



METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BARTEL
ASSOCIATES, LLC

CalPERS and OPEB Unfunded Liabilities Preliminary Results

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Agenda

Definitions

How We Got Here

CalPERS Changes

Plan Funded Status

Where Contributions Are Going

Leaving CalPERS

OPEB Plan Analysis



DEFINITIONS

■ CalPERS

- Established in 1932
- 1.9 million members
 - 1,578 public agencies
 - \$334 billion assets (10/25/18)
 - Largest US pension fund
- Administers CalPERS pension plans in accordance with State law and Board policies
 - 13 Board members, 6 elected by employees/retirees
- CalPERS actuaries determine required contributions, in accordance with Board policies
- CalPERS invests the funds in accordance with Board policies

DEFINITIONS

■ **CalPERS Defined Benefit Promise:**

- At retirement, employees receive a monthly annuity for life
 - Final average pay (monthly) x years of service x factor
 - Cost of living increase up to 2% per year
- Funded by Employer and Employee contributions
- NO SOCIAL SECURITY

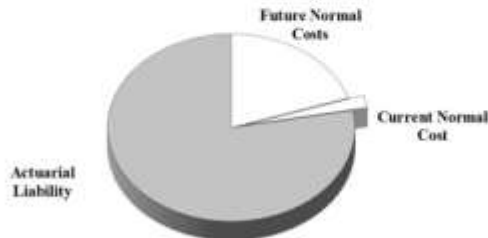
■ **Example:**

- 2% @ 55 Formula for Miscellaneous Tier 1 (“Classic”)
- For employee retiring at age 55:
 - 2% x Highest Year Pay x Years of Service
 - Paid as an annuity for life



DEFINITIONS

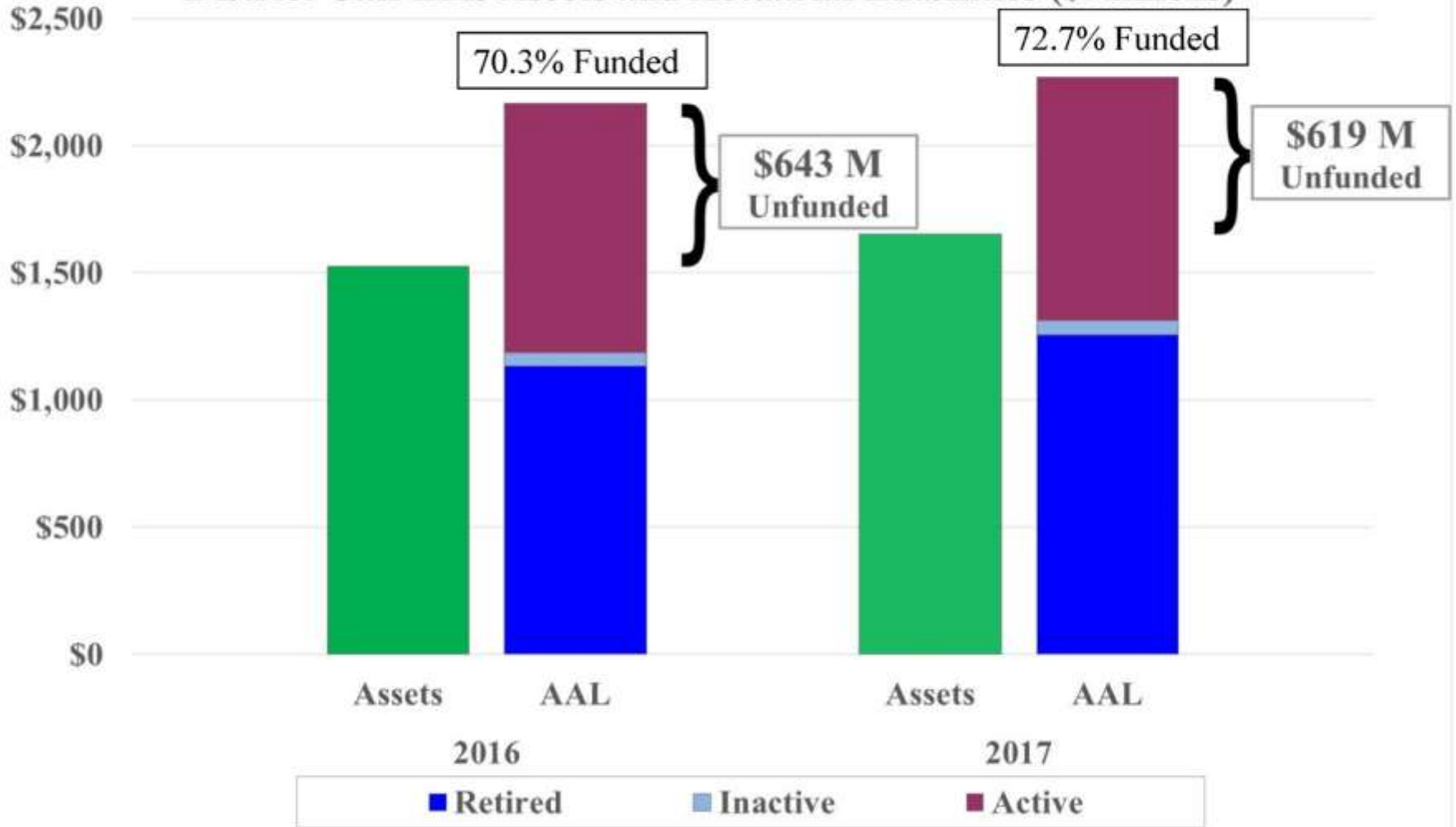
Present Value of Benefits
June 30, 2017



- **PVB - Present Value of all Projected Benefits:**
 - The value now of amounts due to be paid in the future
 - Discounted value of all future expected benefit payments based on actuarial assumptions
- **Normal Cost (NC):**
 - Portion of PVB “earned” during current year
 - Paid as a percentage of payroll by employees and employer
- **Actuarial Liability (AAL):**
 - Present value of benefits earned through valuation date: past service liability, or
 - Accumulation of previous normal costs
- **Unfunded Liability (UAL) - Money short of target at valuation date**
 - If all actuarial assumptions were always exactly met, then plan assets equal AAL
 - Any difference is the unfunded (or overfunded) AAL
 - Every year, the actuary calculates the difference between the expected UAL and Actual UAL. This is a new layer or amortization base
 - Each new layer gets amortized (paid off) over a period of time as part of the District’s contribution.
- **EPMC - Employer-Paid Member Contributions**
- **PEPRA - Public Employees’ Pension Reform Act of 2013**

HOW WE GOT HERE

District CalPERS Assets and Actuarial Liabilities (\$Millions)



HOW WE GOT HERE

- Investment Losses
- CalPERS Contribution Policy
- Enhanced Benefits
- Demographics



HOW WE GOT HERE – INVESTMENT RETURN

Annual Return on Market Value of Assets



Above assumes contributions, payments, etc. received evenly throughout year.



HOW WE GOT HERE – OLD CONTRIBUTION POLICY

- Effective with 2003 valuations:
 - Slow (15 year) recognition of investment losses into funded status
 - Rolling 30 year amortization of all (primarily investment) losses

