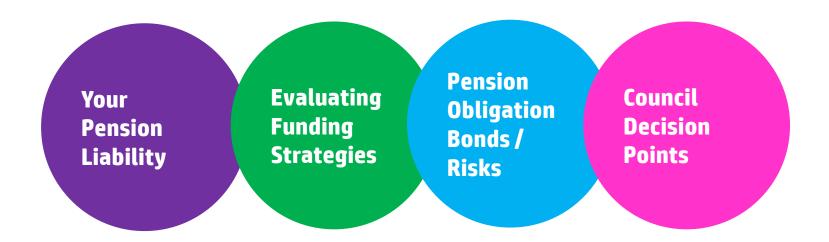


Pension Management Plan (Pension Obligation Bonds)

October 19, 2021



Overview





Your Pension Liability



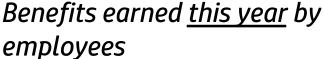
CalPERS Annual Pension Costs

Current Year Payment

Past Due Payment







% of Payroll \$6.7 Million



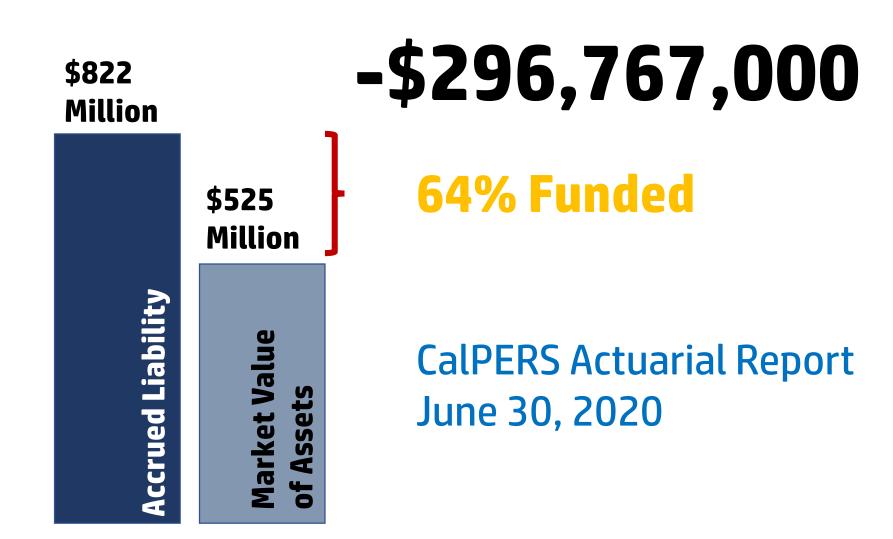
Benefits previously earned by employees + retirees

Fixed \$ Amount

\$20 Million



Unfunded Accrued Liability (UAL)





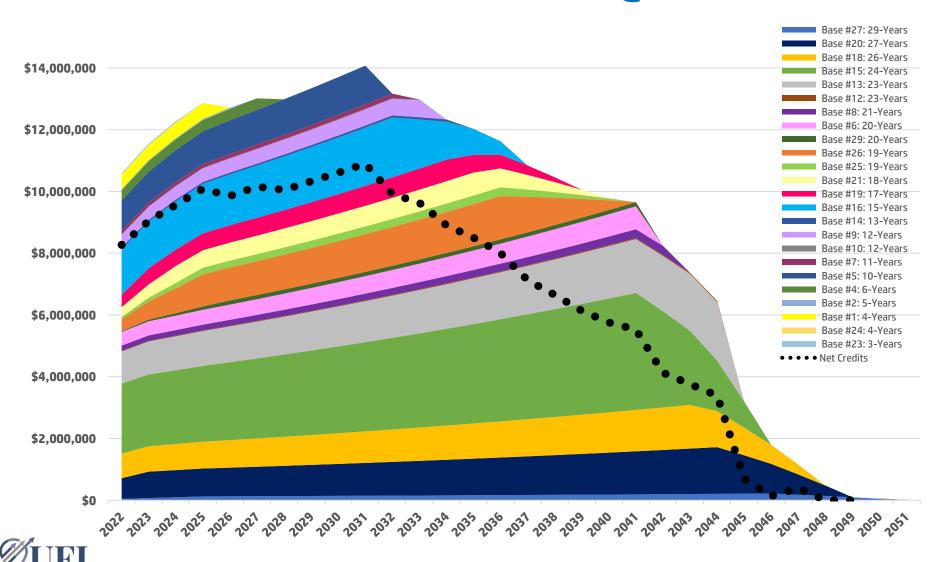
Amortization Bases for FY 22-23 UAL

	MISCELLANEOUS PLAN					SAFETY PLAN				
	Year	Term	FY21-22	FY22-23		Year	Term	FY21-22	FY22-23	
1	2003	3	3,311,022	2,602,545	1	2008	18	(7,730,250)	(7,659,591)	
2	2004	4	(337,037)	(282,542)	2	2009	19	6,616,540	6,573,399	
3	2006	6	568,067	510,094	3	2010	20	1,292,627	1,287,247	
4	2009	9	3,399,633	3,204,010	4	2011	21	1,546,424	1,543,283	
5	2009	19	4,084,212	4,057,582	5	2012	22	2,440,208	2,439,973	
6	2009	9	120,475	113,542	6	2012	22	76,383,053	76,375,701	
7	2010	20	(2,830,122)	(2,818,342)	7	2013	23	44,577,316	44,483,117	
8	2011	11	4,399,142	4,221,638	8	2014	14	14,574,146	9,236,828	
9	2011	21	(2,561,182)	(2,555,981)	9	2014	24	(21,630,676)	(21,626,974)	
10	2012	22	1,864,336	1,864,157	10	2015	25	20,918,924	20,952,349	
11	2012	22	9,815,468	9,814,524	11	2016	16	8,124,206	8,074,530	
12	2013	23	33,280,610	33,210,282	12	2016	26	21,456,777	21,797,859	
13	2014	14	12,785,316	12,350,411	13	2017	17	9,324,623	9,452,200	
14	2014	24	(23,260,388)	(23,256,407)	14	2017	27	(9,275,019)	(9,547,233)	
15	2015	25	17,416,967	17,444,796	15	2018	18	4,074,841	4,206,376	
16	2016	16	5,043,546	5,012,707	16	2018	18	16,297,624	16,823,709	
17	2016	26	17,763,922	18,046,301	17	2018	28	2,626,697	2,738,341	
18	2017	17	4,855,531	4,921,963	18	2019	19	3,547,588	3,461,052	
19	2017	27	(10,611,338)	(10,922,772)	19	2019	19	1,602,989	1,678,944	
20	2018	18	2,358,931	2,435,077	20	2020	20		3,109,564	
21	2018	18	9,514,177	9,821,294	21	2020	20		8,053,429	
22	2018	28	(4,518,403)	(4,710,452)				\$ 196,768,638	\$ 203,454,106	
23	2019	19	(1,668,542)	(1,627,841)				ADP	\$ (5,000,000)	
24	2019	19	1,001,202	1,048,643				Demographic	3,989,501	
25	2020	20		879,937				Investment - 4.70%	14,082,492	
26	2020	20		6,029,063			\$-	\$ 282,564,183	\$ 294,868,334	
			\$ 85,795,545	\$ 91,414,228	!					

