



SCOTTS VALLEY FIRE PROTECTION DISTRICT

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

Board of Directors

Agenda

Wednesday, October 12, 2022, 6:00 P.M.

Scotts Valley City Hall

One Civic Center Drive, Scotts Valley CA 95066

Agendas and Board Packets are available on the Scotts Valley Fire Protection District (SVFPD) website at 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 Ron Whittle, Board Secretary, for immediate consideration.

Teleconference Notice

Director Harmon will be joining the meeting via teleconference from the following location:
5315 D Street, Sacramento, CA 95819.

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 September 14, 2022

4.2 Approve SVFPD Claims Disbursements for the Month of September 1, 2022 through September 30, 2022 in the Amount of:

Payroll and Benefits:	\$562,805.45
General Fund:	\$ 43,064.15
Capital Outlay:	\$ 81,043.55
SCHMIT:	\$ 76.12
TOTAL:	\$686,989.27

Scotts Valley Fire Protection District
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- 4.3 Review SVFPD CalPERS Safety Plans Annual Valuation Reports as of June 30, 2021 (Classic and PEPRA)
- 4.4 Review SVFPD CalPERS Miscellaneous Plans Annual Valuation Reports as of June 30, 2021 (Classic and PEPRA)
- 4.5 Review Total Compensation GASB 74/75
- 4.6 Review SVFPD CERBT and CEPPT Account Update Summary as of June 30, 2022
- 4.7 Approve Permit/Inspection Fee Waiver Request for Scotts Valley High School's Haunted House
- 5. Discussion Items**
 - 5.1 Branciforte Annexation
- 6. Action Items – Discussion/Action**
 - 6.1 Accept and File Draft Structural Engineer Report
- 7. Board of Directors and Administrative Reports – Information/Discussion**
(No action will be taken on any questions raised by the Board at this time.)
 - 7.1 Board of Directors Report – *Directors*
 - 7.2 Administrative Report – *Chief Officers*
- 8. Correspondence**
 - 8.1 Thank You Letters – Baymonte, City of Yreka, Mr. Hill & 1440 Multiversity
- 9. Request for Future Agenda Items**
- 10. Closed Session: Government Code §54957.7**
 - 10.1 Fire Chief Recruitment: Government Code §54957
- 11. Open Session – Discussion/Action**
 - 11.1 Report on Closed Session: Government Code §54957.1
- 12. Adjournment**

Next Regularly Scheduled Board Meeting:
Wednesday, November 9, 2022 at 6:00 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 September 14, 2022

1. Call to Order

The Regular Meeting of the Board of Directors of the Scotts Valley Fire Protection District (SVFPD) was held on Wednesday, September 14, 2022 at SVFPD Station 1, 7 Erba Lane, Scotts Valley. President Patterson called the meeting to order at 6:00 p.m.

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 Whittle, Battalion Chiefs LoFranco, McNeil and Stubendorff, Deputy Fire Marshal Collins and Admin Services Manager Walton

2. Public Comment (GC §54954.3) None

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

President Patterson added Discussion Item 5.2: Branciforte Fire Protection District issues.

4. Consent Calendar

4.1 Minutes: Approve Regular Board Meeting Minutes of August 10, 2022

4.2 Approve SVFPD Claims Disbursements for the Month of August 1, 2022 through August 31, 2022 in the Amount of:

Payroll and Benefits:	\$ 663,187.56
General Fund:	\$ 33,393.49
Capital Outlay:	\$ 824,404.69
SCHMIT:	\$ 1,891.83
TOTAL:	\$1,522,877.57

4.3 Approve Surplus Equipment List

On motion of Director Harmon seconded by Director Campbell to *Approve Consent Calendar Items 4.1, 4.2 and 4.3* was approved by the following vote:

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

5. Discussion Items

5.1 Scotts Valley Fire Protection District Fire Code Adoption Process Update

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Chief Whittle explained that every three years, the new Fire Code is adopted. In the past, each Agency has adopted the Fire Code individually. This year, Santa Cruz County will adopt the Fire Code for all Agencies. This will streamline the process so that the reading of the Fire Code, public notices and hearings will all be done by Santa Cruz County rather than each Agency. In addition, this will give consistency as each Agency will be operating under the same Santa Cruz County Fire Code.

Deputy Fire Marshal Collins stated that the Fire Prevention Officers are close to finishing the Fire Code Amendments, which are mainly in Chapter 9 for the fire sprinklers. Even though this will be the Santa Cruz County Fire Code, each Agency will be listed individually so that the County cannot make changes.

Chief Whittle stated that the Santa Cruz County Fire Code will be presented to the Board in November or December and effective January 1, 2023.

5.2 Branciforte Fire Protection District (BFPD) Issues

Chief Whittle stated that there is no official information regarding the BFPD. Tonight, the BFPD and LAFCO will be hosting a Community Information Meeting.

President Patterson stated that a BFPD Board Member has gone on KSCO three times with a variety of unfavorable opinions regarding the SVFPD, which are not true or accurate and this is very concerning.

Chief Whittle reported that he spoke with LAFCO after the second KSCO interview and LAFCO gave the BFPD Board a stern warning regarding giving inaccurate information. The BFPD had allocated \$50,000 to hire a consultant to conduct a Benefit Assessment Study (Study) to determine the cost to keep the fire station open but the BFPD Board did approve the Study on multiple occasions. A post card to approve or deny the Study was sent to the BFPD Residents and the next Community Meeting will be October 1, 2022. Chief Whittle will inform the Board of future meetings and if the SVFPD is contacted by any concerned residents.

The Board discussed concerns about the inaccurate information that is being given regarding the SVFPD. President Patterson stated that the Board should plan on attending the October Community Meeting and establish a statement of facts regarding the BFPD to post on the SVFPD website and Facebook page in the future.

6. **Action Items – Discussion/Action**

6.1 Consider Release of 5 Properties to be Annexed by Felton Fire Protection District

Chief Whittle reported that he received an email from Felton Fire Chief, Robert Gray, regarding five (5) parcels located at the end of Conference Drive, which are within the SVFPD Boundaries, but serviced by the Felton Fire Protection District. The Felton FPD Board has requested support to annex the parcels into their Fire District. The assessed value of the five (5) parcels is 2.8 million dollars.

The Board inquired about the specific CAD response and if the residents would approve the annexation as they would be losing ALS response. Chief Whittle stated that he didn't look at the specific CAD response but that since the SVFPD cannot access the parcels, the ALS response would be very long. As part of the annexation process, residents are given notice, and have the opportunity to comment or object to the annexation.

On motion of Director Pisciotta seconded by Director Harmon to *Proceed with Detaching the Five (5) Parcels and Allowing the Felton Fire Protection District to Annex into Their District* was approved by the following vote:

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

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

7.1 Board of Directors Report – Directors

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Director Parker stated that the Negotiation Committee met with the Labor Group and it will be reported after the closed session discussion.

Director Pisciotta reported that the soils report has been received and will be incorporated into the Seismic Upgrade final report. Chief Whittle stated that the final report should be completed by the end of the month and once received, it will be distributed to the Board. Chief Whittle stated that the last phase of the project will be to determine the cost of the Seismic Upgrade.

7.2 Administrative Report – Chief Officers

The Administrative Report was included in the board packet and Chief Whittle reported on the following:

- E2538 responded as part of Task Force 2329 to Trinity County for the Six Rivers Complex, which consisted of three Type 3 engines from Santa Cruz County, two Type 3 engines from Sonoma County and one water tender from Alameda County. BC Stubendorff went out as the Strike Team Leader Trainee. The task force returned safely after the 14 day assignment.
- The Bauer SCBA compressor was delivered today.
- The Geotechnical report took longer than anyone expected but the full seismic report should be ready by the end of September.
- On August 3rd, C-Shift crews along with Santa Cruz City Fire, Felton Fire and AMR responded to a confirmed structure fire on Oak Creek Blvd. Fire was extinguished and contained to the room of origin.
- SVFD crews along with Cal Fire have responded to several small wildland fires in the Hansen Quarry area off Mount Hermon and Conference. SCO and Cal Fire are cooperating on the investigation.
- PCF hiring orientation was hosted by Captain Cortes and Firefighter Shaughnessy on 8/22/2022. Six candidates attended and five will be moving on to interviews as one recently dropped out.
- FF Vandiver and FF Shaughnessy are progressing. FF Vandiver is finishing up the last part of probation which has been focused on the wildland apparatus and water tender operations. FF Shaughnessy has been working on driving and pumping the Type 1 apparatus. Both are ahead of schedule with no issues noted.
- DFM Collins has been working on annual inspections, construction inspections and vegetation clearance and complaint inspections.
- DFM Collins completed the fire alarm and building final inspections at Target. The projected opening date is scheduled for late September.
- DFM Collins has been working with the SV Unified School District facilities manager on repairing 2021 school violations in anticipation of the 2022 inspections scheduled for 10/31/22 and 11/1/22. For future school inspections, she would like to schedule early January to work with the schools to gain compliance within the same calendar year.
- DFM Collins has been working to revise the District's city plan review fee collection process.
- Captain Chris Ronzano retired on September 3. Chris started as a volunteer in 1990, he was hired full-time as a Firefighter Paramedic in 2001, he promoted to Captain in 2018. There will be a retirement celebration in the near future.
- B-shift attended the National Night Out 2022. Company training demonstrations were done along with engine tours.
- Chief Whittle attended a presentation from Weist Law Firm and Cal Muni advisors regarding Cal PERS UAL funding strategies. The information and recommendations will be reviewed with the Finance Committee at the next meeting.
- BC McNeil, LoFranco, Stubendorff, FF Smiley remodeled the back storage office creating an admin breakroom. FF Vandiver ran the electrical. The on-duty crews also painted the DFM office.
- Chief Whittle met with the Santa Cruz County Administrative Officer Carlos Palacios, Assistant CAO Elissa Benson and General Service Director Michael Beaton regarding the SCHMIT program. Discussion included history of the program, funding and other options for providing hazardous material response in Santa Cruz County. Next FY, the budget will be increased by 50%, which the County agreed.
- The SV Water District is interested in moving forward with the intertie project on the La Madrona Property and hired a company to assess the value of the property needed for the project. The original proposal was for 8,700 square feet and cannot likely be reduced based on setbacks. Based on the original fire station building plans, the proposal was favorable but will need to be assessed based on the new fire station building plans.

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8. Correspondence – Information

8.1 Thank You Email for Incident at Henry Cowell State Park

8.2 Thank You Letter for Six Rivers Lightning Complex Fire

The Board received and filed the correspondence.

9. Request for Future Agenda Items

None

10. Closed Session: Government Code §54957.7

10.1 Conference with Labor Negotiators: Government Code §54957.6
Agency Designated Representatives: Joe Parker and Robert Campbell
Employee Organization: All Bargaining Groups

10.2 Fire Chief Performance Review: Government Code §54957

At 6:46 p.m., Board President Patterson announced that the Board would be going into Closed Session for the purposes listed in Item 10.1 and 10.2.

11. Open Session – Discussion/Action

11.1 Report on Closed Session: Government Code §54957.1

At 7:24 p.m., the Board reconvened to Open Session. President Patterson reported that for Item 10.1 of the regular agenda, the Board was in favor of approving the MOU Amendment to Post Employment Healthcare as presented.

On motion of Director Campbell seconded by Director Parker to *Approve the MOU Amendment to Post Employment Healthcare as Presented* was approved by the following vote:

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

For Item 10.2 of the regular agenda, with the announcement of the retirement of the current Fire Chief, the Board decided unanimously to open recruitment for an internal Fire Chief promotion. The Board and the Fire Chief will work together on a formal announcement flyer, including a filing deadline and interview date and time.

12. Adjournment

The meeting was adjourned at 7:26 p.m.

ATTEST

Russ Patterson
Board President

Ron Whittle
Board Secretary

Expenditure Actual Transactions

Criteria: PostOn = 9/1/2022..9/30/2022; EntryDate = 9/1/2022..9/30/2022; GLKey = 685010, 685030, 685040; Summarize by = GLKey,Character,Object

FY	FM	Posted	Document	Doc Ref	GLKey	Fund	Organization	GL Obj	Amount	Description	Vendor No	Vendor Name
GL Key 685010 -- SCOTTS VALLEY FIRE PROT SVC												
Character 50 -- SALARIES AND EMPLOYEE BENEF												
Object 51000 -- REGULAR PAY-PERMANENT												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	51000	138,105.61	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	51000	134,428.16	PAYPERIOD 19PAYDATE 09232022		
Total Object 51000									272,533.77			
Object 51005 -- OVERTIME PAY-PERMANENT												
2023	03	9/8/2022	DU90330	DU90330	685010	76585	68500000	51005	(11,819.27)	4850TD 3/17-5/16/21Vandervoort	C99999	DEP
2023	03	9/15/2022	DU90496	DU90496	685010	76585	68500000	51005	(1,550.07)	4850 TD 8/30-8/27/22 Ronzano	C99999	DEP
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	51005	57,714.52	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	51005	48,160.36	PAYPERIOD 19PAYDATE 09232022		
Total Object 51005									92,505.54			
Object 51010 -- REGULAR PAY-EXTRA HELP												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	51010	1,600.05	PAYPERIOD 18PAYDATE 09092022		
Total Object 51010									1,600.05			
Object 51035 -- HOLIDAY PAY												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	51035	11,183.48	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	51035	10,700.20	PAYPERIOD 19PAYDATE 09232022		
Total Object 51035									21,883.68			
Object 51040 -- DIFFERENTIAL PAY												
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	51040	7,508.99	PAYPERIOD 19PAYDATE 09232022		
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	51040	7,814.97	PAYPERIOD 18PAYDATE 09092022		
Total Object 51040									15,323.96			
Object 52010 -- OASDI-SOCIAL SECURITY												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	52010	3,368.08	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	52010	2,809.99	PAYPERIOD 19PAYDATE 09232022		
Total Object 52010									6,178.07			
Object 52015 -- PERS												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	52015	28,581.22	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/1/2022	GASB68SD2		685010	76585	68500000	52015	1,400.00	BT FOR GASB-68 REPORT SD17	V116512	US BANK
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	52015	27,369.81	PAYPERIOD 19PAYDATE 09232022		
Total Object 52015									57,351.03			
Object 53010 -- EMPLOYEE INSURANCE & BENEFITS												
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	53010	750.00	PAYPERIOD 19PAYDATE 09232022		
2023	03	9/30/2022	1022SVFD		685010	76585	68500000	53010	1,186.30	BIDDLE, MIKE SVFD Health Ins.	V105980	BIDDLE, MIKE
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	53010	(1,143.79)	PAYPERIOD 19PAYDATE 09232022		
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	53010	750.00	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/8/2022	DU90330	DU90330	685010	76585	68500000	53010	(48.56)	M.Pasquini Sept22Dental,CK#963	C99999	DEP
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	53010	(1,143.79)	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/8/2022	DU90330	DU90330	685010	76585	68500000	53010	(48.56)	M.Marsano Sept22 Dental,CK#137	C99999	DEP
											Run: 10/3/2022 8:00 AM Includes transactions posted through: 9/30/2022	

Expenditure Actual Transactions

Criteria: PostOn = 9/1/2022..9/30/2022; EntryDate = 9/1/2022..9/30/2022; GLKey = 685010, 685030, 685040; Summarize by = GLKey,Character,Object

FY	FM	Posted	Document	Doc Ref	GLKey	Fund	Organization	GL Obj	Amount	Description	Vendor No	Vendor Name
GL Key 685010 -- SCOTTS VALLEY FIRE PROT SVC												
Character 50 -- SALARIES AND EMPLOYEE BENEF												
Object 53010 -- EMPLOYEE INSURANCE & BENEFITS												
2023	03	9/30/2022	1022SVFD		685010	76585	68500000	53010	1,289.95	MCMURRY, MICHAЕ SVFD Health In	V105430	MCMURRY, MICHAEL
2023	03	9/23/2022	1022SVFD		685010	76585	68500000	53010	1,225.52	FDAC EBA SVFD	V33857	FIRE DISTRICTS ASSOC OF CA
2023	03	9/15/2022	DU90496	DU90496	685010	76585	68500000	53010	(48.56)	S.Downey Sept22 Dental,CK#2329	C99999	DEP
2023	03	9/15/2022	DU90496	DU90496	685010	76585	68500000	53010	(137.94)	S.Kovacs Oct22 Dental	C99999	DEP
2023	03	9/9/2022	092022SVF		685010	76585	68500000	53010	9,372.36	HEALTH CARE EMP SVFD Group 367	V108670	HEALTH CARE EMPLOYEES/EMPLOYER
2023	03	9/30/2022	1022SVFD		685010	76585	68500000	53010	584.32	LOFRANCO, SAL SVFD Health Ins.	V105221	LOFRANCO, SAL
2023	03	9/30/2022	1022SVFD		685010	76585	68500000	53010	357.88	PHINN, MIKE SVFD Health Ins. 1	V103782	PHINN, MIKE
2023	03	9/9/2022	SEP22HLTH		685010	76585	68500000	53010	57,616.20	SV FIRE SEP 2022	V116512	US BANK
2023	03	9/29/2022	DU90848	DU90848	685010	76585	68500000	53010	(91.85)	H.Bustichi Oct22Dental,CK#4010	C99999	DEP
2023	03	9/30/2022	1022SVFD		685010	76585	68500000	53010	698.71	THEILEN, LOTHAR SVFD Health In	V117701	THEILEN, LOTHAR
Total Object 53010									71,168.19			
Object 53015 -- UNEMPLOYMENT INSURANCE												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	53015	53.03	PAYPERIOD 18PAYDATE 09092022		
Total Object 53015									53.03			
Object 55021 -- OTHER BENEFITS MISC												
2023	03	9/8/2022	PAYPERIOD		685010	76585	68500000	55021	22,135.06	PAYPERIOD 18PAYDATE 09092022		
2023	03	9/21/2022	PAYPERIOD		685010	76585	68500000	55021	2,073.07	PAYPERIOD 19PAYDATE 09232022		
Total Object 55021									24,208.13			
Total Character 50									562,805.45			
Character 60 -- SERVICES AND SUPPLIES												
Object 61110 -- CLOTHING & PERSONAL SUPPLIES												
2023	03	9/8/2022	DU90330	DU90330	685010	76585	68500000	61110	(127.36)	Boot reimb. Nehf R#4014	C99999	DEP
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61110	1,122.99	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 61110									995.63			
Object 61221 -- TELEPHONE-NON TELECOM 1099												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61221	982.41	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 61221									982.41			
Object 61310 -- FOOD												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61310	40.00	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 61310									40.00			
Object 61425 -- OTHER HOUSEHOLD EXP-SERVICES												
2023	03	9/2/2022	265783		685010	76585	68500000	61425	171.73	MID VALLEY SUPP SVFD	V481	SPRENKEL INC
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61425	181.81	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
2023	03	9/30/2022	1022SVFD4		685010	76585	68500000	61425	72.57	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
2023	03	9/2/2022	0922SVFD3		685010	76585	68500000	61425	64.10	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
Total Object 61425									490.21			

Expenditure Actual Transactions

Criteria: PostOn = 9/1/2022..9/30/2022; EntryDate = 9/1/2022..9/30/2022; GLKey = 685010, 685030, 685040; Summarize by = GLKey,Character,Object

FY	FM	Posted	Document	Doc Ref	GLKey	Fund	Organization	GL Obj	Amount	Description	Vendor No	Vendor Name
GL Key 685010 -- SCOTTS VALLEY FIRE PROT SVC												
Character 60 -- SERVICES AND SUPPLIES												
Object 61720 -- MAINT-MOBILE EQUIPMENT-SERV												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61720	2,175.89	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
2023	03	9/30/2022	1022SVFD3		685010	76585	68500000	61720	84.20	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
2023	03	9/23/2022	8769		685010	76585	68500000	61720	3,696.79	CENTRAL FIRE PR SVFD	V116886	CENTRAL FIRE PROTECTION DIST
2023	03	9/23/2022	8754		685010	76585	68500000	61720	1,934.73	CENTRAL FIRE PR SVFD	V116886	CENTRAL FIRE PROTECTION DIST
2023	03	9/9/2022	8717		685010	76585	68500000	61720	2,667.64	CENTRAL FIRE PR SVFD	V116886	CENTRAL FIRE PROTECTION DIST
Total Object 61720									10,559.25			
Object 61725 -- MAINT-OFFICE EQUIPMNT-SERVICES												
2023	03	9/2/2022	14275		685010	76585	68500000	61725	1,780.12	PAGODA TECHNOLO SVFD	V125184	PAGODA TECHNOLOGIES INC
2023	03	9/30/2022	14316		685010	76585	68500000	61725	337.42	PAGODA TECHNOLO SVFD	V125184	PAGODA TECHNOLOGIES INC
2023	03	9/30/2022	431708		685010	76585	68500000	61725	117.21	MONTEREY BAY SY SVFD	V125978	MONTEREY BAY SYSTEMS
Total Object 61725									2,234.75			
Object 61730 -- MAINT-OTH EQUIP-SERVICES												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61730	64.42	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 61730									64.42			
Object 61845 -- MAINT-STRUCT/IMPS/GRDS-OTH-SRV												
2023	03	9/30/2022	1022SVFD1		685010	76585	68500000	61845	88.91	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
2023	03	9/9/2022	26224728		685010	76585	68500000	61845	62.70	WESTERN EXTERMI SVFD	V15766	WESTERN EXTERMINATOR COMPANY
2023	03	9/2/2022	0922SVFD4		685010	76585	68500000	61845	145.78	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
2023	03	9/16/2022	0922SVFD		685010	76585	68500000	61845	550.00	CLAYTON, RANDY SVFD PO#22-021	V34995	CLAYTON, RANDY
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61845	1,110.55	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
2023	03	9/16/2022	27038866		685010	76585	68500000	61845	62.70	WESTERN EXTERMI SVFD	V15766	WESTERN EXTERMINATOR COMPANY
2023	03	9/2/2022	0922SVFD		685010	76585	68500000	61845	91.40	PETTEYS, DENNIS SVFD Paint Rei	V124160	PETTEYS, DENNIS
2023	03	9/16/2022	26988633		685010	76585	68500000	61845	62.70	WESTERN EXTERMI SVFD	V15766	WESTERN EXTERMINATOR COMPANY
2023	03	9/23/2022	71955		685010	76585	68500000	61845	179.88	PURE VALLEY WAT SVFD	V105418	PURE VALLEY WATER
2023	03	9/23/2022	25454725		685010	76585	68500000	61845	62.70	WESTERN EXTERMI SVFD	V15766	WESTERN EXTERMINATOR COMPANY
Total Object 61845									2,417.32			
Object 61920 -- MEDICAL, DENTAL & LAB SUPPLIES												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	61920	63.10	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
2023	03	9/9/2022	84665476		685010	76585	68500000	61920	58.13	BOUND TREE MEDI SVFD PO# 22-00	V12149	BOUND TREE MEDICAL
Total Object 61920									121.23			
Object 62020 -- MEMBERSHIPS												
2023	03	9/16/2022	SCO2223DU		685010	76585	68500000	62020	300.00	SANTA CRUZ COUN SVFD	V118736	SANTA CRUZ COUNTY FIRE CHIEFS
Total Object 62020									300.00			
Object 62219 -- PC SOFTWARE PURCHASES												
2023	03	9/16/2022	65		685010	76585	68500000	62219	2,000.00	STEVEN LEE KELL SVFD PO# 22-00	V41741	KELLOGG, STEVEN LEE
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	62219	81.50	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT

Expenditure Actual Transactions

Criteria: PostOn = 9/1/2022..9/30/2022; EntryDate = 9/1/2022..9/30/2022; GLKey = 685010, 685030, 685040; Summarize by = GLKey,Character,Object

FY	FM	Posted	Document	Doc Ref	GLKey	Fund	Organization	GL Obj	Amount	Description	Vendor No	Vendor Name
GL Key 685010 -- SCOTTS VALLEY FIRE PROT SVC												
Character 60 -- SERVICES AND SUPPLIES												
Object 62219 -- PC SOFTWARE PURCHASES												
2023	03	9/2/2022	2379		685010	76585	68500000	62219	2,315.25	LOCALITY MEDIA SVFD PO# 22-004	V39212	LOCALITY MEDIA INC
Total Object 62219									4,396.75			
Object 62223 -- SUPPLIES												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	62223	167.24	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 62223									167.24			
Object 62367 -- MEDICAL SERVICES-OTHER												
2023	03	9/23/2022	F-2324		685010	76585	68500000	62367	355.00	EMERYVILLE OCCU SVFD	V127749	EMERYVILLE OCCUPATIONAL MEDICAL
Total Object 62367									355.00			
Object 62381 -- PROF & SPECIAL SERV-OTHER												
2023	03	9/23/2022	45990		685010	76585	68500000	62381	845.00	CSG CONSULTANTS SVFD	V121100	CSG CONSULTANTS INC
2023	03	9/23/2022	225220		685010	76585	68500000	62381	363.00	LIEBERT CASSIDY SVFD	V119863	LIEBERT CASSIDY WHITMORE
2023	03	9/2/2022	0822SVFD		685010	76585	68500000	62381	506.25	DAWSON PASSAFUI SVFD Acct# 4-P	V125913	DAWSON PASSAFUIME & BOWDEN &
Total Object 62381									1,714.25			
Object 62715 -- SMALL TOOLS & INSTRUMENTS												
2023	03	9/9/2022	242199		685010	76585	68500000	62715	968.00	ALLSTAR FIRE EQ SVFD	V116911	ALLSTAR FIRE EQUIP INC
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	62715	1,838.32	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
2023	03	9/30/2022	1022SVFD2		685010	76585	68500000	62715	157.99	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
Total Object 62715									2,964.31			
Object 62888 -- SPEC DIST EXP-SERVICES												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	62888	881.95	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 62888									881.95			
Object 62890 -- SUBSCRIPTIONS BOOKS & ED MATER												
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	62890	239.44	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 62890									239.44			
Object 62914 -- EDUCATION & TRAINING(REPT)												
2023	03	9/2/2022	0922SVFD2		685010	76585	68500000	62914	121.77	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
Total Object 62914									121.77			
Object 62920 -- GAS, OIL, FUEL												
2023	03	9/16/2022	831176		685010	76585	68500000	62920	1,798.61	WESTERN STATES SVFD	V39738	TOP LOPES DISTRIBUTING
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	62920	175.00	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 62920									1,973.61			
Object 63070 -- UTILITIES												
2023	03	9/16/2022	0922SVFD4		685010	76585	68500000	63070	1,043.82	PACIFIC GAS AND SVFD	V129169	PACIFIC GAS AND ELECTRIC CO
2023	03	9/28/2022	1022SVFD		685010	76585	68500000	63070	1,176.37	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
2023	03	9/16/2022	0922SVFD1		685010	76585	68500000	63070	81.68	PACIFIC GAS AND SVFD	V129169	PACIFIC GAS AND ELECTRIC CO
2023	03	9/16/2022	0922SVFD2		685010	76585	68500000	63070	989.71	PACIFIC GAS AND SVFD	V129169	PACIFIC GAS AND ELECTRIC CO

Expenditure Actual Transactions

Criteria: PostOn = 9/1/2022..9/30/2022; EntryDate = 9/1/2022..9/30/2022; GLKey = 685010, 685030, 685040; Summarize by = GLKey,Character,Object

FY	FM	Posted	Document	Doc Ref	GLKey	Fund	Organization	GL Obj	Amount	Description	Vendor No	Vendor Name
GL Key 685010 -- SCOTTS VALLEY FIRE PROT SVC												
Character 60 -- SERVICES AND SUPPLIES												
Object 63070 -- UTILITIES												
2023	03	9/16/2022	0922SVFD3		685010	76585	68500000	63070	84.85	PACIFIC GAS AND SVFD	V129169	PACIFIC GAS AND ELECTRIC CO
Total Object 63070									3,376.43			
Total Character 60									34,395.97			
Character 70 -- OTHER CHARGES												
Object 75231 -- CONTRIB TO OTHER AGENCIES-OTH												
2023	03	9/13/2022	JV13887		685010	76585	68500000	75231	8,668.18	LAFCO FEES YF22-23		
Total Object 75231									8,668.18			
Total Character 70									8,668.18			
Total GL Key 685010									605,869.60			
GL Key 685030 -- SCOTTS VLY FIRE DIST.-CAPITAL												
Character 60 -- SERVICES AND SUPPLIES												
Object 61845 -- MAINT-STRUCT/IMPS/GRDS-OTH-SRV												
2023	03	9/30/2022	1022SVFD		685030	76595	68500000	61845	505.12	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
2023	03	9/2/2022	0922SVFD1		685030	76595	68500000	61845	462.60	SCARBOROUGH LUM SVFD Acct 1169	V1233	SCARBOROUGH LUMBER & BLDG INC
2023	03	9/9/2022	0922SVFD		685030	76595	68500000	61845	74.16	KINGS PAINT & P SVFD	V105224	KINGS PAINT & PAPER
2023	03	9/28/2022	1022SVFD-1		685030	76595	68500000	61845	1,532.17	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 61845									2,574.05			
Object 62381 -- PROF & SPECIAL SERV-OTHER												
2023	03	9/9/2022	11731		685030	76595	68500000	62381	7,403.95	DEES & ASSOCIAT SVFD PO#21-038	V13256	DEES & ASSOCIATES INC
2023	03	9/2/2022	0822011		685030	76595	68500000	62381	2,140.00	MESITI-MILLER E SVFD	V124519	MESITI-MILLER ENGINEERING INC
Total Object 62381									9,543.95			
Total Character 60									12,118.00			
Character 80 -- FIXED ASSETS												
Object 86204 -- EQUIPMENT												
2023	03	9/23/2022	298135		685030	76595	68500000	86204	1,500.00	BAUER COMPRESSO SVFD PO# 21-35	V103096	BAUER COMPRESSORS INC
2023	03	9/16/2022	296236		685030	76595	68500000	86204	67,425.55	BAUER COMPRESSO SVFD PO#21-35	V103096	BAUER COMPRESSORS INC
Total Object 86204									68,925.55			
Total Character 80									68,925.55			
Total GL Key 685030									81,043.55			

Expenditure Actual Transactions

Criteria: PostOn = 9/1/2022..9/30/2022; EntryDate = 9/1/2022..9/30/2022; GLKey = 685010, 685030, 685040; Summarize by = GLKey,Character,Object

<u>FY</u>	<u>FM</u>	<u>Posted</u>	<u>Document</u>	<u>Doc Ref</u>	<u>GLKey</u>	<u>Fund</u>	<u>Organization</u>	<u>GL Obj</u>	<u>Amount</u>	<u>Description</u>	<u>Vendor No</u>	<u>Vendor Name</u>
GL Key 685040 -- SV FIRE DIST-REGIONAL HAZ RESP												
Character 60 -- SERVICES AND SUPPLIES												
Object 61221 -- TELEPHONE-NON TELECOM 1099												
2023	03	9/28/2022	1022SVFD-2		685040	76597	68500000	61221	76.12	U S BANK CORPOR SVFD 4246-0445	V992019	U S BANK CORPORATE PAYMENT
Total Object 61221									76.12			
Total Character 60									76.12			
Total GL Key 685040									76.12			



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 2022

**Safety Plan of the Scotts Valley Fire Protection District (CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2021**

Dear Employer,

Attached to this letter, you will find the June 30, 2021 actuarial valuation report for the rate plan noted above. **Provided in this report is the determination of the minimum required employer contributions for fiscal year (FY) 2023-24.** 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, 2021.

