

Pension & OPEB Primer

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City of Newport Beach



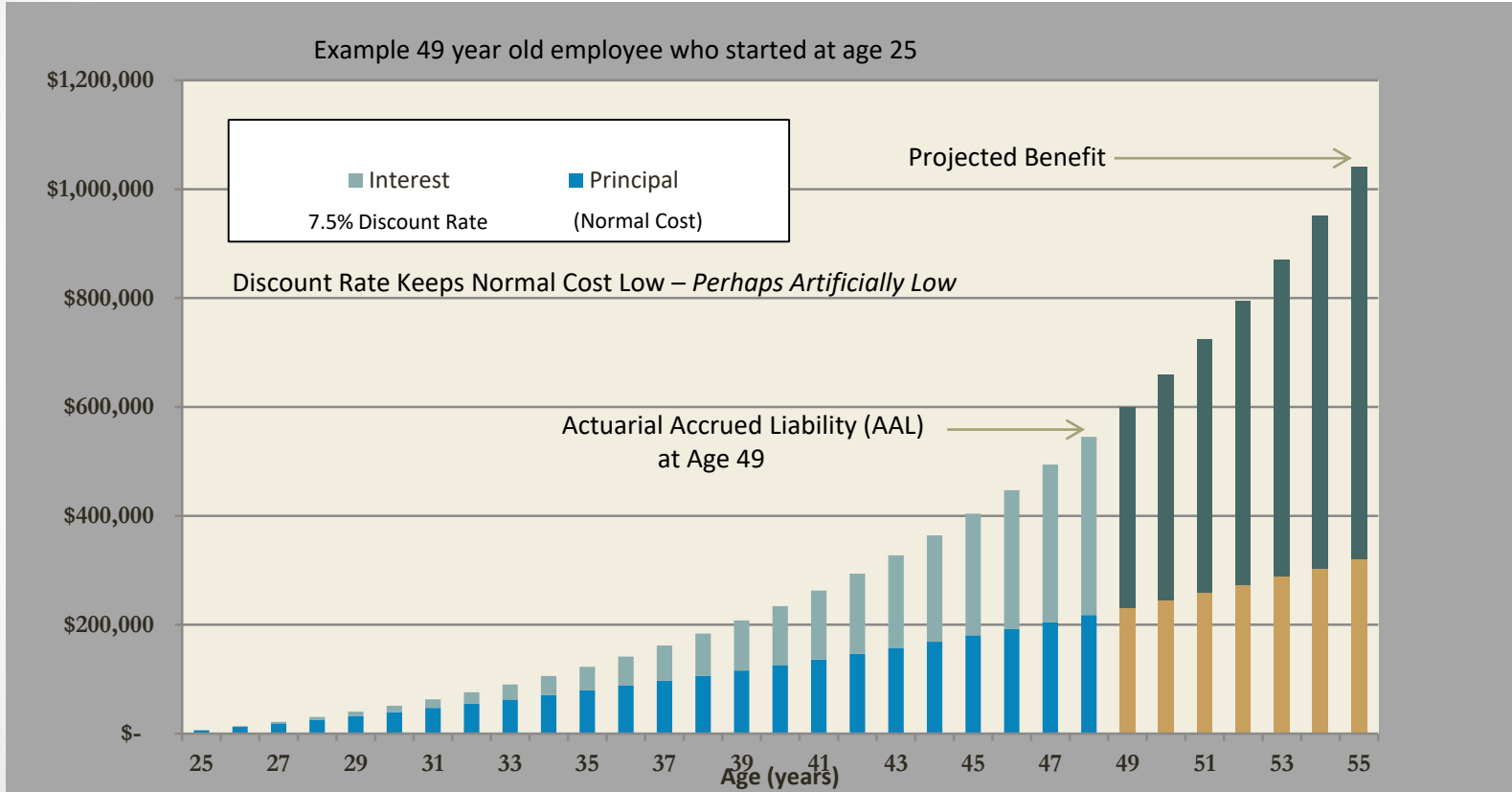
Discussion roadmap

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

Terminology

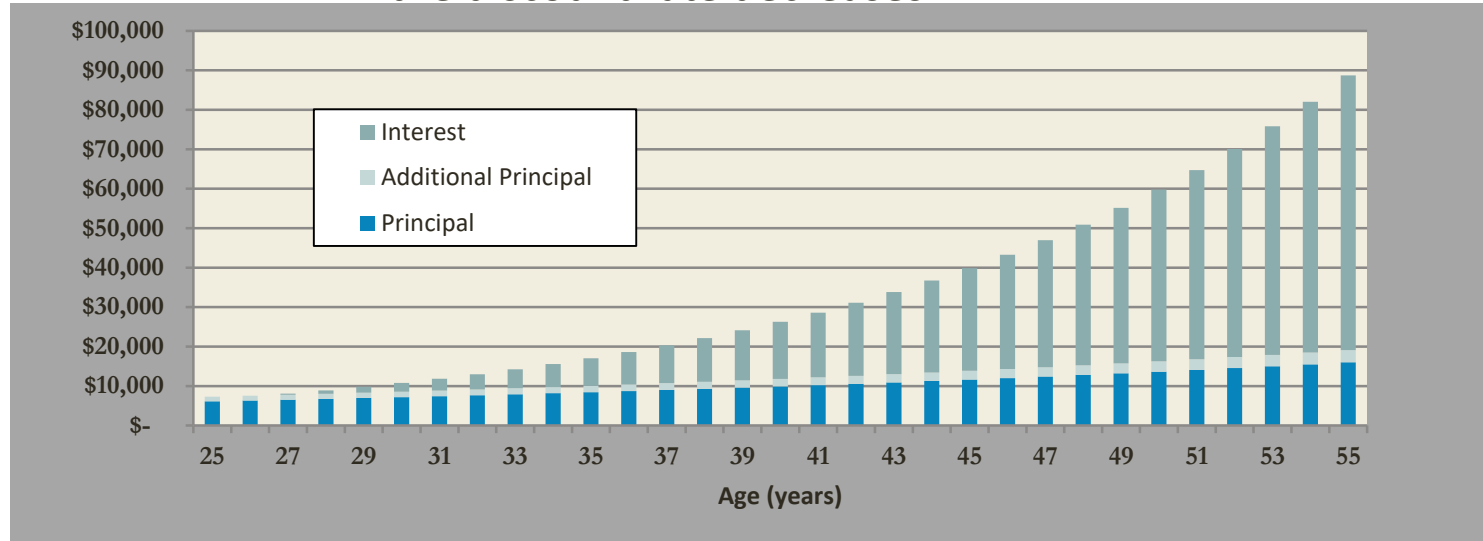
- Normal Cost (NC)
- Projected Benefits
- Present Value of Projected Benefits (PVB)
- Actuarial Accrued Liability (AAL)
- Market Value of Assets (MVA)
- Unfunded Actuarial Accrued Liability (UAAL)
 - $AAL - MVA = UAAL$
 - Same as UAL, Unfunded Pension Liability
