SCOTTS VALLEY
FIRE PROTECTION DISTRICT

7 Erba Lane, Scotts Valley, California 95066 (831) 438-0211 Fax (831) 438-0383

Board of Directors
Agenda
Wednesday, September 11, 2019, 6:30 P.M.
Scotts Valley City Hall
One Civic Center Drive, Scotts Valley CA 95066

Board meetings are televised on Community Television, Channel 25. Agendas and Board Packets are available on the District's web site @ www.scottsvalleyfire.com

Any person who requires a disability related modification or accommodation in order to participate in a public meeting should make such a request to Steve M. Kovacs, Board Secretary, for immediate consideration.

Teleconference Notice
Director Patterson will be joining the meeting via teleconference from the following location:
5295 Lower Honoapiilani Road, Lahaina, HI 96761

1. Call to Order

1.1 Pledge of Allegiance and Moment of Silence

1.2 Roll Call

2. Public Comment (GC §54954.3)
This portion of the meeting is reserved for persons wishing to address the Board on any matter not on the agenda. Any matter that requires Board action will be referred to staff for a report and action at a subsequent Board meeting.

3. Agenda Amendments (GC §54954.2) – Discussion/Action

4. Consent Calendar
(Consent calendar items will be enacted upon by one motion. There will be no separate discussion on items unless a Board Member, Staff, or member of the public requests removal of the item for separate action.)

4.1 Minutes: Approve Regular Board Meeting Minutes of August 14, 2019

4.2 Minutes: Approve Special Board Meeting Minutes of August 21, 2019

4.3 Payroll: Approve August Payroll 16, 17 and 18 in the amount of: $475,418.37

4.4 Expenditures: Approve Expenditures for August in the Amount of:

General Fund:	$159,022.83
Capital Outlay/Zone A:	$ 11,828.75
SCHMIT:	$ 111.07
TOTAL:	$170,962.65

4.5 Approve Payment of $162,117.76 to SC County Bank for the CalPERS Side Fund Loan

4.6 Review Four CalPERS Annual Valuation Reports as of June 30, 2018 (Classic & PEPRA Safety and Miscellaneous Plans)

Action Items

5.1 Adopt Policy 2200: Social Media, Discussion/Action

6. Board of Directors and Administrative Reports – Information/Discussion
(No action will be taken on any questions raised by the Board at this time.)

6.1 Board of Directors Report – *Directors*

6.2 Administrative Report – *Chief Officers*

7. Correspondence

7.1 Scotts Valley Police Department Thank You Letter

7.2 Incident Thank You Letter

8. Request for Future Agenda Items

9. Adjournment

Next Regularly Scheduled Board Meeting:
Wednesday, October 9, 2019 at 6:30 p.m.

SCOTTS VALLEY FIRE PROTECTION DISTRICT

7 Erba Lane, Scotts Valley, California 95066 (831) 438-0211 Fax (831) 438-0383

MINUTES OF THE
SCOTTS VALLEY FIRE PROTECTION DISTRICT
BOARD OF DIRECTORS
REGULAR MEETING OF
August 14, 2019

1. Call to Order

The Regular Meeting of the Board of Directors of the Scotts Valley Fire Protection District (SVFPD) was held on Wednesday, August 14, 2019 at the City of Scotts Valley Council Chambers. President Patterson called the meeting to order at 6:30 p.m. and thanked Community Television for Broadcasting the Meeting.

1.1 Pledge of Allegiance and Moment of Silence

President Patterson called for the Pledge of Allegiance and a Moment of Silence to follow.

1.2 Roll Call

A.	Directors Present:	Directors Campbell, Harmon, Parker, Patterson and Pisciotta
B.	Directors Absent:	None
C.	Fire District Staff:	Chief Kovacs, Battalion Chiefs McNeil and Theilen and Administrative Secretary Walton

2. Public Comment (GC §54954.3)
None

3. Agenda Amendments (GC §54954.2) – Discussion/Action
None

4. Consent Calendar

4.1 Minutes: Approve Regular Board Meeting Minutes of July 10, 2019

4.2 Payroll: Approve July Payroll 14 and 15 in the amount of: $309,862.58

4.3 Expenditures: Approve Expenditures for July in the Amount of:

General Fund:	$215,103.62
SCHMIT:	$ 6,179.30
TOTAL:	$221,282.92

4.4 Certify the Firefighter/Paramedic Eligibility List, per Policy 1501

On motion of Director Campbell seconded by Director Pisciotta to *Approve the Consent Calendar Items 4.1 thru 4.4* was approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

5. Discussion

5.1 Merge the Zone A Fund (685020) into the Capital Outlay Budget (685030)

Chief Kovacs stated that Zone A was created in 1969 as a Special Fire Protection Zone for the purpose of paying for the installation and related maintenance of fire mains, fire hydrants and similar improvements to benefit the Zone A territory. Since then, the Zone A water system has been annexed to Santa Cruz City Water and the water improvements have been done. Zone A is currently a Special Revenue Fund and not intended to be a Capital Project Fund. Merging the Zone A Fund with Capital Outlay will comply with accounting standards for revenue and expenditures, which has been reflected in the Final Budget. The County gave direction on preparing the Final Budget Resolution to transfer the Zone A Fund into Capital Outlay and the Funds will be tracked separately.

5.2 Payoff the CalPERS Side Fund Loan Balance from Santa Cruz County Bank

Chief Kovacs reported that in January 2011, the SVFPD entered into a loan agreement with Santa Cruz County Bank in the amount of $3,227,158 to pay the CalPERS Side Fund Liability. Since the loan inception, the SVFPD has been paying two payments each fiscal year. The CalPERS Side Fund principle balance is $1,684,177 as of August 1, 2019 and an interest payment of approximately $80,000. The Reserve Fund Policy adopted by the Board last fiscal year, requires $1M remain in the General Fund Reserve Account. With a beginning Fund Balance of $2.3M, this leave approximately $1.3M for the Board to allocate to pay the Side Fund, the budgeted payment of $326K and $200K not transferred due to the merging of the Zone A and Capital Outlay Funds, will pay off and close the CalPERS Side Fund Loan, which concludes this financial liability for the SVFPD. This will save the SVFPD approximately $338K in interest if the loan had been taken to maturity in December 2025.

6. Public Hearing/Action Item

Scheduled Public Hearing for the SVFPD Final Budget for Fiscal Year 2019/2020:

685010 General Fund:	$10,225,463
685030 Capital Outlay/Zone A:	$ 1,579,349
685040 SCHMIT:	$ 235,000

6.1 Receive Public Comment and Adopt Resolution 2019-4: Resolution Adopting Final Budget for Fiscal Year 2019/2020, Discussion/Action

Chief Kovacs reviewed the Final Budget and noted the following:

General Fund – 685010

- The beginning fund balance is $2,351,126. The surplus is attributed to a 5.67% increase in Secured Property Tax, the Branciforte Administrative Services Agreement and approximately $740K in Strike Team reimbursement.
- As recommended by the County Auditor's Office, an estimated 4.5% increase in property tax has been included in the Final Budget.
- The Salaries and Benefits budget includes a Cost of Living Adjustment based on the current MOU's.
- The retirement account represents a budgeted amount of $1,264,763 payable to CalPERS, $324,241 loan payment for the Side Fund for a total of $1,589,004. There is an additional payment of $1,467,759 from the Reserve Fund payable to Santa Cruz County Bank to pay off the Side Fund after December 15, 2019.
- Workers Comp insurance is $232,500, which is an increase of $37,655 over last FY.
- The required $1M Reserves per Policy 1608 and $50,000 for Contingencies has been budgeted.

Capital Outlay/Zone A – 685030
The beginning fund balance for Zone A is $1,218,592 and for Capital Outlay $225,479. Capital Outlay and Zone A have been merged into the Capital Outlay Fund but the Revenue and Expenditures have been listed separately.

SCHMIT – 685040
The beginning fund balance for the Santa Cruz Hazardous Materials Interagency Team is $52,188. The management and differential costs have been increased from $4,500 to $5,000 per member.

Director Campbell thanked Chief Kovacs and Administrative Secretary Walton for all the work they did completing the Final Budget.

At 6:43 p.m., President Patterson opened the Public Hearing. With no Public comment presented, the Public Hearing was closed.

On motion of Director Parker seconded by Director Campbell to *Adopt Resolution 2019-4 Adopting the Final Budget and Merge the Zone A and Capital Outlay Fund* was approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

7. Action Items

7.1 Scotts Valley Fire Protection District Fire Code Adoption, Discussion/Action

Chief Kovacs reported that every three years the Fire Code is updated. CSG was hired by the Santa Cruz County Fire Chiefs Association to facilitate the Fire Code update for all Santa County Fire Agencies. The Staff Report lists the significant changes from the previous Fire Code. Administrative Captain Greg Vandervoort has been working on the Fire Code update and is here to answer any questions.

Director Harmon inquired about the Police Powers and if there was any cost associated with requesting assistance. Administrative Captain Vandervoort stated that this was just a title change to Law Enforcement Powers and there is no cost if assistance is needed.

Director Campbell inquired about the Negative Delectation. Chief Kovacs stated that to support fuel reduction programs, the Negative Delectation is required due to the California Environmental Quality Act (CEQA).

Approve Resolution 2019-5, "Notice of Intent to Adopt the California Fire Codes with Amendments," and set a public hearing for October 9, 2019 at 6:30 p.m.

On motion of Director Harmon seconded by Director Pisciotta to *Approve Resolution 2019-5, Notice of Intent to Adopt the California Fire Codes with Amendments and Set a Public Hearing for October 9, 2019 at 6:30 p.m.* was approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

Approve Resolution 2019-6, "Resolution Finding a need for Modification of State Housing Law."

On motion of Director Pisciotta seconded by Director Campbell to *Approve Resolution 2019-6, Finding a Need for Modification of State Housing Law* was approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

Approve Resolution 2019-7, "Notice of Intent to Consider a Negative Declaration for an Ordinance Adopting the 2019 California Fire Code with Amendments."

On motion of Director Campbell seconded by Director Parker to *Approve Resolution 2019-7, Notice of Intent to Consider a Negative Declaration for an Ordinance Adopting the 2019 Fire Code with Amendments* was approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

Conduct the first reading of Ordinance 2019-1 Adopting the Fire Code for the Scotts Valley Fire Protection District and Waive the Reading of the Actual Text.

Direct Staff to Prepare an Environmental Checklist (EIR).

Direct staff to forward a copy of the proposed ordinance with amendments to the Clerk of the Board for the Santa Cruz County Board of Supervisors and the City Clerk for the City of Scotts Valley allowing 30 days for comments, which should be submitted to the Scotts Valley Fire Protection District Board of Directors to be incorporated into the public hearing record on October 9, 2019.

Direct staff to advertise the public hearing in the local newspaper consistent with the California Government Code, Section 6066.

On motion of Director Pisciotta seconded by Director Harmon to *Approve the Last Four Bullet Items as Written and Waive the First Reading of Ordinance 2019-1* approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

8. Board of Directors and Administrative Reports – Information/Discussion
(No action will be taken on any questions raised by the Board at this time.)

8.1 Board of Directors Report – *Directors*

Director Pisciotta reported that he, Director Patterson and Chief Kovacs attended a meeting with Teall Messer, the original architect for the La Madrona Station to review the plans. There will be a Board Workshop on September 28th to discuss the Facilities Study and options for Facility improvements.

Director Campbell stated that he and President Patterson attended the Finance Committee Meeting and discussed the Final Budget and CalPERS Side Fund Loan.

8.2 Administrative Report – *Chief Officers*

The full Administrative Report was included in the Board Packet and Chief Kovacs added the following:

- Two Personnel attended the Personal Protective Clothing (PPE) update class
- We will have a medical booth at the Art and Wine Festival
- The annual financial audit will be the first of September
- The next Interagency Committee Meeting will be October 3, 2019

9. Correspondence – Information

None

10. Request for Future Agenda Items

Chief Kovacs stated that we will need to schedule a Special Meeting next week for an Industrial Disability Retirement (IDR).

11. Adjournment

The meeting was adjourned at 7:07 p.m.

ATTEST ______________________________
Russ Patterson
Board President

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Steve M. Kovacs
Board Secretary

SCOTTS VALLEY FIRE PROTECTION DISTRICT

7 Erba Lane, Scotts Valley, California 95066 (831) 438-0211 Fax (831) 438-0383

MINUTES OF THE
SCOTTS VALLEY FIRE PROTECTION DISTRICT
BOARD OF DIRECTORS
SPECIAL MEETING OF
August 21, 2019

1. **Call to Order**

A Special Meeting of the Board of Directors of the Scotts Valley Fire Protection District (SVFPD) was held on Wednesday, August 21, 2019, at the SVFPD Main Fire Station, 7 Erba Lane, Scotts Valley. President Patterson called the meeting to order at 6:00 p.m.

Teleconference Notice
Director Harmon joined the meeting via teleconference from the following location:
Magnolia Hotel, 818 17th Street, Denver, Colorado, 80202

1.1 Pledge of Allegiance

President Patterson called for the Pledge of Allegiance and a moment of silence to follow.

1.2 Roll Call

A.	Directors Present:	Directors Campbell, Harmon (*Via Teleconference*), Parker, Patterson and Pisciotta
B.	Directors Absent:	None
C.	Fire District Staff:	Chief Kovacs, Battalion Chief Whittle and Administrative Secretary Walton

2. **Oral Communications (GC §54954.3)**
None

3. **Agenda Amendments (GC §54954.2) – Discussion/Action**
None

4. **Action Items**

4.1 Approve Resolution 2019-8: Delegate Authority and Duty to the Fire Chief to Certify to CalPERS Whether a Local Safety Member of the Scotts Valley Fire Protection District is Incapacitated from the Performance of Usual Duties for Purposes of Industrial Disability Retirement, Discussion/Action

Chief Kovacs stated that the Board is responsible to determine Industrial Disability Retirements (IDR). Legal Counsel has recommended that the Board delegate authority to the Fire Chief to Certify to CalPERS the determination for IDR. An employee can appeal the decision, which is reviewed by a Law Judge and then an Appeals Court if necessary. The delegated authority would be required to testify if appealed. If the Board is the delegated authority, all Board Members would be required to testify if appealed.

President Patterson stated that the Resolution could be kept on file so that the current and future Fire Chief would have authority to certify IDR. Director Campbell stated that the future Fire Chief may not have the same understanding of the process for IDR so would it be an option to delegate authority onetime.

Chief Kovacs stated that the Board could delegate authority onetime or revoke the delegated authority at any time. Legal Counsel reviews medical records and necessary documents to make the determination for all IDR. Legal Counsel prepares a letter detailing the determination. The delegated authority certifies the determination, submits the paperwork and would go through the appeals process if necessary.

Director Harmon inquired if Chief Kovacs was comfortable with the Board delegating authority to the Fire Chief. Chief Kovacs stated that he was comfortable as the Board would be delegating authority to certify the determination and Legal Counsel would be making the determination for all IDR.

On motion of Director Parker seconded by Director Pisciotta to *Adopt Resolution 2019-8: Delegate Authority and Duty to the Fire Chief to Certify to CalPERS Whether a Local Safety Member of the Scotts Valley Fire Protection District is Incapacitated from the Performance of Usual Duties for Purposes of Industrial Disability Retirement* was approved by the following vote:

AYES:	**Campbell, Harmon, Parker, Patterson and Pisciotta**
NOES:	**None**
ABSENT:	**None**
ABSTAIN:	**None**

5. Adjournment

The meeting was adjourned at 6:20 p.m.

