

Board of Trustees

1000 Mill Street
San Luis Obispo, CA 93408
Phone: (805) 781-5465
Fax: (805) 781-5697
www.SLOPensionTrust.org



Date: June 24, 2019

To: Board of Trustees

From: Carl Nelson – Executive Secretary
Amy Burke – Deputy Executive Secretary

Agenda Item 9: January 1, 2019 Actuarial Valuation and Pension Contribution Rates

Accompanying this memo are –

- **Draft January 1, 2019 Annual Actuarial Valuation** prepared by Gabriel Roeder Smith (GRS) – the Plan Actuary - with additional supplementary tables of data.
- **Actuarial Valuation presentation** by Leslie Thompson, Actuary, of Gabriel Roeder Smith on the results of the 2019 Annual Actuarial Valuation of the Plan.
- **Deferred Implementation Date** for rate increases and adjusted amounts of pension contribution rate increase as well as allocation of rate increases by class of Member (Miscellaneous, Probation, Safety).
- **Pension Contribution Rate Increase History – 2014-2019**
- **Funding Projections** –
 - **Baseline** 30-year projection of funded status and contribution rates for the Plan
 - Earnings Assumption (discount rate) of 7.00%
 - Forecast investment returns of 7.00% long term
 - Inflation Assumption of 2.50%
 - Salary Growth Assumption of 2.75% (+ merit increase scale)
 - Payroll Growth Assumption of 2.75% (changed for 2019)
 - Mortality Tables updated to latest available.
 - Illustrative 30-year projection similar to the Baseline projection, but with an Earnings Assumption (discount rate) of 7.00% and forecast returns of 6.50%.
 - Illustrative 30-year projection similar to the Baseline projection, but with an Earnings Assumption (discount rate) of 6.50% and forecast returns of 6.50%.

Recommendation:

It is recommended that the Board take the following actions:

1. Approve the January 1, 2019 Actuarial Valuation.
2. Approve the transfer of \$2,483,595 from the Current Reserve to the Retiree Reserve as recommended by GRS in the Reserves Comment of the Valuation (page A-7).
3. Approve the recommendation of the Plan Actuary to increase the current level of County Appropriation and Employee Contribution rates such that a **Total Contribution Rate of 44.52% effective January 1, 2019 is received - an increase of 2.30% over the current Charged Rate of contributions as of 1/1/19** as recommended by GRS in the Contribution Rate Comment of the Valuation (page A-6).
 - a. This increase is subject to delayed implementation as may be requested by the Plan Sponsor, with adjustments to the rate calculated by GRS to account for the deferred implementation. In addition, this rate increase is the aggregate pension contribution rate increase for all classes of Members. Different contribution rate increases are recommended for Miscellaneous, Probation and Safety classes of Members due to their differing benefit formulas.
 - b. **See the attached Deferred Implementation Date exhibit to this memo for the applicable pension contribution rate increases.**

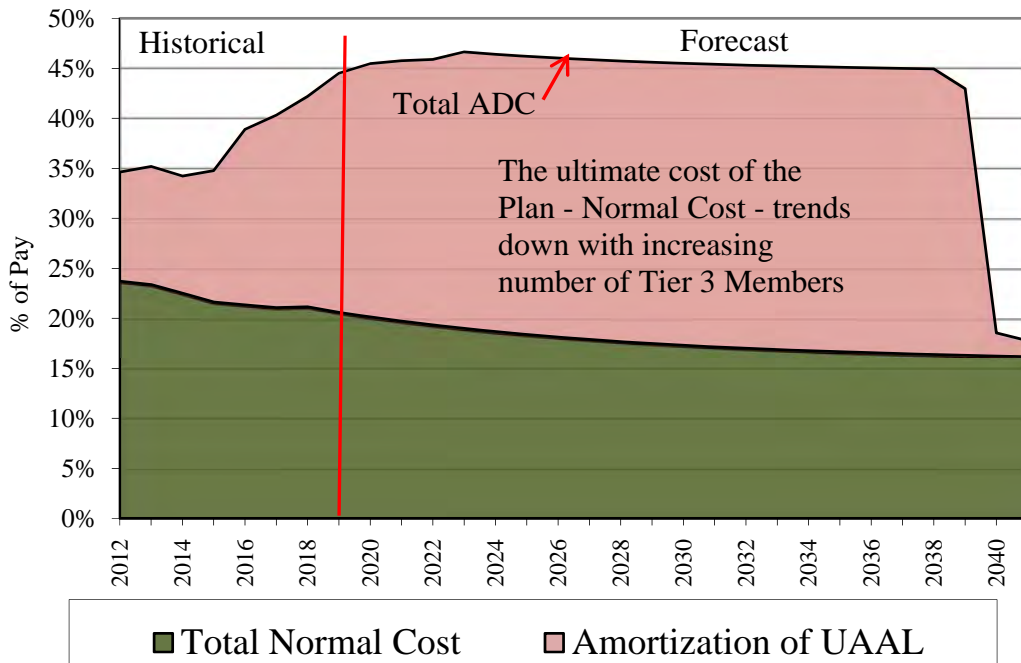
Discussion – Contribution Rate:

The valuation indicates an increase in the Total Required Contribution Rate (or Actuarially Determined Contributions (ADC) vs. the current Charged Rate of contributions) to 44.52% effective January 1, 2019. This **increase of 2.30%** is attributable to –

1. Investment Earnings less than expected over the five-year period used to in the Valuation – Contribution impact = +1.61% of pay
2. Decrease in the Payroll Growth Assumption from 3.00%/year in 2018 to 2.75%/year in 2019. This decrease was planned as a two-year phase-in of changes to assumptions recommended in the 2018 Actuarial Experience Study. Contribution impact = +0.45% of pay.
3. Net demographic experience losses - Contribution impact = +0.24% of pay.

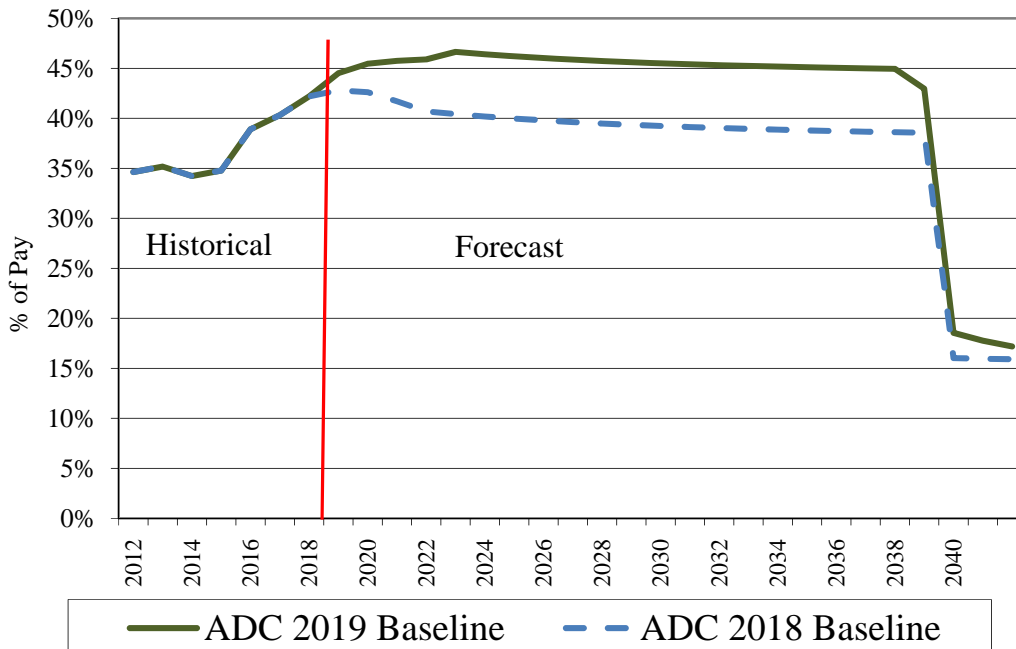
See the attached Actuarial Valuation presentation for further detail on the sources of the increase. The Baseline projections of Total Required Contribution Rates or Actuarially Determined Contributions (ADC) are shown in the following graph.

**SLO Retirement Plan - Contribution Rates -
2019 Baseline - Aggregate - all member classes**



By way of illustration, the following graph shows the ADC forecast from the Baseline forecasts for the 2018 Actuarial Valuation and the 2019 Actuarial Valuation.

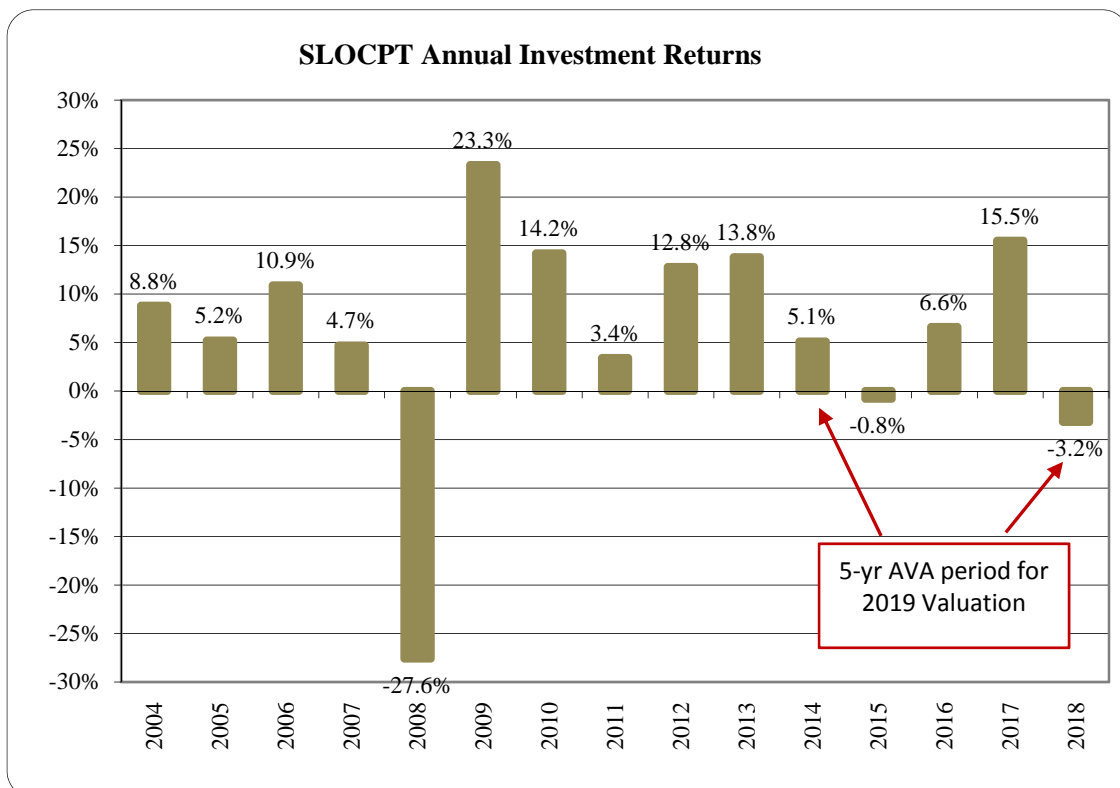
**SLO Retirement Plan - Contribution Rates -
2019 vs. 2018 Baseline - Aggregate - all member classes**



Discussion – Investment Returns:

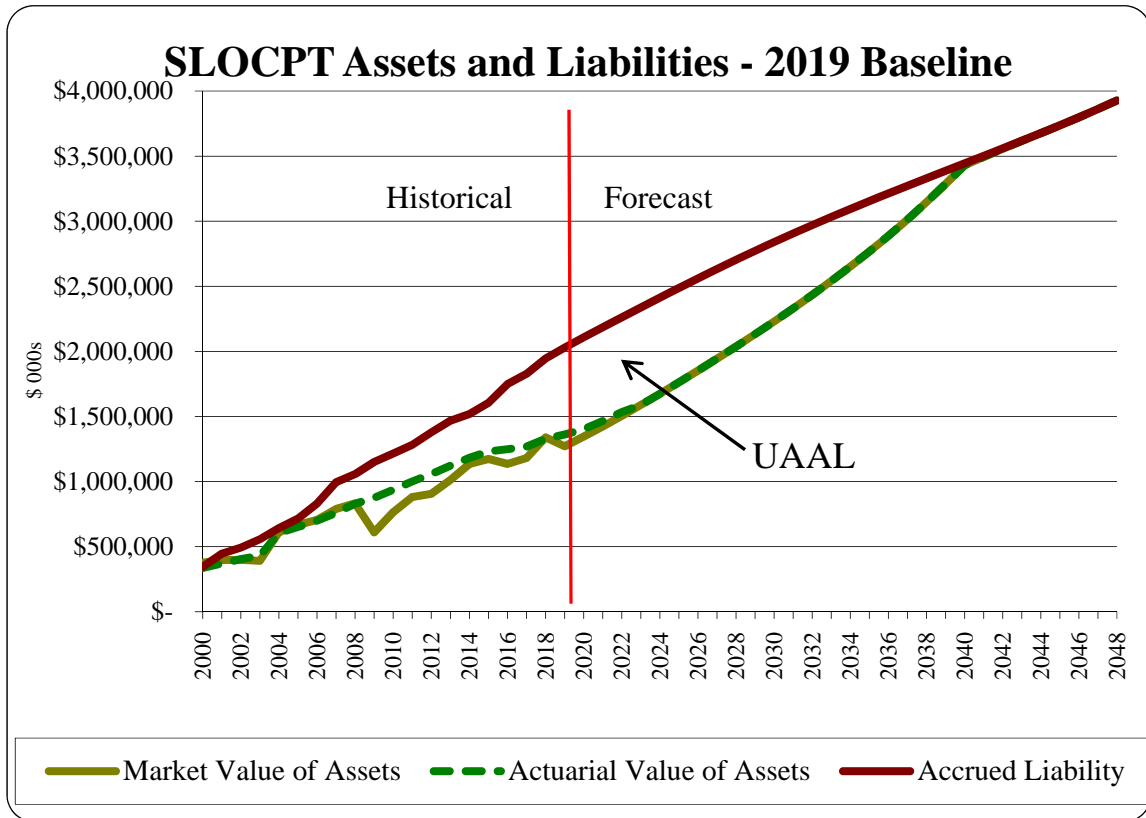
The effect of the below-expectations investment return in 2018 can be summarized as –

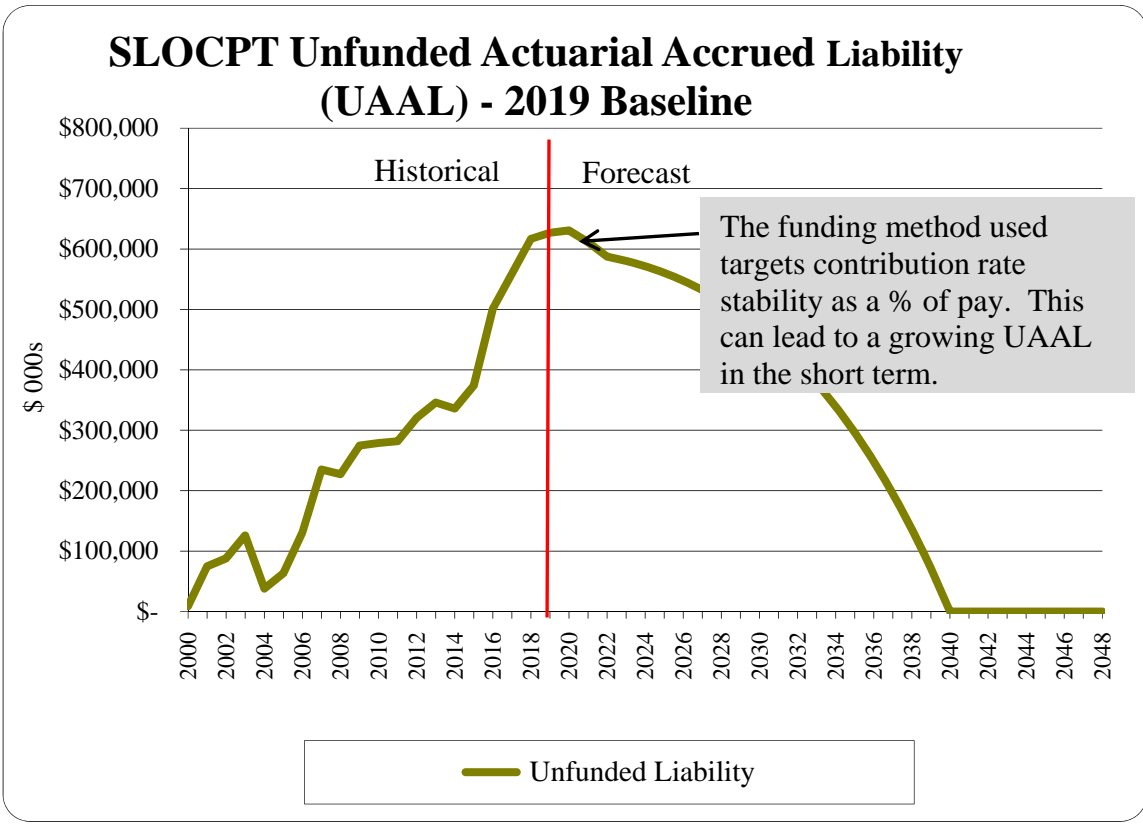
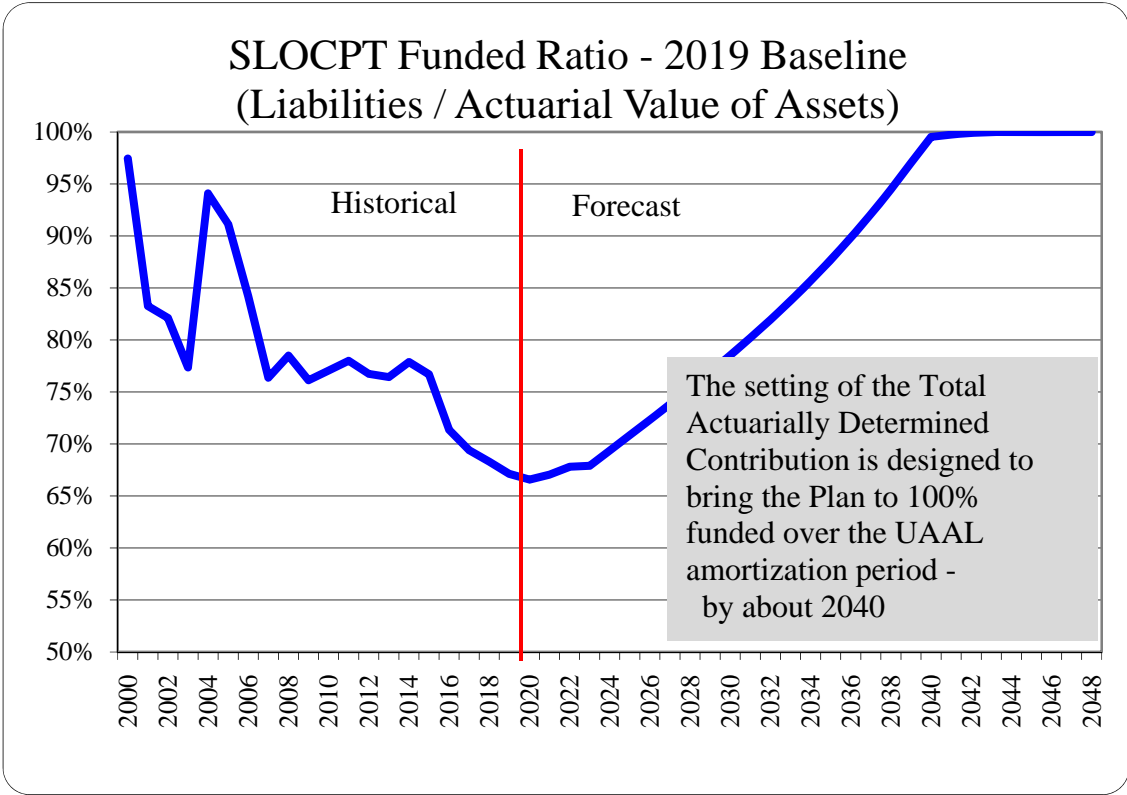
- The actuarial process uses a 5-year smoothing of asset values to arrive at the asset side of the Asset/Liability ratio which is important in the setting of contribution rates. For the five-year period factored into the 2019 Valuation, the 13.8% return in 2013 drops out of the 5-year smoothing period while the -3.2% return of 2018 is added to the 5-year smoothing period. The 10-year smoothing of the 2008 market losses concluded in 2018.
- It should be noted that much of the negative investment experience of 2018 took place in November and December with a bounce-back in 2019. The year-to-date MVA based return on the fund through April 2019 was +8.8%. The remainder of 2019 is an unknown as far as returns are concerned.
- The impacts of investment returns on the outputs from the Actuarial Valuation (contribution rates, funded status) is highly path-dependent. In other words, a bear market at the start of a forecast period has a larger impact than a similar bear market near the end of a forecast period.
- While the actuarial process has its own 5-year smoothing method for investment results, it is illustrative to look at the following graph of year-by-year investment returns of the Pension Trust. Keep in mind that the Pension Trust invests in a broadly diversified portfolio of multiple asset classes. To limit volatility, the Pension Trust follows an investment policy slightly lower-risk than many other pension funds.



Discussion – Funded Ratio:

The valuation results also indicate that the funded ratio of the Plan – Actuarial Accrued Liabilities (AAL) vs. Actuarial Value of Assets (AVA) has declined from 68.3% in 2018 to **67.1%** in 2019. See the attached Actuarial Valuation presentation for further detail on the sources of the decrease. The Baseline projections of assets and liabilities and funded ratio are shown in the following graphs.





