

Staff Report

for the Regular Meeting of the Board of Directors March 8, 2017

TO: Board of Directors
FROM: Marvin Davis, MBA, CPA, Finance Manager/Treasurer
DATE: March 1, 2017
SUBJECT: Pension Discount Rate Discussion

FINANCE

RECOMMENDATION:

Review discount rate impact on Net Pension Liability

BACKGROUND:

In response to public request, the Board directed staff to examine the impact of discount rate adjustments on the District's Net Pension Liability. The District's Net Pension Liability (NPL) of \$37M (page 38) as reflected on the Comprehensive Annual Financial Report (CAFR) is in accordance with Governmental Accounting Standards Board (GASB) 68 (page E-2).

The discount rate is the estimated annual rate of return (page E-1) on the \$76M of plan assets/net position (page 38) and should be consistent with the plan's historical geometric returns (page 11). Mathematically, it is the rate used to convert future receipts or payments to their present value. Page 38 of the attachment calculates the sensitivity of NPL to the discount rate. Essentially a one-percentage point decrease of the discount rate, anticipating lower investment earnings, requires an increase to the NPL of \$14M. Conversely a one-percentage point increase, anticipating higher investment earnings, requires lowering of the NPL by \$12M, thus the NPL is more responsive to decreases.

CALPERS issued Circular Letter 200-004-17 on January 19, 2017 indicating its' Board approved a reduction to the rate from 7.50 percent to 7.00 percent, half a percent or 50 basis points, phased in over the next three years. As demonstrated above, this rate reduction will result in higher normal cost as well as unfunded amortization payments to maintain a 30-year amortization schedule (page 17).

Given a full half percentage point decrease effective year 2020-21, staff estimates an increase of approximately \$7M to the NPL at December 31, 2020. Ostensibly, this is not an actuarial assumption as many other variables determine the NPL (page 47). Since the NPL is extremely sensitive to discount rate adjustments and given NID Board's lack of control over determination of this rate, staff does not recommend additional payments toward the unfunded liability.

However, staff will continue to monitor the size of the plan's assets \$76M (page 19) in comparison to actual benefit payments \$6.6M over fiscal year 2015 (page 38) to determine if a recommendation to increase unfunded payments are warranted.

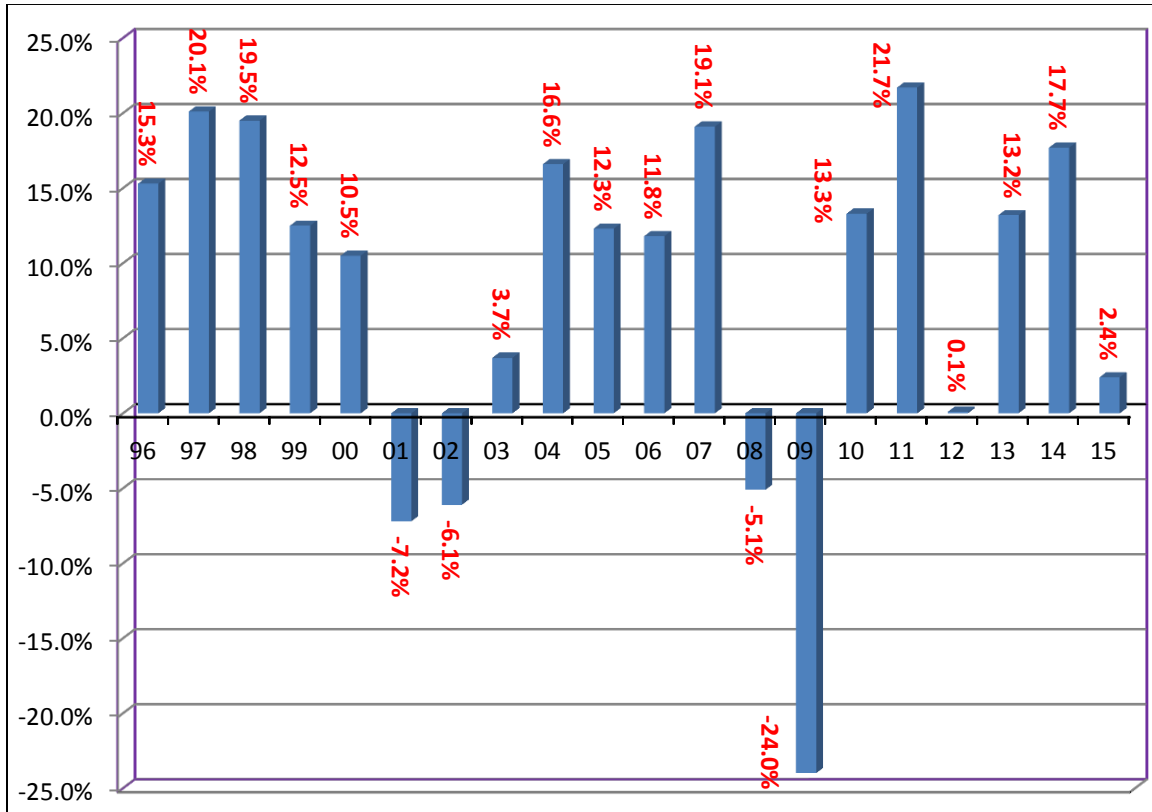
BUDGETARY IMPACT: N/A

Attachments:

- CALPERS Actuarial Valuation – June 30, 2015 (select pages)
- Comprehensive Annual Financial Report – December 31, 2015 (select pages)

CalPERS History of Investment Returns

The following is a chart with the 20-year historical annual returns of the Public Employees Retirement Fund for each fiscal year ending on June 30. Beginning in 2002, the figures are reported as gross of fees.



The table below shows historical geometric mean annual returns of the Public Employees Retirement Fund for various time periods ending on June 30, 2015, (figures are reported as gross of fees). The geometric mean rate of return is the average rate per period compounded over multiple periods. It should be recognized that in any given year the rate of return is volatile. Although the expected rate of return on the recently adopted new asset allocation is 7.5 percent, the portfolio has an expected volatility of 11.76 percent per year. The volatility is a measure of the risk of the portfolio expressed in the standard deviation of the fund's total return distribution, expressed as a percentage. Consequently, when looking at investment returns, it is more instructive to look at returns over longer time horizons.

History of CalPERS Geometric Mean Rates of Return and Volatilities					
	1 year	5 year	10 year	20 year	30 year
Geometric Return	2.4%	10.7%	6.1%	7.7%	9.1%
Volatility	-	9.4%	14.0%	11.8%	10.5%

30-Year Amortization Schedule and Alternatives

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	20 Year Amortization		15 Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2017	40,725,577	2,692,566	40,725,577	3,075,002	40,725,577	3,733,295
6/30/2018	40,988,286	3,044,756	40,591,765	3,167,252	39,909,233	3,845,294
6/30/2019	40,905,538	3,415,651	40,352,271	3,262,270	38,915,540	3,960,652
6/30/2020	40,432,032	3,612,014	39,996,298	3,360,138	37,727,714	4,079,472
6/30/2021	39,719,418	3,791,781	39,512,155	3,460,942	36,327,606	4,201,856
6/30/2022	38,766,972	3,905,532	38,887,186	3,564,770	34,695,599	4,327,912
6/30/2023	37,625,151	4,022,699	38,107,692	3,671,713	32,810,495	4,457,749
6/30/2024	36,276,215	4,143,381	37,158,856	3,781,865	30,649,389	4,591,482
6/30/2025	34,700,982	3,719,268	36,024,649	3,895,321	28,187,544	4,729,226
6/30/2026	33,447,338	3,867,598	34,687,743	4,012,180	25,398,244	4,871,103
6/30/2027	31,945,879	3,983,623	33,129,407	4,132,546	22,252,645	5,017,236
6/30/2028	30,211,511	3,796,152	31,329,398	4,256,522	18,719,613	5,167,753
6/30/2029	28,541,442	3,910,036	29,265,846	4,384,218	14,765,543	5,322,786
6/30/2030	26,628,040	4,027,338	26,915,131	4,515,744	10,354,177	5,482,469
6/30/2031	24,449,509	3,441,023	24,251,743	4,651,217	5,446,396	5,646,943
6/30/2032	22,715,491	3,371,810	21,248,139	4,790,753		
6/30/2033	20,923,189	3,000,791	17,874,591	4,934,476		
6/30/2034	19,381,140	2,907,864	14,099,012	5,082,510		
6/30/2035	17,819,787	2,806,665	9,886,780	5,234,985		
6/30/2036	16,246,259	2,696,775	5,200,540	5,392,035		
6/30/2037	14,668,653	2,777,678				
6/30/2038	12,888,845	2,861,007				
6/30/2039	10,889,152	2,946,840				
6/30/2040	8,650,491	3,035,242				
6/30/2041	6,152,272	2,234,097				
6/30/2042	4,297,329	2,148,086				
6/30/2043	2,392,446	1,887,907				
6/30/2044	614,457	425,381				
6/30/2045	219,496	88,503				
6/30/2046	144,196	149,506				
Totals		88,711,570		82,626,459		69,435,228
Estimated Savings				6,085,111		19,276,342

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made during a fiscal year.