ATTEST ______________________ ______________________

Russ Patterson
Board President

Steve M. Kovacs
Board Secretary

			Date Range from 07/12/2019 To 08/28/2019
PAYROLL	**ACCT.#**	**PP**	**TOTALS**
Regular Pay	51000	16	$122,930.84
		17	$123,197.90
		18	$123,113.61
Overtime	51005	16	$2,880.04
		17	$360.85
		18	$4,422.89
Regular Pay, Extra Help (PCF)	51010	16	$0.00
		17	$3,146.00
		18	$0.00
Regular Pay, Sick Leave	51015	16	$0.00
		17	$0.00
		18	$0.00
Regular Callback Pay	51025	16	$16,426.80
		17	$25,221.04
		18	$22,613.08
Holiday Pay	51035	16	$0.00
		17	$0.00
		18	$0.00
Differential Pay	51040	16	$6,032.01
		17	$6,032.01
		18	$6,032.01
Regular Pay, Sick Leave Reserve	55020	16	$0.00
		17	$0.00
		18	$0.00
Misc Benefits, Vacation Payoff	55021	16	$4,336.43
		17	$4,336.43
		18	$4,336.43
Directors Fees	62327	16	$0.00
		17	$0.00
		18	$0.00
TOTAL PAYROLL			**$475,418.37**

09/03/2019

CLAIMS BY GL OBJ

09/06/2019

Filter: (Claim Date is between 08/01/2019 and 08/31/2019)(Pre-Approved Excluded)

Claim Date	Vendor	Message	Amount
GL Key: 685010			
GL Obj: 53010 Group Health - Dental Insurance			
08/02/2019	CALPERS RETIREMENT SYSTEM	Health Ins.- 8/2019	$53,507.09
08/15/2019	HEALTH CARE EMPLOYEES/EMPLOYER DENTAL TRUST	Dental Ins.- 9/2019	$4,949.96
08/15/2019	FDAC EBA	Life & Vision Ins.- 9/2019	$1,066.06
08/15/2019	CALPERS RETIREMENT SYSTEM	Health Ins.- 9/2019	$53,507.09
08/22/2019	MIKE PHINN	Retiree Health Ins.- 9/2019	$380.88
08/22/2019	MIKE BIDDLE	Retiree Health Ins.- 9/2019	$999.98
08/22/2019	TIM THEILEN	Retiree Health Ins.- 9/2019	$679.29
08/22/2019	MICHAEL MCMURRY	Retiree Health Ins.- 9/2019	$1,596.54
08/22/2019	SAL LOFRANCO	Retiree Health Ins.- 9/2019	$563.20
		SubObject Total	$117,250.09
GL Obj: 61110 Clothing & Personal Supplies			
08/02/2019	SCARBOROUGH LUMBER & BUILDING	Earplugs	$61.20
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	L.N. Curtis- Danner Wildland Tactical Boots Conway Shields- Helmet Shield- Ronzano	$339.99
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	LN Curtis- Danner Tactical Boots	$284.50
		SubObject Total	$685.69
GL Obj: 61221 Telephone & Telegraph			
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Comcast- VF1 Internet & Phones 6/20-7/19/19 Comcast- VF2 Internet & Phones 6/21-7/20/19 Verizon- Cellular 6/5-7/4/19	$1,038.98
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Comcast- VF1 Internet & Phones 7/20-8/19/19 Comcast- VF2 Internet & Phones 7/21-8/4/19 Verizon- Cellular 7/5-8/4/19	$1,082.14
		SubObject Total	$2,121.12
GL Obj: 61310 Food			
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Nob Hill- July 4th Crew Lunch Costco- July 4th Crew Lunch	$182.42
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Nob Hill- County Chiefs Meeting Refreshments Costco- Water	$53.62
		SubObject Total	$236.04
GL Obj: 61425 Household Expense			
08/07/2019	MID VALLEY SUPPLY	Floor Cleaner	$98.62
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Amazon- 2 American Flags for VF2 Costco- Station Supplies Costco- Station Supplies Amazon- Station Supplies	$330.21
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Brass Key Locksmith- Tri-Flow Lock Lubricant for 2580 Costco- Station Supplies	$228.04

Claim Date	Vendor	Message	Amount
		SubObject Total	$656.87

GL Obj: 61720 Maintenance - Mobile Equipment

Claim Date	Vendor	Message	Amount
08/02/2019	SCARBOROUGH LUMBER & BUILDING	Clamps, Tubes, Plugs, Sprinkler Repair Kit,Valves	$153.79
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Amazon- Rear Coil Springs for 2502 Truck Amazon- Hydrant Wrench	$329.04
08/15/2019	WINCHESTER AUTO STORES	Fuel Filters, Coolant Filters, Heater Hose, Jelly Water Blade	$241.00
08/22/2019	GOLDEN STATE EMERGENCY VEHICLE SERVICE	Air Filter and Utilitiy Catch for HM2560	$345.04
08/22/2019	GOLDEN STATE EMERGENCY VEHICLE SERVICE	Air Cleaner	$145.14
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Amazon- JW Speaker High Beam E2510 Amazon- JW Speaker Low Beams E2510 Amsoil- Oil for Apparatus andd Sedans Amazon- WT2550 Headlights	$1,541.39
		SubObject Total	$2,755.40

GL Obj: 61725 Maintenance - Office Equipment

Claim Date	Vendor	Message	Amount
08/02/2019	PAGODA TECHNOLOGIES INC.	Computer Management- 8/2019	$1,122.12
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Network Solutions- SSL Certificate Renewal/Installation Kandence Theme- Wordpress Theme Annual Renewal CREDITED	$0.00
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Network Solutions- SSL Certificate Renewal/Installation Kadance Themes- Wordpress Theme Annual Renewal	$0.00
		SubObject Total	$1,122.12

GL Obj: 61730 Maintenance - Other Equipment

Claim Date	Vendor	Message	Amount
08/02/2019	SCARBOROUGH LUMBER & BUILDING	Fuel Cap	$8.71
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Sports Basement- Jetboil Fuel for 2537/2538 Costco- Batteries	$51.46
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Costco- Batteries	$115.19
		SubObject Total	$175.36

GL Obj: 61845 Maintenance - Buildings & Grounds

Claim Date	Vendor	Message	Amount
08/02/2019	SCARBOROUGH LUMBER & BUILDING	Blades, Gorilla Glue, Tube, Trap	$102.14
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Rayne of SC- VF1 Water Softener 6/2019 Central Home Supply- VF2 Landscaping Mulch/Supplies Central Home Supply- VF2 Ground Cover	$1,062.53
08/15/2019	WESTERN EXTERMINATOR COMPANY	Bug Service- VF1 7/2019	$57.50
08/15/2019	WESTERN EXTERMINATOR COMPANY	Bug Service- VF2 7/2019	$57.50

CLAIMS BY GL OBJ

09/06/2019

Filter: (Claim Date is between 08/01/2019 and 08/31/2019)(Pre-Approved Excluded)

Claim Date	Vendor	Message	Amount
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Rayne of SC- VF1 Water Softener 8/2019 Ben Lomond Transfer Station- VF2 Yard Waste Disposal Big Creek Lumber- Siding for VF1	$280.35
		SubObject Total	$1,560.02
GL Obj: 61920	**Medical Supplies**		
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Batteries Plus- Batteries for Tympannic Themometers Amazon- Oxygen Cylinder Gaskets Walgreens- Medication for Enviromental Issues	$82.88
		SubObject Total	$82.88
GL Obj: 62020	**Memberships**		
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	FDAC- Annual Membership	$550.00
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Amazon- Annual Prime Membership 19/20 FY CCAI- Annual Membership Renewal	$204.71
		SubObject Total	$754.71
GL Obj: 62111	**Miscellaneous Expenses**		
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	K-Mart- 4th of July Flags for Apparatus Office Furniture 2 Go- Training Room Tables-Reimbursed	$3,385.45
		SubObject Total	$3,385.45
GL Obj: 62219	**PC Software**		
08/07/2019	CREWSENSE LLC	Crewsense 8/3-11/2/19	$754.74
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Avenza Systems- Avenza PDF Maps for iPads Fleetio- Pro Plan Annual Subscription	$1,322.36
08/15/2019	FIRST DUE	Annual PrePlan Subscription	$2,000.00
		SubObject Total	$4,077.10
GL Obj: 62223	**Office Supplies**		
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Amazon- Report Folders, Fire Prevention iPad Cover, Pens Quill- 4 Cases of Paper Business With Pleasure- Cardstock Vistaprint- Business Cards Brass Key- Inner Admin Door Keys	$355.71
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Amazon-Binder Tabs PW Printworks-2020 Shift Calendars Amazon-Magenta Toner Vistaprint- Director Business Cards International Code Council-2019 CA Fire Code/Tabsx2 Office Supply-Notepads,Binders	$1,182.89
		SubObject Total	$1,538.60

CLAIMS BY GL OBJ

09/06/2019

Filter: (Claim Date is between 08/01/2019 and 08/31/2019)(Pre-Approved Excluded)

Claim Date	Vendor	Message	Amount
GL Obj: 62367	**Medical Services**		
08/15/2019	EMERYVILLE OCCUPATIONAL MEDICAL CENTER	Medical Questionnaire	$30.00
08/15/2019	EMERYVILLE OCCUPATIONAL MEDICAL CENTER	Medical Questionnaire	$30.00
08/22/2019	EMERYVILLE OCCUPATIONAL MEDICAL CENTER	Medical Questionnaire	$25.00
		SubObject Total	$85.00
GL Obj: 62381	**Professional & Specialized Services**		
08/02/2019	LIEBERT CASSIDY WHITMORE	Legal Services	$7,169.00
08/07/2019	KAREN LANSING	Professional Services	$800.00
08/07/2019	VOYA NATIONAL TRUST COMPANY	Voya Loan Program- (Employee paid) 4/1-6/30/19	$187.50
08/15/2019	GENE MICHALAK	BRD Video- 8/14/2019	$125.00
08/22/2019	CSG CONSULTANTS, INC.	Plan Review- 466 Blue Jay Ln, 1005 Tucker Road, 175 Firehouse Sprinklers- 905, 907, 913, 915 Lundy Lane, 210 O'Laughlin Road, 618 Canepa Dr. 213 Blueberry Dr, 100 Enterprise Way	$700.00
08/22/2019	LIEBERT CASSIDY WHITMORE	Legal Services	$3,002.00
		SubObject Total	$11,983.50
GL Obj: 62715	**Small Tools & Equipment**		
08/02/2019	SCARBOROUGH LUMBER & BUILDING	Wheelbarrow	$152.59
		SubObject Total	$152.59
GL Obj: 62888	**District Special Expense**		
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	FasTrak- Replenish Toll Pass Modern Marketing- Pub Ed Stickers	$641.78
		SubObject Total	$641.78
GL Obj: 62914	**Education & Training**		
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	ACE Parking- State Capital Meeting Parking ACE Parking- EMSA Meeting Parking	$56.00
08/15/2019	ACTIVE WELLNESS LLC	Yoga 7/2019	$750.00
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Southwest- CSDA Conference Airfare/CalChiefs Annual Conference The Sawyer Hotel- FDAC Meeting Lodging DT East Common Garage- FDAC Meeting Parking South Bay Regional- Fire Inspector 2C/2D	$3,247.19
		SubObject Total	$4,053.19

Claim Date	Vendor	Message	Amount
GL Obj: 62920 Gas, Oil & Fuel			
08/15/2019	FLYERS ENERGY LLC	Fuel/Diesel	$1,771.70
		SubObject Total	$1,771.70
GL Obj: 62930 Conference Tuition - Registrations			
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	CSDA- Policies Conference- Walton FDAC- COA- Pisciotta (Refunded)	$340.00
		SubObject Total	$340.00
GL Obj: 63070 Utilities			
08/02/2019	CITY OF SCOTTS VALLEY	Sewer- VF1 5/16-7/15/19	$142.08
08/02/2019	CITY OF SCOTTS VALLEY	Sewer- VF2 5/16-7/15/19	$99.99
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	SVWD- VF1 Water 4/4-6/3/19 SVWD- VF2 RW Service 6/1-6/30/19 SVWD- VF2 Water 4/6-6/5/19 Greenwaste- VF2 Trash & Recycle 7/1-9/30/19 Greenwaste- VF1 Trash & Recycle 6/1-6/30/19	$1,158.10
08/15/2019	PG&E	VF2 Gas 7/9-8/6/2019	$52.54
08/15/2019	PG&E		$0.00
08/15/2019	PG&E	VF1 Gas- 7/9-8/6/19	$60.70
08/22/2019	PG&E	VF2 Electric- 7/8-8/5/19	$599.88
08/22/2019	PG&E	VF1 Electric 7/8-8/5/19	$1,048.54
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	SV Water District- VF2 RW Service Greenwaste- VF1 Trash & Recycling	$431.79
		SubObject Total	$3,593.62
		Index Total	$159,022.83

Filter: (Claim Date is between 08/01/2019 and 08/31/2019)(Pre-Approved Excluded)

GL Key: 685030

GL Obj: 86204 Equipment

Claim Date	Vendor	Message	Amount
08/15/2019	EMPIRE SCBA & SUPPLIES INC	SCBA Bottles x20	$5,875.00
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Taylor Wings- Truck Boxes for B2501 Pickup	$5,953.75
		SubObject Total	$11,828.75
		Index Total	$11,828.75

Claim Date	Vendor	Message	Amount
GL Key: 685040			
GL Obj: 61221 Telephone & Telegraph			
08/12/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Verizon- SCHMIT Cellular 6/5-7/4/19	$38.19
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Verizon- SCHMIT Cellular 7/5-8/4/19	$38.19
		SubObject Total	$76.38
GL Obj: 62920 Fuel			
08/28/2019	U.S. BANK CORPORATE PAYMENT SYSTEM	Valero- HM2560 Fuel	$34.69
		SubObject Total	$34.69
		Index Total	$111.07
		Grand Total	$170,962.65

Loan: CalPERS Side Fund Loan
Date: January 14, 2011
Lender: Santa Cruz County Bank
P.O. Box 8426, SC, CA 95061
Amount: $3,227,158 (Loan $3,202,158/Fees $25,000)
Interest Rate: 5.6250 % (Actual Interest/Principal Applied)
Principal Balance: $1,684,177.70 (as of 7/17/2019)

Account #: 90033-23-00 (**Payment Schedule:** Payment date was changed from 5/15 to 6/15)

Fiscal Year	Payment Date	Interest 4875 - 74425	Principal 4810 - 74110	Total Due
2010/2011	6/15/2011	$76,589.74	$71,717.26	$148,307.00 **Paid 6/6/2011**
Total 2010/2011 Fiscal Year		($72,611.05)	($75,695.95)	**$148,307.00**
2011/2012	12/15/2011	$88,989.91	$59,317.09	$148,307.00 **Paid 11/28/2011**
		($83,535.33)	($64,771.67)	
2011/2012	6/15/2012	$87,317.05	$65,809.95	$153,127.00 **Paid 05/14/2012**
Total 2011/2012 Fiscal Year		($81,342.75)	($71,784.25)	**$301,434.00**
2012/2013	12/15/2012	$85,461.07	$67,665.93	$153,127.00 **Paid 11/21/2012**
		($87,349.68)	($65,777.32)	
2012/2013	6/15/2013	$83,096.18	$75,006.82	$158,103.00 **Paid 4/23/2013**
Total 2012/2013 Fiscal Year		($67,718.86)	($90,384.14)	**$311,230.00**
2013/2014	12/15/2013	$81,437.41	$76,665.59	$158,103.00 **Paid 11/22/2013**
		($95,601.51)	($62,501.49)	
2013/2014	6/15/2014	$78,842.08	$83,275.68	$162,117.76 **Paid 4/22/2014**
Total 2013/2014 Fiscal Year		($65,070.11)	($97,047.65)	**$320,220.76**
2014/2015	12/15/2014	$76,926.74	$85,191.02	$162,117.76 **Paid 11/20/2014**
		($63,532.42)	($98,585.34)	
2014/2015	6/15/2015	$74,116.94	$88,000.82	$162,117.76 **Paid 5/26/2015**
Total 2014/2015 Fiscal Year		($73,680.16)	($88,437.60)	**$324,235.52**
2015/2016	12/15/2015	$72,042.37	$90,075.39	$162,117.76 **Paid 10/26/2016** (No November Meeting)
		($51,936.82)	($110,180.94)	
2015/2016	6/15/2016	$69,502.06	$92,615.70	$162,117.76 **Paid 4/28/2016**
Total 2015/2016 Fiscal Year		($69,480.81)	($92,636.95)	**$324,235.52**
2016/2017	12/15/2016	$66,890.11	$95,227.65	$162,117.76 **Paid 11/16/2016**
		($83,459.31)	($74,643.69)	
2016/2017	6/15/2017	$63,853.65	$98,264.11	$162,117.76 **Paid 5/17/2017** (No April Meeting)
Total 2016/2017 Fiscal Year		($63,198.07)	($94,904.93)	**$324,235.52**
2017/2018	12/15/2017	$61,433.24	$100,684.52	$162,117.76 **Paid 11/15/2017**
		($50,649.07)	($111,468.69)	
2017/2018	6/15/2018	$58,273.55	$103,844.21	$162,117.76 **Paid 4/19/2018**
Total 2017/2018 Fiscal Year		($49,096.38)	($113,021.38)	**$324,235.52**
2018/2019	12/15/2018	$55,665.11	$106,452.65	$162,117.76 **Paid 12/4/2018**
		($71,839.95)	($90,277.81)	
2018/2019	6/15/2019	$52,393.15	$109,742.61	$162,117.76 **Paid 2/28/2019**
Total 2018/2019 Fiscal Year		($21,253.49)	($140,864.27)	**$324,235.52**
2019/2020	12/15/2019	$49,567.96	$112,549.80	$162,117.76
2019/2020	6/15/2020	$46,393.82	$115,723.94	$162,117.76
Total 2019/2020 Fiscal Year				**$324,235.52**
* *2020/2021*	12/15/2020	$43,130.17	$118,987.59	$162,117.76

* *Adjustable Interest Rate After the 12/15/2020 Payment (Ceiling 11.625 %)*

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California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 |Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2019

Safety Plan of the Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2018

Dear Employer,

Attached to this letter, you will find the June 30, 2018 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for Fiscal Year 2020-21**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2018.

