



**CITY OF SAN MARINO  
MISCELLANEOUS AND SAFETY PLANS**

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**CALPERS ACTUARIAL ISSUES – 6/30/15 VALUATION**

**ACTUARIAL BACKGROUND**

**FEBRUARY 16, 2017**

**MARY BETH REDDING**

**B**ARTEL  
ASSOCIATES, LLC

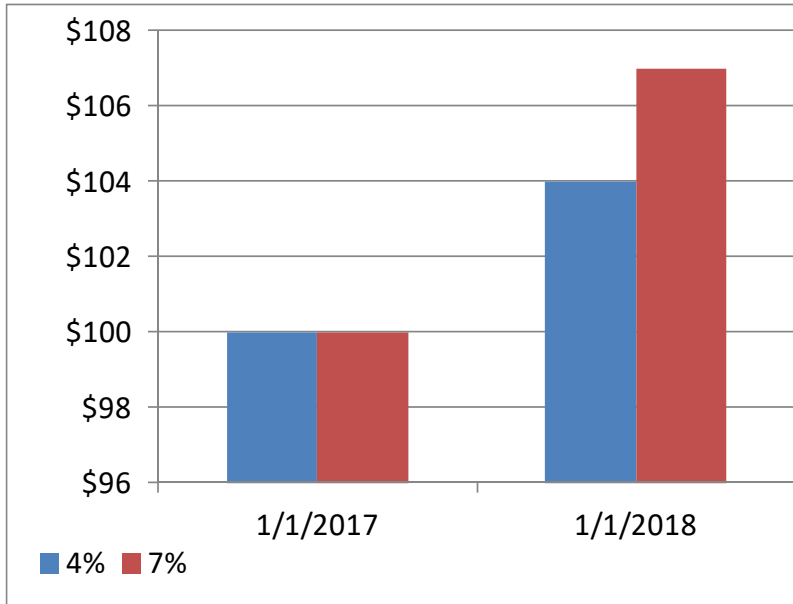
## **Actuarial Terminology**

### **■ Present Value**

- The value now of something that will be paid in the future



# Growth with Interest

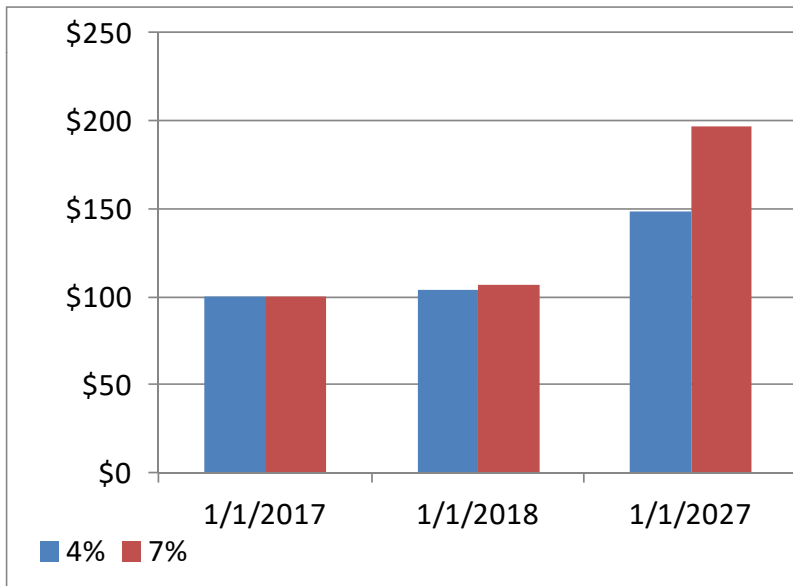


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# Growth with Interest