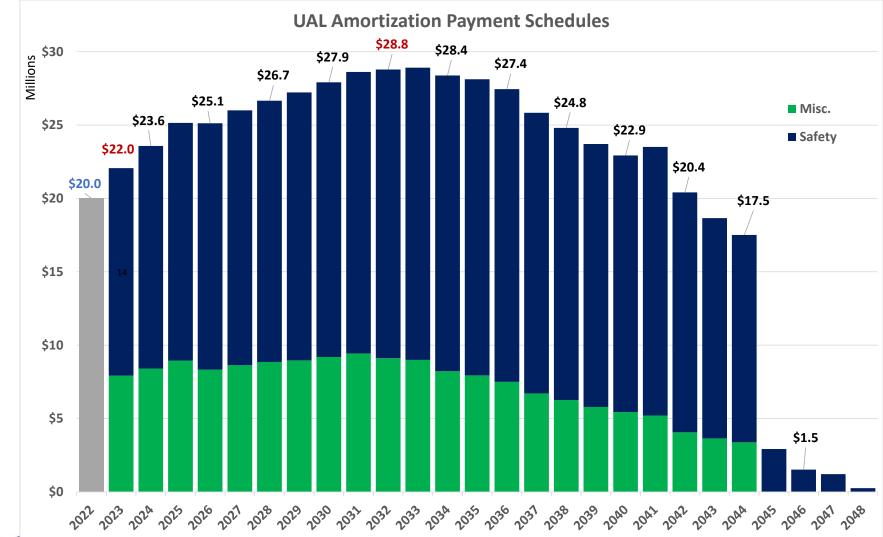


Miscellaneous Plan – "Layer Cake"

Amortization Bases: CalPERS of loans @ 7.0%



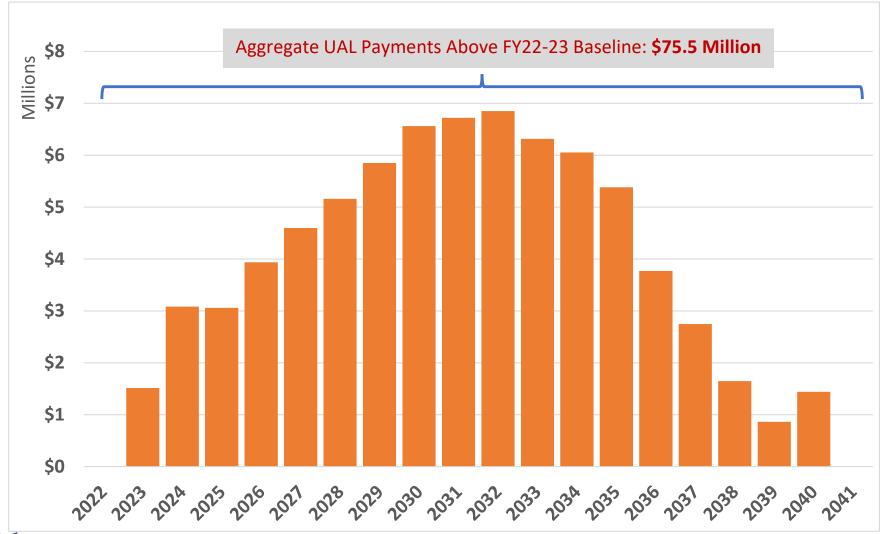
Annual Payments UAL Liability Total UAL Payments = \$557 Million





Increase in Annual UAL Payments

Cumulative Increase UAL Payments = \$75 Million







Evaluating Funding Strategies



Funding Strategies

- 1 Allocation Between Funds
 - Sewer Fund & Power Fund
- 2 Use of Reserves & 1-Time Monies
 - 0.68% LAIF vs 7.0% CalPERS Discount Rate
- Pension Stabilization Fund 115 Trust
- 4 Leveraged Refunding
 - No current opportunities
- 5 Tax-Exempt Exchange
 - Limited Scale (Water & Power Funds)
- 6 Pension Obligation Bonds
- 7 Recycle Savings

