



Advanced Tools for Managing Pension Costs and UAL

Randall Dziubek

Deputy Chief Actuary, CalPERS

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Setting Objectives



Objectives

- Vary from agency to agency
- May vary over time even for a given agency
- Formal funding policy may be helpful in achieving stated objectives
- CalPERS main objective is ensuring the security of promised benefits
 - Annual required minimum employer contributions reflect CalPERS objectives



Examples of Objectives

- Reduce employer contributions in the long run
- Limit year to year contribution volatility
- Achieve a target funded status by a certain date
- Increase flexibility regarding the payment of the minimum required contribution in a given future year
- Alter near-term pattern of required minimum contributions
- Understand the potential impact of various future scenarios on projected actuarial results



Employer Strategies

- Additional Discretionary Payments (ADPs)
- Pension Obligation Bonds (POBs)
- California Employers' Pension Prefunding Trust (CEPPT)
- Fresh start of Unfunded Accrued Liability (UAL)
- Other changes to existing UAL schedule
- CalPERS tools and actuaries can help



Matching Objectives with Strategies

Objective	Possible Strategies
Reduce long-term costs	ADPs, POB, alter UAL schedule
Limit contribution volatility	Alter UAL schedule, CEPPT
Change near-term contribution pattern	Alter UAL schedule, CEPPT
Achieve target funded status	ADPs, POB, alter UAL schedule
Increase flexibility with required contributions	ADPs, CEPPT



Managing Employer Contributions 2020



Case study-1: ADP

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Three Choices of Paydown Options:

1. "Longest to Shortest". Select from drop down menu (cell B7) and click "Run Scenario" button.
2. "Shortest to Longest". Select from drop down menu (cell B7) and click "Run Scenario" button.
3. Customized order of payoff. Enter a unique number for each base. **DO NOT** click "Run Scenario" button.

Shortest to Longest

Run Scenario

					Total Payments		\$	19,389,815	21-22 ADP Amount		\$	-	Total Payments	\$	19,389,815	\$	-	Funded Ratio 2020 val: 66.7%
Run Scenario					Interest Paid		\$	8,203,220	21 - 22 Payment Date				Interest Paid	\$	8,203,220			
									10/31/2021	Total Savings		\$	-					
Order of		Balance as of	Remaining		Original Schedule		Total ADP		Schedule with ADP		Contribution		Projected Funded					
Payoff	Base Name and FULL/PARTIAL Payoff	June 30, 2022	Period		Balance	Payment	(Valued Mid-year)		Balance	Payment	Difference		Ratio End of Year					
10	Non-Investment (Gain)/Loss 2020	\$ 120,126	20	2020-21	\$ 11,173,118	\$ 697,715		\$ 11,173,118	\$ 697,715					67.6%				
11	Investment (Gain)/Loss 2020	605,176	20	2021-22	\$ 11,233,517	\$ 805,551	\$ -	\$ 11,233,517	\$ 805,551	\$ -			68.8%					
8	Non-Investment (Gain)/Loss 2019	144,009	19	2022-23	\$ 11,186,595	\$ 909,177	\$ -	\$ 11,186,595	\$ 909,177	\$ -			70.2%					
9	Investment (Gain)/Loss 2019	133,871	19	2023-24	\$ 11,029,199	\$ 972,270	\$ -	\$ 11,029,199	\$ 972,270	\$ -			71.8%					
6	Method Change 2018	303,247	18	2024-25	\$ 10,795,521	\$ 1,038,244	\$ -	\$ 10,795,521	\$ 1,038,244	\$ -			73.6%					
7	Assumption Change 2018	1,090,208	18	2025-26	\$ 10,477,240	\$ 1,080,753	\$ -	\$ 10,477,240	\$ 1,080,753	\$ -			75.4%					
16	Non-Investment (Gain)/Loss 2018	157,071	28	2026-27	\$ 10,092,706	\$ 1,121,195	\$ -	\$ 10,092,706	\$ 1,121,195	\$ -			77.3%					
5	Assumption Change 2017	669,175	17	2027-28	\$ 9,639,422	\$ 1,149,155	\$ -	\$ 9,639,422	\$ 1,149,155	\$ -			79.3%					
4	Assumption Change 2016	583,109	16	2028-29	\$ 9,125,485	\$ 1,177,878	\$ -	\$ 9,125,485	\$ 1,177,878	\$ -			81.3%					
15	Investment (Gain)/Loss 2016	1,855,299	26	2029-30	\$ 8,545,862	\$ 1,207,394	\$ -	\$ 8,545,862	\$ 1,207,394	\$ -			83.3%					
14	Investment (Gain)/Loss 2015	1,459,864	25	2030-31	\$ 7,895,135	\$ 1,237,721	\$ -	\$ 7,895,135	\$ 1,237,721	\$ -			85.4%					
2	Assumption Change 2014	1,469,442	14	2031-32	\$ 7,167,485	\$ 1,268,884	\$ -	\$ 7,167,485	\$ 1,268,884	\$ -			87.5%					
13	Non-Investment (Gain)/Loss 2014	2,888	24	2032-33	\$ 6,356,666	\$ 1,259,672	\$ -	\$ 6,356,666	\$ 1,259,672	\$ -			89.6%					
1	Side Fund 2014	-	0	2033-34	\$ 5,498,617	\$ 1,249,073	\$ -	\$ 5,498,617	\$ 1,249,073	\$ -			91.6%					
12	Investment (Gain)/Loss 2013	3,332,505	23	2034-35	\$ 4,591,468	\$ 1,221,659	\$ -	\$ 4,591,468	\$ 1,221,659	\$ -			93.6%					
3	Share of Pre-2013 Pool UAL 2013	3,373,301	14	2035-36	\$ 3,649,175	\$ 1,174,357	\$ -	\$ 3,649,175	\$ 1,174,357	\$ -			95.5%					
		-		2036-37	\$ 2,689,852	\$ 618,694	\$ -	\$ 2,689,852	\$ 618,694	\$ -			96.4%					
		-		2037-38	\$ 2,238,158	\$ 559,693	\$ -	\$ 2,238,158	\$ 559,693	\$ -			97.2%					
		-		2038-39	\$ 1,815,877	\$ 497,056	\$ -	\$ 1,815,877	\$ 497,056	\$ -			97.9%					
		-		2039-40	\$ 1,428,829	\$ 448,217	\$ -	\$ 1,428,829	\$ 448,217	\$ -			98.5%					
		-		2040-41	\$ 1,065,208	\$ 416,463	\$ -	\$ 1,065,208	\$ 416,463	\$ -			99.0%					
		-		2041-42	\$ 708,980	\$ 318,269	\$ -	\$ 708,980	\$ 318,269	\$ -			99.4%					
		-		2042-43	\$ 429,388	\$ 223,657	\$ -	\$ 429,388	\$ 223,657	\$ -			99.7%					
		-		2043-44	\$ 228,093	\$ 173,175	\$ -	\$ 228,093	\$ 173,175	\$ -			99.9%					
		-		2044-45	\$ 64,925	\$ 67,159	\$ -	\$ 64,925	\$ 67,159	\$ -			100.0%					