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 Safety Risk Pool Actuarial Valuation Report for June 30, 2021.

Your June 30, 2021 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. The plan actuary whose signature is in the Actuarial Certification is available to discuss.

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 (board) 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 requirements as needed. This valuation is based on an investment return assumption of 6.8%, which was adopted by the board in November 2021. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from November 2021.

Required Contribution

The table below shows the minimum required employer contributions for FY 2023-24 along with estimates of the required contributions for FY 2024-25. Employee contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The required employer contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.**

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability
2023-24	24.15%	\$1,021,417
<i>Projected Results</i>		
2024-25	24.2%	\$1,007,000

The actual investment return for FY 2021-22 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 6.8%. ***To the extent the actual investment return for FY 2021-22 differs from 6.8%, the actual contribution requirements for FY 2024-25 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 FY 2028-29.

Changes from Previous Year's Valuation

On July 12, 2021, CalPERS reported a preliminary 21.3% net return on investments for FY 2020-21. Since the return exceeded the 7.00% discount rate sufficiently, the CalPERS Funding Risk Mitigation policy allows CalPERS to use a portion of the investment gain to offset the cost of reducing the expected volatility of future investment returns. Based on the thresholds specified in the policy, the excess return of 14.3% prescribes a reduction in investment volatility that corresponds to a reduction in the discount rate of 0.20%, from 7.00% to 6.80%.

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the November 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for public agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new strategic asset allocation as part of its Asset Liability Management process. The new asset allocation along with the new capital market assumptions and economic assumptions support a discount rate of 6.80%. This includes a reduction in the price inflation assumption from 2.50% to 2.30%.

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 of the Section 2 report, "Actuarial Methods and Assumptions."

Questions

We understand that you might have questions about these results, and the plan actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or **(888-225-7377)**.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Terando", with a long horizontal flourish extending to the right.

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary



**Actuarial Valuation
as of June 30, 2021**

**for the
Safety Plan
of the
Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)**

**Required Contributions
for Fiscal Year
July 1, 2023 - June 30, 2024**

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Section 1 – Plan Specific Information

Section 2 – Risk Pool Actuarial Valuation Information

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

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

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

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Actuarial Certification

To the best of our knowledge, this report, comprising of Sections 1 and 2, is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the Safety Plan of the Scotts Valley Fire Protection District and satisfies the actuarial valuation requirements of Government Code section 7504. This valuation is based on the member and financial data as of June 30, 2021 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. Section 1 of this report is based on the member and financial data for Scotts Valley Fire Protection District, while Section 2 is based on the corresponding information for all agencies participating in the Safety Risk Pool to which the plan belongs.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the Safety Risk Pool 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 rate plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2021 and employer contribution as of July 1, 2023 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.



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

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Safety Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2021 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 (FY) 2023-24.

Purpose of Section 1

This Section 1 report for the Safety Plan of the Scotts Valley Fire Protection District of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2021;
- Determine the minimum required employer contribution for this plan for the FY July 1, 2023 through June 30, 2024; and
- Provide actuarial information as of June 30, 2021 to the CalPERS Board of Administration (board) and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS website (www.calpers.ca.gov).

The measurements shown in this actuarial valuation may not be applicable for other purposes. The agency should contact the plan 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; changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 5.8% and 7.8%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post-retirement mortality assumptions adopted in 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Contributions

Required Employer Contributions		Fiscal Year
Employer Normal Cost Rate		2023-24
		24.15%
Plus		
Required Payment on Amortization Bases ¹		\$1,021,417
Paid either as		
1) Monthly Payment		\$85,118.08
Or		
2) Annual Prepayment Option*		\$988,365
<p><i>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).</i></p> <p><i>* Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31).</i></p>		

	Fiscal Year	Fiscal Year
	2022-23	2023-24
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	29.63%	31.82%
Surcharge for Class 1 Benefits ²		
a) FAC 1	1.20%	1.32%
Phase out of Normal Cost Difference ³	0.00%	0.00%
Plan's Total Normal Cost	30.83%	33.14%
Formula's Expected Employee Contribution Rate	8.99%	8.99%
Employer Normal Cost Rate	21.84%	24.15%

¹ The required payment on amortization bases does not take into account any additional discretionary payment made after April 29, 2022.

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

³ The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2023-24 FY is \$1,021,417. CalPERS allows agencies to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Agencies can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during FY 2023-24 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

Agencies considering making an ADP should contact CalPERS for additional information.

Minimum Required Employer Contribution for Fiscal Year 2023-24

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
\$470,797	\$1,021,417	\$0	\$1,021,417	\$1,492,214

Alternative Fiscal Year 2023-24 Employer Contributions for Greater UAL Reduction

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP ¹	Total UAL Contribution	Estimated Total Contribution
10 years	\$470,797	\$1,021,417	\$175,889	\$1,197,306	\$1,668,103
5 years	\$470,797	\$1,021,417	\$1,037,575	\$2,058,992	\$2,529,789

¹ The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2023 as determined in the June 30, 2021 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions, and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2020	June 30, 2021
1. Present Value of Projected Benefits (PVB)	\$50,695,159	\$54,346,477
2. Entry Age Accrued Liability (AL)	47,484,681	50,846,730
3. Plan's Market Value of Assets (MVA)	34,165,434	41,417,299
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	13,319,247	9,429,431
5. Funded Ratio [(3) / (2)]	72.0%	81.5%

The UAL and funded ratio are assessments of the need for future employer contributions based on the 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. The funded ratio, on the other hand, is a relative measure of funded status that allows for comparison between plans of different sizes. For measures of funded status that are 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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. In particular, the investment return beginning with FY 2021-22 is assumed to be 6.80% per year, net of investment and administrative expenses. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below. Future contribution requirements may differ significantly from those shown below. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22 and Beyond)				
Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Rate Plan 904 Results					
Normal Cost %	24.15%	24.2%	24.2%	24.2%	24.2%	24.2%
UAL Payment	\$1,021,417	\$1,007,000	\$961,000	\$913,000	\$845,000	\$878,000

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

Our online pension plan projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook can help plan and budget pension costs under various scenarios.

Other Pooled Safety Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 904. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Safety Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.80% per year for three years.

	Fiscal Year 2022-23	Fiscal Year 2023-24
Estimated Combined Employer Contributions for all Pooled Safety Rate Plans		
Projected Payroll for the Contribution Year	\$3,511,697	\$3,635,619
Estimated Employer Normal Cost	\$628,854	\$699,101
Required Payment on Amortization Bases	\$1,046,865	\$1,021,417
Estimated Total Employer Contributions	\$1,675,719	\$1,720,518
Estimated Total Employer Contribution Rate (illustrative only)	47.72%	47.32%

Cost

Actuarial Determination of Plan Cost

Contributions to fund the plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with FY 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 6.9% over the 20 years ending June 30, 2021, yet individual fiscal year returns have ranged from -23.6% to +21.3%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2021.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for Public Agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new asset portfolio as part of its Asset Liability Management process. The new asset mix supports a 6.80% discount rate, which reflects a change in the price inflation assumption to 2.30%.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2021. Changes subsequent to that date are not reflected. Investment returns below the assumed rate of return may increase future required contributions while investment returns above the assumed rate of return may decrease future required contributions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 6.8% going forward and that the realized rate of return on assets for FY 2021-22 is 6.8%.

This actuarial valuation report reflects statutory changes, regulatory changes and board actions through January 2022. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age 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 Accrued Liability

Active Members	\$13,314,776
Transferred Members	2,482,411
Terminated Members	331,549
Members and Beneficiaries Receiving Payments	<u>34,717,994</u>
Total	\$50,846,730

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	\$50,846,730
2. Projected UAL balance at 6/30/2021	13,463,486
3. Pool's Accrued Liability ¹	27,398,042,131
4. Sum of Pool's Individual Plan UAL Balances at 6/30/2021 ¹	6,920,959,100
5. Pool's 2020/21 Investment (Gain)/Loss ¹	(2,925,172,404)
6. Pool's 2020/21 Non-Investment (Gain)/Loss ¹	(102,877,200)
7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$	(5,340,235)
8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$	(190,925)
9. Plan's New (Gain)/Loss as of 6/30/2021: $(7) + (8)$	(5,531,160)
10. Increase in Pool's Accrued Liability due to Change in Assumptions ¹	144,971,064
11. Plan's Share of Pool's Change in Assumptions: $(1) \div (3) \times (10)$	269,045
12. Increase in Pool's Accrued Liability due to Funding Risk Mitigation ¹	661,723,040
13. Plan's Share of Pool's Change due to Funding Risk Mitigation: $(1) \div (3) \times (12)$	1,228,060
14. Offset due to Funding Risk Mitigation	(1,276,111)
15. Plan's Net Investment (Gain): $(7) - (14)$	(4,064,124)

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

16. Plan's UAL: $(2) + (9) + (11) + (13)$	\$9,429,431
17. Plan's Share of Pool's MVA: $(1) - (16)$	\$41,417,299

Schedule of 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, 2021.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2023-24.

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 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.

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	4,405,318	307,114	4,387,495	315,560	4,359,732	316,439
Non-Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	(267,710)	(18,663)	(266,627)	(19,177)	(264,939)	(19,230)
Share of Pre-2013 Pool UAL	6/30/13	No Ramp		2.80%	14	2,893,408	249,140	2,832,688	255,991	2,760,759	258,116
Assumption Change	6/30/14	100%	Up/Down	2.80%	13	1,943,428	195,423	1,873,623	200,798	1,793,517	203,023
Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	(3,157,689)	(214,208)	(3,151,041)	(220,099)	(3,137,852)	(220,524)
Non-Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	38,398	2,605	38,317	2,676	38,157	2,682
Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	1,938,165	128,165	1,937,509	131,689	1,933,167	131,833
Non-Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	(6,988)	(462)	(6,986)	(475)	(6,970)	(475)
Assumption Change	6/30/16	100%	Up/Down	2.80%	15	761,230	56,013	755,108	71,942	732,108	72,603
Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	2,523,969	132,014	2,559,170	169,555	2,557,968	169,601
Non-Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	(405,766)	(21,223)	(411,425)	(27,259)	(411,231)	(27,266)
Assumption Change	6/30/17	100%	Up/Down	2.80%	16	987,755	53,778	999,346	73,676	991,162	92,860
Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	(1,251,743)	(49,192)	(1,286,025)	(67,393)	(1,303,828)	(84,199)
Non-Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	31,162	1,225	32,015	1,678	32,458	2,096
Assumption Change	6/30/18	80%	Up/Down	2.80%	17	1,479,161	53,938	1,524,002	83,132	1,541,722	111,637
Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	(388,929)	(10,338)	(404,692)	(15,934)	(415,744)	(21,213)
Method Change	6/30/18	80%	Up/Down	2.80%	17	333,447	12,159	343,556	18,741	347,550	25,166
Non-Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	181,653	4,829	189,015	7,442	194,177	9,908
Investment (Gain)/Loss	6/30/19	60%	Up Only	0.00%	18	189,066	4,134	197,650	8,267	202,547	12,178
Non-Investment (Gain)/Loss	6/30/19	No Ramp		0.00%	18	220,837	20,152	215,028	20,152	208,824	19,799

Schedule of Plan's Amortization Bases (Continued)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Investment (Gain)/Loss	6/30/20	40%	Up Only	0.00%	19	863,999	0	922,751	20,213	964,609	39,652
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	19	151,315	0	161,604	14,775	157,324	14,509
Assumption Change	6/30/21	No Ramp		0.00%	20	269,045	(19,772)	307,773	(20,326)	349,707	31,447
Net Investment (Gain)	6/30/21	20%	Up Only	0.00%	20	(4,064,124)	0	(4,340,484)	0	(4,635,637)	(99,642)
Non-Investment (Gain)/Loss	6/30/21	No Ramp		0.00%	20	(190,925)	0	(203,908)	0	(217,774)	(19,583)
Risk Mitigation	6/30/21	No Ramp		0.00%	1	1,228,060	(25,303)	1,337,717	(26,011)	1,455,563	1,504,238
Risk Mitigation Offset	6/30/21	No Ramp		0.00%	1	(1,276,111)	0	(1,362,887)	0	(1,455,563)	(1,504,238)
Total						9,429,431	861,528	9,180,292	999,613	8,771,513	1,021,417

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 in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page(s) shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please contact the plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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 an appropriate 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 (continued)

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	10 Year Amortization		5 Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2023	8,771,513	1,021,417	8,771,513	1,197,306	8,771,513	2,058,992
6/30/2024	8,312,402	1,006,562	8,130,631	1,197,307	7,240,129	2,058,992
6/30/2025	7,837,423	961,154	7,446,168	1,197,306	5,604,611	2,058,993
6/30/2026	7,377,074	912,540	6,715,162	1,197,306	3,857,877	2,058,992
6/30/2027	6,935,660	844,974	5,934,448	1,197,307	1,992,366	2,058,992
6/30/2028	6,534,055	877,944	5,100,644	1,197,306		
6/30/2029	6,071,066	911,842	4,210,143	1,197,306		
6/30/2030	5,541,565	946,682	3,259,088	1,197,307		
6/30/2031	4,940,052	982,503	2,243,360	1,197,306		
6/30/2032	4,260,616	967,269	1,158,564	1,197,307		
6/30/2033	3,550,720	950,145				
6/30/2034	2,810,250	911,372				
6/30/2035	2,059,500	843,548				
6/30/2036	1,327,789	721,981				
6/30/2037	671,954	272,513				
6/30/2038	436,023	187,629				
6/30/2039	271,769	120,105				
6/30/2040	166,126	78,088				
6/30/2041	96,724	99,959				
6/30/2042						
6/30/2043						
6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
6/30/2052						
Total		13,618,227		11,973,064		10,294,961
Interest Paid		4,846,714		3,201,551		1,523,448
Estimated Savings				1,645,163		3,323,266

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2021 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment (\$)	Additional Discretionary Payments
2016 - 17	17.689%	\$322,155	N/A
2017 - 18	17.875%	405,353	N/A
2018 - 19	18.677%	526,104	N/A
2019 - 20	20.073%	659,149	0
2020 - 21	21.746%	761,892	0
2021 - 22	21.79%	906,603	
2022 - 23	21.84%	1,045,950	
2023 - 24	24.15%	1,021,417	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
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
06/30/2019	45,731,110	33,562,959	12,168,151	73.4%	1,954,922
06/30/2020	47,484,681	34,165,434	13,319,247	72.0%	1,832,070
06/30/2021	50,846,730	41,417,299	9,429,431	81.5%	1,794,475

Risk Analysis

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

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions. The projections below reflect the impact of the CalPERS Funding Risk Mitigation policy. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits, or funding will occur.

The first table shows projected contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2041.

Assumed Annual Return FY 2021-22 through 2040-41	Projected Employer Contributions				
	2024-25	2025-26	2026-27	2027-28	2028-29
3.0% (5th percentile)					
Normal Cost Rate	24.2%	24.2%	24.2%	24.2%	24.2%
UAL Contribution	\$1,045,000	\$1,079,000	\$1,149,000	\$1,242,000	\$1,477,000
10.8% (95th percentile)					
Normal Cost Rate	24.6%	25.0%	25.4%	25.8%	26.3%
UAL Contribution	\$971,000	\$854,000	\$694,000	\$0	\$0

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of a one or two standard deviation investment loss in FY 2021-22 on the FY 2024-25 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2024-25.

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	2023-24	2024-25
(17.2)% (2 standard deviation loss)		
Normal Cost Rate	24.15%	24.2%
UAL Contribution	\$1,021,417	\$1,251,000
(5.2)% (1 standard deviation loss)		
Normal Cost Rate	24.15%	24.2%
UAL Contribution	\$1,021,417	\$1,129,000

- Without investment gains (returns higher than 6.8%) in year FY 2022-23 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2021-22.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2024-25 as well as to model other investment return scenarios.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.5% and 2.3%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2021 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Real Rate of Return Assumption

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	3.5%	4.5%	5.5%
a) Total Normal Cost	41.56%	33.14%	26.71%
b) Accrued Liability	\$57,502,422	\$50,846,730	\$45,344,237
c) Market Value of Assets	\$41,417,299	\$41,417,299	\$41,417,299
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$16,085,123	\$9,429,431	\$3,926,938
e) Funded Ratio	72.0%	81.5%	91.3%

Sensitivity to the Price Inflation Assumption

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	1.3%	2.3%	3.3%
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	34.78%	33.14%	30.09%
b) Accrued Liability	\$52,558,072	\$50,846,730	\$46,723,312
c) Market Value of Assets	\$41,417,299	\$41,417,299	\$41,417,299
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$11,140,773	\$9,429,431	\$5,306,013
e) Funded Ratio	78.8%	81.5%	88.6%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2021 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	33.61%	33.14%	32.70%
b) Accrued Liability	\$51,751,984	\$50,846,730	\$50,010,330
c) Market Value of Assets	\$41,417,299	\$41,417,299	\$41,417,299
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$10,334,685	\$9,429,431	\$8,593,031
e) Funded Ratio	80.0%	81.5%	82.8%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

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 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2020	June 30, 2021
1. Retired Accrued Liability	\$31,954,048	\$34,717,994
2. Total Accrued Liability	47,484,681	50,846,730
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.67	0.68

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the support ratio. 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above. For comparison, the support ratio for all CalPERS public agency plans is 0.82 and is calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Support Ratio	June 30, 2020	June 30, 2021
1. Number of Actives	13	12
2. Number of Retirees	35	36
3. Support Ratio [(1) / (2)]	0.37	0.33

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, 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

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility, since the AVR, described above, will tend to move closer to the LVR as the funded ratio approaches 100%.

Contribution Volatility	June 30, 2020	June 30, 2021
1. Market Value of Assets	\$34,165,434	\$41,417,299
2. Payroll	1,832,070	1,794,475
3. Asset Volatility Ratio (AVR) [(1) / (2)]	18.6	23.1
4. Accrued Liability	\$47,484,681	\$50,846,730
5. Liability Volatility Ratio (LVR) [(4) / (2)]	25.9	28.3

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.50	0.77	11.8	15.8
06/30/2018	0.53	0.64	13.8	18.9
06/30/2019	0.63	0.47	17.2	23.4
06/30/2020	0.67	0.37	18.6	25.9
06/30/2021	0.68	0.33	23.1	28.3

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, 2021. 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 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to seven months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability^{1,2} at 1.00%	Funded Ratio	Unfunded Termination Liability at 1.00%	Hypothetical Termination Liability^{1,2} at 2.25%	Funded Ratio	Unfunded Termination Liability at 2.25%
\$41,417,299	\$120,817,074	34.3%	\$79,399,775	\$100,511,403	41.2%	\$59,094,104

¹ The hypothetical liabilities calculated above include a 5% contingency load. The contingency load and other actuarial assumptions can be found in Appendix A.

² The discount rate 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 2.00% on June 30, 2021, the valuation date.

In order to terminate the plan, first contact our Pension Contract Services unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to provide a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. Before beginning this process, please consult with the plan actuary.

Participant Data

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

	June 30, 2020	June 30, 2021
Active Members		
Counts	13	12
Average Attained Age	48.99	49.38
Average Entry Age to Rate Plan	28.11	28.55
Average Years of Credited Service	20.21	20.10
Average Annual Covered Pay	\$140,928	\$149,540
Annual Covered Payroll	\$1,832,070	\$1,794,475
Present Value of Future Payroll	\$11,856,788	\$12,073,042
Transferred Members	8	8
Separated Members	2	2
Retired Members and Beneficiaries		
Counts*	35	36
Average Annual Benefits*	\$65,345	\$68,229

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

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 the agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

Member Category	Benefit Group		
	Fire	Fire	
Demographics			
Actives	Yes	No	
Transfers/Separated	Yes	No	
Receiving	Yes	Yes	
Benefit Provision			
Benefit Formula	3% @ 55		
Social Security Coverage	No		
Full/Modified	Full		
Employee Contribution Rate	9.00%		
Final Average Compensation Period	One 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	\$500	
Survivor Allowance (PRSA)	No	No	
COLA	2%	2%	

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

**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 2022

**PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District (CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2021**

Dear Employer,

Attached to this letter, you will find the June 30, 2021 actuarial valuation report for the rate plan noted above. **Provided in this report is the determination of the minimum required employer contributions for fiscal year (FY) 2023-24.** 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, 2021.

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 Safety Risk Pool Actuarial Valuation Report for June 30, 2021.

Your June 30, 2021 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. The plan actuary whose signature is in the Actuarial Certification is available to discuss.

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 (board) 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 requirements as needed. This valuation is based on an investment return assumption of 6.8%, which was adopted by the board in November 2021. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from November 2021.

Required Contribution

The table below shows the minimum required employer contributions and the Employee PEPRA Rate for FY 2023-24 along with estimates of the required contributions for FY 2024-25. Employee contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The required employer contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.**

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Member Rate
2023-24	13.54%	\$0	13.75%
<i>Projected Results</i>			
2024-25	13.5%	\$0	TBD

The actual investment return for FY 2021-22 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 6.8%. ***To the extent the actual investment return for FY 2021-22 differs from 6.8%, the actual contribution requirements for FY 2024-25 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 FY 2028-29.

Changes from Previous Year's Valuation

On July 12, 2021, CalPERS reported a preliminary 21.3% net return on investments for FY 2020-21. Since the return exceeded the 7.00% discount rate sufficiently, the CalPERS Funding Risk Mitigation policy allows CalPERS to use a portion of the investment gain to offset the cost of reducing the expected volatility of future investment returns. Based on the thresholds specified in the policy, the excess return of 14.3% prescribes a reduction in investment volatility that corresponds to a reduction in the discount rate of 0.20%, from 7.00% to 6.80%.

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the November 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for public agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new strategic asset allocation as part of its Asset Liability Management process. The new asset allocation along with the new capital market assumptions and economic assumptions support a discount rate of 6.80%. This includes a reduction in the price inflation assumption from 2.50% to 2.30%.

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 of the Section 2 report, "Actuarial Methods and Assumptions."

Questions

We understand that you might have questions about these results, and the plan actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or **(888-225-7377)**.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Terando", with a long horizontal flourish extending to the right.

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary



**Actuarial Valuation
as of June 30, 2021**

**for the
PEPRA Safety Fire Plan
of the
Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)**

**Required Contributions
for Fiscal Year
July 1, 2023 - June 30, 2024**

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Section 1 – Plan Specific Information

Section 2 – Risk Pool Actuarial Valuation Information

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

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

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

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Actuarial Certification

To the best of our knowledge, this report, comprising of Sections 1 and 2, is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District and satisfies the actuarial valuation requirements of Government Code section 7504. This valuation is based on the member and financial data as of June 30, 2021 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. Section 1 of this report is based on the member and financial data for Scotts Valley Fire Protection District, while Section 2 is based on the corresponding information for all agencies participating in the Safety Risk Pool to which the plan belongs.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the Safety Risk Pool 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 rate plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2021 and employer contribution as of July 1, 2023 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.



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

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Safety Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2021 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 (FY) 2023-24.

Purpose of Section 1

This Section 1 report for the PEPRA Safety Fire Plan of the Scotts Valley Fire Protection District of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2021;
- Determine the minimum required employer contribution for this plan for the FY July 1, 2023 through June 30, 2024; and
- Provide actuarial information as of June 30, 2021 to the CalPERS Board of Administration (board) and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS website (www.calpers.ca.gov).

The measurements shown in this actuarial valuation may not be applicable for other purposes. The agency should contact the plan 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; changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 5.8% and 7.8%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post-retirement mortality assumptions adopted in 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Contributions

Required Employer Contributions		Fiscal Year
		2023-24
Employer Normal Cost Rate		13.54%
<i>Plus</i>		
Required Payment on Amortization Bases ¹		\$0
<i>Paid either as</i>		
1) Monthly Payment		\$0.00
<i>Or</i>		
2) Annual Prepayment Option*		\$0
Required PEPR Member Contribution Rate		13.75%
<i>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).</i>		
<i>* Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31).</i>		
<i>For additional detail regarding the determination of the required PEPR member contribution rate see section on PEPR Member Contribution Rates.</i>		

	Fiscal Year	Fiscal Year
	2022-23	2023-24
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	25.78%	27.29%
Surcharge for Class 1 Benefits ²		
None	0.00%	0.00%
Phase out of Normal Cost Difference ³	0.00%	0.00%
Plan's Total Normal Cost	25.78%	27.29%
Plan's Employee Contribution Rate	13.00%	13.75%
Employer Normal Cost Rate	12.78%	13.54%

¹ The required payment on amortization bases does not take into account any additional discretionary payment made after April 29, 2022.

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

³ The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2023-24 FY is \$0. CalPERS allows agencies to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Agencies can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during FY 2023-24 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

Agencies considering making an ADP should contact CalPERS for additional information.

Minimum Required Employer Contribution for Fiscal Year 2023-24

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
\$228,304	\$0	\$0	\$0	\$228,304

Alternative Fiscal Year 2023-24 Employer Contributions for Greater UAL Reduction

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP ¹	Total UAL Contribution	Estimated Total Contribution
N/A	N/A	N/A	N/A	N/A	N/A

¹ The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2023 as determined in the June 30, 2021 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions, and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2020	June 30, 2021
1. Present Value of Projected Benefits (PVB)	\$5,774,606	\$7,167,714
2. Entry Age Accrued Liability (AL)	1,067,907	1,616,496
3. Plan's Market Value of Assets (MVA)	985,610	1,773,541
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	82,297	(157,045)
5. Funded Ratio [(3) / (2)]	92.3%	109.7%

The UAL and funded ratio are assessments of the need for future employer contributions based on the 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. The funded ratio, on the other hand, is a relative measure of funded status that allows for comparison between plans of different sizes. For measures of funded status that are 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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. In particular, the investment return beginning with FY 2021-22 is assumed to be 6.80% per year, net of investment and administrative expenses. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below. Future contribution requirements may differ significantly from those shown below. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22 and Beyond)				
Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Rate Plan 25848 Results					
Normal Cost %	13.54%	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Payment	\$0	\$0	\$0	\$0	\$0	\$0

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

Our online pension plan projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook can help plan and budget pension costs under various scenarios.