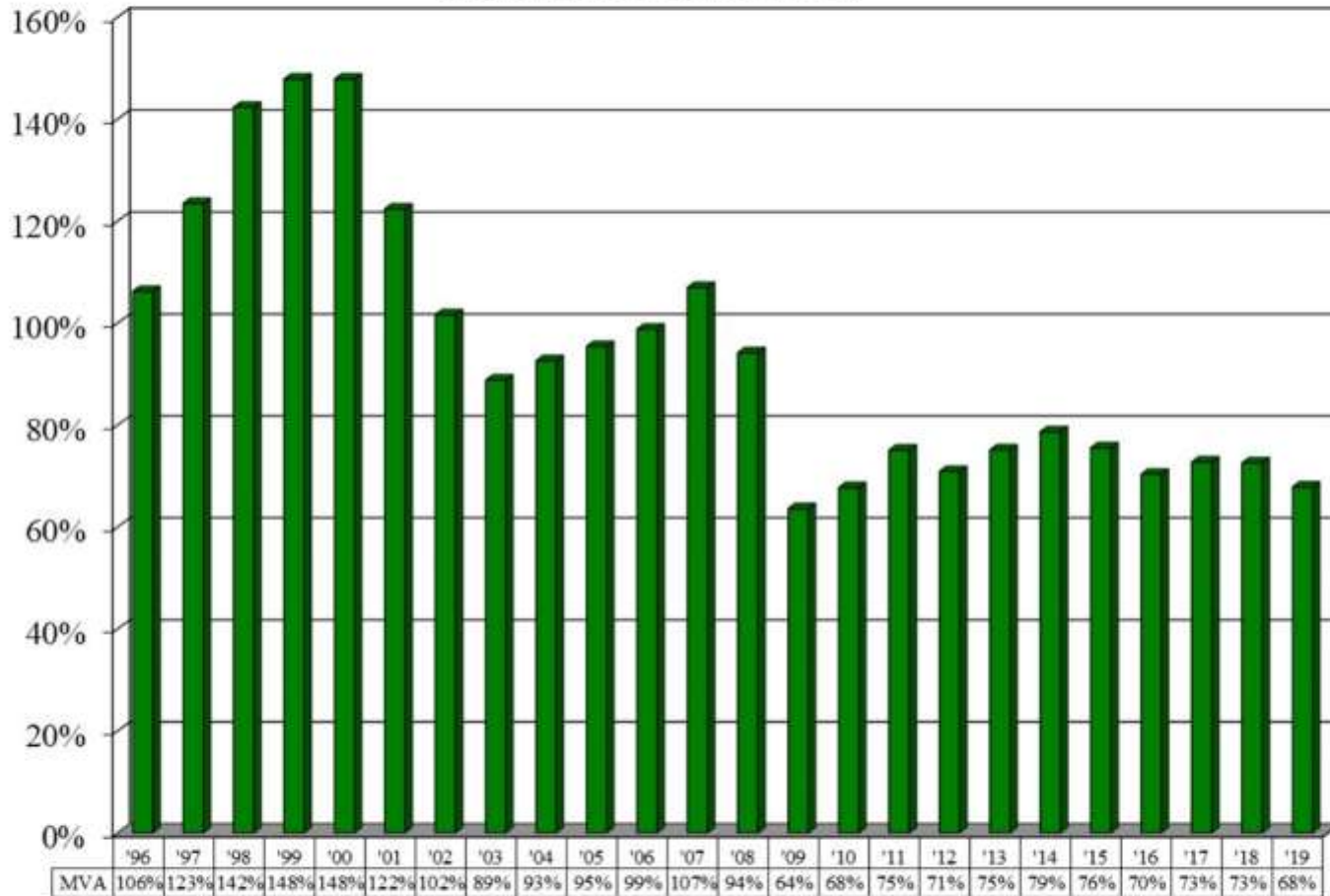
- Designed to:
 - First smooth rates and
 - Second pay off UAL

- Mitigated contribution volatility but did not improve funded status
 - Average public agency Miscellaneous plan 72.7% funded
 - Average public agency Safety plan 69.4% funded



HOW WE GOT HERE

Historical Funded Ratio

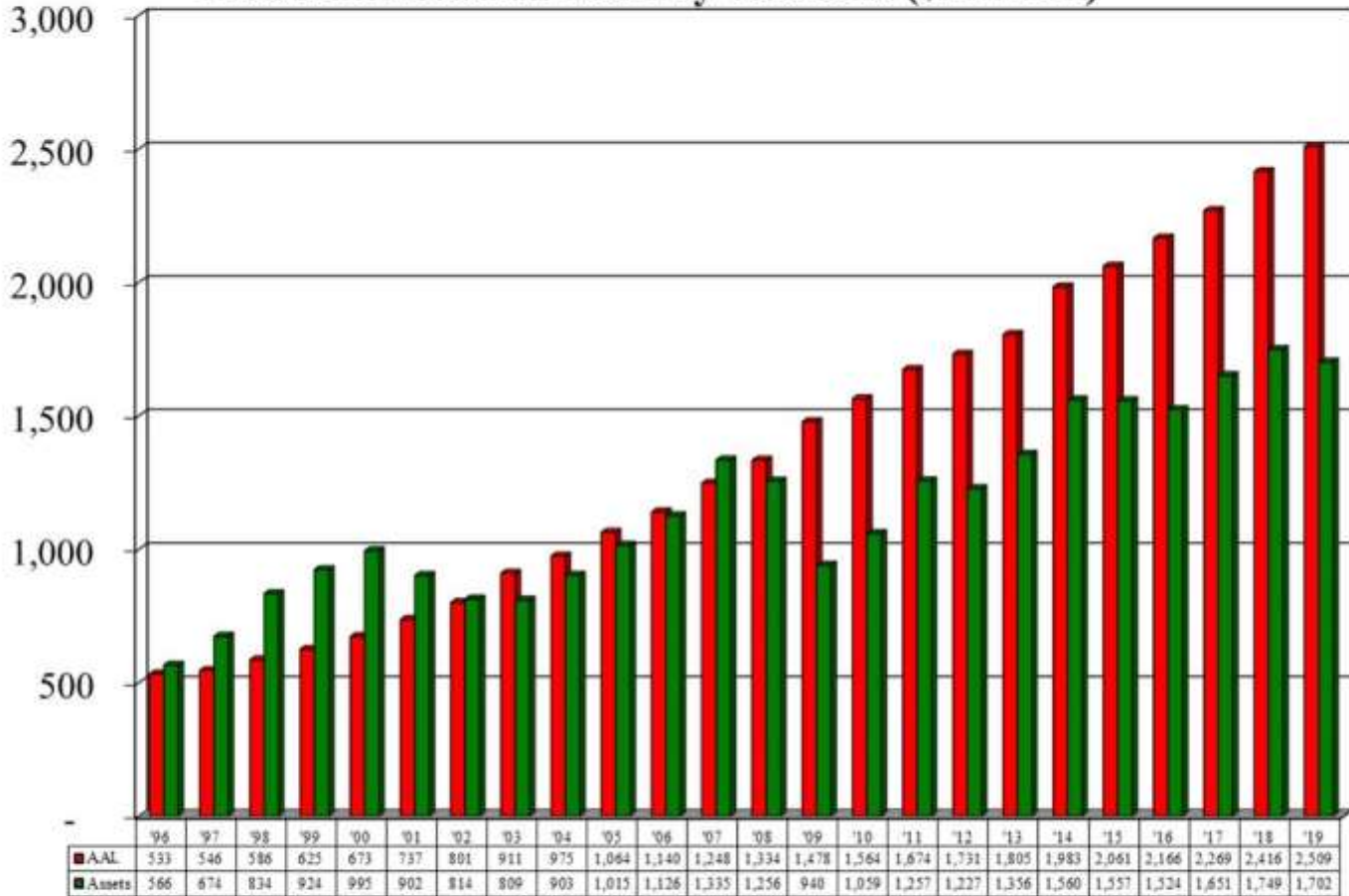


6/30/18 & 6/30/19 funded status estimated



HOW WE GOT HERE

Historical Actuarial Liability vs. Assets (\$Millions)