Case study-1: ADP

Shortest to Longest				21-22 ADP Amount					Funded Ratio 2020 val: 66.7%
Run Scenario				\$ 1,000,000	Total Payments	\$ 18,820,449	\$ (569,366)		
				21 - 22 Payment Date		Interest Paid	\$ 7,633,854		
				10/31/2021	Total Savings	\$ 569,366			
Order of		Balance as of	Remaining	Total ADP	Schedule with ADP		Contribution	Projected Funded	
Payoff	Base Name and FULL/PARTIAL Payoff	June 30, 2022	Period	(Valued Mid-year)	Balance	Payment	Difference		Ratio End of Year
10	Non-Investment (Gain)/Loss 2020	\$ 120,126	20		\$ 11,173,118	\$ 697,715		67.6%	
11	Investment (Gain)/Loss 2020	605,176	20	\$ 1,011,059	\$ 11,233,517	\$ 805,551	\$ 1,000,000	71.7%	
8	Non-Investment (Gain)/Loss 2019	144,009	19	\$ -	\$ 10,140,747	\$ 797,313	\$ (111,864)	72.9%	
9	Investment (Gain)/Loss 2019	133,871	19	\$ -	\$ 10,025,854	\$ 857,330	\$ (114,940)	74.3%	
6	Method Change 2018	303,247	18	\$ -	\$ 9,840,836	\$ 920,144	\$ (118,100)	75.9%	
7	Assumption Change 2018	1,090,208	18	\$ -	\$ 9,577,891	\$ 959,405	\$ (121,348)	77.5%	
16	Non-Investment (Gain)/Loss 2018	157,071	28	\$ -	\$ 9,255,926	\$ 996,509	\$ (124,686)	79.1%	
5	Assumption Change 2017	669,175	17	\$ -	\$ 8,873,043	\$ 1,021,038	\$ (128,117)	80.8%	
4	Assumption Change 2016	583,109	16	\$ -	\$ 8,437,982	\$ 1,046,239	\$ (131,639)	82.6%	
15	Investment (Gain)/Loss 2016	1,855,299	26	\$ -	\$ 7,946,401	\$ 1,072,136	\$ (135,258)	84.4%	
14	Investment (Gain)/Loss 2015	1,459,864	25	\$ -	\$ 7,393,623	\$ 1,098,744	\$ (138,977)	86.2%	
2	Assumption Change 2014 PARTIAL	1,469,442	14	\$ -	\$ 6,774,626	\$ 1,126,084	\$ (142,800)	88.1%	
13	Non-Investment (Gain)/Loss 2014	2,888	24	\$ -	\$ 6,084,020	\$ 1,142,290	\$ (117,382)	89.9%	
1	Side Fund 2014	-	0	\$ -	\$ 5,328,306	\$ 1,158,615	\$ (90,458)	91.8%	
12	Investment (Gain)/Loss 2013	3,332,505	23	\$ -	\$ 4,502,805	\$ 1,159,696	\$ (61,963)	93.7%	
3	Share of Pre-2013 Pool UAL 2013	3,373,301	14	\$ -	\$ 3,618,400	\$ 1,142,524	\$ (31,833)	95.5%	

Case study-1: ADP

Longest to Shortest				21-22 ADP Amount					Funded Ratio 2020 val: 66.7%
Run Scenario				\$ 1,000,000	Total Payments	\$ 18,095,864	\$ (1,293,951)		
				21 - 22 Payment Date	Interest Paid	\$ 6,909,269			
				10/31/2021	Total Savings	\$ 1,293,951			
Order of Payoff	Base Name and FULL/PARTIAL Payoff	Balance as of June 30, 2022	Remaining Period	Total ADP (Valued Mid-year)	Schedule with ADP		Contribution Difference	Projected Funded Ratio End of Year	
					Balance	Payment			
6	Non-Investment (Gain)/Loss 2020	\$ 120,126	20		\$ 11,173,118	\$ 697,715		67.6%	
7	Investment (Gain)/Loss 2020	605,176	20	\$ 1,011,059	\$ 11,233,517	\$ 805,551	\$ 1,000,000	71.7%	
8	Non-Investment (Gain)/Loss 2019	144,009	19	\$ -	\$ 10,140,747	\$ 844,232	\$ (64,945)	73.1%	
9	Investment (Gain)/Loss 2019	133,871	19	\$ -	\$ 9,977,320	\$ 903,425	\$ (68,845)	74.6%	
10	Method Change 2018	303,247	18	\$ -	\$ 9,741,224	\$ 965,334	\$ (72,910)	76.2%	
11	Assumption Change 2018	1,090,208	18	\$ -	\$ 9,424,562	\$ 1,005,839	\$ (74,914)	78.0%	
1	Non-Investment (Gain)/Loss 2018 FULL	157,071	28	\$ -	\$ 9,043,834	\$ 1,044,219	\$ (76,976)	79.8%	
12	Assumption Change 2017	669,175	17	\$ -	\$ 8,596,753	\$ 1,070,061	\$ (79,094)	81.6%	
13	Assumption Change 2016	583,109	16	\$ -	\$ 8,091,643	\$ 1,096,610	\$ (81,268)	83.5%	
2	Investment (Gain)/Loss 2016 PARTIAL	1,855,299	26	\$ -	\$ 7,523,715	\$ 1,123,892	\$ (83,502)	85.4%	
3	Investment (Gain)/Loss 2015	1,459,864	25	\$ -	\$ 6,887,813	\$ 1,151,922	\$ (85,799)	87.4%	
14	Assumption Change 2014	1,469,442	14	\$ -	\$ 6,178,401	\$ 1,180,725	\$ (88,159)	89.4%	
4	Non-Investment (Gain)/Loss 2014	2,888	24	\$ -	\$ 5,389,537	\$ 1,169,089	\$ (90,583)	91.4%	
16	Side Fund 2014	-	0	\$ -	\$ 4,557,489	\$ 1,155,999	\$ (93,074)	93.3%	
5	Investment (Gain)/Loss 2013	3,332,505	23	\$ -	\$ 3,680,736	\$ 1,126,026	\$ (95,633)	95.1%	
15	Share of Pre-2013 Pool UAL 2013	3,373,301	14	\$ -	\$ 2,773,616	\$ 1,076,095	\$ (98,262)	96.9%	