Section 2 can be found on the CalPERS website (www.calpers.ca.gov). From the home page, go to "*Forms & Publications*" and select "*View All*". In the search box, enter "*Risk Pool*" and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2018 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 1, 2019.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2020-21 along with estimates of the required contributions for Fiscal Year 2021-22. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability
2020-21	21.746%	$761,892
Projected Results		
2021-22	*21.7%*	*$882,000*

The actual investment return for Fiscal Year 2018-19 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00 percent. ***If the actual investment return for Fiscal Year 2018-19 differs from 7.00 percent, the actual contribution requirements for the projected years will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2025-26.

Changes from Previous Year's Valuation

CalPERS continues to strive to provide comprehensive risk assessments regarding plan funding and sustainability consistent with the Board of Administration's pension and investment beliefs. Your report this year includes new metrics on plan maturity in recognition of the fact that most pension plans at CalPERS are maturing as anticipated. As plans mature, they become more sensitive to risks than plans that are less mature. The "Risk Analysis" section of your report will help you understand how your plan is affected by investment return volatility and other economic assumptions. We have included plan sensitivity analysis with respect to longevity and inflation to further that discussion and encourage you to review our most recent Annual Review of Funding Levels and Risks report on our website that takes a holistic view of the system.

Upcoming Change for June 30, 2019 Valuations

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on Unfunded Accrued Liability (UAL) bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

Besides the above noted changes, there may also be changes specific to the plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report.

We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 1 2019 to contact us with actuarial questions.

If you have other questions, please call our customer contact center at (888) CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO
Chief Actuary

Actuarial Valuation as of June 30, 2018

for the Safety Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)

Required Contributions for Fiscal Year July 1, 2020 - June 30, 2021

Table of Contents

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the Safety Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)
(Valuation Rate Plan ID: 904)

Table of Contents

Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2018 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2018 provided by employers participating in the Safety Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your Safety Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that Unfunded Accrued Liability amortization bases as of June 30, 2018 and employer contribution as of July 1, 2020, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

DAVID CLEMENT, ASA, MAAA, EA
Senior Pension Actuary, CalPERS
Plan Actuary

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2018 actuarial valuation of the Safety Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2020-21.

Purpose of Section 1

This Section 1 report for the Safety Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2018;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2020 through June 30, 2021; and
- Provide actuarial information as of June 30, 2018 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

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; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 10.

Additionally, this report includes the following "Enhanced Risk Disclosures" also recommended by the CAAP in the Model Disclosure Elements document and consistent with the recommendations of Actuarial Standard of Practice No. 51:

- A "Scenario Test," projecting future results under different investment income scenarios.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0 percent and 8.0 percent.
- A "Sensitivity Analysis," showing the impact on current valuation results using a 1.0 percent plus or minus change in the inflation rate.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.
- Plan maturity measures which indicate how sensitive a plan may be to the risks noted above.

Required Employer Contributions

		Fiscal Year
Required Employer Contributions		**2020-21**
Employer Normal Cost Rate		**21.746%**
Plus, Either		
1) Monthly Employer Dollar UAL Payment	**$**	**63,490.97**
Or		
2) Annual UAL Prepayment Option*	**$**	**736,548**

*The total minimum required employer contribution is the **sum** of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) **plus** the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).*

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**. Any prepayment totaling over $5 million requires a 72-hour notice email to FCSD_public_agency_wires@calpers.ca.gov. Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change.*

In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply.

		Fiscal Year 2019-20		Fiscal Year 2020-21
Development of Normal Cost as a Percentage of Payroll[1]				
Base Total Normal Cost for Formula		27.914%		29.572%
Surcharge for Class 1 Benefits[2]				
a) FAC 1		1.145%		1.161%
Phase out of Normal Cost Difference[3]		0.000%		0.000%
Plan's Total Normal Cost		29.059%		30.733%
Formula's Expected Employee Contribution Rate		8.986%		8.987%
Employer Normal Cost Rate		20.073%		21.746%
Projected Payroll for the Contribution Fiscal Year	$	2,688,915	$	2,458,565
Estimated Employer Contributions Based on Projected Payroll				
Plan's Estimated Employer Normal Cost	$	539,746	$	534,640
Plan's Payment on Amortization Bases[4]		659,149		761,892
% of Projected Payroll (illustrative only)		24.514%		30.989%
Estimated Total Employer Contribution	$	1,198,895	$	1,296,532
% of Projected Payroll (illustrative only)		44.587%		52.735%

[1] The results shown for Fiscal Year 2019-20 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after April 30, 2018.

[2] Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

[3] The normal cost difference is phased out over a five-year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

[4] See page 10 for a breakdown of the Amortization Bases.

Plan's Funded Status

		June 30, 2017		June 30, 2018
1. Present Value of Projected Benefits (PVB)	$	43,197,490	$	46,564,477
2. Entry Age Normal Accrued Liability (AL)		39,096,059		42,761,498
3. Plan's Market Value of Assets (MVA)		29,243,555		31,278,777
4. Unfunded Accrued Liability (UAL) [(2) - (3)]		9,852,504		11,482,721
5. Funded Ratio [(3) / (2)]		74.8%		73.1%

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows projected employer contributions (before cost sharing) for the next six fiscal years. Projected results reflect the adopted changes to the discount rate described in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report. The projections also assume that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period.

	Required Contribution	**Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2018-19)**				
Fiscal Year	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**
Normal Cost %	21.746%	21.7%	21.7%	21.7%	21.7%	21.7%
UAL Payment	$761,892	$882,000	$983,000	$1,044,000	$1,105,000	$1,136,000

Changes in the UAL due to actuarial gains or losses as well as changes in actuarial assumptions or methods are amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of Section 2. This method phases in the impact of unanticipated changes in UAL over a 5-year period and attempts to minimize employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years where there is a large increase in UAL the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Changes Since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

In December of 2016 the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three-year phase-in beginning with the June 30, 2016 actuarial valuation. The minimum employer contributions for Fiscal Year 2020-21 determined in this valuation were calculated using a discount rate of 7.00 percent, payroll growth of 2.75 percent and an inflation rate of 2.50 percent. The projected employer contributions on Page 5 are calculated under the assumption that the discount rate remains at 7.00 percent going forward and that furthermore the realized rate of return on assets for Fiscal Year 2018-19 is 7.00 percent.

The decision to reduce the discount rate was primarily based on reduced capital market assumptions provided by external investment consultants and CalPERS investment staff. The specific decision adopted by the Board reflected recommendations from CalPERS staff and additional input from employer and employee stakeholder groups. Based on the investment allocation adopted by the Board and capital market assumptions, the reduced discount rate assumption provides a more realistic assumption for the long-term investment return of the fund.

CalPERS has implemented a new actuarial valuation software system for the June 30, 2018 valuation. With this new system we have refined and improved some of our calculation methodology. Any difference in liability between the old software and new software calculations is captured as a method change line item.

Subsequent Events

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on UAL bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

For inactive employers the new amortization policy imposes a maximum amortization period of 15 years for all unfunded accrued liabilities effective June 30, 2018. Furthermore, the plan actuary has the ability to shorten the amortization period on any valuation date based on the life expectancy of plan members and projected cash flow needs to the plan. The impact of this has been reflected in the current valuation results.

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2018. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase the required contribution, while investment returns above the assumed rate of return will decrease the required contribution.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2019. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Normal Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Normal Accrued Liability

Active Members	$	16,868,222
Transferred Members		3,001,923
Terminated Members		274,396
Members and Beneficiaries Receiving Payments		22,616,957
Total	$	42,761,498

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	$	42,761,498
2.	Projected UAL balance at 6/30/18		10,204,918
3.	Pool's Accrued Liability[1]		22,716,935,494
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/18[1]		5,835,345,753
5.	Pool's 2017/18 Investment & Asset (Gain)/Loss[1]		(166,826,991)
6.	Pool's 2017/18 Other (Gain)/Loss[1]		79,829,358
7.	Plan's Share of Pool's Asset (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)		(321,730)
8.	Plan's Share of Pool's Other (Gain)/Loss: (1) ÷ (3) × (6)		150,268
9.	Plan's New (Gain)/Loss as of 6/30/2018: (7) + (8)		(171,462)
10.	Increase in Pool's Accrued Liability due to Change in Assumptions[1]		623,352,408
11.	Plan's Share of Pool's Change in Assumptions: (1) ÷ (3) × (10)		1,173,375
12.	Increase in Pool's Accrued Liability due to Change in Method[1]		146,565,925
13.	Plan's Share of Pool's Change in Method: (1) ÷ (3) × (12)		275,890

[1] Does not include plans that transferred to Pool on the valuation date.

Development of the Plan's Share of Pool's Market Value of Assets

14.	Plan's UAL: (2) + (9) + (11) + (13)	$	11,482,721
15.	Plan's Share of Pool's MVA: (1) - (14)	$	**31,278,777**

Schedule of Plan's Amortization Bases

On the next page is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2018.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: Fiscal Year 2020-21.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Schedule of Plan's Amortization Bases

									Amounts for Fiscal 2020-21	
Reason for Base	**Date Established**	**Ramp Up/Down 2020-21**	**Escalation Rate**	**Amortization Period**	**Balance 6/30/18**	**Payment 2018-19**	**Balance 6/30/19**	**Payment 2019-20**	**Balance 6/30/20**	**Scheduled Payment for 2020-21**
SHARE OF PRE-2013 POOL UAL	06/30/13	No Ramp	2.750%	17	$3,007,562	$232,711	$2,977,373	$239,038	$2,938,526	$242,472
NON-ASSET (GAIN)/LOSS	06/30/13	100% →	2.750%	25	$(263,597)	$(13,977)	$(267,591)	$(17,949)	$(267,756)	$(18,164)
ASSET (GAIN)/LOSS	06/30/13	100% →	2.750%	25	$4,337,639	$229,997	$4,403,363	$295,364	$4,406,072	$298,895
NON-ASSET (GAIN)/LOSS	06/30/14	100% →	2.750%	26	$36,711	$1,463	$37,767	$2,005	$38,337	$2,535
ASSET (GAIN)/LOSS	06/30/14	100% →	2.750%	26	$(3,018,943)	$(120,346)	$(3,105,782)	$(164,862)	$(3,152,652)	$(208,475)
ASSUMPTION CHANGE	06/30/14	100% →	2.750%	16	$1,988,089	$109,373	$2,014,119	$149,799	$2,000,154	$190,193
NON-ASSET (GAIN)/LOSS	06/30/15	80% ↗	2.750%	27	$(6,417)	$(173)	$(6,687)	$(267)	$(6,879)	$(360)
ASSET (GAIN)/LOSS	06/30/15	80% ↗	2.750%	27	$1,779,674	$48,022	$1,854,577	$74,013	$1,907,838	$99,788
NON-ASSET (GAIN)/LOSS	06/30/16	60% ↗	2.750%	28	$(358,347)	$(4,973)	$(378,287)	$(10,219)	$(394,196)	$(15,491)
ASSET (GAIN)/LOSS	06/30/16	60% ↗	2.750%	28	$2,229,011	$30,931	$2,353,046	$63,567	$2,452,005	$96,361
ASSUMPTION CHANGE	06/30/16	60% ↗	2.750%	18	$692,824	$13,074	$727,798	$26,864	$750,956	$40,886
NON-ASSET (GAIN)/LOSS	06/30/17	40% ↗	2.750%	29	$26,464	$0	$28,316	$393	$29,892	$795
ASSET (GAIN)/LOSS	06/30/17	40% ↗	2.750%	29	$(1,063,023)	$0	$(1,137,435)	$(15,803)	$(1,200,709)	$(31,917)
ASSUMPTION CHANGE	06/30/17	40% ↗	2.750%	19	$817,271	$(35,211)	$910,903	$17,206	$956,868	$34,893
NON-ASSET (GAIN)/LOSS	06/30/18	20% ↗	2.750%	30	$150,268	$0	$160,786	$0	$172,042	$2,350
ASSET (GAIN)/LOSS	06/30/18	20% ↗	2.750%	30	$(321,730)	$0	$(344,251)	$0	$(368,349)	$(5,031)
ASSUMPTION CHANGE	06/30/18	20% ↗	2.750%	20	$1,173,375	$(29,668)	$1,286,200	$(30,484)	$1,407,766	$26,247
METHOD CHANGE	06/30/18	20% ↗	2.750%	20	$275,890	$(685)	$295,911	$(704)	$317,352	$5,917
TOTAL					**$11,482,721**	**$460,538**	**$11,810,126**	**$627,961**	**$11,987,267**	**$761,892**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is $0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on: 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate “fresh start” amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 2.75 percent for each year into the future.

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single “fresh start” base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

Amortization Schedule and Alternatives

			Alternate Schedules			
	Current Amortization Schedule		15 Year Amortization		10 Year Amortization	
Date	Balance	Payment	Balance	Payment	Balance	Payment
6/30/2020	11,987,267	761,892	11,987,267	1,081,176	11,987,267	1,478,026
6/30/2021	12,038,269	882,316	11,707,998	1,110,908	11,297,494	1,518,672
6/30/2022	11,968,273	982,545	11,378,426	1,141,458	10,517,392	1,560,435
6/30/2023	11,789,699	1,043,593	10,994,181	1,172,849	9,639,483	1,603,347
6/30/2024	11,535,478	1,105,154	10,550,570	1,205,102	8,655,731	1,647,439
6/30/2025	11,199,781	1,135,546	10,042,543	1,238,242	7,557,508	1,692,744
6/30/2026	10,809,148	1,166,773	9,464,673	1,272,294	6,335,546	1,739,294
6/30/2027	10,358,868	1,198,860	8,811,129	1,307,282	4,979,894	1,787,125
6/30/2028	9,843,879	1,231,828	8,075,645	1,343,232	3,479,870	1,836,271
6/30/2029	9,258,738	1,265,703	7,251,490	1,380,171	1,824,008	1,886,768
6/30/2030	8,597,596	1,300,510	6,331,435	1,418,126		
6/30/2031	7,854,169	1,336,274	5,307,714	1,457,124		
6/30/2032	7,021,708	1,320,347	4,171,993	1,497,195		
6/30/2033	6,147,450	1,302,532	2,915,322	1,538,368		
6/30/2034	5,230,422	1,262,815	1,528,094	1,580,673		
6/30/2035	4,290,285	1,193,720				
6/30/2036	3,355,812	1,070,224				
6/30/2037	2,483,670	614,812				
6/30/2038	2,021,560	528,667				
6/30/2039	1,616,212	460,138				
6/30/2040	1,253,377	417,456				
6/30/2041	909,294	329,684				
6/30/2042	631,917	311,581				
6/30/2043	353,850	245,842				
6/30/2044	124,318	124,560				
6/30/2045	4,175	4,318				
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
Totals		**22,597,690**		**19,744,201**		**16,750,121**
Interest Paid		**10,610,423**		**7,756,934**		**4,762,854**
Estimated Savings				**2,853,488**		**5,847,568**

Employer Contribution History

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

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)
2016 - 17	17.689%	$322,155
2017 - 18	17.875%	$405,353
2018 - 19	18.677%	$526,104
2019 - 20	20.073%	$659,149
2020 - 21	21.746%	$761,892

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Plan's Share of Pool's Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/2011	$ 28,067,226	$ 22,531,125	$ 5,536,101	80.3%	$ 2,880,482
06/30/2012	28,624,917	21,696,782	6,928,135	75.8%	2,606,560
06/30/2013	30,838,361	24,852,115	5,986,246	80.6%	2,645,863
06/30/2014	32,340,790	26,848,441	5,492,349	83.0%	2,467,173
06/30/2015	33,840,258	26,630,798	7,209,460	78.7%	2,601,363
06/30/2016	36,711,005	27,023,432	9,687,573	73.6%	2,597,650
06/30/2017	39,096,059	29,243,555	9,852,504	74.8%	2,469,719
06/30/2018	42,761,498	31,278,777	11,482,721	73.1%	2,266,398

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Inflation Rate Sensitivity**
- **Maturity Measures**
- **Hypothetical Termination Liability**

Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2018-19, 2019-20, 2020-21 and 2021-22). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2018-19, 2019-20, 2020-21, and 2021-22, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0 percent, 4.0 percent, 7.0 percent, 9.0 percent and 12.0 percent.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2022. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25 percent of them had an average annual return of 4.0 percent or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0 percent or greater than 12.0 percent over this four-year period, the possibility of a single investment return less than 1.0 percent or greater than 12.0 percent in any given year is much greater.