Other Pooled Safety Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 25848. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Safety Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.80% per year for three years.

	Fiscal Year 2022-23	Fiscal Year 2023-24
Estimated Combined Employer Contributions for all Pooled Safety Rate Plans		
Projected Payroll for the Contribution Year	\$3,511,697	\$3,635,619
Estimated Employer Normal Cost	\$628,854	\$699,101
Required Payment on Amortization Bases	\$1,046,865	\$1,021,417
Estimated Total Employer Contributions	\$1,675,719	\$1,720,518
Estimated Total Employer Contribution Rate (illustrative only)	47.72%	47.32%

Cost

Actuarial Determination of Plan Cost

Contributions to fund the plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with FY 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 6.9% over the 20 years ending June 30, 2021, yet individual fiscal year returns have ranged from -23.6% to +21.3%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2021.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for Public Agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new asset portfolio as part of its Asset Liability Management process. The new asset mix supports a 6.80% discount rate, which reflects a change in the price inflation assumption to 2.30%.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2021. Changes subsequent to that date are not reflected. Investment returns below the assumed rate of return may increase future required contributions while investment returns above the assumed rate of return may decrease future required contributions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 6.8% going forward and that the realized rate of return on assets for FY 2021-22 is 6.8%.

This actuarial valuation report reflects statutory changes, regulatory changes and board actions through January 2022. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age 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 Accrued Liability

Active Members	\$1,395,534
Transferred Members	10,432
Terminated Members	441
Members and Beneficiaries Receiving Payments	<u>210,089</u>
Total	\$1,616,496

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	\$1,616,496
2. Projected UAL balance at 6/30/2021	28,305
3. Pool's Accrued Liability ¹	27,398,042,131
4. Sum of Pool's Individual Plan UAL Balances at 6/30/2021 ¹	6,920,959,100
5. Pool's 2020/21 Investment (Gain)/Loss ¹	(2,925,172,404)
6. Pool's 2020/21 Non-Investment (Gain)/Loss ¹	(102,877,200)
7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$	(226,875)
8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$	(6,070)
9. Plan's New (Gain)/Loss as of 6/30/2021: $(7) + (8)$	(232,945)
10. Increase in Pool's Accrued Liability due to Change in Assumptions ¹	144,971,064
11. Plan's Share of Pool's Change in Assumptions: $(1) \div (3) \times (10)$	8,553
12. Increase in Pool's Accrued Liability due to Funding Risk Mitigation ¹	661,723,040
13. Plan's Share of Pool's Change due to Funding Risk Mitigation: $(1) \div (3) \times (12)$	39,042
14. Offset due to Funding Risk Mitigation	(80,603)
15. Plan's Net Investment (Gain): $(7) - (14)$	(146,272)

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

16. Plan's UAL: $(2) + (9) + (11) + (13)$	(\$157,045)
17. Plan's Share of Pool's MVA: $(1) - (16)$	\$1,773,541

Schedule of 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, 2021.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2023-24.

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 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.

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/21				N/A	(157,045)	(38,986)	(127,434)	(39,163)	(95,627)	0
Total						(157,045)	(38,986)	(127,434)	(39,163)	(95,627)	0

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 in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page(s) shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please contact the plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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 an appropriate 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 (continued)

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	N/A Year Amortization		N/A Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2023	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2024						
6/30/2025						
6/30/2026						
6/30/2027						
6/30/2028						
6/30/2029						
6/30/2030						
6/30/2031						
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6/30/2044						
6/30/2045						
6/30/2046						
6/30/2047						
6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
6/30/2052						
Total		N/A		N/A		N/A
Interest Paid		N/A		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. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2021 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment (\$)	Additional Discretionary Payments
2017 - 18	11.990%	\$0	N/A
2018 - 19	12.141%	2,057	N/A
2019 - 20	13.034%	5,047	0
2020 - 21	13.044%	17,747	40,907
2021 - 22	13.13%	22,134	
2022 - 23	12.78%	915	
2023 - 24	13.54%	0	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	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
06/30/2019	679,096	632,618	46,478	93.2%	1,130,210
06/30/2020	1,067,907	985,610	82,297	92.3%	1,405,145
06/30/2021	1,616,496	1,773,541	(157,045)	109.7%	1,552,088

Risk Analysis

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

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions. The projections below reflect the impact of the CalPERS Funding Risk Mitigation policy. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits, or funding will occur.

The first table shows projected contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2041.

Assumed Annual Return FY 2021-22 through 2040-41	Projected Employer Contributions				
	2024-25	2025-26	2026-27	2027-28	2028-29
3.0% (5th percentile)					
Normal Cost Rate	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Contribution	\$0	\$1,100	\$4,000	\$8,600	\$15,000
10.8% (95th percentile)					
Normal Cost Rate	13.9%	14.3%	14.1%	14.5%	14.8%
UAL Contribution	\$0	\$0	\$0	\$0	\$0

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of a one or two standard deviation investment loss in FY 2021-22 on the FY 2024-25 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2024-25.

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	2023-24	2024-25
(17.2)% (2 standard deviation loss)		
Normal Cost Rate	13.54%	13.5%
UAL Contribution	\$0	\$8,300
(5.2)% (1 standard deviation loss)		
Normal Cost Rate	13.54%	13.5%
UAL Contribution	\$0	\$3,000

- Without investment gains (returns higher than 6.8%) in year FY 2022-23 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2021-22.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2024-25 as well as to model other investment return scenarios.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.5% and 2.3%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2021 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Real Rate of Return Assumption

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	3.5%	4.5%	5.5%
a) Total Normal Cost	34.35%	27.29%	21.95%
b) Accrued Liability	\$1,976,736	\$1,616,496	\$1,334,460
c) Market Value of Assets	\$1,773,541	\$1,773,541	\$1,773,541
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$203,195	(\$157,045)	(\$439,081)
e) Funded Ratio	89.7%	109.7%	132.9%

Sensitivity to the Price Inflation Assumption

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	1.3%	2.3%	3.3%
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	28.79%	27.29%	24.69%
b) Accrued Liability	\$1,690,109	\$1,616,496	\$1,469,331
c) Market Value of Assets	\$1,773,541	\$1,773,541	\$1,773,541
d) Unfunded Liability/(Surplus) [(b) - (c)]	(\$83,432)	(\$157,045)	(\$304,210)
e) Funded Ratio	104.9%	109.7%	120.7%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2021 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	27.65%	27.29%	26.95%
b) Accrued Liability	\$1,642,763	\$1,616,496	\$1,592,033
c) Market Value of Assets	\$1,773,541	\$1,773,541	\$1,773,541
d) Unfunded Liability/(Surplus) [(b) - (c)]	(\$130,778)	(\$157,045)	(\$181,508)
e) Funded Ratio	108.0%	109.7%	111.4%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

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 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2020	June 30, 2021
1. Retired Accrued Liability	\$0	\$210,089
2. Total Accrued Liability	1,067,907	1,616,496
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.00	0.13

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the support ratio. 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above. For comparison, the support ratio for all CalPERS public agency plans is 0.82 and is calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Support Ratio	June 30, 2020	June 30, 2021
1. Number of Actives	13	14
2. Number of Retirees	0	1
3. Support Ratio [(1) / (2)]	N/A	14.00

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, 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

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility, since the AVR, described above, will tend to move closer to the LVR as the funded ratio approaches 100%.

Contribution Volatility	June 30, 2020	June 30, 2021
1. Market Value of Assets	\$985,610	\$1,773,541
2. Payroll	1,405,145	1,552,088
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.7	1.1
4. Accrued Liability	\$1,067,907	\$1,616,496
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.8	1.0

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.00	N/A	0.3	0.4
06/30/2018	0.00	N/A	0.4	0.5
06/30/2019	0.00	N/A	0.6	0.6
06/30/2020	0.00	N/A	0.7	0.8
06/30/2021	0.13	14.00	1.1	1.0

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, 2021. 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 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to seven months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability^{1,2} at 1.00%	Funded Ratio	Unfunded Termination Liability at 1.00%	Hypothetical Termination Liability^{1,2} at 2.25%	Funded Ratio	Unfunded Termination Liability at 2.25%
\$1,773,541	\$4,494,526	39.5%	\$2,720,985	\$3,192,279	55.6%	\$1,418,738

¹ The hypothetical liabilities calculated above include a 5% contingency load. The contingency load and other actuarial assumptions can be found in Appendix A.

² The discount rate 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 2.00% on June 30, 2021, the valuation date.

In order to terminate the plan, first contact our Pension Contract Services unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to provide a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. Before beginning this process, please consult with the plan actuary.

Participant Data

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

	June 30, 2020	June 30, 2021
Active Members		
Counts	13	14
Average Attained Age	37.30	36.30
Average Entry Age to Rate Plan	34.51	33.01
Average Years of Credited Service	2.85	3.36
Average Annual Covered Pay	\$108,088	\$110,863
Annual Covered Payroll	\$1,405,145	\$1,552,088
Present Value of Future Payroll	\$19,567,966	\$23,088,080
Transferred Members	1	1
Separated Members	0	1
Retired Members and Beneficiaries		
Counts*	0	1
Average Annual Benefits*	\$0	\$12,543

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

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 the agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

	Benefit Group	
Member Category	Fire	
Demographics		
Actives	Yes	
Transfers/Separated	Yes	
Receiving	Yes	
Benefit Provision		
Benefit Formula	2.7% @ 57	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	13.00%	
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 California Public Employees' Pension Reform Act of 2013 (PEPRA) established new benefit formulas, final compensation period, and contribution requirements for "new" employees (generally those first hired into a CalPERS-covered position on or after January 1, 2013). In accordance with Government Code Section 7522.30(b), "new members ... shall have an initial contribution rate of at least 50% of the normal cost rate." The normal cost rate is dependent on the plan of retirement benefits, actuarial assumptions, and demographics of the risk pool, particularly members' entry age. Should the total normal cost rate change by more than 1% from the base total normal cost rate, the new member rate shall be 50% of the new normal cost rate rounded to the nearest quarter percent.

The table below shows the determination of the PEPRA member contribution rates effective July 1, 2023, based on 50% of the total normal cost rate as of the June 30, 2021 valuation.

Rate Plan Identifier	Benefit Group Name	<u>Basis for Current Rate</u>		<u>Rates Effective July 1, 2023</u>			
		Total Normal Cost	Member Rate	Total Normal Cost	Change	Change Needed	Member Rate
25848	Safety Fire PEPRA Level	26.044%	13.00%	27.29%	1.246%	Yes	13.75%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

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



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July 2022

**Miscellaneous Plan of the Scotts Valley Fire Protection District (CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2021**

Dear Employer,

Attached to this letter, you will find the June 30, 2021 actuarial valuation report for the rate plan noted above. **Provided in this report is the determination of the minimum required employer contributions for fiscal year (FY) 2023-24.** 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, 2021.

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 Risk Pool Actuarial Valuation Report for June 30, 2021.

Your June 30, 2021 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. The plan actuary whose signature is in the Actuarial Certification is available to discuss.

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 (board) 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 requirements as needed. This valuation is based on an investment return assumption of 6.8%, which was adopted by the board in November 2021. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from November 2021.

Required Contribution

The table below shows the minimum required employer contributions for FY 2023-24 along with estimates of the required contributions for FY 2024-25. Employee contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The required employer contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.**

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability
2023-24	12.47%	\$22,675
<i>Projected Results</i>		
2024-25	12.5%	\$21,000

The actual investment return for FY 2021-22 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 6.8%. ***To the extent the actual investment return for FY 2021-22 differs from 6.8%, the actual contribution requirements for FY 2024-25 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 FY 2028-29.

Changes from Previous Year's Valuation

On July 12, 2021, CalPERS reported a preliminary 21.3% net return on investments for FY 2020-21. Since the return exceeded the 7.00% discount rate sufficiently, the CalPERS Funding Risk Mitigation policy allows CalPERS to use a portion of the investment gain to offset the cost of reducing the expected volatility of future investment returns. Based on the thresholds specified in the policy, the excess return of 14.3% prescribes a reduction in investment volatility that corresponds to a reduction in the discount rate of 0.20%, from 7.00% to 6.80%.

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the November 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for public agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new strategic asset allocation as part of its Asset Liability Management process. The new asset allocation along with the new capital market assumptions and economic assumptions support a discount rate of 6.80%. This includes a reduction in the price inflation assumption from 2.50% to 2.30%.

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 of the Section 2 report, "Actuarial Methods and Assumptions."

Questions

We understand that you might have questions about these results, and the plan actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or **(888-225-7377)**.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Terando", with a long horizontal flourish extending to the right.

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary



**Actuarial Valuation
as of June 30, 2021**

**for the
Miscellaneous Plan
of the
Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)**

**Required Contributions
for Fiscal Year
July 1, 2023 - June 30, 2024**

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Section 1 – Plan Specific Information

Section 2 – Risk Pool Actuarial Valuation Information

Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

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

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

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Actuarial Certification

To the best of our knowledge, this report, comprising of Sections 1 and 2, is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the Miscellaneous Plan of the Scotts Valley Fire Protection District and satisfies the actuarial valuation requirements of Government Code section 7504. This valuation is based on the member and financial data as of June 30, 2021 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. Section 1 of this report is based on the member and financial data for Scotts Valley Fire Protection District, while Section 2 is based on the corresponding information for all agencies participating in the Miscellaneous Risk Pool to which the plan belongs.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the Miscellaneous Risk Pool 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 rate plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2021 and employer contribution as of July 1, 2023 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.



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

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Miscellaneous Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2021 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 (FY) 2023-24.

Purpose of Section 1

This Section 1 report for the Miscellaneous Plan of the Scotts Valley Fire Protection District of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2021;
- Determine the minimum required employer contribution for this plan for the FY July 1, 2023 through June 30, 2024; and
- Provide actuarial information as of June 30, 2021 to the CalPERS Board of Administration (board) and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS website (www.calpers.ca.gov).

The measurements shown in this actuarial valuation may not be applicable for other purposes. The agency should contact the plan 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; changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 5.8% and 7.8%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post-retirement mortality assumptions adopted in 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Contributions

Required Employer Contributions	Fiscal Year 2023-24
Employer Normal Cost Rate	12.47%
Plus	
Required Payment on Amortization Bases ¹	\$22,675
Paid either as	
1) Monthly Payment	\$1,889.58
Or	
2) Annual Prepayment Option*	\$21,941
<p><i>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).</i></p> <p><i>* Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31).</i></p>	

	Fiscal Year 2022-23	Fiscal Year 2023-24
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	17.24%	18.76%
Surcharge for Class 1 Benefits ²		
a) FAC 1	0.55%	0.63%
Phase out of Normal Cost Difference ³	0.00%	0.00%
Plan's Total Normal Cost	17.79%	19.39%
Formula's Expected Employee Contribution Rate	6.92%	6.92%
Employer Normal Cost Rate	10.87%	12.47%

¹ The required payment on amortization bases does not take into account any additional discretionary payment made after April 29, 2022.

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

³ The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2023-24 FY is \$22,675. CalPERS allows agencies to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Agencies can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during FY 2023-24 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

Agencies considering making an ADP should contact CalPERS for additional information.

Minimum Required Employer Contribution for Fiscal Year 2023-24

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
\$15,075	\$22,675	\$0	\$22,675	\$37,750

Alternative Fiscal Year 2023-24 Employer Contributions for Greater UAL Reduction

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP ¹	Total UAL Contribution	Estimated Total Contribution
5 years	\$15,075	\$22,675	\$2,198	\$24,873	\$39,948

¹ The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2023 as determined in the June 30, 2021 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions, and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2020	June 30, 2021
1. Present Value of Projected Benefits (PVB)	\$1,074,613	\$1,200,558
2. Entry Age Accrued Liability (AL)	932,678	1,039,228
3. Plan's Market Value of Assets (MVA)	699,915	903,828
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	232,763	135,400
5. Funded Ratio [(3) / (2)]	75.0%	87.0%

The UAL and funded ratio are assessments of the need for future employer contributions based on the 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. The funded ratio, on the other hand, is a relative measure of funded status that allows for comparison between plans of different sizes. For measures of funded status that are 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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. In particular, the investment return beginning with FY 2021-22 is assumed to be 6.80% per year, net of investment and administrative expenses. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below. Future contribution requirements may differ significantly from those shown below. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22 and Beyond)				
Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Rate Plan 903 Results					
Normal Cost %	12.47%	12.5%	12.5%	12.5%	12.5%	12.5%
UAL Payment	\$22,675	\$21,000	\$19,000	\$17,000	\$15,000	\$15,000

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

Our online pension plan projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook can help plan and budget pension costs under various scenarios.

Other Pooled Miscellaneous Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 903. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Miscellaneous Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.80% per year for three years.

	Fiscal Year 2022-23	Fiscal Year 2023-24
Estimated Combined Employer Contributions for all Pooled Miscellaneous Rate Plans		
Projected Payroll for the Contribution Year	\$171,836	\$186,171
Estimated Employer Normal Cost	\$16,669	\$20,089
Required Payment on Amortization Bases	\$25,562	\$22,675
Estimated Total Employer Contributions	\$42,231	\$42,764
Estimated Total Employer Contribution Rate (illustrative only)	24.58%	22.97%

Cost

Actuarial Determination of Plan Cost

Contributions to fund the plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with FY 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 6.9% over the 20 years ending June 30, 2021, yet individual fiscal year returns have ranged from -23.6% to +21.3%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2021.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for Public Agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new asset portfolio as part of its Asset Liability Management process. The new asset mix supports a 6.80% discount rate, which reflects a change in the price inflation assumption to 2.30%.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2021. Changes subsequent to that date are not reflected. Investment returns below the assumed rate of return may increase future required contributions while investment returns above the assumed rate of return may decrease future required contributions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 6.8% going forward and that the realized rate of return on assets for FY 2021-22 is 6.8%.

This actuarial valuation report reflects statutory changes, regulatory changes and board actions through January 2022. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age 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 Accrued Liability

Active Members	\$597,513
Transferred Members	0
Terminated Members	59,112
Members and Beneficiaries Receiving Payments	<u>382,603</u>
Total	\$1,039,228

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	\$1,039,228
2. Projected UAL balance at 6/30/2021	228,826
3. Pool's Accrued Liability ¹	20,794,529,023
4. Sum of Pool's Individual Plan UAL Balances at 6/30/2021 ¹	4,597,734,264
5. Pool's 2020/21 Investment (Gain)/Loss ¹	(2,338,185,055)
6. Pool's 2020/21 Non-Investment (Gain)/Loss ¹	(84,077,623)
7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$	(116,990)
8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$	(4,202)
9. Plan's New (Gain)/Loss as of 6/30/2021: $(7) + (8)$	(121,192)
10. Increase in Pool's Accrued Liability due to Change in Assumptions ¹	60,407,898
11. Plan's Share of Pool's Change in Assumptions: $(1) \div (3) \times (10)$	3,019
12. Increase in Pool's Accrued Liability due to Funding Risk Mitigation ¹	495,172,731
13. Plan's Share of Pool's Change due to Funding Risk Mitigation: $(1) \div (3) \times (12)$	24,747
14. Offset due to Funding Risk Mitigation	(26,375)
15. Plan's Net Investment (Gain): $(7) - (14)$	(90,615)

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

16. Plan's UAL: $(2) + (9) + (11) + (13)$	\$135,400
17. Plan's Share of Pool's MVA: $(1) - (16)$	\$903,828

Schedule of 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, 2021.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2023-24.

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 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.

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/19	No Ramp		0.00%	11	208,012	24,061	197,291	24,061	185,841	23,743
Investment (Gain)/Loss	6/30/20	40%	Up Only	0.00%	19	17,692	0	18,895	414	19,752	812
Non-Investment (Gain)/Loss	6/30/20	No Ramp		0.00%	19	3,122	0	3,334	305	3,246	299
Assumption Change	6/30/21	No Ramp		0.00%	20	3,019	(845)	4,098	(868)	5,274	474
Net Investment (Gain)	6/30/21	20%	Up Only	0.00%	20	(90,615)	0	(96,777)	0	(103,358)	(2,222)
Non-Investment (Gain)/Loss	6/30/21	No Ramp		0.00%	20	(4,202)	0	(4,488)	0	(4,793)	(431)
Risk Mitigation	6/30/21	No Ramp		0.00%	1	24,747	(858)	27,316	(882)	30,085	31,091
Risk Mitigation Offset	6/30/21	No Ramp		0.00%	1	(26,375)	0	(28,169)	0	(30,085)	(31,091)
Total						135,400	22,358	121,500	23,030	105,962	22,675

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 in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page(s) shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please contact the plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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 an appropriate 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 (continued)

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	5 Year Amortization		0 Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2023	105,962	22,675	105,962	24,873	N/A	N/A
6/30/2024	89,734	20,860	87,463	24,873		
6/30/2025	74,279	19,044	67,706	24,873		
6/30/2026	59,648	17,228	46,605	24,874		
6/30/2027	45,900	15,007	24,068	24,873		
6/30/2028	33,511	15,008				
6/30/2029	20,280	15,007				
6/30/2030	6,150	6,356				
6/30/2031						
6/30/2032						
6/30/2033						
6/30/2034						
6/30/2035						
6/30/2036						
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6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
6/30/2052						
Total		131,185		124,366		N/A
Interest Paid		25,223		18,404		N/A
Estimated Savings				6,819		N/A

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2021 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment (\$)	Additional Discretionary Payments
2016 - 17	8.880%	\$8,629	N/A
2017 - 18	8.921%	10,186	N/A
2018 - 19	9.409%	12,435	N/A
2019 - 20	10.221%	16,476	0
2020 - 21	11.031%	19,557	0
2021 - 22	10.88%	24,061	
2022 - 23	10.87%	24,780	
2023 - 24	12.47%	22,675	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	Funded Ratio	Annual Covered Payroll
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
06/30/2019	886,830	672,279	214,551	75.8%	103,229
06/30/2020	932,678	699,915	232,763	75.0%	103,928
06/30/2021	1,039,228	903,828	135,400	87.0%	111,278

Risk Analysis

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

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions. The projections below reflect the impact of the CalPERS Funding Risk Mitigation policy. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits, or funding will occur.

The first table shows projected contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2041.

Assumed Annual Return FY 2021-22 through 2040-41	Projected Employer Contributions				
	2024-25	2025-26	2026-27	2027-28	2028-29
3.0% (5th percentile)					
Normal Cost Rate	12.5%	12.5%	12.5%	12.5%	12.5%
UAL Contribution	\$22,000	\$22,000	\$22,000	\$24,000	\$28,000
10.8% (95th percentile)					
Normal Cost Rate	12.7%	13.0%	13.2%	13.5%	13.7%
UAL Contribution	\$20,000	\$2,100	\$0	\$0	\$0

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of a one or two standard deviation investment loss in FY 2021-22 on the FY 2024-25 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2024-25.

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	2023-24	2024-25
(17.2)% (2 standard deviation loss)		
Normal Cost Rate	12.47%	12.5%
UAL Contribution	\$22,675	\$26,000
(5.2)% (1 standard deviation loss)		
Normal Cost Rate	12.47%	12.5%
UAL Contribution	\$22,675	\$24,000

- Without investment gains (returns higher than 6.8%) in year FY 2022-23 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2021-22.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2024-25 as well as to model other investment return scenarios.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.5% and 2.3%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2021 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Real Rate of Return Assumption

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	3.5%	4.5%	5.5%
a) Total Normal Cost	24.38%	19.39%	15.59%
b) Accrued Liability	\$1,205,959	\$1,039,228	\$905,686
c) Market Value of Assets	\$903,828	\$903,828	\$903,828
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$302,131	\$135,400	\$1,858
e) Funded Ratio	74.9%	87.0%	99.8%

Sensitivity to the Price Inflation Assumption

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	1.3%	2.3%	3.3%
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	20.35%	19.39%	17.69%
b) Accrued Liability	\$1,073,530	\$1,039,228	\$957,027
c) Market Value of Assets	\$903,828	\$903,828	\$903,828
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$169,702	\$135,400	\$53,199
e) Funded Ratio	84.2%	87.0%	94.4%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2021 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	19.72%	19.39%	19.08%
b) Accrued Liability	\$1,059,135	\$1,039,228	\$1,020,833
c) Market Value of Assets	\$903,828	\$903,828	\$903,828
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$155,307	\$135,400	\$117,005
e) Funded Ratio	85.3%	87.0%	88.5%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

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 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2020	June 30, 2021
1. Retired Accrued Liability	\$383,436	\$382,603
2. Total Accrued Liability	932,678	1,039,228
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.41	0.37

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the support ratio. 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above. For comparison, the support ratio for all CalPERS public agency plans is 0.82 and is calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Support Ratio	June 30, 2020	June 30, 2021
1. Number of Actives	2	2
2. Number of Retirees	1	1
3. Support Ratio [(1) / (2)]	2.00	2.00

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, 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

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility, since the AVR, described above, will tend to move closer to the LVR as the funded ratio approaches 100%.

Contribution Volatility	June 30, 2020	June 30, 2021
1. Market Value of Assets	\$699,915	\$903,828
2. Payroll	103,928	111,278
3. Asset Volatility Ratio (AVR) [(1) / (2)]	6.7	8.1
4. Accrued Liability	\$932,678	\$1,039,228
5. Liability Volatility Ratio (LVR) [(4) / (2)]	9.0	9.3

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.50	2.00	5.7	7.5
06/30/2018	0.46	2.00	6.4	8.5
06/30/2019	0.44	2.00	6.5	8.6
06/30/2020	0.41	2.00	6.7	9.0
06/30/2021	0.37	2.00	8.1	9.3

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, 2021. 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 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to seven months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability^{1,2} at 1.00%	Funded Ratio	Unfunded Termination Liability at 1.00%	Hypothetical Termination Liability^{1,2} at 2.25%	Funded Ratio	Unfunded Termination Liability at 2.25%
\$903,828	\$2,319,988	39.0%	\$1,416,160	\$1,838,303	49.2%	\$934,475

¹ The hypothetical liabilities calculated above include a 5% contingency load. The contingency load and other actuarial assumptions can be found in Appendix A.

² The discount rate 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 2.00% on June 30, 2021, the valuation date.

In order to terminate the plan, first contact our Pension Contract Services unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to provide a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. Before beginning this process, please consult with the plan actuary.

Participant Data

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

	June 30, 2020	June 30, 2021
Active Members		
Counts	2	2
Average Attained Age	41.95	42.95
Average Entry Age to Rate Plan	25.72	25.72
Average Years of Credited Service	14.48	15.28
Average Annual Covered Pay	\$51,964	\$55,639
Annual Covered Payroll	\$103,928	\$111,278
Present Value of Future Payroll	\$924,291	\$998,047
Transferred Members	0	0
Separated Members	1	1
Retired Members and Beneficiaries		
Counts*	1	1
Average Annual Benefits*	\$30,739	\$31,118

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

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 the agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

	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

Risk Pool Actuarial Valuation Information

**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 2022

**PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District (CalPERS ID: 4027652040)
Annual Valuation Report as of June 30, 2021**

Dear Employer,

Attached to this letter, you will find the June 30, 2021 actuarial valuation report for the rate plan noted above. **Provided in this report is the determination of the minimum required employer contributions for fiscal year (FY) 2023-24.** 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, 2021.

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 Risk Pool Actuarial Valuation Report for June 30, 2021.

Your June 30, 2021 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. The plan actuary whose signature is in the Actuarial Certification is available to discuss.

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 (board) 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 requirements as needed. This valuation is based on an investment return assumption of 6.8%, which was adopted by the board in November 2021. Other assumptions used in this report are those recommended in the CalPERS Experience Study and Review of Actuarial Assumptions report from November 2021.

Required Contribution

The table below shows the minimum required employer contributions and the Employee PEPRA Rate for FY 2023-24 along with estimates of the required contributions for FY 2024-25. Employee contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the results shown below. **The required employer contributions in this report do not reflect any cost sharing arrangement between the agency and the employees.**

Fiscal Year	Employer Normal Cost Rate	Employer Amortization of Unfunded Accrued Liability	PEPRA Member Rate
2023-24	7.68%	\$0	7.75%
<i>Projected Results</i>			
2024-25	7.7%	\$0	TBD

The actual investment return for FY 2021-22 was not known at the time this report was prepared. The projections above assume the investment return for that year would be 6.8%. ***To the extent the actual investment return for FY 2021-22 differs from 6.8%, the actual contribution requirements for FY 2024-25 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 FY 2028-29.