Case study-1: ADP

Longest to Shortest				21-22 ADP Amount					Funded Ratio 2020 val 66.7%
Run Scenario				\$ 1,000,000	Total Payments	\$ 16,091,971	\$ (3,297,844)		
				21 - 22 Payment Date	Interest Paid	\$ 4,905,376			
				10/31/2021	Total Savings	\$ 3,297,844			
Order of Payoff	Base Name and FULL/PARTIAL Payoff	Balance as of June 30, 2022	Remaining Period	Total ADP (Valued Mid-year)	Schedule with ADP		Contribution Difference	Projected Funded Ratio End of Year	
	6 Non-Investment (Gain)/Loss 2020	\$ 120,126	20		\$ 11,173,118	\$ 697,715		67.6%	
	7 Investment (Gain)/Loss 2020	605,176	20	\$ 1,011,059	\$ 11,233,517	\$ 805,551	\$ 1,000,000	71.7%	
	8 Non-Investment (Gain)/Loss 2019	144,009	19	\$ 1,000,000	\$ 10,140,747	\$ 844,232	\$ 935,055	75.9%	
	9 Investment (Gain)/Loss 2019	133,871	19	\$ 1,000,000	\$ 8,942,912	\$ 833,129	\$ 860,859	80.0%	
	10 Method Change 2018	303,247	18	\$ -	\$ 7,672,714	\$ 818,852	\$ (219,392)	81.4%	
	11 Assumption Change 2018	1,090,208	18	\$ -	\$ 7,362,777	\$ 855,328	\$ (225,425)	83.0%	
	1 Non-Investment (Gain)/Loss 2018 FULL	157,071	28	\$ -	\$ 6,993,413	\$ 889,569	\$ (231,626)	84.6%	
	12 Assumption Change 2017	669,175	17	\$ -	\$ 6,562,773	\$ 911,158	\$ (237,997)	86.2%	
	13 Assumption Change 2016	583,109	16	\$ -	\$ 6,079,654	\$ 933,338	\$ (244,540)	87.9%	
	2 Investment (Gain)/Loss 2016 FULL	1,855,299	26	\$ -	\$ 5,539,777	\$ 956,130	\$ (251,264)	89.6%	
	3 Investment (Gain)/Loss 2015 PARTIAL	1,459,864	25	\$ -	\$ 4,938,533	\$ 979,547	\$ (258,174)	91.3%	
	14 Assumption Change 2014	1,469,442	14	\$ -	\$ 4,270,978	\$ 1,003,609	\$ (265,275)	93.1%	
	4 Non-Investment (Gain)/Loss 2014	2,888	24	\$ -	\$ 3,531,805	\$ 987,102	\$ (272,570)	94.8%	
	16 Side Fund 2014	-	0	\$ -	\$ 2,757,964	\$ 969,008	\$ (280,065)	96.4%	
	5 Investment (Gain)/Loss 2013	3,332,505	23	\$ -	\$ 1,948,670	\$ 933,892	\$ (287,767)	98.0%	
	15 Share of Pre-2013 Pool UAL 2013	3,373,301	14	\$ -	\$ 1,119,050	\$ 878,678	\$ (295,679)	99.5%	
		-		\$ -	\$ 288,472	\$ 298,398	\$ (320,296)	100.0%	

Case study-2a: Fresh Start

- Employer Goals:
 - Create a level payment schedule
 - Realize savings
 - Shorten the period to paydown the UAL



Case study-2a: Fresh Start

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FS Goal Seek

				Amortization Period	2021-22 ADP Amount	21 - 22 Payment Date	Funded Ratio 2020 val:
				10	\$ -	10/31/2021	66.7%
Total Payments		\$	19,389,815	Total Payments		\$	15,397,396
Total Interest		\$	8,203,220	Total Interest		\$	4,210,801
				Total Savings		\$	3,992,419
Original Schedule				10-Year Fresh Start Level \$			
Year	Balance	Payment		Balance	Payment	Soft Fresh Start Payment	Projected Funded Ratio End of Year
2020-21	\$ 11,173,118	\$ 697,715		\$ 11,173,118	\$ 697,715	\$ -	67.6%
2021-22	\$ 11,233,517	\$ 805,551		\$ 11,233,514	\$ 805,551	\$ -	68.8%
2022-23	\$ 11,186,595	\$ 909,177		\$ 11,186,592	\$ 1,539,740	\$ 630,563	72.0%
2023-24	\$ 11,029,199	\$ 972,270		\$ 10,376,934	\$ 1,539,740	\$ 567,470	75.2%
2024-25	\$ 10,795,521	\$ 1,038,244		\$ 9,510,601	\$ 1,539,740	\$ 501,496	78.4%
2025-26	\$ 10,477,240	\$ 1,080,753		\$ 8,583,624	\$ 1,539,740	\$ 458,987	81.5%
2026-27	\$ 10,092,706	\$ 1,121,195		\$ 7,591,758	\$ 1,539,740	\$ 418,545	84.6%
2027-28	\$ 9,639,422	\$ 1,149,155		\$ 6,530,462	\$ 1,539,740	\$ 390,585	87.8%
2028-29	\$ 9,125,485	\$ 1,177,878		\$ 5,394,876	\$ 1,539,740	\$ 361,862	90.8%
2029-30	\$ 8,545,862	\$ 1,207,394		\$ 4,179,798	\$ 1,539,740	\$ 332,346	93.9%
2030-31	\$ 7,895,135	\$ 1,237,721		\$ 2,879,665	\$ 1,539,740	\$ 302,019	97.0%
2031-32	\$ 7,167,485	\$ 1,268,884		\$ 1,488,522	\$ 1,539,740	\$ 270,856	100.0%
2032-33	\$ 6,356,666	\$ 1,259,672		\$ -	\$ -	\$ (1,259,672)	100.0%
2033-34	\$ 5,498,617	\$ 1,249,073		\$ -	\$ -	\$ (1,249,073)	100.0%
2034-35	\$ 4,591,468	\$ 1,221,659		\$ -	\$ -	\$ (1,221,659)	100.0%
2035-36	\$ 3,649,175	\$ 1,174,357		\$ -	\$ -	\$ (1,174,357)	100.0%
2036-37	\$ 2,689,852	\$ 618,694		\$ -	\$ -	\$ (618,694)	100.0%
2037-38	\$ 2,238,158	\$ 559,693		\$ -	\$ -	\$ (559,693)	100.0%
2038-39	\$ 1,815,877	\$ 497,056		\$ -	\$ -	\$ (497,056)	100.0%
2039-40	\$ 1,428,829	\$ 448,217		\$ -	\$ -	\$ (448,217)	100.0%
2040-41	\$ 1,065,208	\$ 416,463		\$ -	\$ -	\$ (416,463)	100.0%
2041-42	\$ 708,980	\$ 318,269		\$ -	\$ -	\$ (318,269)	100.0%
2042-43	\$ 429,388	\$ 223,657		\$ -	\$ -	\$ (223,657)	100.0%
2043-44	\$ 228,093	\$ 173,175		\$ -	\$ -	\$ (173,175)	100.0%
2044-45	\$ 64,925	\$ 67,159		\$ -	\$ -	\$ (67,159)	100.0%

Case study-2b: ADP & 20-year Fresh Start

- Employer Goals:
 - Create a level payment schedule
 - Reduce future payments



Case study-2b: ADP & 20-year Fresh Start

Press the "FS Goal Seek" button to calculate the minimum ADP to initiate a 20-year Fresh Start.

