Connect
CalPERS Educational Forum 2016

How to Manage Pension Liabilities

Dan Matusiewicz, Finance Director
City of Newport Beach

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Discussion roadmap

- Define the problem
- Pension management strategies
- Granular analysis of the
  - “Schedule of Amortization Bases”
    (Page 15 of Actuarial Valuation for Non-pooled plans)
- High level approach liability management
- Discuss resources

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Takeaways

1. Call your actuary regularly
2. Understand your options
3. Don’t wait to address UAL & known experience losses
4. Analyze your schedule of amortization bases annually
5. Memorialize policies and best practices

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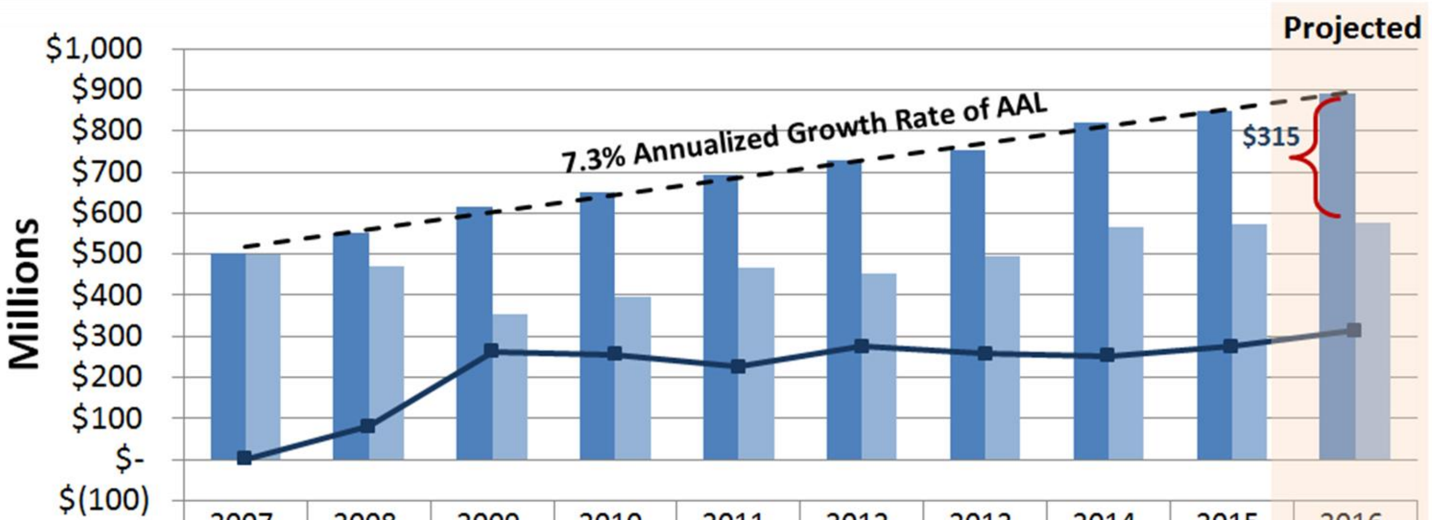
Historical context



	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 the problem?

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

Current Projection

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

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

Current Projection

÷ $71.9 million = 12 times greater than expected payroll

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

<u>Assets</u> are currently underfunded and volatile.
<u>Liabilities</u> are large relative to agency payrolls and budget.

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What to do?

Know your Actuary and call them regularly

- They can guide you through your options and help you stay informed
- They can provide scenario analysis
- They are a wealth of information
- ALL levels of PERS Staff, Executives and Board Members at the Ed Forum

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CalPERS Actuary by county

Actuary:	Nancy Campbell	Bill Karch	Fritzie Archuleta	Kerry Worgan	Randall Dziubek	Cheuk Kiu (Jet) Au
Phone Number:	(916) 795-0575	(916) 795-2856	(916) 795-1262	(916) 795-0003	(916) 795-1354	(916) 795-2187
County Name(s):	San Diego	Ventura	Alameda Contra Costa	Orange San Bernardino	Los Angeles Mono	El Dorado Sierra Solano