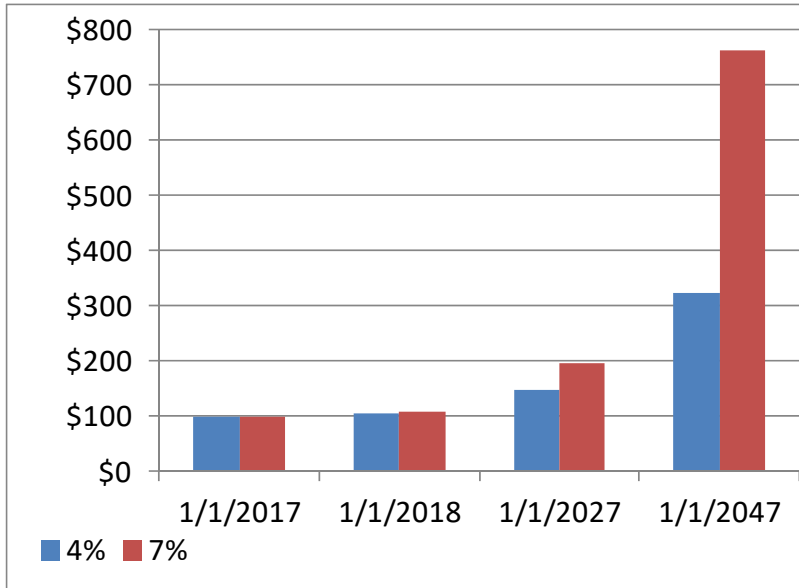


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# Growth with Interest

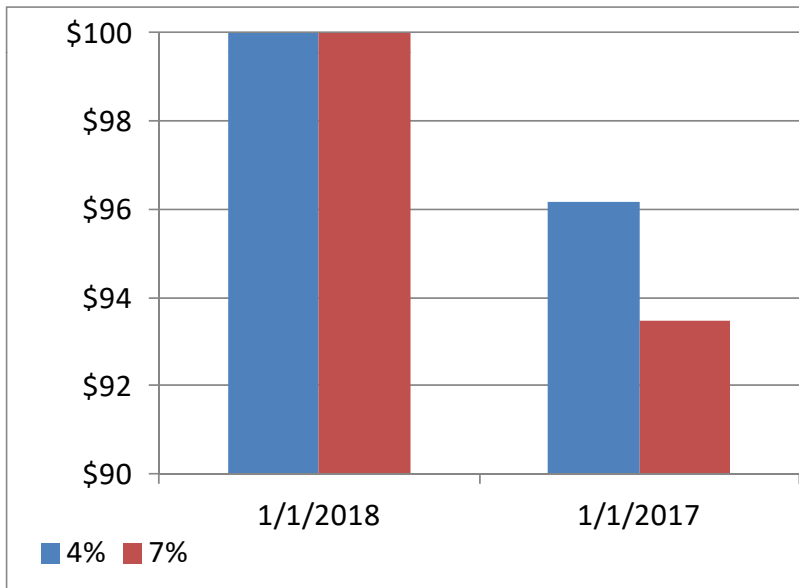


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# Present Value

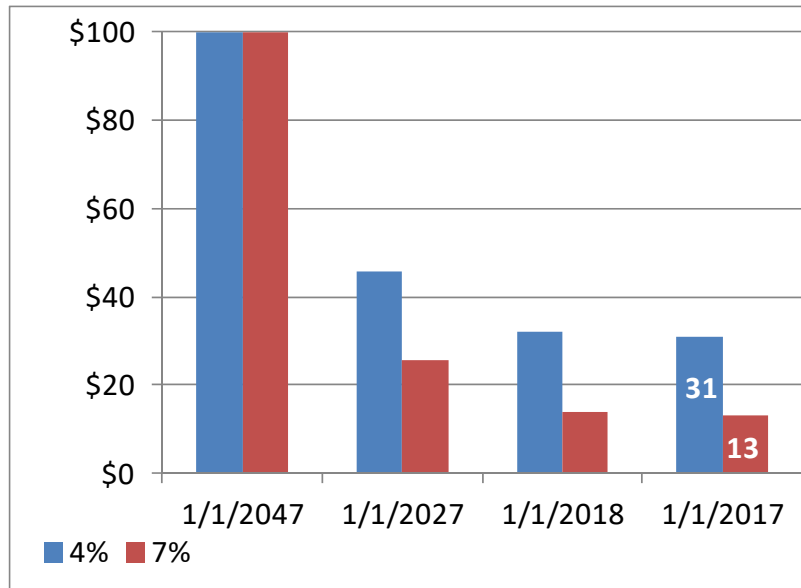


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## Present Value



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## Actuarial Terminology

### ■ Present Value of Benefits (PVB)

- Value, using actuarial assumptions, of all benefits expected to be paid to current employees & retirees