Changes from Previous Year's Valuation

On July 12, 2021, CalPERS reported a preliminary 21.3% net return on investments for FY 2020-21. Since the return exceeded the 7.00% discount rate sufficiently, the CalPERS Funding Risk Mitigation policy allows CalPERS to use a portion of the investment gain to offset the cost of reducing the expected volatility of future investment returns. Based on the thresholds specified in the policy, the excess return of 14.3% prescribes a reduction in investment volatility that corresponds to a reduction in the discount rate of 0.20%, from 7.00% to 6.80%.

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the November 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for public agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new strategic asset allocation as part of its Asset Liability Management process. The new asset allocation along with the new capital market assumptions and economic assumptions support a discount rate of 6.80%. This includes a reduction in the price inflation assumption from 2.50% to 2.30%.

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 of the Section 2 report, "Actuarial Methods and Assumptions."

Questions

We understand that you might have questions about these results, and the plan actuary whose signature is on the valuation report is available to discuss. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (888-225-7377).

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Terando", with a long horizontal flourish extending to the right.

SCOTT TERANDO, ASA, EA, MAAA, FCA, CFA
Chief Actuary



**Actuarial Valuation
as of June 30, 2021**

**for the
PEPRA Miscellaneous Plan
of the
Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)**

**Required Contributions
for Fiscal Year
July 1, 2023 - June 30, 2024**

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Section 1 – Plan Specific Information

Section 2 – Risk Pool Actuarial Valuation Information

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)
(Rate Plan ID: 27417)**

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Actuarial Certification

To the best of our knowledge, this report, comprising of Sections 1 and 2, is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District and satisfies the actuarial valuation requirements of Government Code section 7504. This valuation is based on the member and financial data as of June 30, 2021 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. Section 1 of this report is based on the member and financial data for Scotts Valley Fire Protection District, while Section 2 is based on the corresponding information for all agencies participating in the Miscellaneous Risk Pool to which the plan belongs.

As set forth in Section 2 of this report, the pool actuaries have certified that, in their opinion, the valuation of the Miscellaneous Risk Pool 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 rate plan, it is my opinion as the plan actuary that the Unfunded Accrued Liability amortization bases as of June 30, 2021 and employer contribution as of July 1, 2023 have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary who satisfies the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States with regard to pensions.



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

Highlights and Executive Summary

- **Introduction**
- **Purpose of Section 1**
- **Required Contributions**
- **Additional Discretionary Employer Contributions**
- **Plan's Funded Status**
- **Projected Employer Contributions**
- **Other Pooled Miscellaneous Risk Pool Rate Plans**
- **Cost**
- **Changes Since the Prior Year's Valuation**
- **Subsequent Events**

Introduction

This report presents the results of the June 30, 2021 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 (FY) 2023-24.

Purpose of Section 1

This Section 1 report for the PEPRA Miscellaneous Plan of the Scotts Valley Fire Protection District of CalPERS was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2021;
- Determine the minimum required employer contribution for this plan for the FY July 1, 2023 through June 30, 2024; and
- Provide actuarial information as of June 30, 2021 to the CalPERS Board of Administration (board) and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available on the CalPERS website (www.calpers.ca.gov).

The measurements shown in this actuarial valuation may not be applicable for other purposes. The agency should contact the plan 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; changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 5.8% and 7.8%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post-retirement mortality assumptions adopted in 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Contributions

Required Employer Contributions		Fiscal Year 2023-24
Employer Normal Cost Rate		7.68%
<i>Plus</i>		
Required Payment on Amortization Bases ¹		\$0
<i>Paid either as</i>		
1) Monthly Payment		\$0.00
<i>Or</i>		
2) Annual Prepayment Option*		\$0
Required PEPR Member Contribution Rate		7.75%
<i>The total minimum required employer contribution is the sum of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll and paid as payroll is reported) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly (1) or prepaid annually (2) in dollars).</i>		
<i>* Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31).</i>		
<i>For additional detail regarding the determination of the required PEPR member contribution rate see section on PEPR Member Contribution Rates.</i>		

	Fiscal Year 2022-23	Fiscal Year 2023-24
Development of Normal Cost as a Percentage of Payroll		
Base Total Normal Cost for Formula	14.22%	15.43%
Surcharge for Class 1 Benefits ²		
None	0.00%	0.00%
Phase out of Normal Cost Difference ³	0.00%	0.00%
Plan's Total Normal Cost	14.22%	15.43%
Plan's Employee Contribution Rate	6.75%	7.75%
Employer Normal Cost Rate	7.47%	7.68%

¹ The required payment on amortization bases does not take into account any additional discretionary payment made after April 29, 2022.

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

³ The normal cost change is phased out over a five-year period in accordance with the CalPERS contribution allocation policy.

Additional Discretionary Employer Contributions

The minimum required employer contribution towards the Unfunded Accrued Liability (UAL) for this rate plan for the 2023-24 FY is \$0. CalPERS allows agencies to make additional discretionary payments (ADPs) at any time and in any amount. These optional payments serve to reduce the UAL and future required contributions and can result in significant long-term savings. Agencies can also use ADPs to stabilize annual contributions as a fixed dollar amount, percent of payroll or percent of revenue.

Provided below are select ADP options for consideration. Making such an ADP during FY 2023-24 does not require an ADP be made in any future year, nor does it change the remaining amortization period of any portion of unfunded liability. For information on permanent changes to amortization periods, see the "Amortization Schedule and Alternatives" section of the report.

Agencies considering making an ADP should contact CalPERS for additional information.

Minimum Required Employer Contribution for Fiscal Year 2023-24

Estimated Normal Cost	Minimum UAL Payment	ADP	Total UAL Contribution	Estimated Total Contribution
\$5,014	\$0	\$0	\$0	\$5,014

Alternative Fiscal Year 2023-24 Employer Contributions for Greater UAL Reduction

Funding Target	Estimated Normal Cost	Minimum UAL Payment	ADP ¹	Total UAL Contribution	Estimated Total Contribution
N/A	N/A	N/A	N/A	N/A	N/A

¹ The ADP amounts are assumed to be made in the middle of the fiscal year. A payment made earlier or later in the fiscal year would have to be less or more than the amount shown to have the same effect on the UAL amortization.

Note that the calculations above are based on the projected Unfunded Accrued Liability as of June 30, 2023 as determined in the June 30, 2021 actuarial valuation. New unfunded liabilities can emerge in future years due to assumption or method changes, changes in plan provisions, and actuarial experience different than assumed. Making an ADP illustrated above for the indicated number of years will not result in a plan that is exactly 100% funded in the indicated number of years. Valuation results will vary from one year to the next and can diverge significantly from projections over a period of several years.

Plan's Funded Status

	June 30, 2020	June 30, 2021
1. Present Value of Projected Benefits (PVB)	\$101,227	\$126,513
2. Entry Age Accrued Liability (AL)	26,311	33,920
3. Plan's Market Value of Assets (MVA)	24,507	37,132
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	1,804	(3,212)
5. Funded Ratio [(3) / (2)]	93.1%	109.5%

The UAL and funded ratio are assessments of the need for future employer contributions based on the 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. The funded ratio, on the other hand, is a relative measure of funded status that allows for comparison between plans of different sizes. For measures of funded status that are 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 the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. In particular, the investment return beginning with FY 2021-22 is assumed to be 6.80% per year, net of investment and administrative expenses. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below. Future contribution requirements may differ significantly from those shown below. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22 and Beyond)				
Fiscal Year	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
	Rate Plan 27417 Results					
Normal Cost %	7.68%	7.7%	7.7%	7.7%	7.7%	7.7%
UAL Payment	\$0	\$0	\$0	\$0	\$0	\$0

For some sources of UAL, the change in UAL is 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 the Section 2 Report. This method phases in the impact of the change in UAL over a 5-year period in order to reduce 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 when 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.

Our online pension plan projection tool, Pension Outlook, is available in the Employers section of the CalPERS website. Pension Outlook can help plan and budget pension costs under various scenarios.

Other Pooled Miscellaneous Risk Pool Rate Plans

All of the results presented in this Section 1 report, except those shown below, correspond to rate plan 27417. In many cases, employers have additional rate plans within the same risk pool. For cost analysis and budgeting it is useful to consider contributions for these rate plans as a whole rather than individually. The estimated contribution amounts and rates for all of the employer's rate plans in the Miscellaneous Risk Pool are shown below and assume that the payroll for each rate plan will grow according to the overall payroll growth assumption of 2.80% per year for three years.

	Fiscal Year 2022-23	Fiscal Year 2023-24
Estimated Combined Employer Contributions for all Pooled Miscellaneous Rate Plans		
Projected Payroll for the Contribution Year	\$171,836	\$186,171
Estimated Employer Normal Cost	\$16,669	\$20,089
Required Payment on Amortization Bases	\$25,562	\$22,675
Estimated Total Employer Contributions	\$42,231	\$42,764
Estimated Total Employer Contribution Rate (illustrative only)	24.58%	22.97%

Cost

Actuarial Determination of Plan Cost

Contributions to fund the plan are comprised of two components:

- Normal Cost, expressed as a percentage of total active payroll
- Amortization of the Unfunded Accrued Liability (UAL), expressed as a dollar amount

For fiscal years prior to 2016-17, the Amortization of UAL component was expressed as a percentage of total active payroll. Starting with FY 2016-17, the Amortization of UAL component was expressed as a dollar amount and invoiced on a monthly basis. There continues to be an option to prepay this amount during July of each fiscal year.

The Normal Cost component is expressed as a percentage of active payroll with employer and employee contributions payable as part of the regular payroll reporting process.

The determination of both components requires complex actuarial calculations. The calculations are based on a set of actuarial assumptions which can be divided into two categories:

- Demographic assumptions (e.g., mortality rates, retirement rates, employment termination rates, disability rates)
- Economic assumptions (e.g., future investment earnings, inflation, salary growth rates)

These assumptions reflect CalPERS' best estimate of future experience of the plan and are long term in nature. We recognize that all assumptions will not be realized in any given year. For example, the investment earnings at CalPERS have averaged 6.9% over the 20 years ending June 30, 2021, yet individual fiscal year returns have ranged from -23.6% to +21.3%. In addition, CalPERS reviews all actuarial assumptions by conducting in-depth experience studies every four years, with the most recent experience study completed in 2021.

Changes Since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective, even if the valuation date is prior to the effective date of the amendment.

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 the Section 2 Report for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

On November 17, 2021, the board adopted new actuarial assumptions based on the recommendations in the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. This study reviewed the retirement rates, termination rates, mortality rates, rates of salary increases, and inflation assumption for Public Agencies. These new assumptions are incorporated in this actuarial valuation and will impact the required contribution for FY 2023-24. In addition, the board adopted a new asset portfolio as part of its Asset Liability Management process. The new asset mix supports a 6.80% discount rate, which reflects a change in the price inflation assumption to 2.30%.

Subsequent Events

The contribution requirements determined in this actuarial valuation report are based on demographic and financial information as of June 30, 2021. Changes subsequent to that date are not reflected. Investment returns below the assumed rate of return may increase future required contributions while investment returns above the assumed rate of return may decrease future required contributions.

The projected employer contributions on Page 6 are calculated under the assumption that the discount rate remains at 6.8% going forward and that the realized rate of return on assets for FY 2021-22 is 6.8%.

This actuarial valuation report reflects statutory changes, regulatory changes and board actions through January 2022. Any subsequent changes or actions are not reflected.

Assets and Liabilities

- **Breakdown of Entry Age 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 Accrued Liability

Active Members	\$22,901
Transferred Members	11,019
Terminated Members	0
Members and Beneficiaries Receiving Payments	0
Total	\$33,920

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	\$33,920
2. Projected UAL balance at 6/30/2021	799
3. Pool's Accrued Liability ¹	20,794,529,023
4. Sum of Pool's Individual Plan UAL Balances at 6/30/2021 ¹	4,597,734,264
5. Pool's 2020/21 Investment (Gain)/Loss ¹	(2,338,185,055)
6. Pool's 2020/21 Non-Investment (Gain)/Loss ¹	(84,077,623)
7. Plan's Share of Pool's Investment (Gain)/Loss: $[(1) - (2)] \div [(3) - (4)] \times (5)$	(4,781)
8. Plan's Share of Pool's Non-Investment (Gain)/Loss: $(1) \div (3) \times (6)$	(137)
9. Plan's New (Gain)/Loss as of 6/30/2021: $(7) + (8)$	(4,918)
10. Increase in Pool's Accrued Liability due to Change in Assumptions ¹	60,407,898
11. Plan's Share of Pool's Change in Assumptions: $(1) \div (3) \times (10)$	99
12. Increase in Pool's Accrued Liability due to Funding Risk Mitigation ¹	495,172,731
13. Plan's Share of Pool's Change due to Funding Risk Mitigation: $(1) \div (3) \times (12)$	808
14. Offset due to Funding Risk Mitigation	(1,686)
15. Plan's Net Investment (Gain): $(7) - (14)$	(3,095)

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

16. Plan's UAL: $(2) + (9) + (11) + (13)$	(\$3,212)
17. Plan's Share of Pool's MVA: $(1) - (16)$	\$37,132

Schedule of 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, 2021.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: FY 2023-24.

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 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.

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escalation Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/21				N/A	(3,212)	(823)	(2,580)	(163)	(2,587)	0
Total						(3,212)	(823)	(2,580)	(163)	(2,587)	0

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 in accordance with the CalPERS amortization policy in effect at the time the base was established.

Amortization Schedule and Alternatives

The amortization schedule on the previous page(s) shows the minimum contributions required according to the CalPERS amortization policy. Many agencies have expressed a desire for a more stable pattern of payments or have indicated interest in paying off the unfunded accrued liabilities more quickly than required. As such, we have provided alternative amortization schedules to help analyze the current amortization schedule and illustrate the potential savings 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) alternative "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. To initiate a Fresh Start, please contact the plan actuary.

The Current Amortization Schedule typically contains both positive and negative bases. Positive bases result from plan changes, assumption changes, method changes or plan experience that increase unfunded liability. Negative bases result from plan changes, assumption changes, method changes, or plan experience that decrease 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:

- When a negative payment would be required on a positive unfunded actuarial liability; or
- When the payment would completely amortize the total unfunded liability in a very short time period, and results in a large change in the employer contribution requirement.

In any year when 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 an appropriate 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 (continued)

Date	<u>Current Amortization Schedule</u>		<u>Alternate Schedules</u>			
	Balance	Payment	N/A Year Amortization		N/A Year Amortization	
			Balance	Payment	Balance	Payment
6/30/2023	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2024						
6/30/2025						
6/30/2026						
6/30/2027						
6/30/2028						
6/30/2029						
6/30/2030						
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6/30/2048						
6/30/2049						
6/30/2050						
6/30/2051						
6/30/2052						
Total		N/A		N/A		N/A
Interest Paid		N/A		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. The amounts are based on the actuarial valuation from two years prior and does not account for prepayments or benefit changes made during a fiscal year. Additional discretionary payments before July 1, 2019 or after June 30, 2021 are not included.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment (\$)	Additional Discretionary Payments
2017 - 18	6.533%	\$3	N/A
2018 - 19	6.842%	1,759	N/A
2019 - 20	6.985%	737	0
2020 - 21	7.732%	1,094	0
2021 - 22	7.59%	96	
2022 - 23	7.47%	782	
2023 - 24	7.68%	0	

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Unfunded Accrued Liability (UAL)	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
06/30/2019	10,054	8,563	1,491	85.2%	51,396
06/30/2020	26,311	24,507	1,804	93.1%	54,477
06/30/2021	33,920	37,132	(3,212)	109.5%	60,091

Risk Analysis

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

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions. The projections below reflect the impact of the CalPERS Funding Risk Mitigation policy. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits, or funding will occur.

The first table shows projected contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2041.

Assumed Annual Return FY 2021-22 through 2040-41	Projected Employer Contributions				
	2024-25	2025-26	2026-27	2027-28	2028-29
3.0% (5th percentile)					
Normal Cost Rate	7.7%	7.7%	7.7%	7.7%	7.7%
UAL Contribution	\$0	\$9	\$56	\$140	\$260
10.8% (95th percentile)					
Normal Cost Rate	7.9%	8.1%	8.3%	8.5%	8.7%
UAL Contribution	\$0	\$0	\$0	\$0	\$0

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of a one or two standard deviation investment loss in FY 2021-22 on the FY 2024-25 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2024-25.

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	2023-24	2024-25
(17.2)% (2 standard deviation loss)		
Normal Cost Rate	7.68%	7.7%
UAL Contribution	\$0	\$160
(5.2)% (1 standard deviation loss)		
Normal Cost Rate	7.68%	7.7%
UAL Contribution	\$0	\$50

- Without investment gains (returns higher than 6.8%) in year FY 2022-23 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2021-22.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2024-25 as well as to model other investment return scenarios.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.5% and 2.3%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2021 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Real Rate of Return Assumption

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	3.5%	4.5%	5.5%
a) Total Normal Cost	19.32%	15.43%	12.47%
b) Accrued Liability	\$45,353	\$33,920	\$25,573
c) Market Value of Assets	\$37,132	\$37,132	\$37,132
d) Unfunded Liability/(Surplus) [(b) - (c)]	\$8,221	(\$3,212)	(\$11,559)
e) Funded Ratio	81.9%	109.5%	145.2%

Sensitivity to the Price Inflation Assumption

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	5.8%	6.8%	7.8%
Inflation	1.3%	2.3%	3.3%
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	16.27%	15.43%	14.03%
b) Accrued Liability	\$36,132	\$33,920	\$30,367
c) Market Value of Assets	\$37,132	\$37,132	\$37,132
d) Unfunded Liability/(Surplus) [(b) - (c)]	(\$1,000)	(\$3,212)	(\$6,765)
e) Funded Ratio	102.8%	109.5%	122.3%

Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2021 plan costs and funded status under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	15.71%	15.43%	15.18%
b) Accrued Liability	\$34,427	\$33,920	\$33,443
c) Market Value of Assets	\$37,132	\$37,132	\$37,132
d) Unfunded Liability/(Surplus) [(b) - (c)]	(\$2,705)	(\$3,212)	(\$3,689)
e) Funded Ratio	107.9%	109.5%	111.0%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor to tolerate risk is important in understanding how the pension plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. Since it is the employer that bears the risk, it is appropriate to perform this analysis on a pension plan level considering all rate plans. The following measures are for one rate plan only.

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 60%-65%.

Ratio of Retiree Accrued Liability to Total Accrued Liability	June 30, 2020	June 30, 2021
1. Retired Accrued Liability	\$0	\$0
2. Total Accrued Liability	26,311	33,920
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.00	0.00

Another measure of maturity level of CalPERS and its plans is to look at the ratio of actives to retirees, also called the support ratio. 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above. For comparison, the support ratio for all CalPERS public agency plans is 0.82 and is calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Support Ratio	June 30, 2020	June 30, 2021
1. Number of Actives	1	1
2. Number of Retirees	0	0
3. Support Ratio [(1) / (2)]	N/A	N/A

Maturity Measures (Continued)

The actuarial calculations supplied in this communication are based on various assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., terminations, deaths, disabilities, retirements, salary growth, 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

Shown in the table below is the asset volatility ratio (AVR), which is the ratio of market value of assets to payroll. Plans that have higher AVR 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. 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

Also shown in the table below is the liability volatility ratio (LVR), which is the ratio of accrued liability to payroll. Plans that have a higher LVR experience more volatile employer contributions (as a percentage of payroll) due to changes in liability. For example, a plan with LVR ratio of 8 is expected to have twice the contribution volatility of a plan with LVR of 4. It should be noted that this ratio indicates a longer-term potential for contribution volatility, since the AVR, described above, will tend to move closer to the LVR as the funded ratio approaches 100%.

Contribution Volatility	June 30, 2020	June 30, 2021
1. Market Value of Assets	\$24,507	\$37,132
2. Payroll	54,477	60,091
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.4	0.6
4. Accrued Liability	\$26,311	\$33,920
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.5	0.6

Maturity Measures History

Valuation Date	Ratio of Retiree Accrued Liability to Total Accrued Liability	Support Ratio	Asset Volatility Ratio	Liability Volatility Ratio
06/30/2017	0.00	N/A	0.0	0.0
06/30/2018	0.00	N/A	0.3	0.3
06/30/2019	0.00	N/A	0.2	0.2
06/30/2020	0.00	N/A	0.4	0.5
06/30/2021	0.00	N/A	0.6	0.6

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, 2021. 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 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 limiting the funding risk. 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 19-month period from 12 months before the valuation date to seven months after.

Market Value of Assets (MVA)	Hypothetical Termination Liability^{1,2} at 1.00%	Funded Ratio	Unfunded Termination Liability at 1.00%	Hypothetical Termination Liability^{1,2} at 2.25%	Funded Ratio	Unfunded Termination Liability at 2.25%
\$37,132	\$100,708	36.9%	\$63,576	\$63,904	58.1%	\$26,772

¹ The hypothetical liabilities calculated above include a 5% contingency load. The contingency load and other actuarial assumptions can be found in Appendix A.

² The discount rate 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 2.00% on June 30, 2021, the valuation date.

In order to terminate the plan, first contact our Pension Contract Services unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow the plan actuary to provide a preliminary termination valuation with a more up-to-date estimate of the plan liabilities. Before beginning this process, please consult with the plan actuary.

Participant Data

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

	June 30, 2020	June 30, 2021
Active Members		
Counts	1	1
Average Attained Age	26.0	27.0
Average Entry Age to Rate Plan	24.4	24.4
Average Years of Credited Service	1.7	2.7
Average Annual Covered Pay	\$54,477	\$60,091
Annual Covered Payroll	\$54,477	\$60,091
Present Value of Future Payroll	\$684,597	\$770,436
Transferred Members	1	1
Separated Members	0	0
Retired Members and Beneficiaries		
Counts*	0	0
Average Annual Benefits*	\$0	\$0

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values include community property settlements.

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 the agency has contracted. A description of principal standard and optional plan provisions is in Section 2.

	Benefit Group	
Member Category	Misc	
Demographics		
Actives	Yes	
Transfers/Separated	Yes	
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 California Public Employees' Pension Reform Act of 2013 (PEPRA) established new benefit formulas, final compensation period, and contribution requirements for "new" employees (generally those first hired into a CalPERS-covered position on or after January 1, 2013). In accordance with Government Code Section 7522.30(b), "new members ... shall have an initial contribution rate of at least 50% of the normal cost rate." The normal cost rate is dependent on the plan of retirement benefits, actuarial assumptions, and demographics of the risk pool, particularly members' entry age. Should the total normal cost rate change by more than 1% from the base total normal cost rate, the new member rate shall be 50% of the new normal cost rate rounded to the nearest quarter percent.

The table below shows the determination of the PEPRA member contribution rates effective July 1, 2023, based on 50% of the total normal cost rate as of the June 30, 2021 valuation.

Rate Plan Identifier	Benefit Group Name	<u>Basis for Current Rate</u>		<u>Rates Effective July 1, 2023</u>			
		Total Normal Cost	Member Rate	Total Normal Cost	Change	Change Needed	Member Rate
27417	Miscellaneous PEPRA Level	13.735%	6.75%	15.43%	1.695%	Yes	7.75%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Risk Pool Actuarial Valuation Information

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

**Scotts Valley Fire Protection District
Actuarial Study of
Retiree Health Liabilities Under GASB 74/75
Valuation Date: June 30, 2022
Measurement Date: June 30, 2022
For Fiscal Year-End: June 30, 2022**

*Prepared by:
Total Compensation Systems, Inc.*

Date: August 18, 2022

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Scotts Valley Fire Protection District
Actuarial Study of Retiree Health Liabilities

PART I: EXECUTIVE SUMMARY

A. Introduction

This report was produced by Total Compensation Systems, Inc. for Scotts Valley Fire Protection District to determine the liabilities associated with its current retiree health program as of a June 30, 2022 measurement date and to provide the necessary information to determine accounting entries for the fiscal year ending June 30, 2022. This report may not be suitable for other purposes such as determining employer contributions or assessing the potential impact of changes in plan design.

Different users of this report will likely be interested in different sections of information contained within. We anticipate that the following portions may be of most interest depending on the reader:

- A high level comparison of key results from the current year to the prior year is shown on this page.
- The values we anticipate will be disclosed in the June 30, 2022 year-end financials are shown on pages 2 and 3.
- Additional accounting information is shown on page 12 and Appendices C and D.
- Description and details of measured valuation liabilities can be found beginning on page 10.
- Guidance regarding the next actuarial valuation for the June 30, 2023 measurement date is provided on page 13.

B. Key Results

Scotts Valley Fire Protection District uses an Actuarial Measurement Date that is the same as its Fiscal Year-End. This means that these actuarial results measured as of June 30, 2022 will be used directly for the June 30, 2022 Fiscal Year-End.

Key Results	Current Year	Prior Year
	<i>June 30, 2022 Measurement Date for June 30, 2022 Fiscal Year-End</i>	<i>June 30, 2021 Measurement Date for June 30, 2021 Fiscal Year-End</i>
Total OPEB Liability (TOL)	\$1,959,618	\$2,003,326
Fiduciary Net Position (FNP)	\$447,642	\$360,009
Net OPEB Liability (NOL)	\$1,511,976	\$1,643,317
Service Cost (<i>for year following</i>)	\$45,817	\$47,071
Estimated Pay-as-you-go Amount (<i>for year following</i>)	\$79,175	\$88,140
GASB 75 OPEB Expense (<i>for year ending</i>)	\$68,076	\$71,247

Refer to results section beginning on page 10 or the glossary on page 28 for descriptions of the above items.

Key Assumptions	Current Year	Prior Year
	<i>June 30, 2022 Measurement Date for June 30, 2022 Fiscal Year-End</i>	<i>June 30, 2021 Measurement Date for June 30, 2021 Fiscal Year-End</i>
Valuation Interest Rate	6.25%	6.25%
Expected Rate of Return on Assets	6.25%	6.25%
Long-Term Medical Trend Rate	4.00%	4.00%
Projected Payroll Growth	2.75%	2.75%

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The following table shows the “pay as you go” projection of annual payments for the employer share of retiree health costs. Although actual payments are certain to vary from those shown below, these projections can be useful for planning purposes. See page 11 for amounts below broken out by employee classification, if applicable.

<i>Year Beginning July 1</i>	<i>Projected Benefit Payments</i>
2022	\$79,175
2023	\$85,861
2024	\$98,748
2025	\$115,694
2026	\$123,749
2027	\$139,335
2028	\$150,135
2029	\$153,257
2030	\$169,424
2031	\$176,391

C. Summary of GASB 75 Accounting Results

1. Changes in Net OPEB Liability

The following table shows the reconciliation of the June 30, 2021 Net OPEB Liability (NOL) in the prior valuation to the June 30, 2022 NOL. A more detailed version of this table can be found on page 12.

	<i>TOL</i>	<i>FNP</i>	<i>NOL</i>
Balance at June 30, 2021 Measurement Date	\$2,003,326	\$360,009	\$1,643,317
Service Cost	\$47,071	\$0	\$47,071
Interest on TOL / Return on FNP	\$123,924	(\$66,965)	\$190,889
Employer Contributions	\$0	\$243,140	(\$243,140)
Benefit Payments	(\$88,140)	(\$88,140)	\$0
Administrative Expenses	\$0	(\$402)	\$402
Experience (Gains)/Losses	(\$126,563)	\$0	(\$126,563)
Changes in Assumptions	\$0	\$0	\$0
Other	\$0	\$0	\$0
Net Change	(\$43,708)	\$87,633	(\$131,341)
Actual Balance at June 30, 2022 Measurement Date	\$1,959,618	\$447,642	\$1,511,976

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2. Deferred Inflows and Outflows

Changes in the NOL arising from certain sources are recognized on a deferred basis. The following tables show the balance of each deferral item as of the measurement date and the scheduled future recognition. A reconciliation of these balances can be found on page 12 while the complete deferral history is shown beginning on page 25.