- Gains/Losses vs. Change in Actuarial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

Terminology



Change in Assumption

If the discount rate decreases...



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

Discount Rate

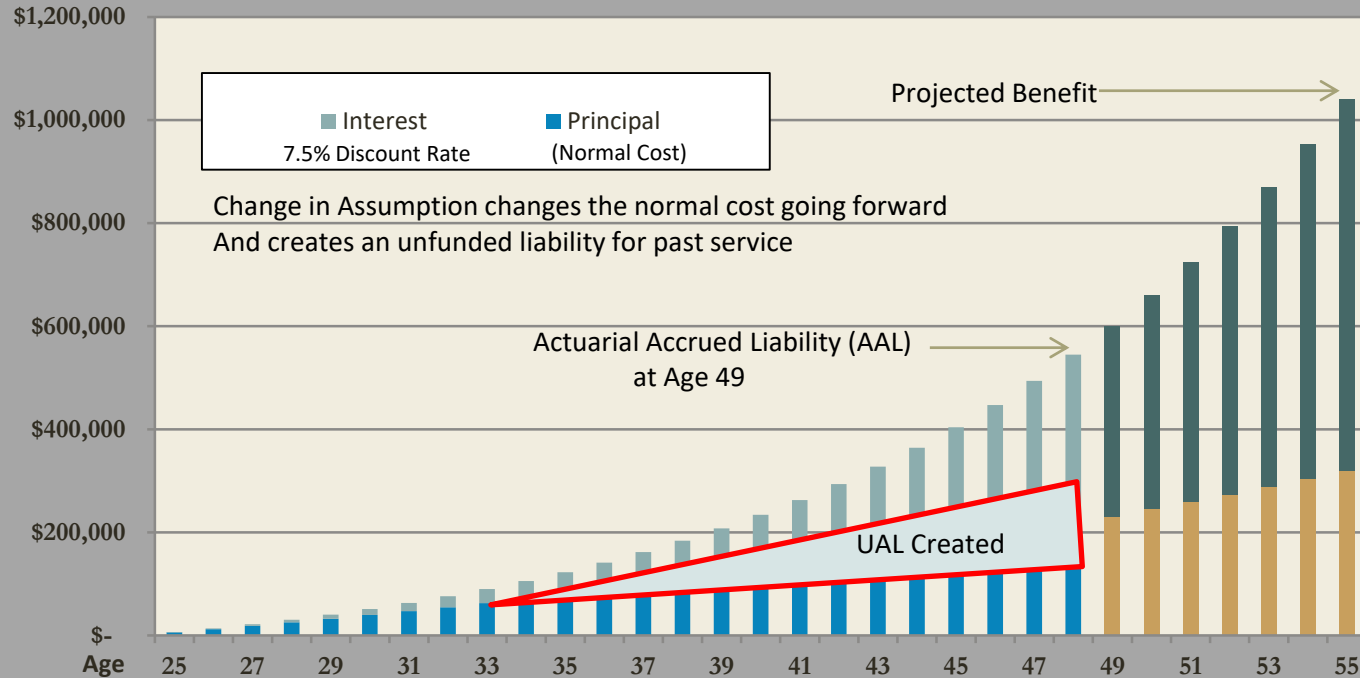


Normal Cost



Change in Assumption

Example 49 year old employee who started at age 25



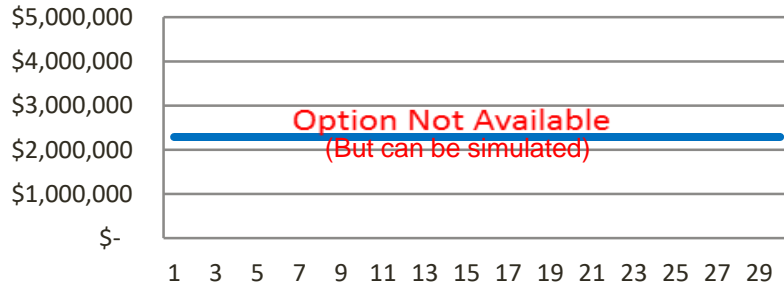
*More Contributions required to make up for lower assumed investment earnings or other assumption change.