Respectfully submitted,

2019 Annual Actuarial Valuation and Supplementary Exhibits

This page left blank intentionally.

San Luis Obispo County Pension Trust

Actuarial Valuation Report
As of January 1, 2019



June 26, 2019

San Luis Obispo County Pension Trust
1000 Mill Street
San Luis Obispo, CA 93408

Members of the Board:

Submitted in this report are the results of the regular Annual Actuarial Valuation as of January 1, 2019 of the San Luis Obispo County Pension Trust (SLOCPT). The valuation is intended to provide a measure of the funding status of the SLOCPT. This valuation provides information relative to the employer appropriation rates for the County's fiscal year beginning July 1, 2019.

The member statistical data on which the valuation was based was furnished by the staff of the SLOCPT, together with pertinent data on financial operations. Data was reviewed for reasonableness, but was not audited by the actuary.

The valuation results are developed using the Entry Age Cost Method. Under this method, normal cost is calculated as a constant percentage of the member's year-by-year projected, covered pay. The amortization of the unfunded actuarial accrued liabilities is done as a level percent of payroll over 21 years (30 year closed amortization period beginning with the January 1, 2010 valuation) for funding computations. Effective with this valuation, new gains and losses generated each year are amortized over their own 20 year closed period.

In the January 1, 2019 valuation, the Trust's funded status decreased from 68.3% to 67.1%. The total actuarially determined contribution rate is 44.52% of pay as of January 1, 2019, compared to the total charged rates of 42.22%. Therefore, due to the difference between the charged rate and the Actuarially Determined Contribution rate, an increase in the charged rate is recommended at this time.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code and ERISA. The undersigned are independent actuaries and consultants. Leslie Thompson, Paul Wood, and Thomas Lyle are Members of the American Academy of Actuaries, and meet all the Qualification Standards of the American Academy of Actuaries.

The cooperation of the SLOCPT Office in furnishing materials requested for this valuation is acknowledged with appreciation.

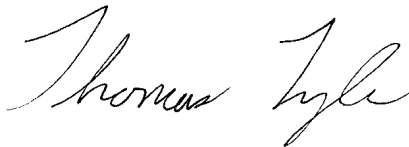
Respectfully submitted,
Gabriel, Roeder, Smith & Company



Leslie L. Thompson, FSA, FCA, EA, MAAA
Senior Consultant



Paul Wood, ASA, FCA, MAAA
Consultant



Thomas A. Lyle, ASA, EA, MAAA
Senior Analyst

Cover Letter

Section A	Valuation Comments & Recommendations
Section B	Executive Summary & Rate Reconciliation
Section C	Valuation Results
Section D	Summary of Member Data
Section E	Valuation Methods & Assumptions
Section F	Summary of Benefit Provisions
Section G	Definitions of Technical Terms

SECTION A

VALUATION COMMENTS & RECOMMENDATIONS

Valuation Comments & Recommendations

Benefits: As of January 1, 2013, Tier 2 was effectively closed and most new hires enter under the provisions of Tier 3 (known as AB 340; some new members enter Tier 2 by virtue of reciprocity). As of January 1, 2019, there are 1,163 active members covered under Tier 3 compared to 1,003 active members covered as of the prior valuation. See Section D for additional details regarding the active membership in each tier.

Assumptions: Other than the payroll growth rate assumption discussed below, there have been no changes to the assumptions since the prior valuation.

Payroll Growth: The payroll growth rate assumption is being decreased by 5/8% over a two-year period. In the January 1, 2018 valuation, the payroll growth assumption decreases 3/8%, from 3.375% to 3.00%. In the January 1, 2019 valuation, the payroll growth assumption was decreased 2/8%, from 3.00% to 2.75%. This is a Board adopted policy, adopted in connection with the 2018 experience study.

Normal Cost: The total normal cost decreased from 21.15% to 20.60% of pay. Employee contribution rates were increased since the prior valuation for most members in all Tiers. As a result, when combined with the expected decrease as Tier 3 members entered the plan, the weighted average employee rate decreased from 16.41% to 16.04%. The net result is the County share of the normal cost decreased from 4.74% to 4.56%. Investment losses and the change in the payroll growth assumption increased the amortization payment and overall the January 1, 2019 computed County Employer actuarial appropriation rate for the SLOCPT increased from 25.78% to 28.48%. While the cost for the Tier 3 members is expected to bring down the total normal cost of the plan, the blended member contribution rate due to the additional Tier 3 members declined as well. The funded ratio under the Entry Age Normal funding method decreased from 68.3% to 67.1%.

Contribution Rate: The total charged rate in 2019 was 39.42%. Adding to that the 2.80% increase that was effective July 1, 2019 creates a charged rate for 2019 of 42.22%. The total actuarially determined contribution rate is 44.52% as of January 1, 2019. Since the margin between the charged rate and the actuarially determined contribution rate has grown to 2.30%, an increase in the charged rate is recommended. Please note that the 2.30% increase assumes the charged rate is changed January 1, 2019. Delaying that change will result in a higher increase.

Changes to Assets & Liabilities: The plan experienced a loss from investments and a small net loss from demographic sources. The key sources of the gains and losses were an actuarial loss of \$43.7 million from investments (described as the return on the actuarial value of assets less than the assumed 7.00%). The actuarial asset return of 3.69% did not exceed the 7.00% benchmark for the prior year. The return on the market value of assets as calculated by the SLOCPT investment consultants was -3.72%.

- A \$1.4 million gain due to compensation increases for continuing active members being less than the expected increase. A continuing active member is a member who was active as of the last valuation date, and is active as of this valuation date. The average increase for continuing active members was 4.16%, while assumed increases range from 2.88% to 8.13%.
- A \$3.5 million loss due to retirement. This loss reflects more retirements than anticipated.
- A \$6.2 million loss on retiree mortality, meaning that retired participants in pay status lived longer than assumed.

Funding Policy: The SLOCPT adopted a 30 year closed amortization period of as of January 1, 2010. Payments on the initial base of the unfunded accrued liability established January 1, 2018 are based on a 21 year amortization as of the January 1, 2019 valuation. Future gains and losses will be amortized over 20 year closed period layers.

Reserves: We recommend that the reserve for Retirees and Beneficiaries be updated to reflect the computed liability in the most recent valuation. With the Trust's current accounting (the County pays for all COLA benefits), this can only be done for non-COLA benefits. The COLA reserve includes amounts attributable to current active and deferred vested members. According to the financial statements as of December 31, 2018, the reserve for retirees and beneficiaries is \$1,042,178,545. The non-COLA liabilities calculated were \$1,044,662,140. Accordingly, we recommend that the Trust transfer this \$2,483,595 difference out of the Current Reserve and back into the Retiree Reserve.

Member Rates: Member rates change regularly as a result of collective bargaining negotiations. See Section F for a complete description of these rates for all bargaining units.

Pension Obligation Bond: Total pension costs also include the debt financing related to the 2003 pension obligation bond of \$135 million. The annual debt financing payment for calendar year 2019 is approximately \$8.5 million -- 4.23% of active member payroll. When this percent is added to the valuation computed appropriation rate of 28.48%, the total rate of 32.71% more accurately reflects total County pension costs.

Assets: There is approximately \$90.9 million in deferred asset losses yet to be recognized. Absent returns in excess of the assumed 7.00%, upward pressure will continue to exist on the actuarially determined contribution rate.

SECTION B

EXECUTIVE SUMMARY AND RATE RECONCILIATION

Executive Summary

Valuation Date:	January 1, 2019	January 1, 2018
	(1)	(2)
Membership		
<ul style="list-style-type: none"> • Number of - Active Members - Retirees and Beneficiaries - Inactive, Vested - Total • Total Payroll (000s) • Average Pay 	2,725 2,868 489 <hr style="width: 100%;"/> 6,082 \$ 200,537 \$ 73,592	2,722 2,745 464 <hr style="width: 100%;"/> 5,931 \$ 196,848 \$ 72,317
Assets		
<ul style="list-style-type: none"> • Market Value (000s) • Actuarial Value (000s) • Return on Market Value • Return on Actuarial Value 	\$ 1,271,620 \$ 1,362,562 -3.72% 3.69%	\$ 1,340,471 \$ 1,328,750 14.92% 5.99%
Actuarial Liabilities and Funded Ratio		
<ul style="list-style-type: none"> • Actuarial Accrued Liability (000s) - Active Members - Retirees and Beneficiaries - Inactive, Vested - Total* • Unfunded Actuarial Accrued Liability (UAAL) (000s) • Funded Ratio • UAAL based on Market Value • Funded Ratio Based on Market Value 	\$ 614,177 1,343,131 72,621 <hr style="width: 100%;"/> \$ 2,029,929 \$ 667,368 67.1% \$ 758,309 62.6%	\$ 627,112 1,252,333 66,235 <hr style="width: 100%;"/> \$ 1,945,681 \$ 616,930 68.3% \$ 605,210 68.9%
Actuarially Determined Contribution**		
<ul style="list-style-type: none"> • Total Normal Cost • Member Contributions • County Normal Cost • Amortization Payment • Total County Cost (ADC) • Total Combined ADC 	20.60% 16.04% 4.56% 23.92% 28.48% 44.52%	21.15% 16.41% 4.74% 21.04% 25.78% 42.19%

* Total may not add due to rounding.

**Percentage of active payroll

Calculation of the UAAL Amortization Payment

UAAL as of January 1, 2019		\$667,367,732		
Total Prior Remaining Amortization Bases as of January 1, 2019		616,632,313		
2019 Amortization Base as of January 1, 2019		\$50,735,419		
2019 Payment (20 years, level percent of pay amortization)		\$3,753,148		
As of January 1, 2019				
Base Year	Initial Base	Remaining Base	Years Remaining	Amortization Payment
2019	\$ 50,735,419	\$ 50,735,419	20	\$ 3,753,148
2018	616,930,482	616,632,313	21	44,209,689
Total		\$ 667,367,732		\$ 47,962,837

Reconciliation of Charged Rates and the Actuarially Determined Contribution

Valuation Date	January 1, 2019	January 1, 2018
Actuarially Determined Contribution (ADC)	44.52%	42.19%
County Charged Rate	23.15%	21.82%
Member Charged Rate	<u>16.27%</u>	<u>15.48%</u>
Total Charged Rate	39.42%	37.30%
Increase to Charged Rate*	2.80%	2.38%
Total Charged Rate as of January 1	42.22%	39.68%
Difference between the ARC and the Charged Rate	2.30%	2.51%
Recommended Rate Increase as of January 1	2.30%	2.51%

*The recommended rate increase as of January 1, 2018 was 2.51%. However, the rate increase was implemented on July 1, 2019 and therefore was increased to 2.80%.

SECTION C

VALUATION RESULTS

Funding Objective

The funding objective of the SLOCPT is to establish and receive contributions, expressed as a percent of active member payroll, which will remain approximately level from year to year and will not have to be increased for future generations of citizens.

CONTRIBUTION RATES

The SLOCPT is supported by member contributions, County appropriations, and investment income from Pension Trust assets.

Contributions and appropriations which satisfy the funding objective are determined by the annual actuarial valuation and are intended to finance over a period of future years the actuarial present value of benefits not covered by valuation assets as a level percentage of future payroll. The allocation of the contributions and appropriations between the County and employees is determined by negotiations between the County and the recognized bargaining units.

Computed contributions and appropriations as of the January 1, 2019 valuation are shown in the following exhibits.

FUNDING POLICY

The policy adopted by the Board is to recommend the full funding of the Total Actuarially Determined Contribution. This includes a 30 year closed amortization of the initial base of the unfunded accrued liability that was effective as of January 1, 2010. This base has 21 years remaining as of January 1, 2019. Future gains and losses, including the loss from this year, will be amortized over 20 year closed period layers.

Elements of Normal Cost January 1, 2019

MISCELLANEOUS VALUATION GROUPS

	Other	Management			SLOCEA				TOTAL MISC.	
	BU #14, 21-22	Non Court	Court BU #18	Court BU #24-27	Total Mgmt	Non Court	Court BU #19	Court BU #20		Total SLOCEA
Service Retirement	14.19%	17.63%	19.11%	19.72%	17.77%	15.00%	15.59%	15.00%	15.01%	15.84%
Vesting	1.69%	1.74%	1.21%	1.88%	1.74%	1.63%	2.15%	1.87%	1.64%	1.67%
Death-In-Service	0.15%	0.26%	0.09%	0.25%	0.25%	0.19%	0.07%	0.09%	0.18%	0.20%
Disability	0.27%	0.29%	0.28%	0.35%	0.30%	0.26%	0.27%	0.27%	0.26%	0.27%
Refunds	<u>1.55%</u>	<u>1.58%</u>	<u>1.49%</u>	<u>1.36%</u>	<u>1.56%</u>	<u>1.56%</u>	<u>1.78%</u>	<u>1.78%</u>	<u>1.57%</u>	<u>1.56%</u>
Total Normal Cost	17.85%	21.50%	22.18%	23.56%	21.62%	18.64%	19.86%	19.01%	18.66%	19.54%
Less										
Employee Contribution Rate	13.56%	16.27%	16.79%	16.80%	16.31%	14.65%	15.68%	15.16%	14.67%	15.16%
Equals										
County Normal Cost	4.29%	5.23%	5.39%	6.76%	5.31%	3.99%	4.18%	3.85%	3.99%	4.38%

Elements of Normal Cost January 1, 2019

	Probation			Safety				GRAND TOTAL	
	Mgmt	Non	Total	Management		Non-Mgmt			Total
		Mgmt	Probation	Sworn	Non-Sworn	Sworn	Non-Sworn		Safety
Service Retirement	17.79%	15.45%	15.63%	25.16%	18.36%	19.85%	18.91%	19.64%	16.35%
Vesting	4.72%	3.83%	3.90%	2.21%	2.50%	2.23%	2.02%	2.14%	1.83%
Death-In-Service	0.28%	0.23%	0.23%	0.51%	0.29%	0.42%	0.33%	0.38%	0.23%
Disability	0.35%	0.29%	0.29%	2.73%	2.67%	2.99%	3.11%	3.02%	0.65%
Refunds	<u>2.83%</u>	<u>2.44%</u>	<u>2.47%</u>	<u>1.24%</u>	<u>1.40%</u>	<u>1.17%</u>	<u>0.96%</u>	<u>1.08%</u>	<u>1.54%</u>
Total Normal Cost	25.97%	22.24%	22.52%	31.85%	25.22%	26.66%	25.33%	26.26%	20.60%
				Less					
Employee Contribution Rate	23.15%	18.55%	18.91%	27.27%	24.10%	21.37%	18.70%	20.48%	16.04%
				Equals					
County Normal Cost	2.82%	3.69%	3.61%	4.58%	1.12%	5.29%	6.63%	5.78%	4.56%

Pension Costs Summary - 2019
Normal Cost by Tier
(Expressed as Percentage of Active Payroll)

NORMAL COST (NC)	Tier 1	Tier 2	Tier 3	2019 Combined
MISCELLANEOUS				
Member Contributions *	18.99%	12.26%	11.12%	15.16%
Employer Paid Normal Cost	<u>3.77%</u>	<u>6.17%</u>	<u>4.67%</u>	<u>4.38%</u>
Total Normal Cost	22.76%	18.43%	15.79%	19.54%
Note: COLA portion of NC	4.93%	3.25%	2.65%	4.03%
PROBATION				
Member Contributions *	21.65%	NA	12.53%	18.91%
Employer Paid Normal Cost	<u>2.65%</u>	NA	<u>5.88%</u>	<u>3.61%</u>
Total Normal Cost	24.30%	NA	18.41%	22.52%
Note: COLA portion of NC	5.38%	NA	3.35%	4.87%
SAFETY				
Member Contributions *	23.56%	17.85%	16.52%	20.48%
Employer Paid Normal Cost	<u>3.84%</u>	<u>8.79%</u>	<u>7.43%</u>	<u>5.78%</u>
Total Normal Cost	27.40%	26.64%	23.95%	26.26%
Note: COLA portion of NC	6.62%	5.27%	4.44%	5.97%
TOTAL				
Member Contributions *	19.79%	13.37%	11.74%	16.04%
Employer Paid Normal Cost	<u>3.72%</u>	<u>6.72%</u>	<u>5.02%</u>	<u>4.56%</u>
Total Normal Cost	23.51%	20.09%	16.76%	20.60%
Note: COLA portion of NC	5.20%	3.67%	2.87%	4.33%

* Average of all active members in group

Note - Member Contributions may include a portion of Employer Paid for Employee Contribution for applicable bargaining units.

Actuarial Balance Sheet January 1, 2019

Present Resources and Expected Future Resources

	(thousands)			
	<u>Miscellaneous</u>	<u>Probation</u>	<u>Safety</u>	<u>Grand</u>
A. Actuarial value of system assets	\$1,054,964	\$57,052	\$250,546	\$1,362,562
B. Present value of expected future County appropriations				
1. Unfunded past service	516,710	27,944	122,715	667,368
2. Expected future service	<u>46,814</u>	<u>2,653</u>	<u>13,587</u>	<u>63,055</u>
3. Total future County	\$563,524	\$30,597	\$136,302	\$730,423
C. Present value of expected future member contributions	<u>184,911</u>	<u>14,161</u>	<u>48,500</u>	<u>247,572</u>
D. Total Present and Expected Future Resources	<u>\$1,803,399</u>	<u>\$101,810</u>	<u>\$435,348</u>	<u>\$2,340,557</u>

Present Value of Expected Future Benefit Payments and Reserve

	(thousands)			
	<u>Miscellaneous</u>	<u>Probation</u>	<u>Safety</u>	<u>Grand Total*</u>
A. To Retirees and Beneficiaries	\$1,024,532	\$52,665	\$265,934	\$1,343,131
B. To Deferred and Reciprocal	63,415	2,183	7,023	72,621
C. Active members				
1. Service rendered prior to valuation date	483,727	30,147	100,303	614,177
2. Expected future service	<u>231,725</u>	<u>16,815</u>	<u>62,088</u>	<u>310,628</u>
D. Total Present Value of Expected Future Benefits	<u>\$1,803,399</u>	<u>\$101,810</u>	<u>\$435,348</u>	<u>\$2,340,557</u>

* Grand Total may not add due to rounding.

Summary of Reported Asset Information Submitted for the January 1, 2019 Valuation

Market Value of Reported Assets

as of January 1, 2019

Cash/Short-term	\$ 55,156,155
Receivables	5,068,682
Equities	508,869,699
Bonds	416,951,719
Mortgages	4,365,340
Alternative Investments	124,392,603
Real Estate	192,202,582
Other	3,622,732
	\$ 1,310,629,512
Liabilities	(39,009,428)
Total Market Value	\$ 1,271,620,084

Reserves as of January 1, 2019

Member Deposit Reserve	\$ 356,146,743
Appropriation Reserves	44,743,010
Retired Members Reserve	1,042,178,545
Cost-of Living	405,954,286
Contingency Reserves	(770,684,547)
Market Value Adjustments	193,282,047
Total Reserves	\$ 1,271,620,084

Summary of Reported Asset Information Submitted for the January 1, 2019 Valuation

Total Reserves	
Beginning of Year	\$ 1,340,471,022
Revenues	
Employer Contributions	\$ 46,243,596
Employee Contributions	32,952,747
Interest	4,120,406
Dividends	9,451,610
Real Estate Income	376,191
Realized and Unrealized Gains and Losses	(60,131,990)
Investment Expenses	(3,849,273)
	(3,849,273)
Total Revenues	\$ 29,163,287
Disbursements	
Benefit Payments	\$ 92,811,810
Refunds of Member Contributions	1,756,682
Death Benefits	60,376
Administration	3,385,357
	3,385,357
Total Disbursements	\$ 98,014,225
Net Increase	\$ (68,850,938)
Total Reserves - End of year	\$ 1,271,620,084

Development of Funding Value of Assets January 1, 2019

	Plan Year Ended December 31, 2014	Plan Year Ended December 31, 2015	Plan Year Ended December 31, 2016	Plan Year Ended December 31, 2017	Plan Year Ended December 31, 2018
A. Funding Value Beginning of Year	\$1,182,923,978	\$1,231,473,577	\$1,248,327,560	\$1,268,404,900	\$1,328,750,029
B. Gross Market Value End of Year	1,173,336,063	1,135,802,704	1,181,242,858	1,340,471,022	1,271,620,084
C. Gross Market Value Beginning of Year	1,135,718,617	1,173,336,063	1,135,802,704	1,181,242,858	1,340,471,022
D. Non-Investment Cash Flow	(14,055,197)	(20,827,506)	(23,509,152)	(15,849,141)	(15,432,525)
E. Investment Income					
E1. Market Total =B-C-D	51,672,643	(16,705,853)	23,509,152	175,077,305	(53,418,413)
E2 Immediate Recognition	<u>85,252,488</u>	<u>88,526,837</u>	<u>88,105,825</u>	<u>89,809,223</u>	<u>92,481,499</u>
E3. Phased-in Recognition	(\$33,579,845)	(\$105,232,690)	(\$19,156,519)	\$85,268,082	(\$145,899,912)
F. Phased-in Recognition					
F1. Current Year=E3x20%*	(6,715,969)	(21,046,538)	(3,831,304)	17,053,616	(29,179,982)
F2. First Prior Year	10,167,841	(6,715,969)	(21,046,538)	(3,831,304)	17,053,616
F3. Second Prior Year	6,442,404	10,167,841	(6,715,969)	(21,046,538)	(3,831,304)
F4. Third Prior Year	(10,690,006)	6,442,404	10,167,841	(6,715,969)	(21,046,538)
F5. Fourth Prior Year	7,437,258	(10,690,006)	6,442,404	10,167,841	(6,715,969)
F6. Continued Recognition of 2008 Asset Loss	(29,936,396)	(29,936,396)	(29,936,396)	(9,936,396)	0
F7. Additional Recognition of 2008 Asset Loss	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
F8. Total Recognized Gain/(Loss)	(\$23,294,868)	(\$51,778,664)	(\$44,919,962)	(\$14,308,750)	(\$43,720,177)
G. Preliminary Funding Value					
=A+D+E2+F8	\$1,230,826,401	\$1,247,394,244	\$1,268,004,271	\$1,328,056,232	\$1,362,078,826
H. Excludable Assets					
H1. End of Year	5,295,316	4,362,000	3,961,371	3,267,574	2,784,819
H2. Beginning of Year	5,942,492	5,295,316	4,362,000	3,961,371	3,267,574
H3. Change=H1-H2	(647,176)	(933,316)	(400,629)	(693,797)	(482,755)
I. Final Funding Value=G-H3	\$1,231,473,577	\$1,248,327,560	\$1,268,404,900	\$1,328,750,029	\$1,362,561,581
J. Investment Return=(E2+F8)/(A+D/2)	5.27%	3.01%	3.49%	5.99%	3.69%

*The Board originally decided to recognize the 2008 asset loss over 10 years with acceleration of the recognition in future years when the funding margin allowed it. The Board elected to accelerate recognition of an additional \$10 million of the 2008 loss base for the year ending December 31, 2010 and another additional \$10 million for the year ending December 31, 2013. This base is now fully recognized.

