

Pension & OPEB Primer

Dan Matusiewicz, Finance Director
City of Newport Beach



Discussion roadmap

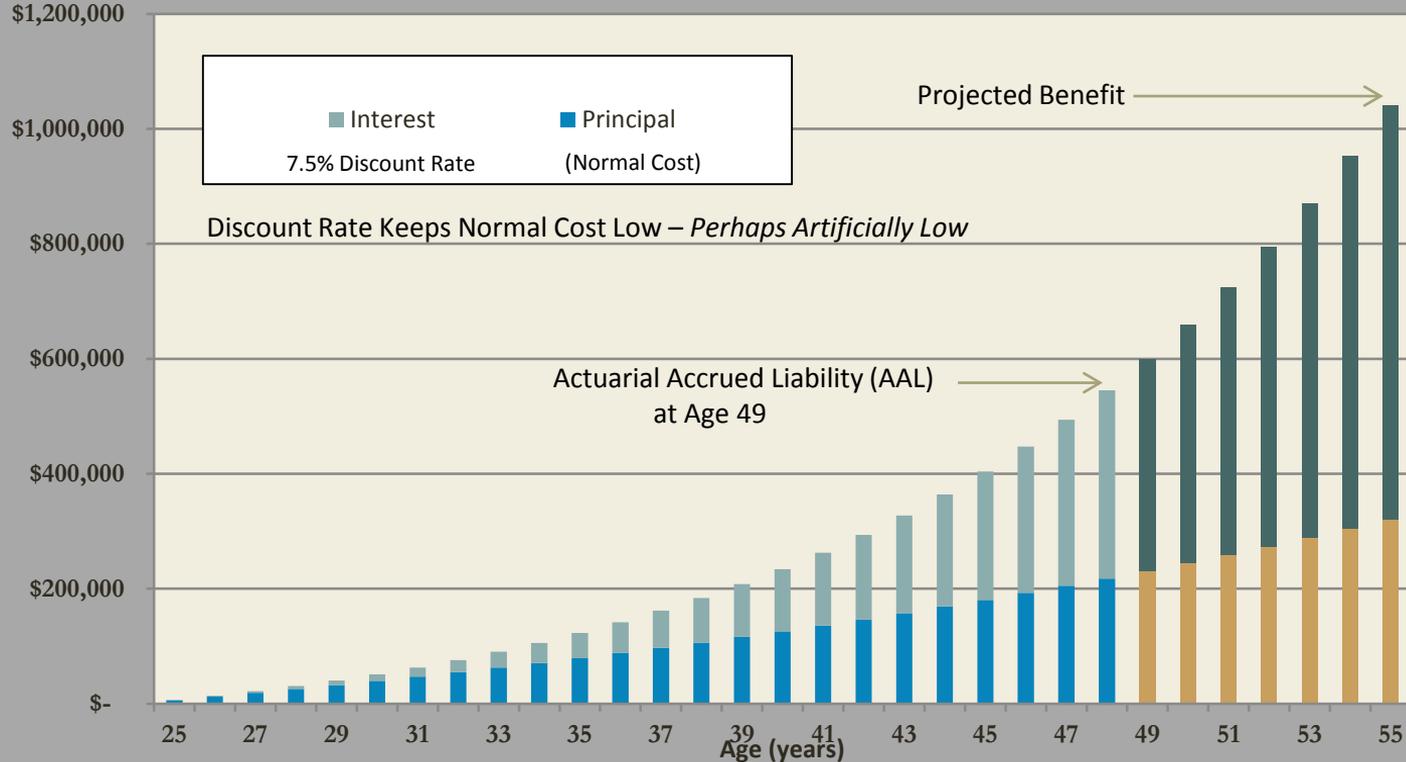
- Review Terminology
- Examination of Amortization Bases & Efficiency
- Current Plan Status
- Preliminary Staff Recommendations

Terminology

- Normal Cost (NC)
- Projected Benefits
- Present Value of Projected Benefits (PVB)
- Actuarial Accrued Liability (AAL)
- Market Value of Assets (MVA)
- Unfunded Actuarial Accrued Liability (UAAL)
 - $AAL - MVA = UAAL$
 - Same as UAL, Unfunded Pension Liability
- Gains/Losses vs. Change in Actuarial Assumptions
- Amortization Schedules – 3 Primary Types

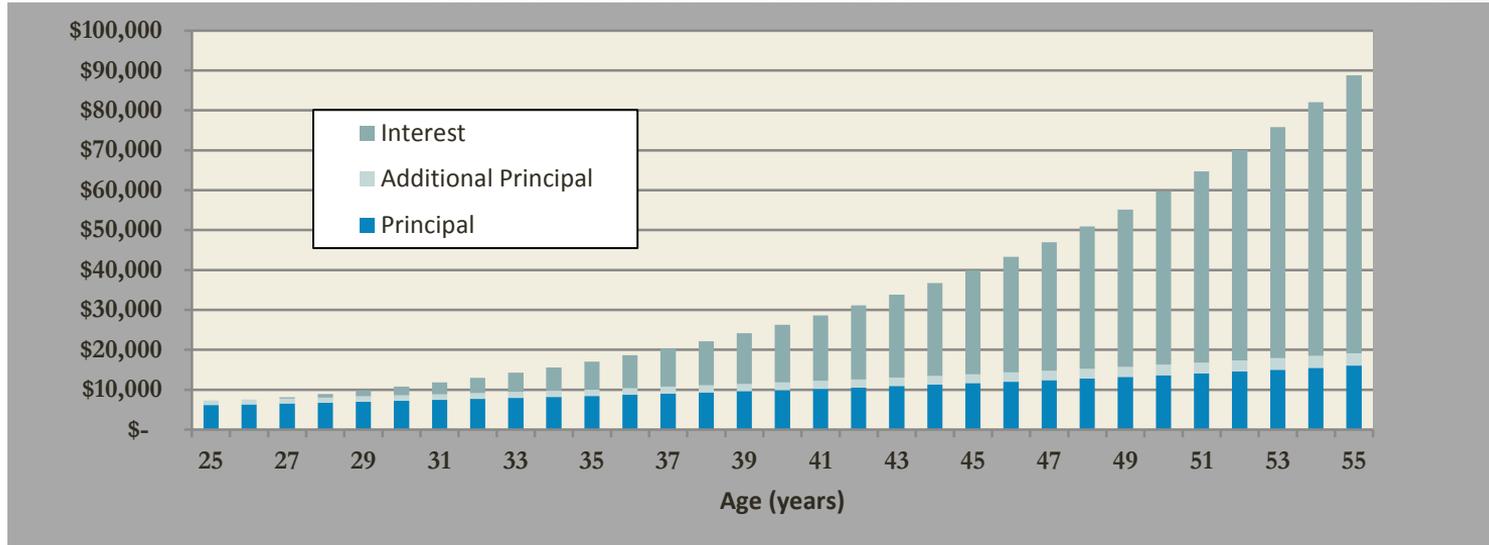
Terminology

Example 49 year old employee who started at age 25



Change in Assumption

If the discount rate decreases...