FS Goal Seek			
Amortization Period	2021-22 ADP Amount	21 - 22 Payment Date	Funded Ratio 2020 val:
20	\$ 1,129,487	10/31/2021	66.7%
Total Payments		\$ 19,389,814	
Total Interest		\$ 8,203,219	
Total Savings		\$ 1	
20-Year Fresh Start Level \$			
Balance	Payment	Soft Fresh Start Payment	Projected Funded Ratio End of Year
\$ 11,173,118	\$ 697,715	\$ -	67.6%
\$ 11,233,514	\$ 805,551	\$ -	72.1%
\$ 10,005,320	\$ 913,016	\$ 3,839	73.7%
\$ 9,761,261	\$ 913,016	\$ (59,254)	75.2%
\$ 9,500,118	\$ 913,016	\$ (125,228)	76.8%
\$ 9,220,695	\$ 913,016	\$ (167,737)	78.3%
\$ 8,921,712	\$ 913,016	\$ (208,179)	79.8%
\$ 8,601,800	\$ 913,016	\$ (236,139)	81.2%
\$ 8,259,495	\$ 913,016	\$ (264,862)	82.7%
\$ 7,893,228	\$ 913,016	\$ (294,378)	84.1%
\$ 7,501,323	\$ 913,016	\$ (324,705)	85.6%
\$ 7,081,984	\$ 913,016	\$ (355,868)	87.0%
\$ 6,633,291	\$ 913,016	\$ (346,656)	88.4%
\$ 6,153,190	\$ 913,016	\$ (336,057)	89.7%
\$ 5,639,482	\$ 913,016	\$ (308,643)	91.1%
\$ 5,089,814	\$ 913,016	\$ (261,341)	92.4%
\$ 4,501,670	\$ 913,016	\$ 294,322	93.7%
\$ 3,872,355	\$ 913,016	\$ 353,323	95.0%
\$ 3,198,989	\$ 913,016	\$ 415,960	96.3%
\$ 2,478,487	\$ 913,016	\$ 464,799	97.5%
\$ 1,707,549	\$ 913,016	\$ 496,553	98.8%
\$ 882,646	\$ 913,016	\$ 594,747	100.0%

Case study-3: Target funded status

- Employer Goals:
 - Make level dollar ADPs for a specified period of time to reach a target funded status



Case study-3: Target funded status

Back to Instructions			Goal Seek			Find ADP Amount	
			Target Funded Ratio:				
			Target Period:				
			21 - 22 Payment Date			10/31/2021	
			ADP Amount Per year			\$ -	
Total Payments \$ 19,389,815			Total Payments \$ 19,389,815			\$ -	
Interest Paid \$ 8,203,220			Interest Paid \$ 8,203,220			\$ -	
			Total Savings \$ -				
Original Schedule			Total ADP Schedule with ADP			Contribution	
						Difference	
Balance Payment			(Valued Mid-year) Balance Payment			Ratio End of Year	
2020-21	\$ 11,173,118	\$ 697,715		\$ 11,173,118	\$ 697,715		67.6%
2021-22	\$ 11,233,517	\$ 805,551	\$ -	\$ 11,233,517	\$ 805,551	\$ -	68.8%
2022-23	\$ 11,186,595	\$ 909,177	\$ -	\$ 11,186,595	\$ 909,177	\$ -	70.2%
2023-24	\$ 11,029,199	\$ 972,270	\$ -	\$ 11,029,199	\$ 972,270	\$ -	71.8%
2024-25	\$ 10,795,521	\$ 1,038,244	\$ -	\$ 10,795,521	\$ 1,038,244	\$ -	73.6%
2025-26	\$ 10,477,240	\$ 1,080,753	\$ -	\$ 10,477,240	\$ 1,080,753	\$ -	75.4%
2026-27	\$ 10,092,706	\$ 1,121,195	\$ -	\$ 10,092,706	\$ 1,121,195	\$ -	77.3%
2027-28	\$ 9,639,422	\$ 1,149,155	\$ -	\$ 9,639,422	\$ 1,149,155	\$ -	79.3%
2028-29	\$ 9,125,485	\$ 1,177,878	\$ -	\$ 9,125,485	\$ 1,177,878	\$ -	81.3%
2029-30	\$ 8,545,862	\$ 1,207,394	\$ -	\$ 8,545,862	\$ 1,207,394	\$ -	83.3%
2030-31	\$ 7,895,135	\$ 1,237,721	\$ -	\$ 7,895,135	\$ 1,237,721	\$ -	85.4%
2031-32	\$ 7,167,485	\$ 1,268,884	\$ -	\$ 7,167,485	\$ 1,268,884	\$ -	87.5%
2032-33	\$ 6,356,666	\$ 1,259,672	\$ -	\$ 6,356,666	\$ 1,259,672	\$ -	89.6%
2033-34	\$ 5,498,617	\$ 1,249,073	\$ -	\$ 5,498,617	\$ 1,249,073	\$ -	91.6%
2034-35	\$ 4,591,468	\$ 1,221,659	\$ -	\$ 4,591,468	\$ 1,221,659	\$ -	93.6%
2035-36	\$ 3,649,175	\$ 1,174,357	\$ -	\$ 3,649,175	\$ 1,174,357	\$ -	95.5%
2036-37	\$ 2,689,852	\$ 618,694	\$ -	\$ 2,689,852	\$ 618,694	\$ -	96.4%
2037-38	\$ 2,238,158	\$ 559,693	\$ -	\$ 2,238,158	\$ 559,693	\$ -	97.2%
2038-39	\$ 1,815,877	\$ 497,056	\$ -	\$ 1,815,877	\$ 497,056	\$ -	97.9%
2039-40	\$ 1,428,829	\$ 448,217	\$ -	\$ 1,428,829	\$ 448,217	\$ -	98.5%
2040-41	\$ 1,065,208	\$ 416,463	\$ -	\$ 1,065,208	\$ 416,463	\$ -	99.0%
2041-42	\$ 708,980	\$ 318,269	\$ -	\$ 708,980	\$ 318,269	\$ -	99.4%
2042-43	\$ 429,388	\$ 223,657	\$ -	\$ 429,388	\$ 223,657	\$ -	99.7%
2043-44	\$ 228,093	\$ 173,175	\$ -	\$ 228,093	\$ 173,175	\$ -	99.9%
2044-45	\$ 64,925	\$ 67,159	\$ -	\$ 64,925	\$ 67,159	\$ -	100.0%

Case study-3: Target funded status

Goal Seek

Target Funded Ratio:

95.0%

Target Period:

5

21 - 22 Payment Date

10/31/2021

ADP Amount Per year

\$ 1,564,579

Find ADP Amount

Total Payments	\$	13,091,689	\$	(6,298,126)	Funded Ratio 2020 val:
Interest Paid	\$	1,905,094			66.7%
Total Savings	\$	6,298,126			

Total ADP		Schedule with ADP		Contribution	Projected Funded	
(Valued Mid-year)		Balance	Payment	Difference	Ratio End of Year	
	\$	11,173,118	\$	697,715	67.6%	
\$	1,581,883	\$	11,233,517	\$	805,551	73.3%
\$	1,564,579	\$	9,550,283	\$	805,187	79.0%
\$	1,564,579	\$	7,767,499	\$	751,186	84.6%
\$	1,564,579	\$	5,915,779	\$	685,970	89.9%
\$	1,564,579	\$	4,001,899	\$	590,194	95.0%
\$	-	\$	2,053,117	\$	454,031	95.9%
\$	-	\$	1,727,181	\$	466,518	96.9%
\$	-	\$	1,365,513	\$	479,346	97.9%
\$	-	\$	965,260	\$	492,528	98.9%
\$	-	\$	523,355	\$	506,072	99.9%
\$	-	\$	36,505	\$	37,761	100.0%