Budgeting Approaches

Financing Approaches



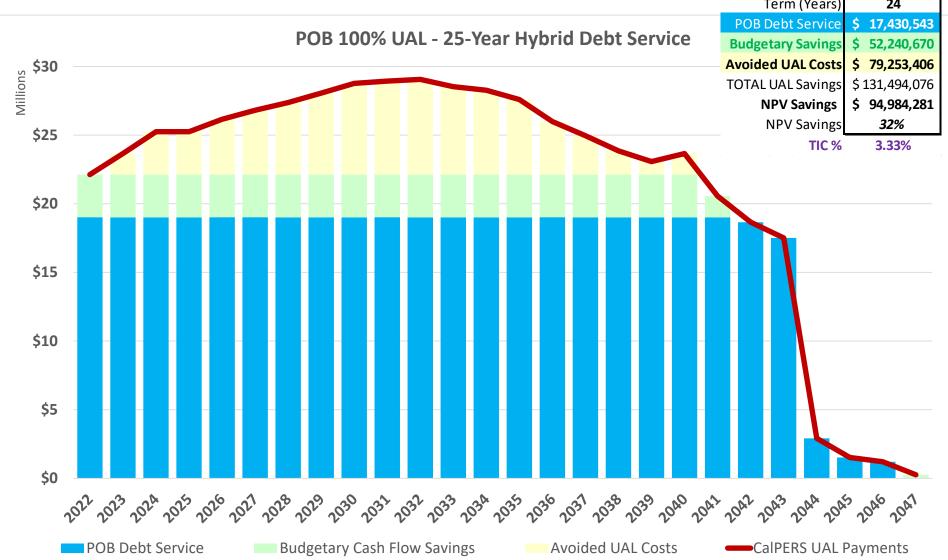


Pension Obligation Bonds / Risks



25-Year POB







25-Year POB Cash Flow Savings

							-			
_		POB Principal	Coupon	Interest	POB Debt Service	CalPERS UAL Payments	Budgetary Savings	Avoided UAL Costs	Savings	NPV Savings
1	2023	5,260,000	1.06%	4,427,664	9,687,664	11,061,556	1,373,891	-	1,373,891	1,329,577
2	2024	10,570,000	1.16%	8,799,573	19,369,573	23,660,836	2,753,539	1,537,725	4,291,264	4,018,899
3	2025	10,695,000	1.50%	8,676,961	19,371,961	25,250,488	2,751,151	3,127,377	5,878,528	5,327,844
4	2026	10,855,000	1.87%	8,516,536	19,371,536	25,250,162	2,751,576	3,127,050	5,878,626	5,156,080
5	2027	11,060,000	2.07%	8,313,547	19,373,547	26,282,472	2,749,564	4,159,360	6,908,925	5,864,288
6	2028	11,285,000	2.34%	8,084,605	19,369,605	26,940,348	2,753,506	4,817,236	7,570,743	6,218,767
7	2029	11,550,000	2.59%	7,820,536	19,370,536	27,502,068	2,752,575	5,378,956	8,131,532	6,463,966
8	2030	11,850,000	2.67%	7,521,391	19,371,391	28,193,483	2,751,720	6,070,371	8,822,092	6,786,709
9	2031	12,165,000	2.79%	7,204,996	19,369,996	28,903,911	2,753,115	6,780,800	9,533,915	7,097,738
10	2032	12,505,000	2.89%	6,865,593	19,370,593	29,064,583	2,752,519	6,941,472	9,693,991	6,984,129
11	2033	12,865,000	2.99%	6,504,198	19,369,198	29,193,256	2,753,913	7,070,145	9,824,058	6,849,542
12	2034	13,250,000	3.14%	6,119,535	19,369,535	28,658,937	2,753,577	6,535,825	9,289,402	6,267,860
13	2035	13,670,000	3.24%	5,703,485	19,373,485	28,398,022	2,749,627	6,274,911	9,024,538	5,892,743
14	2036	14,110,000	3.34%	5,260,577	19,370,577	27,726,631	2,752,535	5,603,519	8,356,054	5,280,253
15	2037	14,580,000	3.44%	4,789,303	19,369,303	26,115,442	2,753,809	3,992,331	6,746,140	4,125,435
16	2038	15,085,000	3.52%	4,287,751	19,372,751	25,090,159	2,750,361	2,967,048	5,717,408	3,383,566
17	2039	15,615,000	3.52%	3,756,759	19,371,759	23,990,520	2,751,353	1,867,408	4,618,761	2,645,221
18	2040	16,165,000	3.52%	3,207,111	19,372,111	23,207,941	2,751,001	1,084,830	3,835,831	2,125,968
19	2041	16,735,000	3.52%	2,638,103	19,373,103	23,787,132	2,750,009	1,664,021	4,414,030	2,367,519
20	2042	17,325,000	3.52%	2,049,031	19,374,031	20,690,721	1,316,690	-	1,316,690	683,444
21	2043	17,215,000	3.67%	1,439,191	18,654,191	18,656,336	2,145	-	2,145	1,078
22	2044	16,700,000	3.67%	807,400	17,507,400	17,511,321	3,921	-	3,921	1,906
23	2045	2,720,000	3.67%	194,510	2,914,510	2,917,462	2,952	-	2,952	1,389
24	2046	1,420,000	3.67%	94,686	1,514,686	1,515,149	463	-	463	211
25	2047	1,160,000	3.67%	42,572	1,202,572	1,207,726	5,154	-	5,154	2,271
26_	2048	-			-	253,021		253,021	253,021	107,880
		\$ 296,410,000		\$ 123,125,607	\$ 419,535,607	\$ 551,029,683	\$ 52,240,670	\$ 79,253,406	\$ 131,494,076	\$ 94,984,281



GFOA Advisory vs. POBs 2.0

- 1. Complex instruments: swaps, CABs, derivatives, GICs
- 2. Increase debt burden / reduce flexibility: "soft to hard liability"
- 3. Not refundable "make-whole" call
- 4. Extend repayment or finance Normal Costs
- 5. Stand alone POBs not viewed as credit positive
- 6. Reinvestment of POB Proceeds: Market & Timing Risk

POBs 2.0



- In-depth Study
- Pension Reform
- Market Evolved

- 1. Plain Vanilla Fixed Rate Bonds
- 2. GASB 68 Liability Balance Sheet

- 3. 10-year Call
- 4. Finance UAL Only (same term)
- 5. Credit Neutral / Plan & Study +
- 6. Dollar Cost Averaging / Multiple Strategies / Hedge



Evaluating Outcome of POBs

1. UAL Savings

- Standard Refinancing: 7.0% vs 3.50%
- Fixed Dollar UAL Payments
- Existing Liability on Balance Sheet
- Actual Budgetary Savings
- Proceeds go to Federated Plan at time of Issuance

2. Plan % Return

- Market Timing Risk
- Leverage Investment Position (50%):
 - increased benefit + return
 - Increased liability return
- Returns during initial years most critical
- Market Timing Risk applies to all investments



Council Decision Points



Develop Comprehensive Plan

2017 City Adopted Guidelines for Pension Rate Stabilization Program (PRSP) and OPEB 115 Trust

- Minimum Annual Contribution: \$250,000 Pension /\$250,000 OPEB
- 50% of excess Budget Reserves over 25% Fund Balance
- Investment Parameters for OPEB (115) Trust w PARS

Expand current Pension Funding Policies

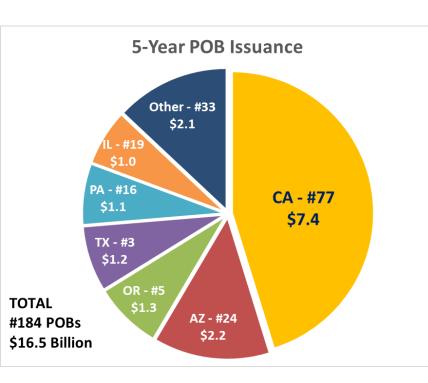
- Financial metrics/targets:
 - Level of reserve and funding target levels
- How to use excess (1-time monies)
- Allocation of Additional Resources (ADPs)
- Potential Funding Solutions
 - Funding objectives
 - Minimum Savings Levels
 - Structuring guidelines