### ■ Actuarial Accrued Liability (AAL)

- Liability for benefits “earned” for past service

### ■ Normal Cost (NC)

- Value of benefits “earned” during the current year

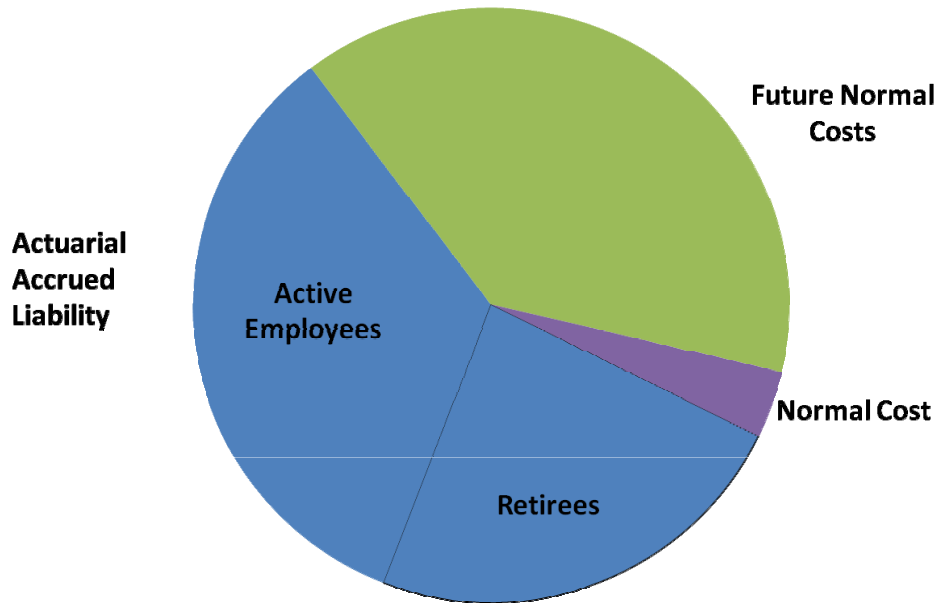


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**DEFINITION OF TERMS**  
**Present Value of Benefits**



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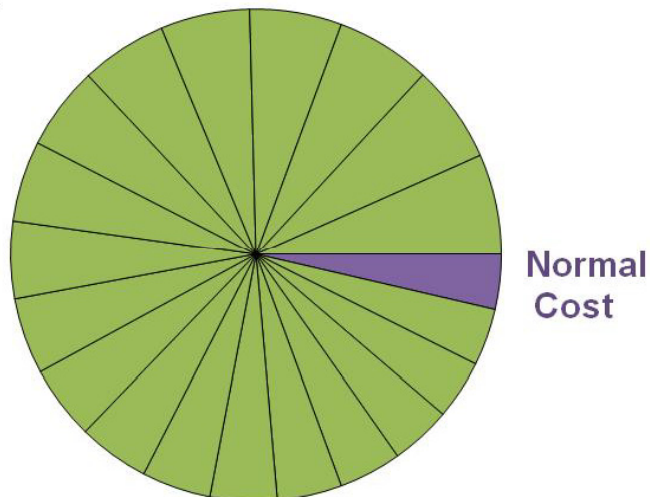