Allocation of Valuation Assets January 1, 2019

	<u>Miscellaneous</u>	<u>Probation</u>	<u>Safety</u>	<u>Grand Total</u>
1) Valuation Assets as of December 31, 2017	\$1,032,437,340	\$53,742,969	\$242,569,720	\$1,328,750,029
2) Preliminary member contributions including pickups by group	\$25,543,974	\$1,685,513	\$5,651,147	\$32,880,634
3) Member contributions from financials, subgroups split in proportion to (2)	\$25,599,997	\$1,689,209	\$5,663,541	\$32,952,747
4) Preliminary employer contributions by group	\$36,128,630	\$1,725,245	\$8,274,277	\$46,128,152
5) Employer contributions from financials, subgroups split in proportion to (4)	\$36,219,048	\$1,729,563	\$8,294,985	\$46,243,596
6) Benefit Payments based on data - avg LY & TY	\$72,376,342	\$3,263,276	\$16,478,066	\$92,117,684
7) Benefit payments from financials, subgroups split in proportion to (6)	\$74,349,365	\$3,352,235	\$16,927,268	\$94,628,868
8) Subtotal = (1) + (3) + (5) - (7)	\$1,019,907,020	\$53,809,506	\$239,600,978	\$1,313,317,504
9) Valuation Assets as of December 31, 2018				\$1,362,561,581
10) Residual to allocate among groups (9) - (8)				\$49,244,077
11) Allocation of residual to equalize funded ratios	\$35,056,672	\$3,242,741	\$10,944,663	\$49,244,077
12) Valuation Assets Allocated by group: (8) + (11)	\$1,054,963,692	\$57,052,247	\$250,545,641	\$1,362,561,580

Development of Unfunded Actuarial Accrued Liability January 1, 2019

	<u>Miscellaneous</u>	<u>Probation</u>	<u>Safety</u>	<u>Total</u>
	(1)	(2)	(3)	(4)
1. Actuarial Accrued Liability for active members				
a. PVB	\$ 715,451,556	\$ 46,962,328	\$ 162,391,062	\$ 924,804,946
b. Less: PVFNC	(231,724,668)	(16,815,308)	(62,088,030)	(310,628,006)
c. Actuarial accrued liability (AAL)	\$ 483,726,888	\$ 30,147,020	\$ 100,303,032	\$ 614,176,940
2. Total AAL for:				
a. Retirees and beneficiaries	\$ 1,024,532,032	\$ 52,665,413	\$ 265,933,938	\$ 1,343,131,383
b. Inactive members	63,414,428	2,183,380	7,023,181	72,620,989
c. Active members (Item 1c)	483,726,888	30,147,020	100,303,032	614,176,940
d. Total AAL	\$ 1,571,673,348	\$ 84,995,813	\$ 373,260,151	\$ 2,029,929,312
3. Actuarial value of assets	\$ 1,054,963,692	\$ 57,052,247	\$ 250,545,641	\$ 1,362,561,580
4. Funded ratio	67.1%	67.1%	67.1%	67.1%
5. UAAL (Item 2d - Item 3)	\$ 516,709,656	\$ 27,943,566	\$ 122,714,510	\$ 667,367,732

Pension Costs Summary - 2019
(Expressed as Percentage of Active Payroll)

UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL) AMORTIZATION* & TOTAL ADC **	2019 Combined	2018 Combined
MISCELLANEOUS		
Total Normal Cost	19.54%	20.15%
UAAL Amortization	22.56%	19.65%
Total ADC - Miscellaneous	42.10%	39.80%
UAAL attributable to Miscellaneous (000's)	\$ 516,710	\$ 479,354
PROBATION		
Total Normal Cost	22.52%	23.24%
UAAL Amortization	22.70%	19.52%
Total ADC - Probation	45.22%	42.76%
UAAL attributable to Probation (000's)	\$ 27,944	\$ 24,953
SAFETY		
Total Normal Cost	26.26%	26.95%
UAAL Amortization	32.60%	30.89%
Total ADC - Safety	58.86%	57.84%
UAAL attributable to Safety (000's)	\$ 122,715	\$ 112,624
TOTAL		
Total Normal Cost	20.60%	21.15%
UAAL Amortization	23.92%	21.04%
Total ADC - Combined	44.52%	42.19%
UAAL Total (000's)	\$ 667,368	\$ 616,930

* UAAL Amortization calculated on 30 year closed period with 21 years remaining as of January 1, 2019, with new bases, amortized over a closed 20 year period.

** Liabilities can be allocated to various Classes and Tiers of active members. Assets are not allocable to Tiers therefore allocation of the UAAL and its amortization as a component of pension cost by Tier is not available.

Development of Experience Gain/(Loss) December 31, 2018

The actuarial gains or losses realized in the operation of the SLOCPT provide an experience test. Gains and losses are expected to cancel each other over a period of years (in the absence of double-digit inflation) and sizable year-to-year fluctuations are common. Detail on the derivation of the actuarial gain/(loss) is shown below.

(1) UAAL at beginning of the year	\$616,930,482
(2) County normal cost	9,376,070
(3) Actuarially determined contribution for prior year	51,412,965
(4) Interest accrual	41,738,726
(5) Increase/(Decrease) in UAAL due to assumption changes	0
(6) Increase in UAAL due to provision changes	0
(7) Expected UAAL at end of year	\$616,632,313
[(1) + (2) - (3) + (4) + (5) + (6)]	
(8) Actual UAAL at end of year	\$667,367,732
(9) Experience Gain/(Loss): (7) - (8)	(\$50,735,419)
(10) Gain (loss) as percentage of actuarial accrued liabilities at beginning of year	
\$1,945,680,511	-2.61%

Components of Experience Gain/(Loss) December 31, 2018

Detail on the components of the actuarial gain/(loss) are shown below.

Components of Experience Gain/(Loss)

Gain/(Loss) due to:	
Compensation increases	\$1,368,962
Investment experience	(43,720,177)
Contribution timing experience	(5,284,813)
Accelerated recognition of 2008 loss	0
Retirement incidence	(3,533,996)
Termination experience	436,787
Active mortality experience	(28,862)
Disability experience	(263,739)
Retiree & beneficiary mortality	
experience and miscellaneous retiree data changes	(6,246,957)
COLAs	(3,568,492)
Other data changes and miscellaneous factors	<u>10,105,868</u>
Total Experience Gain/(Loss)	(\$50,735,419)

Funding Progress Indicators Historic Comparison

(\$ in Thousands)

Valuation Date	Valuation Assets ¹	Actuarial Liability ¹	Funded Ratio	Unfunded Actuarial Liability	Member Payroll	Ratio to Payroll
12/31/2008	\$875,602	\$1,150,214	76.1%	\$274,612	\$168,677	162.8%
12/31/2009	937,279	1,216,153	77.1%	278,874	160,444	173.8%
12/31/2010	1,000,169	1,282,058	78.0%	281,889	161,783	174.2%
12/31/2011	1,057,922	1,334,545	79.3%	276,623	161,055	171.8%
12/31/2011 ^{2,3}	1,057,922	1,378,549	76.7%	320,627	161,055	199.1%
12/31/2012 ³	1,122,151	1,468,001	76.4%	345,850	164,299	210.5%
12/31/2013 ⁴	1,182,924	1,518,751	77.9%	335,827	164,704	203.9%
12/31/2014	1,231,474	1,605,591	76.7%	374,117	167,695	223.1%
12/31/2015	1,248,328	1,686,497	74.0%	438,169	177,004	247.5%
12/31/2015 ²	1,248,328	1,749,342	71.4%	501,014	177,004	283.1%
12/31/2016	1,268,405	1,827,342	69.4%	558,937	185,020	302.1%
12/31/2017	1,328,750	1,937,173	68.6%	608,423	196,848	309.1%
12/31/2017 ²	1,328,750	1,945,681	68.3%	616,930	196,848	313.4%
12/31/2018	1,362,562	2,029,929	67.1%	667,368	200,537	332.8%

¹ Assets and liabilities do not include Employee Additional Reserve amounts (in \$) of:

12/31/2018	\$2,784,819	12/31/2013	\$5,942,492
12/31/2017	3,267,574	12/31/2012	6,606,149
12/31/2016	3,961,371	12/31/2011	7,462,567
12/31/2015	4,362,000	12/31/2010	8,558,571
12/31/2014	5,295,316	12/31/2009	9,341,043

² Reflects assumption changes.

³ Reflects benefit provisions under Tier 2 for certain new members.

⁴ Reflects benefit provisions under Tier 3 for new members, and assumption changes.

Risk Metrics January 1, 2019

As a plan matures, the retiree population is projected to grow, the active population to stabilize, and the total liabilities of the plan are projected to become more leveraged in relation to the active member payroll. As a result, contribution requirements may become more volatile due to possible future adverse experience. The following ratios give some indication of the possible future volatility:

(\$ in Thousands)

Volatility Ratios:

a. Payroll	\$ 200,537
b. Market value of assets	\$ 1,271,620
c. Accrued Liability	\$ 2,029,929
d. Funded ratio, market value basis	62.64%
e. Asset volatility ratio (MVA / Payroll)	6.34
f. Liability volatility ratio (AAL / Payroll)	10.12

Asset Volatility Ratio: MVA/Payroll – This ratio provides an indication of the potential contribution volatility for any given level of investment volatility. The asset volatility ratio is intended to help plan sponsors anticipate the impact of investment volatility of the actuarially determined contribution. A lower ratio means that plan assets are relatively small compared with payroll; this implies that a single year variance in asset performance may not have as large an impact on contribution rates. As the plan has matures, a greater amount of assets have accumulated. With such large retiree liabilities and assets, a change in the asset value becomes a much greater factor relative to payroll.

For SLOCPT, using this volatility measure, an asset loss of 10% (a loss of \$127 million) is 63.4% of payroll. This 63.4% of payroll does not need to be contributed in one year. Five-year asset smoothing, as well as the amortization of experience losses, would spread the contributions toward that loss over time. The following exhibit provides an estimate of the impact on the contribution rate for a 10% loss, assuming 20-year amortization, with and without the five-year asset smoothing.

Asset Volatility Ratio (in Thousands)					
Fiscal Year ending 12/31/-	2018	2017	2016	2015	2014
Market Value of Assets	\$1,271,620	\$1,340,471	\$1,181,243	\$1,135,803	\$1,173,336
Covered Payroll	\$200,537	\$196,848	\$185,020	\$177,004	\$167,695
Asset Volatility Ratio=Assets/Payroll	6.34	6.81	6.38	6.42	7.00
Increase in contribution rate resulting from a 10% asset loss (using 20-year level percent of pay amortization and five-year asset smoothing)	0.94%	1.01%	0.95%	0.96%	1.04%
Increase in contribution rate resulting from a 10% asset loss (using 20-year level percent of pay amortization without asset smoothing)	4.72%	5.07%	4.75%	4.78%	5.21%

If a plan has an asset volatility ratio of 10, a 10% gain or loss on assets translates to 100% of payroll. This will have a substantial impact on determined contributions regardless of the asset smoothing or UAAL amortization mechanisms in use. However, for a plan with an asset volatility ratio of 5, a 10% gain or loss on assets translates to 50% of payroll and would only have half the impact on contributions of a plan with an asset volatility ratio of 10. This is a current measure since it is based on the current level of assets.

Liability Volatility Ratio: AAL/Payroll – This ratio provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because the assets should track the liabilities over an extended period. If a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded. In addition, this ratio provides an indication of the potential contribution volatility due to liability experience (gains and losses) and liability re-measurements (assumption changes).

For SLOCPT, the liability volatility measure has stayed fairly constant over the last five years. The liabilities and the assets have grown at similar rates. To illustrate the sensitivity of liability losses, the following chart shows a possible change in the amortization payment due to and experience loss of 1% for a given year.

Liability Volatility Ratio (in Thousands)					
Fiscal Year ending 12/31/-	2018	2017	2016	2015	2014
Accrued Liability	\$2,029,929	\$1,945,681	\$1,827,342	\$1,749,342	\$1,686,497
Covered Payroll	\$200,537	\$196,848	\$185,020	\$177,004	\$167,695
Liability Volatility Ratio=Liability/Payroll	10.12	9.88	9.88	9.88	10.06
Increase in contribution rate resulting from a 1% liability loss (using 20-year level percent of pay amortization)	0.75%	0.74%	0.74%	0.74%	0.75%

SECTION D

SUMMARY OF MEMBER DATA

Reconciliation of Members From January 1, 2018 to January 1, 2019

	Actives	Terminated			DROP	Beneficiary	Total
		Disability	Vested	Retiree			
Counts as of January 1, 2018	2,722	137	464	2,323	77	208	5,931
Actives	5		(5)				0
Disability	(4)	5		(1)			0
Terminated Vested	(58)		58				0
Terminated Nonvested	(99)		(1)				(100)
Retiree	(96)		(31)	150	(23)		0
DROP	(28)				28		0
Beneficiary							0
Deceased		(1)		(51)		(6)	(58)
Refund	(5)		(5)				(10)
New Beneficiaries						21	21
New Actives	275						275
Return to Work	13						13
Missing							0
Not included last year			9		1		10
Counts as of January 1, 2019	2,725	141	489	2,421	83	223	6,082

**Summary of Active Members Included
January 1, 2019 Valuation
By Attained Ages and Years of Service
Total Membership**

Age Group	Years of Accrued Service							No.	Compensation Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30+		
<20	1							1	35,797
20-24	43	0						43	2,393,352
25-29	237	14	0					251	14,406,725
30-34	248	95	26	0				369	24,593,211
35-39	190	100	99	19	1			409	29,260,836
40-44	117	78	80	58	9	0		342	26,751,314
45-49	80	52	87	61	45	6	1	332	26,660,226
50-54	80	45	63	77	63	23	8	359	28,743,759
55-59	64	51	52	61	50	36	23	337	26,167,302
60-64	39	35	46	40	29	20	6	215	16,518,287
65-69	11	12	11	12	4	1	2	53	4,106,314
70-74	3	1	3	3	0	0	1	11	629,574
75+	0	1	1	1	0	0	0	3	270,774
Totals	1,113	484	468	332	201	86	41	2,725	\$200,537,472

While not used in the financial computations, the following averages are computed and shown for their general interest.

Averages

Age: 44.7
 Service: 9.1
 Compensation: \$73,592

Summary of Active Members Included in the January 1, 2019 Valuation

	<u>No.</u>	<u>Total Payroll</u>	<u>Averages</u>		
			<u>Annual Compensation</u>	<u>Age</u>	<u>Service</u>
Miscellaneous Members					
1/1/2019	2,324	\$164,634,676	\$70,841	45.5	8.9
1/1/2018	2,340	\$163,791,934	\$69,997	45.9	9.1
Percent Increase	-0.7%	0.5%	1.2%		
Probation Members					
1/1/2019	116	\$8,848,590	\$76,281	38.8	9.1
1/1/2018	115	\$8,580,686	\$74,615	39.5	9.6
Percent Increase	0.9%	3.1%	2.2%		
Safety Members					
1/1/2019	285	\$27,054,206	\$94,927	40.0	10.1
1/1/2018	267	\$24,475,464	\$91,668	40.8	10.6
Percent Increase	6.7%	10.5%	3.6%		
All Active Members					
1/1/2019	2,725	\$200,537,472	\$73,592	44.7	9.1
1/1/2018	2,722	\$196,848,084	\$72,317	45.1	9.3
Percent Increase	0.1%	1.9%	1.8%		

For affected Management employees, pick-ups are not included as valuation compensation in these figures, even though such pick-ups are used to determine their benefits.

Payroll represents the total valuation pay of all covered members. Payroll changes year by year based on new hires, departures, and pay for continuing actives. The assumption for payroll growth is used in amortizing the UAL.

Salaries represent the pay earned by an individual member in the system. The salary growth assumption is an assumption for an individual member's increase in salary.

Pensionable compensation is capped at \$124,180 for 2019 for Tier 3 members.

Summary of Active Members by Valuation Group January 1, 2019 Valuation

	Counts				Total Payroll (000s*)			
	Tier 1	Tier 2	Tier 3	Total	Tier 1	Tier 2	Tier 3	Total
Miscellaneous Members								
1/1/2019	1,039	259	1,026	2,324	\$ 82,021	\$20,514	\$62,100	\$164,635
1/1/2018	1,174	262	904	2,340	\$ 90,953	\$20,061	\$52,778	\$163,792
Percent Increase				-0.7%				0.5%
Probation Members								
1/1/2019	72	0	44	116	\$ 6,219	\$ -	\$ 2,630	\$ 8,849
1/1/2018	80	0	35	115	\$ 6,634	\$ -	\$ 1,947	\$ 8,581
Percent Increase				0.9%				3.1%
Safety Members								
1/1/2019	140	52	93	285	\$ 14,343	\$ 5,086	\$ 7,625	\$ 27,054
1/1/2018	151	52	64	267	\$ 14,675	\$ 4,805	\$ 4,996	\$ 24,475
Percent Increase				6.7%				10.5%
All Active Members								
1/1/2019	1,251	311	1,163	2,725	\$102,583	\$25,600	\$72,355	\$200,537
1/1/2018	1,405	314	1,003	2,722	\$112,262	\$24,866	\$59,720	\$196,848
Percent Increase				0.1%				1.9%

* Total may not add due to rounding.

Summary of Deferred and Reciprocal members Included in the January 1, 2019 Valuation

	<u>No.</u>	<u>Member Contributions</u>	<u>Contribution Balance</u>	<u>Averages</u>		
				<u>Attained Age</u>	<u>Age at Termination</u>	<u>Service</u>
Miscellaneous						
Reciprocal	215	\$15,145,627	\$70,445	49.2	39.7	5.0
Deferred	<u>215</u>	<u>21,593,833</u>	100,436	50.4	40.7	9.0
Total	430	\$36,739,460	\$85,441	49.8	40.2	7.0
Probation						
Reciprocal	8	\$337,798	\$42,225	45.2	34.6	3.7
Deferred	<u>9</u>	<u>1,028,710</u>	114,301	42.4	36.0	9.5
Total	17	\$1,366,508	\$80,383	43.7	35.3	6.8
Safety						
Reciprocal	17	\$1,323,895	\$77,876	44.0	34.4	4.4
Deferred	<u>25</u>	<u>3,526,316</u>	141,053	44.5	36.4	9.3
Total	42	\$4,850,211	\$115,481	44.3	35.6	7.3
Total						
Reciprocal						
1/1/2019	240	\$16,807,320	\$70,031	48.7	39.2	4.9
1/1/2018	221	\$13,313,197	\$60,241	48.6	38.7	4.5
Percent Change	8.6%	26.2%	16.3%			
Deferred						
1/1/2019	249	\$26,148,859	\$105,015	49.5	40.1	9.1
1/1/2018	243	\$24,372,696	\$100,299	50.4	40.1	9.1
Percent Change	2.5%	7.3%	4.7%			
Grand Total 1/1/2019	489	\$42,956,179	\$87,845	49.1	39.7	7.0
Grand Total 1/1/2018	464	\$37,685,893	\$81,220	49.5	39.4	6.9
Percent Change	5.4%	14.0%	8.2%			

Summary of Retirees Included in the January 1, 2019 Valuation

	<u>No.</u>	<u>Averages</u>				<u>New Retirees Only</u>		
		<u>Annual Allowance</u>	<u>Annual Allowance</u>	<u>Attained Age</u>	<u>Age at Retirement*</u>	<u>No.</u>	<u>Average Annual Allowance</u>	<u>Average Age at Retirement</u>
Miscellaneous								
1/1/2019	2,279	\$71,578,729	\$31,408	69.8	59.3	144	\$36,657	61.7
1/1/2018	2,179	\$65,658,991	\$30,133	69.5	59.2	132	\$41,992	61.0
Percent Change	4.6%	9.0%	4.2%				-12.7%	
Probation								
1/1/2019	78	\$3,324,873	\$42,627	64.3	55.8	8	\$47,767	55.3
1/1/2018	70	\$2,864,113	\$40,916	64.3	55.8	4	\$34,976	54.0
Percent Change	11.4%	16.1%	4.2%				36.6%	
Safety								
1/1/2019	288	\$15,880,657	\$55,141	63.3	52.7	16	\$39,796	51.6
1/1/2018	288	\$15,294,071	\$53,104	63.5	52.9	29	\$50,996	54.5
Percent Change	0.0%	3.8%	3.8%				-22.0%	
All Retirees								
1/1/2019	2,645	\$90,784,259	\$34,323	68.9	58.5	168	\$37,326	60.4
1/1/2018	2,537	\$83,817,175	\$33,038	68.7	58.4	165	\$42,821	60.1
Percent Change	4.3%	8.3%	3.9%				-12.8%	

* For retired and disabled members only; does not include beneficiaries.