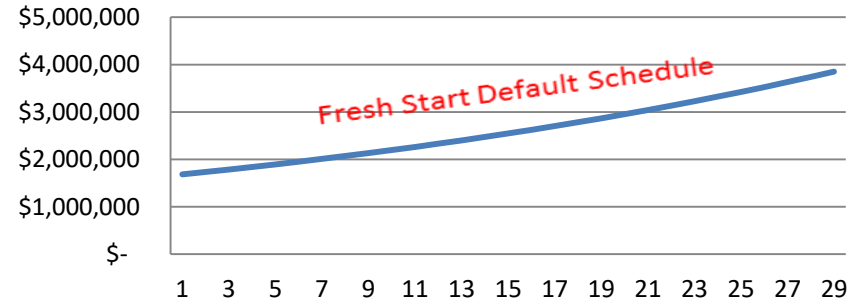
Examination Amortization Bases and Amortization Efficiency

Amortization schedules

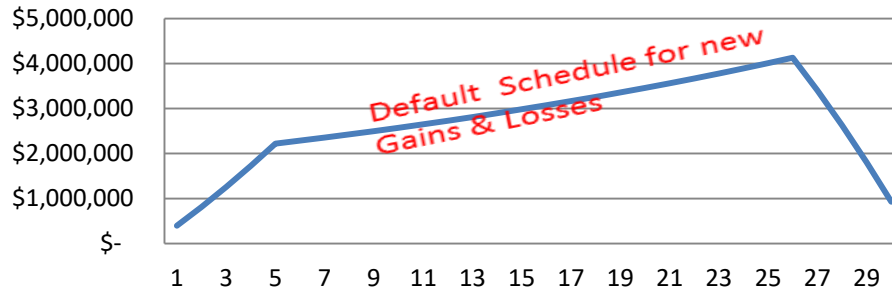
Level Payment Amortization



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		
1	\$ 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	\$ 66,221,333	20	\$	5,000,070		
2	\$ 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	\$ 66,003,750	19	\$	5,150,072		
3	\$ 73,499,553	28	\$	2,964,384		\$ 67,848,000	28	\$	4,218,803	\$ 72,427,046	18	\$	4,014,541	\$ 65,614,300	18	\$	5,304,574	\$ 65,614,300	18	\$	5,304,574		
4	\$ 75,938,481	27	\$	4,071,087		\$ 68,562,453	27	\$	4,345,367	\$ 73,696,710	17	\$	5,513,303	\$ 65,035,400	17	\$	5,463,712	\$ 65,035,400	17	\$	5,463,712		
5	\$ 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	\$ 64,248,263	16	\$	5,627,623		
6	\$ 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	\$ 63,232,039	15	\$	5,796,452		
7	\$ 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	\$ 61,964,553	14	\$	5,970,345		
8	\$ 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	\$ 60,421,709	13	\$	6,149,456		
9	\$ 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	\$ 58,577,446	12	\$	6,333,939		
10	\$ 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	\$ 56,403,586	11	\$	6,523,957		
11	\$ 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	\$ 53,869,672	10	\$	6,719,676		
12	\$ 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	\$ 50,942,789	9	\$	6,921,266		
13	\$ 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	\$ 47,587,377	8	\$	7,128,904		
14	\$ 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	\$ 43,765,024	7	\$	7,342,771		
15	\$ 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	\$ 39,434,254	6	\$	7,563,055		
16	\$ 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	\$ 34,550,281	5	\$	7,789,946		
17	\$ 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	\$ 29,064,764	4	\$	8,023,645		
18	\$ 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	\$ 22,925,529	3	\$	8,264,354		
19	\$ 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	\$ 16,076,279	2	\$	8,512,285		
20	\$ 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	\$ 8,456,276	1	\$	8,767,653		
21	\$ 55,894,600	10	\$	8,411,108		\$ 57,577,822	10	\$	7,182,229	\$ (0)	-	\$	-	-	-	-	-	-	-	-	-		
22	\$ 51,365,870	9	\$	8,663,442		\$ 54,449,465	9	\$	7,397,696														
23	\$ 46,235,870	8	\$	8,923,345		\$ 50,863,081	8	\$	7,619,627														
24	\$ 40,451,639	7	\$	9,191,045		\$ 46,777,615	7	\$	7,848,215														
25	\$ 33,956,034	6	\$	9,466,777		\$ 42,148,733	6	\$	8,083,662														
26	\$ 26,687,373	5	\$	9,750,780		\$ 36,928,569	5	\$	8,326,172														
27	\$ 18,579,103	4	\$	8,034,643		\$ 31,065,454	4	\$	8,575,957														
28	\$ 11,642,040	3	\$	6,206,761		\$ 24,503,621	3	\$	8,833,236														
29	\$ 6,079,886	2	\$	4,261,976		\$ 17,182,899	2	\$	9,098,233														
30	\$ 2,116,967	1	\$	2,194,918		\$ 9,038,368	1	\$	9,371,180														
\$ -						\$ -																	
\$190,643,158						Sum of Payments						\$134,985,569						Sum of Payments					
\$117,556,017						NPV @ 3%						\$97,969,960						NPV @ 3%					
						\$189,189,635												\$134,353,756					
						\$115,824,058												\$97,088,739					