Assumed Annual Return From 2019-20 through 2021-22	**Projected Employer Contributions**			
	2021-22	**2022-23**	**2023-24**	**2024-25**
1.0%				
Normal Cost	21.7%	21.7%	21.7%	21.7%
UAL Contribution	$929,000	$1,122,000	$1,323,000	$1,571,000
4.0%				
Normal Cost	21.7%	21.7%	21.7%	21.7%
UAL Contribution	$906,000	$1,053,000	$1,186,000	$1,345,000
7.0%				
Normal Cost	21.7%	21.7%	21.7%	21.7%
UAL Contribution	$882,000	$983,000	$1,044,000	$1,105,000
9.0%				
Normal Cost	22.1%	22.5%	22.9%	23.3%
UAL Contribution	$871,000	$949,000	$978,000	$995,000
12.0%				
Normal Cost	22.1%	22.5%	22.9%	23.3%
UAL Contribution	$847,000	$877,000	$828,000	$735,000

In addition, the projections above reflect the recent changes to the new amortization policy effective with the June 30, 2019 valuation. The projections above incorporate the impact of the CalPERS risk mitigation policy which reduces the discount rate when investment returns are above specified trigger points.

Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2018 assuming alternate discount rates. Results are shown using the current discount rate of 7.0 percent as well as alternate discount rates of 6.0 percent and 8.0 percent. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" at the end of this section.

Sensitivity Analysis				
As of June 30, 2018	**Plan's Total Normal Cost**	**Accrued Liability**	**Unfunded Accrued Liability**	**Funded Status**
7.0% (current discount rate)	30.733%	$42,761,498	$11,482,721	73.1%
6.0%	38.440%	$48,419,085	$17,140,308	64.6%
8.0%	24.829%	$38,073,428	$6,794,651	82.2%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2018 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2018	Current Mortality	10% Lower Mortality Rates	10% Higher Mortality Rates
a) Accrued Liability	$42,761,498	$43,515,353	$42,062,940
b) Market Value of Assets	$31,278,777	$31,278,777	$31,278,777
c) Unfunded Liability (Surplus) [(a)-(b)]	$11,482,721	$12,236,576	$10,784,163
d) Funded Status	73.1%	71.9%	74.4%

A 10 percent increase (decrease) in assumed mortality rates over the long-term would result in approximately a 1.3 percent increase (decrease) to the funded ratio.

Inflation Rate Sensitivity

The following analysis looks at the change in the June 30, 2018 plan costs and funded ratio under two different inflation rate scenarios, namely assuming the liability inflation rate is 1 percent lower or 1 percent higher than the current valuation inflation rate assumption of 2.50%, while holding the discount rate fixed at 7.0%. This type of analysis highlights the impact on the plan of increased or decreased inflation of active salaries and retiree COLAs over the long-term.

As of June 30, 2018	Current Inflation Rate	-1% Inflation Rate	+1% Inflation Rate
a) Accrued Liability	$42,761,498	$40,015,092	$44,845,128
b) Market Value of Assets	$31,278,777	$31,278,777	$31,278,777
c) Unfunded Liability (Surplus) [(a)-(b)]	$11,482,721	$8,736,315	$13,566,351
d) Funded Status	73.1%	78.2%	69.7%

A decrease of 1 percent in the liability inflation rate (2.50 percent to 1.50 percent) reduces the Accrued Liability by 6.4 percent. However, a 1 percent increase in the liability inflation rate (2.50 percent to 3.50 percent) increases the Accrued Liability by 4.9 percent.

Maturity Measures

As pension plans mature they become much more sensitive to risks than plans that are less mature. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 0.60 to 0.65. For both CalPERS and other retirement systems in the United States, these ratios have been steadily increasing in recent years.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2017	June 30, 2018
1. Retired Accrued Liability	19,724,787	22,616,957
2. Total Accrued Liability	39,096,059	42,761,498
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.50	0.53

Another way to look at the maturity level of CalPERS and its plans is to look at the ratio of actives to retirees. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	June 30, 2017	June 30, 2018
1. Number of Actives	20	18
2. Number of Retirees	26	28
3. Support Ratio [(1) / (2)]	0.77	0.64

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with a liability-to-payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability-to-payroll ratio of 4. The liability volatility ratio is also shown in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The asset volatility ratio, described above, will tend to move closer to the liability volatility ratio as the plan matures.

Contribution Volatility	June 30, 2017	June 30, 2018
1. Market Value of Assets	$ 29,243,555	$ 31,278,777
2. Payroll	2,469,719	2,266,398
3. Asset Volatility Ratio (AVR) [(1) / (2)]	11.8	13.8
4. Accrued Liability	$ 39,096,059	$ 42,761,498
5. Liability Volatility Ratio (LVR) [(4) / (2)]	15.8	18.9
6. Accrued Liability (7.00% discount rate)	40,189,354	42,761,498
7. Projected Liability Volatility Ratio [(6) / (2)]	16.3	18.9

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2018. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] @ 2.50%	Funded Status	Unfunded Termination Liability @ 2.50%	Hypothetical Termination Liability[1,2] @ 3.25%	Funded Status	Unfunded Termination Liability @ 3.25%
$31,278,777	$80,641,800	38.8%	$49,363,022	$73,935,033	42.3%	$42,656,256

1 The hypothetical liabilities calculated above include a 5 percent mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

2 The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.91 percent on June 30, 2018, and was 2.83 percent on January 31, 2019.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

	June 30, 2017	June 30, 2018
Reported Payroll	$ 2,469,719	$ 2,266,398
Projected Payroll for Contribution Purposes	$ 2,688,915	$ 2,458,565
Number of Members		
Active	20	18
Transferred	10	10
Separated	2	2
Retired	26	28

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- One Year Final Compensation (FAC 1)

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in the following section of this Appendix.

	Benefit Group		
Member Category	Fire	Fire	
Demographics			
Actives	Yes	No	
Transfers/Separated	Yes	No	
Receiving	Yes	Yes	
Benefit Provision			
Benefit Formula	3% @ 55	2% @ 50	
Social Security Coverage	No	No	
Full/Modified	Full	Full	
Employee Contribution Rate	9.00%		
Final Average Compensation Period	One Year	One Year	
Sick Leave Credit	Yes	Yes	
Non-Industrial Disability	Standard	Standard	
Industrial Disability	Standard	Standard	
Pre-Retirement Death Benefits			
Optional Settlement 2	Yes	No	
1959 Survivor Benefit Level	Indexed	Indexed	
Special	Yes	Yes	
Alternate (firefighters)	No	No	
Post-Retirement Death Benefits			
Lump Sum	$500	$500	
Survivor Allowance (PRSA)	No	No	
COLA	2%	2%	

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Section 2 may be found on the CalPERS website (www.calpers.ca.gov) in the Forms and Publications section

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 |Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2019

PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2018

Dear Employer,

Attached to this letter, you will find the June 30, 2018 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for Fiscal Year 2020-21**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2018.

Section 2 can be found on the CalPERS website (www.calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2018 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 1, 2019.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2020-21 along with estimates of the required contributions for Fiscal Year 2021-22. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Employee Rate
2020-21	13.044%	$17,747	13.000%
Projected Results			
2021-22	*13.0%*	*$18,000*	*TBD*

The actual investment return for Fiscal Year 2018-19 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00 percent. ***If the actual investment return for Fiscal Year 2018-19 differs from 7.00 percent, the actual contribution requirements for the projected years will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2025-26.

Changes from Previous Year's Valuation

CalPERS continues to strive to provide comprehensive risk assessments regarding plan funding and sustainability consistent with the Board of Administration's pension and investment beliefs. Your report this year includes new metrics on plan maturity in recognition of the fact that most pension plans at CalPERS are maturing as anticipated. As plans mature, they become more sensitive to risks than plans that are less mature. The "Risk Analysis" section of your report will help you understand how your plan is affected by investment return volatility and other economic assumptions. We have included plan sensitivity analysis with respect to longevity and inflation to further that discussion and encourage you to review our most recent Annual Review of Funding Levels and Risks report on our website that takes a holistic view of the system.

Upcoming Change for June 30, 2019 Valuations

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on Unfunded Accrued Liability (UAL) bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

Besides the above noted changes, there may also be changes specific to the plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report.

We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 1 2019 to contact us with actuarial questions.

If you have other questions, please call our customer contact center at (888) CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO
Chief Actuary

Actuarial Valuation as of June 30, 2018

for the PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)

Required Contributions for Fiscal Year July 1, 2020 - June 30, 2021

Table of Contents

Section 1

Plan Specific Information for the PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)
(Valuation Rate Plan ID: 25848)

Table of Contents

Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2018 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2018 provided by employers participating in the Safety Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your PEPRA Safety Fire Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that Unfunded Accrued Liability amortization bases as of June 30, 2018 and employer contribution as of July 1, 2020, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

DAVID CLEMENT, ASA, MAAA, EA
Senior Pension Actuary, CalPERS
Plan Actuary

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2018 actuarial valuation of the PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2020-21.

Purpose of Section 1

This Section 1 report for the PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2018;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2020 through June 30, 2021; and
- Provide actuarial information as of June 30, 2018 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

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; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 10.

Additionally, this report includes the following "Enhanced Risk Disclosures" also recommended by the CAAP in the Model Disclosure Elements document and consistent with the recommendations of Actuarial Standard of Practice No. 51:

- A "Scenario Test," projecting future results under different investment income scenarios.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0 percent and 8.0 percent.
- A "Sensitivity Analysis," showing the impact on current valuation results using a 1.0 percent plus or minus change in the inflation rate.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.
- Plan maturity measures which indicate how sensitive a plan may be to the risks noted above.

Required Employer Contributions

		Fiscal Year
Required Employer Contributions		**2020-21**
Employer Normal Cost Rate		**13.044%**
Plus, Either		
1) Monthly Employer Dollar UAL Payment	**$**	**1,478.94**
Or		
2) Annual UAL Prepayment Option*	**$**	**17,157**

The total minimum required employer contribution is the ***sum*** *of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll)* ***plus*** *the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).*

** Only the UAL portion of the employer contribution can be prepaid* ***(which must be received in full no later than July 31)****. Any prepayment totaling over $5 million requires a 72-hour notice email to FCSD_public_agency_wires@calpers.ca.gov. Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change.*

In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply.

		Fiscal Year 2019-20		Fiscal Year 2020-21
Development of Normal Cost as a Percentage of Payroll[1]				
Base Total Normal Cost for Formula		25.034%		26.044%
Surcharge for Class 1 Benefits[2]				
None		0.000%		0.000%
Phase out of Normal Cost Difference[3]		0.000%		0.000%
Plan's Total Normal Cost		25.034%		26.044%
Plan's Employee Contribution Rate[4]		12.000%		13.000%
Employer Normal Cost Rate		13.034%		13.044%
Projected Payroll for the Contribution Fiscal Year	$	472,001	$	863,721
Estimated Employer Contributions Based on Projected Payroll				
Plan's Estimated Employer Normal Cost	$	61,521	$	112,664
Plan's Payment on Amortization Bases[5]		5,047		17,747
% of Projected Payroll (illustrative only)		1.069%		2.055%
Estimated Total Employer Contribution	$	66,568	$	130,411
% of Projected Payroll (illustrative only)		14.103%		15.099%

1 The results shown for Fiscal Year 2019-20 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after April 30, 2018.

2 Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

3 The normal cost difference is phased out over a five-year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

4 For detail regarding the determination of the required PEPRA employee contribution rate see Section on PEPRA Member Contribution Rates.

5 See page 10 for a breakdown of the Amortization Bases.

Plan's Funded Status

	June 30, 2017	June 30, 2018
1. Present Value of Projected Benefits (PVB)	$ 1,760,539	$ 3,112,568
2. Entry Age Normal Accrued Liability (AL)	156,005	374,975
3. Plan's Market Value of Assets (MVA)	151,473	351,415
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	4,532	23,560
5. Funded Ratio [(3) / (2)]	97.1%	93.7%

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows projected employer contributions (before cost sharing) for the next six fiscal years. Projected results reflect the adopted changes to the discount rate described in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report. The projections also assume that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period.

	Required Contribution	Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2018-19)				
Fiscal Year	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**
Normal Cost %	13.044%	13.0%	13.0%	13.0%	13.0%	13.0%
UAL Payment	$17,747	$18,000	$19,000	$0	$0	$0

Changes in the UAL due to actuarial gains or losses as well as changes in actuarial assumptions or methods are amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of Section 2. This method phases in the impact of unanticipated changes in UAL over a 5-year period and attempts to minimize employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years where there is a large increase in UAL the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Changes Since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

In December of 2016 the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three-year phase-in beginning with the June 30, 2016 actuarial valuation. The minimum employer contributions for Fiscal Year 2020-21 determined in this valuation were calculated using a discount rate of 7.00 percent, payroll growth of 2.75 percent and an inflation rate of 2.50 percent. The projected employer contributions on Page 5 are calculated under the assumption that the discount rate remains at 7.00 percent going forward and that furthermore the realized rate of return on assets for Fiscal Year 2018-19 is 7.00 percent.

The decision to reduce the discount rate was primarily based on reduced capital market assumptions provided by external investment consultants and CalPERS investment staff. The specific decision adopted by the Board reflected recommendations from CalPERS staff and additional input from employer and employee stakeholder groups. Based on the investment allocation adopted by the Board and capital market assumptions, the reduced discount rate assumption provides a more realistic assumption for the long-term investment return of the fund.

CalPERS has implemented a new actuarial valuation software system for the June 30, 2018 valuation. With this new system we have refined and improved some of our calculation methodology. Any difference in liability between the old software and new software calculations is captured as a method change line item.

Subsequent Events

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on UAL bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

For inactive employers the new amortization policy imposes a maximum amortization period of 15 years for all unfunded accrued liabilities effective June 30, 2018. Furthermore, the plan actuary has the ability to shorten the amortization period on any valuation date based on the life expectancy of plan members and projected cash flow needs to the plan. The impact of this has been reflected in the current valuation results.

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2018. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase the required contribution, while investment returns above the assumed rate of return will decrease the required contribution.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2019. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Normal Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Normal Accrued Liability

Active Members	$	374,975
Transferred Members		0
Terminated Members		0
Members and Beneficiaries Receiving Payments		0
Total	$	374,975

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	$	374,975
2.	Projected UAL balance at 6/30/18		13,110
3.	Pool's Accrued Liability[1]		22,716,935,494
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/18[1]		5,835,345,753
5.	Pool's 2017/18 Investment & Asset (Gain)/Loss[1]		(166,826,991)
6.	Pool's 2017/18 Other (Gain)/Loss[1]		79,829,358
7.	Plan's Share of Pool's Asset (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)		(3,576)
8.	Plan's Share of Pool's Other (Gain)/Loss: (1) ÷ (3) × (6)		1,318
9.	Plan's New (Gain)/Loss as of 6/30/2018: (7) + (8)		(2,258)
10.	Increase in Pool's Accrued Liability due to Change in Assumptions[1]		623,352,408
11.	Plan's Share of Pool's Change in Assumptions: (1) ÷ (3) × (10)		10,289
12.	Increase in Pool's Accrued Liability due to Change in Method[1]		146,565,925
13.	Plan's Share of Pool's Change in Method: (1) ÷ (3) × (12)		2,419

[1] Does not include plans that transferred to Pool on the valuation date.