Pension Outlook



Pension Outlook 2020

- Registration/Log-in on CalPERS Website and User Manual
 - <https://www.calpers.ca.gov/page/employers/actuarial-resources/pension-outlook-overview/pension-outlook>
- Cost Projection Tool is Open to All Stakeholders
- Non-Pooled and Pooled Plans
- State and Schools plans
- Based on most recent valuation results at 6.30.20
- Recently updated to model new actuarial assumptions adopted by the Board in November 2021



The Path Forward – “Baseline”

- Baseline – Financial position at 6.30.20 projected forward with investment return of 7% each year
- Does not reflect Demographic changes in plan data beyond 6.30.20
- PEPPRA transition is defaulted to 15 Years



The Path Forward - Baseline

Modeling Assumptions

Economic Assumptions

Details	Baseline
Discount Rate	7.000%
Payroll Growth	2.750%
Inflation Rate	2.500%

Investment Scenario Chosen

Rate	Period
7.000%	1
7.000%	1
7.000%	1
7.000%	7
7.000%	20

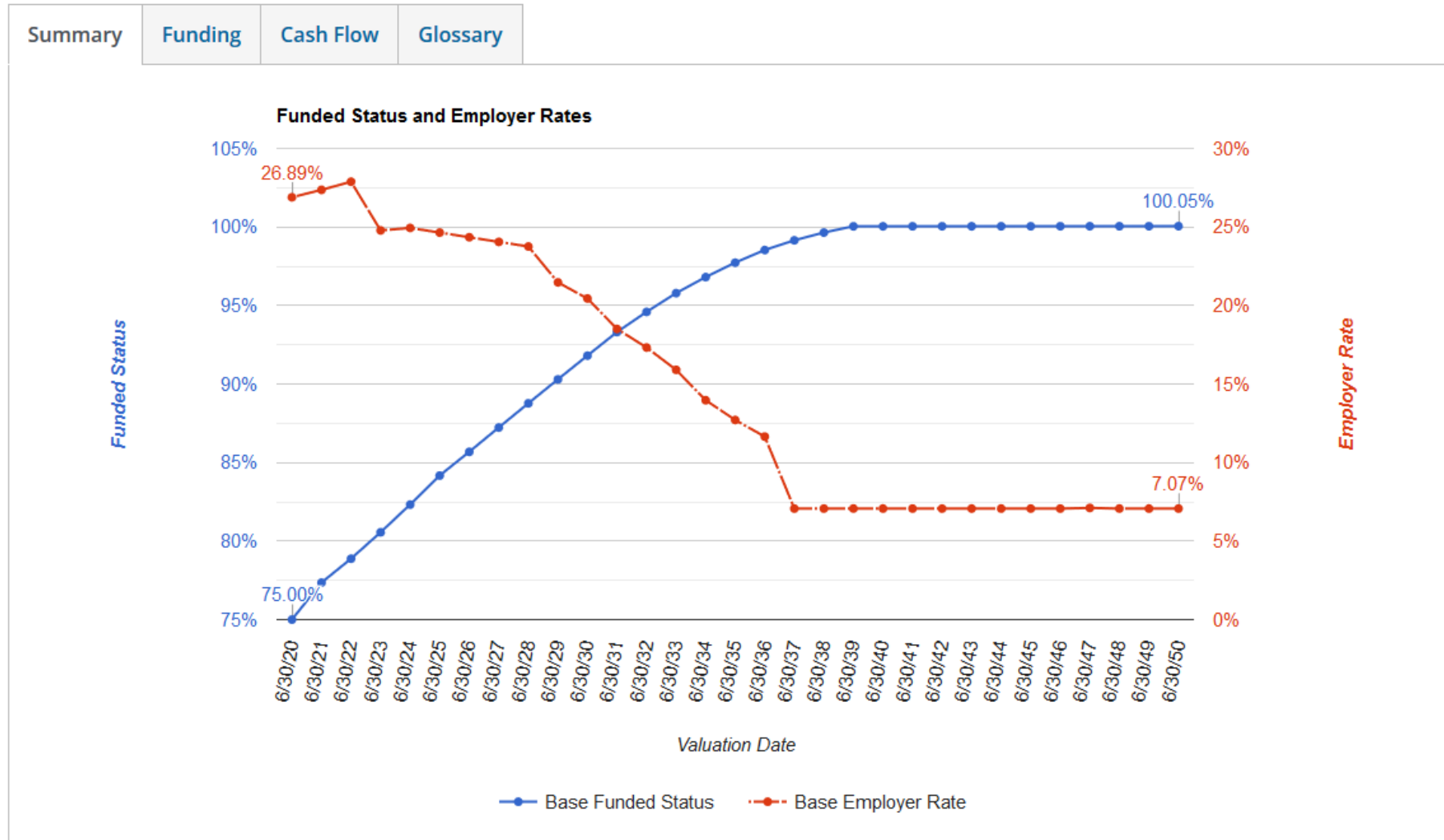
Other Assumptions

Details	Baseline
PEPRA	Yes
Transition Years	15
ADP	No
Use ALM Assumptions	No

The Path Forward - Baseline

30 Year Budget

Download the [Fiscal Year Cost and Annual Relative Increase in Cost \(XLSX\)](#).



The Path Forward - Baseline

Cost Over 30 Years (\$M)

Details	Amount
Baseline	\$386.02
Scenario	\$386.02
Change	\$0.00
Increase/ Decrease	0.00%

Funded Status

Details	Percentage
Current at 06/30/2020	75.00%
Projected at 06/30/2021	77.35%
Lowest Funded Status	75.00%

Future Funded Status

Date	Percentage
at 06/30/2024	82.32%
at 06/30/2026	85.68%
at 06/30/2031	93.31%

Employer Rates

Details	Percentage
Current FY (at 06/30/2021)	27.13%
Projected for next FY (at 06/30/2022)	26.89%
Average Over 30 Years	15.47%
Increase Over Baseline Over 30 Years	0.00%
Maximum Over 30 Years	27.88%
Increase Over Baseline Over 30 Years	0.00%

Plan Cost Diagnostics

Rate	Average
Average Rate Relative to Current Rate	-42.96%
Maximum Rate Relative to Current Rate	2.77%
Average Rate Relative to Baseline	0.00%
Maximum Rate Relative to Baseline	0.00%
Cost Over 30 Years Relative to Baseline	0.00%

The Path Forward – User Scenario 1

Model -

1. 21.3% Investment return for FY 2020-21
2. 6.80% Risk Mitigation Discount Rate
3. New actuarial assumptions adopted November 2021
(retirement rates, mortality rates, etc.)