Summary of Beneficiaries Included in the January 1, 2019 Valuation

		<u>Averages</u>		
	<u>No.</u>	<u>Annual Allowance</u>	<u>Annual Allowance</u>	<u>Attained Age</u>
Miscellaneous				
1/1/2019	184	\$3,774,609	\$20,514	76.0
1/1/2018	176	\$3,594,654	\$20,424	75.5
Percent Change	4.5%	5.0%	0.4%	
Probation				
1/1/2019	5	\$171,113	\$34,223	75.2
1/1/2018	5	\$166,452	\$33,290	74.2
Percent Change	0.0%	2.8%	2.8%	
Safety				
1/1/2019	34	\$1,152,283	\$33,891	73.3
1/1/2018	27	\$774,811	\$28,697	72.8
Percent Change	25.9%	48.7%	18.1%	
All Beneficiaries				
1/1/2019	223	\$5,098,005	\$22,861	75.6
1/1/2018	208	\$4,535,918	\$21,807	75.1
Percent Change	7.2%	12.4%	4.8%	

Retirees and Beneficiaries January 1, 2019 Total Tabulated by Type of Allowances Being Paid

<u>Type of Allowance</u>	<u>No.</u>	<u>Annual Allowances</u>
SERVICE RETIREMENT		
Unmodified	1,081	\$34,076,166
Cash Refund	176	5,341,778
100% Continuance	740	29,969,574
50% Continuance	272	11,472,991
Benefits Coordinated with Social Security		
Unmodified	125	\$2,663,689
Cash Refund	24	398,508
100% Continuance	49	1,704,101
50% Continuance	<u>37</u>	<u>1,322,856</u>
Total Service Retirement	2,504	\$86,949,662
DISABILITY RETIREMENT		
Unmodified	79	\$2,133,524
Cash Refund	13	285,928
100% Continuance	40	1,220,735
50% Continuance	<u>9</u>	<u>194,409</u>
Total Disability Retirement	141	\$3,834,597
BENEFICIARIES	<u>223</u>	<u>\$5,098,005</u>
Total Allowances	<u>2,868</u>	<u>\$95,882,264</u>

SECTION E

VALUATION METHODS AND ASSUMPTIONS

Actuarial Methods and Assumptions Used in the January 1, 2019 Valuation

I. Valuation Date

The valuation date is December 31 of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an individual entry age actuarial cost method having the following characteristics:

- (i) the annual normal costs for each active member, payable from the date of entry into the system to the date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement;
- (ii) each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

Deferred and Reciprocal Member Actuarial Accrued Liability. Data provided includes date of birth, service credit, reciprocal status, and hourly pay rates at termination. The estimated benefit was used to compute the liabilities for reserve members. For reciprocal members, the estimated benefits were projected with 2.50% inflation from their date of termination to their assumed retirement date to compute those liabilities.

Amortization of Unfunded Actuarial Accrued Liabilities is done as a level percent of payroll over a closed 30-year period (21 years as of January 1, 2019) for funding computations. Starting January 1, 2019, all new gains and losses, including the loss from this year, will be amortized over a closed 20-year layer each year.

III. Actuarial Value of Assets

The funding value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income. Pursuant to Board policy, the asset losses that occurred in 2008 are smoothed over a ten-year period with recognition accelerated if a positive contribution margin develops. Expected investment income is determined using the assumed investment return rate and the actuarial value of assets (adjusted for receipts and disbursements during the year). Returns are measured net of all administrative expenses.

IV. Actuarial Assumptions (changes effective January 1, 2018, based on the December 31, 2017 experience study)

A. Economic Assumptions

1. Investment return: 7.00%, compounded annually, net of administrative expenses. This is made up of a 2.50% inflation rate and a 4.50% real rate of return.
2. Salary increase rate: Inflation rate of 2.50% plus productivity increase rate of 0.25% plus an additional service-related merit component as shown below:

% Merit Increases in Salaries Next Year		% Total Increases in Salaries Next Year	
Service Index	Rate	Service Index	Rate
1	5.25%	1	8.00%
2	5.00%	2	7.75%
3	4.00%	3	6.75%
4	3.00%	4	5.75%
5	2.00%	5	4.75%
6	1.00%	6	3.75%
7	0.50%	7	3.25%
8 +	0.00%	8 +	2.75%

3. Cost-of-living increases:

Assumed to increase the full 2.50% each year (2% for Tier 2 and Tier 3)

4. Payroll growth:

2.75% per year (inflation 2.50%; productivity of 0.25%) for the January 1, 2019 actuarial valuation.

5. Increase to maximum earnings limit for Tier 3 members:

2.50% per year

6. Contribution accumulation: Contributions are credited with 6.00% interest, compounded biweekly.

B. Demographic Assumptions

1. Mortality projection – The projection calculation for MP-2017
2. Mortality after termination or retirement -
 - a. Healthy males – RP-2014 with generational mortality improvements using scale MP-2017, a 105% multiplier
 - b. Healthy females - RP-2014 with generational mortality improvements using scale MP-2017, a 115% multiplier

See sample rates for 2019 below:

Ages	% Dying Within Next Year Retirees	
	Men	Women
45	0.19%	0.18%
50	0.27%	0.23%
55	0.40%	0.31%
60	0.55%	0.46%
65	0.80%	0.74%
70	1.27%	1.16%
75	2.13%	1.93%
80	3.74%	3.37%
85	6.89%	6.11%

3. Mortality rates of active members – RP-2014 Employee Mortality Tables, with generational improvements using scale MP-2017, setback one year with a 105% multiplier for males, and setback two years with a 50% multiplier for females, applied to RP-2014, as shown below for selected ages:

See sample rates for 2019 below:

Ages	% of Active Members Dying Within Next Year	
	Men	Women
30	0.05%	0.01%
35	0.06%	0.01%
40	0.06%	0.02%
45	0.09%	0.03%
50	0.15%	0.04%
55	0.26%	0.07%
60	0.44%	0.11%
65	0.78%	0.15%
70	1.28%	0.24%

4. Disability mortality after termination or retirement- RP-2014 Disabled Mortality Tables, with generational improvements using scale MP-2017, with setback of one year and a 100% multiplier for males, and setback one year with a 75% multiplier for females, applied to RP-2014, as shown below for selected ages:

See sample rates for 2019 below:

Ages	% of Disabled Members Dying Within Next Year	
	Men	Women
30	0.44%	0.15%
35	0.84%	0.30%
40	1.23%	0.47%
45	1.55%	0.64%
50	1.86%	0.82%
55	2.20%	1.05%
60	2.60%	1.26%
65	3.06%	1.47%
70	3.72%	1.88%

5. Retirement –

a. As shown below for Tier 1 members for selected ages (rates are only applied to members eligible for retirement):

Age	Percent of Eligible Active Members Retiring Within Next Year		
	Miscellaneous	Probation	Safety
50	4.0%	7.5%	20.0%
51	4.0%	7.5%	14.0%
52	4.0%	7.5%	10.0%
53	4.0%	7.5%	10.0%
54	4.0%	7.5%	12.0%
55	6.0%	10.0%	15.0%
56	6.0%	12.0%	12.0%
57	8.0%	12.0%	12.0%
58	8.0%	12.0%	12.0%
59	8.0%	12.0%	18.0%
60	10.0%	15.0%	25.0%
61	10.0%	15.0%	30.0%
62	20.0%	20.0%	40.0%
63	20.0%	20.0%	50.0%
64	20.0%	20.0%	75.0%
65	40.0%	40.0%	100.0%
66	30.0%	20.0%	
67	25.0%	20.0%	
68	25.0%	40.0%	
69	25.0%	50.0%	
70	100.0%	100.0%	

Current Reciprocal and Reserve members are assumed to retire at the later of age 60 (age 55 for Tier 1 Reserve Members) or attained age.

b. As shown below for Tier 2 and future Tier 3 members for selected ages (rates are only applied to members eligible for retirement):

Age	Percent of Eligible Active Members Retiring Within Next Year		
	Miscellaneous	Probation	Safety
50	3.0%	7.5%	9.0%
51	3.0%	7.5%	9.0%
52	3.0%	7.5%	10.0%
53	3.0%	7.5%	10.0%
54	3.0%	7.5%	10.0%
55	6.0%	7.5%	10.0%
56	6.0%	7.5%	10.0%
57	6.0%	7.5%	10.0%
58	6.0%	9.0%	11.0%
59	6.0%	9.0%	15.0%
60	8.0%	10.0%	20.0%
61	8.0%	10.0%	25.0%
62	20.0%	20.0%	30.0%
63	20.0%	20.0%	40.0%
64	20.0%	20.0%	60.0%
65	40.0%	40.0%	100.0%
66	30.0%	20.0%	
67	25.0%	20.0%	
68	25.0%	40.0%	
69	25.0%	50.0%	
70	100.0%	100.0%	

6. Rates of separation from active membership (for causes other than death or retirement) - As shown below for selected ages:

Sample Ages	% of Active Members Separating Within Next Year			
	Miscellaneous Members			
	Disability	Withdrawal < 5 years	Withdrawal ≥ 5 years	Vested Termination
20	0.00%	12.50%	8.50%	0.00%
25	0.00%	11.00%	7.75%	3.50%
30	0.01%	9.50%	3.75%	4.00%
35	0.04%	8.00%	2.00%	3.50%
40	0.06%	7.00%	1.25%	3.00%
45	0.09%	6.00%	0.50%	3.00%
50	0.11%	6.00%	0.00%	2.50%
55	0.14%	6.00%	0.00%	2.00%
60	0.16%	6.00%	0.00%	0.00%
64	0.18%	6.00%	0.00%	0.00%
GRS Table No.	762			1188

Sample Ages	% of Active Members Separating Within Next Year			
	Safety and Probation Members			
	Disability	Withdrawal < 5 years	Withdrawal ≥ 5 years	Vested Termination
20	0.00%	5.20%	1.50%	3.00%
25	0.03%	5.00%	1.50%	2.00%
30	0.13%	4.70%	1.00%	1.50%
35	0.23%	4.00%	0.50%	1.50%
40	0.33%	3.50%	0.50%	1.50%
45	0.43%	2.50%	0.00%	1.50%
50	0.53%	1.50%	0.00%	1.50%
55	0.63%	0.00%	0.00%	0.00%
60	0.73%	0.00%	0.00%	0.00%
64	0.81%	0.00%	0.00%	0.00%
GRS Table No.	761			1189

Vested termination rates and disability rates are applied after the member is eligible for reduced or unreduced retirement benefits. 100% of the Safety disabilities and 0% of the Miscellaneous and Probation disabilities are duty-related.

40% of Vested Terminations are assumed to be Reciprocal.

Based on Member Contribution Totals provided by SLOCPT, we are assuming that 1.00% of members' contribution account balances are for supplemental/additional benefits.

C. Other Assumptions

Member Refunds. All or part of the employee contribution rate is subject to potential "Pick Up" by the employer. Our understanding is that "Pick Ups", and related interest, are subject to refund.

Deferral Age. The assumed retirement age for future Reserve and Reciprocal members is age 57.

Active Death. 100% of active deaths are assumed to be duty related.

Survivor Benefits. Marital status and spouses' census data were imputed with respect to active and deferred members.

Marital Status. 80% of men and 60% of women were assumed married at retirement.

Spouse Census. Women were assumed to be 3 years younger than men for active employees.

Disability Benefits. Benefits are not assumed to be offset by Social Security benefits.

IRC Section 415 Limits. We are assuming that IRC Section 415 limits, although applicable to this plan, will not impact any individual benefits.

Analysis of Selected Actuarial Assumptions Compared to Actual Experience

Assumed and actual changes experienced in areas related to the following assumptions are shown:

	Year Ended December 31					Averages		
	2018	2017	2016	2015	2014	3 Year	5 Year	10 Year
Inflation ¹	3.9%	3.3%	2.8%	2.6%	1.7%	3.3%	2.9%	2.4%
Current Assumption	2.500%							
Average Pay Increase	1.8%	4.6%	1.9%	3.2%	0.7%	2.7%	2.4%	1.5%
Current Assumption	2.750%							
Merit & Longevity Pay Increase	-2.1%	1.3%	-0.9%	0.6%	-1.0%	-0.6%	-0.5%	-0.9%
Current Assumption	0.250%							
Total Payroll	1.9%	6.4%	4.5%	5.6%	1.8%	4.2%	4.0%	1.7%
Current Assumption	2.750%							
Investment Return Rate ²	3.7%	6.0%	3.5%	3.0%	5.3%	4.4%	4.3%	5.1%
Current Assumption	7.000%							
Real Rate of Investment Return	-0.2%	2.7%	0.7%	0.4%	3.6%	1.1%	1.4%	2.7%
Current Assumption	4.500%							

¹ Based on the average of the Consumer Price Index for Los Angeles – Long Beach – Anaheim and the San Francisco – Oakland – Hayward, All Items, 1982-84=100.

² Based on actuarial value of assets NOT market value or book value

SECTION F

SUMMARY OF BENEFIT PROVISIONS AND CURRENT MEMBER CONTRIBUTION RATES

Note: The member contribution rates are the rates submitted in the data and used in the valuation.

Brief Summary of Benefit Provisions Evaluated Effective January 1, 2019

1. Membership Requirements – All regular permanent employees of the County or district covered by the County or agencies that have contracted with the County to participate in the SLOCPT

2. Tiers
 Tier 1 generally includes new members hired before January 1, 2011.

 Tier 2 generally includes new members hired on or after January 1, 2011 and before January 1, 2013. Tier 2 only applies to members hired after the date each particular bargaining unit adopted Tier 2. Members hired in a bargaining unit that did not adopt Tier 2 are considered Tier 1 members.

 Tier 3 includes all new members hired on or after January 1, 2013.

3. Final Compensation – Highest one-year average for employees in Tier 1 and “Pick Up” included as compensation for various management employees. Bargaining Units #4, 7, 8, 9, 10, 11, 12, 17, 99

Pick Up Percentage included in final average compensation:

<u>Bargaining Unit</u>	<u>Pick Up</u>
4,7,8,9,11,12,99	9.29%
10	13.55%
17	13.59%

Highest three-year average for employees in Tier 2 and Tier 3

4. Member Contributions
 Please refer to Appendix A. Employee contribution rates used in the January 1, 2019 valuation have increased since the January 1, 2018 valuation for some members.

5. Service Retirement
 - A. Eligibility - Age 50 with 5 years of service (Age 52 with 5 years of service for Miscellaneous members in Tier 3).

 - B. Benefit Formula - Final Compensation multiplied by Years of Credited Service multiplied by Retirement Age Factor.

Brief Summary of Benefit Provisions Evaluated Effective January 1, 2019

C. Retirement Age Factors

Safety					
Age	Tier 1 ¹	Tier 1 ²	Tier 2 ³	Tier 2 ⁴	Tier 3
50	2.300%	3.000%	2.000%	2.300%	2.000%
51	2.440	3.000	2.140	2.440	2.100
52	2.580	3.000	2.280	2.580	2.200
53	2.720	3.000	2.420	2.720	2.300
54	2.860	3.000	2.560	2.860	2.400
55	3.000	3.000	2.700	3.000	2.500
56	3.000	3.000	2.700	3.000	2.600
57+	3.000	3.000	2.700	3.000	2.700

Probation		
Age	Tier 1	Tier 3
50	2.300%	2.000%
51	2.440	2.100
52	2.580	2.200
53	2.720	2.300
54	2.860	2.400
55	3.000	2.500
56	3.000	2.600
57+	3.000	2.700

¹ Safety Bargaining Units 6 & 7 and Non-Sworn Bargaining Units 3, 14, 15

² Safety Bargaining Units 10 & 16 and Sworn Bargaining Units 15, 27, 28

³ Non-Sworn Safety members

⁴ Safety Bargaining Units 6 & 7 and Sworn Safety members

Miscellaneous			
Age	Tier 1	Tier 2	Tier 3
50	1.426%	1.092%	-
51	1.541	1.156	-
52	1.656	1.224	1.000%
53	1.770	1.296	1.100
54	1.885	1.376	1.200
55	2.000	1.460	1.300
56	2.117	1.552	1.400
57	2.233	1.650	1.500
58	2.350	1.758	1.600
59	2.466	1.874	1.700
60	2.583	2.000	1.800
61	2.699	2.134	1.900
62	2.816	2.272	2.000
63	2.932	2.418	2.100
64	3.049	2.458	2.200
65	3.165	2.500	2.300
66	3.165	2.500	2.400
67+	3.165	2.500	2.500

Brief Summary of Benefit Provisions Evaluated Effective January 1, 2019

- D. Maximum Benefit
 - a. Tier 1
 - 80% of Final Compensation for SLOCEA and Misc. Other
 - 90% of Final Compensation for Safety and Probation
 - 100% of Final Compensation for Miscellaneous Management
 - b. Tier 2
 - 90% of Final Compensation for all of Tier 2
 - c. Tier 3
 - No maximum benefit applies but pensionable compensation is capped at \$121,388 for 2018 and adjusted annually based on CPI.

- 6. Ordinary Disability
 - A. Eligibility - Five years of service and less than 65 years old.
 - B. Benefit Formula - Greater of (1) 1.5% of Final Compensation times Credited Service, (2) 1/3 of Final Compensation if Credited Service is between 10 and 22.222 years, or (3) the earned Service Retirement Allowance (if eligible).

- 7. Line-of-Duty Disability
 - A. Eligibility - No age or service requirement for Safety members.
 - B. Benefit Formula - Greater of (1) 50% of Final Compensation, or (2) Service Retirement Allowance (if eligible).

- 8. Ordinary Death Before Eligible for Retirement (Basic Death Benefit)

Refund of employee contributions with interest plus lump sum of one and one-half month's compensation for each year of service to a maximum of eighteen months' Compensation.

- 9. Ordinary Death After Eligible for Retirement

50% of earned benefit payable to surviving eligible spouse or children until age 18, or benefit in (8) above if greater. Spouse can elect an actuarially-reduced 100% Joint and Survivor benefit.

- 10. Line-of-Duty Death (Safety only)

50% of Final Compensation. Benefit increased to 62.5%, 70% or 75%, respectively, if violent death and 1, 2, or 3 children.

- 11. Death After Retirement

50% of member's unmodified allowance continued to eligible spouse. Optional forms of payment are also available.
\$1,000 payable in lump sum to the beneficiary or the estate of the retiree.

Brief Summary of Benefit Provisions Evaluated Effective January 1, 2019

12. Withdrawal Benefits

A. Less than Five Years of Service

Refund of accumulated employee contributions with interest.

B. Five or More Years of Service

If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire.

13. Post-Retirement Cost-of-Living Benefits

Based on changes in Consumer Price Index to a maximum of 3% per year (maximum of 2% per year for Tier 2 and Tier 3).

14. Deferred Retirement Option Program (DROP): A Tier 1 member (excluding Court employees) may elect to participate in the SLOCPT's DROP. A member age 50 or more with 5 or more years of service may participate. An amount equal to the amount that would have been paid had the member retired, is deposited into a DROP account. The annual addition to the DROP account is increased each year by the Cost-of-Living Adjustment approved by the Board of Trustees not to exceed 3% per year. Deposits into the DROP account and participation in DROP cease at the earlier of 5 years of DROP participation or separation from service. Upon actual retirement, the member may receive the DROP account balance in the form of a lump sum or as an annuity payment.

NOTE: The summary of major plan provisions is designed to outline principal plan benefits. If the County should find the plan summary not in accordance with the actual provisions, the County should alert the actuary **IMMEDIATELY** so proper provisions are valued.