Development of the Plan's Share of Pool's Market Value of Assets

14.	Plan's UAL: (2) + (9) + (11) + (13)	$	23,560
15.	Plan's Share of Pool's MVA: (1) - (14)	$	**351,415**

Schedule of Plan's Amortization Bases

On the next page is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2018.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: Fiscal Year 2020-21.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Schedule of Plan's Amortization Bases

Reason for Base	Date Established	Ramp Up/Down 2020-21	Escalation Rate	Amortization Period	Balance 6/30/18	Payment 2018-19	Balance 6/30/19	Payment 2019-20	Amounts for Fiscal 2020-21 Balance 6/30/20	Amounts for Fiscal 2020-21 Scheduled Payment for 2020-21
FRESH START	06/30/18	No Ramp	2.750%	3	$23,560	$(14,787)	$40,505	$(5,909)	$49,454	$17,747
TOTAL					**$23,560**	**$(14,787)**	**$40,505**	**$(5,909)**	**$49,454**	**$17,747**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is $0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on: 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 2.75 percent for each year into the future.

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

Amortization Schedule and Alternatives

	Current Amortization Schedule		Alternate Schedules			
			0 Year Amortization		0 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2020	49,453	17,747	N/A	N/A	N/A	N/A
6/30/2021	34,557	18,235				
6/30/2022	18,113	18,736				
6/30/2023						
6/30/2024						
6/30/2025						
6/30/2026						
6/30/2027						
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6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
Totals		**54,718**		**N/A**		**N/A**
Interest Paid		**5,266**		**N/A**		**N/A**
Estimated Savings				**N/A**		**N/A**

Employer Contribution History

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

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)
2017 - 18	11.990%	$0
2018 - 19	12.141%	$2,057
2019 - 20	13.034%	$5,047
2020 - 21	13.044%	$17,747

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Plan's Share of Pool's Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/2015	$ 65	$ 62	$ 3	94.8%	$ 108,822
06/30/2016	59,319	54,979	4,340	92.7%	234,586
06/30/2017	156,005	151,473	4,532	97.1%	433,524
06/30/2018	374,975	351,415	23,560	93.7%	796,211

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Inflation Rate Sensitivity**
- **Maturity Measures**
- **Hypothetical Termination Liability**

Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2018-19, 2019-20, 2020-21 and 2021-22). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2018-19, 2019-20, 2020-21, and 2021-22, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0 percent, 4.0 percent, 7.0 percent, 9.0 percent and 12.0 percent.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2022. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25 percent of them had an average annual return of 4.0 percent or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0 percent or greater than 12.0 percent over this four-year period, the possibility of a single investment return less than 1.0 percent or greater than 12.0 percent in any given year is much greater.

Assumed Annual Return From 2019-20 through 2021-22	**Projected Employer Contributions**			
	2021-22	**2022-23**	**2023-24**	**2024-25**
1.0%				
Normal Cost	13.0%	13.0%	13.0%	13.0%
UAL Contribution	$19,000	$20,000	$3,100	$5,200
4.0%				
Normal Cost	13.0%	13.0%	13.0%	13.0%
UAL Contribution	$18,000	$20,000	$1,600	$2,700
7.0%				
Normal Cost	13.0%	13.0%	13.0%	13.0%
UAL Contribution	$18,000	$19,000	$0	$0
9.0%				
Normal Cost	13.4%	13.7%	14.0%	13.6%
UAL Contribution	$18,000	$18,000	$0	$0
12.0%				
Normal Cost	13.4%	13.7%	14.0%	13.6%
UAL Contribution	$18,000	$0	$0	$0

In addition, the projections above reflect the recent changes to the new amortization policy effective with the June 30, 2019 valuation. The projections above incorporate the impact of the CalPERS risk mitigation policy which reduces the discount rate when investment returns are above specified trigger points.

Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2018 assuming alternate discount rates. Results are shown using the current discount rate of 7.0 percent as well as alternate discount rates of 6.0 percent and 8.0 percent. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" at the end of this section.

Sensitivity Analysis

As of June 30, 2018	Plan's Total Normal Cost	Accrued Liability	Unfunded Accrued Liability	Funded Status
7.0% (current discount rate)	26.044%	$374,975	$23,560	93.7%
6.0%	32.461%	$457,472	$106,057	76.8%
8.0%	21.147%	$309,895	$(41,520)	113.4%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2018 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2018	Current Mortality	10% Lower Mortality Rates	10% Higher Mortality Rates
a) Accrued Liability	$374,975	$381,874	$368,596
b) Market Value of Assets	$351,415	$351,415	$351,415
c) Unfunded Liability (Surplus) [(a)-(b)]	$23,560	$30,459	$17,181
d) Funded Status	93.7%	92.0%	95.3%

A 10 percent increase (decrease) in assumed mortality rates over the long-term would result in approximately a 1.6 percent increase (decrease) to the funded ratio.

Inflation Rate Sensitivity

The following analysis looks at the change in the June 30, 2018 plan costs and funded ratio under two different inflation rate scenarios, namely assuming the liability inflation rate is 1 percent lower or 1 percent higher than the current valuation inflation rate assumption of 2.50%, while holding the discount rate fixed at 7.0%. This type of analysis highlights the impact on the plan of increased or decreased inflation of active salaries and retiree COLAs over the long-term.

As of June 30, 2018	Current Inflation Rate	-1% Inflation Rate	+1% Inflation Rate
a) Accrued Liability	$374,975	$329,209	$418,405
b) Market Value of Assets	$351,415	$351,415	$351,415
c) Unfunded Liability (Surplus) [(a)-(b)]	$23,560	$(22,206)	$66,990
d) Funded Status	93.7%	106.7%	84.0%

A decrease of 1 percent in the liability inflation rate (2.50 percent to 1.50 percent) reduces the Accrued Liability by 12.2 percent. However, a 1 percent increase in the liability inflation rate (2.50 percent to 3.50 percent) increases the Accrued Liability by 11.6 percent.

Maturity Measures

As pension plans mature they become much more sensitive to risks than plans that are less mature. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 0.60 to 0.65. For both CalPERS and other retirement systems in the United States, these ratios have been steadily increasing in recent years.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2017	June 30, 2018
1. Retired Accrued Liability	0	0
2. Total Accrued Liability	156,005	374,975
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.00	0.00

Another way to look at the maturity level of CalPERS and its plans is to look at the ratio of actives to retirees. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	June 30, 2017	June 30, 2018
1. Number of Actives	5	8
2. Number of Retirees	0	0
3. Support Ratio [(1) / (2)]	N/A	N/A

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with a liability-to-payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability-to-payroll ratio of 4. The liability volatility ratio is also shown in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The asset volatility ratio, described above, will tend to move closer to the liability volatility ratio as the plan matures.

Contribution Volatility	**June 30, 2017**	**June 30, 2018**
1. Market Value of Assets	$ 151,473	$ 351,415
2. Payroll	433,524	796,211
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.3	0.4
4. Accrued Liability	$ 156,005	$ 374,975
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.4	0.5
6. Accrued Liability (7.00% discount rate)	162,249	374,975
7. Projected Liability Volatility Ratio [(6) / (2)]	0.4	0.5

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2018. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] @ 2.50%	Funded Status	Unfunded Termination Liability @ 2.50%	Hypothetical Termination Liability[1,2] @ 3.25%	Funded Status	Unfunded Termination Liability @ 3.25%
$351,415	$610,068	57.6%	$258,653	$510,990	68.8%	$159,575

1 The hypothetical liabilities calculated above include a 5 percent mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

2 The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.91 percent on June 30, 2018, and was 2.83 percent on January 31, 2019.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

	June 30, 2017	June 30, 2018
Reported Payroll	$ 433,524	$ 796,211
Projected Payroll for Contribution Purposes	$ 472,001	$ 863,721
Number of Members		
Active	5	8
Transferred	0	0
Separated	0	0
Retired	0	0

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- None

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in the following section of this Appendix.

	Benefit Group	
Member Category	Fire	
Demographics		
Actives	Yes	
Transfers/Separated	No	
Receiving	No	
Benefit Provision		
Benefit Formula	2.7% @ 57	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	12.00%	
Final Average Compensation Period	Three Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Standard	
Industrial Disability	Standard	
Pre-Retirement Death Benefits		
Optional Settlement 2	Yes	
1959 Survivor Benefit Level	Indexed	
Special	Yes	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$500	
Survivor Allowance (PRSA)	No	
COLA	2%	

PEPRA Member Contribution Rates

The table below shows the determination of the PEPRA Member contribution rates based on 50 percent of the Total Normal Cost for each respective plan on June 30, 2018. Assembly Bill (AB) 340 created PEPRA that implemented new benefit formulas and a final compensation period as well as new contribution requirements for new employees. In accordance with Section Code 7522.30(b), "new members … shall have an initial contribution rate of at least 50 percent of the normal cost rate." The normal cost for the plan is dependent on the benefit levels, actuarial assumptions and demographics of the plan particularly the entry age into the plan. Should the total normal cost of the plan change by one percent or more from the base total normal cost established for the plan, the new member rate shall be 50 percent of the new normal cost rounded to the nearest quarter percent.

		Basis for Current Rate		Rates Effective July 1, 2020			
Rate Plan Identifier	**Benefit Group Name**	**Total Normal Cost**	**Member Rate**	**Total Normal Cost**	**Change**	**Change Needed**	**Member Rate**
25848	Safety Fire PEPRA Level	24.141%	12.000%	26.044%	1.903%	Yes	13.000%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Section 2 may be found on the CalPERS website (www.calpers.ca.gov) in the Forms and Publications section

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 |Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2019

Miscellaneous Plan of the Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2018

Dear Employer,

Attached to this letter, you will find the June 30, 2018 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for Fiscal Year 2020-21**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2018.

Section 2 can be found on the CalPERS website (www.calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2018 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 1, 2019.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2020-21 along with estimates of the required contributions for Fiscal Year 2021-22. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability
2020-21	11.031%	$19,557
Projected Results		
2021-22	*11.0%*	*$20,000*

The actual investment return for Fiscal Year 2018-19 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00 percent. ***If the actual investment return for Fiscal Year 2018-19 differs from 7.00 percent, the actual contribution requirements for the projected years will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2025-26.

Changes from Previous Year's Valuation

CalPERS continues to strive to provide comprehensive risk assessments regarding plan funding and sustainability consistent with the Board of Administration's pension and investment beliefs. Your report this year includes new metrics on plan maturity in recognition of the fact that most pension plans at CalPERS are maturing as anticipated. As plans mature, they become more sensitive to risks than plans that are less mature. The "Risk Analysis" section of your report will help you understand how your plan is affected by investment return volatility and other economic assumptions. We have included plan sensitivity analysis with respect to longevity and inflation to further that discussion and encourage you to review our most recent Annual Review of Funding Levels and Risks report on our website that takes a holistic view of the system.

Upcoming Change for June 30, 2019 Valuations

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on Unfunded Accrued Liability (UAL) bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

Besides the above noted changes, there may also be changes specific to the plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report.

We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 1 2019 to contact us with actuarial questions.

If you have other questions, please call our customer contact center at (888) CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO
Chief Actuary

CalPERS

Actuarial Valuation
as of June 30, 2018

for the
Miscellaneous Plan
of the
Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)

Required Contributions
for Fiscal Year
July 1, 2020 - June 30, 2021

Table of Contents

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the Miscellaneous Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)
(Valuation Rate Plan ID: 903)

Table of Contents

Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2018 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2018 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your Miscellaneous Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that Unfunded Accrued Liability amortization bases as of June 30, 2018 and employer contribution as of July 1, 2020, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

David Clement

DAVID CLEMENT, ASA, MAAA, EA
Senior Pension Actuary, CalPERS
Plan Actuary

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2018 actuarial valuation of the Miscellaneous Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2020-21.

Purpose of Section 1

This Section 1 report for the Miscellaneous Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2018;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2020 through June 30, 2021; and
- Provide actuarial information as of June 30, 2018 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

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; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 10.

Additionally, this report includes the following "Enhanced Risk Disclosures" also recommended by the CAAP in the Model Disclosure Elements document and consistent with the recommendations of Actuarial Standard of Practice No. 51:

- A "Scenario Test," projecting future results under different investment income scenarios.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0 percent and 8.0 percent.
- A "Sensitivity Analysis," showing the impact on current valuation results using a 1.0 percent plus or minus change in the inflation rate.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.
- Plan maturity measures which indicate how sensitive a plan may be to the risks noted above.

Required Employer Contributions

Required Employer Contributions		Fiscal Year 2020-21
Employer Normal Cost Rate		**11.031%**
Plus, Either		
1) Monthly Employer Dollar UAL Payment	**$**	**1,629.75**
Or		
2) Annual UAL Prepayment Option*	**$**	**18,906**

*The total minimum required employer contribution is the **sum** of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) **plus** the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).*

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**. Any prepayment totaling over $5 million requires a 72-hour notice email to FCSD_public_agency_wires@calpers.ca.gov. Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change.*

In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply.

		Fiscal Year 2019-20		Fiscal Year 2020-21
Development of Normal Cost as a Percentage of Payroll[1]				
Base Total Normal Cost for Formula		16.586%		17.392%
Surcharge for Class 1 Benefits[2]				
a) FAC 1		0.541%		0.547%
Phase out of Normal Cost Difference[3]		0.000%		0.000%
Plan's Total Normal Cost		17.127%		17.939%
Formula's Expected Employee Contribution Rate		6.906%		6.908%
Employer Normal Cost Rate		10.221%		11.031%
Projected Payroll for the Contribution Fiscal Year	$	106,968	$	106,165
Estimated Employer Contributions Based on Projected Payroll				
Plan's Estimated Employer Normal Cost	$	10,933	$	11,711
Plan's Payment on Amortization Bases[4]		16,476		19,557
% of Projected Payroll (illustrative only)		15.402%		18.421%
Estimated Total Employer Contribution	$	27,409	$	31,268
% of Projected Payroll (illustrative only)		25.623%		29.452%

[1] The results shown for Fiscal Year 2019-20 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after April 30, 2018.

[2] Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

[3] The normal cost difference is phased out over a five-year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

[4] See page 10 for a breakdown of the Amortization Bases.

Plan's Funded Status

		June 30, 2017		June 30, 2018
1. Present Value of Projected Benefits (PVB)	$	893,103	$	979,660
2. Entry Age Normal Accrued Liability (AL)		739,373		834,584
3. Plan's Market Value of Assets (MVA)		562,619		629,773
4. Unfunded Accrued Liability (UAL) [(2) - (3)]		176,754		204,811
5. Funded Ratio [(3) / (2)]		76.1%		75.5%

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows projected employer contributions (before cost sharing) for the next six fiscal years. Projected results reflect the adopted changes to the discount rate described in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report. The projections also assume that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period.

	Required Contribution	Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2018-19)				
Fiscal Year	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**
Normal Cost %	11.031%	11.0%	11.0%	11.0%	11.0%	11.0%
UAL Payment	$19,557	$20,000	$21,000	$21,000	$22,000	$22,000

Changes in the UAL due to actuarial gains or losses as well as changes in actuarial assumptions or methods are amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of Section 2. This method phases in the impact of unanticipated changes in UAL over a 5-year period and attempts to minimize employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years where there is a large increase in UAL the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Changes Since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

In December of 2016 the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three-year phase-in beginning with the June 30, 2016 actuarial valuation. The minimum employer contributions for Fiscal Year 2020-21 determined in this valuation were calculated using a discount rate of 7.00 percent, payroll growth of 2.75 percent and an inflation rate of 2.50 percent. The projected employer contributions on Page 5 are calculated under the assumption that the discount rate remains at 7.00 percent going forward and that furthermore the realized rate of return on assets for Fiscal Year 2018-19 is 7.00 percent.

The decision to reduce the discount rate was primarily based on reduced capital market assumptions provided by external investment consultants and CalPERS investment staff. The specific decision adopted by the Board reflected recommendations from CalPERS staff and additional input from employer and employee stakeholder groups. Based on the investment allocation adopted by the Board and capital market assumptions, the reduced discount rate assumption provides a more realistic assumption for the long-term investment return of the fund.

CalPERS has implemented a new actuarial valuation software system for the June 30, 2018 valuation. With this new system we have refined and improved some of our calculation methodology. Any difference in liability between the old software and new software calculations is captured as a method change line item.

Subsequent Events

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on UAL bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

For inactive employers the new amortization policy imposes a maximum amortization period of 15 years for all unfunded accrued liabilities effective June 30, 2018. Furthermore, the plan actuary has the ability to shorten the amortization period on any valuation date based on the life expectancy of plan members and projected cash flow needs to the plan. The impact of this has been reflected in the current valuation results.