**DEFINITION OF TERMS**

**Present Value of Benefits for One Employee**

**Year 1**

**Future Normal Costs**



**Normal Cost**

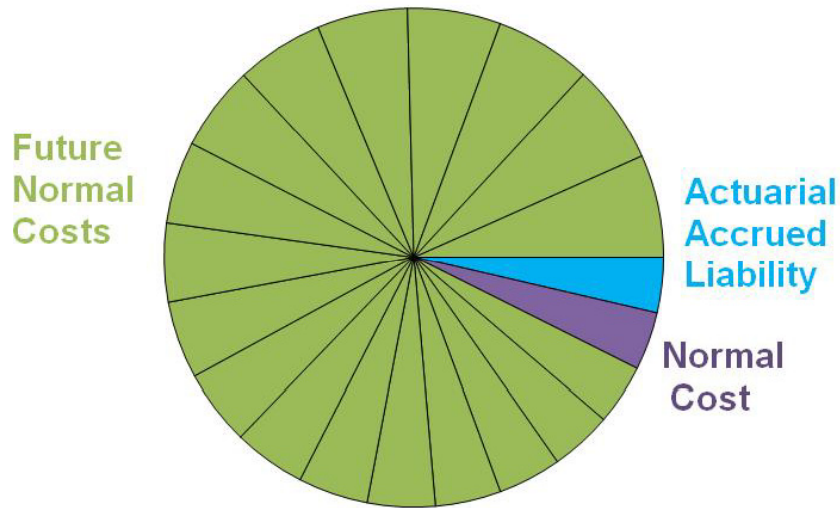


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DEFINITION OF TERMS

**Present Value of Benefits for One Employee  
Year 2**

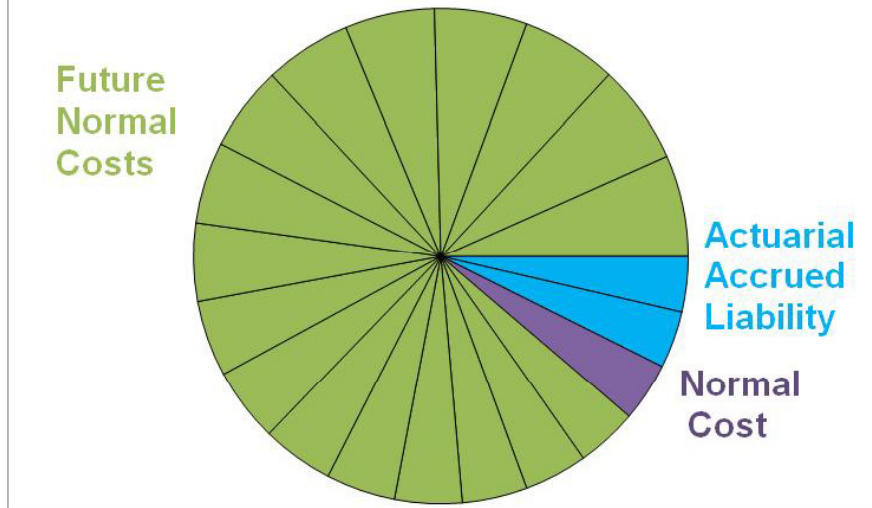


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DEFINITION OF TERMS

**Present Value of Benefits for One Employee  
Year 3**

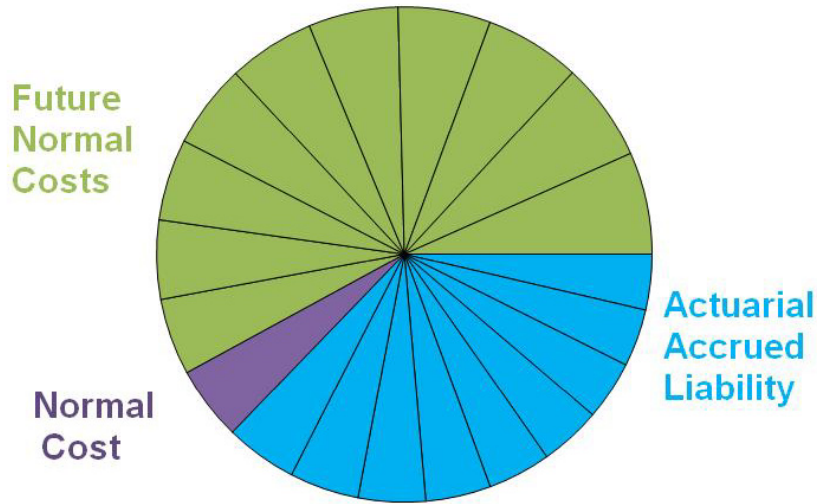


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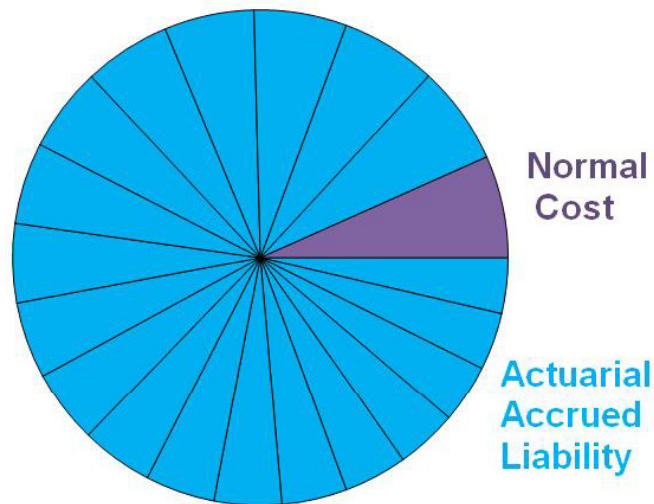
DEFINITION OF TERMS