January 1, 2019 Actuarial Valuation Member Contribution Rates*

MISCELLANEOUS - TIER 1

BU Entry	14,21,22	7 (LAFCO)	4,7,8,9,10, 11,17,99	12	17C (Interpreter)	18	20	24,26,27	25	1,5,13	2	19	98	99
	Age	Other Management	Non-Court Management	Non-Court Management	Court Other	Court Other	Court Other	Court Management	Court Management	Non-Court SLOCEA	Non-Court SLOCEA	Court SLOCEA	Non-Court SLOCEA	Non-Court Management
18	17.69%	14.59%	18.19%	17.30%	17.83%	17.83%	15.31%	16.60%	15.61%	17.88%	17.32%	14.75%	18.96%	19.27%
19	17.76%	14.66%	18.26%	17.37%	17.90%	17.90%	15.38%	16.67%	15.68%	17.95%	17.39%	14.82%	19.03%	19.34%
20	17.83%	14.73%	18.33%	17.44%	17.97%	17.97%	15.45%	16.74%	15.75%	18.02%	17.46%	14.89%	19.10%	19.41%
21	17.89%	14.79%	18.39%	17.50%	18.03%	18.03%	15.51%	16.80%	15.81%	18.08%	17.52%	14.95%	19.16%	19.47%
22	17.91%	14.81%	18.41%	17.52%	18.05%	18.05%	15.53%	16.82%	15.83%	18.10%	17.54%	14.97%	19.18%	19.49%
23	17.93%	14.83%	18.43%	17.54%	18.07%	18.07%	15.55%	16.84%	15.85%	18.12%	17.56%	14.99%	19.20%	19.51%
24	17.96%	14.86%	18.46%	17.57%	18.10%	18.10%	15.58%	16.87%	15.88%	18.15%	17.59%	15.02%	19.23%	19.54%
25	18.00%	14.90%	18.50%	17.61%	18.14%	18.14%	15.62%	16.91%	15.92%	18.19%	17.63%	15.06%	19.27%	19.58%
26	18.05%	14.95%	18.55%	17.66%	18.19%	18.19%	15.67%	16.96%	15.97%	18.24%	17.68%	15.11%	19.32%	19.63%
27	18.10%	15.00%	18.60%	17.71%	18.24%	18.24%	15.72%	17.01%	16.02%	18.29%	17.73%	15.16%	19.37%	19.68%
28	18.16%	15.06%	18.66%	17.77%	18.30%	18.30%	15.78%	17.07%	16.08%	18.35%	17.79%	15.22%	19.43%	19.74%
29	18.23%	15.13%	18.73%	17.84%	18.37%	18.37%	15.85%	17.14%	16.15%	18.42%	17.86%	15.29%	19.50%	19.81%
30	18.30%	15.20%	18.80%	17.91%	18.44%	18.44%	15.92%	17.21%	16.22%	18.49%	17.93%	15.36%	19.57%	19.88%
31	18.38%	15.28%	18.88%	17.99%	18.52%	18.52%	16.00%	17.29%	16.30%	18.57%	18.01%	15.44%	19.65%	19.96%
32	18.47%	15.37%	18.97%	18.08%	18.61%	18.61%	16.09%	17.38%	16.39%	18.66%	18.10%	15.53%	19.74%	20.05%
33	18.56%	15.46%	19.06%	18.17%	18.70%	18.70%	16.18%	17.47%	16.48%	18.75%	18.19%	15.62%	19.83%	20.14%
34	18.66%	15.56%	19.16%	18.27%	18.80%	18.80%	16.28%	17.57%	16.58%	18.85%	18.29%	15.72%	19.93%	20.24%
35	18.76%	15.66%	19.26%	18.37%	18.90%	18.90%	16.38%	17.67%	16.68%	18.95%	18.39%	15.82%	20.03%	20.34%
36	18.86%	15.76%	19.36%	18.47%	19.00%	19.00%	16.48%	17.77%	16.78%	19.05%	18.49%	15.92%	20.13%	20.44%
37	18.97%	15.87%	19.47%	18.58%	19.11%	19.11%	16.59%	17.88%	16.89%	19.16%	18.60%	16.03%	20.24%	20.55%
38	19.08%	15.98%	19.58%	18.69%	19.22%	19.22%	16.70%	17.99%	17.00%	19.27%	18.71%	16.14%	20.35%	20.66%
39	19.20%	16.10%	19.70%	18.81%	19.34%	19.34%	16.82%	18.11%	17.12%	19.39%	18.83%	16.26%	20.47%	20.78%
40	19.32%	16.22%	19.82%	18.93%	19.46%	19.46%	16.94%	18.23%	17.24%	19.51%	18.95%	16.38%	20.59%	20.90%
41	19.45%	16.35%	19.95%	19.06%	19.59%	19.59%	17.07%	18.36%	17.37%	19.64%	19.08%	16.51%	20.72%	21.03%
42	19.58%	16.48%	20.08%	19.19%	19.72%	19.72%	17.20%	18.49%	17.50%	19.77%	19.21%	16.64%	20.85%	21.16%
43	19.72%	16.62%	20.22%	19.33%	19.86%	19.86%	17.34%	18.63%	17.64%	19.91%	19.35%	16.78%	20.99%	21.30%
44	19.86%	16.76%	20.36%	19.47%	20.00%	20.00%	17.48%	18.77%	17.78%	20.05%	19.49%	16.92%	21.13%	21.44%
45	20.00%	16.90%	20.50%	19.61%	20.14%	20.14%	17.62%	18.91%	17.92%	20.19%	19.63%	17.06%	21.27%	21.58%
46	20.15%	17.05%	20.65%	19.76%	20.29%	20.29%	17.77%	19.06%	18.07%	20.34%	19.78%	17.21%	21.42%	21.73%
47	20.31%	17.21%	20.81%	19.92%	20.45%	20.45%	17.93%	19.22%	18.23%	20.50%	19.94%	17.37%	21.58%	21.89%
48	20.47%	17.37%	20.97%	20.08%	20.61%	20.61%	18.09%	19.38%	18.39%	20.66%	20.10%	17.53%	21.74%	22.05%
49	20.63%	17.53%	21.13%	20.24%	20.77%	20.77%	18.25%	19.54%	18.55%	20.82%	20.26%	17.69%	21.90%	22.21%
50	20.80%	17.70%	21.30%	20.41%	20.94%	20.94%	18.42%	19.71%	18.72%	20.99%	20.43%	17.86%	22.07%	22.38%
51	20.97%	17.87%	21.47%	20.58%	21.11%	21.11%	18.59%	19.88%	18.89%	21.16%	20.60%	18.03%	22.24%	22.55%
52	21.14%	18.04%	21.64%	20.75%	21.28%	21.28%	18.76%	20.05%	19.06%	21.33%	20.77%	18.20%	22.41%	22.72%
53	21.32%	18.22%	21.82%	20.93%	21.46%	21.46%	18.94%	20.23%	19.24%	21.51%	20.95%	18.38%	22.59%	22.90%
54	21.50%	18.40%	22.00%	21.11%	21.64%	21.64%	19.12%	20.41%	19.42%	21.69%	21.13%	18.56%	22.77%	23.08%
55	21.69%	18.59%	22.19%	21.30%	21.83%	21.83%	19.31%	20.60%	19.61%	21.88%	21.32%	18.75%	22.96%	23.27%
56	21.88%	18.78%	22.38%	21.49%	22.02%	22.02%	19.50%	20.79%	19.80%	22.07%	21.51%	18.94%	23.15%	23.46%
57	22.07%	18.97%	22.57%	21.68%	22.21%	22.21%	19.69%	20.98%	19.99%	22.26%	21.70%	19.13%	23.34%	23.65%
58	22.27%	19.17%	22.77%	21.88%	22.41%	22.41%	19.89%	21.18%	20.19%	22.46%	21.90%	19.33%	23.54%	23.85%
59+	22.47%	19.37%	22.97%	22.08%	22.61%	22.61%	20.09%	21.38%	20.39%	22.66%	22.10%	19.53%	23.74%	24.05%

* Rates do not include Auto Allowance for certain individuals. These are the rates in effect at the time of the valuation and which were increased through the collective bargaining process.

January 1, 2019 Actuarial Valuation Member Contribution Rates*

BU Entry Age	PROBATION - TIER 1		
	8	9	31,32 Non-
	<u>Management</u>	<u>Management</u>	<u>Management</u>
18	22.07%	22.07%	20.83%
19	22.15%	22.15%	20.91%
20	22.23%	22.23%	20.99%
21	22.30%	22.30%	21.06%
22	22.32%	22.32%	21.08%
23	22.34%	22.34%	21.10%
24	22.37%	22.37%	21.13%
25	22.42%	22.42%	21.18%
26	22.47%	22.47%	21.23%
27	22.53%	22.53%	21.29%
28	22.59%	22.59%	21.35%
29	22.67%	22.67%	21.43%
30	22.75%	22.75%	21.51%
31	22.84%	22.84%	21.60%
32	22.94%	22.94%	21.70%
33	23.04%	23.04%	21.80%
34	23.15%	23.15%	21.91%
35	23.26%	23.26%	22.02%
36	23.37%	23.37%	22.13%
37	23.49%	23.49%	22.25%
38	23.61%	23.61%	22.37%
39	23.74%	23.74%	22.50%
40	23.88%	23.88%	22.64%
41	24.02%	24.02%	22.78%
42	24.16%	24.16%	22.92%
43	24.32%	24.32%	23.08%
44	24.47%	24.47%	23.23%
45	24.63%	24.63%	23.39%
46	24.80%	24.80%	23.56%
47	24.97%	24.97%	23.73%
48	25.15%	25.15%	23.91%
49	25.33%	25.33%	24.09%
50	25.51%	25.51%	24.27%
51	25.70%	25.70%	24.46%
52	25.89%	25.89%	24.65%
53	26.09%	26.09%	24.85%
54	26.29%	26.29%	25.05%
55	26.50%	26.50%	25.26%
56	26.71%	26.71%	25.47%
57	26.92%	26.92%	25.68%
58	27.14%	27.14%	25.90%
59+	27.36%	27.36%	26.12%

* Rates do not include Auto Allowance for certain individuals. These are the rates in effect at the time of the valuation and which were increased through the collective bargaining process.

January 1, 2019 Actuarial Valuation

Member Contribution Rates*

BU Entry Age	SAFETY - TIER 1							
	6 Non- Management	3,14 Non- Management	27,28 Non- Management	7 Management	10 (Sheriff-Coroner) Management	15 (non-sworn) Management#	15 (sworn) Management@	16 (sworn) Management
18	19.12%	19.78%	24.35%	21.96%	26.61%	24.04%	28.79%	28.79%
19	19.23%	19.89%	24.46%	22.07%	26.72%	24.15%	28.90%	28.90%
20	19.34%	20.00%	24.57%	22.18%	26.83%	24.26%	29.01%	29.01%
21	19.45%	20.11%	24.68%	22.29%	26.94%	24.37%	29.12%	29.12%
22	19.56%	20.22%	24.79%	22.40%	27.05%	24.48%	29.23%	29.23%
23	19.68%	20.34%	24.91%	22.52%	27.17%	24.60%	29.35%	29.35%
24	19.80%	20.46%	25.03%	22.64%	27.29%	24.72%	29.47%	29.47%
25	19.92%	20.58%	25.15%	22.76%	27.41%	24.84%	29.59%	29.59%
26	20.04%	20.70%	25.27%	22.88%	27.53%	24.96%	29.71%	29.71%
27	20.16%	20.82%	25.39%	23.00%	27.65%	25.08%	29.83%	29.83%
28	20.28%	20.94%	25.51%	23.12%	27.77%	25.20%	29.95%	29.95%
29	20.40%	21.06%	25.63%	23.24%	27.89%	25.32%	30.07%	30.07%
30	20.52%	21.18%	25.75%	23.36%	28.01%	25.44%	30.19%	30.19%
31	20.64%	21.30%	25.87%	23.48%	28.13%	25.56%	30.31%	30.31%
32	20.76%	21.42%	25.99%	23.60%	28.25%	25.68%	30.43%	30.43%
33	20.88%	21.54%	26.11%	23.72%	28.37%	25.80%	30.55%	30.55%
34	21.00%	21.66%	26.23%	23.84%	28.49%	25.92%	30.67%	30.67%
35	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
36	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
37	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
38	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
39	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
40	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
41	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
42	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
43	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
44	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
45	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
46	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
47	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
48	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
49	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
50	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
51	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
52	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
53	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
54	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
55	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
56	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
57	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
58	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%
59+	21.12%	21.78%	26.35%	23.96%	28.61%	26.04%	30.79%	30.79%

* Rates do not include Auto Allowance for certain individuals. These are the rates in effect at the time of the valuation and which were increased through the collective bargaining process.

#Includes Non Sworn members of Bargaining Unit 15.

@ Includes Sworn members of Bargaining Unit 15.



January 1, 2019 Actuarial Valuation

Member Contribution Rates

Tier 2							
BU	12	7 LAFCO	all others	3, 14	6	7, 15 (non-sworn)	all other
<u>Entry Age</u>	<u>Miscellaneous</u>	<u>Miscellaneous</u>	<u>Miscellaneous</u>	<u>Safety</u>	<u>Safety</u>	<u>Safety</u>	<u>Safety</u>
18	8.41%	9.31%	9.30%	14.01%	13.01%	14.19%	14.88%
19	8.53%	9.43%	9.42%	14.36%	13.36%	14.54%	15.28%
20	8.65%	9.55%	9.54%	14.71%	13.71%	14.89%	15.68%
21	8.80%	9.70%	9.69%	15.06%	14.06%	15.24%	16.08%
22	8.91%	9.81%	9.80%	15.41%	14.41%	15.59%	16.48%
23	9.07%	9.97%	9.96%	15.76%	14.76%	15.94%	16.88%
24	9.19%	10.09%	10.08%	16.11%	15.11%	16.29%	17.29%
25	9.33%	10.23%	10.22%	16.46%	15.46%	16.64%	17.69%
26	9.53%	10.43%	10.42%	16.81%	15.81%	16.99%	18.09%
27	9.63%	10.53%	10.52%	17.16%	16.16%	17.34%	18.49%
28	9.82%	10.72%	10.71%	17.51%	16.51%	17.69%	18.89%
29	9.97%	10.87%	10.86%	17.86%	16.86%	18.04%	19.29%
30	10.27%	11.17%	11.16%	18.21%	17.21%	18.39%	19.69%
31	10.43%	11.33%	11.32%	18.56%	17.56%	18.74%	20.09%
32	10.72%	11.62%	11.61%	18.91%	17.91%	19.09%	20.50%
33	10.87%	11.77%	11.76%	19.26%	18.26%	19.44%	20.90%
34	11.05%	11.95%	11.94%	19.61%	18.61%	19.79%	21.30%
35	11.37%	12.27%	12.26%	19.96%	18.96%	20.14%	21.70%
36	11.52%	12.42%	12.41%	19.96%	18.96%	20.14%	21.70%
37	11.73%	12.63%	12.62%	19.96%	18.96%	20.14%	21.70%
38	11.96%	12.86%	12.85%	19.96%	18.96%	20.14%	21.70%
39	12.17%	13.07%	13.06%	19.96%	18.96%	20.14%	21.70%
40	12.37%	13.27%	13.26%	19.96%	18.96%	20.14%	21.70%
41	12.52%	13.42%	13.41%	19.96%	18.96%	20.14%	21.70%
42	12.55%	13.45%	13.44%	19.96%	18.96%	20.14%	21.70%
43	12.78%	13.68%	13.67%	19.96%	18.96%	20.14%	21.70%
44	13.01%	13.91%	13.90%	19.96%	18.96%	20.14%	21.70%
45	13.10%	14.00%	13.99%	19.96%	18.96%	20.14%	21.70%
46	13.38%	14.28%	14.27%	19.96%	18.96%	20.14%	21.70%
47	13.62%	14.52%	14.51%	19.96%	18.96%	20.14%	21.70%
48	13.72%	14.62%	14.61%	19.96%	18.96%	20.14%	21.70%
49	14.00%	14.90%	14.89%	19.96%	18.96%	20.14%	21.70%
50	14.04%	14.94%	14.93%	19.96%	18.96%	20.14%	21.70%
51	14.25%	15.15%	15.14%	19.96%	18.96%	20.14%	21.70%
52	14.31%	15.21%	15.20%	19.96%	18.96%	20.14%	21.70%
53	14.51%	15.41%	15.40%	19.96%	18.96%	20.14%	21.70%
54	14.70%	15.60%	15.59%	19.96%	18.96%	20.14%	21.70%
55	15.00%	15.90%	15.89%	19.96%	18.96%	20.14%	21.70%
56	15.06%	15.96%	15.95%	19.96%	18.96%	20.14%	21.70%
57	15.08%	15.98%	15.97%	19.96%	18.96%	20.14%	21.70%
58	15.10%	16.00%	15.99%	19.96%	18.96%	20.14%	21.70%
59	15.12%	16.02%	16.01%	19.96%	18.96%	20.14%	21.70%
60	15.14%	16.04%	16.03%	19.96%	18.96%	20.14%	21.70%
61	15.16%	16.06%	16.05%	19.96%	18.96%	20.14%	21.70%
62+	15.18%	16.08%	16.07%	19.96%	18.96%	20.14%	21.70%

January 1, 2019 Actuarial Valuation

Member Contribution Rates

BU Entry Age	Tier 3										
	all other Miscellaneous	17C,18,19,20,24,26,27 Miscellaneous	12 Miscellaneous	25 Miscellaneous	98, 99 Miscellaneous	7 LAFCO Miscellaneous	3, 14 Safety	6 Safety	all other Safety	8, 9 Probation	31, 32 Probation
18	7.68%	8.85%	6.79%	7.86%	8.76%	7.69%	12.81%	11.81%	12.99%	9.64%	9.59%
19	7.93%	9.10%	7.04%	8.11%	9.01%	7.94%	13.31%	12.31%	13.49%	9.89%	9.84%
20	7.93%	9.10%	7.04%	8.11%	9.01%	7.94%	13.56%	12.56%	13.74%	10.14%	10.09%
21	8.18%	9.35%	7.29%	8.36%	9.26%	8.19%	13.81%	12.81%	13.99%	10.14%	10.09%
22	8.18%	9.35%	7.29%	8.36%	9.26%	8.19%	14.06%	13.06%	14.24%	10.39%	10.34%
23	8.43%	9.60%	7.54%	8.61%	9.51%	8.44%	14.56%	13.56%	14.74%	10.64%	10.59%
24	8.43%	9.60%	7.54%	8.61%	9.51%	8.44%	14.81%	13.81%	14.99%	10.89%	10.84%
25	8.68%	9.85%	7.79%	8.86%	9.76%	8.69%	15.06%	14.06%	15.24%	11.14%	11.09%
26	8.93%	10.10%	8.04%	9.11%	10.01%	8.94%	15.56%	14.56%	15.74%	11.39%	11.34%
27	8.93%	10.10%	8.04%	9.11%	10.01%	8.94%	15.81%	14.81%	15.99%	11.64%	11.59%
28	9.18%	10.35%	8.29%	9.36%	10.26%	9.19%	16.06%	15.06%	16.24%	12.14%	12.09%
29	9.43%	10.60%	8.54%	9.61%	10.51%	9.44%	16.56%	15.56%	16.74%	12.39%	12.34%
30	9.43%	10.60%	8.54%	9.61%	10.51%	9.44%	16.81%	15.81%	16.99%	12.64%	12.59%
31	9.68%	10.85%	8.79%	9.86%	10.76%	9.69%	17.06%	16.06%	17.24%	13.14%	13.09%
32	9.93%	11.10%	9.04%	10.11%	11.01%	9.94%	17.56%	16.56%	17.74%	13.39%	13.34%
33	10.18%	11.35%	9.29%	10.36%	11.26%	10.19%	17.81%	16.81%	17.99%	13.64%	13.59%
34	10.43%	11.60%	9.54%	10.61%	11.51%	10.44%	18.06%	17.06%	18.24%	14.14%	14.09%
35	10.43%	11.60%	9.54%	10.61%	11.51%	10.44%	18.56%	17.56%	18.74%	14.39%	14.34%
36	10.68%	11.85%	9.79%	10.86%	11.76%	10.69%	18.56%	17.56%	18.74%	14.89%	14.84%
37	10.93%	12.10%	10.04%	11.11%	12.01%	10.94%	18.56%	17.56%	18.74%	15.14%	15.09%
38	11.18%	12.35%	10.29%	11.36%	12.26%	11.19%	18.56%	17.56%	18.74%	15.39%	15.34%
39	11.43%	12.60%	10.54%	11.61%	12.51%	11.44%	18.56%	17.56%	18.74%	15.64%	15.59%
40	11.68%	12.85%	10.79%	11.86%	12.76%	11.69%	18.56%	17.56%	18.74%	15.89%	15.84%
41	11.93%	13.10%	11.04%	12.11%	13.01%	11.94%	18.56%	17.56%	18.74%	16.14%	16.09%
42	11.93%	13.10%	11.04%	12.11%	13.01%	11.94%	18.56%	17.56%	18.74%	16.39%	16.34%
43	12.18%	13.35%	11.29%	12.36%	13.26%	12.19%	18.56%	17.56%	18.74%	16.64%	16.59%
44	12.43%	13.60%	11.54%	12.61%	13.51%	12.44%	18.56%	17.56%	18.74%	16.89%	16.84%
45	12.68%	13.85%	11.79%	12.86%	13.76%	12.69%	18.56%	17.56%	18.74%	17.14%	17.09%
46	12.93%	14.10%	12.04%	13.11%	14.01%	12.94%	18.56%	17.56%	18.74%	17.39%	17.34%
47	13.18%	14.35%	12.29%	13.36%	14.26%	13.19%	18.56%	17.56%	18.74%	17.64%	17.59%
48	13.43%	14.60%	12.54%	13.61%	14.51%	13.44%	18.56%	17.56%	18.74%	17.89%	17.84%
49	13.68%	14.85%	12.79%	13.86%	14.76%	13.69%	18.56%	17.56%	18.74%	17.89%	17.84%
50	13.93%	15.10%	13.04%	14.11%	15.01%	13.94%	18.56%	17.56%	18.74%	18.14%	18.09%
51	14.18%	15.35%	13.29%	14.36%	15.26%	14.19%	18.56%	17.56%	18.74%	18.39%	18.34%
52	14.43%	15.60%	13.54%	14.61%	15.51%	14.44%	18.56%	17.56%	18.74%	18.39%	18.34%
53	14.68%	15.85%	13.79%	14.86%	15.76%	14.69%	18.56%	17.56%	18.74%	18.64%	18.59%
54	14.93%	16.10%	14.04%	15.11%	16.01%	14.94%	18.56%	17.56%	18.74%	18.64%	18.59%
55	15.18%	16.35%	14.29%	15.36%	16.26%	15.19%	18.56%	17.56%	18.74%	18.89%	18.84%
56	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.14%	19.09%
57	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.14%	19.09%
58	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.39%	19.34%
59	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.64%	19.59%
60	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.64%	19.59%
61	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.64%	19.59%
62+	15.43%	16.60%	14.54%	15.61%	16.51%	15.44%	18.56%	17.56%	18.74%	19.64%	19.59%