... additional “normal cost” contributions are needed to fund the predefined benefit

Discount Rate

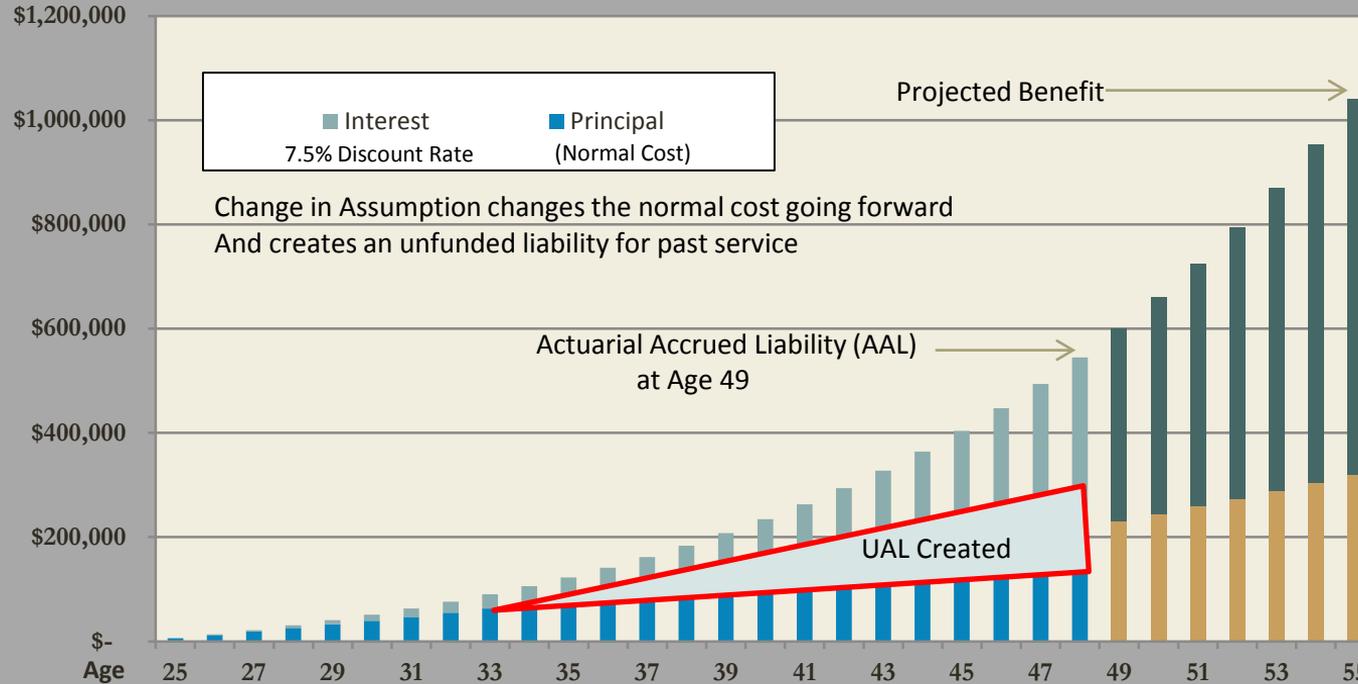


Normal Cost

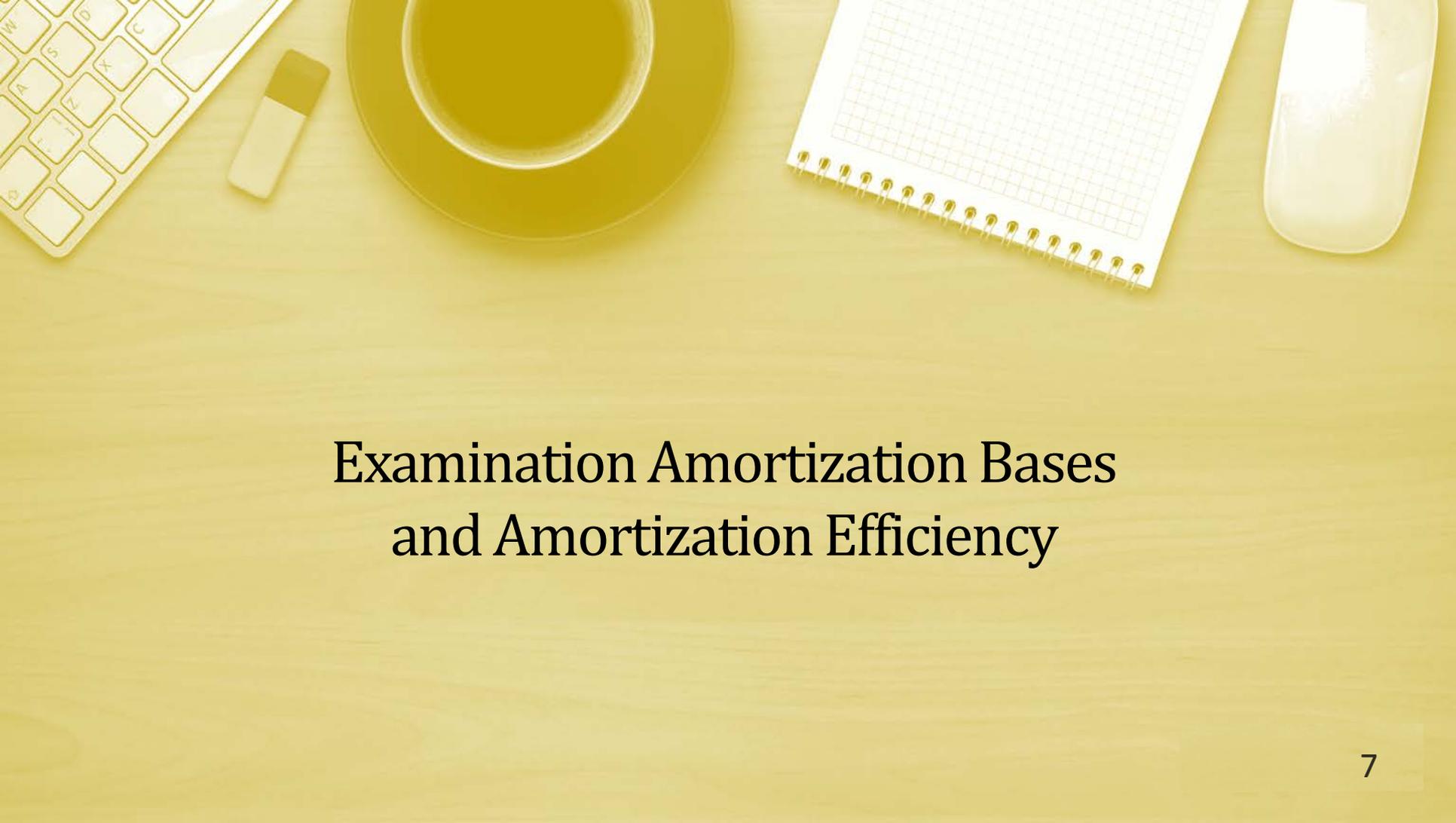


Change in Assumption

Example 49 year old employee who started at age 25



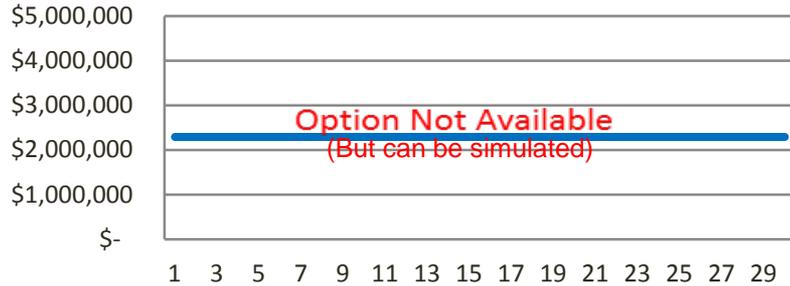
*More Contributions required to make up for lower assumed investment earnings or other assumption change.