Balances at June 30, 2022 Fiscal Year-End	<i>Deferred Outflows</i>	<i>Deferred Inflows</i>
Differences between expected and actual experience	\$28,357	(\$209,323)
Changes in assumptions	\$84,478	(\$587,427)
Differences between projected and actual return on assets	\$76,234	\$0
Total	\$189,069	(\$796,750)

To be recognized fiscal year ending June 30:	<i>Deferred Outflows</i>	<i>Deferred Inflows</i>
2023	\$48,285	(\$124,274)
2024	\$48,285	(\$124,274)
2025	\$48,272	(\$116,371)
2026	\$24,256	(\$111,105)
2027	\$5,399	(\$111,105)
Thereafter	\$14,572	(\$209,621)
Total	\$189,069	(\$796,750)

3. OPEB Expense

Under GASB 74 and 75, OPEB expense includes service cost, interest cost, administrative expenses, and change in TOL due to plan changes, adjusted for deferred inflows and outflows. OPEB expense can also be derived as change in net position, adjusted for employer contributions, which can be found on page 12.

To be recognized fiscal year ending June 30, 2022	<i>Expense Component</i>
Service Cost	\$47,071
Interest Cost	\$123,924
Expected Return on Assets	(\$27,332)
Administrative Expenses	\$402
Recognition of Experience (Gain)/Loss Deferrals	(\$18,692)
Recognition of Assumption Change Deferrals	(\$76,424)
Recognition of Investment (Gain)/Loss Deferrals	\$19,127
Employee Contributions	\$0
Changes in Benefit Terms	\$0
Net OPEB Expense for fiscal year ending June 30, 2022	\$68,076

4. Adjustments

We are unaware of any adjustments that need to be made.

5. Trend and Interest Rate Sensitivities

The following presents what the Net OPEB Liability would be if it were calculated using a discount rate assumption or a healthcare trend rate assumption one percent higher or lower than the current assumption.

Net OPEB Liability at June 30, 2022 Measurement Date	<i>Discount Rate</i>	<i>Healthcare Trend Rate</i>
1% Decrease in Assumption	\$1,739,827	\$1,337,082
Current Assumption	\$1,511,976	\$1,511,976
1% Increase in Assumption	\$1,320,658	\$1,726,299

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D. Description of Retiree Benefits

Following is a description of the current retiree benefit plan. The benefits below were changed in 2020 to include pre-65 coverage for Fire employees.

	<i>Firefighters and Fire Marshall</i>	<i>Chief and Battalion Chiefs</i>	<i>Administrative Secretary</i>	<i>Secretary/Receptionist</i>
Benefit types provided	Medical only	Medical only	Medical only	Medical only
Duration of Benefits	Lifetime	Lifetime	Lifetime	Lifetime
Required Service	10 Years	10 Years	CalPERS retirement	CalPERS retirement
Minimum Age	CalPERS retirement	CalPERS retirement	CalPERS retirement	CalPERS retirement
Dependent Coverage	Yes	Yes	No	Yes
District Contribution %	100% to cap	100% to cap	25% at 10 years + 5% per year to 100% at 25 or more years	100% to cap
District Cap	\$1,000 per month for 10 years or until Age 65, then statutory minimum	\$1,000 per month for 12 years or until Age 65, then statutory minimum	Same as active to 65, then statutory minimum	Statutory minimum only

E. Summary of Valuation Data

This report is based on census data provided to us as of May, 2021. Distributions of participants by age and service can be found on page 18. For non-lifetime benefits, the active count below excludes employees for whom it is not possible to receive retiree benefits (e.g. employees who are already older than the maximum age to which benefits are payable or who will not accrue the required service prior to reaching the maximum age).

	Current Year <i>June 30, 2022 Valuation Date</i> <i>June 30, 2022 Measurement Date</i>	Prior Year <i>June 30, 2020 Valuation Date</i> <i>June 30, 2021 Measurement Date</i>
Active Employees eligible for future benefits		
Count	29	29
Average Age	42.9	42.5
Average Years of Service	12.2	11.5
Retirees currently receiving benefits		
Count	14	12
Average Age	64.4	63.4

We were not provided with information about any terminated, vested employees.

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F. Certification

The actuarial information in this report is intended solely to assist Scotts Valley Fire Protection District in complying with Governmental Accounting Standards Board Accounting Statement 74 and 75 and, unless otherwise stated, fully and fairly discloses actuarial information required for compliance. Nothing in this report should be construed as an accounting opinion, accounting advice or legal advice. TCS recommends that third parties retain their own actuary or other qualified professionals when reviewing this report. TCS's work is prepared solely for the use and benefit of Scotts Valley Fire Protection District. Release of this report may be subject to provisions of the Agreement between Scotts Valley Fire Protection District and TCS. No third party recipient of this report product should rely on the report for any purpose other than accounting compliance. Any other use of this report is unauthorized without first consulting with TCS.

This report is for fiscal year July 1, 2021 to June 30, 2022, using a measurement date of June 30, 2022. The calculations in this report have been made based on our understanding of plan provisions and actual practice at the time we were provided the required information. We relied on information provided by Scotts Valley Fire Protection District. Much or all of this information was unaudited at the time of our evaluation. We reviewed the information provided for reasonableness, but this review should not be viewed as fulfilling any audit requirements. We relied on the following materials to complete this study:

- We used paper reports and digital files containing participant demographic data from the District personnel records.
- We used relevant sections of collective bargaining agreements provided by the District.

All costs, liabilities, and other estimates are based on actuarial assumptions and methods that comply with all applicable Actuarial Standards of Practice (ASOPs). Each assumption is deemed to be reasonable by itself, taking into account plan experience and reasonable future expectations and in combination represent our estimate of anticipated experience of the Plan.

This report contains estimates of the Plan's financial condition and future results only as of a single date. Future results can vary dramatically and the accuracy of estimates contained in this report depends on the actuarial assumptions used. This valuation cannot predict the Plan's future condition nor guarantee its future financial soundness. Actuarial valuations do not affect the ultimate cost of Plan benefits, only the timing of Plan contributions. While the valuation is based on individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. Determining results using alternative assumptions (except for the alternate discount and trend rates shown in this report) is outside the scope of our engagement.

Future actuarial measurements may differ significantly from those presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the measurement methodology (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. We were not asked to perform analyses to estimate the potential range of such future measurements.

The signing actuary is independent of Scotts Valley Fire Protection District and any plan sponsor. TCS does not intend to benefit from and assumes no duty or liability to other parties who receive this report. TCS is not aware of any relationship that would impair the objectivity of the opinion.

On the basis of the foregoing, I hereby certify that, to the best of my knowledge and belief, this report is complete and has been prepared in accordance with generally accepted actuarial principles and practices and all

Total Compensation Systems, Inc.

applicable Actuarial Standards of Practice. My experience and continuing education are consistent with the requirements described for actuaries under the Qualification Standards of the American Academy of Actuaries.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Geoffrey L. Kischuk". The signature is fluid and cursive, with the first name "Geoffrey" being more prominent.

Geoffrey L. Kischuk
Actuary
Total Compensation Systems, Inc.
(805) 496-1700

PART II: LIABILITIES AND COSTS FOR RETIREE BENEFITS

A. Introduction.

We calculated the actuarial present value of projected benefit payments (APVPBP) separately for each participant. We determined eligibility for retiree benefits based on information supplied by Scotts Valley Fire Protection District. We then selected assumptions that, based on plan provisions and our training and experience, represent our best prediction of future plan experience. For each participant, we applied the appropriate assumption factors based on the participant's age, sex, length of service, and employee classification.

The actuarial assumptions used for this study are summarized beginning on page 14.

B. Liability for Retiree Benefits.

For each participant, we projected future premium costs using an assumed trend rate (see Appendix C). To the extent Scotts Valley Fire Protection District uses contribution caps, the influence of the trend factor is further reduced. We multiplied each year's benefit payments by the probability that benefits will be paid; i.e. based on the probability that the participant is living, has not terminated employment, has retired and remains eligible. The probability that benefit will be paid is zero if the participant is not eligible. The participant is not eligible if s/he has not met minimum service, minimum age or, if applicable, maximum age requirements.

The product of each year's benefit payments and the probability the benefit will be paid equals the expected cost for that year. We multiplied the above expected cost figures by the probability that the retiree would elect coverage. A retiree may not elect to be covered if retiree health coverage is available less expensively from another source (e.g. Medicare risk contract) or the retiree is covered under a spouse's plan. Finally, we discounted the expected cost for each year to the measurement date June 30, 2022 at 6.25% interest.

For any *current retirees*, the approach used was similar. The major difference is that the probability of payment for current retirees depends only on mortality and age restrictions (i.e. for retired employees the probability of being retired and of not being terminated are always both 100%).

The value generated from the process described above is called the actuarial present value of projected benefit payments (APVPBP). We added APVPBP for each participant to get the total APVPBP for all participants which is the estimated present value of all future retiree health benefits for all **current** participants. The APVPBP is the amount on June 30, 2022 that, if all actuarial assumptions are exactly right, would be sufficient to expense all promised benefits until the last participant dies or reaches the maximum eligibility age. However, for most actuarial and accounting purposes, the APVPBP is not used directly but is instead apportioned over the lifetime of each participant as described in the following sections.

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C. Actuarial Accrual

Accounting principles provide that the cost of retiree benefits should be “accrued” over employees' working lifetime. For this reason, the Governmental Accounting Standards Board (GASB) issued in June of 2015 Accounting Standards 74 and 75 for retiree health benefits. These standards apply to all public employers that pay any part of the cost of retiree health benefits for current or future retirees (including early retirees), whether they pay directly or indirectly (via an “implicit rate subsidy”).

To actuarially accrue retiree health benefits requires determining the amount to expense each year so that the liability accumulated at retirement is, on average, sufficient (with interest) to cover all retiree health expenditures without the need for additional expenses. There are many different ways to determine the annual accrual amount. The calculation method used is called an “actuarial cost method” and uses the APVPBP to develop expense and liability figures. Furthermore, the APVPBP should be accrued over the working lifetime of employees.

In order to accrue the APVPBP over the working lifetime of employees, actuarial cost methods apportion the APVPBP into two parts: the portions attributable to service rendered prior to the measurement date (the past service liability or Total OPEB Liability (TOL) under GASB 74 and 75) and to service after the measurement date but prior to retirement (the future service liability or present value of future service costs). Of the future service liability, the portion attributable to the single year immediately following the measurement date is known as the normal cost or Service Cost under GASB 74 and 75.

The service cost can be thought of as the value of the benefit earned each year if benefits are accrued during the working lifetime of employees. The actuarial cost method mandated by GASB 75 is the “entry age actuarial cost method”. Under the entry age actuarial cost method, the actuary determines the service cost as the annual amount needing to be expensed from hire until retirement to fully accrue the cost of retiree health benefits. Under GASB 75, the service cost is calculated to be a level percentage of each employee’s projected pay.

D. Actuarial Assumptions

The APVPBP and service cost are determined using several key assumptions:

- The current ***cost of retiree health benefits*** (often varying by age, Medicare status and/or dependent coverage). The higher the current cost of retiree benefits, the higher the service cost.
- The ***“trend” rate*** at which retiree health benefits are expected to increase over time. A higher trend rate increases the service cost. A “cap” on District contributions can reduce trend to zero once the cap is reached thereby dramatically reducing service costs.
- ***Mortality rates*** varying by age and sex (and sometimes retirement or disability status). If employees die prior to retirement, past contributions are available to fund benefits for employees who live to retirement. After retirement, death results in benefit termination or reduction. Although higher mortality rates reduce service costs, the mortality assumption is not likely to vary from employer to employer.
- ***Employment termination rates*** have the same effect as mortality inasmuch as higher termination rates reduce service costs. Employment termination can vary considerably between public agencies.
- The ***service requirement*** reflects years of service required to earn full or partial retiree benefits. While a longer service requirement reduces costs, cost reductions are not usually substantial unless the service period exceeds 20 years of service.

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- **Retirement rates** determine what proportion of employees retire at each age (assuming employees reach the requisite length of service). Retirement rates often vary by employee classification and implicitly reflect the minimum retirement age required for eligibility. Retirement rates also depend on the amount of pension benefits available. Higher retirement rates increase service costs but, except for differences in minimum retirement age, retirement rates tend to be consistent between public agencies for each employee type.
- **Participation rates** indicate what proportion of retirees are expected to elect retiree health benefits if a significant retiree contribution is required. Higher participation rates increase costs.
- The **discount rate** estimates investment earnings for assets earmarked to cover retiree health benefit liabilities. The discount rate depends on the nature of underlying assets for funded plans. The rate used for a funded plan is the **real** rate of return expected for plan assets plus the long term inflation assumption. For an unfunded plan, the discount rate is based on an index of 20 year General Obligation municipal bonds rated AA or higher. For partially funded plans, the discount rate is a blend of the funded and unfunded rates.

E. Total OPEB Liability

The assumptions listed above are not exhaustive, but are the most common assumptions used in actuarial cost calculations. If all actuarial assumptions are exactly met and an employer expensed the service cost every year for all past and current employees and retirees, a sizeable liability would have accumulated (after adding interest and subtracting retiree benefit costs). The liability that would have accumulated is called the Total OPEB Liability (TOL). The excess of TOL over the value of plan assets is called the Net OPEB Liability (NOL). Under GASB 74 and 75, in order for assets to count toward offsetting the TOL, the assets have to be held in an irrevocable trust that is safe from creditors and can only be used to provide OPEB benefits to eligible participants.

Changes in the TOL can arise in several ways - e.g., as a result of plan changes or changes in actuarial assumptions. Change in the TOL can also arise from actuarial gains and losses. Actuarial gains and losses result from differences between actuarial assumptions and actual plan experience. GASB 75 allows certain changes in the TOL to be deferred (i.e. deferred inflows and outflows of resources).

Under GASB 74 and 75, a portion of actuarial gains and losses can be deferred as follows:

- Investment gains and losses are deferred five years.
- Experience gains and losses are deferred over the Expected Average Remaining Service Lives (EARSL) of plan participants. In calculating the EARSL, terminated employees (primarily retirees) are considered to have a working lifetime of zero. This often makes the EARSL quite short.
- Liability changes resulting from changes in economic and demographic assumptions are also deferred based on the EARSL.
- Liability changes resulting from plan changes, for example, cannot be deferred.

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F. Valuation Results

This section details the measured values of the concepts described on the previous pages.

1. Actuarial Present Value of Projected Benefit Payments (APVPBP)

Actuarial Present Value of Projected Benefit Payments as of June 30, 2022 Valuation Date

	<i>Total</i>	<i>Fire Management</i>	<i>Fire Fighters</i>	<i>General Employees</i>
Active: Pre-65 Benefit	\$794,948	\$185,369	\$520,659	\$88,920
Post-65 Benefit	\$450,398	\$76,115	\$338,232	\$36,051
Subtotal	\$1,245,346	\$261,484	\$858,891	\$124,971
Retiree: Pre-65 Benefit	\$202,634	\$171,028	\$31,606	\$0
Post-65 Benefit	\$959,160	\$804,914	\$154,246	\$0
Subtotal	\$1,161,794	\$975,942	\$185,852	\$0
Grand Total	\$2,407,140	\$1,237,426	\$1,044,743	\$124,971
Subtotal Pre-65 Benefit	\$997,582	\$356,397	\$552,265	\$88,920
Subtotal Post-65 Benefit	\$1,409,558	\$881,029	\$492,478	\$36,051

2. Service Cost

The service cost represents the value of the benefit earned during a single year of employment. It is the APVPBP spread over the expected working lifetime of the employee and divided into annual segments. We applied an "entry age" actuarial cost method to determine funding rates for active employees. The table below summarizes the calculated service cost.

Service Cost Valuation Year Beginning July 1, 2022

	<i>Total</i>	<i>Fire Management</i>	<i>Fire Fighters</i>	<i>General Employees</i>
# of Eligible Employees	29	4	22	3
First Year Service Cost				
Pre-65 Benefit	\$29,184	\$4,744	\$22,550	\$1,890
Post-65 Benefit	\$16,633	\$1,512	\$14,212	\$909
Total	\$45,817	\$6,256	\$36,762	\$2,799

Accruing retiree health benefit costs using service costs levels out the cost of retiree health benefits over time and more fairly reflects the value of benefits "earned" each year by employees. While the service cost for each employee is targeted to remain level as a percentage of covered payroll, the service cost as a dollar amount would increase each year based on covered payroll. Additionally, the overall service cost may grow or shrink based on changes in the demographic makeup of the employees from year to year.

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3. Total OPEB Liability and Net OPEB Liability

If actuarial assumptions are borne out by experience, the District will fully accrue retiree benefits by expensing an amount each year that equals the service cost. If no accruals had taken place in the past, there would be a shortfall of many years' accruals, accumulated interest and forfeitures for terminated or deceased employees. This shortfall is called the Total OPEB Liability. We calculated the Total OPEB Liability (TOL) as the APVPBP minus the present value of future service costs. To the extent that benefits are funded through a GASB 74 qualifying trust, the trust's Fiduciary Net Position (FNP) is subtracted to get the NOL. The FNP is the value of assets adjusted for any applicable payables and receivables as shown in the table on page 15.

Total OPEB Liability and Net OPEB Liability as of June 30, 2022 Valuation Date

	<i>Total</i>	<i>Fire Management</i>	<i>Fire Fighters</i>	<i>General Employees</i>
Active: Pre-65 Benefit	527,838	\$157,664	\$294,540	\$75,634
Active: Post-65 Benefit	\$269,986	\$66,166	\$177,478	\$26,342
Subtotal	\$797,824	\$223,830	\$472,018	\$101,976
Retiree: Pre-65 Benefit	\$202,634	\$171,028	\$31,606	\$0
Retiree: Post-65 Benefit	\$959,160	\$804,914	\$154,246	\$0
Subtotal	\$1,161,794	\$975,942	\$185,852	\$0
Subtotal: Pre-65 Benefit	\$730,472	\$328,692	\$326,146	\$75,634
Subtotal: Post-65 Benefit	\$1,229,146	\$871,080	\$331,724	\$26,342
Total OPEB Liability (TOL)	\$1,959,618	\$1,199,772	\$657,870	\$101,976
Fiduciary Net Position as of June 30, 2022	\$447,642			
Net OPEB Liability (NOL)	\$1,511,976			

4. "Pay As You Go" Projection of Retiree Benefit Payments

We used the actuarial assumptions shown in Appendix C to project the District's ten year retiree benefit outlay. Because these cost estimates reflect average assumptions applied to a relatively small number of participants, estimates for individual years are **certain** to be **inaccurate**. However, these estimates show the size of cash outflow.

The following table shows a projection of annual amounts needed to pay the District's share of retiree health costs.

<i>Year Beginning July 1</i>	<i>Total</i>	<i>Fire Management</i>	<i>Fire Fighters</i>	<i>General Employees</i>
2022	\$79,175	\$68,375	\$10,800	\$0
2023	\$85,861	\$70,497	\$14,737	\$627
2024	\$98,748	\$77,609	\$18,360	\$2,779
2025	\$115,694	\$83,106	\$27,686	\$4,902
2026	\$123,749	\$87,043	\$29,839	\$6,867
2027	\$139,335	\$90,054	\$40,308	\$8,973
2028	\$150,135	\$92,841	\$46,058	\$11,236
2029	\$153,257	\$81,447	\$58,041	\$13,769
2030	\$169,424	\$86,400	\$66,636	\$16,388
2031	\$176,391	\$91,369	\$65,739	\$19,283

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G. Additional Reconciliation of GASB 75 Results

The following table shows the reconciliation of the June 30, 2021 Net OPEB Liability (NOL) in the prior valuation to the June 30, 2022 NOL. For some plans, it will provide additional detail and transparency beyond that shown in the table on Page 2.

	<i>TOL</i>	<i>FNP</i>	<i>NOL</i>
Balance at June 30, 2021	\$2,003,326	\$360,009	\$1,643,317
Service Cost	\$47,071	\$0	\$47,071
Interest on Total OPEB Liability	\$123,924	\$0	\$123,924
Expected Investment Income	\$0	\$27,332	(\$27,332)
Administrative Expenses	\$0	(\$402)	\$402
Employee Contributions	\$0	\$0	\$0
Employer Contributions to Trust	\$0	\$155,000	(\$155,000)
Employer Contributions as Benefit Payments	\$0	\$88,140	(\$88,140)
Benefit Payments from Trust	\$0	\$0	\$0
Expected Benefit Payments from Employer	(\$88,140)	(\$88,140)	\$0
Expected Balance at June 30, 2022	\$2,086,181	\$541,939	\$1,544,242
Experience (Gains)/Losses	(\$126,563)	\$0	(\$126,563)
Changes in Assumptions	\$0	\$0	\$0
Changes in Benefit Terms	\$0	\$0	\$0
Investment Gains/(Losses)	\$0	(\$94,297)	\$94,297
Other	\$0	\$0	\$0
Net Change during 2022	(\$43,708)	\$87,633	(\$131,341)
Actual Balance at June 30, 2022*	\$1,959,618	\$447,642	\$1,511,976

* May include a slight rounding error.

Changes in the NOL arising from certain sources are recognized on a deferred basis. The deferral history for Scotts Valley Fire Protection District is shown beginning on page 25. The following table summarizes the beginning and ending balances for each deferral item. The current year expense reflects the change in deferral balances for the measurement year.

Deferred Inflow/Outflow Balances Fiscal Year Ending June 30, 2022

	<i>Beginning Balance</i>	<i>Change Due to New Deferrals</i>	<i>Change Due to Recognition</i>	<i>Ending Balance</i>
Experience (Gains)/Losses	(\$73,095)	(\$126,563)	\$18,692	(\$180,966)
Assumption Changes	(\$579,373)	\$0	\$76,424	(\$502,949)
Investment (Gains)/Losses	\$1,064	\$94,297	(\$19,127)	\$76,234
Deferred Balances	(\$651,404)	(\$32,266)	\$75,989	(\$607,681)

The following table shows the reconciliation of Net Position (NOL less the balance of any deferred inflows or outflows). When adjusted for contributions, the change in Net Position is equal to the OPEB expense shown previously on page 3.

OPEB Expense Fiscal Year Ending June 30, 2022

	<i>Beginning Net Position</i>	<i>Ending Net Position</i>	<i>Change</i>
Net OPEB Liability (NOL)	\$1,643,317	\$1,511,976	(\$131,341)
Deferred Balances	(\$651,404)	(\$607,681)	\$43,723
Net Position	\$2,294,721	\$2,119,657	(\$175,064)
Adjust Out Employer Contributions			\$243,140
OPEB Expense			\$68,076

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H. Procedures for Future Valuations

GASB 74/75 require annual measurements of liability with a full actuarial valuation required every two years. This means that for the measurement date one year following a full actuarial valuation, a streamlined “roll-forward” valuation may be performed in place of a full valuation. The following outlines the key differences between full and roll-forward valuations.

	Full Actuarial Valuation	Roll-Forward Valuation
Collect New Census Data	Yes	No
Reflect Updates to Plan Design	Yes	No
Update Actuarial Assumptions	Yes	Typically Not
Update Valuation Interest Rate	Yes	Yes
Actual Assets as of Measurement Date	Yes	Yes
Timing	4-6 weeks after information is received	1-2 weeks after information is received
Fees	Full	Reduced
Information Needed from Employer	Moderate	Minimal
Required Frequency	At least every two years	Each year, unless a full valuation is performed

The majority of employers use an alternating cycle of a full valuation one year followed by a roll-forward valuation the next year. However, a full valuation may be required or preferred under certain circumstances. Following are examples of actions that could cause the employer to consider a full valuation instead of a roll-forward valuation.

- The employer adds or terminates a group of participants that constitutes a significant part of the covered group.
- The employer considers or implements changes to retiree benefit provisions or eligibility requirements.
- The employer considers or puts in place an early retirement incentive program.
- The employer desires the measured liability to incorporate more recent census data or assumptions.

We anticipate that the next valuation we perform for Scotts Valley Fire Protection District will be a roll-forward valuation with a measurement date of June 30, 2023 which will be used for the fiscal year ending June 30, 2023. Please let us know if Scotts Valley Fire Protection District would like to discuss whether another full valuation would be preferable based on any of the examples listed above.

PART III: ACTUARIAL ASSUMPTIONS AND METHODS

Following is a summary of actuarial assumptions and methods used in this study. The District should carefully review these assumptions and methods to make sure they reflect the District's assessment of its underlying experience. It is important for Scotts Valley Fire Protection District to understand that the appropriateness of all selected actuarial assumptions and methods are Scotts Valley Fire Protection District's responsibility. Unless otherwise disclosed in this report, TCS believes that all methods and assumptions are within a reasonable range based on the provisions of GASB 74 and 75, applicable actuarial standards of practice, Scotts Valley Fire Protection District's actual historical experience, and TCS's judgment based on experience and training.

A. ACTUARIAL METHODS AND ASSUMPTIONS:

ACTUARIAL COST METHOD: GASB 74 and 75 require use of the entry age actuarial cost method.

Entry age is based on the age at hire for eligible employees. The attribution period is determined as the difference between the expected retirement age and the age at hire. The APVPBP and present value of future service costs are determined on a participant by participant basis and then aggregated.

SUBSTANTIVE PLAN: As required under GASB 74 and 75, we based the valuation on the substantive plan. The formulation of the substantive plan was based on a review of written plan documents as well as historical information provided by Scotts Valley Fire Protection District regarding practices with respect to employer and employee contributions and other relevant factors.

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B. ECONOMIC ASSUMPTIONS:

Economic assumptions are set under the guidance of Actuarial Standard of Practice 27 (ASOP 27). Among other things, ASOP 27 provides that economic assumptions should reflect a consistent underlying rate of general inflation. For that reason, we show our assumed long-term inflation rate below.

INFLATION: We assumed 2.50% per year used for pension purposes. Actuarial standards require using the same rate for OPEB that is used for pension.

INVESTMENT RETURN / DISCOUNT RATE: We assumed 6.25% per year net of expenses. This is based on assumed long-term return on employer assets. We used the “Building Block Method”. (See Appendix C, Paragraph 53 for more information). Our assessment of long-term returns for employer assets is based on long-term historical returns for surplus funds invested pursuant to California Government Code Sections 53601 et seq.

TREND: We assumed 4.00% per year. Our long-term trend assumption is based on the conclusion that, while medical trend will continue to be cyclical, the average increase over time cannot continue to outstrip general inflation by a wide margin. Trend increases in excess of general inflation result in dramatic increases in unemployment, the number of uninsured and the number of underinsured. These effects are nearing a tipping point which will inevitably result in fundamental changes in health care finance and/or delivery which will bring increases in health care costs more closely in line with general inflation. We do not believe it is reasonable to project historical trend vs. inflation differences several decades into the future.

PAYROLL INCREASE: We assumed 2.75% per year. Since benefits do not depend on salary (as they do for pensions), this assumption is only used to determine the accrual pattern of the Actuarial Present Value of Projected Benefit Payments.

FIDUCIARY NET POSITION (FNP): The following table shows the beginning and ending FNP numbers that were provided by Scotts Valley Fire Protection District.

Fiduciary Net Position as of June 30, 2022

	<u>06/30/2021</u>	<u>06/30/2022</u>
Cash and Equivalents	\$0	\$0
Contributions Receivable	\$0	\$0
Total Investments	\$360,009	\$447,642
Capital Assets	\$0	\$0
Total Assets	<u>\$360,009</u>	<u>\$447,642</u>
Benefits Payable	<u>\$0</u>	<u>\$0</u>
Fiduciary Net Position	<u>\$360,009</u>	<u>\$447,642</u>

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C. NON-ECONOMIC ASSUMPTIONS:

Economic assumptions are set under the guidance of Actuarial Standard of Practice 35 (ASOP 35). See Appendix C, Paragraph 52 for more information.

MORTALITY

<i>Participant Type</i>	<i>Mortality Tables</i>
Firefighters	2017 CalPERS Mortality for Safety Employees
Miscellaneous	2017 CalPERS Mortality for Miscellaneous and Schools Employees

RETIREMENT RATES

<i>Employee Type</i>	<i>Retirement Rate Tables</i>
Fire Management	2017 CalPERS 3.0% @55 Rates for Fire Employees
Fire Fighters	Hired 2013 and later: 2017 CalPERS 2.7% @57 Rates for Fire Employees Hired 2012 and earlier: 2017 CalPERS 3.0% @55 Rates for Fire Employees
General Employees	Hired 2012 and earlier: 2017 CalPERS 2.0% @55 Rates for Miscellaneous Employees Hired 2013 and later: 2017 CalPERS 2.0% @62 Rates for Miscellaneous Employees

COSTS FOR RETIREE COVERAGE

Actuarial Standard of Practice 6 (ASOP 6) provides that, as a general rule, retiree costs should be based on actual claim costs or age-adjusted premiums. This is true even for many medical plans that are commonly considered to be “community-rated.” However, ASOP 6 contains a provision – specifically section 3.7.7(c) – that allows use of unadjusted premiums in certain circumstances.