Actuary:	David Clemment	May Shuang Yu	Barbara Ware	Stuart Bennett	Kelly Sturm	Shelly Chu
Phone Number:	(916) 795-2472	(916) 795-4143	(916) 795-3426	(916) 795-2692	(916) 795-0400	(916) 795-0647
County Name(s):	Santa Clara Santa Cruz Stanislaus	Lassen Modoc Sacramento Siskiyou	Los Angeles Marin Monterey San Luis Obispo	Butte Kern Kings San Bernardino Santa Barbara	Amador Placer San Benito San Joaquin Yolo	Colusa Fresno Merced Plumas Tuolumne

Actuary:	Todd Tauzer	Julian Robinson	Jordan Fassler	Jean Fannjiang
Phone Number:	(916) 795-9623	(916) 795-4164	(916) 795-1018	(916) 795-2475
County Name(s):	Humboldt Riverside Sutter Trinity Yuba	Imperial Los Angeles Napa San Francisco San Mateo Tulare	Alpine Calaveras Del Norte Lake Medera Mariposa	Glenn Inyo Los Angeles Nevada Shasta Sonoma Mendocino Tehama

Understand your asset replenishment options

- Lump sum additional discretionary payments
- Fresh Start (re-amortize UAL bases)
- Partial Fresh Start (re-amortize any two UAL bases)
- Prepay or not to prepay?

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Knowing what is coming down the road can help your long-term planning

- Imminent experience losses
  - 6/30/2015 Investment Return of 2.4% results in 5.1% experience loss
  - 6/30/2016 Investment Returns of .6% results in 6.9% experience loss
- Decoupling of UAL from PERS Rates (FY 2017-18)

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Create New UAL Object Code FY 2017-18

Consider reorganizing object codes on the General Ledger

Pension Costs

- Employer Rate
- Employee Rate
  - Subtotal – Normal Cost
- Amortized Cost of UAL
- Negotiated EE Contributions
  - Subtotal – Net Employer Pension Cost

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Asset replenishment strategies

- Estimate your experience loss when you first learn of them – For FY 16, approximate loss = FY 15 MVA x 6.9%
- Start paying on experience losses in the current fiscal year – Why let them grow 15.6% $(1.075)^2$ before they hit your contribution schedule?
- Analyze Schedule of Amortization Bases (pg. 15) and ask your actuary about the new additions.
- Identify if some or all of the bases can be amortized more effectively within your means

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How to build the business case to accelerate your repayment schedule?

- Replicate amortization schedules for each base on your schedule of amortization bases
- Compare cash flow options
- Prepare a present value (PV) analysis of your optional cash flow schedules
- The PV analysis will help identify most efficient payment schedules
- Determine what your agency can afford
- Determine which payment option best fits your agency

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Understand the amortization schedule options

- Level percent of pay with 5-year phase-in schedule
  - Default effective 6/30/13
- Level percent of pay
  - Default (only when a fresh start is initiated)
- Level dollar payment
  - Not a current option (However, this can be simulated with discretionary payments)