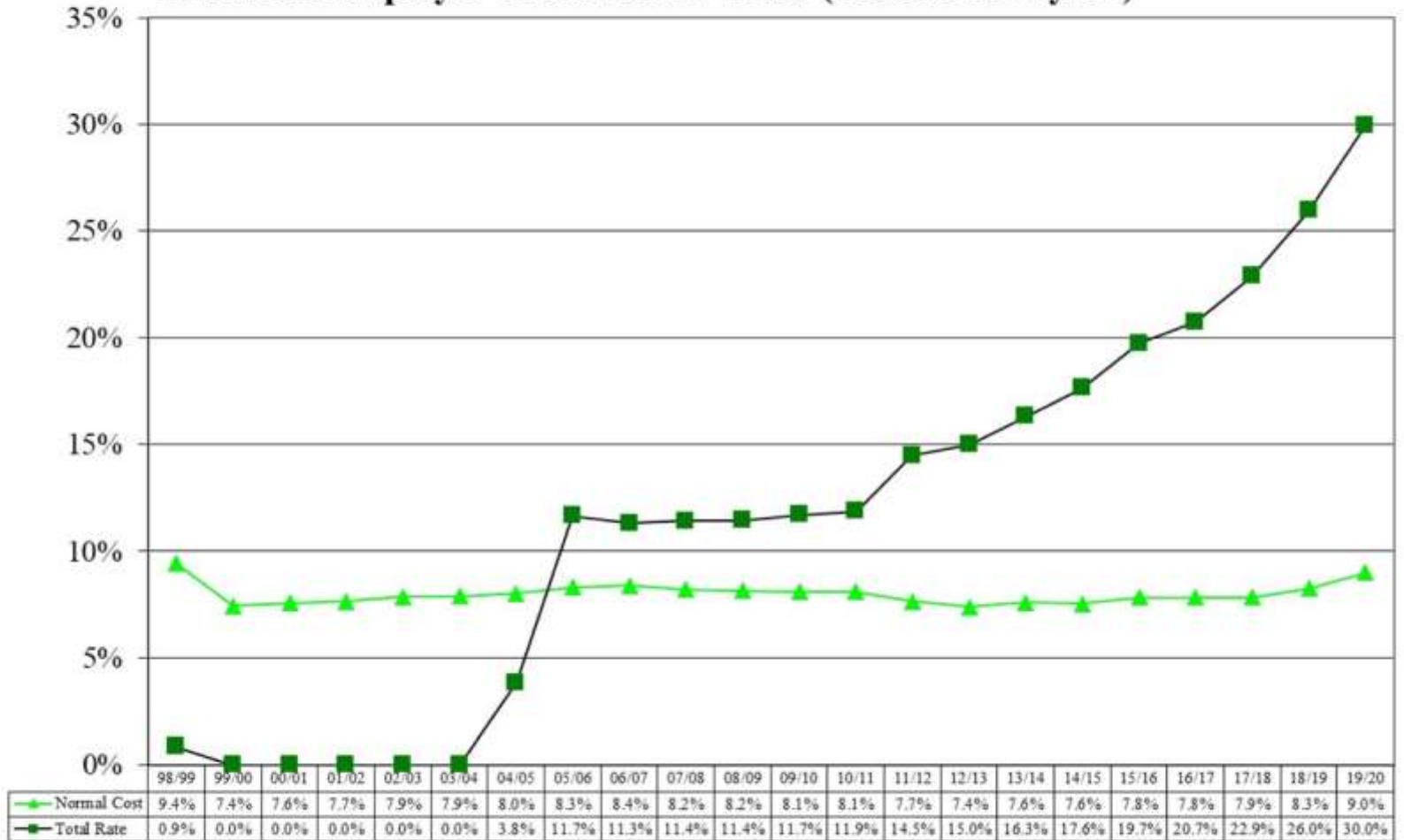


6/30/18 & 6/30/19 funded status estimated



HOW WE GOT HERE – OLD CONTRIBUTION POLICY

Historical Employer Contribution Rates (Percent of Payroll)



HOW WE GOT HERE – ENHANCED BENEFITS

- At CalPERS, Enhanced Benefits implemented using all (future & prior) service
- Typically not negotiated with cost sharing
- Metropolitan Water District of Southern California did not adopt enhanced formulas
 - Agencies without enhanced formulas generally have better funded ratios and lower contribution rates

Benefit Formula	Tier 1	PEPRA
● Miscellaneous	2%@55 FAE1	2%@62 FAE3

- Notes:
 - PEPRA (Public Employees’ Pension Reform Act of 2013) mandates lower benefit formulas and higher member contributions for new hires in 2013 and later.
 - FAE1 is highest one year (typically final) average earnings
 - FAE3 is highest three years (typically final three) average earnings

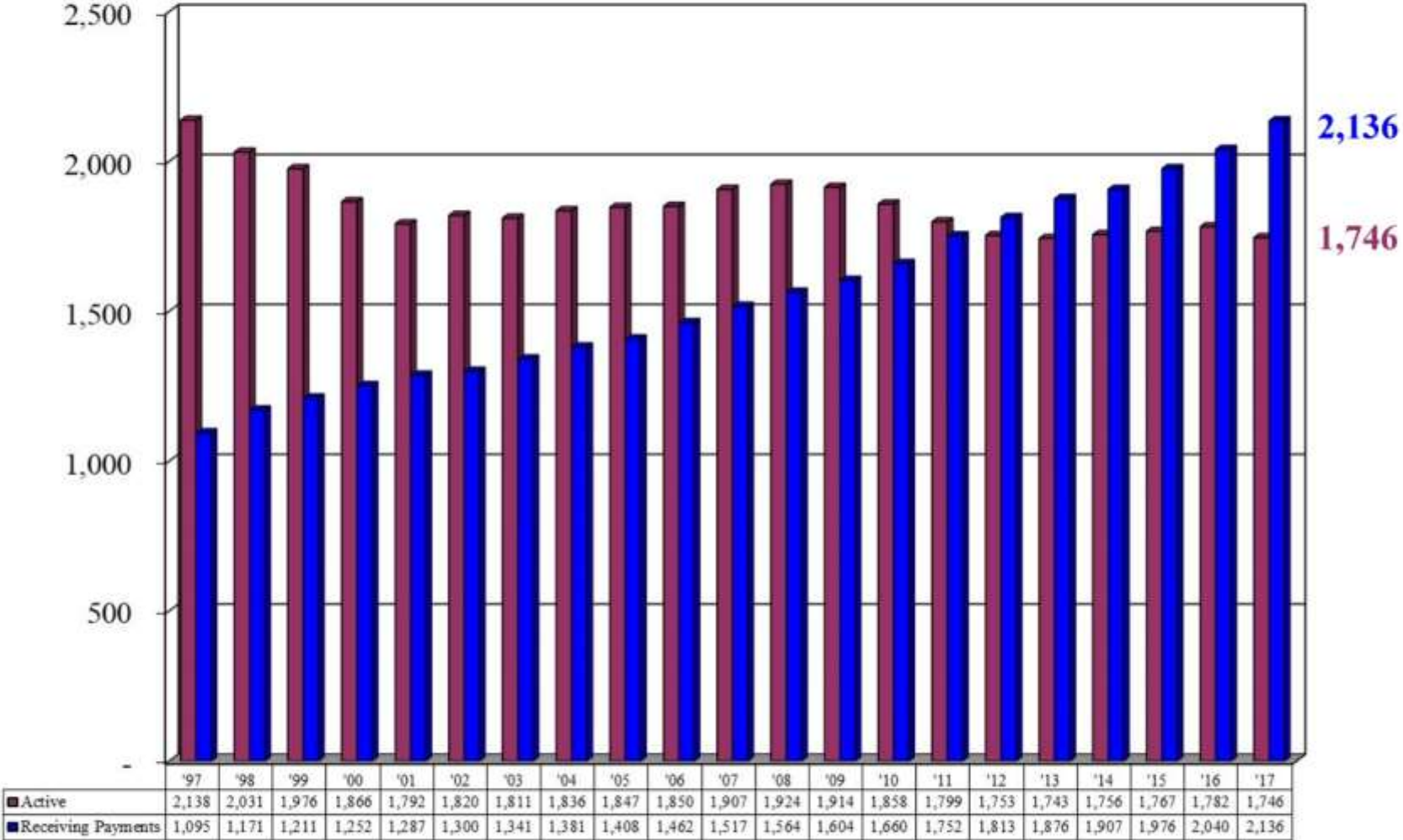
HOW WE GOT HERE – DEMOGRAPHICS

- Around the State
 - Large retiree liability compared to actives
 - State average: 55% for Miscellaneous, 65% for Safety
 - Declining active population and increasing number of retirees
 - Higher percentage of retiree liability increases contribution volatility

- Metropolitan Water District of Southern California percentage of liability belonging to retirees: 55%
 - Will increase in the future, leading to more volatile contribution rates



HOW WE GOT HERE – DEMOGRAPHICS



Also, 932 transferred and separated employees not yet retired, with small liability



CALPERS CHANGES

- Contribution policy changes:
 - No asset smoothing or rolling amortization
 - 5-year ramp up in rates for changes
 - First impact 15/16 rates; full impact 19/20

- Assumption changes:
 - Mainly anticipate future mortality improvement
 - First impact 16/17 rates; full impact 20/21

■ CalPERS Board changed their discount rate:

	<u>Rate</u>	<u>Initial Impact</u>	<u>Full Impact</u>
● 6/30/16 valuation	7.375%	18/19	22/23
● 6/30/17 valuation	7.25%	19/20	23/24
● 6/30/18 valuation	7.00%	20/21	24/25
● Based on investment advisor's 7% long term return estimate			
● Investment advisors estimate short term returns average 6.2%			



