age	48	48	48	48
Employee retirement age	63	63	60	67
Current pay	\$50,000	\$50,000	\$50,000	\$50,000
Annual pay increases	3.35%	3.35%	3.35%	3.35%
Years of pay increases	15	15	12	19
Future pay	\$81,965	\$81,965	\$74,250	\$93,512
Plan multiplier per year of service	2%	2%	2%	2%
Future benefit for current year of service	\$1,639	\$1,639	\$1,485	\$1,870
Mortality	84	84	84	84
Years to mortality (from retirement)	21	21	24	17
Interest/discount rate	7.50%	7.20%	7.20%	7.20%
Present value of annuity = needed at retirement	\$17,069	\$17,478	\$16,735	\$18,006
Number of years until retirement	15	15	12	19
Present value of future value = needed now	\$5,769	\$6,160	\$7,266	\$4,805
Normal Cost as a percent of payroll	11.54%	12.32%	14.53%	9.61%
		\$391	\$1,106	(\$1,355)
		~Loss to System ~Systems earnings less than original assumption	~Loss to System ~Pay benefits 3 years more than assumed ~Received contributions 3 years less than assumed	~Gain to System ~Pay benefits 4 years less than assumed ~Received contributions 4 years longer than assumed
		\$0		

Service Cost Calculation Example Current Year Service Only	Assumption Change				
	7.5% Investment Return Rate Example	7.2% Investment Return Rate Example	Differences between actual and expected experience		
			7.2% Investment Early Retirement	7.2% Investment Work Longer	7.2% Investment Salary Less Increase
Employee current age	48	48	48	48	48
Employee retirement age	63	63	60	67	63
Current pay	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Annual pay increases	3.35%	3.35%	3.35%	3.35%	2.50%
Years of pay increases	15	15	12	19	15
Future pay	\$81,965	\$81,965	\$74,250	\$93,512	\$72,415
Plan multiplier per year of service	2%	2%	2%	2%	2%
Future benefit for current year of service	\$1,639	\$1,639	\$1,485	\$1,870	\$1,448
Mortality	84	84	84	84	84
Years to mortality (from retirement)	21	21	24	17	21
Interest/discount rate	7.50%	7.20%	7.20%	7.20%	7.20%
Present value of annuity = needed at retirement	\$17,069	\$17,478	\$16,735	\$18,006	\$15,442
Number of years until retirement	15	15	12	19	15
Present value of future value = needed now	\$5,769	\$6,160	\$7,266	\$4,805	\$5,442
Normal Cost as a percent of payroll	11.54%	12.32%	14.53%	9.61%	10.88%
		\$391	\$1,106	(\$1,355)	(\$718)
		~Loss to System ~Systems earnings less than original assumption	~Loss to System ~Pay benefits 3 years more than assumed ~Received contributions 3 years less than assumed	~Gain to System ~Pay benefits 4 years less than assumed ~Received contributions 4 years longer than assumed	~Gain to System ~Salary less than assumed ~Smaller benefit
		\$0			

URS Economic benefits to Utah



In 2016 URS DB Plan paid out:

- \$1.5 billion in benefits in the State of Utah
- Nearly 63,000 benefit recipients
- Average benefit is \$23,200 annually
- 93% of all benefit paid stay in the State

URS Pension benefits by County

Calendar Year 2016

County	Number of recipients	Dollars Paid	% of total
Salt Lake County	20,655	\$542,439,631	36.05%
Utah County	8,183	204,321,593	13.58%
Davis County	6,003	152,582,106	10.14%
Weber County	5,108	123,161,977	8.18%
Washington County	3,303	76,498,388	5.08%
Cache County	2,396	54,042,390	3.59%
Box Elder County	1,253	26,251,679	1.74%
Tooele County	1,065	23,307,111	1.55%
Iron County	989	22,213,962	1.48%
Sevier County	804	18,512,503	1.23%
Sanpete County	807	16,627,620	1.11%
Summit County	627	17,368,322	1.15%
Carbon County	708	14,928,270	0.99%
Wasatch County	597	14,245,919	0.95%

URS Pension benefits by County

Calendar Year 2016

		Number of		
County		recipients	Dollars Paid	% of total
»	Uintah County	671	13,065,347	0.87%
	Duchesne County	588	11,143,273	0.74%
	San Juan County	388	8,849,587	0.59%
	Millard County	424	9,179,854	0.61%
	Morgan County	306	7,935,937	0.53%
	Emery County	387	7,672,187	0.51%
	Juab County	326	6,918,234	0.46%
	Grand County	249	5,319,816	0.35%
	Beaver County	201	4,408,043	0.29%
	Kane County	203	4,003,977	0.27%
	Garfield County	177	3,716,356	0.25%
	Wayne County	107	2,275,002	0.15%
	Rich County	90	1,623,663	0.11%
	Piute County	84	1,631,211	0.11%
	Daggett County	58	1,007,126	0.07%
	Out of the State of Utah	5,775	109,495,980	7.28%
Total Payments		62,532	\$1,504,747,066	100.00%

URS Economic benefits to Utah

Juliette Tennert, M. A. (2016). *The Economic Impacts of Utah Retirement Systems Pension Payments in the State of Utah*. Salt Lake City: Kem C. Gardner Policy Institute.