A top-down view of a desk with a keyboard, a coffee cup, a notebook, and a mouse. The desk is light-colored wood. The keyboard is on the left, the coffee cup is in the center, the notebook is on the right, and the mouse is on the far right. The entire image has a yellowish tint.

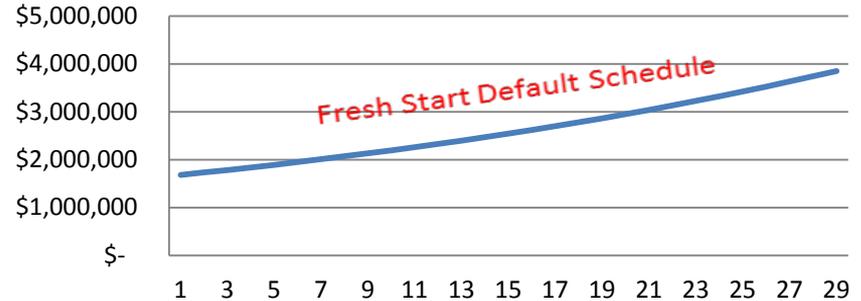
Examination Amortization Bases and Amortization Efficiency

Amortization schedules

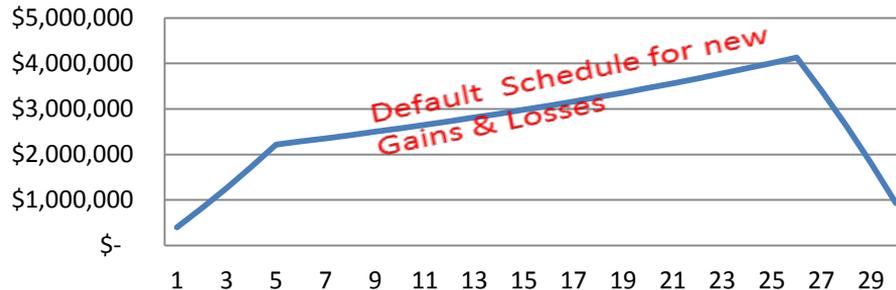
Level Payment Amortization



Level % of Pay Amortization



Level % of Pay - 5Yr Phase-in



Other City Example

CALPERS ACTUARIAL VALUATION - June 30, 2014

Schedule of Amortization Bases

Reason for Base	Date Established	Amortization Period	Balance 6/30/14	Expected Payment 2014-15	Balance 6/30/15	Expected Payment 2015-16	Amounts for Fiscal 2016-17		
							Balance 6/30/16	Scheduled Payment for 2016-17	Payment as Percentage of Payroll
FS 30-YEAR AMORTIZATION	06/30/08	24	\$(4,760,389)	\$(307,896)	\$(4,798,185)	\$(317,133)	\$(4,829,238)	\$(326,647)	(0.737%)
ASSUMPTION CHANGE	06/30/09	15	\$10,557,847	\$886,978	\$10,430,047	\$913,587	\$10,265,074	\$940,995	2.122%
SPECIAL (GAIN)/LOSS	06/30/09	25	\$11,727,208	\$743,250	\$11,836,131	\$765,547	\$11,930,105	\$788,514	1.778%
SPECIAL (GAIN)/LOSS	06/30/10	26	\$(1,985,365)	\$(123,450)	\$(2,006,272)	\$(127,154)	\$(2,024,906)	\$(130,969)	(0.295%)
ASSUMPTION CHANGE	06/30/11	17	\$11,462,630	\$894,394	\$11,395,000	\$921,226	\$11,294,477	\$948,863	2.140%
SPECIAL (GAIN)/LOSS	06/30/11	27	\$(5,269,530)	\$(321,832)	\$(5,331,062)	\$(331,487)	\$(5,387,199)	\$(341,431)	(0.770%)
PAYMENT (GAIN)/LOSS	06/30/12	28	\$1,857,636	\$111,552	\$1,881,299	\$114,899	\$1,903,267	\$118,346	0.267%
(GAIN)/LOSS	06/30/12	28	\$70,991,591	\$4,263,082	\$71,895,902	\$4,390,975	\$72,735,435	\$4,522,704	10.199%
(GAIN)/LOSS	06/30/13	29	\$61,329,437	\$(281,811)	\$66,221,333	\$931,405	\$70,222,231	\$1,918,695	4.327%
ASSUMPTION CHANGE	06/30/14	20	\$33,710,124	\$(689,286)	\$36,953,050	\$(709,964)	\$40,460,635	\$770,682	1.738%
(GAIN)/LOSS	06/30/14	30	\$(58,432,251)	\$(322,812)	\$(62,479,971)	\$(406,772)	\$(66,744,219)	\$(938,760)	(2.117%)
TOTAL			\$131,188,938	\$4,852,169	\$135,997,272	\$6,145,129	\$139,825,662	\$8,270,992	18.651%