Fiscal Year	Employer Normal Cost	Required By Valuation	
		Unfunded Rate	Unfunded Liability Payment (\$)
2012 - 13	8.088%	13.072%	N/A
2013 - 14	8.670%	14.030%	N/A
2014 - 15	8.728%	17.771%	N/A
2015 - 16	8.841%	19.066%	N/A
2016 - 17	8.847%	21.126%	N/A
2017 - 18	8.622%	N/A	2,692,566

Funding History

The table below shows the recent history of the actuarial accrued liability, the market value of assets, the funded ratio and the annual covered payroll.

Valuation Date	Accrued Liability	Market Value of Assets (MVA)	Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/10	\$ 89,323,172	\$ 55,132,220	\$ 34,190,952	61.7%	\$ 10,302,099
06/30/11	94,462,942	65,088,052	29,374,890	68.9%	10,283,213
06/30/12	98,365,938	62,576,901	35,789,037	63.6%	9,667,622
06/30/13	102,575,329	68,418,010	34,157,319	66.7%	10,084,783
06/30/14	112,319,622	77,516,591	34,803,031	69.0%	10,215,613
06/30/15	116,484,507	76,509,356	39,975,151	65.7%	11,874,347

NOTES TO THE BASIC FINANCIAL STATEMENTS (CONTINUED)

December 31, 2015

NOTE 7 – PENSION PLANS (Continued)

Changes in the Net Pension Liability: The changes in Net Pension Liability for the Plan for the year ended December 31, 2015 are as follows:

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability/(Asset)
Balance at June 30, 2014	\$ 111,177,303	\$ 77,661,352	\$ 33,515,951
Changes in the year:			
Service cost	1,691,635		1,691,635
Interest on the total pension liability	8,255,944		8,255,944
Changes in assumptions	(1,922,782)		(1,922,782)
Differences between actual and expected experience	1,142,319		1,142,319
Plan to plan resource movement			
Changes in benefit terms			
Contribution - employer		3,098,851	(3,098,851)
Contribution - employee		921,705	(921,705)
Net investment income		1,695,016	(1,695,016)
Benefit payments, including refunds of employee contributions	(6,643,641)	(6,643,641)	-
Administrative expenses		(86,331)	86,331
Net changes during 2014-15	2,523,475	(1,014,400)	3,537,875
Balance at June 30, 2015	\$ 113,700,778	\$ 76,646,952	\$ 37,053,826

Sensitivity of the Net Pension Liability to Changes in the Discount Rate: The following presents the net pension liability of the District for the Plan, calculated using the discount rate for the Plan, as well as what the District’s net pension liability would be if it were calculated using a discount rate that is 1-percentage point lower or 1-percentage point higher than the current rate:

	Miscellaneous Plan
1% Decrease	6.65%
Net Pension Liability	\$ 51,406,133
Current Discount Rate	7.65%
Net Pension Liability	\$ 37,053,826
1% Increase	8.65%
Net Pension Liability	\$ 25,180,271

Pension Plan Fiduciary Net Position: Detailed information about the Plan’s fiduciary net position is available in the separately issued CalPERS financial reports.

NEVADA IRRIGATION DISTRICT

REQUIRED SUPPLEMENTARY INFORMATION

December 31, 2015
Last 10 Years

SCHEDULE OF CONTRIBUTIONS - PENSION PLAN (Unaudited)

	<u>2015</u>	<u>2014</u>
Contractually Required Contribution (Actuarially Determined)	\$ 3,098,851	\$ 2,449,665
Contributions in Relation to the Actuarially Determined Contributions	<u>(3,098,851)</u>	<u>(2,449,665)</u>
Contribution Deficiency (Excess)	<u>\$ -</u>	<u>\$ -</u>
Covered - Employee Payroll	\$ 10,522,081	\$ 10,387,326
Contributions as a Percentage of Covered - Employee Payroll	29.45%	23.58%

Notes to Schedule:

Valuation Date: June 30, 2014 (for 2015) and June 30, 2013 (for 2014).

Measurement Date: June 30, 2015 (for 2015) and June 30, 2014 (for 2014).

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal Cost Method
Amortization Method	Level Percentage of Payroll
Average Remaining Amortization Period	21 Years (2015), 24 Years (2014)
Asset Valuation Method	15-year Smoothed Market
Inflation	2.75%
Salary Increases	3.20% to 12.20% (2015), 3.30% to 14.20% (2014) Depending on Entry Age and Service.
Payroll Growth	3.00%
Investment Rate of Return	7.65% (2015) and 7.50%, Net of Administrative Expenses (2014), Including Inflation.
Retirement Age	50 to 67 years. Probabilities of Retirement are Based on the 2010 CalPERS Experience Study for the Period 1997 to 2007.
Mortality	Based on 2010 CalPERS Experience Study for the Period 1997 to 2007.