The Path Forward – User Scenario 1

Modeling Assumptions

Years to Project

- ☐ 10
☐ 20
☒ 30

Discount Rate % (required)

6.8

☒ Use ALM Assumptions

PEPRA

- ☒ Yes
☐ No

PEPRA Transition Years

- ☐ 10
☒ 15
☐ 20

Additional Discretionary Payment

- ☐ Yes
☒ No

Random Investment Scenario

- ☐ Yes
☒ No

Rate % (required)

21.3
6.8
6.8
6.8
6.8

Number of Years (required)

1
1
1
7
20

Submit

Reset Modeling Criteria

The Path Forward – User Scenario 1

30 Year Budget

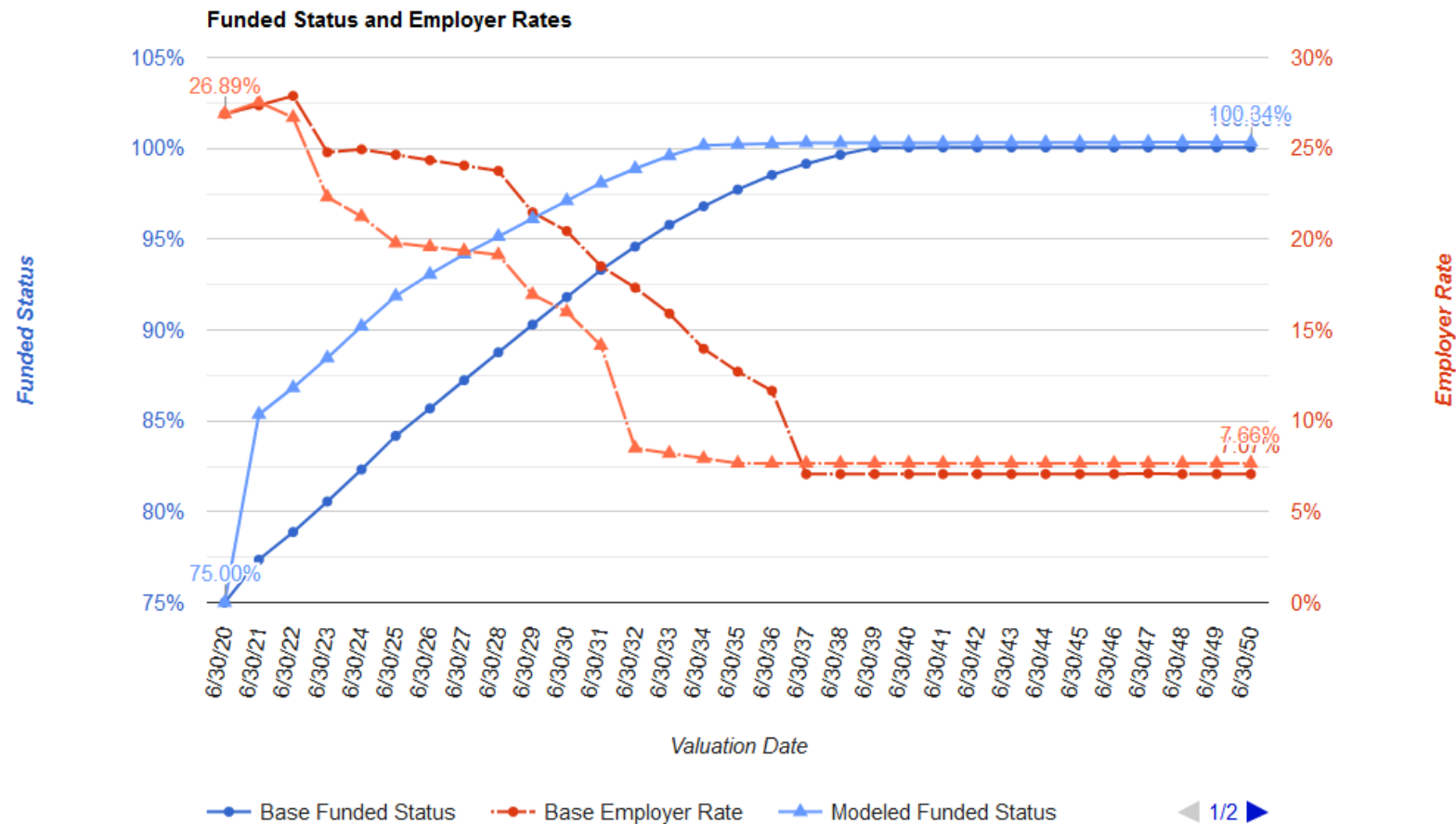
Download the [Fiscal Year Cost and Annual Relative Increase in Cost \(XLSX\)](#).

Summary

Funding

Cash Flow

Glossary



The Path Forward – User Scenario 1

Cost Over 30 Years (\$M)

Details	Amount
Baseline	\$386.02
Scenario	\$338.15
Change	(\$47.87)
Increase/ Decrease	-12.40%

Funded Status

Details	Percentage
Current at 06/30/2020	75.00%
Projected at 06/30/2021	85.35%
Lowest Funded Status	75.00%

Future Funded Status

Date	Percentage
at 06/30/2024	90.20%
at 06/30/2026	93.06%
at 06/30/2031	98.09%

Employer Rates

Details	Percentage
Current FY (at 06/30/2021)	27.13%
Projected for next FY (at 06/30/2022)	26.89%
Average Over 30 Years	13.43%
Increase Over Baseline Over 30 Years	-2.04%
Maximum Over 30 Years	27.55%
Increase Over Baseline Over 30 Years	-0.34%

Plan Cost Diagnostics

Rate	Average
Average Rate Relative to Current Rate	-50.50%
Maximum Rate Relative to Current Rate	1.53%
Average Rate Relative to Baseline	-13.21%
Maximum Rate Relative to Baseline	-1.21%
Cost Over 30 Years Relative to Baseline	-12.40%