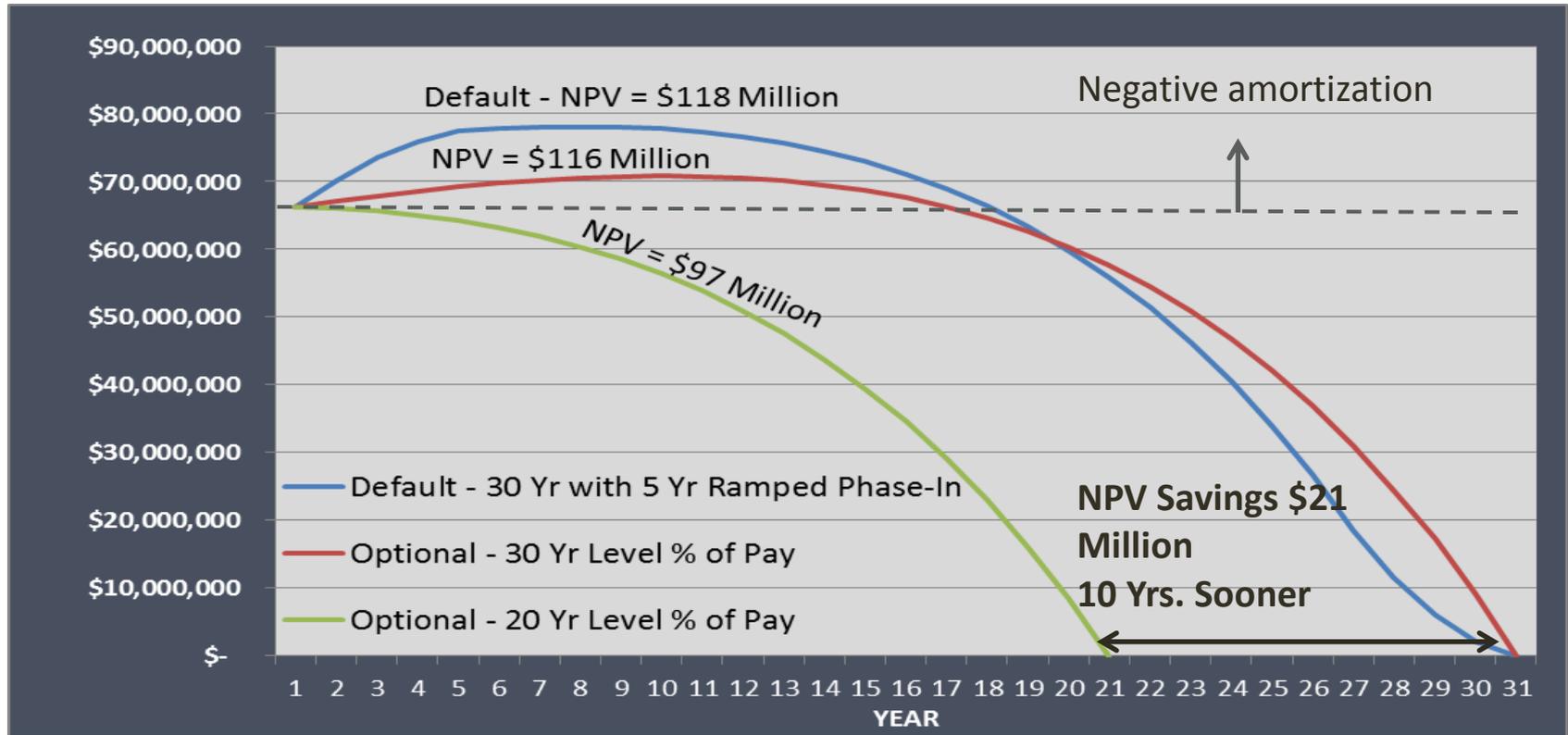
CHANGE IN MORTALITY ASSUMPTION

18.4% INVESTMENT GAIN

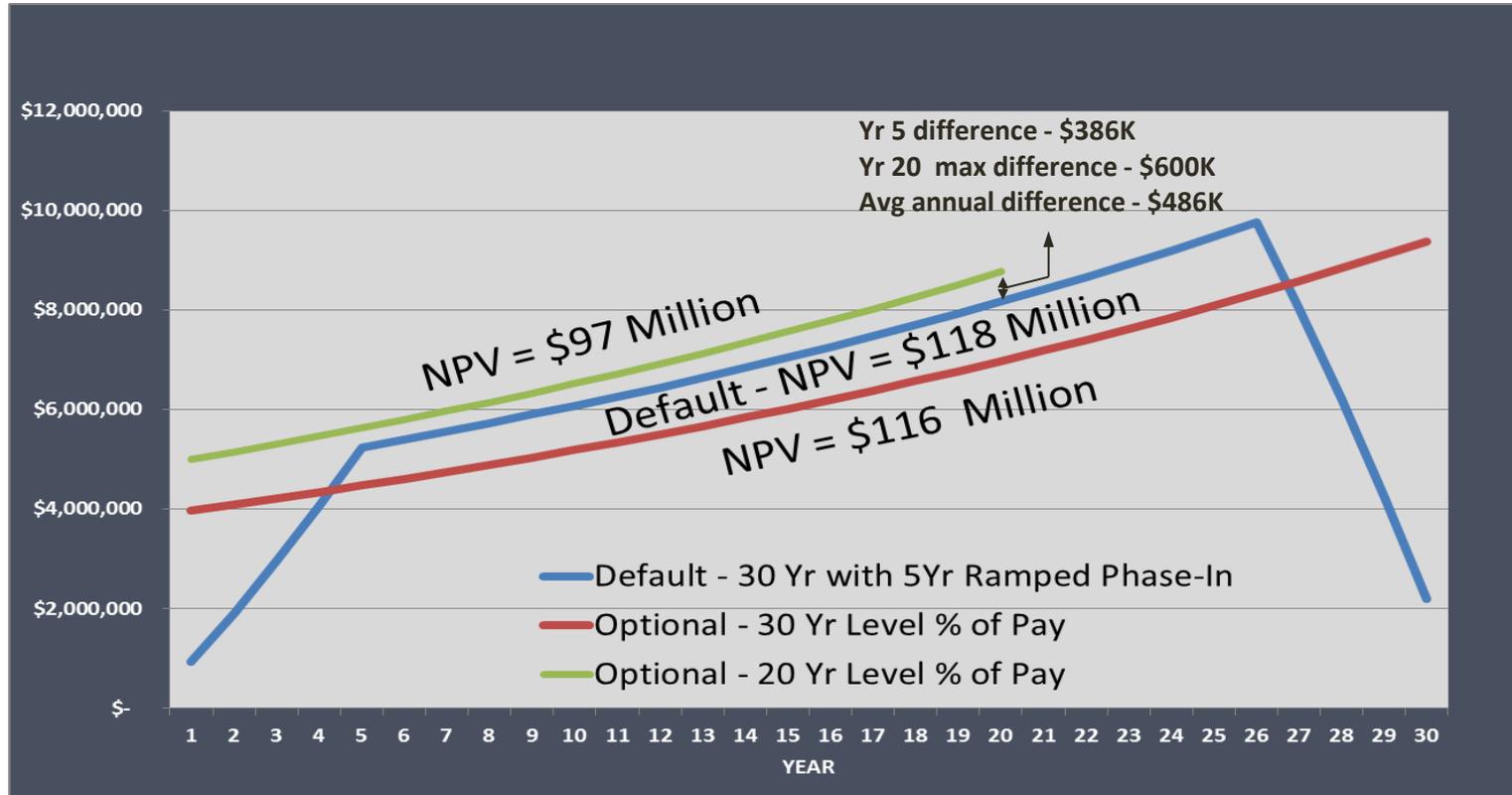
Default - 30 Yr, 5 Yr Ramps			Optional - 30 Yr, Level % of Pay			Default - 20 Yr, with 5 Yr Ramps			Optional - 20 Yr, Level % of pay		
Balance	Period	Payment	Balance	Period	Payment	Balance	Period	Payment	Balance	Period	Payment
\$ 66,221,333	30	\$ 931,405	\$ 66,221,333	30	\$ 3,976,626	\$ 66,221,333	20	\$ 1,261,363	\$ 66,221,333	20	\$ 5,000,070
\$ 70,222,231	29	\$ 1,918,695	\$ 67,064,879	29	\$ 4,095,925	\$ 69,880,124	19	\$ 2,598,408	\$ 66,003,750	19	\$ 5,150,072
\$ 73,499,553	28	\$ 2,964,384	\$ 67,848,000	28	\$ 4,218,803	\$ 72,427,046	18	\$ 4,014,541	\$ 65,614,300	8	\$ 5,304,574
\$ 75,938,481	27	\$ 4,071,087	\$ 68,562,453	27	\$ 4,345,367	\$ 73,696,710	17	\$ 5,513,303	\$ 65,035,400	7	\$ 5,463,712
\$ 77,412,874	26	\$ 5,241,525	\$ 69,199,265	26	\$ 4,475,728	\$ 73,507,649	16	\$ 7,098,377	\$ 64,248,263	16	\$ 5,627,623
\$ 77,784,311	25	\$ 5,398,770	\$ 69,748,676	25	\$ 4,609,999	\$ 71,660,969	15	\$ 7,311,328	\$ 63,232,039	15	\$ 5,796,452
\$ 78,020,570	24	\$ 5,560,734	\$ 70,200,078	24	\$ 4,748,299	\$ 69,454,995	14	\$ 7,530,668	\$ 61,964,553	14	\$ 5,970,345
\$ 78,106,622	23	\$ 5,727,556	\$ 70,541,942	23	\$ 4,890,748	\$ 66,856,156	13	\$ 7,756,588	\$ 60,421,709	13	\$ 6,149,456
\$ 78,026,163	22	\$ 5,899,382	\$ 70,761,752	22	\$ 5,037,471	\$ 63,828,166	12	\$ 7,989,286	\$ 58,577,446	12	\$ 6,333,939
\$ 77,761,515	21	\$ 6,076,364	\$ 70,845,922	21	\$ 5,188,595	\$ 60,331,811	11	\$ 8,228,965	\$ 56,403,586	11	\$ 6,523,957
\$ 77,293,521	20	\$ 6,258,655	\$ 70,779,717	20	\$ 5,344,253	\$ 56,324,724	10	\$ 8,475,834	\$ 53,869,672	10	\$ 6,719,676
\$ 76,601,424	19	\$ 6,446,414	\$ 70,547,156	19	\$ 5,504,580	\$ 51,761,147	9	\$ 8,730,109	\$ 50,942,789	9	\$ 6,921,266
\$ 75,662,746	18	\$ 6,639,807	\$ 70,130,923	18	\$ 5,669,718	\$ 46,591,664	8	\$ 8,992,012	\$ 47,587,377	8	\$ 7,128,904
\$ 74,453,154	17	\$ 6,839,001	\$ 69,512,253	17	\$ 5,839,809	\$ 40,762,923	7	\$ 9,261,772	\$ 43,765,024	7	\$ 7,342,771
\$ 72,946,313	16	\$ 7,044,171	\$ 68,670,829	16	\$ 6,015,004	\$ 34,217,332	6	\$ 9,539,625	\$ 39,434,254	6	\$ 7,563,055
\$ 71,113,735	15	\$ 7,255,496	\$ 67,584,653	15	\$ 6,195,454	\$ 26,892,738	5	\$ 9,825,814	\$ 34,550,281	5	\$ 7,789,946