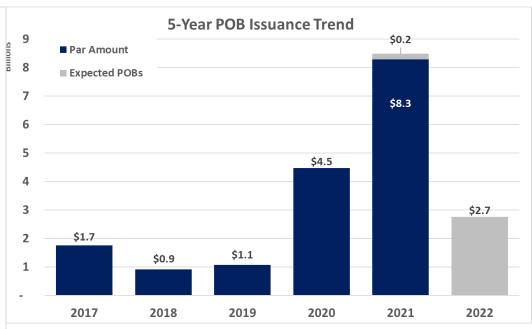


Appendix



POB Market







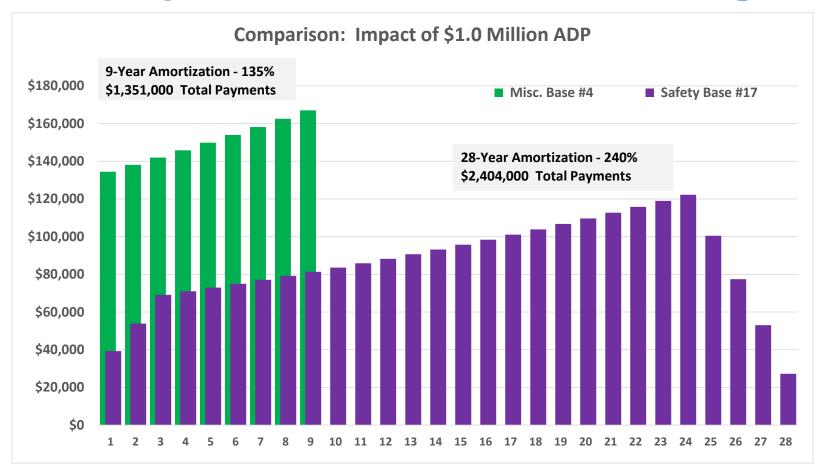
California POB Issues

CA Pension Obligation Bonds: 2017-2021								
Agency	Date	Par Value	Agency	Date	Par Value	Agency	Date	Par Value
1 Corona	9/27/2021	276,710,000	29 Downey	2/9/2021	113,585,000	57 Montebello	6/10/2020	153,425,000
2 San Anselmo	9/15/2021	9,285,000	30 Monterey Park	2/2/2021	106,335,000	58 Fort Ord	6/10/2020	30,405,000
3 County of Santa Cruz	9/2/2021	124,195,000	31 Bonita Sunnyside FD	2/1/2021	5,127,000	59 Grass Valley	6/1/2020	18,311,000
4 Santa Ana	8/25/2021	425,830,000	32 El Cajon	1/13/2021	147,210,000	60 Ontario	5/21/2020	236,585,000
5 Commerce	8/24/2021	27,875,000	33 Lake Valley FD	1/1/2021	10,952,522	61 Larkspur	5/14/2020	18,295,000
6 Buena Park	8/17/2021	96,385,000	34 Ukiah	12/17/2020	49,875,000	62 County of Riverside	5/6/2020	719,995,000
7 Sanger	8/10/2021	19,450,000	35 Coachella	12/8/2020	17,590,000	63 Carpinteria Valley WD	4/7/2020	23,145,000
8 San Fernando	8/5/2021	36,525,000	36 Penn Valley FD	12/1/2020	1,037,884	64 Richardson Bay SD	2/28/2020	2,383,000
9 Whittier	8/3/2021	133,895,000	37 Gardena	11/24/2020	101,490,000	65 Pasadena	2/26/2020	131,805,000
10 Covina	7/28/2021	62,795,000	38 Placentia	11/12/2020	52,950,000	66 Orange USD	12/19/2019	33,595,000
11 Redondo Beach	7/15/2021	226,180,000	39 Arcadia	10/27/2020	90,000,000	67 Monterey Co Reg FD	12/5/2019	20,250,000
12 Red Bluff	7/15/2021	18,540,000	40 Novato Sanitary Dist	10/13/2020	6,467,000	68 Pacifica	10/23/2019	9,685,000
13 Livermore	7/29/2021	12,875,000	41 Torrance	10/12/2020	349,515,000	69 Hawthorne	10/8/2019	121,865,000
14 Placer Hills FD	6/24/2021	1,000,000	42 Belvedere	10/1/2020	2,323,000	70 Marysville	9/24/2019	15,000,000
15 Turlock Mosquito Abate	6/22/2021	1,100,000	43 Borrego Springs Fire	10/1/2020	1,874,111	71 Glendora	9/5/2019	64,420,000
16 El Segundo	6/9/2021	144,135,000	44 Azusa	9/30/2020	70,075,000	72 Chowchilla	3/21/2019	10,500,000
17 Montecito FD	6/7/2021	8,263,240	45 Town of Fairfax	9/16/2020	9,402,000	73 Baldwin Park	3/6/2019	54,085,000
18 Auburn	6/3/2021	17,165,000	46 Pomona	8/20/2020	219,890,000	74 Calaveras County WD	2/1/2019	5,665,000
19 Oceano CSD	6/1/2021	906,000	47 West Covina	7/30/2020	204,095,000	75 Ridgecrest	12/18/2018	19,955,000
20 Willows	5/27/2021	8,510,000	48 San Bernardino	7/23/2020	5,945,000	76 La Verne	8/15/2018	54,265,000
21 Cental Marin Police Auth	5/11/2021	26,505,000	49 San Bernardino	7/23/2020	13,905,000	77 County of Tulare	6/25/2018	251,220,000
22 Corte Madera	4/29/2021	18,955,000	50 El Monte	6/30/2020	21,000,000	78 Monrovia	12/13/2017	111,545,000
23 Manhattan Beach	4/28/2021	91,275,000	51 Carson	6/18/2020	108,020,000	79 Inglewood	11/14/2017	52,795,000
24 San Benito County WD	4/1/2021	3,016,000	52 El Monte	6/18/2020	118,725,000	80 Belvedere	8/25/2017	2,655,000
25 Palos Verdes Library Dist	4/1/2021	5,924,000	53 North Co FD	6/18/2020	20,305,000	81 Brawley	7/20/2017	16,310,000
26 Huntington Beach	3/17/2021	363,645,000	54 Kensington Police	6/18/2020	4,544,000	82 Pomona	6/29/2017	50,475,000
27 Orange	3/3/2021	285,770,000	55 Inglewood	6/17/2020	101,620,000	83 Riverside	5/31/2017	31,960,000
28 Chula Vista	2/11/20/21	350,025,000	56 Riverside	6/11/2020	432,165,000	84 Town of Fairfax	1/1/2017	3,860,000