Summary of Benefits by Collective Bargaining Unit As of January 1, 2019

Tier 1

Collective Bargaining Unit	Valuation Group	Benefit % at age	FAC Period	Benefit Maximum
14	Miscellaneous Other	2% @ 55	One year	80%
21	Miscellaneous Other	2% @ 55	One year	80%
22	Miscellaneous Other	2% @ 55	One year	80%
4	Miscellaneous Management Non-Court	2% @ 55	One year	100%
7	Miscellaneous Management Non-Court	2% @ 55	One year	100%
8	Miscellaneous Management Non-Court	2% @ 55	One year	100%
9	Miscellaneous Management Non-Court	2% @ 55	One year	100%
10	Miscellaneous Management Non-Court	2% @ 55	One year	100%
11	Miscellaneous Management Non-Court	2% @ 55	One year	100%
12	Miscellaneous Management Non-Court	2% @ 55	One year	100%
17	Miscellaneous Management Non-Court	2% @ 55	One year	100%
99	Miscellaneous Management Non-Court	2% @ 55	One year	100%
17C	Miscellaneous Other Court	2% @ 55	One year	80%
18	Miscellaneous Other Court	2% @ 55	One year	80%
20	Miscellaneous Other Court	2% @ 55	One year	80%
24	Miscellaneous Management Court	2% @ 55	One year	100%
25	Miscellaneous Management Court	2% @ 55	One year	100%
26	Miscellaneous Management Court	2% @ 55	One year	100%
27	Miscellaneous Management Court	2% @ 55	One year	100%
1	SLOCEA Non Court	2% @ 55	One year	80%
2	SLOCEA Non Court	2% @ 55	One year	80%
5	SLOCEA Non Court	2% @ 55	One year	80%
13	SLOCEA Non Court	2% @ 55	One year	80%
98	SLOCEA Non Court	2% @ 55	One year	80%
19	SLOCEA Court	2% @ 55	One year	80%
8	Probation Management	3% @ 55	One year	90%
9	Probation Management	3% @ 55	One year	90%
31	Probation Non Management	3% @ 55	One year	90%
32	Probation Non Management	3% @ 55	One year	90%
3	Non Sworn Safety Non Management	3% @ 55	One year	90%
27	Sworn Safety Non Management	3% @ 50	One year	90%
6	Non Sworn Safety Non Management	3% @ 55	One year	90%
7	Non Sworn Safety Management	3% @ 55	One year	90%
10	Sworn Safety Management	3% @ 50	One year	90%
14	Non Sworn Safety Non Management	3% @ 55	One year	90%
28	Sworn Safety Non Management	3% @ 50	One year	90%
15	Non Sworn Safety Management	3% @ 55	One year	90%
15	Sworn Safety Management	3% @ 50	One year	90%
16	Sworn Safety Management	3% @ 50	One year	90%

Summary of Benefits by Collective Bargaining Unit As of January 1, 2019

Collective Bargaining Unit	Valuation Group	Benefit % at age	FAC Period	Benefit Maximum
Tier 2	Miscellaneous Non-Court	2% @ 60	Three year	90%
Tier 2	Non Sworn Safety	2.7% @ 55	Three year	90%
Tier 2	Sworn Safety	3.0% @ 55	Three year	90%
Tier 2	DAIA	3.0% @ 55	Three year	90%
Tier 3	Miscellaneous	2% @ 62	Three year	N/A*
Tier 3	Safety	2.7% @ 57	Three year	N/A*
Tier 3	Probation	2.7% @ 57	Three year	N/A*

* No benefit maximum but pensionable compensation is capped at \$124,180 for 2019 and annually adjusted based on inflation.

SECTION G

DEFINITIONS OF TECHNICAL TERMS

Definitions of Technical Terms

Actuarial Accrued Liability – The difference between the actuarial present value of system benefits and the actuarial value of future normal costs. Also referred to as "accrued liability" or "actuarial liability".

Actuarial Assumptions – Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and Compensation increases. Actuarial assumptions (rates of mortality, disability, turnover and retirement) are generally based on experience, often modified for projected changes in conditions. Economic assumptions (Compensation increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Accrued Service – Service credited under the system that was rendered before the date of the actuarial valuation.

Actuarial Equivalent – A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

Actuarial Cost Method – A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the SLOCPT benefits between future normal cost and actuarial accrued liability. Sometimes referred to as the "actuarial funding method".

Actuarial Gain (Loss) – The difference between actual experience and actuarial assumption anticipated experience during the period between two actuarial valuation dates.

Actuarial Present Value – The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

Amortization – Paying off an interest-discounted amount with periodic payments of interest and principal - as opposed to paying off with lump sum payment.

Normal Cost – The actuarial present value of the SLOCPT benefits allocated to the current year by the actuarial cost method.

Unfunded Actuarial Accrued Liability – The difference between actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded actuarial liability" or "unfunded accrued liability".

Most retirement systems have an unfunded actuarial accrued liability. A UAL arises each time new benefits are added and each time an actuarial loss occurs.

This page left blank intentionally.

Date: June 13, 2019

To: Carl Nelson, Executive Secretary, San Luis Obispo County Pension Trust

Re: **Supplemental Exhibits for the January 1, 2019 Actuarial Valuation**

Attached please find supplemental data exhibits, which relate to the January 1, 2019 actuarial valuation. These exhibits previously have been included in the actuarial valuation report. In 2017 the report was redesigned, with selected exhibits moving to this supplemental report.

Summary of Active Members by Valuation Group in the January 1, 2019 Actuarial Valuation

Miscellaneous Members
Probation and Safety Members

Average Pay by Years of Service

Miscellaneous Members
Probation Members
Safety Members

Elements of Normal Cost

Miscellaneous Tier 1 Members
Miscellaneous Tier 2 Members
Miscellaneous Tier 3 Members
Probation & Safety Tier 1 Members
Probation & Safety Tier 2 Members
Probation & Safety Tier 3 Members

Respectfully submitted,



Paul Wood, ASA, FCA, MAAA

CC: Leslie L. Thompson, FSA, FCA, EA, MAAA

Summary of Active Members by Valuation Group In the January 1, 2019 Actuarial Valuation

	<u>No.</u>	<u>Total Payroll</u>	<u>Averages</u>		
			<u>Annual Compensation</u>	<u>Age</u>	<u>Service</u>
Miscellaneous Members					
1 Other - Units # 14, 21, 22					
1/1/2019	32	\$2,487,659	\$77,739	40.5	5.7
1/1/2018	31	\$2,374,445	\$76,595	39.0	5.7
2 Management Non-Court - Units # 4, 7, 8, 9, 10, 11, 12, 17, 99					
1/1/2019	471	\$46,907,207	\$99,591	48.4	11.1
1/1/2018	462	\$46,064,522	\$99,707	48.4	11.6
3 Management Court - Unit # 18					
1/1/2019	10	\$929,198	\$92,920	46.0	5.6
1/1/2018	10	\$893,069	\$89,307	49.1	8.1
4 Management Court - Units # 24, 25, 26, 27					
1/1/2019	25	\$2,829,735	\$113,189	50.6	14.0
1/1/2018	24	\$2,652,249	\$110,510	52.6	14.4
5 SLOCEA Non-Court - Units # 1, 2, 5, 13, 31, 98					
1/1/2019	1,703	\$106,570,225	\$62,578	44.7	8.2
1/1/2018	1,733	\$107,196,331	\$61,856	45.2	8.3
6 SLOCEA Court - Unit # 19					
1/1/2019	10	\$765,232	\$76,523	52.4	19.3
1/1/2018	9	\$652,662	\$72,518	51.2	19.7
7 SLOCEA Court - Unit # 20					
1/1/2019	73	\$4,145,419	\$56,787	46.0	10.9
1/1/2018	71	\$3,958,656	\$55,756	46.8	11.0

Summary of Active Members by Valuation Group In the January 1, 2019 Actuarial Valuation

		Averages				
		Total	Annual			
	<u>No.</u>	<u>Payroll</u>	<u>Compensation</u>	<u>Age</u>	<u>Service</u>	
Probation Members						
8 Probation Management - Units # 8, 9						
	1/1/2019	5	\$690,310	\$138,062	51.8	22.1
	1/1/2018	6	\$800,238	\$133,373	51.8	22.5
9 Probation Non-Management - Units # 31, 32						
	1/1/2019	111	\$8,158,280	\$73,498	38.2	8.6
	1/1/2018	109	\$7,780,448	\$71,380	38.8	8.9
Safety Members						
10 Safety Management - Units # 7, 10, 15, 16						
	1/1/2019	12	\$1,792,377	\$149,365	50.8	18.3
	1/1/2018	10	\$1,501,906	\$150,191	52.2	17.7
11 Safety Non-Management - Units # 3, 6, 14, 27, 28						
	1/1/2019	273	\$25,261,829	\$92,534	39.5	9.7
	1/1/2018	257	\$22,973,558	\$89,391	40.3	10.3

Average Pay by Years of Service

Miscellaneous Members

Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	46	92	138	\$7,437,102	\$53,892
1	83	165	248	14,860,370	59,921
2	62	153	215	13,569,271	63,113
3	65	131	196	12,792,080	65,266
4	57	119	176	11,987,934	68,113
5	37	102	139	9,458,341	68,046
6	15	69	84	6,173,439	73,493
7	33	42	75	5,322,803	70,971
8	17	57	74	5,615,355	75,883
9	12	25	37	2,960,897	80,024
10	22	46	68	5,419,159	79,694
11	28	64	92	7,139,896	77,608
12	23	66	89	6,440,767	72,368
13	36	59	95	7,093,050	74,664
14	16	32	48	3,433,914	71,540
15 & Up	198	352	550	44,930,299	81,691
Totals	750	1,574	2,324	\$164,634,676	\$70,841

Average Pay by Years of Service

Probation Members

Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	4	1	5	\$281,923	\$56,385
1	5	9	14	780,021	55,716
2	9	5	14	835,827	59,702
3	2	4	6	404,477	67,413
4	3	2	5	323,939	64,788
5	2	4	6	449,779	74,963
6	2	4	6	470,059	78,343
7	2	2	4	335,920	83,980
8	2	0	2	160,451	80,226
9	1	2	3	229,112	76,371
10	2	3	5	379,309	75,862
11	3	3	6	497,328	82,888
12	2	0	2	155,771	77,886
13	3	0	3	244,026	81,342
14	3	1	4	332,821	83,205
15 & Up	16	15	31	2,967,827	95,736
Totals	61	55	116	\$8,848,590	\$76,281

Average Pay by Years of Service

Safety Members

Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	7	1	8	\$667,514	\$83,439
1	32	4	36	2,865,117	79,587
2	12	1	13	1,150,323	88,486
3	13	6	19	1,493,482	78,604
4	18	2	20	1,878,718	93,936
5	17	3	20	1,878,968	93,948
6	10	3	13	1,295,362	99,643
7	11	5	16	1,532,440	95,778
8	2	0	2	308,942	154,471
9	2	1	3	280,925	93,642
10	6	0	6	567,965	94,661
11	20	1	21	2,086,053	99,336
12	11	2	13	1,209,146	93,011
13	5	3	8	814,882	101,860
14	8	0	8	758,389	94,799
15 & Up	70	9	79	8,265,980	104,633
Totals	244	41	285	\$27,054,206	\$94,927

Elements of Normal Cost

Miscellaneous Tier 1 Members

	Other	Management			SLOCEA				TOTAL MISC.	
	BU #21-22	Non Court	Court BU #18	Court BU #24-27	Total Mgmt	Non Court	Court BU #19	Court BU #20		Total SLOCEA
Total Normal Cost	23.87%	24.15%	24.91%	24.98%	24.22%	21.94%	19.86%	20.94%	21.85%	22.76%
				Less						
Employee Contribution Rate	19.07%	19.39%	18.96%	17.65%	19.25%	19.02%	15.68%	16.61%	18.83%	18.99%
				Equals						
County Normal Cost	4.80%	4.76%	5.95%	7.33%	4.97%	2.92%	4.18%	4.33%	3.02%	3.77%

Elements of Normal Cost

Miscellaneous Tier 2 Members

	Other	Management			SLOCEA				TOTAL MISC.	
	BU #21-22	Non Court	Court BU #18	Court BU #24-27	Total Mgmt	Non Court	Court BU #19	Court BU #20		Total SLOCEA
Total Normal Cost	16.47%	18.90%	0.00%	0.00%	18.90%	18.28%	0.00%	0.00%	18.28%	18.43%
				Less						
Employee Contribution Rate	11.79%	12.10%	0.00%	0.00%	12.10%	12.37%	0.00%	0.00%	12.37%	12.26%
				Equals						
County Normal Cost	4.68%	6.80%	0.00%	0.00%	6.80%	5.91%	0.00%	0.00%	5.91%	6.17%

Elements of Normal Cost

Miscellaneous Tier 3 Members

	Other	Management			SLOCEA				TOTAL MISC.	
	BU #21-22	Non Court	Court BU #18	Court BU #24-27	Total Mgmt	Non Court	Court BU #19	Court BU #20		Total SLOCEA
Total Normal Cost	13.46%	17.07%	17.93%	16.20%	17.08%	15.52%	0.00%	14.26%	15.48%	15.79%
				Less						
Employee Contribution Rate	9.98%	11.62%	13.37%	12.26%	11.69%	10.98%	0.00%	11.55%	10.99%	11.12%
				Equals						
County Normal Cost	3.48%	5.45%	4.56%	3.94%	5.39%	4.54%	0.00%	2.71%	4.49%	4.67%

Elements of Normal Cost

Probation & Safety Tier 1 Members

	Probation			Safety					GRAND TOTAL
	Mgmt	Non	Total	Management		Non-Mgmt		Total	
		Mgmt	Probation	Sworn	Non-Sworn	Sworn	Non-Sworn	Safety	
Total Normal Cost	25.97%	24.10%	24.30%	32.37%	25.22%	27.74%	26.33%	27.40%	23.51%
				Less					
Employee Contribution Rate	23.15%	21.47%	21.65%	29.41%	24.10%	25.23%	20.74%	23.56%	19.79%
				Equals					
County Normal Cost	2.82%	2.63%	2.65%	2.96%	1.12%	2.51%	5.59%	3.84%	3.72%

Elements of Normal Cost

Probation & Safety Tier 2 Members

	Probation			Safety					GRAND TOTAL
	Mgmt	Non	Total	Management		Non-Mgmt		Total	
		Mgmt	Probation	Sworn	Non-Sworn	Sworn	Non-Sworn	Safety	
Total Normal Cost	0.00%	0.00%	0.00%	25.43%	0.00%	26.79%	26.44%	26.64%	20.09%
				Less					
Employee Contribution Rate	0.00%	0.00%	0.00%	16.64%	0.00%	18.24%	17.27%	17.85%	13.37%
				Equals					
County Normal Cost	0.00%	0.00%	0.00%	8.79%	0.00%	8.55%	9.17%	8.79%	6.72%

Elements of Normal Cost

Probation & Safety Tier 3 Members

	Probation			Safety					GRAND TOTAL
	Mgmt	Non	Total	Management		Non-Mgmt		Total	
		Mgmt	Probation	Sworn	Non-Sworn	Sworn	Non-Sworn	Safety	
Total Normal Cost	0.00%	18.41%	18.41%	36.23%	0.00%	24.35%	23.49%	23.95%	16.76%
				Less					
Employee Contribution Rate	0.00%	12.53%	12.53%	18.74%	0.00%	16.61%	16.40%	16.52%	11.74%
				Equals					
County Normal Cost	0.00%	5.88%	5.88%	17.49%	0.00%	7.74%	7.09%	7.43%	5.02%

**2019 Annual Actuarial Valuation
Presentation by Plan Actuary**

This page left blank intentionally.

San Luis Obispo County Pension Trust

**Actuarial Valuation
As of January 1, 2019**

Actuarial Valuation

Rate Increase

- Rate increase of 2.30% recommended
 - The Actuarially Determined Contribution (ADC) is 44.52%, while the rate being charged is 42.22%
 - Charged rate includes 2.80% increase recommended as of July 1, 2019 from the prior valuation
- The rate increase comes from three primary sources
 - First, from investment earnings less than assumed (1.61% of pay)
 - Second, from the second part of the phase in of the decrease in the payroll growth assumption (0.45% of pay)
 - Third, from demographic experience including payroll not growing as much as expected

Actuarial Valuation

Development of the ADC and Recommended Rate Increase

	Jan 1, 2019	Jan 1, 2018	Change
1. Total Normal Cost	20.60%	21.15%	(0.55)%
2. Less Employee Rate	16.04%	16.41%	(0.37)%
3. County Normal Cost (1.-2.)	4.56%	4.74%	(0.18)%
4. Amortization Payment	23.92%	21.04%	2.88%
5. ADC (3.+4.)	28.48%	25.78%	2.70%
6. Total Required Contribution (2.+5.)	44.52%	42.19%	2.33%
7. Total Charged Rate (actual)	42.22%	39.68%	2.54%
8. Difference in Rate (6.-7.)	2.30%	2.51%	
9. Recommended Rate Increase	2.30%	2.51%	

Actuarial Valuation

Development of the Charged Rate

Category	Dollar Amounts	Rates as a Percent of Payroll
Employee Contributions	\$32,952,747	16.27%
Employer Appropriations	\$46,243,596	23.15%
Total	\$79,196,343	39.42%
Increase at 7/1/2019	\$5,615,049	2.80%
Grand Total Contributions	\$84,811,392	42.22%
Total Reported Payroll	\$200,537,472	

Actuarial Valuation

Charged Rate Summary

- The current charged rate is not adequate to meet the Total Actuarially Determined Contribution
- The normal cost will continue to decrease with more Tier 3 members
- The total charged rate will also continue to decrease as more Tier 3 members enter the plan with their lower employee contribution rates
- Losses are still being smoothed into the actuarial value of assets, thus an upward rate pressure still exists
- Total payroll growth less than the assumed rate will also put upward pressure on the rate

Actuarial Valuation

Assumption Changes

- Payroll growth assumption decreased 0.25%
 - This was the second part of a two step approach to decreasing the assumed rate of growth in total payroll
 - This impacts the dollar amount of the amortization payment
 - The lower the future growth in payroll, the slower the growth in the amortization payment; hence more dollar contribution needed up front to pay off the debt

Membership

Summary

2019	Tier 1	Tier 2	Tier 3	Total
Miscellaneous	1,039	259	1,026	2,324
Probation	72	0	44	116
Safety	140	52	93	285
Total	1,251	311	1,163	2,725

2018	Tier 1	Tier 2	Tier 3	Total
Miscellaneous	1,174	262	904	2,340
Probation	80	0	35	115
Safety	151	52	64	267
Total	1,405	314	1,003	2,722

Membership

Average Age and Service

Average Age	1/1/2019	1/1/2018
Miscellaneous Members	45.5	45.9
Probation Members	38.8	39.5
Safety Members	40.0	40.8
All Active Members	44.7	45.1

Average Service	1/1/2019	1/1/2018
Miscellaneous Members	8.9	9.1
Probation Members	9.1	9.6
Safety Members	10.1	10.6
All Active Members	9.1	9.3

- Average pay for all **continuing** active members increased 4.16%

Membership

Reconciliation

- The year started with 2,722 actives
 - 280 new hires
 - 13 returned to work
 - 290 actives ceased active status
- Implication
 - Tier 3 members pay a lesser amount
 - Fixed cost of UAL remains the same

Assets

Returns

- Market value return was -3.72%
 - Fair market value decreased from \$1,340 million to \$1,272 million
 - The amount of investment income “expected” was \$92 million
 - The actual amount of investment income received was -\$53 million
 - The -\$146 million loss is to be phased in over 5 years
- The actuarial value return was 3.69%
 - This is less than the assumption and produces a loss in this year

Assets

Gains and Losses

- The portion of each year's investment gains and losses being recognized is:
 - 2018 \$ (29.2)
 - 2017 \$ 17.1
 - 2016 \$ (3.8)
 - 2015 \$ (21.0)
 - 2014 \$ (6.7)
 - Total recognized for this year \$(43.7) million
- Total yet to be recognized
 - *the difference between the actuarial and market value*
 - \$ 90.9 million in deferred losses
- Actuarial value of assets is 107% of market value

Results

Tiers and Class-Normal Costs-2019

Class/Tier	Tier 1	Tier 2	Tier 3	Total
Misc.	22.76%	18.43%	15.79%	19.54%
Probation	24.30%	N/A	18.41%	22.52%
Safety	27.40%	26.64%	23.95%	26.26%
Blended	23.51%	20.09%	16.76%	20.60%

Results

Liabilities-Total Plan Basis

	Jan 1, 2019	Jan 1, 2018	Change
Accrued Liability	\$2.03B	\$1.95B	\$80M
Unfunded Accrued Liability	\$667M	\$617M	\$50M
Actuarial Value of Assets (AVA)	\$1.36B	\$1.33B	\$30M
Funded Ratio (AVA Basis)	67.1%	68.3%	(1.2)%
Market Value of Assets (MVA)	\$1.27B	\$1.34B	(\$70)M
Funded Ratio (MVA Basis)	62.6%	68.9%	(6.3)%