\$ 68,924,607	14	\$ 7,473,161	\$ 66,229,919	14	\$ 6,381,317	\$ 18,722,072	4	\$ 8,096,471	\$ 29,064,764	4	\$ 8,023,645
\$ 66,345,614	13	\$ 7,697,356	\$ 64,580,872	13	\$ 6,572,757	\$ 11,731,628	3	\$ 6,254,524	\$ 22,925,529	3	\$ 8,264,354
\$ 63,340,747	12	\$ 7,928,276	\$ 62,609,658	12	\$ 6,769,940	\$ 6,126,672	2	\$ 4,294,773	\$ 16,076,279	2	\$ 8,512,285
\$ 59,871,091	11	\$ 8,166,125	\$ 60,286,160	11	\$ 6,973,038	\$ 2,133,257	1	\$ 2,211,808	\$ 8,456,276	1	\$ 8,767,653
\$ 55,894,600	10	\$ 8,411,108	\$ 57,577,822	10	\$ 7,182,229	\$ (0)	-	\$ -	\$ -	-	\$ -
\$ 51,365,870	9	\$ 8,663,442	\$ 54,449,465	9	\$ 7,397,696						
\$ 46,235,870	8	\$ 8,923,345	\$ 50,863,081	8	\$ 7,619,627						
\$ 40,451,639	7	\$ 9,191,045	\$ 46,777,615	7	\$ 7,848,215						
\$ 33,956,034	6	\$ 9,466,777	\$ 42,148,733	6	\$ 8,083,662						
\$ 26,687,373	5	\$ 9,750,780	\$ 36,928,569	5	\$ 8,326,172						
\$ 18,579,103	4	\$ 8,034,643	\$ 31,065,454	4	\$ 8,575,957						
\$ 11,642,040	3	\$ 6,206,761	\$ 24,503,621	3	\$ 8,833,236						
\$ 6,079,886	2	\$ 4,261,976	\$ 17,182,899	2	\$ 9,098,233						
\$ 2,116,967	1	\$ 2,194,918	\$ 9,038,368	1	\$ 9,371,180						
\$ -			\$ -								
		\$190,643,158	Sum of Payments		\$189,189,635			\$134,985,569	Sum of Payments		\$134,353,756
		\$117,556,017	NPV @ 3%		\$115,824,058			\$97,969,960	NPV @ 3%		\$97,088,739

**20 Yr. vs 30 Yr.
NPV Savings
\$21M**

Example balance comparison



Example payment comparison



Amortization Efficiency

	30 Year Amortization			20 Year Amortization		
	5 Yr Ramps	Level % of Pay	Level \$ Payment	5 Yr Ramps	Level % of pay	Level \$ Payment
Amortization Efficiency Ratio (AER)©	2.88	2.86	2.45	2.04	2.03	1.90
Interest as % of Principal	188%	186%	145%	104%	103%	90%
Interest as % of Total Payments	65.3%	65.0%	59.2%	50.9%	50.7%	47.4%



Least Cost Effective **Most Cost Effective**

Amortization Efficiency Comparison

City	UAL Balance	Total Payments	AER*	Interest as % of Principal	Interest as % of Total Payments
Newport Beach	\$ 272,977,868	\$ 467,100,918	171%	71%	42%
Irvine	\$ 115,178,121	\$ 211,629,106	184%	84%	46%
Anaheim	\$ 609,881,577	\$ 1,303,628,563	214%	114%	53%
Long Beach	\$ 963,327,181	\$ 2,126,017,847	221%	121%	55%
Santa Ana	\$ 527,005,976	\$ 1,167,087,776	221%	121%	55%
Costa Mesa	\$ 255,359,653	\$ 566,799,114	222%	122%	55%
Huntington Beach	\$ 359,407,114	\$ 810,431,873	225%	125%	56%

*Amortization Efficiency Ratio (AER)