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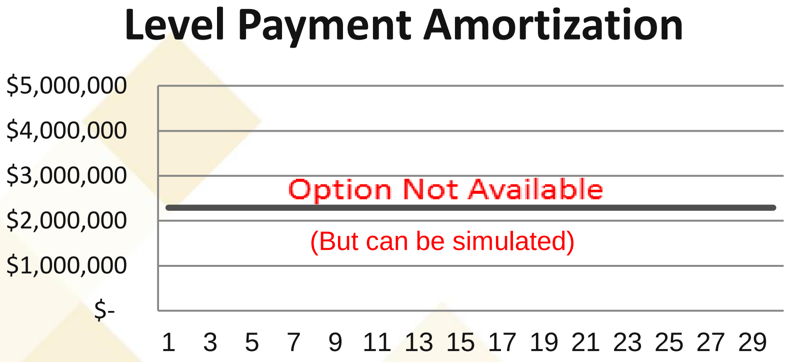
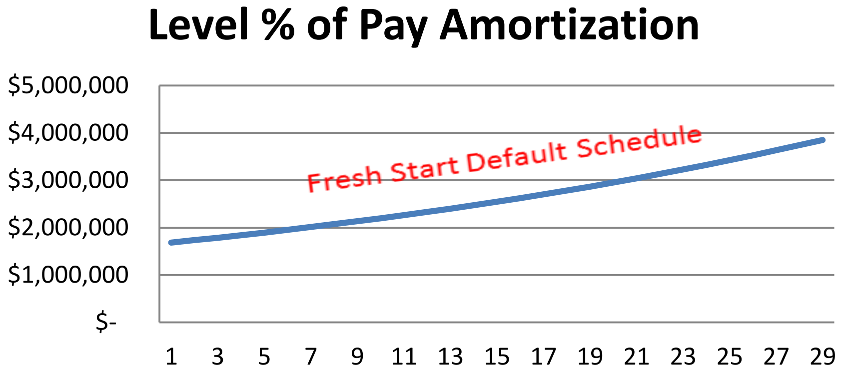
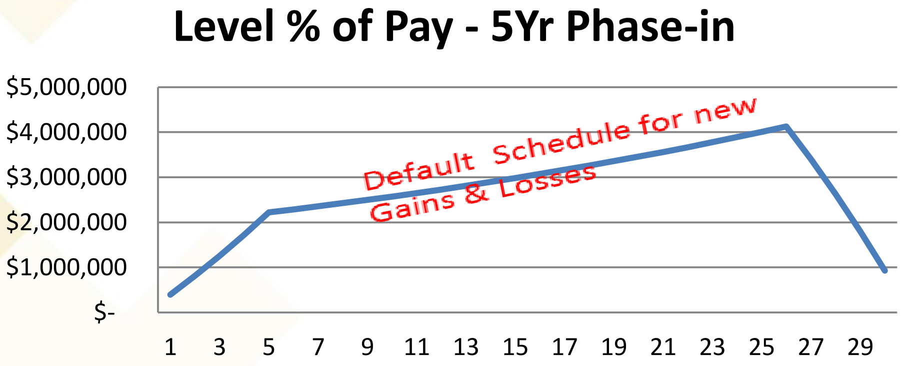
Amortization schedules







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Analyze Amortization Bases

CALPERS ACTUARIAL VALUATION - June 30, 2014

Schedule of Amortization Bases

							Amounts for Fiscal 2016-17		
Reason for Base	Date Established	Amortization Period	Balance 6/30/14	Expected Payment 2014-15	Balance 6/30/15	Expected Payment 2015-16	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
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
3	$ 73,499,553	28	$ 2,964,384	$ 67,848,000	28	$ 4,218,803	$ 72,427,046	18	$ 4,014,541	$ 65,614,3[illegible]	[illegible]8	$ 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	$ 65,035,4[illegible]	[illegible]7	$ 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***
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
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
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
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
10	$ 77,761,515	21	$ 6,076,364	$ 70,845,922	21	$ 5,188,595	$ 60,331,811	[illegible]	$ 8,228,965	$ 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
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
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
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
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
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
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
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
19	$ 63,340,747	12	$ 7,928,276	$ 62,609,658	[illegible]	$ 6,769,940	$ 6,126,672	2	$ 4,294,773	$ 16,076,279	2	$ 8,512,285
20	$ 59,871,09[illegible]	[illegible]	$ 8,166,125	$ 60,286,160	[illegible]	$ 6,973,038	$ 2,133,257	1	$ 2,211,[illegible]98	$ 8,456,276	1	$ 8,767,653
21	$ 55,894,60[illegible]	10	$ 8,411,108	$ 57,577,822	10	$ 7,182,229	$ (0)	-	$	$ -		
22	$ 51,365,877	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		$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%		$97,088,73[illegible]