Results

Attribution of Change in Determined Contribution

	Increase/ (Decrease)	Rate
Actuarially Determined Contribution at 1/1/2018		42.19%
Expected at 1/1/2019		42.50%
Expected at 1/1/2019 (with actual payroll)		42.74%
Experience items during 2018:		
Wage inflation assumption change	0.45%	43.20%
Decrease in normal cost	(0.55)%	42.65%
Due to investment experience	1.61%	44.26%
Due to pay increases	(0.05)%	44.21%
Due to retirement experience	0.13%	44.34%
Due to mortality experience	0.24%	44.58%
Due to COLA experience	0.13%	44.71%
Due to other factors	(0.19)%	44.52%
Actuarially Determined Contribution Rate at 1/1/2019		44.52%

Results

Components of Experience Gains/(Loss)

Gain/(Loss) due to:	In millions*
Compensation increases	\$1.37
Investment experience	(43.72)
Contribution timing experience	(5.28)
Retirement incidence	(3.53)
Termination experience	0.44
Active mortality experience	(0.03)
Disability experience	(0.26)
Retiree & beneficiary mortality experience and misc. retiree data changes	(6.25)
COLAs	(3.57)
Other data changes and misc. factors	<u>10.11</u>
Total Experience Gain/(Loss)	(<u>\$50.73</u>)

Results

Change in Funded Ratio

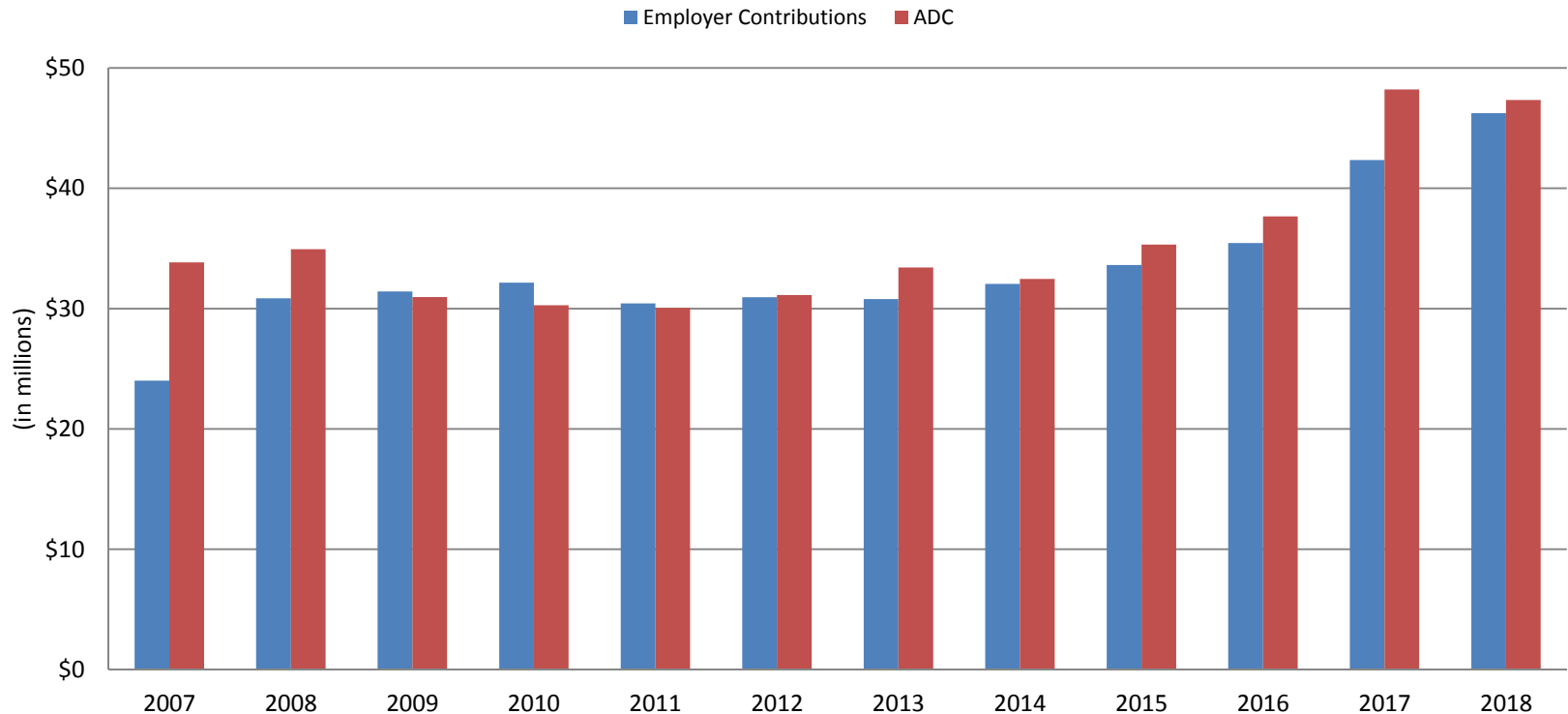
	Increase/ (Decrease)	Ratio
Funded Ratio at 1/1/2018		68.29%
Funded Ratio expected at 1/1/2019	1.22%	69.51%
Change in Funded Ratio due to:		
Investment experience	(2.15)%	67.36%
Pay experience	0.05%	67.41%
Retirement experience	(0.12)%	67.29%
Mortality experience	(0.22)%	67.07%
Higher actual COLA	(0.12)%	66.95%
Other factors	0.17%	67.12%
Actual Funded Ratio at 1/1/2019		67.12%

Historical Perspective

Historical Perspective

How Has The Trust Done In Meeting Its Long Term Obligations?

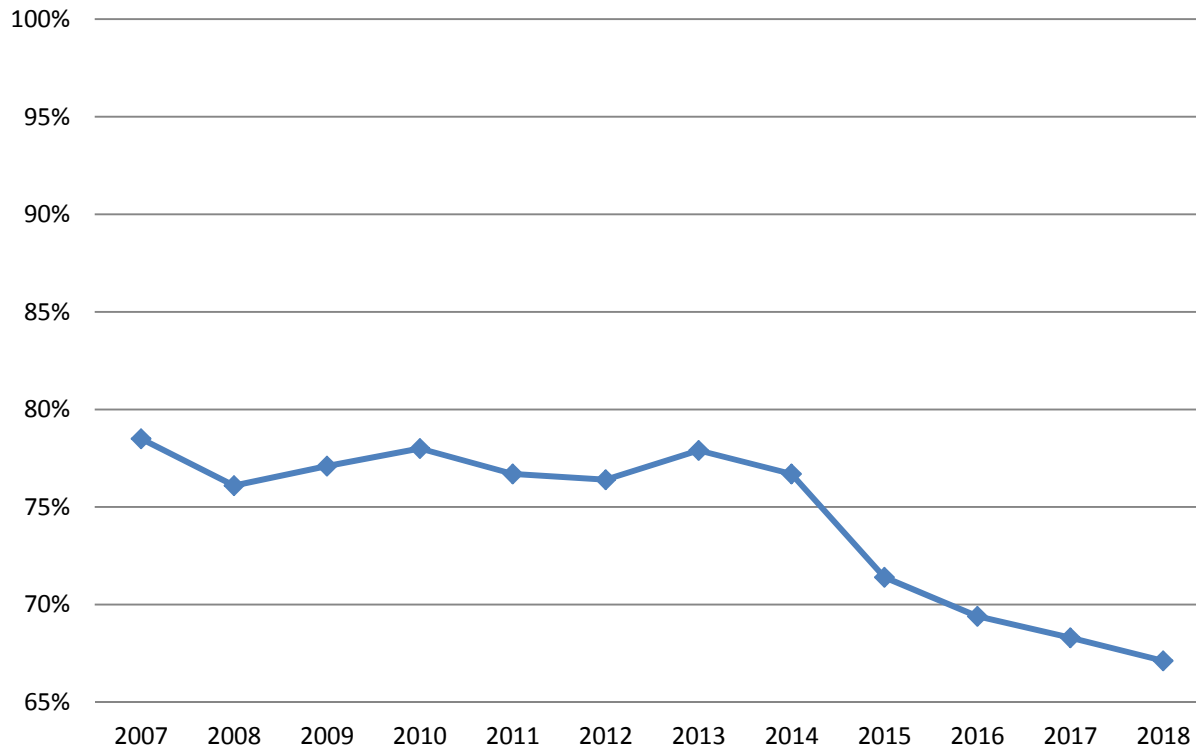
Annual Required Contribution vs Actual Contribution Made



Historical Perspective

How Well Are The Assets Of The Trust Covering The Accrued Liabilities?

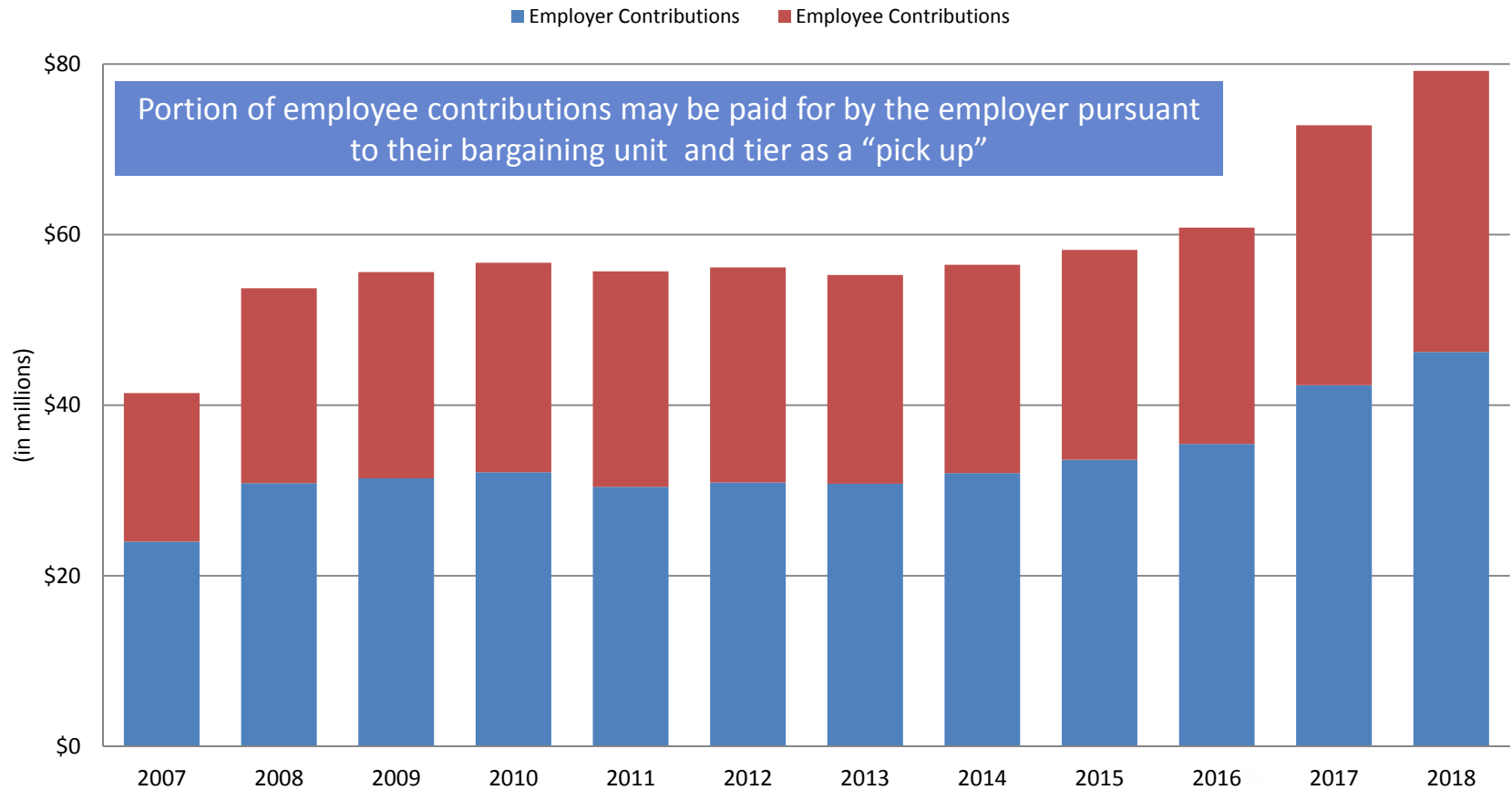
A year by year summary of the funded ratio



Historical Perspective

How Has The Cost Of The Plan Been Shared?

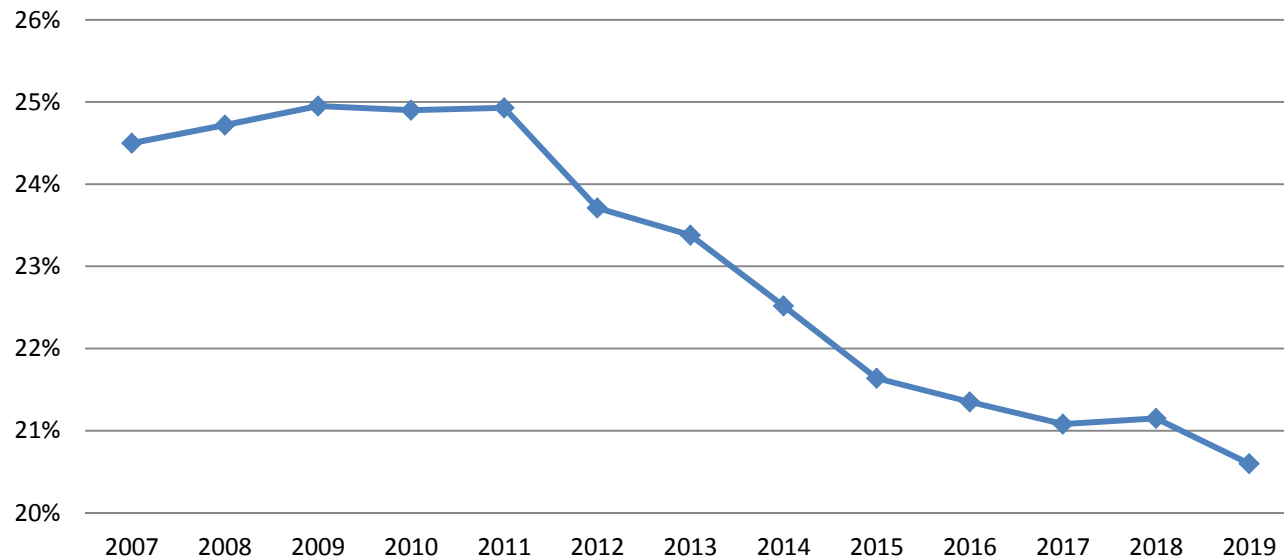
Member Contributions and Employer Contributions



Historical Perspective

Has The Plan's Normal Cost Been Stabilized?

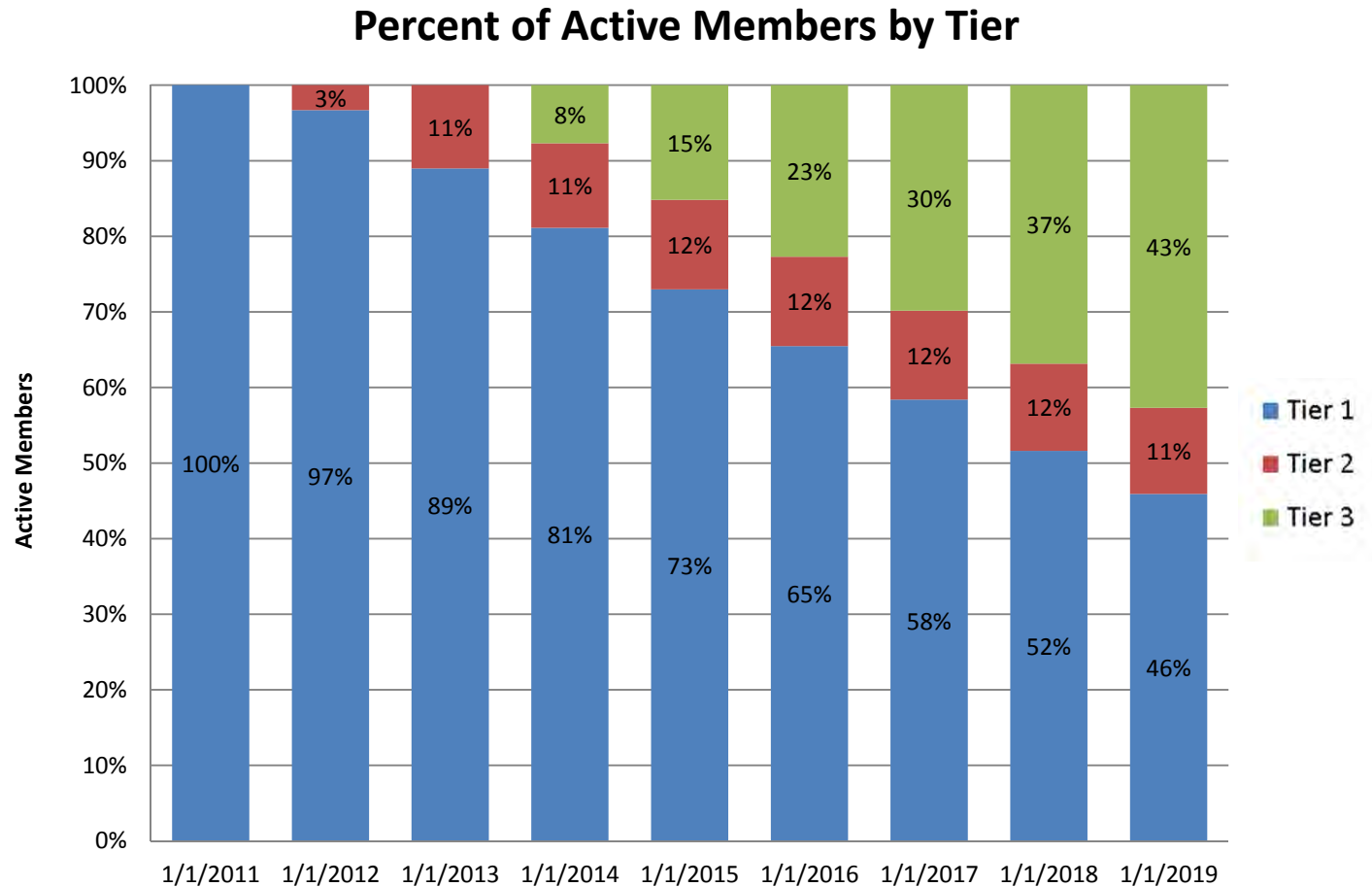
Year by year total normal cost as a percent of payroll*



*Total blended normal cost of 20.60% as of January 1, 2019 including Tier 2 and Tier 3 members.

Historical Perspective

Active Members By Tier

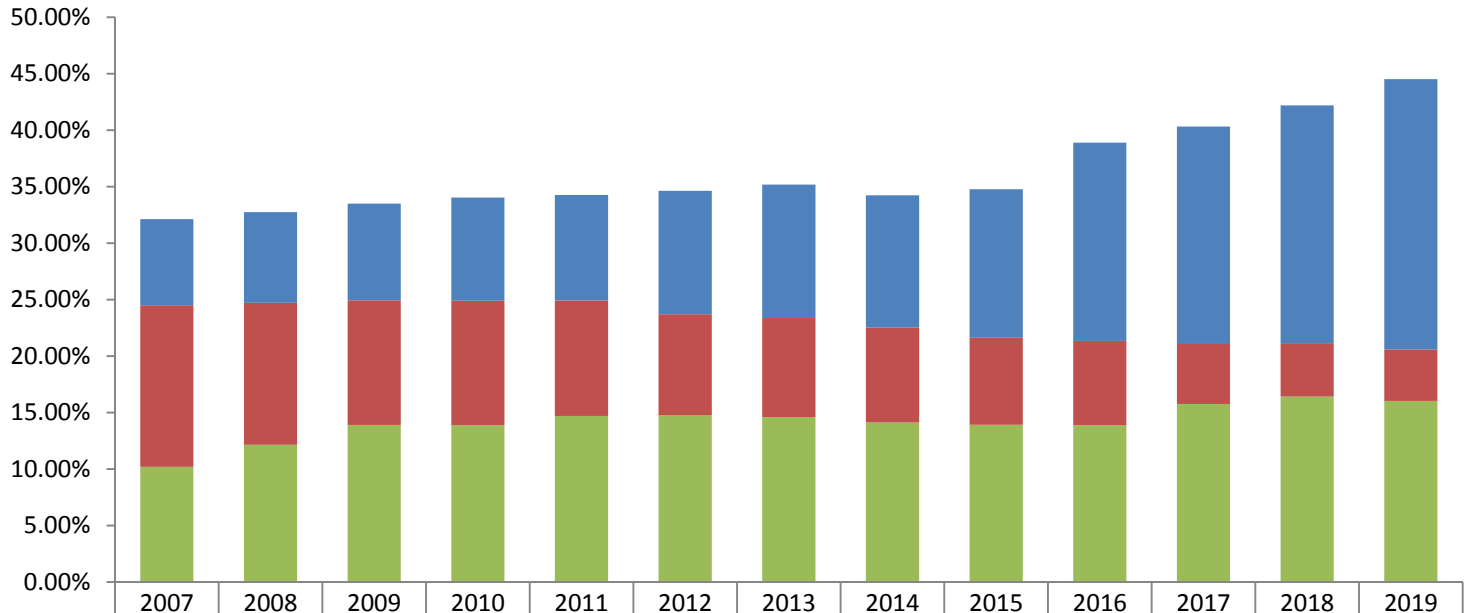


Historical Perspective

How Are County Costs Split Between Current Costs And Amortization Of Past Costs?