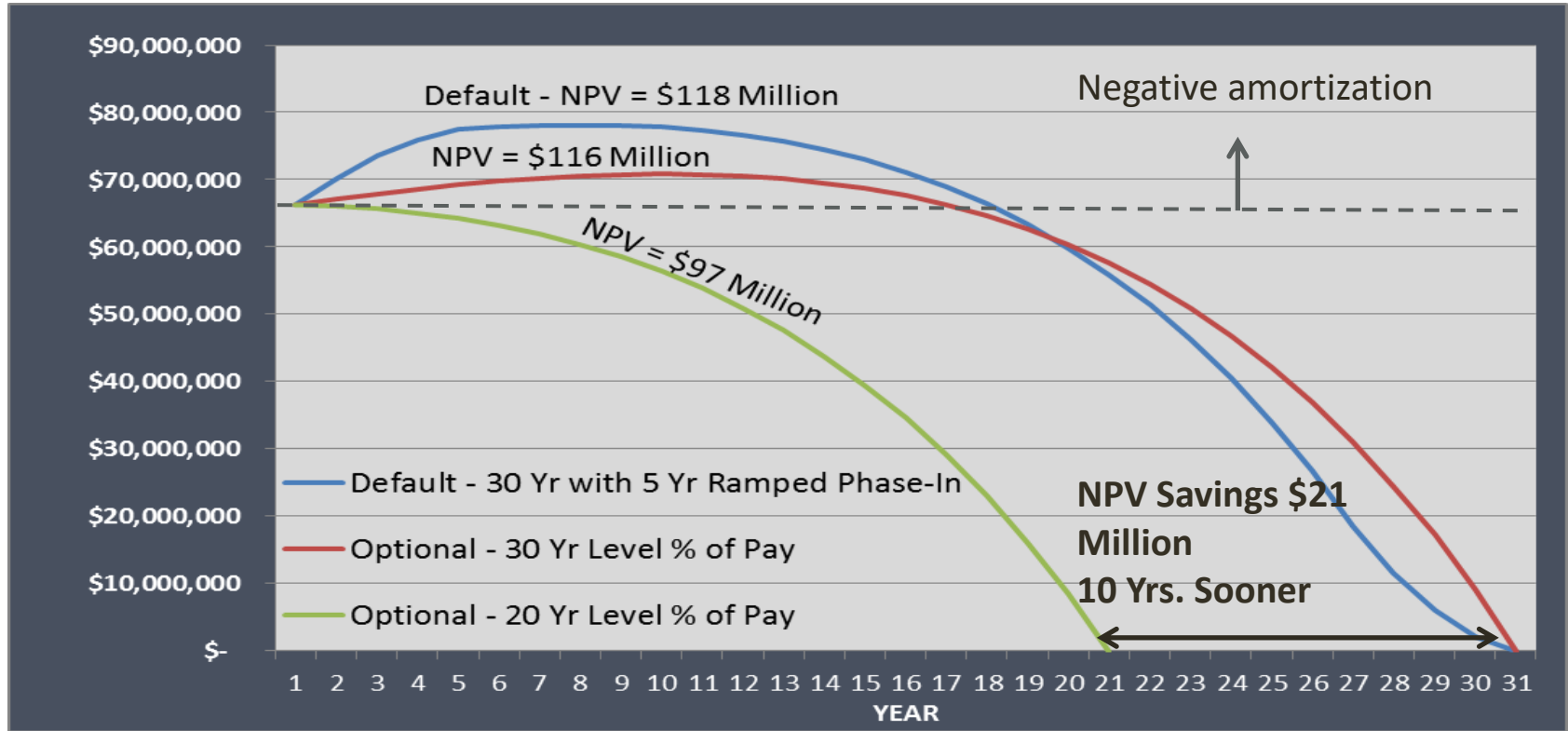
20 Yr. vs 30 Yr.
NPV Savings
\$21M

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

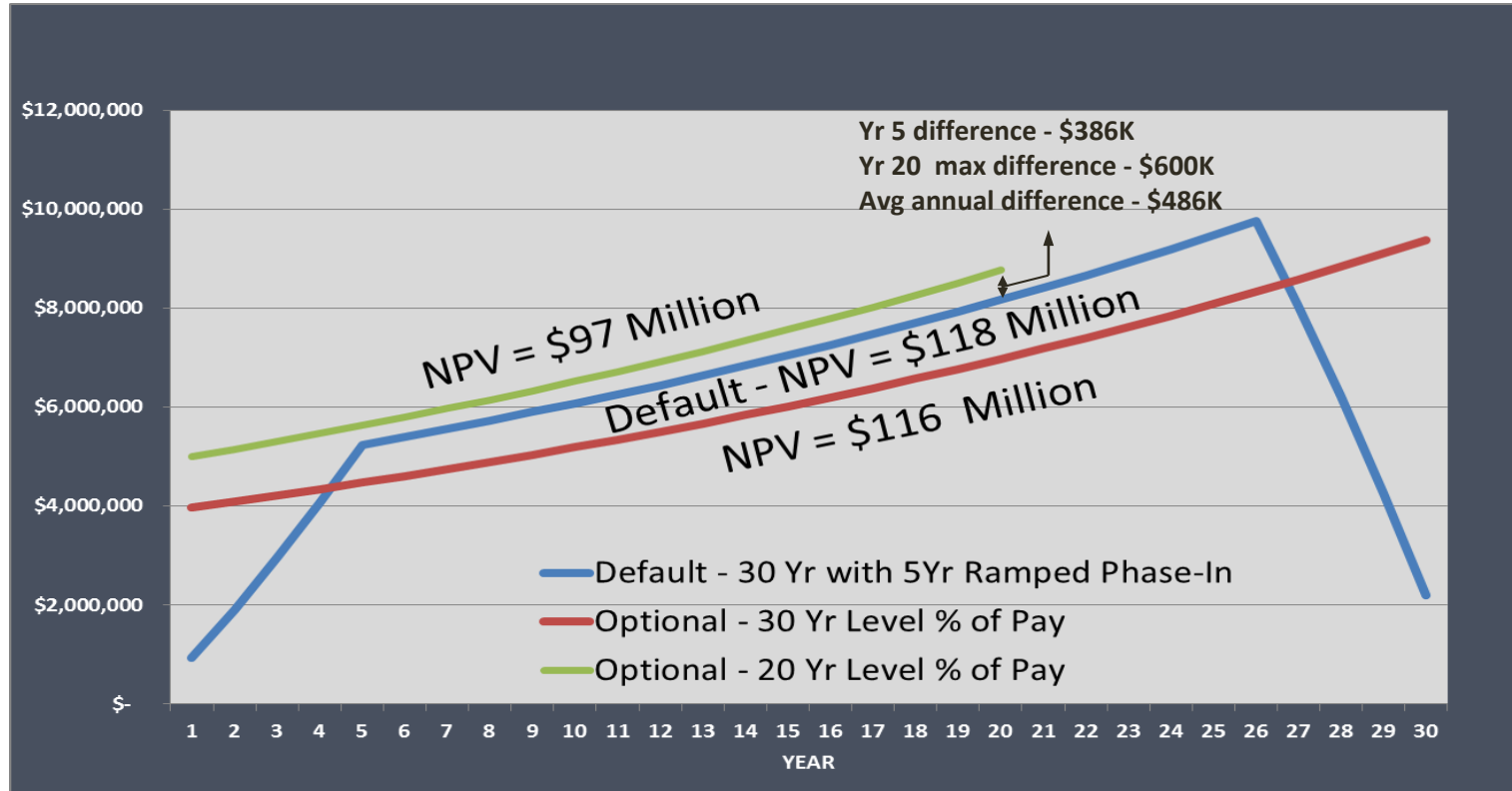
Least Cost Effective

Most Cost Effective

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

			Balance			Minimum	Level		Level	Level
			6/30/2015	6/30/2016	6/30/2017	Contribution	% of pay		% of pay	Pmt
Reason For Base	Date Established	Yrs				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 wooden desk with a keyboard, a cup of coffee, a spiral notebook, and a mouse.