CALPERS CHANGES

- Risk Mitigation Strategy
 - Move to more conservative investments over time to reduce volatility
 - Only when investment return is better than expected
 - Lower discount rate in concert
 - Essentially use $\approx 50\%$ of investment gains to pay for cost increases
 - Likely get to 6.0% over 20+ years
 - Risk mitigation suspended until 6/30/18 valuation

- New amortization policy
 - Effective June 30, 2019 valuation for 2021/22 contributions
 - Applies only to newly established amortization bases
 - Fixed dollar amortization rather than escalating payments
 - Amortize gains/losses over 20 rather than 30 years
 - 5-year ramp up (not down) for investment gains and losses only
 - Minimizes total interest paid over time and pays off UAL faster

CALPERS CHANGES

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PLAN FUNDED STATUS

Discount Rate Sensitivity

June 30, 2017

	<u>Discount Rate</u>		
	<u>7.25%</u>	<u>7.00%</u>	<u>6.00%</u>
AAL	\$2,269,000,000	\$2,328,900,000	\$2,624,000,000
Assets	<u>1,650,500,000</u>	<u>1,650,500,000</u>	<u>1,650,500,000</u>
Unfunded Liability	618,500,000	678,400,000	973,500,000
Funded Ratio	72.7%	70.9%	62.9%

**Total expected future
payments (17/18+)** \$ 1,351,900,000
towards 6/30/17 UAL

**Total future interest
paid** 733,400,000



PLAN FUNDED STATUS

Unfunded Accrued Liability Changes

■ Unfunded Accrued Liability on 6/30/16		\$642,600,000
■ Expected Unfunded Accrued Liability on 6/30/17		662,500,000 ¹
■ Other Changes		
• Asset Loss (Gain) (11.2% return for FY 2017)	(58,600,000)	
• Assumption Change (discount rate 7.375=>7.25)	19,100,000	
• Contribution & Experience Loss (Gain)	(4,500,000)	
• Total		<u>(44,000,000)</u>
■ Unfunded Accrued Liability on 6/30/17		618,500,000
■ Expected Unfunded Accrued Liability on 6/30/18		632,300,000
■ Asset Loss (Gain) (8.6% return for FY 2018)	(22,300,000)	
■ Assumption Change (discount rate 7.25=>7.00)	62,100,000	
■ Estimated UAL on 6/30/18		672,100,000

¹ Increases since required UAL payment is less than interest on UAL.



CONTRIBUTION PROJECTIONS

Summary: Everything we know is in the projections

- Market Value Investment Return:

- June 30, 2018 8.6%²
- June 30, 2019 -0.8%³
- Future returns based on stochastic analysis using 1,000 trials

<u>Single Year Returns at⁴</u>	<u>25th Percentile</u>	<u>50th Percentile</u>	<u>75th Percentile</u>
Current Investment Mix	0.1%	7.0%	14.8%
Ultimate Investment Mix	0.8%	6.0%	11.4%

- Assumes investment returns will generally be 6.5% (as compared to 7.0%) over the next 10 years and higher beyond that.

- Assumption Changes – Discount Rate

- 7.0% at June 30, 2018 valuation and future decreases due to Risk Mitigation policy.

- No Other: Gains/Losses, Method/Assumption Changes, Benefit Improvements

- Different from CalPERS projection

- 2018/19 new hires are PEPRA 62.5% and 37.5% Classic=> 100% PEPRA by 2028.

- 7% EPMC for Classic members hired pre 1/1/12 and with 5 years of service hired after 1/1/12

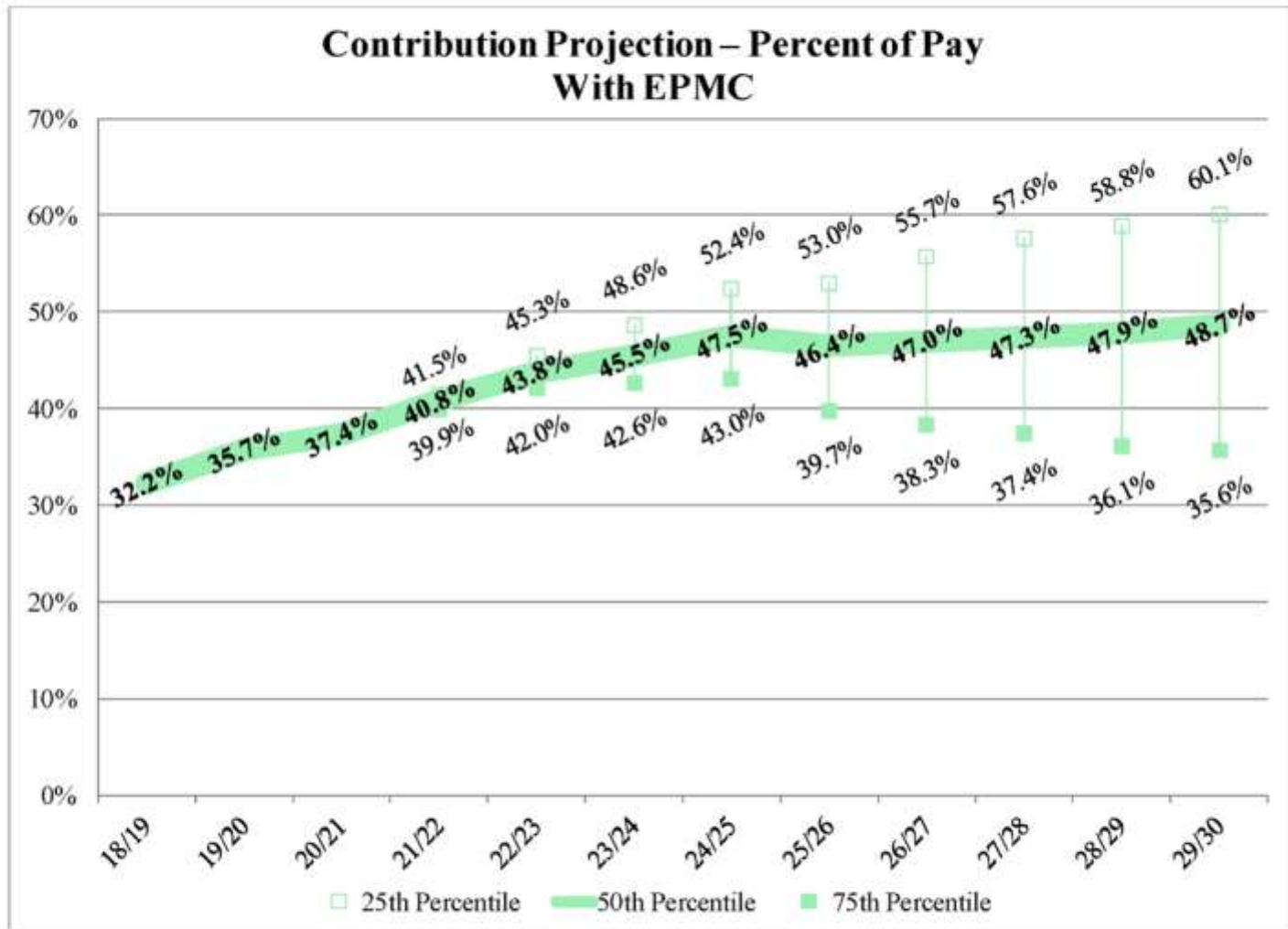
² based July 2018 CalPERS press release

³ June 30, 2019 return based on actual CalPERS return of -3.9% through 12/31/18 and assumed returns for 6 months.