Newport's Amortization Bases

Per Actuarial Valuations

Illustrative Payment Diff

Reason For Base	Date Established	Yrs	Balance			Minimum	Level		Level	Level
			6/30/2015	6/30/2016	6/30/2017	Contribution	% of pay	% of pay	Pmt	
						2017-18	30		20	20
MISCELLANEOUS										
Forced Fresh Start Old Method	6/30/2013	17	117,227,554	118,054,038	118,168,306	9,927,464	9,927,464	17	9,927,464	12,080,996
2014 Investment Gain	6/30/2014	29	(26,269,946)	(28,041,895)	(29,736,104)	(812,484)	(812,484)	29	(812,484)	(812,484)
2015 Investment Loss	6/30/2015	30	10,245,755	10,864,793	11,521,602	162,052	691,878	20	869,943	940,902
			101,203,363	100,876,936	99,953,804	9,277,032	9,806,858		9,984,923	12,209,415
PUBLIC SAFETY										
Forced Fresh Start Old Method	6/30/2013	17	196,292,155	197,350,177	197,276,421	16,573,433	\$16,573,433	17	16,573,433	20,168,655
2014 Investment Gain	6/30/2014	29	(36,371,839)	(39,279,139)	(41,652,269)	(1,138,073)	(1,138,073)	29	(1,138,073)	(1,138,073)
2015 Investment Loss	6/30/2015	30	14,550,267	15,949,122	17,399,912	244,730	\$1,044,874	20	1,313,788	\$1,420,950
			174,470,583	174,020,160	173,024,064	15,680,090	16,480,234		16,749,148	20,451,531
TOTAL										
Forced Fresh Start Old Method	6/30/2013	17	313,519,709	315,404,215	315,444,727	26,500,897	\$26,500,897	17	26,500,897	32,249,651
2014 Investment Gain	6/30/2014	29	(62,641,785)	(67,321,034)	(71,388,373)	(1,950,557)	(1,950,557)	29	(1,950,557)	(1,950,557)
2015 Investment Loss	6/30/2015	30	24,796,022	26,813,915	28,921,514	406,782	\$1,736,752	20	2,183,731	2,361,852
			275,673,946	274,897,096	272,977,868	24,957,122	26,287,092		26,734,071	32,660,946

AER 190%
Interest 47%

A top-down view of a desk with a keyboard, a coffee cup, a notebook, and a mouse. The desk is light-colored wood. The keyboard is on the left, the coffee cup is in the center, the notebook is on the right, and the mouse is on the far right. The entire image has a yellowish tint.

Pension Plan Status

Census Data

Participant Data as of June 30, 2015			
	Misc	Safety	Total
<u>Active Members</u>			
a) Counts	510	269	779
b) Average Attained Age	44.56	38.84	42.58
c) Average Entry Age to Rate Plan	32.18	27.48	30.56
d) Average Years of Service	12.38	11.36	12.03
e) Actuarial Accrued Liability	\$138,520,667	\$117,569,806	\$256,090,473
<u>Transferred Members</u>			
a) Counts	240	46	286
b) Average Attained Age	43.80	43.00	43.67
d) Average Years of Service	2.78	3.59	2.91
e) Actuarial Accrued Liability	\$12,960,386	\$5,643,677	\$18,604,063
<u>Terminated Members</u>			
a) Counts	296	40	336
b) Average Attained Age	44.12	43.61	44.06
d) Average Years of Service	2.96	3.74	3.05
e) Actuarial Accrued Liability	\$8,245,782	\$3,237,248	\$11,483,030
<u>Retired Members and Beneficiaries</u>			
a) Counts	605	424	1029
b) Average Attained Age	68.56	65.07	67.12
e) Average Annual Benefits	\$26,963	\$63,407	\$41,980
e) Actuarial Accrued Liability	\$196,662,277	\$365,503,106	\$562,165,383

PEPRA Employees

102 Misc. PEPRA employees, or 12.3% of all Misc. PERS employees.

Formula: 2% @ 62

Employer Normal Cost: 5.5% vs. Classic Member 8.242%

22 Safety PEPRA employees, or 2.7% of all Safety PERS employees.

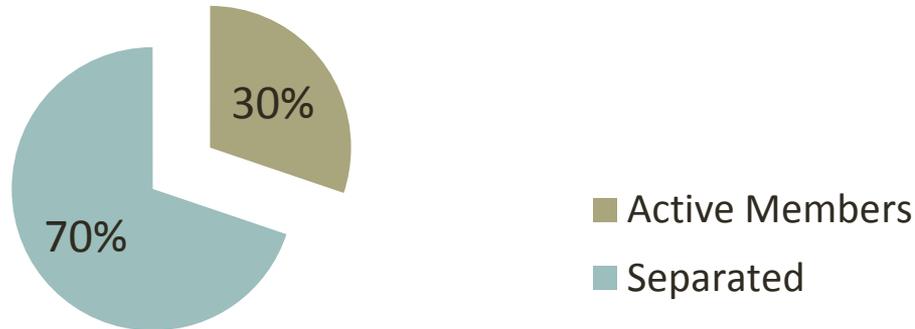
Formula: 2.7% @ 57

Employer Normal Cost: 10.5% vs. Classic Member 17.913%

UAL Status

	Miscellaneous	Public Safety	Total
Accrued Liability	\$356,419,112	\$491,953,837	\$848,372,949
Less Market Value of Assets (MVA)	\$255,215,749	\$317,483,254	\$572,699,003
Unfunded Liability	\$101,203,363	\$174,470,583	\$275,673,946
Funded Ratio (MVA/Accrued Liability)	71.6%	64.5%	67.5%

UAL Attribution



What's the problem?

	Projected 2016
Accrued Pension Liability	\$891 million
Market Value of Assets	\$576 million
Unfunded Liability	\$315 million
Funded Status	65%

Accrued Pension Liability	\$891 million
Market Value of Assets	\$891 million
Unfunded Liability	–
Funded Status	100%

Current Projection

x 7.5% = \$23.6 million just to keep up with the interest

What if Fully Funded?

÷ \$71.9 million = 12 times greater than expected payroll

Expected asset volatility +/- ~12% = \$107 million

Assets are currently underfunded and volatile.

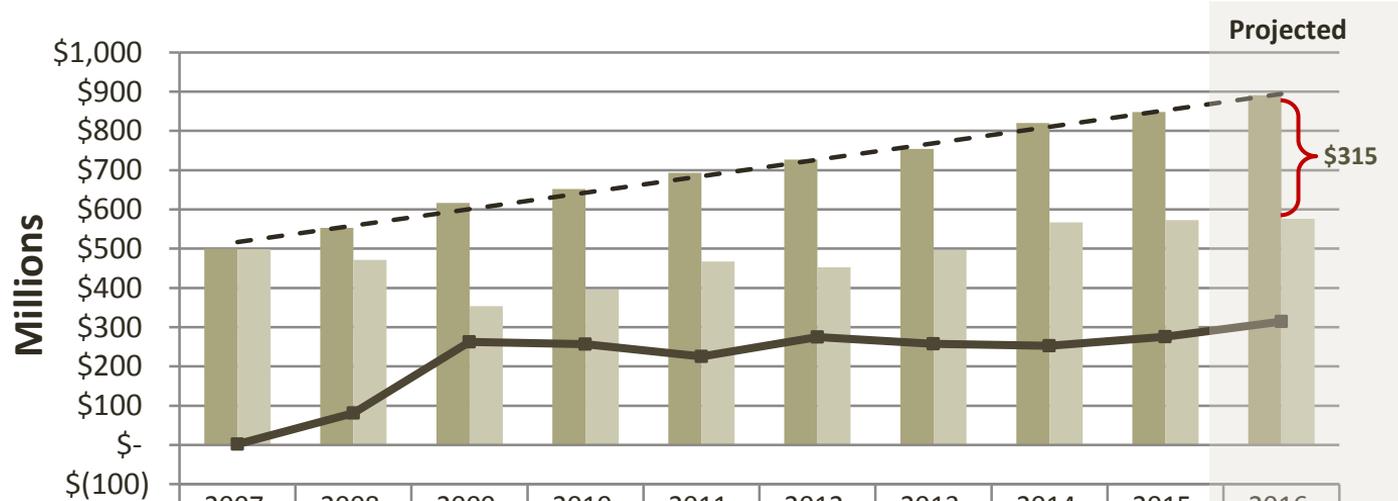
Liabilities are large relative to agency payrolls and budget.