Utah Retirement Systems' retirees expenditures support:

- Approximately 8,000 jobs
- \$324 million in earnings
- \$1.2 billion in economic output
- \$607 million in state gross domestic product
- \$53 million in state and local tax revenue



Tier 2 Savings

UTAH RETIREMENT SYSTEMS

Tier 2 Annual Savings

Combined Savings for Public Employees, Public Safety, and Firefighters

Year	Annual Savings	Cumulative Savings
2011	\$ 1,122,497	\$ 1,122,497
2012	7,734,952	8,857,449
2013	15,332,997	24,190,446
2014	23,373,380	47,563,826
2015	32,087,138	79,650,964
2016	41,576,030	121,226,995



Tier 2 Savings will continue to grow!

UTAH RETIREMENT SYSTEMS

Examples of how Tier 2 savings are calculated

Tier 2 Savings for 2015

Public Employees (State/School and Local Government)

	<u>12/31/16 Employer Rate</u>	
	State & School*	Local Government
Tier 1 Noncontributory	23.69%	18.47%
Tier 2 Public Employees	20.02%	16.69%
Rate savings	3.67%	1.78%
Tier 2 Covered payroll		
Hybrid Public Employees	\$ 604,758,539	\$ 217,660,603
DC Only Employees	144,334,065	45,939,393
Total Tier 2 Covered payroll	749,092,605	263,599,996
Tier 2 Savings	27,491,699	4,692,080
Total Savings		\$ 32,183,779

* Rate includes the 1.5% payable to 401(k) for Tier 1 State & School and 1.78% for Tier 2

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Examples of how Tier 2 savings are calculated

Tier 2 Savings for 2015

Public Safety and Firefighters

	<u>12/31/16 Employer Rate</u>	
	Public Safety	Firefighters
Tier 1 PS State Div A / Firefighters DIV B	41.35%	6.66%
Tier 2 Public Safety *	30.54%	0.08%
Rate savings	10.81%	6.58%
Tier 2 Covered payroll		
Hybrid Public Employees	\$ 67,707,123	\$ 15,311,729
DC Only Employees	8,795,359	1,745,011
Total Tier 2 Covered payroll	76,502,482	17,056,740
Tier 2 Savings	8,269,918	1,122,334
Total Savings		\$ 9,392,252

* Rate includes the 1.33% into the 401(k)