1 Yr

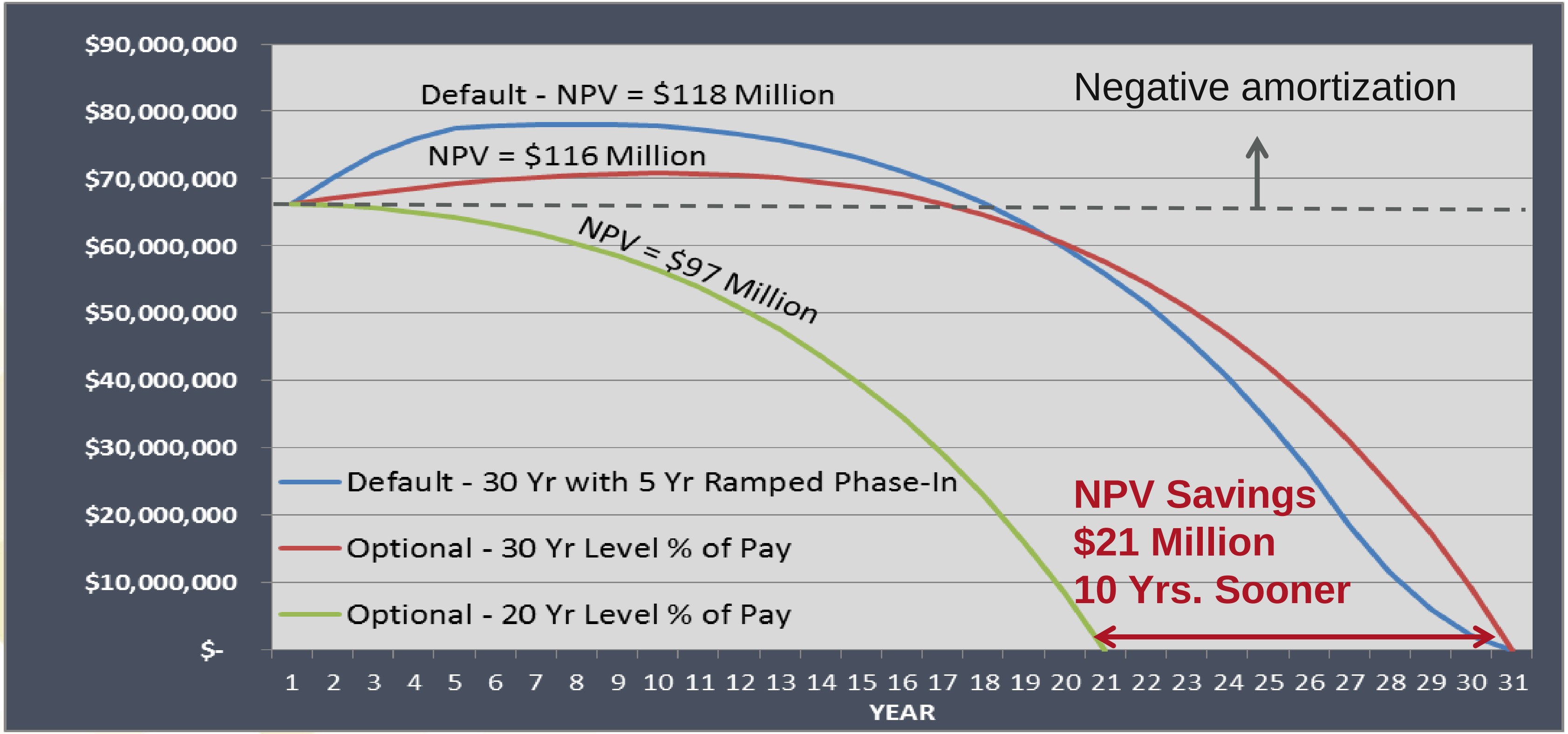
8 Yrs.