It is my opinion that the section 3.7.7(c)(4) exception allows use of unadjusted premium for PEMHCA agencies if certain conditions are met. Following are the criteria we applied to Scotts Valley Fire Protection District to determine that it is reasonable to assume that Scotts Valley Fire Protection District’s future participation in PEMHCA is likely and that the CalPERS medical program as well as its premium structure are sustainable. (We also have an extensive white paper on this subject that provides a basis for our rationale entirely within the context of ASOP 6. We will make this white paper available upon request.)

- **Plan qualifies as a “pooled health plan.”** ASOP 6 defines a “pooled health plan” as one in which premiums are based at least in part on the claims experience of groups other than the one being valued.” Since CalPERS rates are the same for all employers in each region, rates are clearly based on the experience of many groups.
- **Rates not based to any extent on the agency’s claim experience.** As mentioned above, rates are the same for all participating employers regardless of claim experience or size.
- **Rates not based to any extent on the agency’s demographics.** As mentioned above, rates are the same for all participating employers regardless of demographics.
- **No refunds or charges based on the agency’s claim experience or demographics.** The terms of operation of the CalPERS program are set by statute and there is no provision for any refunds and charges that vary from employer to employer for any reason. The only charges are uniform administrative charges.
- **Plan in existence 20 or more years.** Enabling legislation to allow “contracting agencies” to participate in the CalPERS program was passed in 1967. The CalPERS medical plan has been successfully operating for almost 50 years. As far back as we can obtain records, the rating structure has been consistent, with the only difference having been a move to regional rating which is unrelated to age-adjusted rating.

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- **No recent large increases or decreases in the number of participating plans or enrollment.** The CalPERS medical plan has shown remarkably stable enrollment. In the past 10 years, there has been small growth in the number of employers in most years – with the maximum being a little over 2% and a very small decrease in one year. Average year over year growth in the number of employers over the last 10 years has been about 0.75% per year. Groups have been consistently leaving the CalPERS medical plan while other groups have been joining with no disruption to its stability.
- **Agency is not expecting to leave plan in foreseeable future.** The District does not plan to leave CalPERS at present.
- **No indication the plan will be discontinued.** We are unaware of anything that would cause the CalPERS medical plan to cease or to significantly change its operation in a way that would affect this determination.
- **The agency does not represent a large part of the pool.** The District is in the CalPERS Bay Area region. Based on the information we have, the District constitutes no more than 0.04% of the Bay Area pool. In our opinion, this is not enough for the District to have a measurable effect on the rates or viability of the Bay Area pool.

Retiree liabilities are based on actual retiree costs. Liabilities for active participants are based on the first year costs shown below. Subsequent years' costs are based on first year costs adjusted for trend and limited by any District contribution caps.

<i>Participant Type</i>	<i>Future Retirees Pre-65</i>	<i>Future Retirees Post-65</i>
Fire Fighters	\$12,000	\$1,800
Fire Management	\$12,000	\$1,800
General Employees	\$1,800	\$1,800
	Administrative Secretary: \$18,485	

PARTICIPATION RATES

<i>Employee Type</i>	<i><65 Non-Medicare Participation %</i>	<i>65+ Medicare Participation %</i>
Fire Management	If PEMHCA Minimum Only: 90%, otherwise 100%	90%
Fire Fighters	If PEMHCA Minimum Only: 90%, otherwise 100%	90%
General Employees	If PEMHCA Minimum Only: 80%, otherwise 100%	80%

TURNOVER

<i>Employee Type</i>	<i>Turnover Rate Tables</i>
Firefighters	2017 CalPERS Turnover for Fire Employees
Miscellaneous	2017 CalPERS Turnover for Miscellaneous Employees

SPOUSE PREVALENCE

To the extent not provided and when needed to calculate benefit liabilities, 80% of retirees assumed to be married at retirement. After retirement, the percentage married is adjusted to reflect mortality.

SPOUSE AGES

To the extent spouse dates of birth are not provided and when needed to calculate benefit liabilities, female spouse assumed to be three years younger than male.

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PART IV: APPENDICES

APPENDIX A: DEMOGRAPHIC DATA BY AGE

ELIGIBLE ACTIVE EMPLOYEES BY AGE AND EMPLOYEE CLASS

<i>Age</i>	<i>Total</i>	<i>Fire Management</i>	<i>Fire Fighters</i>	<i>General Employees</i>
Under 25	0	0	0	0
25 – 29	1	0	0	1
30 – 34	8	0	7	1
35 – 39	5	0	5	0
40 – 44	1	0	1	0
45 – 49	6	2	4	0
50 – 54	5	1	3	1
55 – 59	2	1	1	0
60 – 64	1	0	1	0
65 and older	0	0	0	0
Total	29	4	22	3

ELIGIBLE ACTIVE EMPLOYEES BY AGE AND SERVICE

	<i>Under 5</i>	<i>5 – 9</i>	<i>10 – 14</i>	<i>15 – 19</i>	<i>20 – 24</i>	<i>25 – 29</i>	<i>30 – 34</i>	<i>Over 34</i>
	<i>Years of</i>	<i>Years of</i>	<i>Years of</i>	<i>Years of</i>	<i>Years of</i>	<i>Years of</i>	<i>Years of</i>	<i>Years of</i>
<i>Total</i>	<i>Service</i>	<i>Service</i>	<i>Service</i>	<i>Service</i>	<i>Service</i>	<i>Service</i>	<i>Service</i>	<i>Service</i>
Under 25	0							
25 – 29	1	1						
30 – 34	8	5	2	1				
35 – 39	5	4		1				
40 – 44	1		1					
45 – 49	6		3	1	2			
50 – 54	5			2	2		1	
55 – 59	2				1		1	
60 – 64	1				1			
65 and older	0							
Total	29	10	5	3	3	6	0	2

ELIGIBLE RETIREES BY AGE AND EMPLOYEE CLASS

<i>Age</i>	<i>Total</i>	<i>Fire Management</i>	<i>Fire Fighters</i>	<i>General Employees</i>
Under 50	0	0	0	0
50 – 54	1	1	0	0
55 – 59	5	3	2	0
60 – 64	2	1	1	0
65 – 69	2	1	1	0
70 – 74	3	1	2	0
75 – 79	1	1	0	0
80 – 84	0	0	0	0
85 – 89	0	0	0	0
90 and older	0	0	0	0
Total	14	8	6	0

APPENDIX B: ADMINISTRATIVE BEST PRACTICES

It is outside the scope of this report to make specific recommendations of actions Scotts Valley Fire Protection District should take to manage the liability created by the current retiree health program. The following items are intended only to allow the District to get more information from this and future studies. Because we have not conducted a comprehensive administrative audit of Scotts Valley Fire Protection District's practices, it is possible that Scotts Valley Fire Protection District is already complying with some or all of these suggestions.

- We suggest that Scotts Valley Fire Protection District maintain an inventory of all benefits and services provided to retirees – whether contractually or not and whether retiree-paid or not. For each, Scotts Valley Fire Protection District should determine whether the benefit is material and subject to GASB 74 and/or 75.
- Under GASB 75, it is important to isolate the cost of retiree health benefits. Scotts Valley Fire Protection District should have all premiums, claims and expenses for retirees separated from active employee premiums, claims, expenses, etc. To the extent any retiree benefits are made available to retirees over the age of 65 – *even on a retiree-pay-all basis* – all premiums, claims and expenses for post-65 retiree coverage should be segregated from those for pre-65 coverage. Furthermore, Scotts Valley Fire Protection District should arrange for the rates or prices of all retiree benefits to be set on what is expected to be a self-sustaining basis.
- Scotts Valley Fire Protection District should establish a way of designating employees as eligible or ineligible for future OPEB benefits. Ineligible employees can include those in ineligible job classes; those hired after a designated date restricting eligibility; those who, due to their age at hire cannot qualify for District-paid OPEB benefits; employees who exceed the termination age for OPEB benefits, etc.
- Several assumptions were made in estimating costs and liabilities under Scotts Valley Fire Protection District's retiree health program. Further studies may be desired to validate any assumptions where there is any doubt that the assumption is appropriate. (See Part III of this report for a summary of assumptions.) For example, Scotts Valley Fire Protection District should maintain a retiree database that includes – in addition to date of birth, gender and employee classification – retirement date and (if applicable) dependent date of birth, relationship and gender. It will also be helpful for Scotts Valley Fire Protection District to maintain employment termination information – namely, the number of OPEB-eligible employees in each employee class that terminate employment each year for reasons other than death, disability or retirement.

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APPENDIX C: GASB 74/75 ACCOUNTING ENTRIES AND DISCLOSURES

This report does not necessarily include the entire accounting values. As mentioned earlier, there are certain deferred items that are employer-specific. The District should consult with its auditor if there are any questions about what, if any, adjustments may be appropriate.

GASB 74/75 include a large number of items that should be included in the Note Disclosures and Required Supplementary Information (RSI) Schedules. Many of these items are outside the scope of the actuarial valuation. However, following is information to assist the District in complying with GASB 74/75 disclosure requirements:

Paragraph 50: **Information about the OPEB Plan**

Most of the information about the OPEB plan should be supplied by Scotts Valley Fire Protection District. Following is information to help fulfill Paragraph 50 reporting requirements.

50.c: Following is a table of plan participants

	Number of Participants
Inactive Employees Currently Receiving Benefit Payments	14
Inactive Employees Entitled to But Not Yet Receiving Benefit Payments*	0
Participating Active Employees	29
Total Number of participants	43

*We were not provided with information about any terminated, vested employees

Paragraph 51: **Significant Assumptions and Other Inputs**

Shown in Part III.

Paragraph 52: **Information Related to Assumptions and Other Inputs**

The following information is intended to assist Scotts Valley Fire Protection District in complying with the requirements of Paragraph 52.

52.b: Mortality Assumptions Following are the tables the mortality assumptions are based upon. Inasmuch as these tables are based on appropriate populations, and that these tables are used for pension purposes, we believe these tables to be the most appropriate for the valuation.

Mortality Table	2017 CalPERS Mortality for Miscellaneous and Schools Employees
Disclosure	The mortality assumptions are based on the 2017 CalPERS Mortality for Miscellaneous and Schools Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.

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Mortality Table	2017 CalPERS Retiree Mortality for Safety Employees
Disclosure	The mortality assumptions are based on the 2017 CalPERS Retiree Mortality for Safety Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.
Mortality Table	2017 CalPERS Mortality for Safety Employees
Disclosure	The mortality assumptions are based on the 2017 CalPERS Mortality for Safety Employees table created by CalPERS. CalPERS periodically studies mortality for participating agencies and establishes mortality tables that are modified versions of commonly used tables. This table incorporates mortality projection as deemed appropriate based on CalPERS analysis.

52.c: Experience Studies Following are the tables the retirement and turnover assumptions are based upon. Inasmuch as these tables are based on appropriate populations, and that these tables are used for pension purposes, we believe these tables to be the most appropriate for the valuation.

Retirement Tables

Retirement Table	2017 CalPERS 2.0% @55 Rates for Miscellaneous Employees
Disclosure	The retirement assumptions are based on the 2017 CalPERS 2.0% @55 Rates for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.
Retirement Table	2017 CalPERS 2.0% @62 Rates for Miscellaneous Employees
Disclosure	The retirement assumptions are based on the 2017 CalPERS 2.0% @62 Rates for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.
Retirement Table	2017 CalPERS 2.7% @57 Rates for Fire Employees
Disclosure	The retirement assumptions are based on the 2017 CalPERS 2.7% @57 Rates for Fire Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.
Retirement Table	2017 CalPERS 3.0% @55 Rates for Fire Employees
Disclosure	The retirement assumptions are based on the 2017 CalPERS 3.0% @55 Rates for Fire Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

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Turnover Tables

Turnover Table	2017 CalPERS Turnover for Fire Employees
Disclosure	The turnover assumptions are based on the 2017 CalPERS Turnover for Fire Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

Turnover Table	2017 CalPERS Turnover for Miscellaneous Employees
Disclosure	The turnover assumptions are based on the 2017 CalPERS Turnover for Miscellaneous Employees table created by CalPERS. CalPERS periodically studies the experience for participating agencies and establishes tables that are appropriate for each pool.

For other assumptions, we use actual plan provisions and plan data.

52.d: The alternative measurement method was not used in this valuation.

52.e: NOL using alternative trend assumptions The following table shows the Net OPEB Liability with a healthcare cost trend rate 1% higher and 1% lower than assumed in the valuation.

	Trend 1% Lower	Valuation Trend	Trend 1% Higher
Net OPEB Liability	\$1,337,082	\$1,511,976	\$1,726,299

Paragraph 53:

Discount Rate

The following information is intended to assist Scotts Valley Fire Protection District to comply with Paragraph 53 requirements.

53.a: A discount rate of 6.25% was used in the valuation. The interest rate used in the prior valuation was 6.25%.

53.b: We assumed that all contributions are from the employer.

53.c: We used historic 28 year real rates of return for each asset class along with our assumed long-term inflation assumption to set the discount rate. We offset the expected investment return by investment expenses of 25 basis points.

53.d: The interest assumption does not reflect a municipal bond rate.

53.e: Not applicable.

53.f: Following is the assumed asset allocation and assumed rate of return for each.

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CERBT - Strategy 2

Asset Class	Percentage of Portfolio	Assumed Gross Return
All Equities	40.0000	7.5450
All Fixed Income	43.0000	4.2500
Real Estate Investment Trusts	8.0000	7.2500
All Commodities	4.0000	7.5450
Treasury Inflation Protected Securities (TIPS)	5.0000	3.0000

We looked at rolling periods of time for all asset classes in combination to appropriately reflect correlation between asset classes. That means that the average returns for any asset class don't necessarily reflect the averages over time individually, but reflect the return for the asset class for the portfolio average. We used geometric means.

53.g: The following table shows the Net OPEB liability with a discount rate 1% higher and 1% lower than assumed in the valuation.

	Discount Rate 1% Lower	Valuation Discount Rate	Discount Rate 1% Higher
Net OPEB Liability	\$1,739,827	\$1,511,976	\$1,320,658

Paragraph 55: **Changes in the Net OPEB Liability**

Please see reconciliation on pages 2 or 12.

Paragraph 56: **Additional Net OPEB Liability Information**

The following information is intended to assist Scotts Valley Fire Protection District to comply with Paragraph 56 requirements.

56.a: The valuation date is June 30, 2022.

The measurement date is June 30, 2022.

56.b: We are not aware of a special funding arrangement.

56.c: There were no assumption changes since the prior measurement date.

56.d: There were no changes in benefit terms since the prior measurement date.

56.e: Not applicable

56.f: To be determined by the employer

56.g: To be determined by the employer

56.h: Other than contributions after the measurement, all deferred inflow and outflow balances are shown on page 12 and in Appendix D

56.i: Future recognition of deferred inflows and outflows is shown in Appendix D

Paragraph 57: **Required Supplementary Information**

57.a: Please see reconciliation on pages 2 or 12. Please see the notes for Paragraph 244 below for more information.

57.b: These items are provided on pages 2 and 12 for the current valuation, except for covered payroll, which should be determined based on appropriate methods.

57.c: We have not been asked to calculate an actuarially determined contribution amount. We assume the District contributes on an ad hoc basis, but in an amount sufficient to fully fund the obligation over a period not to exceed 28 years.

57.d: We are not aware that there are any statutorily or contractually established contribution requirements.

Total Compensation Systems, Inc.

Paragraph 58: **Actuarially Determined Contributions**

We have not been asked to calculate an actuarially determined contribution amount. We assume the District contributes on an ad hoc basis, but in an amount sufficient to fully fund the obligation over a period not to exceed 28 years.

Paragraph 244: **Transition Option**

Prior periods were not restated due to the fact that prior valuations were not rerun in accordance with GASB 75. It was determined that the time and expense necessary to rerun prior valuations and to restate prior financial statements was not justified.

Total Compensation Systems, Inc.

APPENDIX D: DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

EXPERIENCE GAINS AND LOSSES

Increase (Decrease) in OPEB Expense Arising from the Recognition of Effects of Experience Gains and Losses (Measurement Periods)											
Measurement Period	Experience (Gain)/Loss	Original Recognition Period (Years)	Amounts Recognized in OPEB Expense through 2021	2022	Amounts to be Recognized in OPEB Expense after 2022	2023	2024	2025	2026	2027	Thereafter
2018-19	\$66,173	7	\$28,362	\$9,454	\$28,357	\$9,454	\$9,454	\$9,449			
2019-20	(\$138,395)	9.7	(\$28,536)	(\$14,268)	(\$95,591)	(\$14,268)	(\$14,268)	(\$14,268)	(\$14,268)	(\$14,268)	(\$24,251)
2020-21	(\$1,168)	9.7	(\$121)	(\$121)	(\$926)	(\$121)	(\$121)	(\$121)	(\$121)	(\$121)	(\$321)
2021-22	(\$126,563)	9.2	\$0	(\$13,757)	(\$112,806)	(\$13,757)	(\$13,757)	(\$13,757)	(\$13,757)	(\$13,757)	(\$44,021)
Net Increase (Decrease) in OPEB Expense			(\$295)	(\$18,692)	(\$180,966)	(\$18,692)	(\$18,692)	(\$18,697)	(\$28,146)	(\$28,146)	(\$68,593)

Total Compensation Systems, Inc.

CHANGES OF ASSUMPTIONS

Increase (Decrease) in OPEB Expense Arising from the Recognition of Effects of Changes of Assumptions (Measurement Periods)

Measurement Period	Changes of Assumptions	Original Recognition Period (Years)	Amounts Recognized in OPEB Expense through 2021	2022	Amounts to be Recognized in OPEB Expense after 2022	2023	2024	2025	2026	2027	Thereafter
2017-18	(\$97,449)	7.4	(\$52,676)	(\$13,169)	(\$31,604)	(\$13,169)	(\$13,169)	(\$5,266)			
2018-19	\$100,131	7	\$42,915	\$14,305	\$42,911	\$14,305	\$14,305	\$14,301			
2019-20	(\$804,700)	9.7	(\$165,918)	(\$82,959)	(\$555,823)	(\$82,959)	(\$82,959)	(\$82,959)	(\$82,959)	(\$82,959)	(\$141,028)
2020-21	\$52,365	9.7	\$5,399	\$5,399	\$41,567	\$5,399	\$5,399	\$5,399	\$5,399	\$5,399	\$14,572
2021-22	\$0	0	\$0	\$0	\$0						
Net Increase (Decrease) in OPEB Expense			(\$170,280)	(\$76,424)	(\$502,949)	(\$76,424)	(\$76,424)	(\$68,525)	(\$77,560)	(\$77,560)	(\$126,456)

Total Compensation Systems, Inc.

INVESTMENT GAINS AND LOSSES

Increase (Decrease) in OPEB Expense Arising from the Recognition of Effects of Investment Gains and Losses (Measurement Periods)

Measurement Period	Investment (Gain)/Loss	Original Recognition Period (Years)	Amounts Recognized in OPEB Expense through 2021	2022	Amounts to be Recognized in OPEB Expense after 2022	2023	2024	2025	2026	2027	Thereafter
2020-21	\$1,331	5	\$267	\$267	\$797	\$267	\$267	\$263			
2021-22	\$94,297	5	\$0	\$18,860	\$75,437	\$18,860	\$18,860	\$18,860	\$18,857		
Net Increase (Decrease) in OPEB Expense			\$267	\$19,127	\$76,234	\$19,127	\$19,127	\$19,123	\$18,857	\$0	\$0

APPENDIX E: GLOSSARY OF RETIREE HEALTH VALUATION TERMS

Note: The following definitions are intended to help a *non*-actuary understand concepts related to retiree health valuations. Therefore, the definitions may not be actuarially accurate.

<u>Actuarial Cost Method:</u>	A mathematical model for allocating OPEB costs by year of service. The only actuarial cost method allowed under GASB 74/75 is the entry age actuarial cost method.
<u>Actuarial Present Value of Projected Benefit Payments:</u>	The projected amount of all OPEB benefits to be paid to current and future retirees discounted back to the valuation or measurement date.
<u>Deferred Inflows/Outflows of Resources:</u>	A portion of certain items that can be deferred to future periods or that weren't reflected in the valuation. The former includes investment gains/losses, actuarial gains/losses, and gains/losses due to changes in actuarial assumptions or methods. The latter includes contributions made to a trust subsequent to the measurement date but before the statement date.
<u>Discount Rate:</u>	Assumed investment return net of all investment expenses. Generally, a higher assumed interest rate leads to lower service costs and total OPEB liability.
<u>Fiduciary Net Position:</u>	Net assets (liability) of a qualifying OPEB "plan" (i.e. qualifying irrevocable trust or equivalent arrangement).
<u>Implicit Rate Subsidy:</u>	The estimated amount by which retiree rates are understated in situations where, for rating purposes, retirees are combined with active employees and the employer is expected, in the long run, to pay the underlying cost of retiree benefits.
<u>Measurement Date:</u>	The date at which assets and liabilities are determined in order to estimate TOL and NOL.
<u>Mortality Rate:</u>	Assumed proportion of people who die each year. Mortality rates always vary by age and often by sex. A mortality table should always be selected that is based on a similar "population" to the one being studied.
<u>Net OPEB Liability (NOL):</u>	The Total OPEB Liability minus the Fiduciary Net Position.
<u>OPEB Benefits:</u>	Other Post Employment Benefits. Generally, medical, dental, prescription drug, life, long-term care or other postemployment benefits that are not pension benefits.
<u>OPEB Expense:</u>	This is the amount employers must recognize as an expense each year. The annual OPEB expense is equal to the Service Cost plus interest on the Total OPEB Liability (TOL) plus change in TOL due to plan changes minus projected investment income; all adjusted to reflect deferred inflows and outflows of resources.
<u>Participation Rate:</u>	The proportion of retirees who elect to receive retiree benefits. A lower participation rate results in lower service cost and a TOL. The participation rate often is related to retiree contributions.

Total Compensation Systems, Inc.

<u>Pay As You Go Cost:</u>	The projected benefit payments to retirees in a given year as estimated by the actuarial valuation. Actual benefit payments are likely to differ from these estimated amounts. For OPEB plans that do not pre-fund through an irrevocable trust, the Pay As You Go Cost serves as an estimated amount to budget for annual OPEB payments.
<u>Retirement Rate:</u>	The proportion of active employees who retire each year. Retirement rates are usually based on age and/or length of service. (Retirement rates can be used in conjunction with the service requirement to reflect both age and length of service). The more likely employees are to retire early, the higher service costs and actuarial accrued liability will be.
<u>Service Cost:</u>	The annual dollar value of the “earned” portion of retiree health benefits if retiree health benefits are to be fully accrued at retirement.
<u>Service Requirement:</u>	The proportion of retiree benefits payable under the OPEB plan, based on length of service and, sometimes, age. A shorter service requirement increases service costs and TOL.
<u>Total OPEB Liability (TOL):</u>	The amount of the actuarial present value of projected benefit payments attributable to participants’ past service based on the actuarial cost method used.
<u>Trend Rate:</u>	The rate at which the employer’s share of the cost of retiree benefits is expected to increase over time. The trend rate usually varies by type of benefit (e.g. medical, dental, vision, etc.) and may vary over time. A higher trend rate results in higher service costs and TOL.
<u>Turnover Rate:</u>	The rate at which employees cease employment due to reasons other than death, disability or retirement. Turnover rates usually vary based on length of service and may vary by other factors. Higher turnover rates reduce service costs and TOL.
<u>Valuation Date:</u>	The date as of which the OPEB obligation is determined by means of an actuarial valuation. Under GASB 74 and 75, the valuation date does not have to coincide with the statement date, but can’t be more than 30 months prior.

CERBT Account Update Summary

Scotts Valley Fire Protection District

as of June 30, 2022

OPEB Valuation Report Summary

OPEB Actuarial Valuation Report by Total Compensation Systems, Inc.	
Valuation Date	6/30/2020
Measurement Date	6/30/2021
Total OPEB Liability (TOL)	\$2,003,326
Valuation Assets	\$360,009
Net OPEB Liability (NOL)	\$1,643,317
Funded Status	18%
Actuarially Determined Contribution (ADC)	\$0
CERBT Asset Allocation Strategy	Strategy 2
Discount Rate	6.25%

CERBT Account Summary

As of June 30, 2022	Strategy 2
Initial contribution (05/20/2021)	\$350,000
Additional contributions	\$155,000
Disbursements	\$0
CERBT expenses	(\$436)
Investment earnings	(\$56,923)
Total assets	\$447,642
Annualized net rate of return (05/20/2021-06/30/2022 = 1.11 years)	-11.19%

Cash Flow Summary by Fiscal Year

Fiscal Year	Contributions	Disbursements	Cumulative Investment Gains (Losses)	Cumulative Fees	Cumulative Ending Assets
2006-07	\$0	\$0	\$0	\$0	\$0
2007-08	\$0	\$0	\$0	\$0	\$0
2008-09	\$0	\$0	\$0	\$0	\$0
2009-10	\$0	\$0	\$0	\$0	\$0
2010-11	\$0	\$0	\$0	\$0	\$0
2011-12	\$0	\$0	\$0	\$0	\$0
2012-13	\$0	\$0	\$0	\$0	\$0
2013-14	\$0	\$0	\$0	\$0	\$0
2014-15	\$0	\$0	\$0	\$0	\$0
2015-16	\$0	\$0	\$0	\$0	\$0
2016-17	\$0	\$0	\$0	\$0	\$0
2017-18	\$0	\$0	\$0	\$0	\$0
2018-19	\$0	\$0	\$0	\$0	\$0
2019-20	\$0	\$0	\$0	\$0	\$0
2020-21	\$350,000	\$0	\$10,043	(\$34)	\$360,009
as of 6/30/2022	\$505,000	\$0	(\$56,923)	(\$436)	\$447,642

CERBT/CEPPT Investment Returns Outperform Benchmarks

Periods ended June 30, 2022

Fund	Assets	1 Month	3 Months	FYTD	1 Year	3 Years	5 Years	10 Years	ITD
CERBT Strategy 1 (Inception June 1, 2007)	\$12,805,762,723	-6.65%	-12.97%	-13.35%	-13.35%	4.60%	5.60%	6.86%	4.86%
Benchmark		-6.71%	-13.07%	-13.55%	-13.55%	4.32%	5.32%	6.51%	4.45%
CERBT Strategy 2 (Inception October 1, 2011)	\$1,750,235,674	-5.53%	-11.49%	-12.54%	-12.54%	3.35%	4.66%	5.69%	6.29%
Benchmark		-5.57%	-11.54%	-12.66%	-12.66%	3.15%	4.43%	5.37%	6.02%
CERBT Strategy 3 (Inception January 1, 2012)	\$747,065,965	-4.56%	-9.82%	-10.72%	-10.72%	2.56%	3.91%	4.55%	4.81%
Benchmark		-4.59%	-9.84%	-10.77%	-10.77%	2.41%	3.73%	4.22%	4.53%
CERBT Total	\$15,303,064,362								
CEPPT Strategy 1 (Inception October 1, 2019)	\$58,090,430	-4.86%	-10.08%	-12.41%	-12.41%	-	-	-	2.49%
Benchmark		-4.95%	-10.24%	-12.62%	-12.62%	-	-	-	2.41%
CEPPT Strategy 2 (Inception January 1, 2020)	\$25,825,663	-3.12%	-7.30%	-10.94%	-10.94%	-	-	-	-0.48%
Benchmark		-3.14%	-7.34%	-11.02%	-11.02%	-	-	-	-0.62%
CEPPT Total	\$83,916,093								

CERBT Portfolios

Portfolios	CERBT Strategy 1	CERBT Strategy 2	CERBT Strategy 3
Expected Return	7.59%	7.01%	6.22%
Risk	11.83%	9.24%	7.28%

CERBT Portfolio Details

Asset Classification	Benchmark	CERBT Strategy 1	CERBT Strategy 2	CERBT Strategy 3
Global Equity	MSCI All Country World Index	59% ±5%	40% ±5%	22% ±5%
Fixed Income	Barclays Capital Long Liability Index (CERBT)	25% ±5%	43% ±5%	49% ±5%
Global Real Estate (REITs)	FTSE EPRA/NAREIT Developed Liquid Index	8% ±5%	8% ±5%	8% ±5%
Treasury Inflation Protected Securities (TIPS)	Barclays Capital Global Real: US TIPS Index	5% ±3%	5% ±3%	16% ±3%
Commodities	S&P GSCI Total Return Index	3% ±3%	4% ±3%	5% ±3%
Cash	3-Month Treasury Bill	0% +2%	0% +2%	0% +2%

Total Participation Cost Fee Rate

- Total all-inclusive cost of participation
 - Combines administrative, custodial, and investment fees
 - Separate trust funds
 - Self-funded, fee rate may change in the future
 - Fee is applied daily to assets under management
 - 10 basis points - CERBT
 - 25 basis points - CEPPT

CEPPT/CERBT Consistently Low Fee Rate History

Fiscal Year	CERBT	CEPPT
2007-2008	2.00 basis points	-
2008-2009	6.00 basis points	-
2009-2010	9.00 basis points	-
2010-2011	12.00 basis points	-
2011-2012	12.00 basis points	-
2012-2013	15.00 basis points	-
2013-2014	14.00 basis points	-
2014-2015	10.00 basis points	-
2015-2016	10.00 basis points	-
2016-2017	10.00 basis points	-
2017-2018	10.00 basis points	-
2018-2019	10.00 basis points	-
2019-2020	10.00 basis points	25.00 basis points
2020-2021	10.00 basis points	25.00 basis points
2021-2022	10.00 basis points	25.00 basis points
2022-2023	10.00 basis points	25.00 basis points

618 Prefunding Program Employers

598 CERBT and 72 CEPPT

- State of California
- 157 Cities or Towns
- 10 Counties
- 81 School Employers
- 32 Courts
- 337 Special Districts and other Public Agencies
 - (101 Water, 37 Sanitation, 34 Fire, 25 Transportation)

Financial Reporting

- CERBT is the Plan
 - Provides audited and compliant GASB 74 report in a Schedule of Changes in Fiduciary Net Position (FNP)
 - Published in February each year

CERBT FNP Fiscal Year	Availability
2018-19	Available at https://www.calpers.ca.gov/cerbt
2019-20	
2020-21	
2021-22	February 2023

Questions? Where to Get Trust Fund Information?