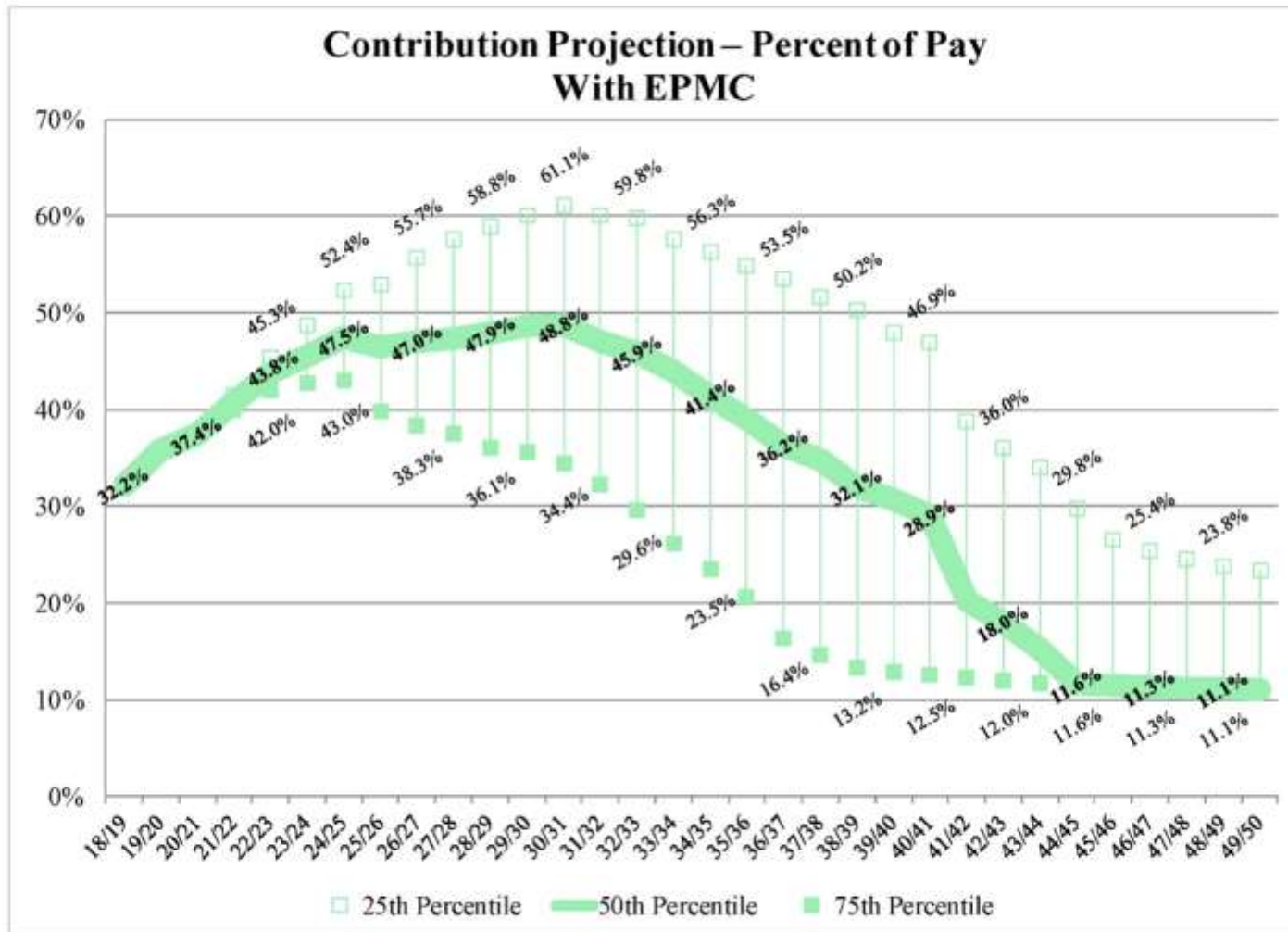
⁴ Nth percentile means N percentage of our trials result in returns lower than the indicated rates.