New Experience Losses

2015 & 2016 Investment Experience Losses

Valuation Year	Contribution FY Year	Expected Return	Actual Return	Experience Loss	MVA	Experience Loss	Two Year Interest Accumulation
2015	2017-18	7.5%	2.4%	5.1%	567,303,448	28,932,476	33,435,092
2016	2018-19	7.5%	0.6%	6.9%	572,699,003	39,516,231	45,665,945
						68,448,707	79,101,037

Projected



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Accrued Pension Liability	\$501	\$553	\$617	\$652	\$693	\$727	\$755	\$820	\$848	\$891
Market Value of Assets	\$499	\$472	\$354	\$395	\$467	\$452	\$497	\$567	\$573	\$576
Unfunded Liability at Market Value	\$2	\$82	\$263	\$257	\$226	\$275	\$258	\$253	\$276	\$315
CalPERS Rate of Investment Return	18.8%	-2.9%	-23.6%	11.1%	20.7%	1.0%	12.5%	18.4%	2.4%	0.6%

What's on the Horizon?

- Risk Mitigation Strategy Adopted Nov 2015 – Expected to impact employers when investment returns exceed 4% of current discount rate
- New Experience Study – 6/30/17 Val.
- Strategic Asset Allocation Study – 6/30/17 Val.
- State pressure to lower discount rate sooner rather than later

Potential Impact of Lowering Discount Rate to 6.5%

	MISCELLANEOUS		SAFETY		Total	
	7.5% Discount Rate	6.5% Discount Rate	7.5% Discount Rate	6.5% Discount Rate	7.5% Discount Rate	6.5% Discount Rate
Plan's Total Normal Cost	16.016%	20.194%	26.966%	33.974%	20.748%	26.149%
Accrued Liability	356,419,112	404,545,471	491,953,837	555,768,319	848,372,949	960,313,790
Market value of Assets	255,215,749	255,215,749	317,483,254	317,483,254	572,699,003	572,699,003
Unfunded Accrued Liability	101,203,363	149,329,722	174,470,583	238,285,065	275,673,946	387,614,787
Total Normal Cost	6,916,411	8,720,655	8,861,465	11,164,408	15,777,876	19,885,062
Estimated Increase in Normal Cost		1,804,244		2,302,943		4,107,186
Estimated Increase in UAL Payment*		3,348,599		4,440,167		7,788,766
Estimate Increase in UAL		48,126,359		63,814,482		111,940,841
*State Proposal - 20 Yr Amortization, 6.5%, Level%-of-Pay						
** CalPERS Proposal - Flexible Glide Path						

A top-down view of a desk with a keyboard, a coffee cup, a spiral notebook, and a mouse. The desk is light-colored wood. The keyboard is on the left, the coffee cup is in the center, the spiral notebook is on the right, and the mouse is on the far right. The background is a solid light yellow color.

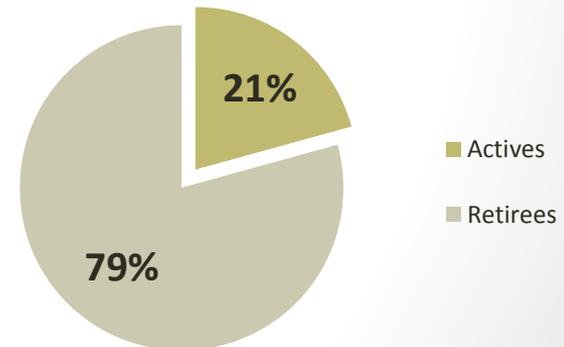
Retiree Insurance OPEB Plan Staus

Demographics

	Miscellaneous	Safety	Total
No. of Active Employees	508	270	778
Average Age	44.6	39.0	42.7
Average Past Service	12.3	11.7	12.1
No. of Retired Employees*	302	262	564
Average Age	68.4	64.9	66.8
Average Retirement Age	57.5	51.3	54.7

*Counts exclude 103 retirees waiving coverage and not receiving any City Contribution

UAAL Attribution



OPEB Status

7.0% Assumed Discount Rate	6/30/2015	Projected 6/30/2016	Remaining Years
Actuarial Accrued Liability (AAL)	42,638,555	42,737,245	
Less: Actuarial Value of Assets	14,890,926	16,695,850	
Unfunded AAL	27,747,629	26,041,395	11
Funded Status	35%	39%	

6.5% Assumed Discount Rate	6/30/2015	6/30/2016	Remaining Years
Actuarial Accrued Liability (AAL)	44,606,004	44,692,159	
Less: Actuarial Value of Assets	14,890,926	16,131,814	
Unfunded AAL	29,715,078	28,560,345	11
Funded Status	33%	36%	

Actuarial Determined Contribution (ADC)	
2016-17	2017-18
3,582,661	3,827,337

Annual Required Contribution (ADC)	
2016-17	2017-18
3,791,887	3,909,640



What to do?