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.

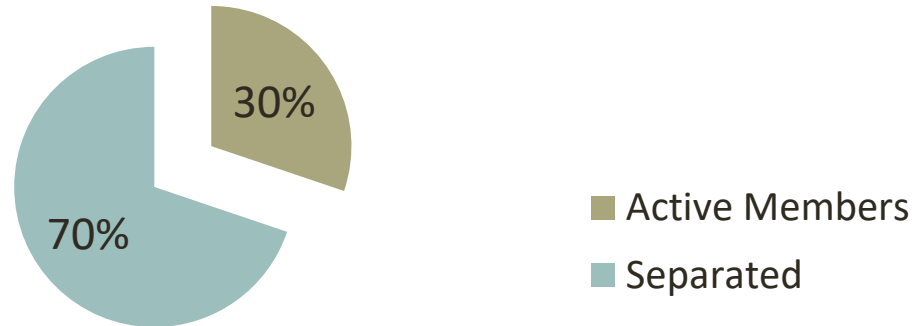
Formula: 2.7% @ 57

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

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

What if Fully Funded?

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

Expected asset volatility $\pm \sim 12\% = \$107$ million

Assets are currently underfunded and volatile.

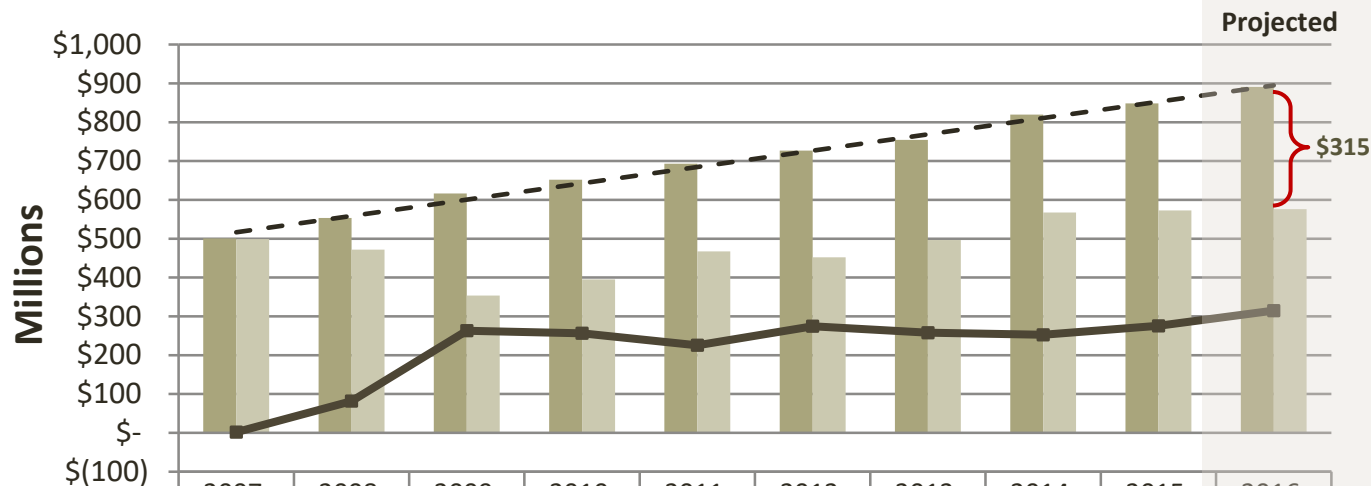
Liabilities are large relative to agency payrolls and budget.