17 Yrs.

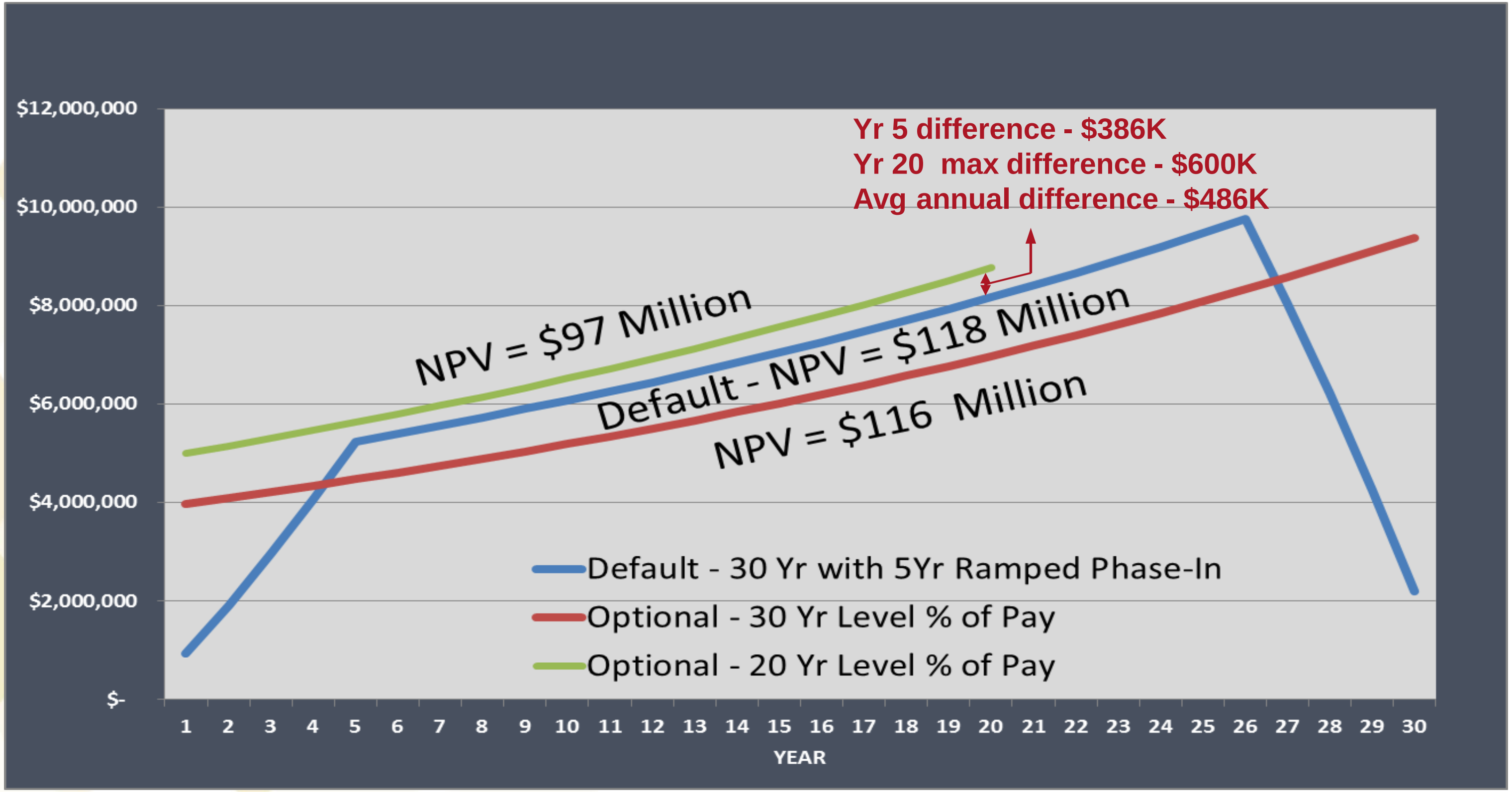
18 Yrs.

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

Annual balance comparison



Annual 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**

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Analyze your schedule of amortization bases annually

Question

Is your organization OK with the added cost of a 30 year schedule?

If not…

Consider reviewing payment alternatives with your actuary.

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Analyze your schedule of amortization bases annually

Question	If not…
Is your organization OK with negative amortization?	30 year “level payment” schedules will avoid negative amortization but “level % of pay” schedules > 20 years do not. Five year ramp up/down schedules negatively amortize during the ramp up period.

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Analyze your schedule of amortization bases annually

Question

Is a “level percent of pay” schedule right for your organization?

If not…

consider making payments on a level payment basis so your agency isn’t chasing an increasing payment each year especially during recessions. Payment increases 136% $(1.03)^{29}$ over 30 years.

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Managing your amortization bases

Reason for Base	Date Established	Amort. Period	Balance 06/30/14	Amounts for Fiscal 2016-17: Payment for 2016-17	Amounts for Fiscal 2016-17: Payment as % of Payroll	Amort Schedule	Recommendations	
FS 30-YEAR AMORTIZATION	06/30/08	24	($4,760,389)	($326,647)	-0.737%	Level % of Pay	OK	
ASSUMPTION CHANGE	06/30/09	15	$10,557,847	$940,995	2.122%	Level % of Pay	OK	
SPECIAL (GAIN)/LOSS	06/30/09	25	$11,727,208	$788,514	1.778%	Level % of Pay	A30	Take Action
SPECIAL (GAIN)/LOSS	06/30/10	26	($1,985,365)	($130,969)	-0.295%	Level % of Pay	OK - Credit	
ASSUMPTION CHANGE	06/30/11	17	$11,462,630	$948,863	2.140%	Level % of Pay	OK	
SPECIAL (GAIN)/LOSS	06/30/11	27	($5,269,530)	($341,431)	-0.770%	Level % of Pay	OK - Credit	
PAYMENT (GAIN)/LOSS	06/30/12	28	$1,857,636	$118,346	0.267%	Level % of Pay	A30	Take Action
(GAIN)/LOSS	06/30/12	28	$70,991,591	$4,522,704	10.199%	Level % of Pay	A30	Take Action
(GAIN)/LOSS	06/30/13	29	$61,329,437	$1,918,695	4.327%	5 Yr Ramp	AR, A30	Take Action
ASSUMPTION CHANGE	06/30/14	20	$33,710,124	$770,682	1.738%	5 Yr Ramp	AR	Take Action
(GAIN)/LOSS	06/30/14	30	($58,432,251)	($938,760)	-2.117%	5 Yr Ramp	OK - Credit	
TOTAL			**$131,188,938**	**$8,270,992**	**18.651%**			