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2018, and may reflect additional discretionary payments made by the employer through April 30, 2019. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase the required contribution, while investment returns above the assumed rate of return will decrease the required contribution.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2019. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Normal Accrued Liability**
- **Allocation of Plan’s Share of Pool’s Experience/Assumption Change**
- **Development of Plan’s Share of Pool’s Market Value of Assets**
- **Schedule of Plan’s Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Normal Accrued Liability

Active Members	$	392,726
Transferred Members		0
Terminated Members		56,910
Members and Beneficiaries Receiving Payments		384,948
Total	$	834,584

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	$	834,584
2.	Projected UAL balance at 6/30/18		180,220
3.	Pool's Accrued Liability[1]		17,424,237,070
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/18[1]		3,777,499,883
5.	Pool's 2017/18 Investment & Asset (Gain)/Loss[1]		(135,628,188)
6.	Pool's 2017/18 Other (Gain)/Loss[1]		66,272,613
7.	Plan's Share of Pool's Asset (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)		(6,503)
8.	Plan's Share of Pool's Other (Gain)/Loss: (1) ÷ (3) × (6)		3,174
9.	Plan's New (Gain)/Loss as of 6/30/2018: (7) + (8)		(3,329)
10.	Increase in Pool's Accrued Liability due to Change in Assumptions[1]		453,914,155
11.	Plan's Share of Pool's Change in Assumptions: (1) ÷ (3) × (10)		21,742
12.	Increase in Pool's Accrued Liability due to Change in Method[1]		128,995,852
13.	Plan's Share of Pool's Change in Method: (1) ÷ (3) × (12)		6,179

[1] Does not include plans that transferred to Pool on the valuation date.

Development of the Plan's Share of Pool's Market Value of Assets

14.	Plan's UAL: (2) + (9) + (11) + (13)	$	204,811
15.	Plan's Share of Pool's MVA: (1) - (14)	$	**629,773**

Schedule of Plan's Amortization Bases

On the next page is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2018.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: Fiscal Year 2020-21.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Schedule of Plan's Amortization Bases

									Amounts for Fiscal 2020-21	
Reason for Base	**Date Established**	**Ramp Up/Down 2020-21**	**Escalation Rate**	**Amortization Period**	**Balance 6/30/18**	**Payment 2018-19**	**Balance 6/30/19**	**Payment 2019-20**	**Balance 6/30/20**	**Scheduled Payment for 2020-21**
FRESH START	06/30/18	No Ramp	2.750%	14	$204,811	$10,946	$207,826	$15,719	$206,113	$19,557
TOTAL					**$204,811**	**$10,946**	**$207,826**	**$15,719**	**$206,113**	**$19,557**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is $0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on: 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 2.75 percent for each year into the future, except for inactive plans.

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

Amortization Schedule and Alternatives

			Alternate Schedules			
	Current Amortization Schedule		10 Year Amortization		5 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2020	206,114	19,557	206,114	25,414	206,114	46,166
6/30/2021	200,312	20,095	194,254	26,113	172,788	47,435
6/30/2022	193,548	20,647	180,840	26,831	135,815	48,740
6/30/2023	185,738	21,215	165,745	27,569	94,906	50,080
6/30/2024	176,794	21,799	148,830	28,327	49,746	51,457
6/30/2025	166,621	22,398	129,947	29,106		
6/30/2026	155,116	23,014	108,936	29,906		
6/30/2027	142,168	23,647	85,626	30,729		
6/30/2028	127,659	24,297	59,834	31,574		
6/30/2029	111,462	24,965	31,363	32,442		
6/30/2030	93,440	25,652				
6/30/2031	73,446	26,357				
6/30/2032	51,323	27,082				
6/30/2033	26,901	27,827				
6/30/2034						
6/30/2035						
6/30/2036						
6/30/2037						
6/30/2038						
6/30/2039						
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6/30/2043						
6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
Totals		**328,554**		**288,008**		**243,878**
Interest Paid		**122,440**		**81,894**		**37,764**
Estimated Savings				**40,545**		**84,675**

Employer Contribution History

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

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)
2016 - 17	8.880%	$8,629
2017 - 18	8.921%	$10,186
2018 - 19	9.409%	$12,435
2019 - 20	10.221%	$16,476
2020 - 21	11.031%	$19,557

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Plan's Share of Pool's Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/2011	$ 509,811	$ 400,210	$ 109,601	78.5%	$ 109,164
06/30/2012	536,773	399,282	137,491	74.4%	104,664
06/30/2013	576,213	453,796	122,417	78.8%	113,226
06/30/2014	605,694	495,736	109,958	81.9%	104,818
06/30/2015	635,438	499,065	136,373	78.5%	91,548
06/30/2016	673,254	493,089	180,165	73.2%	93,102
06/30/2017	739,373	562,619	176,754	76.1%	98,248
06/30/2018	834,584	629,773	204,811	75.5%	97,867

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Inflation Rate Sensitivity**
- **Maturity Measures**
- **Hypothetical Termination Liability**

Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2018-19, 2019-20, 2020-21 and 2021-22). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2018-19, 2019-20, 2020-21, and 2021-22, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0 percent, 4.0 percent, 7.0 percent, 9.0 percent and 12.0 percent.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2022. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25 percent of them had an average annual return of 4.0 percent or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0 percent or greater than 12.0 percent over this four-year period, the possibility of a single investment return less than 1.0 percent or greater than 12.0 percent in any given year is much greater.

Assumed Annual Return From 2018-19 through 2021-22	**Projected Employer Contributions**			
	2021-22	**2022-23**	**2023-24**	**2024-25**
1.0%				
Normal Cost	11.0%	11.0%	11.0%	11.0%
UAL Contribution	$21,000	$23,000	$27,000	$31,000
4.0%				
Normal Cost	11.0%	11.0%	11.0%	11.0%
UAL Contribution	$21,000	$22,000	$24,000	$27,000
7.0%				
Normal Cost	11.0%	11.0%	11.0%	11.0%
UAL Contribution	$20,000	$21,000	$21,000	$22,000
9.0%				
Normal Cost	11.3%	11.5%	11.7%	11.9%
UAL Contribution	$20,000	$20,000	$20,000	$20,000
12.0%				
Normal Cost	11.3%	11.5%	11.7%	11.9%
UAL Contribution	$19,000	$18,000	$17,000	$14,000

In addition, the projections above reflect the recent changes to the new amortization policy effective with the June 30, 2019 valuation. The projections above incorporate the impact of the CalPERS risk mitigation policy which reduces the discount rate when investment returns are above specified trigger points.

Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2018 assuming alternate discount rates. Results are shown using the current discount rate of 7.0 percent as well as alternate discount rates of 6.0 percent and 8.0 percent. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" at the end of this section.

Sensitivity Analysis

As of June 30, 2018	Plan's Total Normal Cost	Accrued Liability	Unfunded Accrued Liability	Funded Status
7.0% (current discount rate)	17.939%	$834,584	$204,811	75.5%
6.0%	22.343%	$964,911	$335,138	65.3%
8.0%	14.561%	$728,519	$98,746	86.4%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2018 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2018	Current Mortality	10% Lower Mortality Rates	10% Higher Mortality Rates
a) Accrued Liability	$834,584	$849,732	$820,539
b) Market Value of Assets	$629,773	$629,773	$629,773
c) Unfunded Liability (Surplus) [(a)-(b)]	$204,811	$219,959	$190,766
d) Funded Status	75.5%	74.1%	76.8%

A 10 percent increase (decrease) in assumed mortality rates over the long-term would result in approximately a 1.3 percent increase (decrease) to the funded ratio.

Inflation Rate Sensitivity

The following analysis looks at the change in the June 30, 2018 plan costs and funded ratio under two different inflation rate scenarios, namely assuming the liability inflation rate is 1 percent lower or 1 percent higher than the current valuation inflation rate assumption of 2.50%, while holding the discount rate fixed at 7.0%. This type of analysis highlights the impact on the plan of increased or decreased inflation of active salaries and retiree COLAs over the long-term.

As of June 30, 2018	Current Inflation Rate	-1% Inflation Rate	+1% Inflation Rate
a) Accrued Liability	$834,584	$764,340	$892,442
b) Market Value of Assets	$629,773	$629,773	$629,773
c) Unfunded Liability (Surplus) [(a)-(b)]	$204,811	$134,567	$262,669
d) Funded Status	75.5%	82.4%	70.6%

A decrease of 1 percent in the liability inflation rate (2.50 percent to 1.50 percent) reduces the Accrued Liability by 8.4 percent. However, a 1 percent increase in the liability inflation rate (2.50 percent to 3.50 percent) increases the Accrued Liability by 6.9 percent.

Maturity Measures

As pension plans mature they become much more sensitive to risks than plans that are less mature. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 0.60 to 0.65. For both CalPERS and other retirement systems in the United States, these ratios have been steadily increasing in recent years.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2017	June 30, 2018
1. Retired Accrued Liability	371,032	384,948
2. Total Accrued Liability	739,373	834,584
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.50	0.46

Another way to look at the maturity level of CalPERS and its plans is to look at the ratio of actives to retirees. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	June 30, 2017	June 30, 2018
1. Number of Actives	2	2
2. Number of Retirees	1	1
3. Support Ratio [(1) / (2)]	2.00	2.00

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with a liability-to-payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability-to-payroll ratio of 4. The liability volatility ratio is also shown in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The asset volatility ratio, described above, will tend to move closer to the liability volatility ratio as the plan matures.

Contribution Volatility	**June 30, 2017**	**June 30, 2018**
1. Market Value of Assets	$ 562,619	$ 629,773
2. Payroll	98,248	97,867
3. Asset Volatility Ratio (AVR) [(1) / (2)]	5.7	6.4
4. Accrued Liability	$ 739,373	$ 834,584
5. Liability Volatility Ratio (LVR) [(4) / (2)]	7.5	8.5
6. Accrued Liability (7.00% discount rate)	761,534	834,584
7. Projected Liability Volatility Ratio [(6) / (2)]	7.8	8.5

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2018. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] @ 2.50%	Funded Status	Unfunded Termination Liability @ 2.50%	Hypothetical Termination Liability[1,2] @ 3.25%	Funded Status	Unfunded Termination Liability @ 3.25%
$629,773	$1,400,099	45.0%	$770,326	$1,252,333	50.3%	$622,560

1 The hypothetical liabilities calculated above include a 5 percent mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

2 The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.91 percent on June 30, 2018, and was 2.83 percent on January 31, 2019.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

	June 30, 2017	June 30, 2018
Reported Payroll	$ 98,248	$ 97,867
Projected Payroll for Contribution Purposes	$ 106,968	$ 106,165
Number of Members		
Active	2	2
Transferred	0	0
Separated	1	1
Retired	1	1

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- One Year Final Compensation (FAC 1)

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in the following section of this Appendix.

	Benefit Group	
Member Category	Misc	
Demographics		
Actives	Yes	
Transfers/Separated	Yes	
Receiving	Yes	
Benefit Provision		
Benefit Formula	2% @ 55	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	7.00%	
Final Average Compensation Period	One Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Standard	
Industrial Disability	No	
Pre-Retirement Death Benefits		
Optional Settlement 2	Yes	
1959 Survivor Benefit Level	Indexed	
Special	No	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$500	
Survivor Allowance (PRSA)	No	
COLA	2%	

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Section 2 may be found on the CalPERS website (www.calpers.ca.gov) in the Forms and Publications section

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

July 2019

PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2018

Dear Employer,

Attached to this letter, you will find the June 30, 2018 actuarial valuation report of your CalPERS pension plan. **Provided in this report is the determination of the minimum required employer contributions for Fiscal Year 2020-21**. In addition, the report contains important information regarding the current financial status of the plan as well as projections and risk measures to aid in planning for the future.

Because this plan is in a risk pool, the following valuation report has been separated into two sections:

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2018.

Section 2 can be found on the CalPERS website (www.calpers.ca.gov). From the home page, go to *"Forms & Publications"* and select *"View All"*. In the search box, enter *"Risk Pool"* and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2018 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 1, 2019.

Actuarial valuations are based on assumptions regarding future plan experience including investment return and payroll growth, eligibility for the types of benefits provided, and longevity among retirees. The CalPERS Board of Administration adopts these assumptions after considering the advice of CalPERS actuarial and investment teams and other professionals. Each actuarial valuation reflects all prior differences between actual and assumed experience and adjusts the contribution rates as needed. This valuation is based on an investment return assumption of 7.0% which was adopted by the board in December 2016. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from December 2017.

Required Contribution

The exhibit below displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2020-21 along with estimates of the required contributions for Fiscal Year 2021-22. Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees**.

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Employee Rate
2020-21	7.732%	$1,094	6.750%
Projected Results			
2021-22	*7.7%*	*$0*	*TBD*

The actual investment return for Fiscal Year 2018-19 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 7.00 percent. ***If the actual investment return for Fiscal Year 2018-19 differs from 7.00 percent, the actual contribution requirements for the projected years will differ from those shown above.*** For additional details regarding the assumptions and methods used for these projections please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This section also contains projected required contributions through fiscal year 2025-26.

Changes from Previous Year's Valuation

CalPERS continues to strive to provide comprehensive risk assessments regarding plan funding and sustainability consistent with the Board of Administration's pension and investment beliefs. Your report this year includes new metrics on plan maturity in recognition of the fact that most pension plans at CalPERS are maturing as anticipated. As plans mature, they become more sensitive to risks than plans that are less mature. The "Risk Analysis" section of your report will help you understand how your plan is affected by investment return volatility and other economic assumptions. We have included plan sensitivity analysis with respect to longevity and inflation to further that discussion and encourage you to review our most recent Annual Review of Funding Levels and Risks report on our website that takes a holistic view of the system.

Upcoming Change for June 30, 2019 Valuations

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on Unfunded Accrued Liability (UAL) bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

Besides the above noted changes, there may also be changes specific to the plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the "Highlights and Executive Summary" section and in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report.

We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their results, we ask that you wait until after August 1 2019 to contact us with actuarial questions.

If you have other questions, please call our customer contact center at (888) CalPERS or (**888-225-7377**).

Sincerely,

SCOTT TERANDO
Chief Actuary

Actuarial Valuation
as of June 30, 2018

for the
PEPRA Miscellaneous Plan
of the
Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)

Required Contributions
for Fiscal Year
July 1, 2020 - June 30, 2021

Table of Contents

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Plan Specific Information for the PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)
(Valuation Rate Plan ID: 27417)

Table of Contents

Actuarial Certification

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2018 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2018 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the risk pool containing your PEPRA Miscellaneous Plan has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the risk pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that Unfunded Accrued Liability amortization bases as of June 30, 2018 and employer contribution as of July 1, 2020, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

DAVID CLEMENT, ASA, MAAA, EA
Senior Pension Actuary, CalPERS
Plan Actuary

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2018 actuarial valuation of the PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2020-21.

Purpose of Section 1

This Section 1 report for the PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2018;
- Determine the minimum required employer contribution for this plan for the fiscal year July 1, 2020 through June 30, 2021; and
- Provide actuarial information as of June 30, 2018 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

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; changes in actuarial policies; and changes in plan provisions or applicable law.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 10.

Additionally, this report includes the following "Enhanced Risk Disclosures" also recommended by the CAAP in the Model Disclosure Elements document and consistent with the recommendations of Actuarial Standard of Practice No. 51:

- A "Scenario Test," projecting future results under different investment income scenarios.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 6.0 percent and 8.0 percent.
- A "Sensitivity Analysis," showing the impact on current valuation results using a 1.0 percent plus or minus change in the inflation rate.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.
- Plan maturity measures which indicate how sensitive a plan may be to the risks noted above.

Required Employer Contributions

		Fiscal Year
Required Employer Contributions		**2020-21**
Employer Normal Cost Rate		**7.732%**
Plus, Either		
1) Monthly Employer Dollar UAL Payment	**$**	**91.13**
Or		
2) Annual UAL Prepayment Option*	**$**	**1,057**

*The total minimum required employer contribution is the **sum** of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) **plus** the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars).*

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**. Any prepayment totaling over $5 million requires a 72-hour notice email to FCSD_public_agency_wires@calpers.ca.gov. Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change.*

In accordance with Sections 20537 and 20572 of the Public Employees' Retirement Law, if a contracting agency fails to remit the required contributions when due, interest and penalties may apply.