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 wooden desk with a keyboard, a cup of coffee, a spiral notebook, and a mouse.

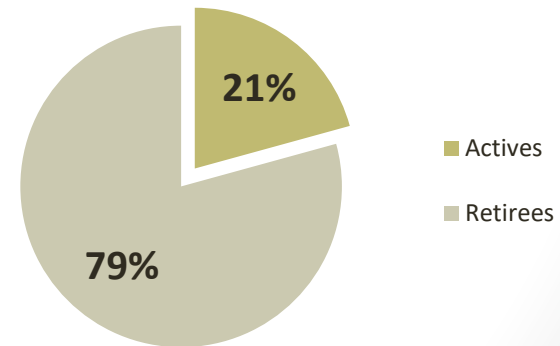
Retiree Insurance OPEB Plan Staus

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

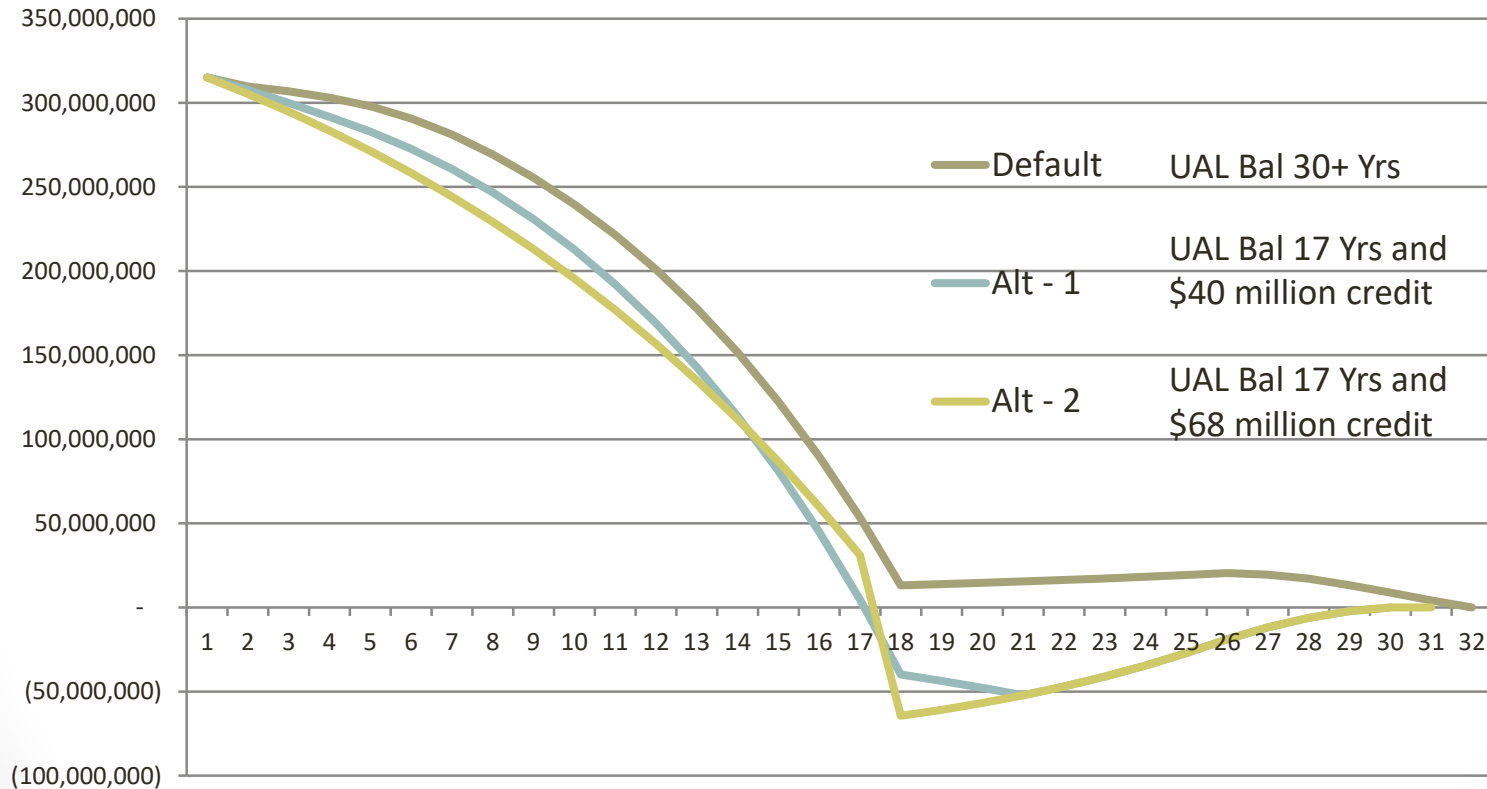
- Fewer Employees through attrition, layoffs, contracting and efficiency
- Lower Benefit Tiers
- Substantial increase in employee contributions
- Aggressive UAL payment schedule
- Other....