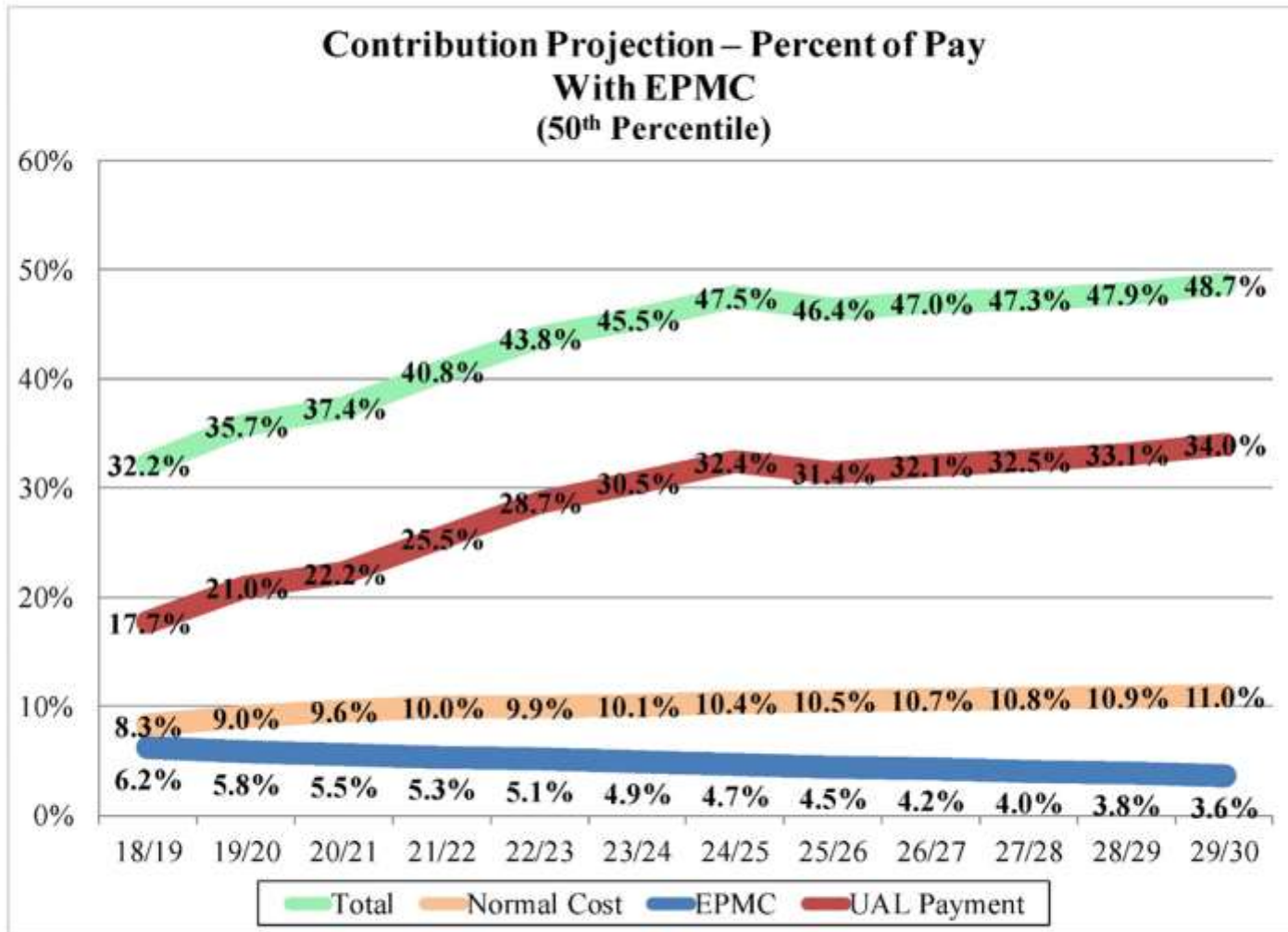
CONTRIBUTION PROJECTIONS



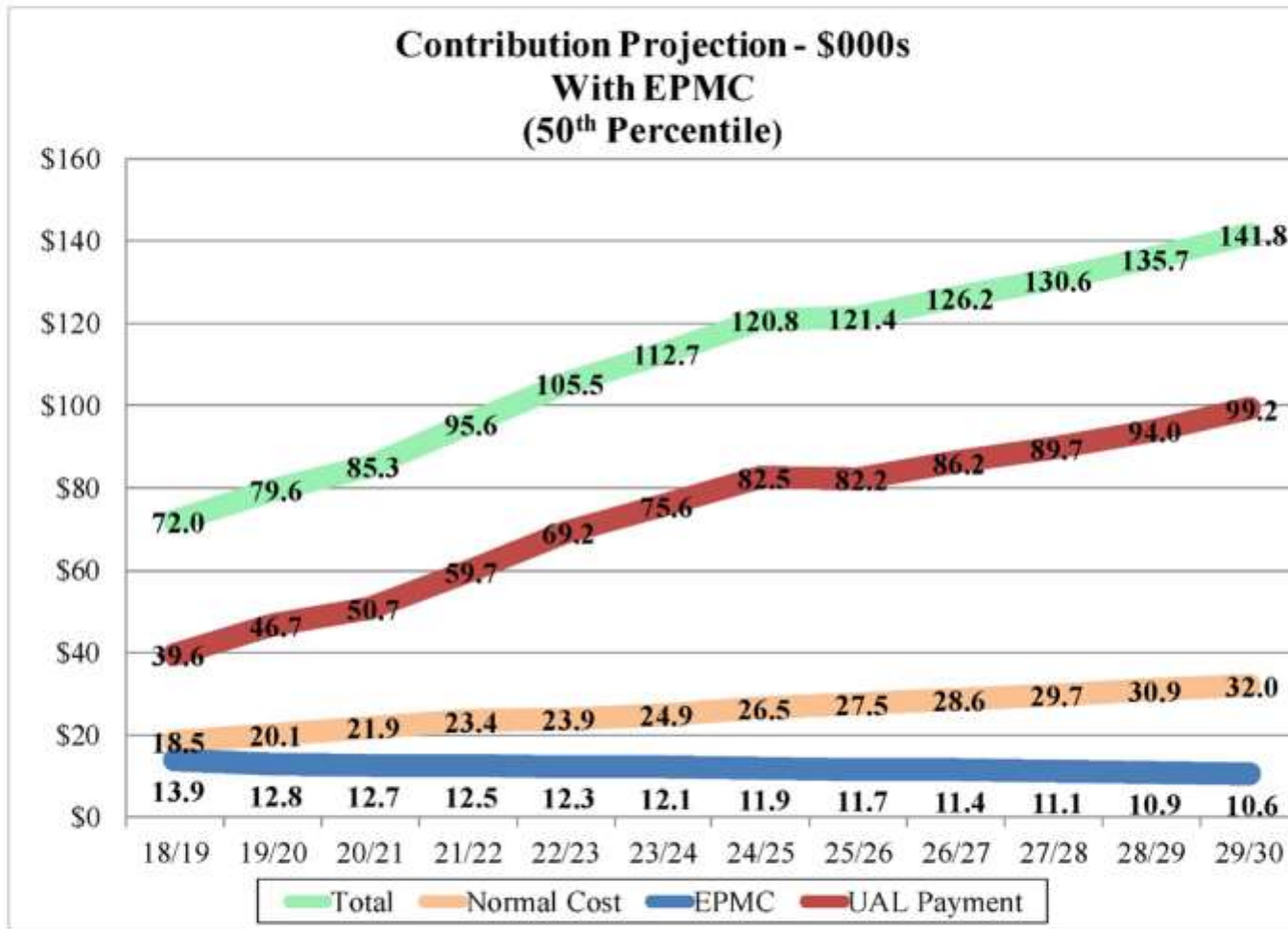
CONTRIBUTION PROJECTIONS



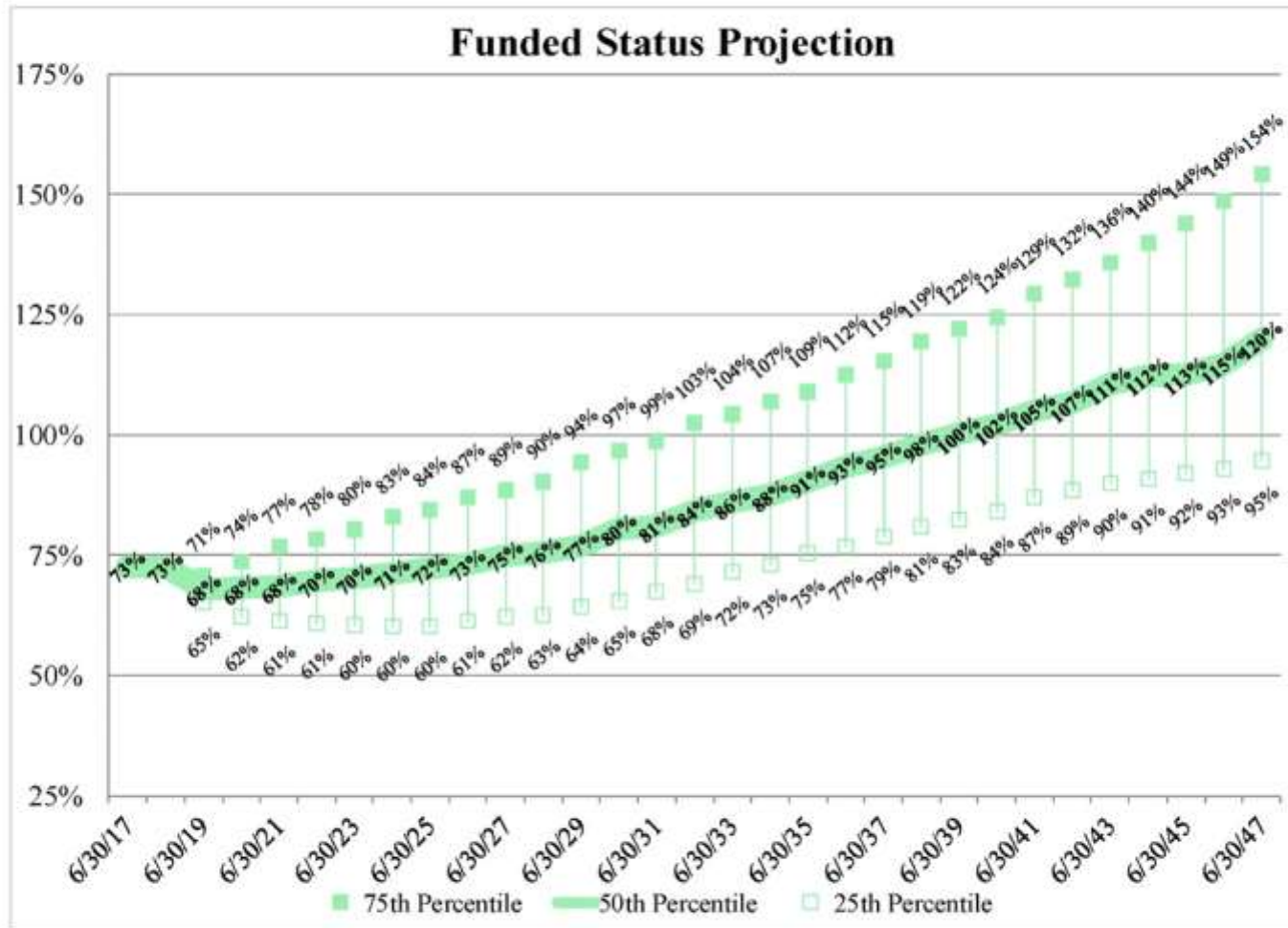
CONTRIBUTION PROJECTIONS



CONTRIBUTION PROJECTIONS



FUNDED STATUS PROJECTION



LEAVING CALPERS

- Participation in CalPERS is governed by State law and CalPERS rules
- The following are considered “withdrawing” from CalPERS:
 - Exclude new hires from CalPERS & giving them a different pension
 - Stop accruing benefits for current employees
- “Withdrawal” from CalPERS:
 - Treated as plan termination
 - Liability increased for conservative investments
 - Liability increased for future demographic fluctuations
 - Liability must be funded immediately by withdrawing agency
 - Otherwise, retiree benefits are cut



LEAVING CALPERS

CalPERS Termination Estimates on June 30, 2017 (Amounts in Millions)

Discount Rate	Ongoing Plan	Termination Basis	
	7.25%	1.75%	3.00%
Miscellaneous			
Actuarial Accrued Liability	\$ 2,269	\$ 4,212	\$ 3,801
Assets	<u>1,651</u>	<u>1,651</u>	<u>1,651</u>
Unfunded AAL (UAAL)	618	2,561	2,150
Funded Ratio	72.8%	39.2%	43.4%