Normal Cost and UAAL Amortization

■ Employee Normal Cost ■ Employer Normal Cost ■ UAAL Amortization



UAAL Amortization	7.62%	8.02%	8.55%	9.13%	9.34%	10.92%	11.80%	11.71%	13.13%	17.55%	19.24%	21.04%	23.92%
Employer Normal Cost	14.30%	12.57%	11.04%	11.01%	10.22%	8.92%	8.77%	8.40%	7.71%	7.47%	5.32%	4.74%	4.56%
Employee Normal Cost	10.20%	12.15%	13.91%	13.89%	14.71%	14.79%	14.61%	14.12%	13.93%	13.88%	15.76%	16.41%	16.04%

Historical Perspective

Asset Volatility Ratio

- Measures impact of asset volatility on contribution rates
- Higher ratios mean more significant impact on rates from asset volatility

All numbers in (000)	2009	2014	2019
Market Value of Assets	\$610,287	\$1,173,336	\$1,271,620
Covered Payroll	\$160,444	\$167,695	\$200,537
Asset Volatility = Assets / Payroll	3.80	7.00	6.34
Increase in Actuarially Determined Contribution Resulting From a 10% Asset Loss	0.69%	1.04%	0.94%

Projections

Projections

- Results based on a closed 21 year amortization period for original base, with new layers amortized of a closed 20 year period
- Total contribution rate drops significantly once the UAL is fully paid off
- Results based on level percent of pay financing – means the contribution will remain level as a percent of pay and therefore, will increase each year as a dollar amount.

2019 Projection—With All Future Members In Tier 3

San Luis Obispo County Pension Trust
Projection Based on January 1, 2019 Actuarial Valuation with Tier 3 (AB 340)

7.00% Discount Rate Assumption and Payroll Growth Assumption of 2.75% - 7.00% Actual Returns

Valuation as of January 1,	Input Market Return for Past Fiscal Year	Total Determined Contribution Rate	Compensation at Valuation	Total Determined Contribution (3)x(4)	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded AAL (6)-(7)	Funded Ratio (7)/(6)	Total Normal Cost Rate	Market Value of Assets (MVA)	Funded Ratio Using MVA (11)/(6)	Percent Tier 3 Members
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2019	3.72%	44.52%	\$ 201	\$ 89	\$ 2,030	\$ 1,363	\$ 667	67.1%	20.60%	\$ 1,272	62.6%	42.7%
2020	7.00%	45.47%	206	94	2,108	1,403	704	66.6%	20.12%	1,346	63.9%	47.6%
2021	7.00%	45.76%	212	97	2,185	1,465	720	67.1%	19.72%	1,424	65.2%	51.6%
2022	7.00%	45.89%	217	100	2,262	1,534	728	67.8%	19.33%	1,504	66.5%	55.4%
2023	7.00%	46.65%	223	104	2,338	1,588	750	67.9%	18.98%	1,588	67.9%	59.5%
2024	7.00%	46.40%	228	106	2,414	1,674	739	69.4%	18.67%	1,674	69.4%	62.9%
2025	7.00%	46.21%	234	108	2,488	1,763	725	70.8%	18.39%	1,763	70.8%	66.1%
2026	7.00%	46.03%	240	110	2,561	1,852	709	72.3%	18.14%	1,852	72.3%	69.0%
2027	7.00%	45.87%	246	113	2,633	1,944	689	73.8%	17.90%	1,944	73.8%	71.8%
2028	7.00%	45.73%	252	115	2,704	2,037	666	75.4%	17.69%	2,037	75.4%	74.4%
2029	7.00%	45.61%	258	118	2,773	2,133	640	76.9%	17.49%	2,133	76.9%	76.7%
2034	7.00%	45.17%	293	132	3,094	2,651	443	85.7%	16.75%	2,651	85.7%	86.4%
2039	7.00%	42.96%	333	143	3,388	3,287	101	97.0%	16.29%	3,287	97.0%	92.9%
2044	7.00%	16.03%	379	61	3,677	3,677	-	100.0%	16.03%	3,677	100.0%	97.2%
2049	7.00%	15.92%	434	69	3,996	3,996	0	100.0%	15.92%	3,996	100.0%	99.5%

This page left blank intentionally.

**2019 Deferred Implementation Dates or
Contribution Rate Increases**

and

**Contribution Rate Increases by
Class of Member
(Miscellaneous, Probation, Safety)**

This page left blank intentionally.

Date: June 11, 2019

To: Board of Trustees

Re: **Delayed Implementation for Rate Increase
Two dates for rate increase implementation-January 1, 2020 and July 1, 2020**

The purpose of this letter is to provide the rate increases required for two different implementation dates.

The January 1, 2019 actuarial valuation recommended a rate increase of 2.30%. This rate increase would be effective January 1, 2019. The Board has requested a recalculation of the recommended rate increase for a January 1, 2020 and a July 1, 2020 implementation date.

The contribution rate increase is adjusted for interest as well as for the underlying change in payroll.

For an implementation date of January 1, 2020 the rate increase would be 2.58% of pay. For an implementation date of July 1, 2020 the rate increase would be 2.68% of pay. The following chart illustrates the increase as well as the increase on the Miscellaneous, Probation and Safety divisions.

San Luis Obispo Pension Trust-Rate Increases for Alternate Implementation Dates							
	2018 Total Charged Rates	2019 Val.		January 1, 2020		July 1, 2020	
		Total ADC	Rate Change	Total ADC	Rate Change	Total ADC	Rate Change
ALL CATEGORIES	42.22%	44.52%	2.30%	44.80%	2.58%	44.90%	2.68%
All Miscellaneous	39.65%	42.12%	2.47%	42.38%	2.73%	42.48%	2.83%
All Probation	42.98%	45.24%	2.26%	45.52%	2.54%	45.62%	2.64%
All Safety	57.63%	58.88%	1.25%	59.25%	1.62%	59.38%	1.75%

Full year 2018 Average (plus 2.80% increase effective July 2019)

The Total ADC is composed of a blended ER appropriation plus a distinct EE rate based on the individual normal cost of each member

These calculations are based upon assumptions regarding future events, which may or may not materialize. Please bear in mind that actual results could deviate from the assumptions, depending on actual plan experience.

Respectfully submitted,



Paul Wood, ASA, FCA, MAAA

CC: Leslie L. Thompson, FSA, FCA, EA, MAAA

This page left blank intentionally.

Pension Contribution Rate History

This page left blank intentionally.

San Luis Obispo County Pension Trust
Pension Contribution Rate Increases

	<u>2014</u> <u>Valuation</u>	<u>2015</u> <u>Valuation</u>	<u>2016</u> <u>Valuation</u>	<u>2017</u> <u>Valuation</u>	<u>2018</u> <u>Valuation</u>	<u>2019</u> <u>Valuation</u>
Total Rate Increases						
Miscellaneous	0.00%	0.91%	4.51%	1.65%	1.99%	2.47%
Probation	0.00%	9.90%	4.72%	2.25%	3.70%	2.26%
Safety	0.00%	1.17%	6.71%	3.54%	5.63%	1.25%
COMBINED	0.00%	0.95%	4.85%	1.93%	2.51%	2.30%
Total ADC	34.23%	34.77%	38.90%	40.32%	42.19%	44.52%
Significant Changes:						
Discount Rate	7.250%	7.250%	7.125%	7.125%	7.000%	7.000%
Inflation	2.750%	2.750%	2.650%	2.650%	2.500%	2.500%
Payroll Growth Rate	3.750%	3.750%	3.375%	3.375%	3.000%	2.750%
Mortality			Updated (1st part of 2 step phased)		Updated (2nd part of 2 step phased)	

As of Valuation date of Jan. 1 of the Valuation year
Actual increase modified for delayed implementaton (e.g. Jan. 1 of following year)

Total pension contribution rate increase result of:
Increases in the Actuarially Determined Contribution Rate (ADC)
Increases to adjust for difference between planned ADC to be collected and the actual charged rate during the prior year.

Increases allocated between Employer and Employee pursuant to various MOU provisions in the various bargaining units.

Note - prior to 2018 the ADC was referred to as the Annually Required Contribution or ARC.

This page left blank intentionally.

**2019 Funding Projections
(30 years)**

This page left blank intentionally.

San Luis Obispo County Pension Trust
Projection Based on January 1, 2019 Actuarial Valuation with Tier 3 (AB 340)
7.00% Discount Rate Assumption and Payroll Growth Assumption of 2.75% - 7.00% Actual Returns

Valuation as of January 1,	Input Market Return for Past Fiscal Year	Determined Contribution Rate	Compensation at Valuation	Determined Contribution (3)x(4)	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded AAL (6)-(-7)	Funded Ratio (7)/(6)	Total Normal Cost Rate	Market Value of Assets (MVA)	Funded Ratio Using MVA (11)/(6)	Percent Tier 3 Members
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2019	-4.008%	44.52%	\$ 201	\$ 89	\$ 2,030	\$ 1,363	\$ 667	67.1%	20.60%	\$ 1,272	62.6%	42.7%
2020	7.000%	45.47%	206	94	2,108	1,403	704	66.6%	20.12%	1,346	63.9%	47.6%
2021	7.000%	45.76%	212	97	2,185	1,465	720	67.1%	19.72%	1,424	65.2%	51.6%
2022	7.000%	45.89%	217	100	2,262	1,534	728	67.8%	19.33%	1,504	66.5%	55.4%
2023	7.000%	46.65%	223	104	2,338	1,588	750	67.9%	18.98%	1,588	67.9%	59.5%
2024	7.000%	46.40%	228	106	2,414	1,674	739	69.4%	18.67%	1,674	69.4%	62.9%
2025	7.000%	46.21%	234	108	2,488	1,763	725	70.8%	18.39%	1,763	70.8%	66.1%
2026	7.000%	46.03%	240	110	2,561	1,852	709	72.3%	18.14%	1,852	72.3%	69.0%
2027	7.000%	45.87%	246	113	2,633	1,944	689	73.8%	17.90%	1,944	73.8%	71.8%
2028	7.000%	45.73%	252	115	2,704	2,037	666	75.4%	17.69%	2,037	75.4%	74.4%
2029	7.000%	45.61%	258	118	2,773	2,133	640	76.9%	17.49%	2,133	76.9%	76.7%
2030	7.000%	45.50%	265	120	2,840	2,230	610	78.5%	17.31%	2,230	78.5%	79.0%
2031	7.000%	45.41%	271	123	2,906	2,330	575	80.2%	17.16%	2,330	80.2%	81.1%
2032	7.000%	45.32%	278	126	2,970	2,434	536	81.9%	17.01%	2,434	81.9%	83.0%
2033	7.000%	45.24%	285	129	3,033	2,540	492	83.8%	16.88%	2,540	83.8%	84.8%
2034	7.000%	45.17%	293	132	3,094	2,651	443	85.7%	16.75%	2,651	85.7%	86.4%
2035	7.000%	45.11%	300	135	3,154	2,766	388	87.7%	16.64%	2,766	87.7%	87.9%
2036	7.000%	45.05%	308	139	3,214	2,887	327	89.8%	16.54%	2,887	89.8%	89.3%
2037	7.000%	44.99%	316	142	3,272	3,013	259	92.1%	16.45%	3,013	92.1%	90.6%
2038	7.000%	44.95%	324	146	3,330	3,146	184	94.5%	16.37%	3,146	94.5%	91.8%
2039	7.000%	42.96%	333	143	3,388	3,287	101	97.0%	16.29%	3,287	97.0%	92.9%
2040	7.000%	18.55%	341	63	3,445	3,429	16	99.5%	16.22%	3,429	99.5%	93.9%
2041	7.000%	17.77%	350	62	3,503	3,494	9	99.7%	16.16%	3,494	99.7%	94.8%
2042	7.000%	17.19%	360	62	3,560	3,556	4	99.9%	16.11%	3,556	99.9%	95.7%
2043	7.000%	16.07%	369	59	3,618	3,618	-	100.0%	16.07%	3,618	100.0%	96.5%
2044	7.000%	16.03%	379	61	3,677	3,677	-	100.0%	16.03%	3,677	100.0%	97.2%
2045	7.000%	16.00%	390	62	3,737	3,737	0	100.0%	16.00%	3,737	100.0%	97.8%
2046	7.000%	15.97%	400	64	3,799	3,799	0	100.0%	15.97%	3,799	100.0%	98.3%
2047	7.000%	15.95%	411	66	3,862	3,862	-	100.0%	15.95%	3,862	100.0%	98.8%
2048	7.000%	15.93%	422	67	3,928	3,928	0	100.0%	15.93%	3,928	100.0%	99.2%
2049	7.000%	15.92%	434	69	3,996	3,996	0	100.0%	15.92%	3,996	100.0%	99.5%

This page left blank intentionally.

San Luis Obispo County Pension Trust
Projection Based on January 1, 2019 Actuarial Valuation with Tier 3 (AB 340)
7.00% Discount Rate Assumption and Payroll Growth Assumption of 2.75% - 6.50% Actual Returns

Valuation as of January 1,	Input Market Return for Past Fiscal Year	Determined Contribution Rate	Compensation at Valuation	Determined Contribution (3)x(4)	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded AAL (6)-(7)	Funded Ratio (7)/(6)	Total Normal Cost Rate	Market Value of Assets (MVA)	Funded Ratio Using MVA (11)/(6)	Percent Tier 3 Members
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2019	-4.008%	44.52%	\$ 201	\$ 89	\$ 2,030	\$ 1,363	\$ 667	67.1%	20.60%	\$ 1,272	62.6%	42.7%
2020	6.500%	45.51%	206	94	2,108	1,402	706	66.5%	20.12%	1,340	63.6%	47.6%
2021	6.500%	45.90%	212	97	2,185	1,461	724	66.9%	19.72%	1,410	64.6%	51.6%
2022	6.500%	46.20%	217	100	2,262	1,525	737	67.4%	19.33%	1,484	65.6%	55.4%
2023	6.500%	47.16%	223	105	2,338	1,573	766	67.3%	18.98%	1,559	66.7%	59.5%
2024	6.500%	47.18%	228	108	2,414	1,651	762	68.4%	18.67%	1,637	67.8%	62.9%
2025	6.500%	47.25%	234	111	2,488	1,732	756	69.6%	18.39%	1,716	69.0%	66.1%
2026	6.500%	47.35%	240	114	2,561	1,813	748	70.8%	18.14%	1,797	70.1%	69.0%
2027	6.500%	47.47%	246	117	2,633	1,896	738	72.0%	17.90%	1,879	71.3%	71.8%
2028	6.500%	47.62%	252	120	2,704	1,980	724	73.2%	17.69%	1,962	72.6%	74.4%
2029	6.500%	47.80%	258	123	2,773	2,066	706	74.5%	17.49%	2,047	73.8%	76.7%
2030	6.500%	47.99%	265	127	2,840	2,154	686	75.9%	17.31%	2,135	75.2%	79.0%
2031	6.500%	48.21%	271	131	2,906	2,245	661	77.3%	17.16%	2,225	76.6%	81.1%
2032	6.500%	48.43%	278	135	2,970	2,338	631	78.7%	17.01%	2,317	78.0%	83.0%
2033	6.500%	48.67%	285	139	3,033	2,435	597	80.3%	16.88%	2,413	79.6%	84.8%
2034	6.500%	48.92%	293	143	3,094	2,536	558	82.0%	16.75%	2,513	81.2%	86.4%
2035	6.500%	49.19%	300	148	3,154	2,642	513	83.7%	16.64%	2,618	83.0%	87.9%
2036	6.500%	49.46%	308	152	3,214	2,753	461	85.7%	16.54%	2,728	84.9%	89.3%
2037	6.500%	49.75%	316	157	3,272	2,869	403	87.7%	16.45%	2,844	86.9%	90.6%
2038	6.500%	50.04%	324	162	3,330	2,993	337	89.9%	16.37%	2,966	89.1%	91.8%
2039	6.500%	48.41%	333	161	3,388	3,125	263	92.2%	16.29%	3,097	91.4%	92.9%
2040	6.500%	24.30%	341	83	3,445	3,258	187	94.6%	16.22%	3,229	93.7%	93.9%
2041	6.500%	23.77%	350	83	3,503	3,314	188	94.6%	16.16%	3,284	93.8%	94.8%
2042	6.500%	23.39%	360	84	3,560	3,369	191	94.6%	16.11%	3,338	93.8%	95.7%
2043	6.500%	22.41%	369	83	3,618	3,423	195	94.6%	16.07%	3,391	93.7%	96.5%
2044	6.500%	22.47%	379	85	3,677	3,474	203	94.5%	16.03%	3,442	93.6%	97.2%
2045	6.500%	22.52%	390	88	3,737	3,527	210	94.4%	16.00%	3,494	93.5%	97.8%
2046	6.500%	22.56%	400	90	3,799	3,581	218	94.3%	15.97%	3,548	93.4%	98.3%
2047	6.500%	22.60%	411	93	3,862	3,638	225	94.2%	15.95%	3,603	93.3%	98.8%
2048	6.500%	22.63%	422	96	3,928	3,696	232	94.1%	15.93%	3,661	93.2%	99.2%
2049	6.500%	22.66%	434	98	3,996	3,757	239	94.0%	15.92%	3,722	93.1%	99.5%

San Luis Obispo County Pension Trust
Projection Based on January 1, 2019 Actuarial Valuation with Tier 3 (AB 340)
6.50% Discount Rate Assumption and Payroll Growth Assumption of 2.75% - 6.50% Actual Returns

Valuation as of January 1,	Input Market Return for Past Fiscal Year	Determined Contribution Rate	Compensation at Valuation	Determined Contribution (3)x(4)	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Unfunded AAL (6)-(-7)	Funded Ratio (7)/(6)	Total Normal Cost Rate	Market Value of Assets (MVA)	Funded Ratio Using MVA (11)/(6)	Percent Tier 3 Members
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2019	-4.008%	50.59%	\$ 201	\$ 101	\$ 2,162	\$ 1,363	\$ 799	63.0%	23.01%	\$ 1,272	58.8%	42.7%
2020	6.500%	51.43%	206	106	2,243	1,409	833	62.8%	22.50%	1,352	60.3%	47.6%
2021	6.500%	51.64%	212	109	2,323	1,478	846	63.6%	22.06%	1,436	61.8%	51.6%
2022	6.500%	51.72%	217	112	2,404	1,553	851	64.6%	21.62%	1,524	63.4%	55.4%
2023	6.500%	52.40%	223	117	2,484	1,614	870	65.0%	21.24%	1,614	65.0%	59.5%
2024	6.500%	52.13%	228	119	2,562	1,708	854	66.7%	20.90%	1,708	66.7%	62.9%
2025	6.500%	51.92%	234	122	2,640	1,803	836	68.3%	20.59%	1,803	68.3%	66.1%
2026	6.500%	51.72%	240	124	2,716	1,901	815	70.0%	20.31%	1,901	70.0%	69.0%
2027	6.500%	51.54%	246	127	2,791	2,001	790	71.7%	20.05%	2,001	71.7%	71.8%
2028	6.500%	51.40%	252	129	2,865	2,103	762	73.4%	19.81%	2,103	73.4%	74.4%
2029	6.500%	51.26%	258	132	2,936	2,207	729	75.2%	19.60%	2,207	75.2%	76.7%
2030	6.500%	51.15%	265	135	3,006	2,314	692	77.0%	19.40%	2,314	77.0%	79.0%
2031	6.500%	51.05%	271	138	3,075	2,424	651	78.8%	19.23%	2,424	78.8%	81.1%
2032	6.500%	50.95%	278	142	3,142	2,538	604	80.8%	19.07%	2,538	80.8%	83.0%
2033	6.500%	50.86%	285	145	3,207	2,656	551	82.8%	18.92%	2,656	82.8%	84.8%
2034	6.500%	50.78%	293	149	3,271	2,778	493	84.9%	18.78%	2,778	84.9%	86.4%
2035	6.500%	50.72%	300	152	3,335	2,906	429	87.1%	18.66%	2,906	87.1%	87.9%
2036	6.500%	50.65%	308	156	3,397	3,039	357	89.5%	18.55%	3,039	89.5%	89.3%
2037	6.500%	50.60%	316	160	3,458	3,179	279	91.9%	18.45%	3,179	91.9%	90.6%
2038	6.500%	50.54%	324	164	3,519	3,327	192	94.5%	18.36%	3,327	94.5%	91.8%
2039	6.500%	43.81%	333	146	3,579	3,482	97	97.3%	18.28%	3,482	97.3%	92.9%
2040	6.500%	20.42%	341	70	3,639	3,624	15	99.6%	18.20%	3,624	99.6%	93.9%
2041	6.500%	19.67%	350	69	3,700	3,691	9	99.8%	18.14%	3,691	99.8%	94.8%
2042	6.500%	19.11%	360	69	3,760	3,757	4	99.9%	18.08%	3,757	99.9%	95.7%
2043	6.500%	18.04%	369	67	3,822	3,822	(0)	100.0%	18.04%	3,822	100.0%	96.5%
2044	6.500%	18.00%	379	68	3,884	3,884	-	100.0%	18.00%	3,884	100.0%	97.2%
2045	6.500%	17.96%	390	70	3,948	3,948	(0)	100.0%	17.96%	3,948	100.0%	97.8%
2046	6.500%	17.94%	400	72	4,013	4,013	(0)	100.0%	17.94%	4,013	100.0%	98.3%
2047	6.500%	17.91%	411	74	4,081	4,081	(0)	100.0%	17.91%	4,081	100.0%	98.8%
2048	6.500%	17.90%	422	76	4,150	4,150	-	100.0%	17.90%	4,150	100.0%	99.2%
2049	6.500%	17.89%	434	78	4,222	4,222	-	100.0%	17.89%	4,222	100.0%	99.5%