Preliminary Staff Recommendations

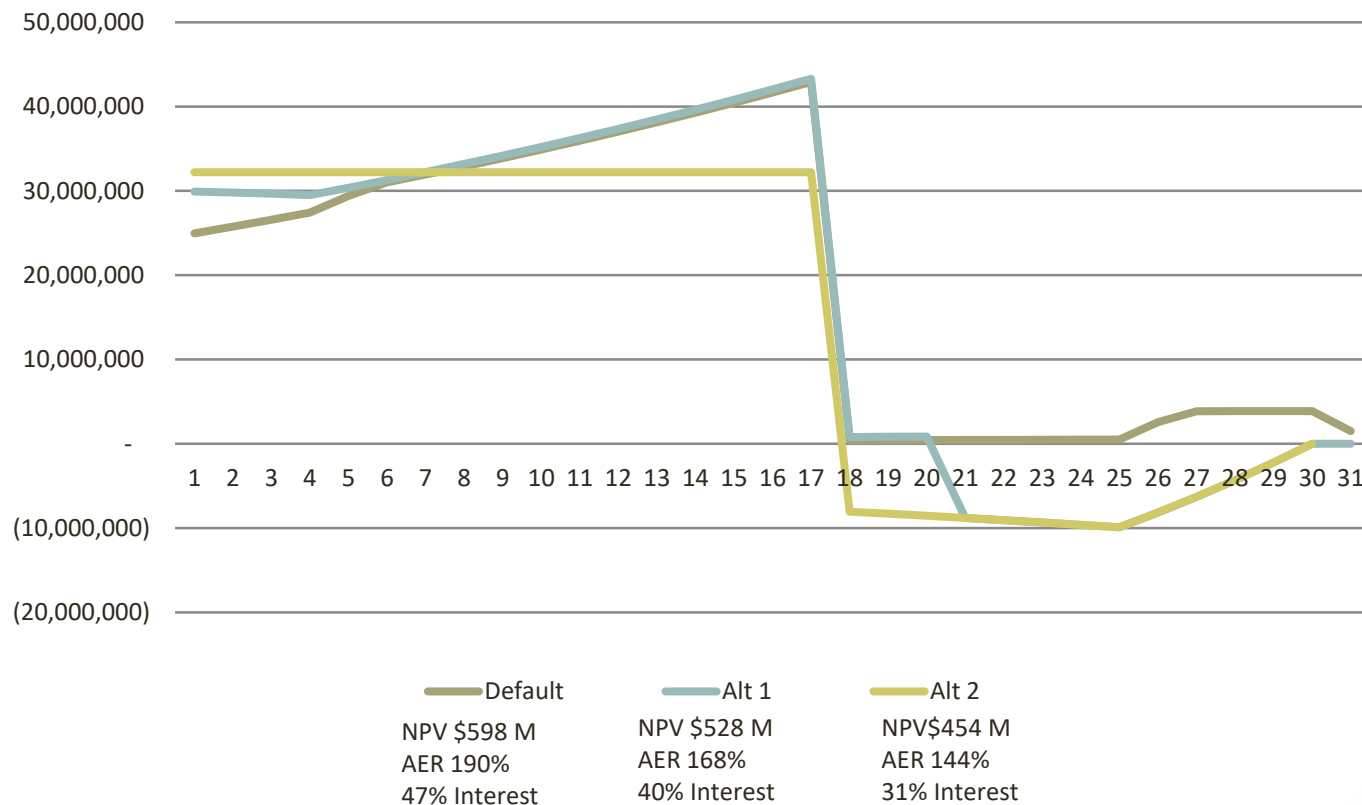
- 1) Start paying on 2016 experience in 2017-18 or sooner
- 2) Amortize 2015 & 2016 Experience Losses no longer than 20 Years
- 3) Make discretionary payments to preserve budget flexibility
- 4) Leave 2014 Experience Gain (\$71 million credit) as a rainy day fund
- 5) Incorporate a level payment on UAL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