Omitted Years: GASB Statement No. 68 was implemented during the year ended December 31, 2015. Information was not available prior to 2014.

Glossary of Actuarial Terms

Accrued Liability (*also called Actuarial Accrued Liability or Entry Age Normal Accrued Liability*)

The total dollars needed as of the valuation date to fund all benefits earned in the past for *current* members.

Actuarial Assumptions

Assumptions made about certain events that will affect pension costs. Assumptions generally can be broken down into two categories: demographic and economic. Demographic assumptions include such things as mortality, disability and retirement rates. Economic assumptions include discount rate, salary growth and inflation.

Actuarial Methods

Procedures employed by actuaries to achieve certain funding goals of a pension plan. Actuarial methods include funding method, setting the length of time to fund the Accrued Liability and determining the Value of Assets.

Actuarial Valuation

The determination, as of a valuation date of the Normal Cost, Accrued liability, and related actuarial present values for a pension plan. These valuations are performed annually or when an employer is contemplating a change to their plan provisions.

Amortization Bases

Separate payment schedules for different portions of the Unfunded Liability. The total Unfunded Liability of a Risk Pool or non-pooled plan can be segregated by "cause," creating "bases" and each such base will be separately amortized and paid for over a specific period of time. However, all bases are amortized using investment and payroll assumptions from the current valuation. This can be likened to a home having a first mortgage of 24 years remaining payments and a second mortgage that has 10 years remaining payments. Each base or each mortgage note has its own terms (payment period, principal, etc.)

Generally, in an actuarial valuation, the separate bases consist of changes in unfunded liability due to contract amendments, actuarial assumption changes, actuarial methodology changes, and/or gains and losses. Payment periods are determined by Board policy and vary based on the cause of the change.

Amortization Period

The number of years required to pay off an Amortization Base.

Classic Member (under PEPRA)

A classic member is a member who joined CalPERS prior to January, 1, 2013 and who is not defined as a new member under PEPRA. (See definition of new member below)

Discount Rate Assumption

The actuarial assumption that was called "investment return" in earlier CalPERS reports or "actuarial interest rate" in Section 20014 of the California Public Employees' Retirement Law (PERL).

Entry Age

The earliest age at which a plan member begins to accrue benefits under a defined benefit pension plan. In most cases, this is the age of the member on their date of hire.

Entry Age Normal Cost Method

An actuarial cost method designed to fund a member's total plan benefit over the course of his or her career. This method is designed to yield a rate expressed as a level percentage of payroll.

(The assumed retirement age less the entry age is the amount of time required to fund a member's total benefit. Generally, the older a member on the date of hire, the greater the entry age normal cost. This is mainly because there is less time to earn investment income to fund the future benefits.)

Fresh Start

A Fresh Start is when multiple amortization bases are collapsed to one base and amortized together over a new funding period.

Funded Status

A measure of how well funded, or how "on track" a plan or risk pool is with respect to assets versus accrued liabilities. A ratio greater than 100% means the plan or risk pool has more assets than liabilities and a ratio less than 100% means liabilities are greater than assets.

GASB 68

Statement No. 68 of the Governmental Accounting Standards Board. The accounting standard governing a state or local governmental employer's accounting and financial reporting for pensions. GASB 68 replaces GASB 27 effective the first fiscal year beginning after June 15, 2014.

New Member (under PEPPRA)

A new member includes an individual who becomes a member of a public retirement system for the first time on or after January 1, 2013, and who was not a member of another public retirement system prior to that date, and who is not subject to reciprocity with another public retirement system.

Normal Cost

The annual cost of service accrual for the upcoming fiscal year for active employees. The normal cost should be viewed as the long term contribution rate.

Pension Actuary

A business professional that is authorized by the Society of Actuaries, and the American Academy of Actuaries to perform the calculations necessary to properly fund a pension plan.

PEPPRA

The California Public Employees' Pension Reform Act of 2013

Prepayment Contribution

A payment made by the employer to reduce or eliminate the year's required employer contribution.

Present Value of Benefits (PVB)

The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

Superfunded

A condition existing when a plan's Actuarial Value of Assets exceeds its Present Value of Benefits. Prior to the passage of PEPPRA, when this condition existed on a given valuation date for a given plan, employee contributions for the rate year covered by that valuation could be waived.

Unfunded Liability (UAL)

When a plan or pool's Value of Assets is less than its Accrued Liability, the difference is the plan or pool's Unfunded Liability. If the Unfunded Liability is positive, the plan or pool will have to pay contributions exceeding the Normal Cost.