Name	Title	E-mail	Desk	Mobile
Matt Goss	Outreach & Support Program Manager	Matthew.Goss@calpers.ca.gov	(916) 795-9071	(916) 382-6487
Karen Lookingbill	Outreach & Support Manager	Karen.Lookingbill@calpers.ca.gov	(916) 795-1387	(916) 501-2219
Jasper Jacobs	Outreach & Support Analyst	Jasper.Jacobs@calpers.ca.gov	(916) 795-0432	(916) 717-3886
Colleen Cain-Herrback	Administration & Reporting Program Manager	Colleen.Cain-Herrback@calpers.ca.gov	(916) 795-2474	(916) 505-2506
Vic Anderson	Administration & Reporting Manager	Victor.Anderson@calpers.ca.gov	(916) 795-3739	(916) 281-8214
Robert Sharp	Assistant Division Chief	Robert.Sharp@calpers.ca.gov	(916) 795-3878	(916) 397-0756

Program E-mail Addresses	Prefunding Programs Webpages
CERBT4U@calpers.ca.gov – Questions & Document Submittal	www.calpers.ca.gov/CERBT
CEPPT4U@calpers.ca.gov – Questions & Document Submittal	www.calpers.ca.gov/CEPPT
CERBTACCOUNT@calpers.ca.gov – Online Record Keeping System	

CEPPT Account Update Summary

Scotts Valley Fire Protection District

as of June 30, 2022

CEPPT Account Summary

As of June 30, 2022	Strategy 1	Strategy 2	Total
Initial contribution (05/20/2021)	\$0	\$150,000	\$150,000
Additional contributions	\$0	\$150,000	\$150,000
Disbursements	\$0	\$0	\$0
CEPPT expenses	\$0	(\$639)	(\$639)
Investment earnings	\$0	(\$32,332)	(\$32,332)
Total assets (05/20/2021-06/30/2022 = 1.11 years)	\$0	\$267,029	\$267,029

CEPPT/CERBT Investment Returns Outperform Benchmarks

Periods ended June 30, 2022

Fund	Assets	1 Month	3 Months	FYTD	1 Year	3 Years	5 Years	10 Years	ITD
CERBT Strategy 1 (Inception June 1, 2007)	\$12,805,762,723	-6.65%	-12.97%	-13.35%	-13.35%	4.60%	5.60%	6.86%	4.86%
Benchmark		-6.71%	-13.07%	-13.55%	-13.55%	4.32%	5.32%	6.51%	4.45%
CERBT Strategy 2 (Inception October 1, 2011)	\$1,750,235,674	-5.53%	-11.49%	-12.54%	-12.54%	3.35%	4.66%	5.69%	6.29%
Benchmark		-5.57%	-11.54%	-12.66%	-12.66%	3.15%	4.43%	5.37%	6.02%
CERBT Strategy 3 (Inception January 1, 2012)	\$747,065,965	-4.56%	-9.82%	-10.72%	-10.72%	2.56%	3.91%	4.55%	4.81%
Benchmark		-4.59%	-9.84%	-10.77%	-10.77%	2.41%	3.73%	4.22%	4.53%
CERBT Total	\$16,954,078,879								
CEPPT Strategy 1 (Inception October 1, 2019)	\$58,090,430	-4.86%	-10.08%	-12.41%	-12.41%	-	-	-	2.49%
Benchmark		-4.95%	-10.24%	-12.62%	-12.62%	-	-	-	2.41%
CEPPT Strategy 2 (Inception January 1, 2020)	\$25,825,663	-3.12%	-7.30%	-10.94%	-10.94%	-	-	-	-0.48%
Benchmark		-3.14%	-7.34%	-11.02%	-11.02%	-	-	-	-0.62%
CEPPT Total	\$70,697,726								

CEPPT Portfolios

Portfolios	CEPPT Strategy 1	CEPPT Strategy 2
Expected Return	5.0%	4.0%
Risk	8.2%	5.2%

CEPPT Portfolio Details

Asset Classification	Benchmark	CEPPT Strategy 1	CEPPT Strategy 2
Global Equity	MSCI All Country World Index	40% ±5%	14% ±5%
Fixed Income	Bloomberg Barclays U.S. Aggregate Bond Index	47% ±5%	73% ±5%
Global Real Estate (REITs)	FTSE EPRA/NAREIT Developed Liquid Index	8% ±5%	8% ±5%
Treasury Inflation Protected Securities (TIPS)	Barclays Capital Global Real: US TIPS Index	5% ±3%	5% ±3%
Cash	3-Month Treasury Bill	0% +2%	0% +2%

Total Participation Cost Fee Rate

- Total all-inclusive cost of participation
 - Combines administrative, custodial, and investment fees
 - Separate trust funds
 - Self-funded, fee rate may change in the future
 - Fee is applied daily to assets under management
 - 10 basis points - CERBT
 - 25 basis points - CEPPT

CEPPT/CERBT Consistently Low Fee Rate History

Fiscal Year	CERBT	CEPPT
2007-2008	2.00 basis points	-
2008-2009	6.00 basis points	-
2009-2010	9.00 basis points	-
2010-2011	12.00 basis points	-
2011-2012	12.00 basis points	-
2012-2013	15.00 basis points	-
2013-2014	14.00 basis points	-
2014-2015	10.00 basis points	-
2015-2016	10.00 basis points	-
2016-2017	10.00 basis points	-
2017-2018	10.00 basis points	-
2018-2019	10.00 basis points	-
2019-2020	10.00 basis points	25.00 basis points
2020-2021	10.00 basis points	25.00 basis points
2021-2022	10.00 basis points	25.00 basis points
2022-2023	10.00 basis points	25.00 basis points

618 Prefunding Program Employers

598 CERBT and 72 CEPPT

- State of California
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- 10 Counties
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- 32 Courts
- 337 Special Districts and other Public Agencies
 - (101 Water, 37 Sanitation, 34 Fire, 25 Transportation)

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Karen Lookingbill	Outreach & Support Manager	Karen.Lookingbill@calpers.ca.gov	(916) 795-1387	(916) 501-2219
Jasper Jacobs	Outreach & Support Analyst	Jasper.Jacobs@calpers.ca.gov	(916) 795-0432	(916) 717-3886
Colleen Cain-Herrback	Administration & Reporting Program Manager	Colleen.Cain-Herrback@calpers.ca.gov	(916) 795-2474	(916) 505-2506
Vic Anderson	Administration & Reporting Manager	Victor.Anderson@calpers.ca.gov	(916) 795-3739	(916) 281-8214
Robert Sharp	Assistant Division Chief	Robert.Sharp@calpers.ca.gov	(916) 795-3878	(916) 397-0756

Program E-mail Addresses	Prefunding Programs Webpages
CEPPT4U@calpers.ca.gov – Questions & Document Submittal	www.calpers.ca.gov/CEPPT
CERBT4U@calpers.ca.gov – Questions & Document Submittal	www.calpers.ca.gov/CERBT
CERBTACCOUNT@calpers.ca.gov – Online Record Keeping System	



Fee Waiver Request

Scotts Valley Fire Station 1
7 Erba Lane
Scotts Valley, California 95066

September 15, 2022

Dear Scotts Valley Fire Captain Vandervoort,

This year we are celebrating the 20th annual Scotts Valley Haunted House. Performances are October 21-22 and October 28-30.

All proceeds from the Haunted House are donated to the Leukemia and Lymphoma Society each year. Participating students earn community service hours towards their graduation requirement.

Previously, you have waived the \$330 fee generated by the permit inspection. All of us in the Haunted House and school community would greatly appreciate your consideration in allowing this waiver again.

Thank you for your continued support.

Sincerely,


Brody Gentile
Safety Manager


Sarah Gialdini
Principal, SVHS


Cory Kaspar
Ringleader


Erik Wyner
Ringleader



MME

CIVIL + STRUCTURAL ENGINEERING • SINCE 1987

**Seismic Evaluation - Tier 1&2
Scotts Valley Fire Station 1
7 Erba Lane
Scotts Valley, California**



Prepared For:
Scotts Valley Fire District

Prepared By:
MME Civil + Structural Engineering

MME Job No. 21183

October 06, 2022



October 6, 2022

Ron Whittle, Fire Chief

Scotts Valley Fire District
7 Erba Lane
Scotts Valley, CA 95066

**Re: Scotts Valley Fire Station 1
Seismic Evaluation – Tier 1 and 2**

MME Project No: 21183

Dear Mr. Whittle,

As requested, we have prepared the following building Tier 1 and 2 Seismic Evaluation report for Fire Station 1 located at 7 Erba Lane, Scotts Valley, California. Our work includes a seismic evaluation of the existing buildings based on visual observations of the existing construction, limited testing, field documentation, and provided documentation. We performed the seismic evaluation under the provisions of the American Society of Civil Engineers (ASCE) 41-17 Standard. Our assessment intends to identify the seismic code conformance of the existing building.

Thank you for the opportunity to assist you with your project. Should you have any questions or comments or require further assistance, please call.

Respectfully yours,

Robert Riley, SE
Senior Structural Engineer



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Executive Summary

Based on our evaluation, a review of the existing design, and subsequent evaluation reports, the current building is vulnerable to seismic damage. The original design from 1958 was before vast improvements in the science of earthquake engineering were incorporated into the building codes. The additions in 1983 and 1984 failed to bring the building into conformance with the improved seismic codes at that time. The building relies on masonry and wood shear walls for lateral load resistance and to support the gravity loads. These elements do not have sufficient strength to resist seismic lateral displacements without sustaining significant damage. Damage to these critical structural gravity load-resisting elements could result in a collapse of the roof structure. The life safety and economic risk could be substantial.

The structural deficiencies noted in this report indicate that the building is likely to sustain damage and not be functionally operable if a significant seismic event were to occur. If damaged, the timely delivery of services to the community that is provided by this building would be impacted. Additionally, occupants of the building (public and staff) are at a higher risk of injury compared to a similar occupancy in a building that did not have these deficiencies.

We used the ASCE 41-17 Standard for Seismic Evaluation and Retrofit of Existing Buildings, Tier 1 and Tier 2 Evaluation in conjunction with the review of previous reports, original plans, field measurements, and testing, to develop the following structural findings and recommendations for improvement.

Fire Stations are designated as essential facilities and therefore classified as risk category IV according to the California Building Code (CBC) table 1604.5. Essential facilities are required to be immediately occupied and utilized after a seismic event. These requirements necessitate more stringent design requirements than typical buildings.

We found that the building does not comply with risk category IV evaluation criteria unless a seismic strengthening is undertaken.

The Tier 1 and 2 non-compliant structural deficiencies are extensive and are described in more detail in this report. A brief summary of deficiencies includes:

1. Some of the CMU walls require strengthening that utilizes FRP laminates and foundation improvements.
2. Plywood shear walls that require strengthening by adding hold-downs, sill bolting, and additional nailing of the plywood.
3. Roof structural elements including the addition of plywood sheathing, framing, hardware, and other fasteners.



Nonstructural

Nonstructural elements were not included in the scope of our Tier 1 and 2 analysis.

Geotechnical

A geotechnical report was provided by Dees & Associates, Inc titled “Geotechnical Investigation for Proposed Seismic Upgrade for Existing Firehouse”, September 2022.

Testing

An investigation and report were provided by Smith Emery. The work included the scanning of masonry walls for reinforcement, coring of the walls for reinforcement size, removal and testing of masonry prisms, and excavation of a footing for size and reinforcement.

Cost Estimate

We prepared an Engineer’s Estimate of Construction Costs that included both structural repairs based on our evaluation and an estimate for architectural repairs and improvements. Our estimate for the entire project is approximately \$4.8 million.

Introduction

The purpose of this evaluation is to review and evaluate the structural systems of the subject building using criteria provided by ASCE 41-17. The ASCE 41 evaluation criteria have been tailored for specific building types and desired levels of building performance. This standard provides a means to identify general deficiencies based on the anticipated behavior of specific building types.

The evaluation begins with a Screening Phase (Tier 1) to assess primary components and connections in the seismic force-resisting system using standard checklists and simplified structural calculations. If the element is compliant, it is anticipated to perform adequately under seismic loading without additional review or strengthening. Items indicated as non-compliant in a Tier 1 checklist are considered potential deficiencies that require further analysis.

A limited, deficiency-based Evaluation Phase (Tier 2) is then be used to review in more detail the items determined to be potential deficiencies by Tier 1 checklists and simplified calculations. Non-compliant items are evaluated for calculated linear seismic demand as determined by ASCE 41-17. If the elements are compliant per Tier 2 analysis, the Tier 1 deficiency is waived. However, if the element remains non-compliant after the more detailed Tier 2 analysis, repair or remediation of the deficiency is recommended.



Evaluation Overview

This seismic evaluation report is based on the following:

- The American Society of Civil Engineers/ Structural Engineering Institute (ASCE/SEI 41-17) Standard for Seismic Evaluation and Retrofit of Existing Buildings - Tier 1 and 2, Immediate Occupancy and Collapse Prevention level structural evaluation criteria, including:
 - Checklists
 - Analysis
- Several site visits for a general review of the structures, photo documentation, and field measuring of the building were conducted.
- Preparing CAD drawings for use in our analysis.
- Review of the original addition drawings dated April 1983 and January 1984. There are no construction drawings for the original portions of the building.
- Scanning, coring, removal, and testing of masonry prisms were performed.
- A Geotechnical Report was prepared.
- Seismic review of non-structural elements is not included as part of our Tier 1 evaluation.

Structure Overview

General Site Description

The building is located on a lot that slopes gently from right to left when facing the building. The change in elevation is approximately 3.5 feet.

Structural Performance Objective

Per ASCE 41-17, a structural performance objective consists of a target performance level for structural elements in combination with a specific seismic hazard level. For the seismic assessment of the subject building, a Basic Performance Objective for Existing Buildings (BPOE) was selected.

The Fire Station is considered an “Essential Facility” and is a Risk Category IV as defined by ASCE 7:

ESSENTIAL FACILITIES: Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquakes.

For the Tier 1 review to the BPOE, the specified level of performance is Immediate Occupancy (1-B) at the BSE-1E seismic hazard level and Life Safety (3-D) at the BSE-2E seismic hazard level.

The Immediate Occupancy Performance Level as described by ASCE/SEI 41-17 is made up of two parts: the structural performance level and the non-structural



performance level. The number “1” designates the structural performance level defined as:

Structural Performance Level S-1, Immediate Occupancy, is defined as the post-earthquake damage state in which a structure remains safe to occupy and essentially retains its pre-earthquake strength and stiffness.

The letter designation “B” in the BPOE indicates the nonstructural performance level and is defined as:

Position Retention Nonstructural Performance Level (N-B). Nonstructural Performance Level N-B, Position Retention, is the post-earthquake damage state in which nonstructural components might be damaged to the extent that they cannot immediately function but are secured in place so that damage caused by falling, toppling, or breaking of utility connections is avoided. Building access and Life Safety Systems, including doors, stairways, elevators, emergency lighting, fire alarms, and fire suppression systems, generally remain available and operable, provided that power and utility services are available.

The Life Safety Performance Level as described by ASCE/SEI 41-17 is defined as:

Structural Performance Level S-3, Life Safety, is defined as the post-earthquake damage state in which a structure has damaged components but retains a margin of safety against the onset of partial or total collapse.

The letter designation “D” in the BPOE is defined as:

Hazards Reduced Nonstructural Performance Level (N-D). Nonstructural Performance Level N-D, Hazards Reduced, shall be defined as the post-earthquake damage state in which nonstructural components are damaged and could potentially create falling hazards, but high hazard nonstructural components identified in Chapter 13, Table 13-1, are secured to prevent falling into areas of public assembly or those falling hazards from those components could pose a risk to life safety for many people. Preservation of egress, protection of fire suppression systems, and similar life-safety issues are not addressed in this Nonstructural Performance Level.

Site Seismicity

Per ASCE 41-17, ‘seismicity’, or the potential for ground motion, is classified into regions defined as Low, Moderate, or High. These regions are based upon mapped site accelerations S_s and S_1 which are then modified by site coefficients F_a and F_v to produce the Design Spectral Accelerations, SDS (short period), and SD_1 (1-second period).

The geotechnical report classifies the site as Site Class D for use in the determination of site coefficients F_a and F_v . In addition, the site has a low potential for liquefaction.

Per the site values indicated by the geotechnical report, the USGS data, seismic acceleration equations, and tables of ASCE 41-17, the site is located in a region of



High Seismicity. The design short-period spectral response acceleration parameter (SDS) is 1.856g and the design spectral response acceleration parameter at a one-second period (SD1) is 1.016g.

The spectral response parameters SS and S1 were obtained for the BSE-2E seismic hazard level for existing structures (BPOE). The acceleration values were adjusted for the maximum direction and site class per ASCE 41-17 Section 2.4.1, and compared to BSE-1N (used by the current building code for the design of new buildings) to determine the design values for the Tier 1 analysis, since values obtained for the BSE-2E hazard level need not exceed the hazard levels for new construction.

The successful performance of buildings in areas of high seismicity depends on a combination of strength, ductility of structural components, and the presence of a fully interconnected, balanced, and complete seismic force-resisting system.

Material Properties

Basic properties for existing structural materials were not found on the existing building documentation and therefore the ASCE 41 code prescribed minimum structural values were utilized in the analysis calculations.

Historical Performance

In addition to classifying buildings by type of construction, ASCE 41 identifies 'Benchmark Buildings' for each building type. The detailing of seismic force-resisting systems in Benchmark Buildings is generally considered to meet the performance requirements of ASCE 41. A building can be determined to be compliant with the Benchmark Building requirements after a thorough review of the existing building plans, field verification of construction, age of the building, and a condition assessment.

However, for the structural performance that is required for this building (Immediate Occupancy at BSE-1E and Life Safety at BSE-2E), there is no benchmark code unless a seismic upgrade had been performed previously.

Engineers Estimate

The engineer's estimate provided should be considered a rough order of magnitude estimate. Tier 1 and 2 evaluations are preliminary and repairs have not yet been designed. Additional analysis and detailing will be required that may increase or decrease the cost of repair. Our estimate does not specifically address any architectural demolition or repairs that may be required to complete the structural work. However, it does include rough square footage costs that may provide some guidance on expected costs for a project of this size. The amount may vary significantly until a more detailed description of work is specified.



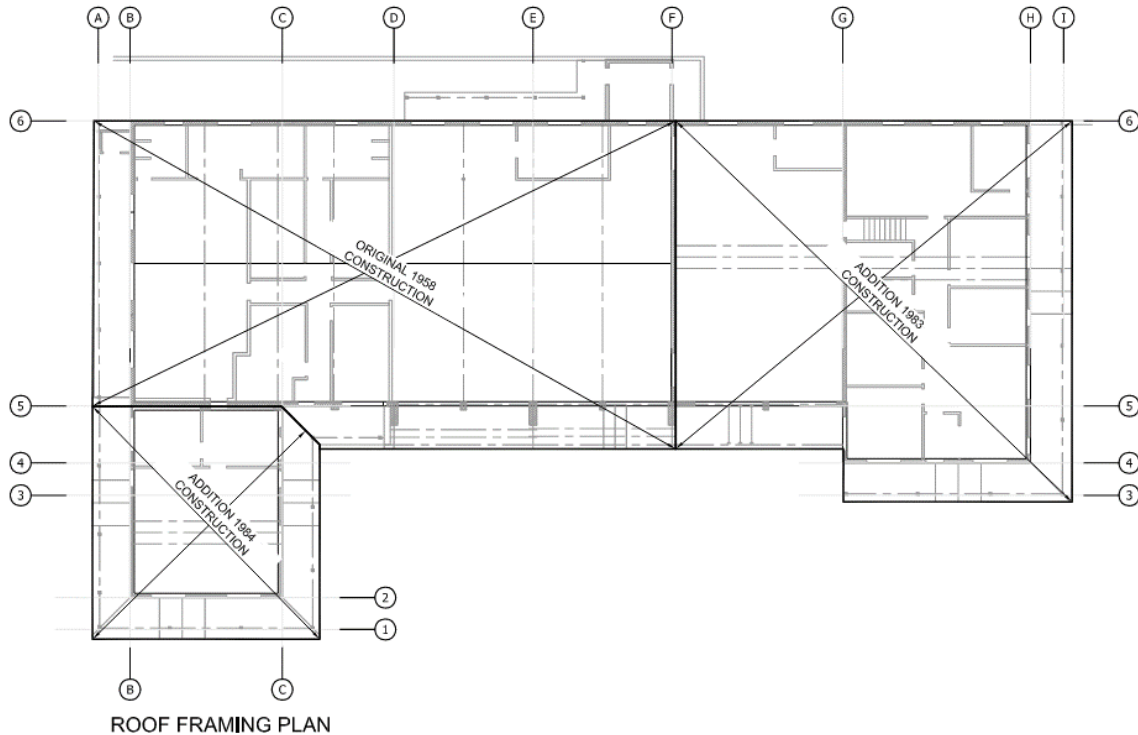
Reliability of Seismic Evaluations

In general, structural engineers cannot predict the exact damage to a building as a result of an earthquake. There will be a wide variation of damage from building to building due to the variations in ground motion and varying types and quality of construction. In addition, engineers cannot predict the exact ground motions of the earthquake that may strike a given building. Design and evaluation of buildings are performed using general guidelines and information from past earthquakes. Engineers and the codes used for design and evaluation have been conservative when attempting to ensure that building design meets minimum standards of Life Safety Occupancy. This effort is based on science and technology as well as on observations made from actual seismic events. Building design and codes are constantly evolving to better meet performance targets. Continued research will improve predictive methods and facilitate performance-based engineering. It has been estimated that, given design ground motions, a small percent of new buildings and a slightly greater percentage of retrofit buildings may fail to meet their expected performance.

This report is general and does not imply that the recommendations listed above are the only structural requirements that must be made to the existing structure to meet current code criteria.

General

From discussions with you and your staff, the original building was constructed in 1958 as a one-story rectangular building. The original building was constructed with reinforced CMU and a wood-framed roof. Two additions were constructed in 1983 and 1984. The 1983 addition is a combination of wood-framed walls and reinforced CMU walls, with a wood-framed roof. The 1984 addition is a wood-framed building. The overall building footprint including the roofed verandas is approximately 11,900 square feet. The floor is a concrete slab on grade.



Building Structure

Foundations: Foundations are shallow continuous concrete footings.

Floor: The ground floor is a concrete slab on grade.

Walls:

- Original building - The perimeter walls of the original building and one interior wall that partitions the living space from the apparatus bay are reinforced CMU. Interior non-structural wood-framed partitions separate the various rooms and offices.
- 1983 Addition - CMU walls surround the new apparatus bay and the wood-framed walls with plywood sheathing enclose the office space.
- 1984 Addition – Wood framed walls with plywood sheathing

Roof:

- Original building - The roof is constructed with deep “gable” glulam beams spaced at 12 feet on-center. The exposed ceiling is 3x sawn lumber.
- 1983 & 1984 Addition – The roof framing consists of pre-manufactured trusses and ½” plywood sheathing.



Seismic Force-Resisting System

The vertical lateral system of the building consists of reinforced 8" masonry shear walls and plywood sheathed walls. The roof diaphragm for the original portion of the building is 3x straight sheathing and 1/2" plywood for the new additions.

Field Verification and Condition Assessment

A visual assessment was performed during our site visits. The exterior and interior of the structure were observed. The structures appeared to be in generally good structural condition with minimal structural damage or deterioration apparent.

Smith Emery Investigation

Smith Emery is a company that provides a wide array of testing, scanning, and building investigation services. See the Appendices for their report. For this project, their investigation consisted of:

- Scanning for reinforcement in the CMU walls at 6 locations distributed around the building.
- Drilling at these locations to verify the presence of grout and to determine rebar diameter.
- Extracting CMU test prism at two locations
- Excavation adjacent to an exterior wall to determine foundation geometry and foundation reinforcement.

The results of the scanning were a wide variety of spacing for vertical and horizontal reinforcement as well as grouting. For the purposes of this evaluation, we considered all the walls to be reinforced, except for walls along Grid 5. Grid 5 walls did have reinforcement, but the cells were not grouted at several locations.

Building Type

Per ASCE/SEI 41-17, this building was classified into 3 different Building Types:

- RM1: Reinforced Masonry Bearing Walls With Flexible Diaphragms.
- URM: Unreinforced Masonry Bearing Walls With Flexible Diaphragms
- W2: Wood Frames, Commercial and Industrial

Findings and Recommendations

Structural - The results of our evaluations have determined that the following repairs are required.

Wood-framed portions of the building:

1. *Load Path* – The plans for the two buildings are missing several important load path details that include load transfer from roof diaphragms to the shear wall lines and hold-downs at the end of the shear walls.



Recommendation: Install additional nailing, blocking, hardware, and hold-downs.

2. *Shear Stress in shear walls* – Loads on wood shearwalls on several lines of resistance exceeded capacities.

Recommendation: Install more nails to attain the required capacity.

3. *Roof diaphragm* – Loads on the roof diaphragms exceeded capacities.

Recommendation: Install additional nails to attain the required capacity.

4. *Wood sill bolts* – Additional sill bolts are required to meet the new increased shear wall capacities noted in #2 above.

Recommendation: Install additional anchor bolts to attain the required capacity.

5. *Tower* – We understand that the tower is no longer used and the plans are for it to be removed.

Recommendation: Remove the tower.

Masonry portions of the building:

1. *Shear Stress in shear walls* – Loads on three lines of shearwalls exceeded capacities. Grid lines (B, D, and 5).

Recommendation:

- Grid lines B and D: Install Fiber Reinforced Polymer on one face of the walls. Install new foundation below reinforced walls.
- Grid line 5: Install new concrete shear walls between Grids A and D attached to and adjacent to existing walls on Grid 5. Install new foundation below new walls.

2. *Diaphragm attachment to shear walls* – Currently there is no defined system to transfer diaphragm loading to the shear walls below.

Recommendation:

- Grids 5 and 6: Install ledgers, bolted to the CMU and attached to the roof diaphragm.
- Grids B, D, F, and G: Attach the existing ledger to the diaphragm.

3. *Wall anchorage to roof framing* - Tops of CMU walls require anchorage to the roof framing for out-of-plane loading.

Recommendation: Install roof framing to support new wall-to-roof anchors. Install anchors around the perimeter of the CMU portion of the building and at interior CMU walls.

4. *CMU pilasters at the apparatus bay openings* - The short segments of walls and the pilasters between openings along grid 5 do not extend above the soffit



framing. The tops of these walls are not supported by the roof for out-of-plane loads.

Recommendation: Along Grid 5 at apparatus bays, remove CMU walls and pilasters and replace them with wood or steel framing.

5. *Diaphragm Cross Ties* – Full-length cross ties to develop wall forces into the diaphragm are required.

Recommendation: Install cross-tie framing parallel to numbered grids in the area bounded by Grids B to G and 5 to 6.

6. *Diaphragm Strength* – The current diaphragm is overstressed.