		Fiscal Year 2019-20		Fiscal Year 2020-21
Development of Normal Cost as a Percentage of Payroll[1]				
Base Total Normal Cost for Formula		13.735%		14.482%
Surcharge for Class 1 Benefits[2]				
None		0.000%		0.000%
Phase out of Normal Cost Difference[3]		0.000%		0.000%
Plan's Total Normal Cost		13.735%		14.482%
Plan's Employee Contribution Rate[4]		6.750%		6.750%
Employer Normal Cost Rate		6.985%		7.732%
Projected Payroll for the Contribution Fiscal Year	$	47,148	$	42,135
Estimated Employer Contributions Based on Projected Payroll				
Plan's Estimated Employer Normal Cost	$	3,293	$	3,258
Plan's Payment on Amortization Bases[5]		737		1,094
% of Projected Payroll (illustrative only)		1.563%		2.595%
Estimated Total Employer Contribution	$	4,030	$	4,352
% of Projected Payroll (illustrative only)		8.548%		10.327%

1 The results shown for Fiscal Year 2019-20 reflect the prior year valuation and may not take into account any lump sum payment, side fund payoff, or rate adjustment made after April 30, 2018.

2 Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

3 The normal cost difference is phased out over a five-year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

4 For detail regarding the determination of the required PEPRA employee contribution rate see Section on PEPRA Member Contribution Rates.

5 See page 10 for a breakdown of the Amortization Bases.

Plan's Funded Status

		June 30, 2017		June 30, 2018
1. Present Value of Projected Benefits (PVB)	$	71,909	$	85,356
2. Entry Age Normal Accrued Liability (AL)		746		12,945
3. Plan's Market Value of Assets (MVA)		(521)		10,530
4. Unfunded Accrued Liability (UAL) [(2) - (3)]		1,267		2,415
5. Funded Ratio [(3) / (2)]		(69.9%)		81.3%

This measure of funded status is an assessment of the need for future employer contributions based on the selected actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The table below shows projected employer contributions (before cost sharing) for the next six fiscal years. Projected results reflect the adopted changes to the discount rate described in Appendix A, "Statement of Actuarial Data, Methods and Assumptions" of the Section 2 report. The projections also assume that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period.

	Required Contribution	Projected Future Employer Contributions (Assumes 7.00% Return for Fiscal Year 2018-19)				
Fiscal Year	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**
Normal Cost %	7.732%	7.7%	7.7%	7.7%	7.7%	7.7%
UAL Payment	$1,094	$0	$0	$0	$0	$0

Changes in the UAL due to actuarial gains or losses as well as changes in actuarial assumptions or methods are amortized using a 5-year ramp up. For more information, please see "Amortization of the Unfunded Actuarial Accrued Liability" under "Actuarial Methods" in Appendix A of Section 2. This method phases in the impact of unanticipated changes in UAL over a 5-year period and attempts to minimize employer cost volatility from year to year. As a result of this methodology, dramatic changes in the required employer contributions in any one year are less likely. However, required contributions can change gradually and significantly over the next five years. In years where there is a large increase in UAL the relatively small amortization payments during the ramp up period could result in a funded ratio that is projected to decrease initially while the contribution impact of the increase in the UAL is phased in.

For projected contributions under alternate investment return scenarios, please see the "Future Investment Return Scenarios" in the "Risk Analysis" section.

Changes Since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

In December of 2016 the CalPERS Board of Administration lowered the discount rate from 7.50 percent to 7.00 percent using a three-year phase-in beginning with the June 30, 2016 actuarial valuation. The minimum employer contributions for Fiscal Year 2020-21 determined in this valuation were calculated using a discount rate of 7.00 percent, payroll growth of 2.75 percent and an inflation rate of 2.50 percent. The projected employer contributions on Page 5 are calculated under the assumption that the discount rate remains at 7.00 percent going forward and that furthermore the realized rate of return on assets for Fiscal Year 2018-19 is 7.00 percent.

The decision to reduce the discount rate was primarily based on reduced capital market assumptions provided by external investment consultants and CalPERS investment staff. The specific decision adopted by the Board reflected recommendations from CalPERS staff and additional input from employer and employee stakeholder groups. Based on the investment allocation adopted by the Board and capital market assumptions, the reduced discount rate assumption provides a more realistic assumption for the long-term investment return of the fund.

CalPERS has implemented a new actuarial valuation software system for the June 30, 2018 valuation. With this new system we have refined and improved some of our calculation methodology. Any difference in liability between the old software and new software calculations is captured as a method change line item.

Subsequent Events

The CalPERS Board of Administration has adopted a new amortization policy effective with the June 30, 2019 actuarial valuation. The new policy shortens the period over which actuarial gains and losses are amortized from 30 years to 20 years with the payments computed using a level dollar amount. In addition, the new policy removes the 5-year ramp-up and ramp-down on UAL bases attributable to assumption changes and non-investment gains/losses. The new policy removes the 5-year ramp-down on investment gains/losses. These changes will apply only to new UAL bases established on or after June 30, 2019.

For inactive employers the new amortization policy imposes a maximum amortization period of 15 years for all unfunded accrued liabilities effective June 30, 2018. Furthermore, the plan actuary has the ability to shorten the amortization period on any valuation date based on the life expectancy of plan members and projected cash flow needs to the plan. The impact of this has been reflected in the current valuation results.

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2018, and may reflect additional discretionary payments made by the employer through April 30, 2019. Changes in the value of assets subsequent to that date are not reflected. Investment returns below the assumed rate of return will increase the required contribution, while investment returns above the assumed rate of return will decrease the required contribution.

This actuarial valuation report reflects statutory changes, regulatory changes and CalPERS Board actions through January 2019. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age Normal Accrued Liability**
- **Allocation of Plan's Share of Pool's Experience/Assumption Change**
- **Development of Plan's Share of Pool's Market Value of Assets**
- **Schedule of Plan's Amortization Bases**
- **Amortization Schedule and Alternatives**
- **Employer Contribution History**
- **Funding History**

Breakdown of Entry Age Normal Accrued Liability

Active Members	$	12,945
Transferred Members		0
Terminated Members		0
Members and Beneficiaries Receiving Payments		0
Total	$	12,945

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	$	12,945
2.	Projected UAL balance at 6/30/18		2,041
3.	Pool's Accrued Liability[1]		17,424,237,070
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/18[1]		3,777,499,883
5.	Pool's 2017/18 Investment & Asset (Gain)/Loss[1]		(135,628,188)
6.	Pool's 2017/18 Other (Gain)/Loss[1]		66,272,613
7.	Plan's Share of Pool's Asset (Gain)/Loss: [(1) - (2)] ÷ [(3) - (4)] × (5)		(108)
8.	Plan's Share of Pool's Other (Gain)/Loss: (1) ÷ (3) × (6)		49
9.	Plan's New (Gain)/Loss as of 6/30/2018: (7) + (8)		(59)
10.	Increase in Pool's Accrued Liability due to Change in Assumptions[1]		453,914,155
11.	Plan's Share of Pool's Change in Assumptions: (1) ÷ (3) × (10)		337
12.	Increase in Pool's Accrued Liability due to Change in Method[1]		128,995,852
13.	Plan's Share of Pool's Change in Method: (1) ÷ (3) × (12)		96

[1] Does not include plans that transferred to Pool on the valuation date.

Development of the Plan's Share of Pool's Market Value of Assets

14.	Plan's UAL: (2) + (9) + (11) + (13)	$	2,415
15.	Plan's Share of Pool's MVA: (1) - (14)	$	**10,530**

Schedule of Plan's Amortization Bases

On the next page is the schedule of the plan's amortization bases. Note that there is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2018.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: Fiscal Year 2020-21.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and the need to provide public agencies with their required employer contribution well in advance of the start of the fiscal year.

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Schedule of Plan's Amortization Bases

Reason for Base	Date Established	Ramp Up/Down 2020-21	Escalation Rate	Amortization Period	Balance 6/30/18	Payment 2018-19	Balance 6/30/19	Payment 2019-20	Amounts for Fiscal 2020-21: Balance 6/30/20	Amounts for Fiscal 2020-21: Scheduled Payment for 2020-21
FRESH START	06/30/18	No Ramp	2.750%	1	$2,415	$1,135	$1,410	$437	$1,057	$1,094
TOTAL					**$2,415**	**$1,135**	**$1,410**	**$437**	**$1,057**	**$1,094**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed in "Allocation of Plan's Share of Pool's Experience/Assumption Change" earlier in this section. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is $0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on: 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 2.75 percent for each year into the future, except for inactive plans.

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy.

Amortization Schedule and Alternatives

	Current Amortization Schedule		Alternate Schedules			
			0 Year Amortization		0 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2020	1,057	1,093	N/A	N/A	N/A	N/A
6/30/2021						
6/30/2022						
6/30/2023						
6/30/2024						
6/30/2025						
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6/30/2047						
6/30/2048						
6/30/2049						
Totals		**1,093**		**N/A**		**N/A**
Interest Paid		**36**		**N/A**		**N/A**
Estimated Savings				**N/A**		**N/A**

Employer Contribution History

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

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)
2017 - 18	6.533%	$3
2018 - 19	6.842%	$1,759
2019 - 20	6.985%	$737
2020 - 21	7.732%	$1,094

Funding History

The funding history below shows the plan's actuarial accrued liability, share of the pool's market value of assets, share of the pool's unfunded liability, funded ratio, and annual covered payroll.

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Plan's Share of Pool's Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/2015	$ 3,878	$ 3,690	$ 188	95.2%	$ 42,494
06/30/2016	8,943	8,091	852	90.5%	73,877
06/30/2017	746	(521)	1,267	(69.9%)	43,304
06/30/2018	12,945	10,530	2,415	81.3%	38,842

Risk Analysis

- **Future Investment Return Scenarios**
- **Discount Rate Sensitivity**
- **Mortality Rate Sensitivity**
- **Inflation Rate Sensitivity**
- **Maturity Measures**
- **Hypothetical Termination Liability**

Future Investment Return Scenarios

Analysis was performed to determine the effects of various future investment returns on required employer contributions. The projections below provide a range of results based on five investment return scenarios assumed to occur during the next four fiscal years (2018-19, 2019-20, 2020-21 and 2021-22). The projections also assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

For fiscal years 2018-19, 2019-20, 2020-21, and 2021-22, each scenario assumes an alternate fixed annual return. The fixed return assumptions for the five scenarios are 1.0 percent, 4.0 percent, 7.0 percent, 9.0 percent and 12.0 percent.

These alternate investment returns were chosen based on stochastic analysis of possible future investment returns over the four-year period ending June 30, 2022. Using the expected returns and volatility of the asset classes in which the funds are invested, we produced five thousand stochastic outcomes for this period based on the most recently completed Asset Liability Management process. We then selected annual returns that approximate the 5th, 25th, 50th, 75th, and 95th percentiles for these outcomes. For example, of all the 4-year outcomes generated in the stochastic analysis, approximately 25 percent of them had an average annual return of 4.0 percent or less.

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 1.0 percent or greater than 12.0 percent over this four-year period, the possibility of a single investment return less than 1.0 percent or greater than 12.0 percent in any given year is much greater.

Assumed Annual Return From 2018-19 through 2021-22	Projected Employer Contributions			
	2021-22	2022-23	2023-24	2024-25
1.0%				
Normal Cost	7.7%	7.7%	7.7%	7.7%
UAL Contribution	$16	$47	$95	$160
4.0%				
Normal Cost	7.7%	7.7%	7.7%	7.7%
UAL Contribution	$8	$24	$49	$82
7.0%				
Normal Cost	7.7%	7.7%	7.7%	7.7%
UAL Contribution	$0	$0	$0	$0
9.0%				
Normal Cost	7.9%	7.3%	7.5%	7.7%
UAL Contribution	$0	$0	$0	$0
12.0%				
Normal Cost	7.9%	7.3%	7.5%	7.7%
UAL Contribution	$0	$0	$0	$0

In addition, the projections above reflect the recent changes to the new amortization policy effective with the June 30, 2019 valuation. The projections above incorporate the impact of the CalPERS risk mitigation policy which reduces the discount rate when investment returns are above specified trigger points.

Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2018 assuming alternate discount rates. Results are shown using the current discount rate of 7.0 percent as well as alternate discount rates of 6.0 percent and 8.0 percent. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" at the end of this section.

Sensitivity Analysis				
As of June 30, 2018	**Plan's Total Normal Cost**	**Accrued Liability**	**Unfunded Accrued Liability**	**Funded Status**
7.0% (current discount rate)	14.482%	$12,945	$2,415	81.3%
6.0%	17.929%	$15,849	$5,319	66.4%
8.0%	11.838%	$10,666	$136	98.7%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2018 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2018	Current Mortality	10% Lower Mortality Rates	10% Higher Mortality Rates
a) Accrued Liability	$12,945	$13,178	$12,720
b) Market Value of Assets	$10,530	$10,530	$10,530
c) Unfunded Liability (Surplus) [(a)-(b)]	$2,415	$2,648	$2,190
d) Funded Status	81.3%	79.9%	82.8%

A 10 percent increase (decrease) in assumed mortality rates over the long-term would result in approximately a 1.5 percent increase (decrease) to the funded ratio.

Inflation Rate Sensitivity

The following analysis looks at the change in the June 30, 2018 plan costs and funded ratio under two different inflation rate scenarios, namely assuming the liability inflation rate is 1 percent lower or 1 percent higher than the current valuation inflation rate assumption of 2.50%, while holding the discount rate fixed at 7.0%. This type of analysis highlights the impact on the plan of increased or decreased inflation of active salaries and retiree COLAs over the long-term.

As of June 30, 2018	Current Inflation Rate	-1% Inflation Rate	+1% Inflation Rate
a) Accrued Liability	$12,945	$11,294	$14,529
b) Market Value of Assets	$10,530	$10,530	$10,530
c) Unfunded Liability (Surplus) [(a)-(b)]	$2,415	$764	$3,999
d) Funded Status	81.3%	93.2%	72.5%

A decrease of 1 percent in the liability inflation rate (2.50 percent to 1.50 percent) reduces the Accrued Liability by 12.8 percent. However, a 1 percent increase in the liability inflation rate (2.50 percent to 3.50 percent) increases the Accrued Liability by 12.2 percent.

Maturity Measures

As pension plans mature they become much more sensitive to risks than plans that are less mature. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 0.60 to 0.65. For both CalPERS and other retirement systems in the United States, these ratios have been steadily increasing in recent years.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2017	June 30, 2018
1. Retired Accrued Liability	0	0
2. Total Accrued Liability	746	12,945
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.00	0.00

Another way to look at the maturity level of CalPERS and its plans is to look at the ratio of actives to retirees. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

Support Ratio	June 30, 2017	June 30, 2018
1. Number of Actives	1	1
2. Number of Retirees	0	0
3. Support Ratio [(1) / (2)]	N/A	N/A

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the assumptions are called actuarial gains and losses and serve to lower or raise required employer contributions from one year to the next. Therefore, employer contributions will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

Plans that have higher liability-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return and changes in liability. For example, a plan with a liability-to-payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability-to-payroll ratio of 4. The liability volatility ratio is also shown in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility. The asset volatility ratio, described above, will tend to move closer to the liability volatility ratio as the plan matures.

Contribution Volatility	**June 30, 2017**	**June 30, 2018**
1. Market Value of Assets	$ (521)	$ 10,530
2. Payroll	43,304	38,842
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.0	0.3
4. Accrued Liability	$ 746	$ 12,945
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.0	0.3
6. Accrued Liability (7.00% discount rate)	769	12,945
7. Projected Liability Volatility Ratio [(6) / (2)]	0.0	0.3

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2018. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] @ 2.50%	Funded Status	Unfunded Termination Liability @ 2.50%	Hypothetical Termination Liability[1,2] @ 3.25%	Funded Status	Unfunded Termination Liability @ 3.25%
$10,530	$24,710	42.6%	$14,180	$20,919	50.3%	$10,389

1 The hypothetical liabilities calculated above include a 5 percent mortality contingency load in accordance with Board policy. Other actuarial assumptions can be found in Appendix A of the Section 2 report.

2 The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.91 percent on June 30, 2018, and was 2.83 percent on January 31, 2019.

In order to terminate the plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. CalPERS advises you to consult with the plan actuary before beginning this process.

Participant Data

The table below shows a summary of your plan's member data upon which this valuation is based:

	June 30, 2017	June 30, 2018
Reported Payroll	$ 43,304	$ 38,842
Projected Payroll for Contribution Purposes	$ 47,148	$ 42,135
Number of Members		
Active	1	1
Transferred	0	0
Separated	0	0
Retired	0	0

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- None

Plan's Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in the following section of this Appendix.