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Tier 2 Savings

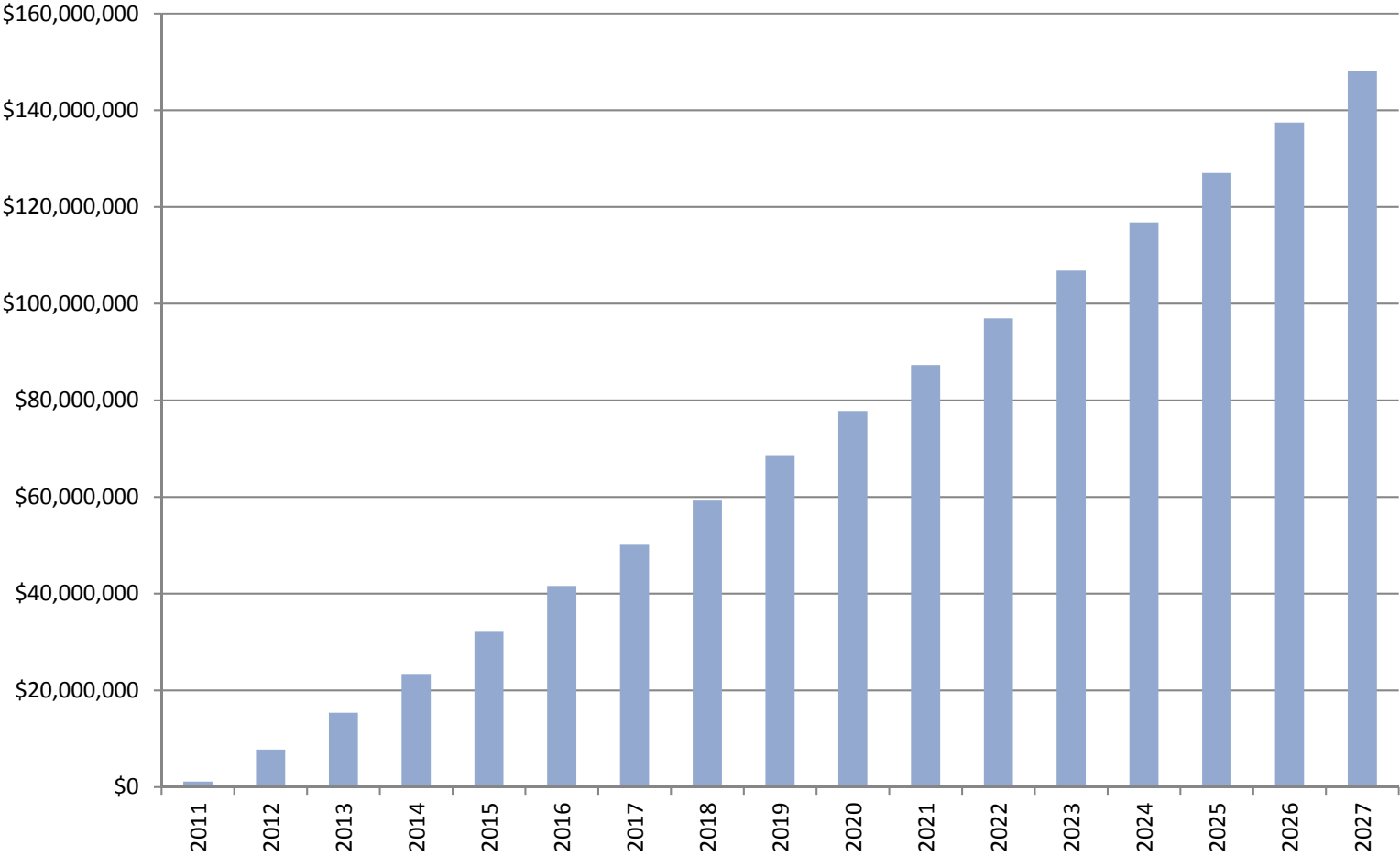
Calendar Year	Savings		Cumulative Savings	
2011	\$1,122,497		\$1,122,497	
2012	\$7,734,952		\$8,857,449	
2013	\$15,332,997		\$24,190,446	
2014	\$23,373,380		\$47,563,826	
2015	\$32,087,138		\$79,650,964	
2016	\$41,576,030		\$121,226,995	
2017	\$50,099,000	*	\$171,325,995	*
2018	\$59,241,000	*	\$230,566,995	*
2019	\$68,472,000	*	\$299,038,995	*
2020	\$77,811,000	*	\$376,849,995	*
2021	\$87,290,000	*	\$464,139,995	*
2022	\$96,950,000	*	\$561,089,995	*
2023	\$106,793,000	*	\$667,882,995	*
2024	\$116,803,000	*	\$784,685,995	*
2025	\$127,026,000	*	\$911,711,995	*
2026	\$137,447,000	*	\$1,049,158,995	*
2027	\$148,142,000	*	\$1,197,300,995	*

* Estimated



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Estimated Tier 2 Annualized Savings



Income Statement vs. Balance Sheet

GASB has Shifted the Focus from the Income Statement to the Balance Sheet

GASB 27	GASB 68
Pension Expense drives the Balance Sheet recognition	Balance Sheet drives the Pension Expense
Accountability focused on whether the employer is making the Actuarially Required Contributions	Accountability focused on the Net Pension Liability

Comparing the Old and the New

	GASB 27	GASB 68
Number of Pages	142	248
Number of Authoritative Paragraphs	34	131
Pages Describing Required Notes	2	15
Pages Describing RSI	1	8
Number of Permitted Actuarial Cost Methods	6	1
Permitted Amortization Approaches	Numerous	1
Permissible Asset Smoothing Methods	Numerous	None

- Employer reporting requirements –
Financial Statements

Noncontributory State and School Fund

Total Pension Liability for Fund:	\$21,447,254,094
Market Value of Assets:	18,206,337,192
Net Pension Liability:	\$3,240,916,902
Total GASB 68 Employer Contributions for FY '16:	\$655,450,485

XYZ District proportionate share

XYZ School District Contributions for FY '16:	\$24,260,150
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School District's Proportionate Share:	3.7012941%
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School District's Net Pension Liability:	\$119,955,866
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Employer Reporting Requirements – Financial

Calculation of the Pension Expense for the Noncontributory State/School Fund:

1. Service Cost	\$311,640,746
2. Interest Cost	1,434,005,139
3. Benefit Changes	0
4. Member Contributions	(11,285,389)
5. Projected Investment Earnings	(1,220,179,815)
6. Administrative Expenses	7,185,208
7. Other	16,328,203
8. Deferred Outflow/(Inflow) due to Liabilities	6,753,918
9. Deferred Outflow/(Inflow) due to Investments	162,412,379
10. Total Pension Expense	\$706,860,389

School District's Proportionate Share:

3.7012941%

School District's Pension Expense:

\$26,162,982

Common GASB 68 questions

- Why do we have both a pension asset and pension liability?
- What is the meaning of the net difference between expected and actual earnings on plan investments?
- What is measurement date and why different than my year end?

GASB 68 Disclosures

Request via email or letter

- Email to: gasb@urs.org
- Write to: URS, 560 East 200 South, Salt Lake City, UT 84102
- Be sure to include year end date, unit name and number, and auditor contact information (if needed)
- Processed within 5-7 days after receipt and all contributions are received and processed through the unit's year end





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GASB 68 Employer Pension Financial Disclosure 12/31/2014



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