Recommendation Notes:

(1) AR - Avoid the 5 Yr Ramp Amortization Schedules to avoid negative amortization.

(2) A30 - Avoid the 30 Yr Amortization Schedules. Target < 20 Years to avoid negative amortization.

(3) GFOA Recommendation: "Never exceed 25 years, but ideally fall between 15-20 year range"
http://www.gfoa.org/sites/default/files/GFOABPCoreElementsofPensionFundingPolicy.pdf

(4) Partial Fresh Start can be achieved by combining any two amortization bases.

(5) Consider leaving credit balances in place as a rainy day fund; you can combine credits with other bases when/if you need rate-relief down the road.

Detail analysis

- Download Excel amortization schedules www.newportbeachca.gov/csmfo
- Focus on bases that exceed 20 years
- Also evaluate bases starting with 5-yr Pphase-in ramps, 6/30/13 bases or later
- Create a comparative amortization schedule for each base in question
- Consider combining bases to create fewer and shorter amortization bases
- Evaluate what your agency can afford to pay making use of the “discretionary payment,” “fresh start” or “partial fresh start” options
- Quantify savings by preparing a PV analysis comparing current and proposed cash flows
- Estimate and start paying on known experience losses not in current valuation
- Review plan with your actuary and governing board

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High level approach

- Check to see if UAL Payment > (UAL x 7.5 %). If not, why not?
- 2015 UAL + Est. 2016 Exp. Loss (MVA x 6.9%) = Est. 2016 UAL
- Determine UAL amortization goal (< 20 years?)
- Use basic mortgage payment calculation assuming level payment plan to arrive at new UAL payment target
- Subtract current UAL budget to arrive at payment shortfall
- Discuss with actuary and start making additional discretionary payments
- Consider dedicating 2016 surplus, anticipated revenue growth, plus any loose change to new target payment

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Other common pension management strategies

Long term savings

- PEPRA
- Lower Tier Benefits
- Creative non-pensionable benefits
  - Cafeteria and other health allowance plans
  - Generous leave accrual
  - One-time bonuses

Immediate Savings

- Negotiated employee contributions add up quickly
- Lower payrolls provide immediate cash savings

Note

Early retirement plans may exacerbate the liability problem

Disability retirements also drive-up liabilities

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Memorialize policies

Consider adopting pension & OPEB funding policy

- Target funding at 100% of Actuarial Accrued Liability
- Contribute no less then 100% of actuarially determined contribution annually
- Analyze schedule of amortization bases each and every year
- Amortize ALL gains/losses no longer than a 20 year, closed period
- Asset smoothing or rate phase-in no longer than five years

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Memorialize policies (continued)

Revise Reserve and Surplus Policies to address UAL

- Establish a rate smoothing reserve to avoid phase-in periods and provide economic relief during recessionary cycles
- Dedicate a portion of surplus funds to accelerate payment on unfunded liabilities

Resources

- CalPERS Actuary
- Independent Actuary
- Emerging Analytical Tools and Services
- Government Finance Officers Association (GFOA)

  http://www.gfoa.org/core-elements-funding-policy

  http://www.gfoa.org/sustainable-funding-practices-defined-benefit-pension-plans
- California Actuarial Advisory Panel (CAAP)

  http://www.sco.ca.gov/Files-ARD/BudLeg/CAAP_Funding_Policies_w_letter.pdf
- Comparative Amortization Schedules

  http://newportbeachca.gov/csmfo

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Questions?

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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%

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*Amortization Efficiency Ratio (AER)