	Benefit Group	
Member Category	Misc	
Demographics		
Actives	Yes	
Transfers/Separated	No	
Receiving	No	
Benefit Provision		
Benefit Formula	2% @ 62	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	6.75%	
Final Average Compensation Period	Three Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Standard	
Industrial Disability	No	
Pre-Retirement Death Benefits		
Optional Settlement 2	Yes	
1959 Survivor Benefit Level	Indexed	
Special	No	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$500	
Survivor Allowance (PRSA)	No	
COLA	2%	

PEPRA Member Contribution Rates

The table below shows the determination of the PEPRA Member contribution rates based on 50 percent of the Total Normal Cost for each respective plan on June 30, 2018. Assembly Bill (AB) 340 created PEPRA that implemented new benefit formulas and a final compensation period as well as new contribution requirements for new employees. In accordance with Section Code 7522.30(b), "new members … shall have an initial contribution rate of at least 50 percent of the normal cost rate." The normal cost for the plan is dependent on the benefit levels, actuarial assumptions and demographics of the plan particularly the entry age into the plan. Should the total normal cost of the plan change by one percent or more from the base total normal cost established for the plan, the new member rate shall be 50 percent of the new normal cost rounded to the nearest quarter percent.

		Basis for Current Rate		Rates Effective July 1, 2020			
Rate Plan Identifier	**Benefit Group Name**	**Total Normal Cost**	**Member Rate**	**Total Normal Cost**	**Change**	**Change Needed**	**Member Rate**
27417	Miscellaneous PEPRA Level	13.735%	6.750%	14.482%	0.747%	No	6.750%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Section 2 may be found on the CalPERS website (www.calpers.ca.gov) in the Forms and Publications section

Scotts Valley Fire Protection District	
POLICY: 2200	SUBJECT: Social Media
DATE APPROVED: 9/11/2019	
BOARD PRESIDENT: ______________	FIRE CHIEF: ______________

I. PURPOSE

The Scotts Valley Fire Protection District (SVFPD) has a business need to augment traditional communication methods with the use of social media channels. This need primarily stems from public demand and the rapid growth of social media (aka: Web 2.0) use by other local, state and federal government entities as an indication that social media can be used effectively to enhance constituent communications. The use of social media presents opportunity and risk to the SVFPD. In general, the SVFPD supports the use of social media technology to enhance communication, collaboration and information exchange to meet the SVFPD mission and goals.

This document establishes the SVFPD social media use policies, protocols and procedures intended to mitigate associated risks from use of this technology where possible. Shall the SVFPD change its direction on social media use, this policy will be revised and social media activity shall be adjusted accordingly.

II. APPLICABILITY

This policy applies to all SVFPD Employees, Paid Call Firefighters, Volunteers, Board Members and Auxiliary Members.

Personnel using social media technology prior to the implementation of the SVFPD Social Media Policy shall achieve full policy compliance within 90 days of the effective date of this document.

III. POLICY

Section 1 - SVFPD Social Media Technology Use

SVFPD use of social media technology shall conform to the policies, protocols and procedures contained, or referenced, herein.

1.1 Comply with all applicable federal, state, and local laws, regulations and policies including, but may not be limited to, copyright, records retention, California Public Records Act, First Amendment, privacy laws, employment related laws and Social Media usage policies.
1.2 Be familiar with and carry-out social media activity in accordance with the SVFPD Social Media Participation Guidelines, where applicable.

Section 2 - SVFPD Decision to Embrace Social Media

The SVFPD decision to embrace social media shall be a risk-based decision approved by the Board of Directors and supported by a strong consideration the SVFPD mission and goals, audience, legal risks, technical capabilities and potential benefits. The SVFPD when utilizing social media shall:

2.1 Have a strong understanding of the risks associated with using social media in order to make an effective business decision.
2.2 Establish a well thought out social media strategy.
2.3 The Fire Chief will designate a Social Media Administrator responsible for overseeing the SVFPD social media activity and policy compliance.

Section 3 - Access to Social Media Networks

Access to social media networks from within the SVFPD IT infrastructure is limited to personnel performing SVFPD business with sufficient Information and Technology security controls.

3.1 SVFPD computers, laptops, iPads, and mobile devices used to access social media sites shall have up-to-date software designed and intended to protect against destructive technical incidents, including but may not be limited to, cyber, virus and spyware/adware attacks.
3.3 The SVFPD website shall not contain automatic feeds to uncensored social media site content. Prior to approving content for display on the SVFPD website, the SVFPD shall have monitoring protocols in place to ensure content and links are appropriate and free from harmful technical attacks.

Section - 4 Authorized Use

The Fire Chief is responsible for determining who is authorized to use social media on behalf of the SVFPD, and for designating appropriate access levels.

4.1 Social media network access shall be limited only to those with a clear business purpose to use the forum.
4.2 As designated by the Fire Chief, authorized Administrative Personnel and ranks of Fire Captain and above shall have permission to create, publish or comment on behalf of the SVFPD.
4.3 Authorized Social Media Users shall be provided a copy of the SVFPD Social Media Policy and Standard Operating Procedure and are required to acknowledge they have read the policy and procedure and indicate their understanding and acceptance via wet signature.

Section 5 - Approved Social Media Networks

The SVFPD shall only utilize SVFPD approved social media networks for hosting official SVFPD social media sites.

5.1 The Fire Chief is responsible for maintaining the list of approved social media networks.
5.2 Social media networks on the approved list shall be reviewed bi-annually for any necessary changes.
5.3 The Social Media Administrator may submit a request for approval of additional social media networks as needed.

Section 6 - Official SVFPD Social Media Sites

SVFPD social media sites shall be created and maintained in accordance with SVFPD social network usage standards and with identifiable characteristics of an official SVFPD site.

6.1 SVFPD social media network accounts shall be created using an official SVFPD email account, when possible.
6.2 Sites shall contain visible elements that identify them as an official SVFPD site. Among other items, this includes displaying official SVFPD seals/logos, contact information and a link the SVFPD website.
6.3 SVFPD social media sites shall display, or provide a link to, the SVFPD social media disclaimer.

Section 7 - Site Content

The SVFPD is responsible for establishing and maintaining content posted to their social media sites and shall have measures in effect to prevent inappropriate or technically harmful information and links.

7.1 The SVFPD is responsible for the content and upkeep of their social media sites.
7.2 The SVFPD shall remain the primary and predominant source for Internet information.
7.3 Social media content shall fully comply with the SVFPD social media policies.
7.4 Information and comments shared through social media channels shall fully comply with the SVFPD policies and shall not disclose confidential or proprietary information.
7.5 Sharing or posting content owned by others shall be performed in accordance with copyright, fair use and established laws pertaining to materials owned by others. This includes, but is not limited to, quotes, images, documents, links, etc.
7.6 Use of sites that are not Section 508 web accessible shall contain "simple" text links to identical material on a compliant website or other social media network.
7.7 Electronic information posted to a social media site by the SVFPD, or a member of the public, may be considered a record subject to California's Public Record Act.
7.8 It is not intended to use social media sites in a way that guarantees the right to protected free speech. The SVFPD is responsible for monitoring postings, and taking appropriate action when necessary, to protect general site visitors from inappropriate or technically harmful information and links.
7.9 Sites that allow public comment shall inform visitors of the intended purpose of the site and provide a clear statement of the discussion topic introduced for public comment so that the public is aware of the limited nature of the discussion and that inappropriate posts are subject to removal, including but not limited to the following types of postings regardless of format (text, video, images, links, documents, etc.):
   7.9.1 Comments not topically related;
   7.9.2 Profane language or content;
   7.9.3 Content that promotes, fosters or perpetuates discrimination on the basis of race, creed, color, age, religion, gender, marital status, status with regards to public assistance, national origin, physical or mental disability or sexual orientation;
   7.9.4 Sexual content or links to sexual content;
   7.9.5 Solicitations of commerce;
   7.9.6 Conduct or encouragement of illegal activity;
   7.9.7 Information that may tend to compromise the safety or security of the public or public systems;
   7.9.8 Content that violates a legal ownership interest of any other party;
   7.9.9 Content that violates any policies regarding disclosure of confidential or proprietary information;
   7.9.10 SVFPD reserves the right to restrict or remove any content that is deemed in violation of its policy or any acceptable law.

Policy 8 - User Behavior

The same standards, principles and guidelines that apply to SVFPD personnel in the performance of their assigned duties apply to social media technology use.

8.1 Authorized Social Media Users shall do so only within the scope defined by their respective functional assignments and in compliance with all SVFPD Policies and Standard Operating Procedures.
8.2 Authorized Social Media Users shall be briefed with recommended safety procedures.
8.3 Authorized Social Media Users performing SVFPD social media work beyond normal work hours shall receive pre-authorization from the SVPD.
8.4 Authorized Social Media Users shall obey all laws, including but not limited to, the Hatch Act of 1939, when using social media.

Section 9 - Records Management

SVFPD use of social media shall be documented and maintained in an easily accessible format that tracks account information and preserves items that may be considered a record subject to disclosure under the California's Public Records Act or required to be retained pursuant to the Government Code.

9.1 The SVFPD is responsible for the creation, administration and deactivation of social media accounts.
- 9.1.1 Account password information shall only be shared with authorized personnel that has been designated by the Fire Chief.
- 9.1.2 Account passwords shall promptly be reset when personnel are removed as an authorized Social Media Administrator or User.

9.2 The SVFPD shall maintain a record of social media sites created for SVFPD use, including, but may not be limited to:
- 9.2.1 A log file containing the name of the social media network, account ID, password, registered email address and date established.
- 9.2.2 A list containing the authorized Social Media Administrator and Users.

9.3 Electronic information posted to a social media site by the SVFPD, or a member of the public if permitted, may be considered a record subject to California's Public Record Act.
- 9.3.1 Any content maintained in a social media format that is related to SVFPD business, may be a public record. The SVFPD shall have procedures in effect to preserve published social media content.
- 9.3.2 The Fire Chief is responsible for responding completely and accurately to any public records request for public records on social media.
- 9.3.3 Site content shall be maintained in accordance with its respective Records Retention Schedule and in accordance with SVFPD policies and procedures. If the content constitutes a public record, it must be disclosed to the public unless an exemption applies.
- 9.3.4 Posts deemed technically harmful or inappropriate per section 7 shall be promptly documented, saved, and removed.

9.4. The SVFPD shall maintain a record of signed Social Media Policy and Standard Operating Procedure acknowledgement forms for the authorized Social Media Administrator and Users.

Section 10 - Site Monitoring

SVFPD social media sites shall be monitored regularly and prompt corrective action shall be taken when an issue arises that places, or has potential to place, the SVFPD at risk.

10.1 SVFPD social media site administrators shall review site activity and content daily for exploitation or misuse.

10.2 The SVFPD will evaluate comments, links or material directly onto their social media sites and shall have an established process, including technical capability outside of the SVFPD network, to verify that postings meet the rules established under section 7 of this document. Posts deemed technically harmful or inappropriate shall be handled per procedure:
- 10.2.1 Posts deemed technically harmful or inappropriate per section 7 shall be promptly documented, saved, and removed.

10.3 Perceived or known compromises to the SVFPD internal network shall be promptly reported to the Social Media Administrator.

IV. DEFINITIONS

<u>Social Media and Web 2.0</u> - The U.S. Government defines social media and Web 2.0 as umbrella terms that define the various activities that integrate technology, social interaction, and content creation. Through social media, individuals or collaborations of individuals can create web content, organize content, edit or comment on content, combine content, and share content. Social media and Web 2.0 uses many technologies and forms, including RSS and other syndicated web feeds, blogs, wikis, photo–sharing, video–sharing, podcast, social bookmarking, mashups, widgets, virtual worlds, micro– blogs, and more. Not all forms of social media may be appropriate for use by the SVFPD.

<u>Official SVFPD Email Account</u> – Email account provided by a SVFPD mail system or approved external mailbox that is used for official SVFPD business.

<u>Approved SVFPD Social Networking Site</u> – Refers to social networks that the SVFPD Fire Chief has assessed and approved for use by the SVFPD.

SCOTTS VALLEY
FIRE PROTECTION DISTRICT

7 Erba Lane, Scotts Valley, California 95066 (831) 438-0211 Fax (831) 438-0383

Steve M. Kovacs
Fire Chief

Date: September 11, 2019

To: Board of Directors

From: Chief Kovacs

Subject: Administrative Report

Incident Type	June		July		August		Year To Date	
	2018	2019	2018	2019	2018	2019	2018	2019
Fires	10	2	4	4	10	8	35	28
Explosion / Rupture	0	0	0	0	0	0	0	1
EMS	112	91	129	116	126	102	895	852
Hazardous Condition	4	3	3	5	5	7	40	62
Service Calls	14	18	11	17	15	20	105	146
Good Intent	28	26	37	25	24	32	252	272
False Alarms	3	10	9	13	10	17	63	101
Severe Weather	0	0	0	0	0	0	0	3
Totals	171	150	193	180	190	186	1390	1465

Operations
- Met with architect for La Madrona property
- First Alarm walk through for potential security system at both Stations
- Met with fence companies for bids security fences bids for both Stations

Training
- Firefighter Bridges completed Firefighter I successfully and now focused on the FFII program
- Firefighter Pedemonte completed requirements for FFIII and received a step increase to Engineer I
- Captain Grigg has fulfilled Captain I requirements and received a step increase to Captain II
- PCF orientation completed, six potential candidates.
- FF Pedemonte and Captain Petteys attended SC1910 PPE TECH Class
- C shift did extinguisher training for employees at 1600 Green Hills Rd.
- Multiple PCFs staffed the first-aid booth during the Art and Wine Festival weekend

Administration
- Child Passenger Safety Program – Secretary Receptionist Bridges inspected 17 car seats in August
- Open enrollment meetings are starting
- Auditor will be here this month

- Final budget has been loaded into the County system.
- Administrative Secretary Walton and Secretary Receptionist Mayfield attended the quarterly AFSS meeting hosted at Watsonville Fire where they completed firefighter drills including vehicle extrication, hose pulls, search and rescue, and putting on SCBAs in under 60 seconds.

Prevention/Community Risk Reduction

- Inspections: Completed 9 Fire and Life Safety Inspections
- Underground Inspections and flush test: 4
- Sprinkler Inspections: 9
- LE 100 Inspections: Whispering Pines, Canham Rd., Sandhill Rd., Summerhill Rd.
- Permits approved: 8 plans sent to CSG for review
- Hazard Complaint Inspections: 6
- Meetings attended: 5
- Vandervoort completed Inspector 2C and 2D
- Successful National Night Out
- Vandervoort working on 2019 Fire Code Adoption

Fire Chief Activities:

- Attended CSDA Financial Management Seminar
- Conference Call FDAC EBA
- Attended Celebration of Life for a Menlo Park Captain
- Staff Meeting
- Meeting with Santa Cruz County Bank
- Meeting with Architect
- SCO and BRN Board Meetings
- Finance Meeting
- Extended Conditional job Offers to Matt Smiley and Matt Smith
- Attended a PTSD Webinar
- Attended the SVSD Welcome Back Breakfast
- Attended an IMT Command and General Staff Meeting
- County Fire Chief’s Meeting
- EMSIA Meeting
- Legislative Task Force Conference Call
- Mtg. With Delta Dental
- PG&E Conference Call
- Users Meeting

August 15, 2019

Dear Chief Kovacs,

Thank you for your joint participation with us at our recent National Night Out event - we were thrilled to have you there! Through your informative display of materials on fire prevention preparedness and fun demonstrations with the kids especially, you helped accomplish our common goal of building positive relationships between our departments and the Scotts Valley community. Your crew truly made the difference for us and we are extremely grateful!

Together, we are making our community a safer and more caring place to live. We couldn't do this without the wonderful support shown by community members and our strong relationship with the Scotts Valley Fire District.

Thank you again!

Sincerely,

Steve Walpole

Steve Walpole
Chief of Police
SCOTTS VALLEY POLICE DEPARTMENT

RECEIVED
JUL 24 2019
SCOTTS VALLEY FIRE PROTECTION DISTRICT

Robert and Katherine Munsey
4 Lawridge Road
Santa Cruz, CA 95060
Voice: 831 427-2717
Fax: 831 427-2333
bobcrows@hotmail.com

7 Jul 19

Chief Steve Kovacs
Scotts Valley Fire District
7 Erba Ln.
Scotts Valley, CA 95016

Dear Chief Kovacs:

I would like to thank your firefighters for their excellent, professional, and kind help when I had an incident at the Club One gym on June 8th. The men and women who checked me out and gave advice for follow-up were a credit to your District. Please pass my kudos to the crews who assisted me.

Needless to say, the District has my full support of your mission and the moneys needed to accomplished it.

Most grateful,

Bob Munsey

Bob Munsey

A/C R. Todd
ENG/PM DUNCAN
ENG/PM ROTHWEILER