**Present Value of Benefits for One Employee  
Year 10**

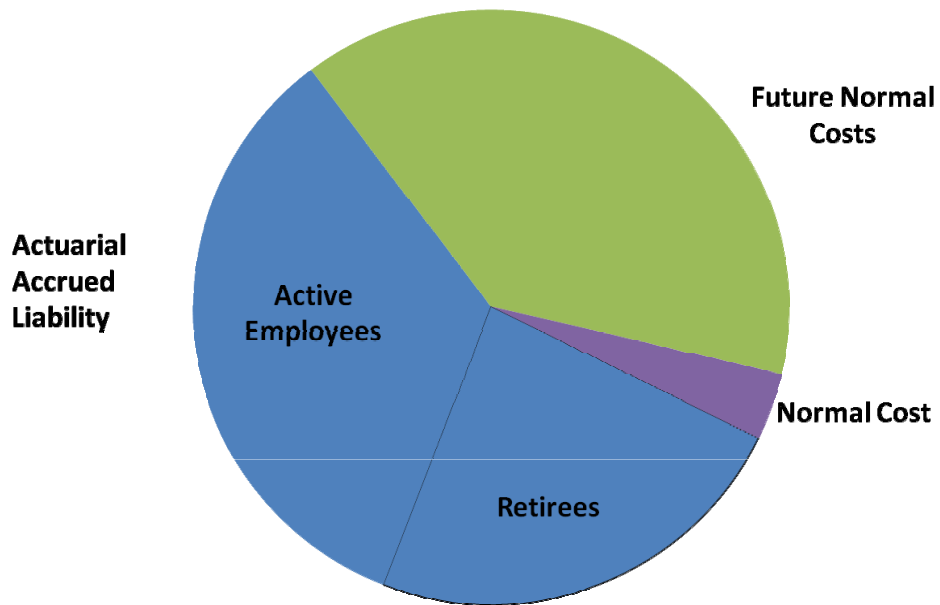


DEFINITION OF TERMS

**Present Value of Benefits for One Employee  
Year 20: Retirement**



**DEFINITION OF TERMS**  
**Present Value of Benefits**

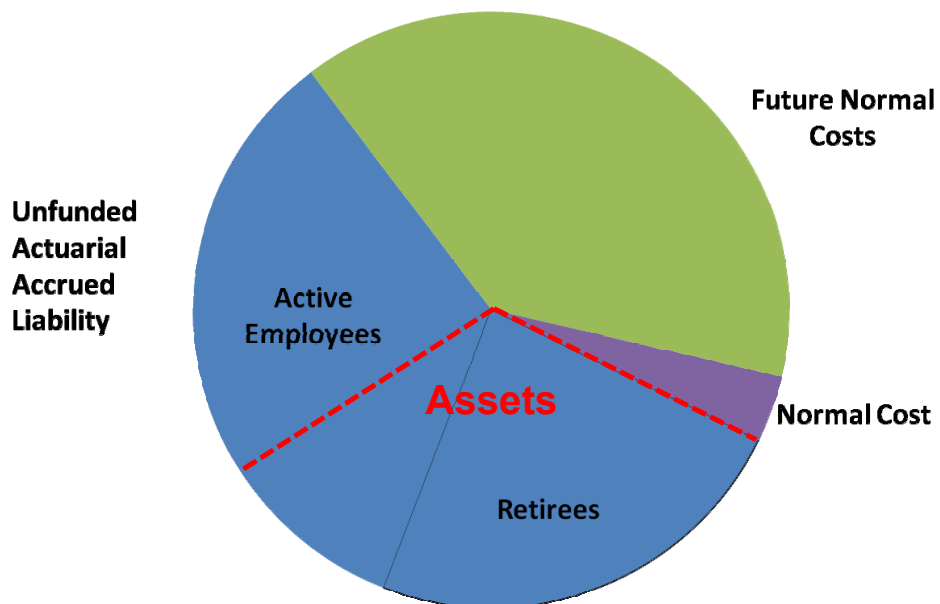


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**DEFINITION OF TERMS**  
**Present Value of Benefits**



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# Actuarial Terminology - UAAL

## ■ **Unfunded Actuarial Accrued Liability (AAL)**

- If all actuarial assumptions were always exactly met, then the plan assets would always equal AAL
- Any difference is the unfunded (or overfunded) AAL
- Every year, the actuary calculates the difference between the expected UAAL and Actual UAAL. This is a new layer or amortization base
- Each new layer gets amortized (paid off) over a period of time as part of the contribution rate.



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