Base Selection – Cash Flow vs Savings

CalPERS requires Selection of Base when making ADP

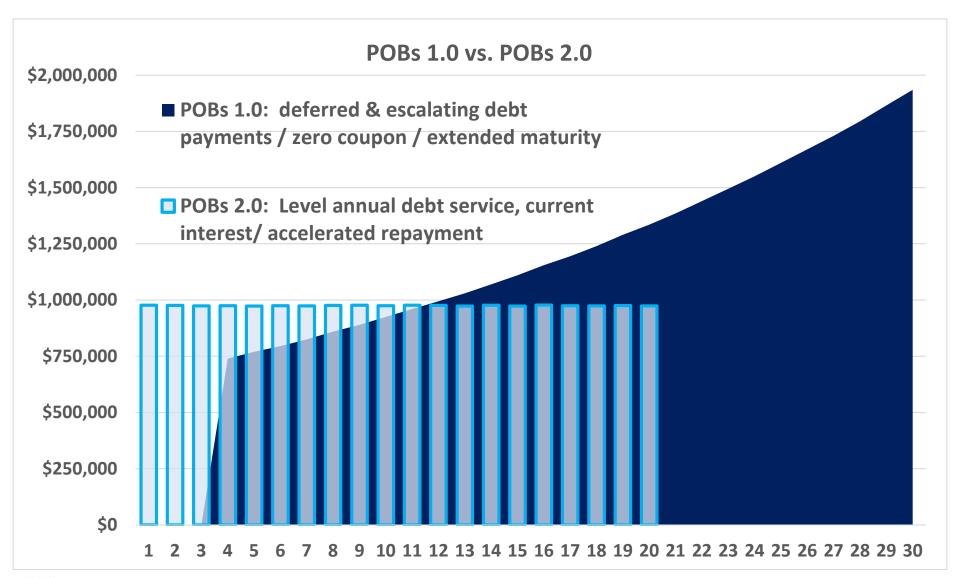


Shorter Base = Greater Budget / Cash Flow Impact

Longer Base = Greater Total Savings



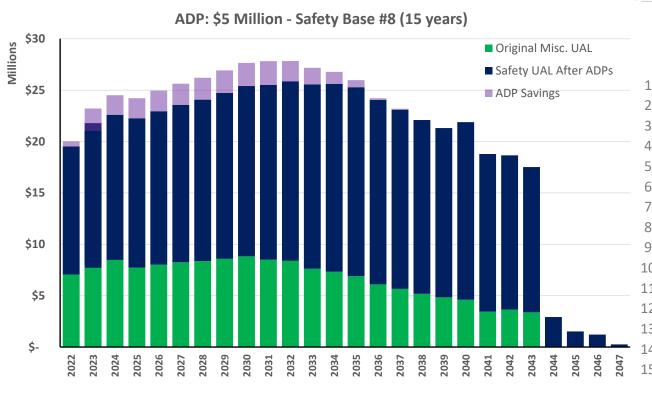
POBs 1.0 vs. POBs 2.0





Additional Discretionary Payments

City made \$5.0 million ADP savings \$7.75 Million Safety Base #8 was selected to have maximum impact on General Fund budget



	\$5.	0 AI	4 1	5 Years				
		Base #8			fter ADP	Savings		
1	2022	\$	1,465,518	\$	962,738	\$	502,780	
2	2023		1,505,820		989,213		516,607	
3	2023		1,547,230		1,016,417		530,813	
4	2024		1,589,779		1,044,368		545,411	
5	2025		1,633,498		1,073,088		560,409	
6	2026		1,678,419		1,102,598		575,821	
7	2027		1,724,575		1,132,920		591,656	
8	2028		1,772,001		1,164,075		607,926	
9	2029		1,820,731		1,196,087		624,644	
10	2030		1,870,801		1,228,979		641,822	
11	2031		1,922,248		1,262,776		659,472	
12	2032		1,580,088		1,038,002		542,086	
13	2033		1,217,655		799,910		417,745	
14	2034		834,094		547,939		286,155	
15	2035		428,516		281,503		147,012	
		\$ 2	22,590,972	\$1	4,840,613	\$	7,750,359	



Termination Payment

\$295 Million



US TREASURY BONDS (Risk-Free Strategy) Termination Agency Pool







Risk Transfer Pavment

CalPERS Funds Future Shortfall





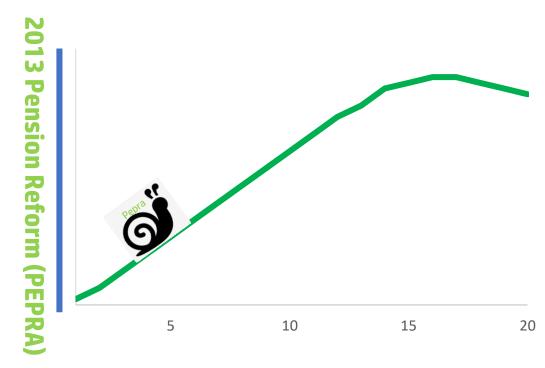
Can I Reduce the Level of Benefits?

Classic Unfunded



California Rule

- Reduction in pension benefits must be offset by "comparable" benefits.
- Prevented legislative &ballotbased initiatives
- Recent decisions have more narrowly interpreted the rule.



PEPRA - New Employees

- 2.0% @ 62 Misc. &
- 2.7% @ 57% Safety
- 50% Normal



Tax Exempt Exchange

Tax-Exempt Bonds

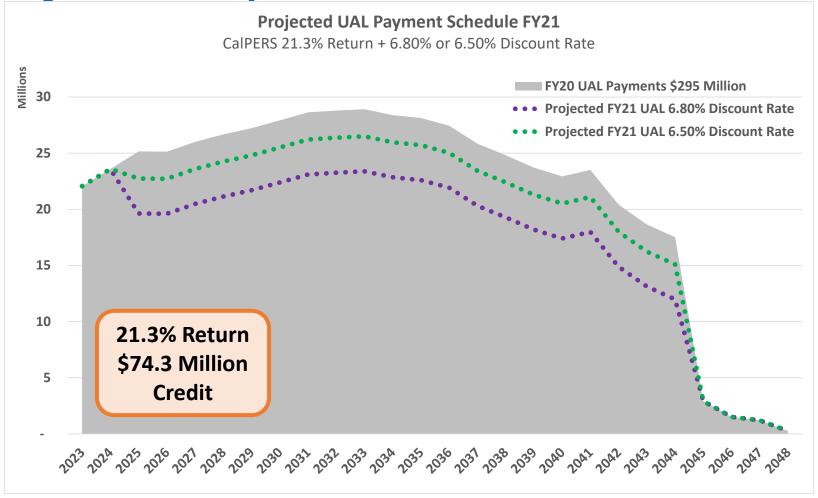
- 1. Identify "Pay-Go" Capital Project(s)
- 2. Issue Tax-Exempt
 Bonds to finance CIP

Budget Exchange

- 3. Reallocate Capital Project Budget to UAL
- 4. Pre-Pay UAL Bases with similar term
- UAL payments pay bond debt service
- 7.0% CalPERS liability effectively refinanced using tax-exempt rates ~2.0%



Projected Impact of FY21on UAL



Discount Rate 6.50% \$51 Million Increase in UAL **Discount Rate 6.80%** \$20.4 Million Increase in UAL



Net Impact ~(\$23.2) Million credit

Net Impact ~(\$53.9) Million credit

Axiom: Investment Returns exceed POBs

Axiom: Rate of Return Exceeds Rate on POBs Oversimplifies - Market Timing is Critical



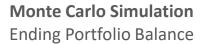


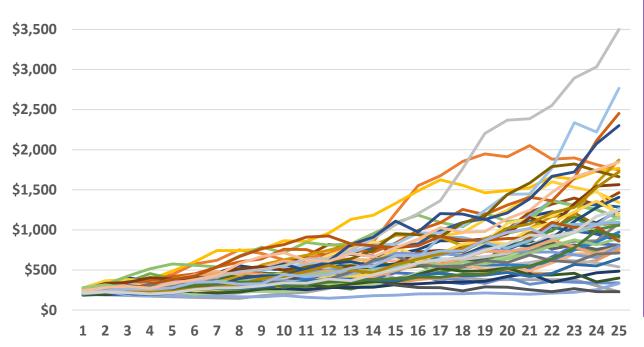
Compare ending portfolio balance two similar returns:

- 6.46% Loss Initial Years = \$20 Million
- 6.44% Gain Initial Years = \$108 Million



Monte Carlo Simulation





Key Issue w/ Basic Risk Analysis:

Avg. Return # Compound (year-over-year return)

Timing of returns is critical to ending portfolio value

- Compares ending portfolio balance: POBs vs UAL payments
- 10,000 different (random) scenarios
 - CalPERS Return over 25-year period
 - Expect Return = 7.0% (Std. Dev. = 8.25%)



Monte Carlo Simulation

Probability of Success

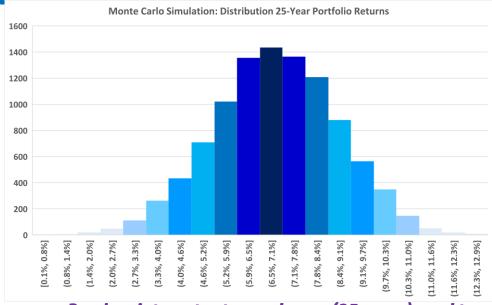
Expected NPV Portfolio Balance:

- + \$26 Million @ 7.0%
- Positive (Break-Even) = **79%**
- Ending Portfolio Balance POBsVAL Payments

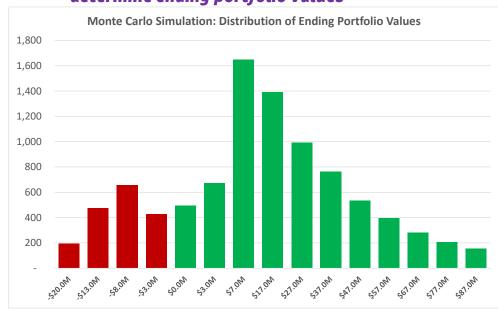
Probability of Success + 100bps

Expected NPV Portfolio Balance:

- + \$15 Million @ 7.0%
- Positive (Break-Even) = 67%



Random interest rates each year (25 years) used to determine ending portfolio values





POBs vs COPs

PENSION OBLIGATION BONDS

- Validation Required
- •+ 4-6 Months
- Invest with CalPERS
- Credit Rating: AA
- GFOA Advisory
- No Borrowing limit

Opportunity Cost

\$120 Million

x 3.50%

x4-6 months

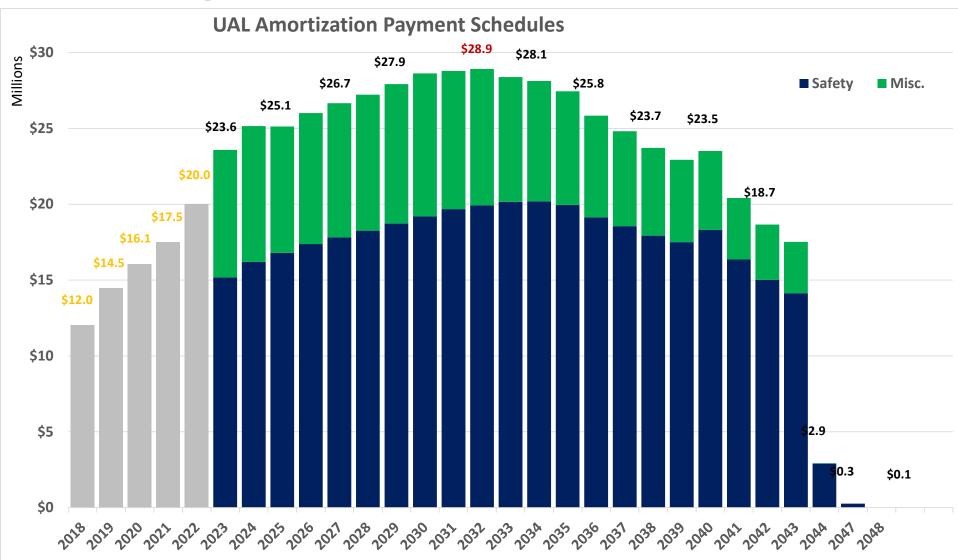
\$1.4 Million \$2.1 Million

CERTIFICATES OF PARTICIPATION

- No Validation Required
- No Waiting
- Dollar Cost Averaging
- Credit Rating AA-
- •Leveraging City Assets
- Capacity



Growing Trend





Pension Analysis

(Pension Management Plan)

Bonding Process

Validation Process

May

- Council workshop
- Stakeholder/Community Meetings

June

July

Aug

City Council Approval

Commence Validation Process

Develop Pension Funding Plan

- Leveraged Refunding
 - Use of Reserves
 - Tax-Exempt Exchange
- Determine POB Structure
- Draft Pension Funding Policy
- Risk Analysis / Monte Carlo
- Sept
- City Council 1on1s
- Stakeholder/Community Meetings
- Oct

City Council Approval

Underwriter + Pension Funding Policy

Nov

<u>City Council Approval</u>

 Approves POS & Amount of POBs

Dec

- **Sale of POBs**
- Marketing / Investor Outreach
- Pre-Pricing / Sale
- Closing

Legal Counsel RFP

- Written Responses
- Interviews, if necessary
- 1.Indenture, Resolution & BPA
- 2. Review Documents
- 3.Staff Report

Underwriter RFP

- Written Responses
- Interviews

POS & Rating Presentation

- 1st Draft POS
- Conference Call
- 2nd Draft POS
- 1st Draft Rating
- Conference Call
- Rating Presentation

Court Filing Process

- File Validation with Court
- Receive Order for Publication
- Publish 21 days + 10 days

Waiting Period - File Petition (2-6 Weeks)

Enter Default Judgement

- Clerk Schedules Hearing
- Hearing for Default Judgement

Appeal Period (30 Days)

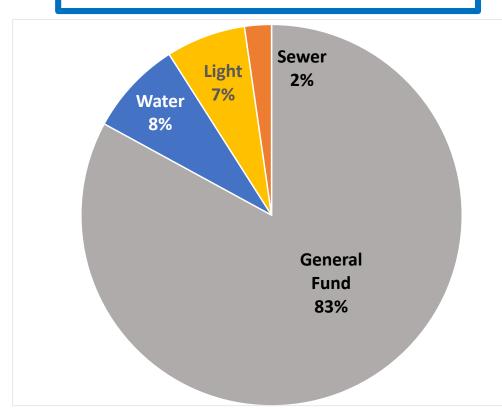


Case Studies



Fund Allocation - ADP

\$83.3 Million UAL



17% of UAL =





City of Azusa:

ADP Enterprise Reserves

- \$10.7 Million
- Misc. Base #15,13 (45%)
- 27 Years
- Savings = \$25.1 Million

POBs - \$70.0 Million

- \$33 Million UAL Savings
- NPV Savings = \$26 Million 37%
- TIC = 3.10%

Combined NPV Savings

\$42 Million

Leveraged Refunding

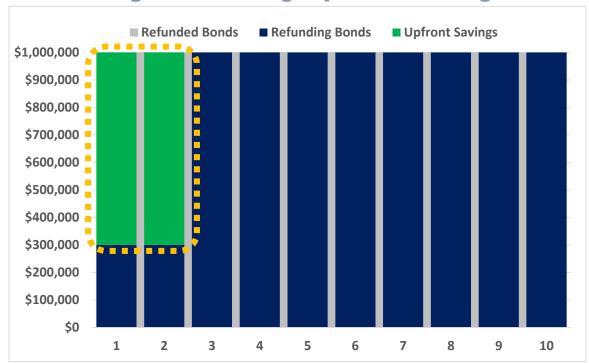


\$490,000 Up-Front Savings Base #15

\$1.0 Million UAL Savings

2.0X

Leveraged Refunding: Up-Front Savings



City of Arcadia: 2001 & 2011 TABs

- \$10.3 Million Refunding \$4.9 Million Savings
- 10% share of savings
- \$498,000 up-front

ADP

Safety Base #15 (25 Years)

\$1.0 Million Savings



Tax Exempt Exchange + ADP

\$56 Million UAL

85% Funding Target

Tax-Exempt Exchange

\$10
Million
Pay-Go
Projects

Pay-Go Budget
Reallocated to Pay UAL

\$10
Million
Bonds @
2.0%

** Separate Board Actions

UAL Payments
Cover Bond Debt Service

\$10 Million UAL @ 7.0%



Placer County Water:

- Merged Bases
 - Restructure cash flows
- ADPs from Reserves
 - \$11.5 Million
 - Base #9 (85%)
 - Savings = \$28.9 Million
- Bonding Capacity / Coverage
- Tax-Exempt Exchange
 - \$10.2 million (20 years)
 - Base #9,10,4,21
 - Savings = \$11 Million
- Combined Savings
 - \$40 Million

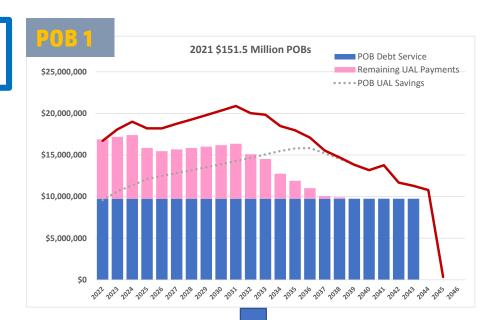


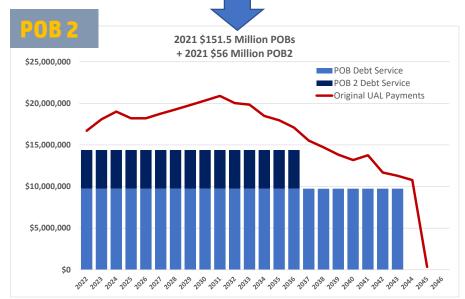
CalPERS Investment Risk

\$206 Million UAL

El Cajon:

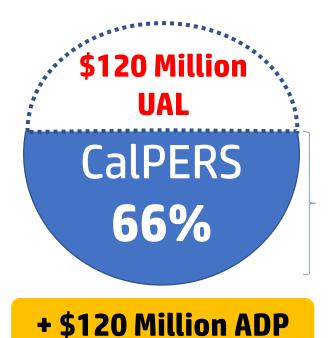
- Market Timing Risk: Issue Multiple POBs
- Rising % rates between series
 - Select longer bases on POB 1- \$150 Million
 - POB 2 shorter maturity, less % risk - \$55 Million







Effect of Leverage & Compounding



\$233 Millio

66% Funded 23,359,878 100% Funded 35,393,142 \$ 12,033,264 **52%**

+10%

CalPERS Investment Return

-10%

\$354 Million



\$(12,033,264) **52%** 66% Funded (23,359,878)100% Funded (35,393,142)

CalPERS Pension Costs

Miscellaneous

UAL Payment = 22.9%

Employee Share = 7.4%

Normal Costs = 10.3%
(Net = 8.6%)

Base Salary 100%

3 Components:

- UAL Payment
 - Fixed \$ Annual Payment
 - Catch-up or "past due" payments
- Employee Share of Normal Cost EPMC
 - Paid by employees
 - o % of Payroll
- Normal Costs =
 - Benefits Earned during the Year
 - % of Payroll

Safety (Police)

UAL Payment = 48.6%

Employee Share = 9.5%

Employee Concession = 5.7%

Normal Costs = 20.8% (Net = 15.1%)

Base Salary 100%



Primary Contributing Factors

California League of Cities 2018 Pension Sustainability Report **Enhanced &** Retroactive •SB 300 (1999) Safety Officers **Benefits** 2.0% @ 50 to 3.0% @ 50 • AB 616 (2001) Miscellaneous 2.0% @ 55 to 2.7% @ 55 Investment COL A Losses Life **CalPERS Expectanc** Contribution **Policy**



Measures to Address Pensions

California League of Cities

2018 Pension Sustainability Report

Local Ballot Measure Bargaining Unit Concessions

Level of Service

Pension Stabilization Fund

Pension Management Plan + Pension Funding Policies

Pension Obligation Bonds

Local Ballot Measure F - 2018

- ½ Sales Tax (9.75%)
- \$4.2 Million

2. Bargaining Unit Concessions

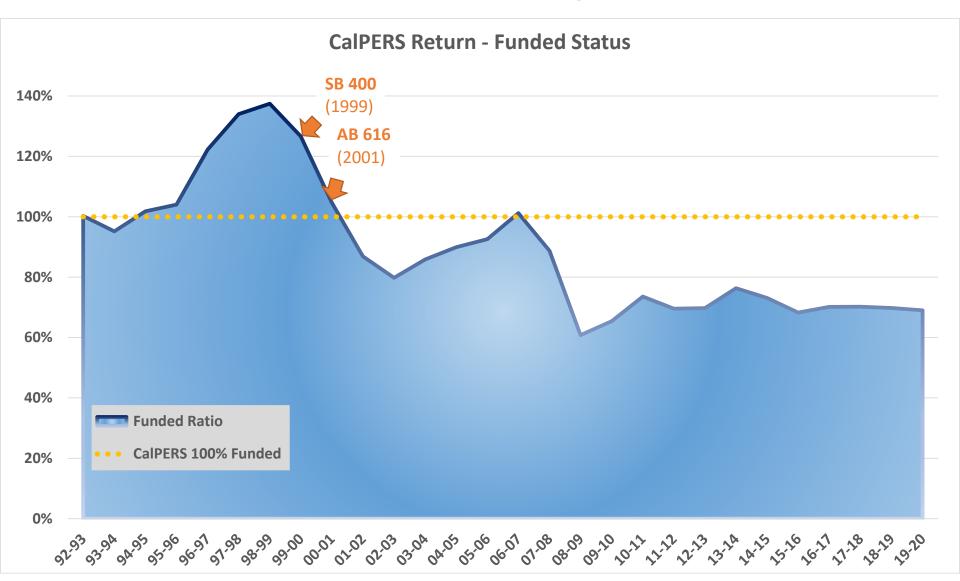
- 1.7% Misc. Classic Normal Costs
- 5.7% Safety Classic Normal Costs
- 3. Service Delivery & Levels of Service
 - Outsource ?????