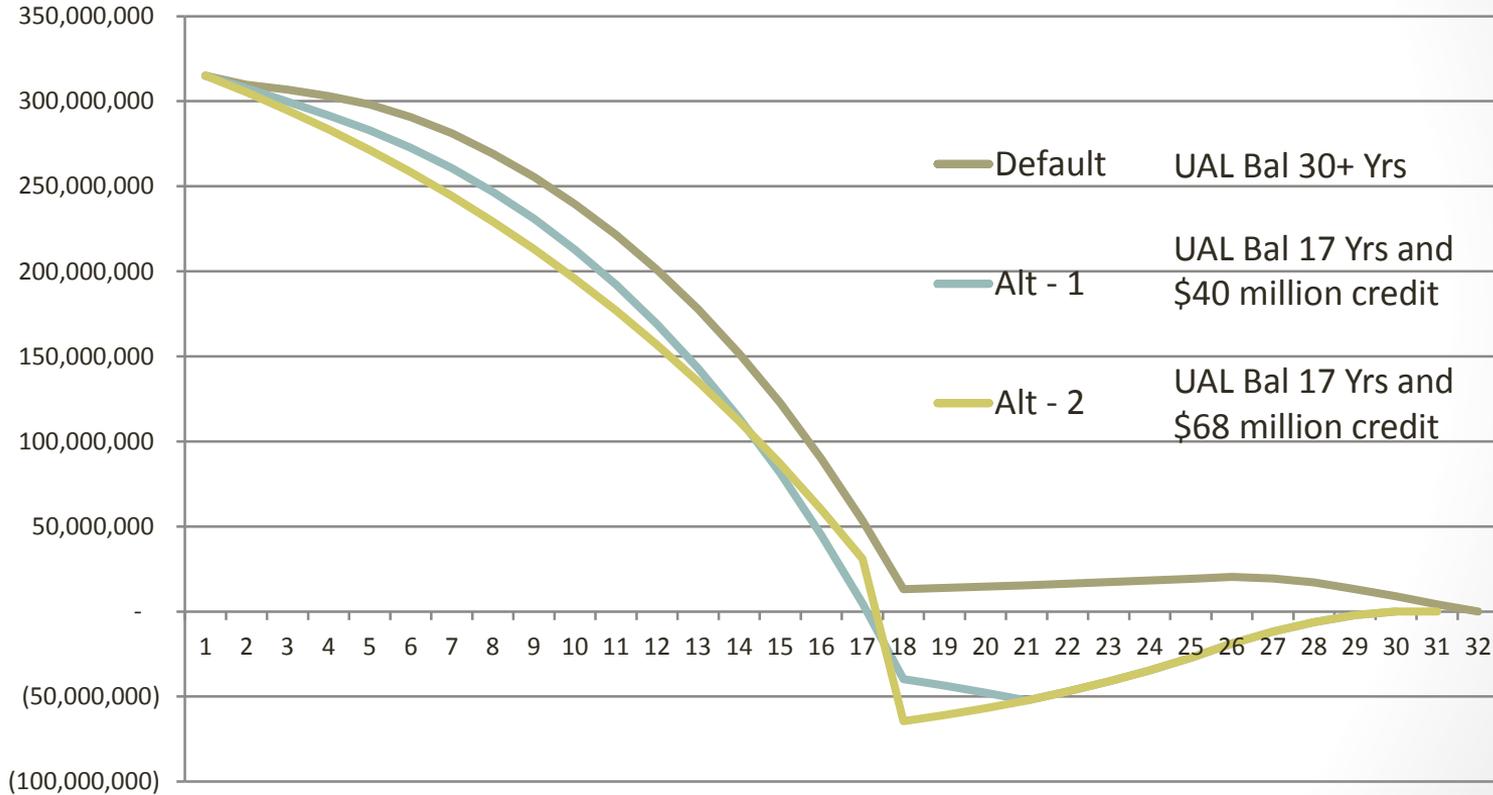
Already Doing

- Fewer Employees through attrition, layoffs, contracting and efficiency
- Lower Benefit Tiers
- Substantial increase in employee contributions
- Aggressive UAL payment schedule
- Other....

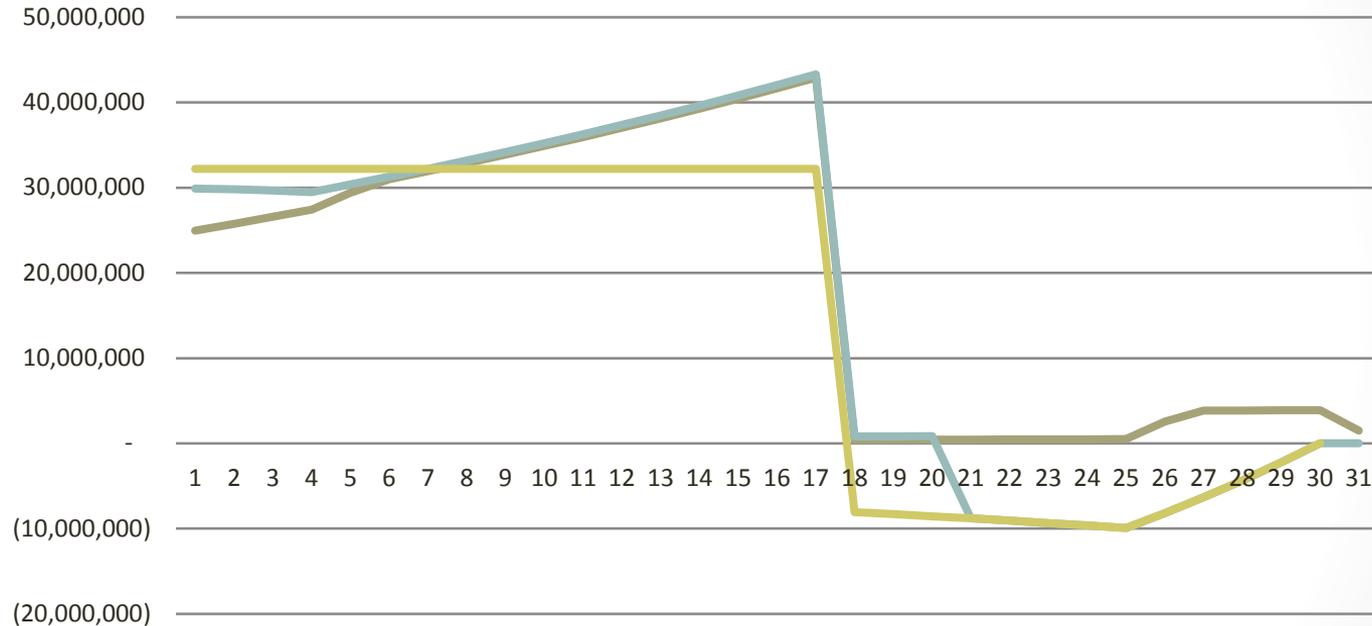
Preliminary Staff Recommendations

- 1) Start paying on 2016 experience in 2017-18 or sooner
- 2) Amortize 2015 & 2016 Experience Losses no longer than 20 Years
- 3) Make discretionary payments to preserve budget flexibility
- 4) Leave 2014 Experience Gain (\$71 million credit) as a rainy day fund
- 5) Incorporate a level payment on UAL into the 2017/18 budget
- 6) Consider the creation of a Pension & OPEB Funding Policy

UAL Balance Comparison



Payment Comparisons



— Default
NPV \$598 M
AER 190%
47% Interest

— Alt 1
NPV \$528 M
AER 168%
40% Interest

— Alt 2
NPV \$454 M
AER 144%
31% Interest

Memorialize policies

- Contribute no less than 100% of actuarially determined contribution (ADC) annually *[DOING]*
- Target funding at 100% of Actuarial Accrued Liability *[GOOD STATEMENT]*
- Analyze schedule of amortization bases each and every year *[DOING]*
- Amortize ALL gains/losses no longer than a 20 year, closed period *[RECOMMENDED/DOING]*
- Rate smoothing phase-in no longer than five years, zero if possible *[DOING]*
- Establish a rate smoothing reserve or strategy to avoid phase-in periods and provide economic relief during recessionary cycles *[DISCUSSION/INPUT]*
- Dedicate a portion of surplus funds to accelerate payment on unfunded liabilities *[DONE]*



Further Questions?

Dan Matusiewicz, Finance Director
City of Newport Beach

danm@newportbeachca.gov

949.644.3126