LEAVING CALPERS

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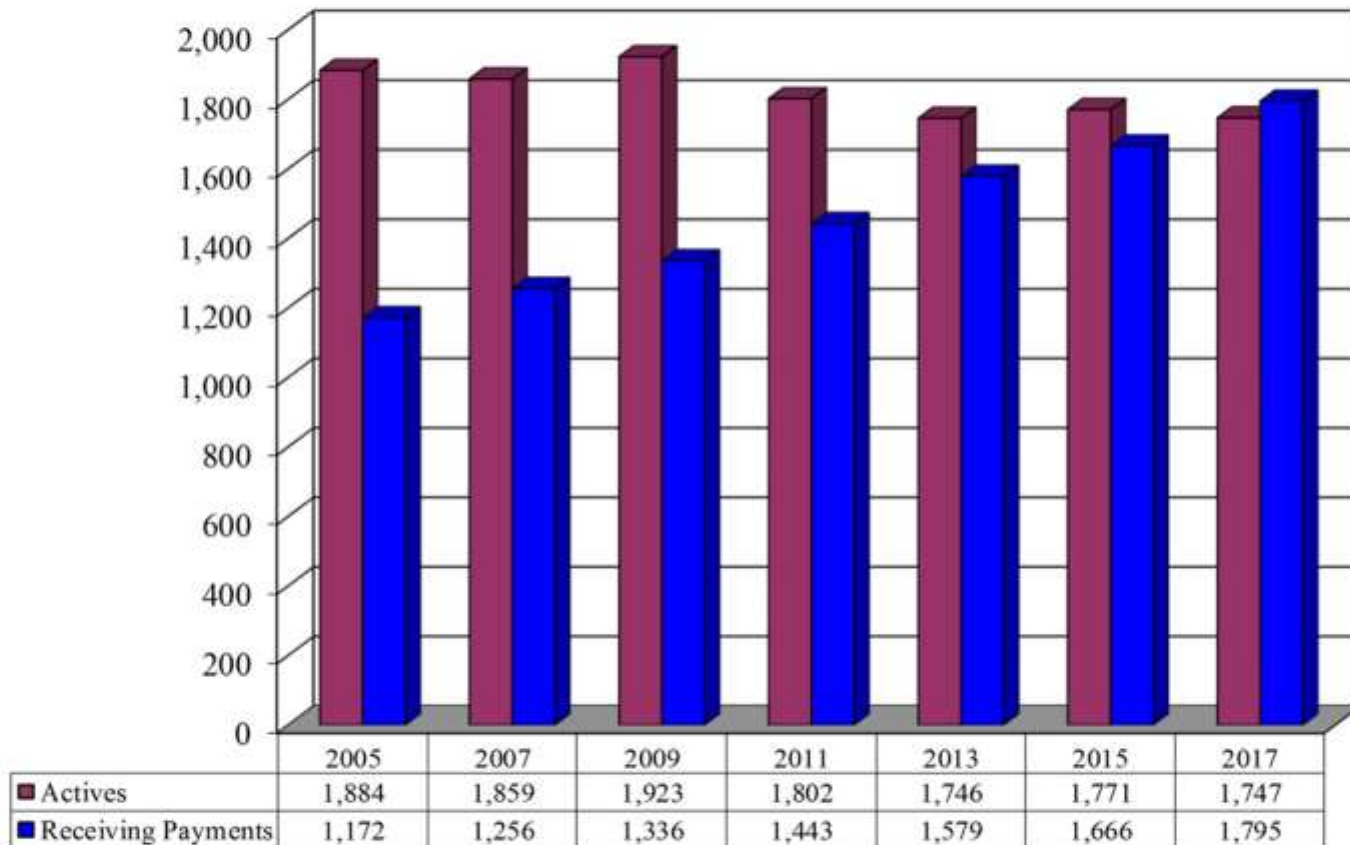
OPEB PLAN – BENEFIT SUMMARY

<ul style="list-style-type: none"> ■ Eligibility 	<ul style="list-style-type: none"> ■ Full-time employees that retire directly from the District under CalPERS
<ul style="list-style-type: none"> ■ Medical Benefit 	<ul style="list-style-type: none"> ■ District pays PEMHCA (CalPERS medical plans) premium for retirees and eligible dependents up to 100% of the highest cost HMO basic rate in the LA or Other Southern California regions
<ul style="list-style-type: none"> ■ Vesting Schedule for Employees Hired on or after 1/1/12 	<ul style="list-style-type: none"> ■ Vesting schedule based on CalPERS service, with minimum 5 years District service ■ Starts at 50% vested for 10 years CalPERS service, grades up to 100% for 20 years CalPERS service ■ 100% vested for disability retirements or termination with 20 years District service
<ul style="list-style-type: none"> ■ Implied Subsidy 	<ul style="list-style-type: none"> ■ Employer cost for allowing retirees to participate at active rates



OPEB PLAN – DATA SUMMARY

Historical Participant Counts



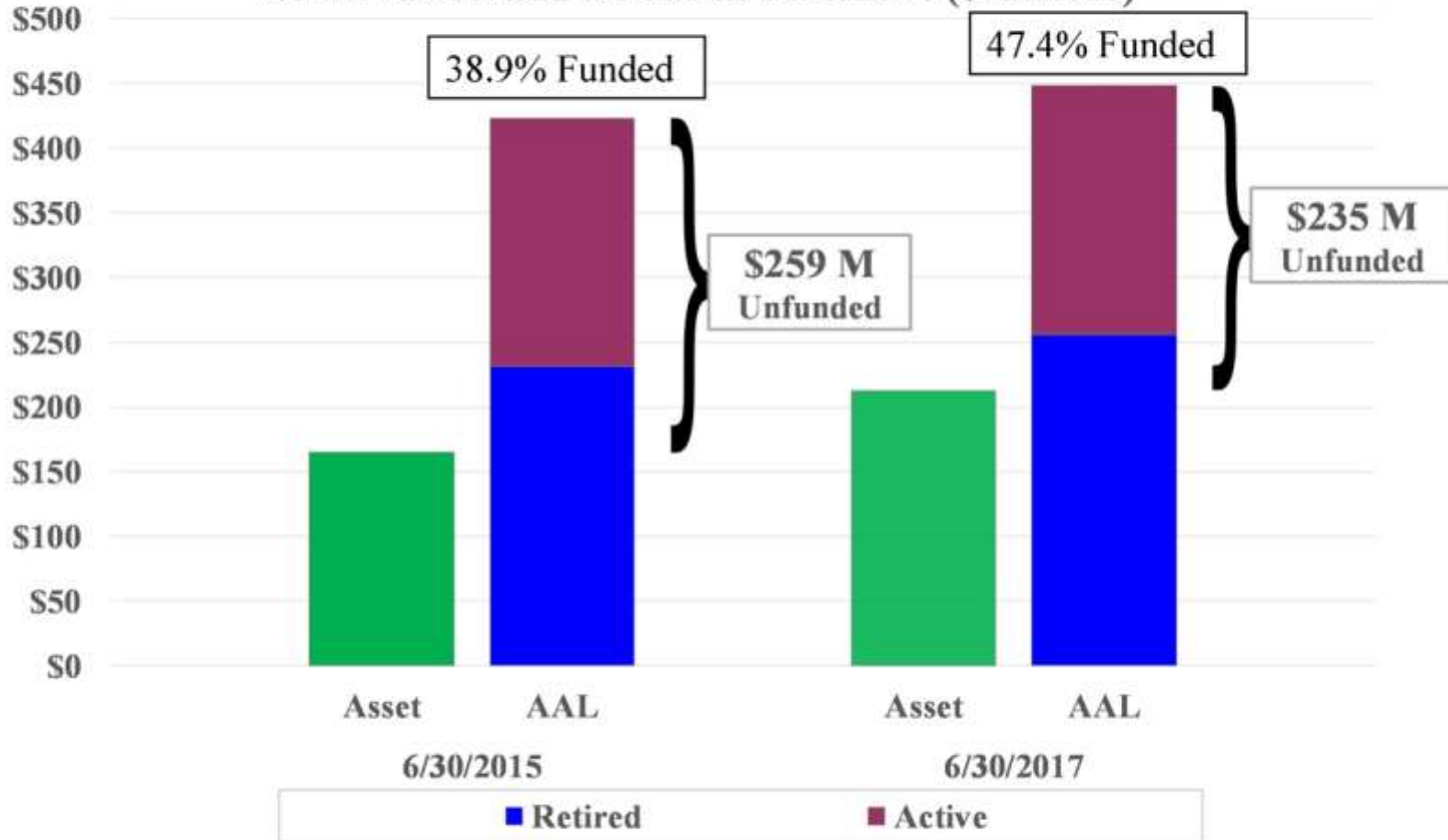
OPEB PLAN – FUNDING POLICY

- **District began pre-funding with CalPERS CERBT Fund #1 in 2013/14:**
 - Full Actuarially Determined Contribution (ADC) to be contributed each year
 - Additional contributions were made during 2013/14 and 2014/15 (\$100 million total)
- **Assumed rate of return:**
 - 6.75% for June 30, 2017 Valuation
- **Other assumptions**
 - Recommended by District's actuary
- **Funding policy**
 - District has complete discretion