The Path Forward – User Scenario 1

Fiscal Year Cost (in \$M)										
1 - Miscellaneous Plan	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Payroll	\$59.06	\$60.72	\$62.42	\$64.17	\$65.96	\$67.81	\$69.71	\$71.66	\$73.67	\$75.73
Baseline										
Normal Cost	\$6.04	\$6.11	\$6.15	\$6.20	\$6.23	\$6.27	\$6.30	\$6.33	\$6.36	\$6.39
UAL Payment	\$9.20	\$10.20	\$10.91	\$11.67	\$10.08	\$10.60	\$10.82	\$11.05	\$11.29	\$11.53
Total Employer Cost	\$15.24	\$16.32	\$17.06	\$17.87	\$16.31	\$16.87	\$17.13	\$17.39	\$17.65	\$17.91
Total Employer Rate	27.13%	26.89%	27.36%	27.88%	24.78%	24.94%	24.64%	24.35%	24.05%	23.76%
Scenario										
Normal Cost	\$6.04	\$6.11	\$7.18	\$7.21	\$7.23	\$7.24	\$7.25	\$7.26	\$7.26	\$7.26
UAL Payment	\$9.20	\$10.20	\$10.01	\$9.92	\$7.49	\$7.16	\$6.54	\$6.77	\$7.00	\$7.24
Total Employer Cost	\$15.24	\$16.32	\$17.19	\$17.13	\$14.72	\$14.41	\$13.79	\$14.03	\$14.26	\$14.49
Total Employer Rate	27.13%	26.89%	27.55%	26.69%	22.32%	21.24%	19.79%	19.58%	19.36%	19.14%
Impact on Cost										
Total Employer Cost	\$0.00	\$0.00	\$0.13	(\$0.74)	(\$1.59)	(\$2.47)	(\$3.33)	(\$3.36)	(\$3.39)	(\$3.42)
Total Employer Rate	0.00%	0.00%	0.18%	-1.19%	-2.47%	-3.70%	-4.85%	-4.77%	-4.69%	-4.62%
Baseline	6/30/2021	6/30/2022	6/30/2023	6/30/2024	6/30/2025	6/30/2026	6/30/2027	6/30/2028	6/30/2029	6/30/2030
Accrued Liability	\$463.20	\$484.97	\$507.87	\$531.96	\$557.31	\$583.99	\$612.08	\$641.67	\$672.83	\$705.67
Market Value of Assets	\$358.30	\$382.53	\$409.14	\$437.93	\$469.10	\$500.38	\$533.94	\$569.61	\$607.54	\$647.87
UAL - Baseline	\$104.90	\$102.44	\$98.73	\$94.04	\$88.21	\$83.61	\$78.15	\$72.06	\$65.30	\$57.81
Funded Ratio	77.35%	78.88%	80.56%	82.32%	84.17%	85.68%	87.23%	88.77%	90.30%	91.81%
Scenario										
Accrued Liability	\$475.64	\$498.41	\$522.40	\$547.67	\$574.30	\$602.36	\$631.95	\$663.15	\$696.06	\$730.77
Market Value of Assets	\$405.95	\$432.75	\$462.10	\$493.97	\$527.57	\$560.58	\$595.12	\$630.97	\$669.09	\$709.63
UAL - Scenario	\$69.68	\$65.66	\$60.30	\$53.70	\$46.73	\$41.78	\$36.83	\$32.18	\$26.96	\$21.14
Funded Ratio	85.35%	86.83%	88.46%	90.20%	91.86%	93.06%	94.17%	95.15%	96.13%	97.11%
Impact on UAL	(\$35.22)	(\$36.78)	(\$38.43)	(\$40.34)	(\$41.48)	(\$41.83)	(\$41.31)	(\$39.88)	(\$38.33)	(\$36.67)

The Path Forward – User Scenario 2

Model -

1. 21.3% Investment return for FY 2020-21
2. 6.80% Risk Mitigation Discount Rate
3. New actuarial assumptions adopted November 2021
(retirement rates, mortality rates, etc.)
4. \$50 mill ADP



The Path Forward – User Scenario 2

Modeling Assumptions

Years to Project

- ☐ 10
☐ 20
☒ 30

Discount Rate % (required)

6.8

☒ Use ALM Assumptions

PEPRA

- ☒ Yes
☐ No

PEPRA Transition Years

- ☐ 10
☒ 15
☐ 20

Additional Discretionary Payment

- ☒ Yes
☐ No

1% of UAL is \$1.107M

ADP Amount (\$M) (required)

50.000

Number of Annual Payments (required)

1

Random Investment Scenario

- ☐ Yes
☒ No

Rate % (required)

21.3

6.8

6.8

6.8

6.8

Number of Years (required)

1

1

1

7

20

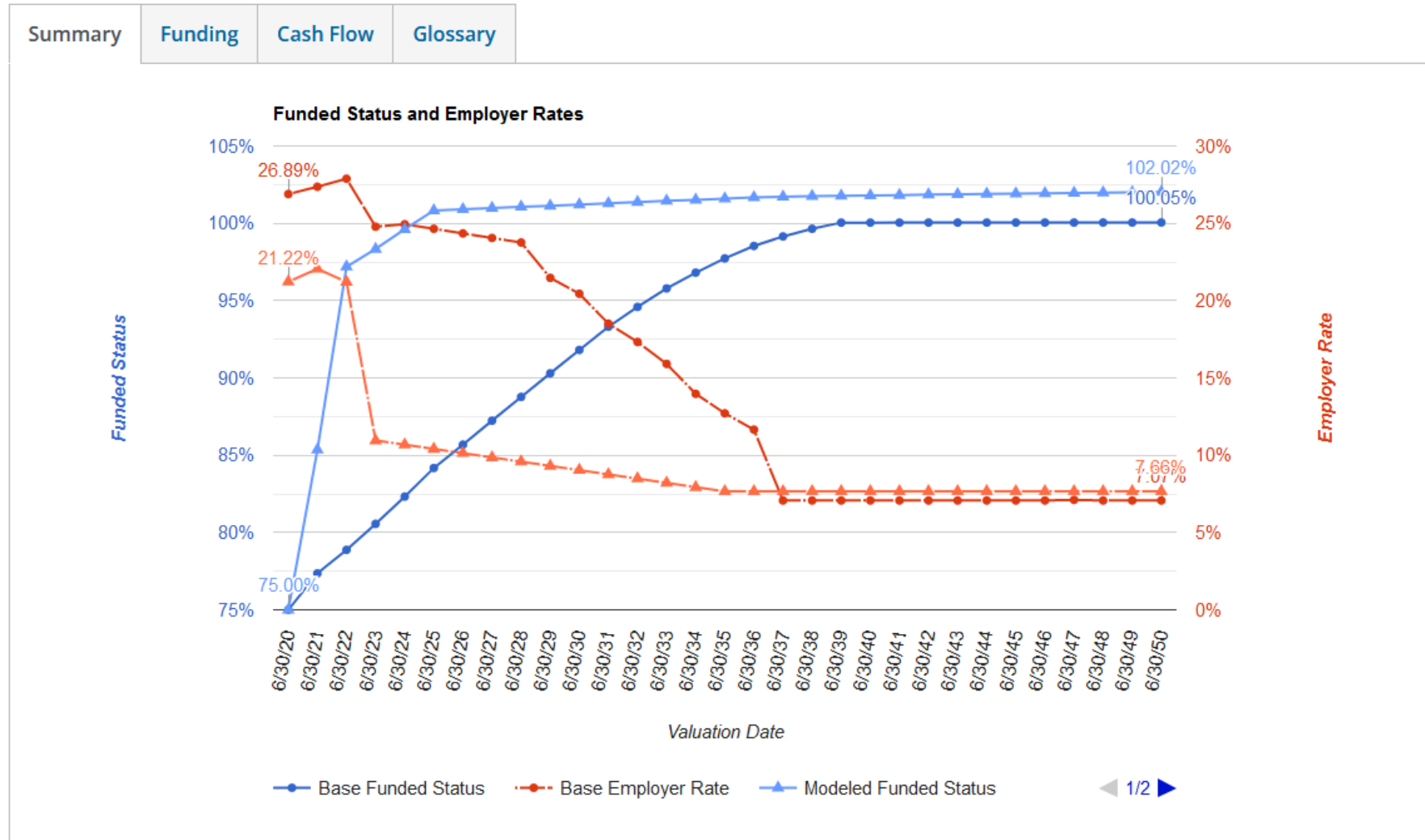
Submit

Reset Modeling Criteria

The Path Forward – User Scenario 2

30 Year Budget

Download the [Fiscal Year Cost and Annual Relative Increase in Cost \(XLSX\)](#).