	Sch.	Preliminary Funding Recommendations														[31]
Val	Pmt															
FYE	FYE	Default - Amortizing 2015 & 2016 Losses Over 30 Years						Alternative 1 - Amortize 2015 & 2016 Losses Over 20 Yrs							Alternative 2 - Level Pmt. Plan	
												Pmt Over			Pmt Over	
		2014 Base	2014 Credit	2015 Loss	2016 Loss	Total		2014 Base	2014 Credit	2015 Loss	2016 Loss	Total	Default		Default	
2015	2018	26,500,897	-1,950,558	406,782		24,957,121		26,500,897	-1,950,558	2,183,731	3,177,327	29,911,398	-4,954,276		32,204,184	-7,247,063
2016	2019	27,295,924	-3,013,612	837,971	636,258	25,756,541		27,295,924	-3,013,612	2,249,243	3,272,647	29,804,202	-4,047,661		32,204,184	-6,447,643
2017	2020	28,114,802	-4,138,693	1,294,665	1,310,691	26,581,464		28,114,802	-4,138,693	2,316,721	3,370,827	29,663,655	-3,082,191		32,204,184	-5,622,720
2018	2021	28,958,246	-5,328,568	1,778,007	2,025,017	27,432,702		28,958,246	-5,328,568	2,386,222	3,471,951	29,487,851	-2,055,149		32,204,184	-4,771,482
2019	2022	29,826,993	-5,488,425	2,289,184	2,781,024	29,408,776		29,826,993	-5,488,425	2,457,809	3,576,110	30,372,487	-963,711		32,204,184	-2,795,408
2020	2023	30,721,803	-5,653,078	2,357,860	3,580,568	31,007,153		30,721,803	-5,653,078	2,531,543	3,683,393	31,283,661	-276,508		32,204,184	-1,197,031
2021	2024	31,643,457	-5,822,670	2,428,596	3,687,985	31,937,368		31,643,457	-5,822,670	2,607,489	3,793,895	32,222,171	-284,803		32,204,184	-266,816
2022	2025	32,592,761	-5,997,350	2,501,453	3,798,625	32,895,489		32,592,761	-5,997,350	2,685,714	3,907,712	33,188,836	-293,348		32,204,184	691,305
2023	2026	33,570,543	-6,177,271	2,576,497	3,912,584	33,882,354		33,570,543	-6,177,271	2,766,285	4,024,943	34,184,501	-302,148		32,204,184	1,678,169
2024	2027	34,577,660	-6,362,589	2,653,792	4,029,961	34,898,824		34,577,660	-6,362,589	2,849,274	4,145,691	35,210,037	-311,212		32,204,184	2,694,640
2025	2028	35,614,989	-6,553,466	2,733,406	4,150,860	35,945,789		35,614,989	-6,553,466	2,934,752	4,270,062	36,266,338	-320,549		32,204,184	3,741,605
2026	2029	36,683,439	-6,750,070	2,815,408	4,275,386	37,024,163		36,683,439	-6,750,070	3,022,795	4,398,164	37,354,328	-330,165		32,204,184	4,819,978
2027	2030	37,783,942	-6,952,572	2,899,870	4,403,647	38,134,887		37,783,942	-6,952,572	3,113,479	4,530,109	38,474,958	-340,070		32,204,184	5,930,703
2028	2031	38,917,461	-7,161,150	2,986,866	4,535,757	39,278,934		38,917,461	-7,161,150	3,206,883	4,666,012	39,629,206	-350,272		32,204,184	7,074,750
2029	2032	40,084,984	-7,375,984	3,076,472	4,671,830	40,457,302		40,084,984	-7,375,984	3,303,090	4,805,993	40,818,082	-360,780		32,204,184	8,253,118
2030	2033	41,287,534	-7,597,264	3,168,766	4,811,984	41,671,021		41,287,534	-7,597,264	3,402,182	4,950,172	42,042,625	-371,604		32,204,184	9,466,837
2031	2034	42,526,160	-7,825,181	3,263,829	4,956,344	42,921,152		42,526,160	-7,825,181	3,504,248	5,098,678	43,303,904	-382,752		32,204,184	10,716,968
2032	2035		-8,059,937	3,361,744	5,105,034	406,842			-8,059,937	3,609,375	5,251,638	801,076	-394,235		-8,059,937	8,466,778
2033	2036		-8,301,735	3,462,597	5,258,185	419,047			-8,301,735	3,717,656	5,409,187	825,108	-406,062		-8,301,735	8,720,782
2034	2037		-8,550,787	3,566,474	5,415,931	431,618			-8,550,787	3,829,186	5,571,463	849,862	-418,243		-8,550,787	8,982,405
2035	2038		-8,807,311	3,673,469	5,578,409	444,567			-8,807,311	-	-	-8,807,311	9,251,877		-8,807,311	9,251,877
2036	2039		-9,071,530	3,783,673	5,745,761	457,904			-9,071,530			-9,071,530	9,529,434		-9,071,530	9,529,434
2037	2040		-9,343,676	3,897,183	5,918,134	471,641			-9,343,676			-9,343,676	9,815,317		-9,343,676	9,815,317
2038	2041		-9,623,986	4,014,098	6,095,678	485,790			-9,623,986			-9,623,986	10,109,776		-9,623,986	10,109,776
2039	2042		-9,912,706	4,134,521	6,278,548	500,364			-9,912,706			-9,912,706	10,413,070		-9,912,706	10,413,070
2040	2043		-8,168,070	4,258,557	6,466,905	2,557,392			-8,168,070			-8,168,070	10,725,462		-8,168,070	10,725,462
2041	2044		-6,309,834	3,509,051	6,660,912	3,860,129			-6,309,834			-6,309,834	10,169,963		-6,309,834	10,169,963
2042	2045		-4,332,752	2,710,742	5,488,591	3,866,581			-4,332,752			-4,332,752	8,199,333		-4,332,752	8,199,333
2043	2046		-2,231,368	1,861,376	4,239,937	3,869,945			-2,231,368			-2,231,368	6,101,313		-2,231,368	6,101,313
2044	2047			958,609	2,911,423	3,870,032						-	3,870,032		-	3,870,032
					1,499,383	1,499,383						-	1,499,383			1,499,383
		Total Payments				597,332,274						527,893,055	69,439,219		454,757,441	142,574,833
		PV savings over default											25,208,615			67,893,237
		Amortization Efficiency Ratio (AER)				189.60%							167.60%			144.30%
						47.30%							40.30%			30.70%

UAL Balance Comparison




Payment Comparisons



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?

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