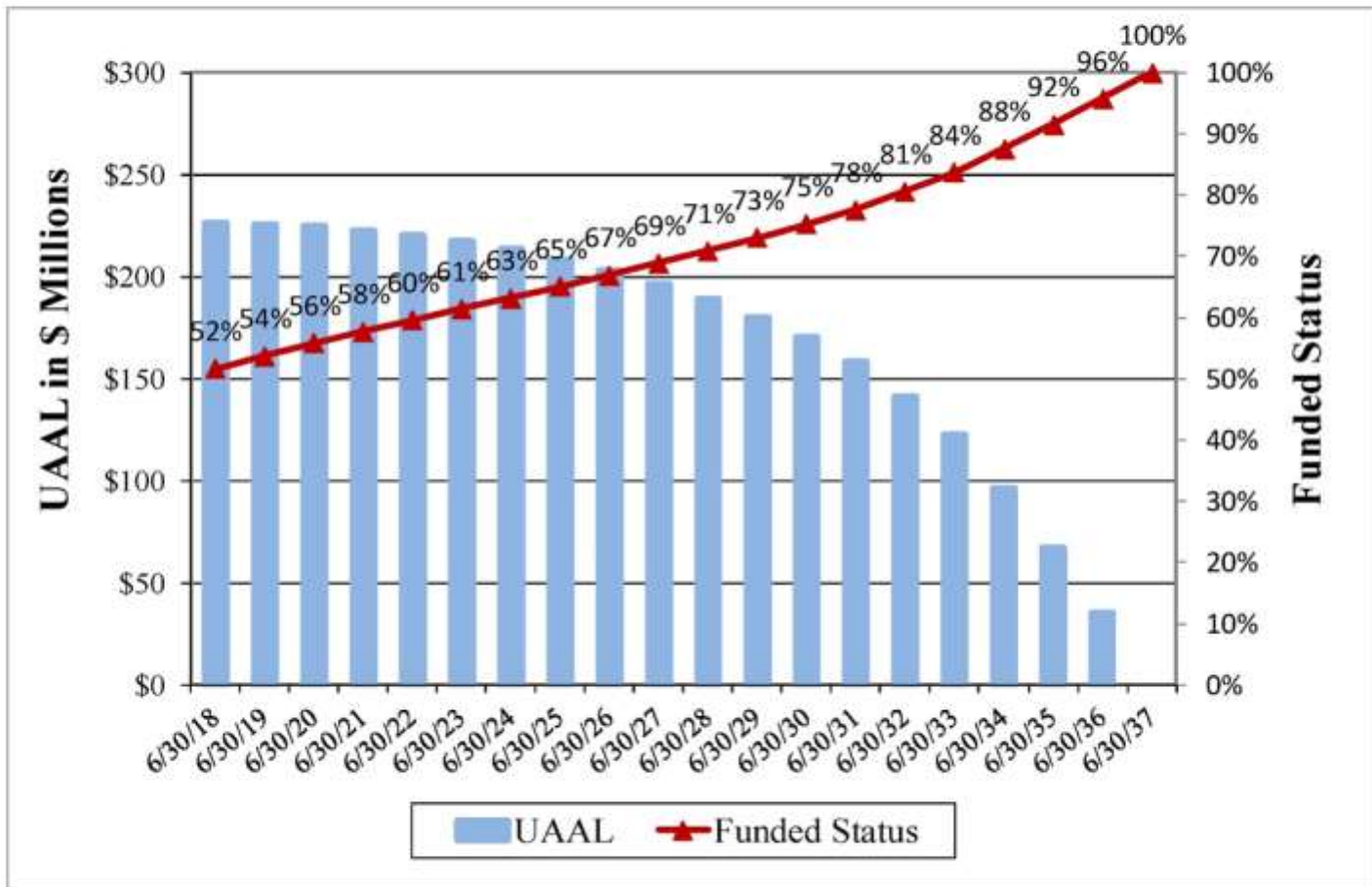
OPEB PLAN – FUNDED STATUS

OPEB Assets and Actuarial Liabilities (\$Millions)



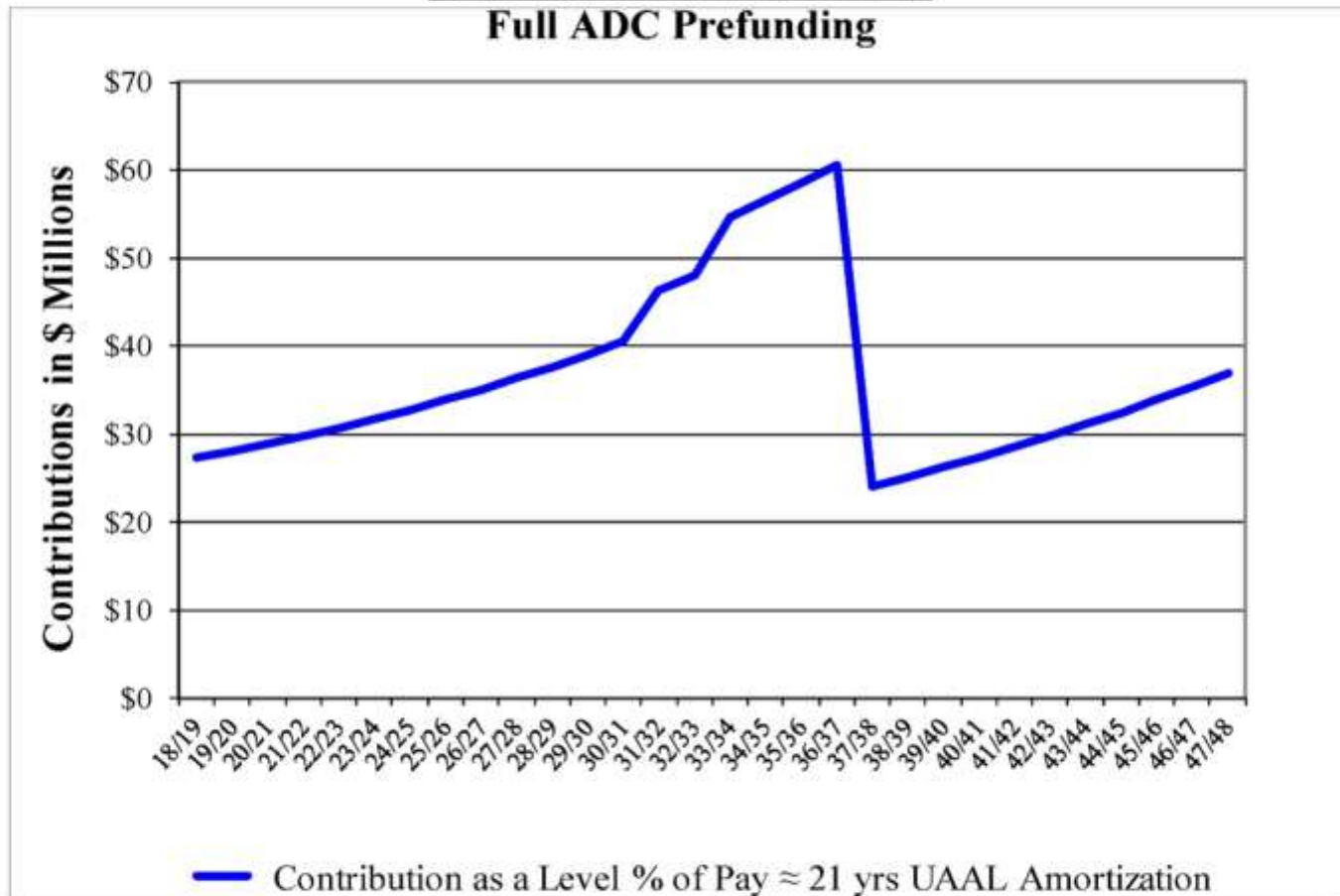
OPEB PLAN – PROJECTIONS

Unfunded Liability (UAAL) Projections Full ADC Prefunding



OPEB PLAN – PROJECTIONS

Contribution Projections Full ADC Prefunding



The District's current practice of not requesting reimbursement for implied subsidy payments effectively increases contributions by \$5M to \$7M per year.