The Path Forward – User Scenario 3

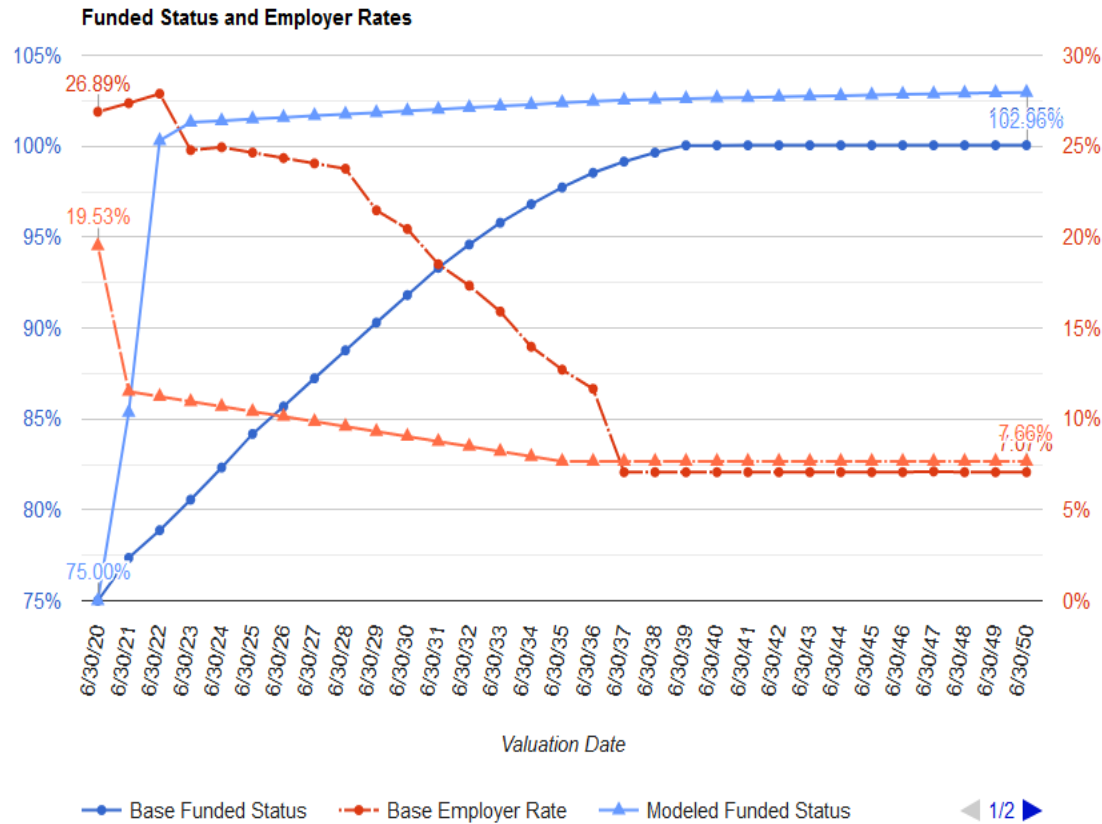
Model -

1. 21.3% Investment return for FY 2020-21
2. 6.80% Risk Mitigation Discount Rate
3. New actuarial assumptions adopted November 2021 (retirement rates, mortality rates, etc.)
4. POB to fully fund UAL
5. -20.0% investment return

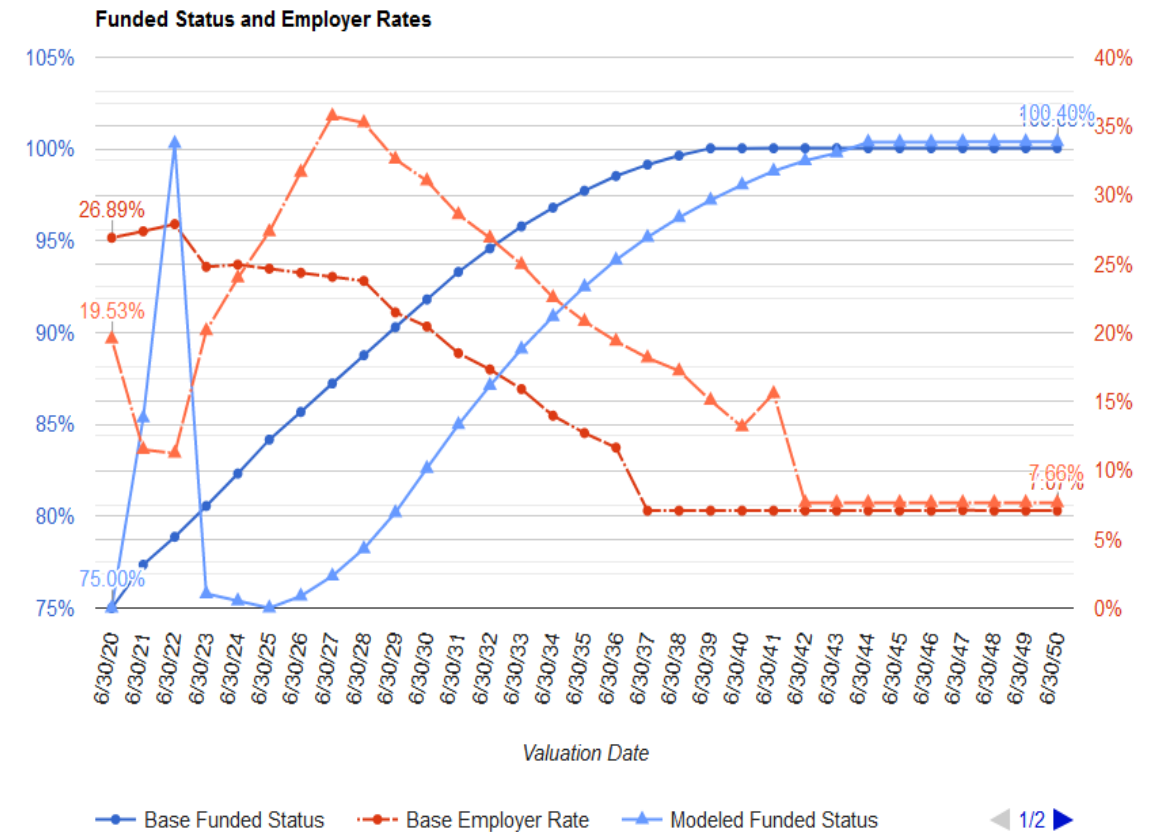


The Path Forward – User Scenario 3

POB to Fully Fund UAL



-20% Return After POB



The Path Forward – Other Scenarios

Model:

1. 6.8% Discount Rate with 6.0% Returns
2. 6.8% Discount Rate with 6% Returns for 5 years, 6.8% thereafter
3. Impact of paydown programs – extra \$X million paid for next 5 years
4. Volatile year to year investment returns
5. Many possible scenarios to be considered or budgeted for