4. Pension Stabilization Fund 115

- \$6.9 Million Balance
- 75% of excess above 25% General Fund Reserve
- 5. Develop Plan + Funding Policies Address Pension Liabilities
 - In process
- 6. Pension Obligation Bonds (POBs)
 - Under consideration

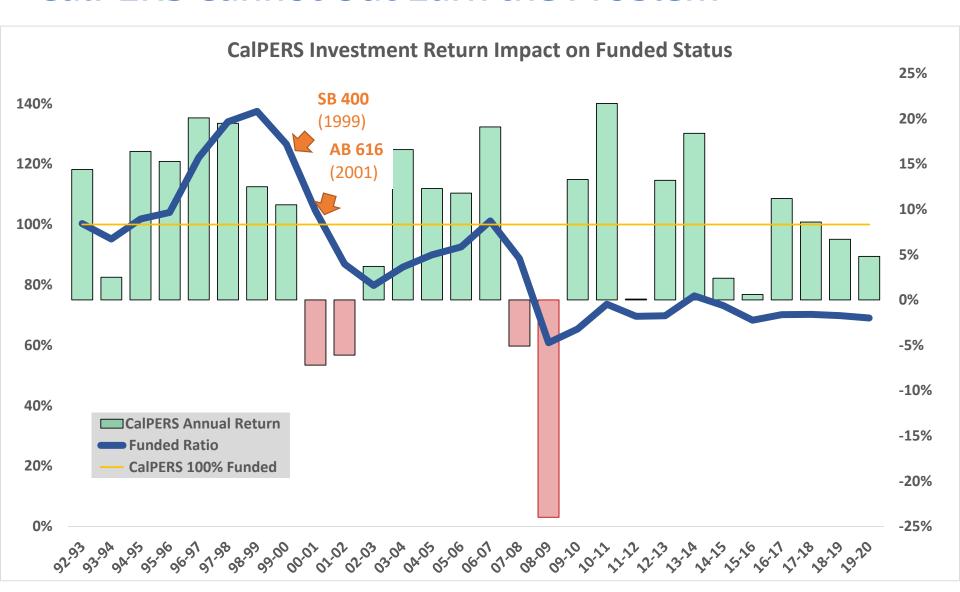


Started at Peak of Market – Implemented....



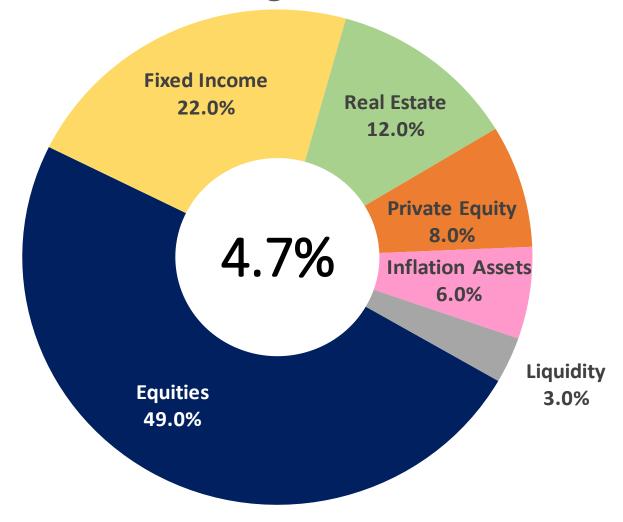


CalPERS Cannot Out Earn the Problem





CalPERS 2018 Strategic Asset Allocation

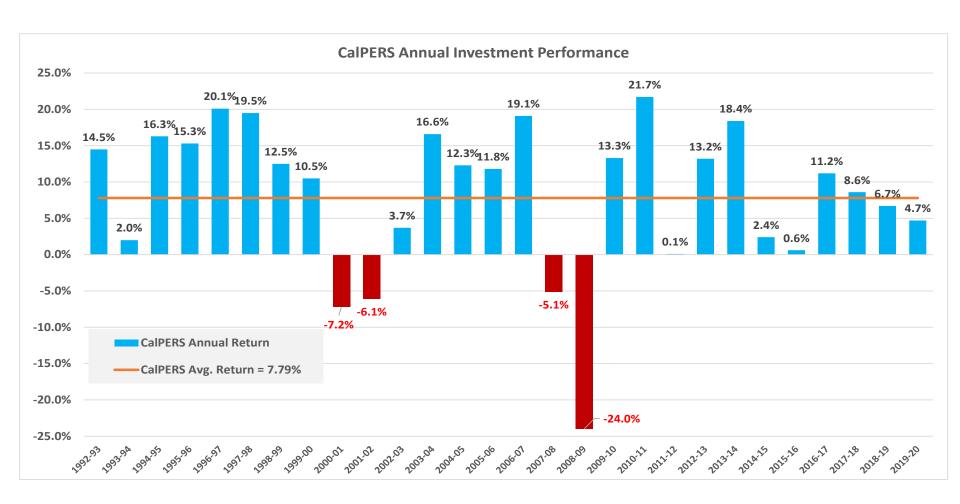




Develop Pension Management Plan & Implementation



CalPERS Return





Likelihood of Political Solution



Local Agency UAL

Local
Agencies
(PERF A)
\$80 Billion
70%

Pool > 100 (PERF C) \$9.6 Billion 72%

OPEB \$9.3 Billion 61%



Local Agency CalPERS UAL =

(\$90 Billion)

PERFA = \$138.7 Billion - State \$58.7 Billion

PERFC (Risk Pool)= Misc. \$3.8 Billion + Safety = \$5.8 Billion

OPEB Trusts – including Water, Sewer, Cities, Counties, Fire: \$15.2 B – \$6 B = \$9.3 B NOL

* Only for CERBT Trusts (No PARS)



State has Greater Burdens

State
Employee
UAL
\$58.7 Billion
67%

School Pool (PERF B) \$23.6 Billion 72%

State OPEB \$85.6 Billion

1%

Combined
Unfunded
Liabilities =

(\$300 Billion)

UC
Regents
\$10.9
Billion
85%

OPEB \$18.6 Billion Pay-go CalSTRS \$102 Billion 66% 2017 State CalPERS Actuarial Valuation

\$6.3 Billion Annual Contribution

2018 State OPEB Actuarial Valuation

Discount Rate = 4.25% since pay-go NOL @ 7.0% = \$56 billion \$2.2 Billion "Pay-Go" Benefit Payments

2017 CalSTRS Actuarial Valuation

2% @ 60/62 \$325 million MPP (OPEB) pay-go

2017 University California Regents Actuarial Valuation 27% of payroll -\$3 billion annual contribution.



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