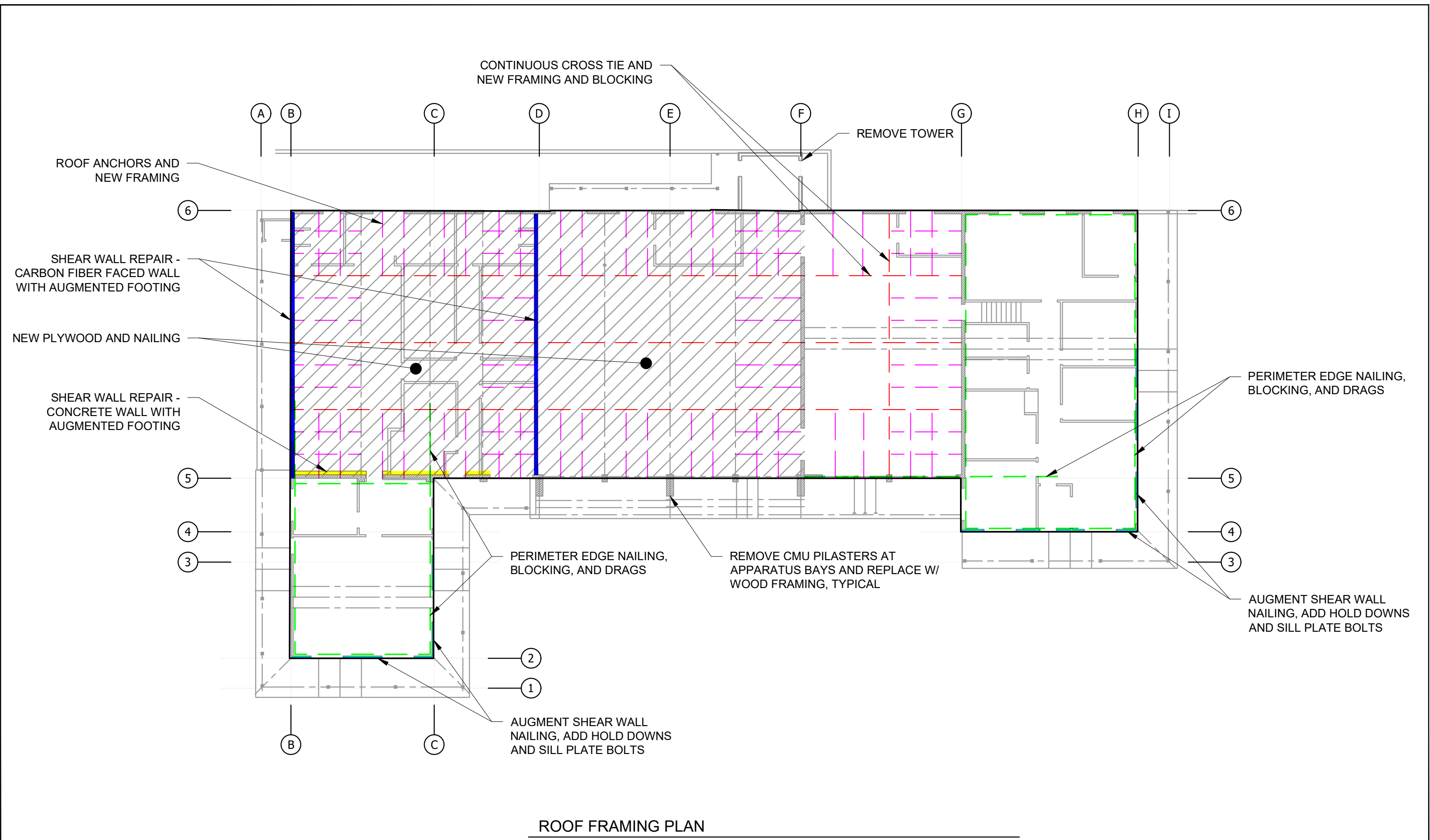
Recommendation: Install new plywood and nailing adequate to meet demand.

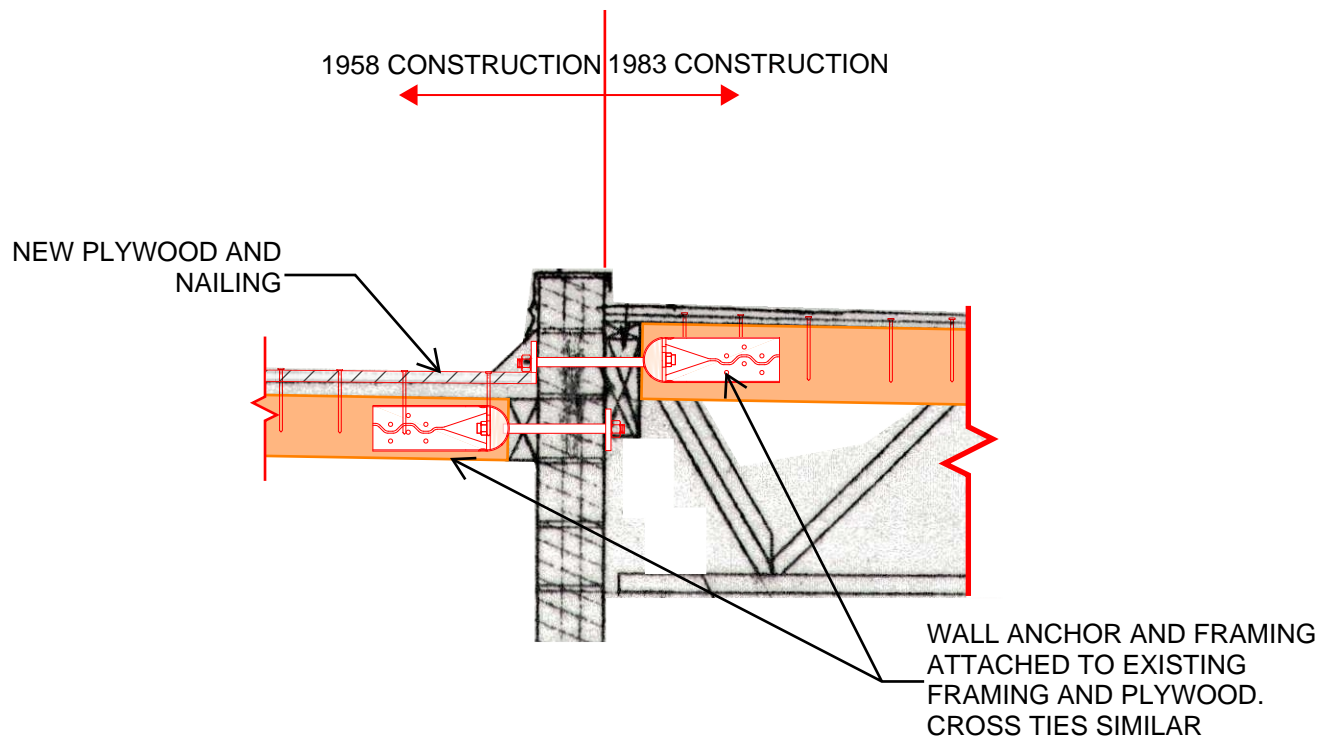
Non-Structural -

We did not complete a Tier 1 evaluation of non-structural elements such as mechanical, electrical, and plumbing (MEP) anchorage and bracing. However, as noted previously these items should be adequately braced and supported to prevent damage and potential falling hazards. We have included an allowance in our cost estimate for this work.

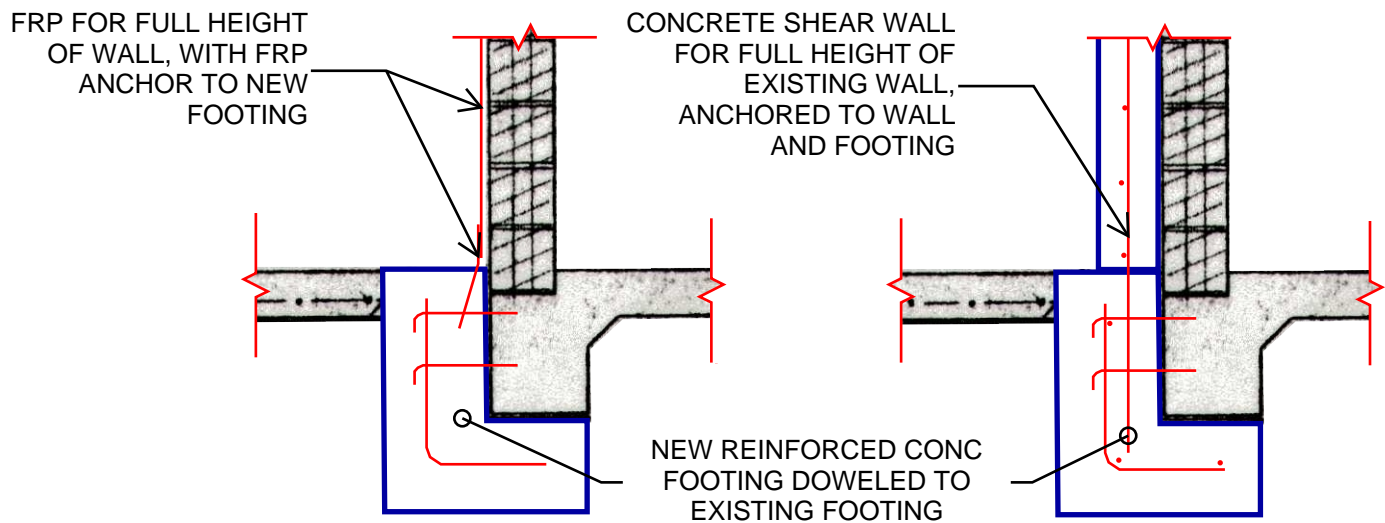


APPENDIX A - Drawings





WALL ANCHORS AND CROSS TIES



FRP

CONCRETE SHEAR WALL

CMU SHEARWALL REPAIR

SHEET:

SEISMIC EVALUATION

SCFD FIRE STATION 1



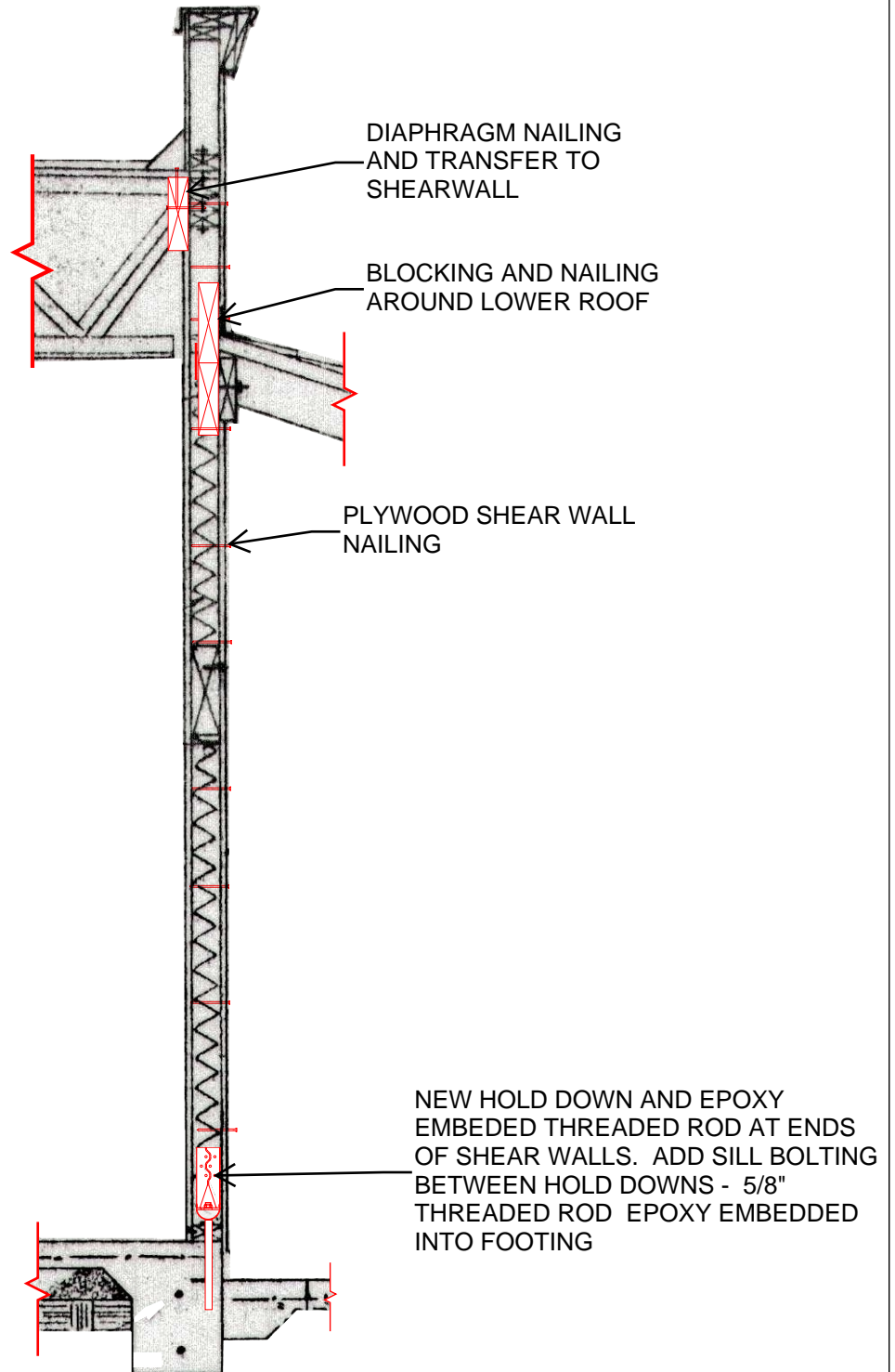
Mesiti-Miller Engineering, Inc.
Civil and Structural Engineering
224 Walnut Avenue, Suite B • Santa Cruz, CA 95060
Phone: 831-426-3196 • Fax: 831-426-6607

DRAWN BY:

BR

JOB #:

21183



WOOD FRAMED SHEARWALL REPAIR

SHEET:

SEISMIC EVALUATION

SCFD FIRE STATION 1



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21183



APPENDIX B - Engineers Estimate



Engineer's Opinion of Total Estimated Construction Cost
Seismic Retrofit of Fire Station 1
100% Schematic Design
Scotts Valley Fire Department

MME Project No: 21183
September 27, 2022

ITEM		QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Mobilization/Demobilization	1	LS	\$100,000	\$100,000
	Wood framed portions of building				
2	Load Path				
a	Nailing of diaphragm edges to walls, blocking, and hardware	300	LF	\$100	\$30,000
b	Holdowns at ends of Shearwalls	22	EA	\$3,000	\$66,000
3	Increase Shear Wall nailing	760	SF	\$20	\$15,200
4	Increase Diaphragm Nailing	2,850	SF	\$20	\$57,000
5	Additional sill plate anchor bolts	76	LF	\$200	\$15,200
6	Remove Tower	1	LS	\$40,000	\$40,000
	Masonry portions of the building				
7	Repair of CMU Shear Walls				
	Grid B FRP on CMU Walls				
a	Demo - Saw cut slab and excavate adjacent to wall	50	LF	\$200	\$10,000
b	New footing and Slab	11	YD	\$4,000	\$44,000
c	FRP anchor to existing footing (anchor @ 6" OC)	50	LF	\$240	\$12,000
d	FRP (8" strip @ 32" OC vertical and horizontal)	771	SF	\$30	\$23,130
	Grid D FRP on CMU Walls				
e	Demo - Saw cut slab and excavate adjacent to wall	50	LF	\$200	\$10,000
f	New footing and Slab	11	YD	\$4,000	\$44,000
g	FRP anchor to existing footing (anchor @ 6" OC)	50	LF	\$240	\$12,000
h	FRP (8" strip @ 32" OC vertical and horizontal)	771	SF	\$30	\$23,130
	Grid 5 New concrete shearwalls				
i	Demo - Saw cut slab, excavate	41	LF	\$200	\$8,200
j	New footing and Slab	6	YD	\$4,000	\$24,000
k	New wall 8" Conc Shearwall	550	SF	\$100	\$55,000



Engineer's Opinion of Total Estimated Construction Cost
Seismic Retrofit of Fire Station 1
100% Schematic Design
Scotts Valley Fire Department

MME Project No: 21183
September 27, 2022

ITEM		QUANTITY	UNIT	UNIT PRICE	EXTENSION
8	Diaphragm attachment to shear walls				
a	Roof diaphragm anchorage to wall (In Plane) anchor bolt through new ledger	290	LF	\$200	\$58,000
b	Roof diaphragm anchorage to wall (In Plane) anchor bolt through existing ledger	200	LF	\$100	\$20,000
9	Wall anchorage to roof @ 4' on center @ CMU walls (Out of Plane)	123	EA	\$1,500	\$184,500
10	Remove and Replace unsupported walls and pilasters at Apparatus Bay openings	1	LS	\$40,000	\$40,000
11	Diaphragm Cross Ties @ 12' OC perp to existing GLB with added framing and blocking	750	LF	\$100	\$75,000
12	Plywood sheathing and blocking	6,300	SF	\$30	\$189,000
		Structural Repairs Subtotal:			\$1,155,360
13	Architectural Demolition required for structural repairs	11,900	SF	\$25	\$297,500
14	Architectural Repairs	11,900	SF	\$100	\$1,190,000
15	ADA and other required improvements	11,900	SF	\$80	\$952,000
16	Nonstructural elements anchorage, bracing and replacement	11,900	SF	\$15	\$178,500
		Non-Structural Repairs Subtotal:			\$2,618,000
		General Conditions (10%):			\$377,336
		Subtotal:			\$4,150,696
		Contingencies (15%)			\$622,604
		Total:			\$4,773,300

The above breakdown represents our best estimate at this time and may change subject to future developments during the project. It is possible that some of the estimated costs for specific items may increase, while others may decrease. This provides us a greater degree of confidence in the overall project estimate, rather than in any given item.



APPENDIX C - Checklists

Project Name _____
Project Number _____

Appendix C: Summary Data Sheet

BUILDING DATA

Building Name: _____ Date: _____
Building Address: _____
Latitude: _____ Longitude: _____ By: _____
Year Built: _____ Year(s) Remodeled: _____ Original Design Code: _____
Area [ft² (m²)]: _____ Length [ft (m)]: _____ Width [ft (m)]: _____
No. of Stories: _____ Story Height: _____ Total Height: _____

USE ☐ Industrial ☐ Office ☐ Warehouse ☐ Hospital ☐ Residential ☐ Educational ☐ Other: _____

CONSTRUCTION DATA

Gravity Load Structural System: _____
Exterior Transverse Walls: _____ Openings? _____
Exterior Longitudinal Walls: _____ Openings? _____
Roof Materials/Framing: _____
Intermediate Floors/Framing: _____
Ground Floor: _____
Columns: _____ Foundation: _____
General Condition of Structure: _____
Levels Below Grade? _____
Special Features and Comments: _____

LATERAL-FORCE-RESISTING SYSTEM

	Longitudinal	Transverse
System:	_____	_____
Vertical Elements:	_____	_____
Diaphragms:	_____	_____
Connections:	_____	_____

EVALUATION DATA

BSE-1N Spectral Response Accelerations: S_{DS} = _____ S_{D1} = _____
Soil Factors: Class = _____ F_a = _____ F_v = _____
BSE-_____ Spectral Response Accelerations: S_{AS} = _____ S_{A1} = _____
Level of Seismicity: _____ Performance Level: _____
Building Period: T = _____
Spectral Acceleration: S_a = _____
Modification Factor: C = _____ Building Weight: W = _____
Pseudolateral Force: V = _____
 $C S_a W$ = _____

BUILDING CLASSIFICATION:

REQUIRED TIER 1 CHECKLISTS

	Yes	No
Basic Configuration Checklist	<input type="checkbox"/>	<input type="checkbox"/>
Building Structural Checklist	<input type="checkbox"/>	<input type="checkbox"/>
Nonstructural Component Checklist	<input type="checkbox"/>	<input type="checkbox"/>

FURTHER EVALUATION REQUIREMENT: _____

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.1.2CP Basic Configuration Checklist

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Low Seismicity							
Building System—General							
C	NC	N/A	U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Building System—Building Configuration							
C	NC	N/A	U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name _____
 Project Number _____

C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Moderate Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)							
Geologic Site Hazards							
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2	
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3	

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
High Seismicity (Complete the Following Items in Addition to the Items for Moderate Seismicity)							
Foundation Configuration							
C	NC	N/A	U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$.	5.4.3.3	A.6.2.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.1.2IO Basic Configuration Checklist

Table 17-3. Immediate Occupancy Basic Configuration Checklist

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Very Low Seismicity							
Building System—General							
C	NC	N/A	U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.5% of the height of the shorter building in low seismicity, 1.0% in moderate seismicity, and 3.0% in high seismicity.	5.4.1.2	A.2.1.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Building System—Building Configuration							
C	NC	N/A	U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C <input type="checkbox"/>	NC <input type="checkbox"/>	N/A <input type="checkbox"/>	U <input type="checkbox"/>	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Low Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)							
Geologic Site Hazards							
C	NC	N/A	U	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Moderate and High Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)							
Foundation Configuration							
C	NC	N/A	U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$.	5.4.3.3	A.6.2.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.3CP Structural Checklist for Building Type W2: Wood Frames, Commercial and Industrial

Table 17-6. Collapse Prevention Structural Checklist for Building Type W2

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Low and Moderate Seismicity							
Seismic-Force-Resisting System							
C	NC	N/A	U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than the following values: Structural panel sheathing 1,000 lb/ft Diagonal sheathing 700 lb/ft Straight sheathing 100 lb/ft All other conditions 100 lb/ft	5.5.3.1.1	A.3.2.7.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system.	5.5.3.6.1	A.3.2.7.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used for shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building.	5.5.3.6.1	A.3.2.7.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces.	5.5.3.6.1	A.3.2.7.4	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor.	5.5.3.6.2	A.3.2.7.5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-1.	5.5.3.6.3	A.3.2.7.6	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels.	5.5.3.6.4	A.3.2.7.7		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
C	NC	N/A	U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces.	5.5.3.6.5	A.3.2.7.8		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Connections								
C	NC	N/A	U	WOOD POSTS: There is a positive connection of wood posts to the foundation.	5.7.3.3	A.5.3.3		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
C	NC	N/A	U	WOOD SILLS: All wood sills are bolted to the foundation.	5.7.3.3	A.5.3.4		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
C	NC	N/A	U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Status		Evaluation Statement		Tier 2 Reference	Commentary Reference	Comments		
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)								
Connections								
C	NC	N/A	U	WOOD SILL BOLTS: Sill bolts are spaced at 6 ft (1.8 m) or less with acceptable edge and end distance provided for wood and concrete.	5.7.3.3	A.5.3.7		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Diaphragms								
C	NC	N/A	U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	5.6.1.1	A.4.1.1		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
C	NC	N/A	U	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and have aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.3IO Structural Checklist for Building Type W2: Wood Frames, Commercial and Industrial

Table 17-7. Immediate Occupancy Checklist for Building Type W2

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Very Low Seismicity							
Seismic-Force-Resisting System							
C	NC	N/A	U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than the following values: Structural panel sheathing 1,000 lb/ft (14.6 kN/m) Diagonal sheathing 700 lb/ft (10.2 kN/m) Straight sheathing 100 lb/ft (1.5 kN/m) All other conditions 100 lb/ft (1.5 kN/m)	5.5.3.1.1	A.3.2.7.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system.	5.5.3.6.1	A.3.2.7.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used for shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building.	5.5.3.6.1	A.3.2.7.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces.	5.5.3.6.1	A.3.2.7.4	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor.	5.5.3.6.2	A.3.2.7.5	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-2.	5.5.3.6.3	A.3.2.7.6	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels.	5.5.3.6.4	A.3.2.7.7	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces.	5.5.3.6.5	A.3.2.7.8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	HOLD-DOWN ANCHORS: All shear walls have hold-down anchors attached to the end studs constructed in accordance with acceptable construction practices.	5.5.3.6.6	A.3.2.7.9
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Connections						
C	NC	N/A	U	WOOD POSTS: There is a positive connection of wood posts to the foundation.	5.7.3.3	A.5.3.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	WOOD SILLS: All wood sills are bolted to the foundation.	5.7.3.3	A.5.3.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Foundation System						
C	NC	N/A	U	DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil.		A.6.2.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high.		A.6.2.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Status	Evaluation Statement			Tier 2 Reference	Commentary Reference	Comments
Low, Moderate, and High Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)						
Seismic-Force-Resisting System						
C	NC	N/A	U	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 1.5-to-1 are not used to resist seismic forces.	5.5.3.6.1	A.3.2.7.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Diaphragms						
C	NC	N/A	U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints.	5.6.1.1	A.4.1.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation.	5.6.1.1	A.4.1.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	5.6.2	A.4.2.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	SPANS: All wood diaphragms with spans greater than 12 ft (3.6 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft (9.2 m) and have aspect ratios less than or equal to 3-to-1.	5.6.2	A.4.2.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Connections						
C	NC	N/A	U	WOOD SILL BOLTS: Sill bolts are spaced at 4 ft or less with acceptable edge and end distance provided for wood and concrete.	5.7.3.3	A.5.3.7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.17CP Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms and RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms

Table 17-34. Collapse Prevention Structural Checklist for Building Types RM1 and RM2

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Low and Moderate Seismicity							
Seismic-Force-Resisting System							
C	NC	N/A	U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 70 lb/in. ² (0.48 MPa).	5.5.3.1.1	A.3.2.4.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in. (1220 mm), and all vertical bars extend to the top of the walls.	5.5.3.1.3	A.3.2.4.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Stiff Diaphragms							
C	NC	N/A	U	TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab.	5.6.4	A.4.5.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Connections							
C	NC	N/A	U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

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C	NC	N/A	U	TRANSFER TO SHEAR WALLS: <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> Diaphragms are connected for transfer of seismic forces to the shear walls.	5.7.2	A.5.2.1
C	NC	N/A	U	TOPPING SLAB TO WALLS OR FRAMES: <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements.	5.7.2	A.5.2.3
C	NC	N/A	U	FOUNDATION DOWELS: Wall <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> reinforcement is doweled into the foundation.	5.7.3.4	A.5.3.5
C	NC	N/A	U	GIRDER–COLUMN CONNECTION: There <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
Status		Evaluation Statement		Tier 2 Reference	Commentary Reference	Comments
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)						
Stiff Diaphragms						
C	NC	N/A	U	OPENINGS AT SHEAR WALLS: <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
C	NC	N/A	U	OPENINGS AT EXTERIOR MASONRY <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6
Flexible Diaphragms						
C	NC	N/A	U	CROSS TIES: There are continuous cross <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> ties between diaphragm chords.	5.6.1.2	A.4.1.2
C	NC	N/A	U	OPENINGS AT SHEAR WALLS: <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
C	NC	N/A	U	OPENINGS AT EXTERIOR MASONRY <div><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/></div> SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name _____
 Project Number _____

C	NC	N/A	U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Connections						
C	NC	N/A	U	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. (3 mm) before engagement of the anchors.	5.7.1.2	A.5.1.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.1710 Structural Checklist for Building Types RM1: Reinforced Masonry Bearing Walls with Flexible Diaphragms and RM2: Reinforced Masonry Bearing Walls with Stiff Diaphragms

Table 17-35. Immediate Occupancy Structural Checklist for Building Types RM1 and RM2

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Very Low Seismicity							
Seismic-Force-Resisting System							
C	NC	N/A	U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SHEAR STRESS CHECK: The shear stress in the reinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 70 lb/in. ² (4.83 MPa).	5.5.3.1.1	A.3.2.4.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	REINFORCING STEEL: The total vertical and horizontal reinforcing steel ratio in reinforced masonry walls is greater than 0.002 of the wall with the minimum of 0.0007 in either of the two directions; the spacing of reinforcing steel is less than 48 in., and all vertical bars extend to the top of the walls.	5.5.3.1.3	A.3.2.4.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Connections							
C	NC	N/A	U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms.	5.7.2	A.5.2.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name _____
Project Number _____

C	NC	N/A	U	FOUNDATION DOWELS: Wall reinforcement is doweled into the foundation, and the dowels are able to develop the lesser of the strength of the walls or the uplift capacity of the foundation.	5.7.3.4	A.5.3.5			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
C	NC	N/A	U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Stiff Diaphragms									
C	NC	N/A	U	TOPPING SLAB: Precast concrete diaphragm elements are interconnected by a continuous reinforced concrete topping slab.	5.6.4	A.4.5.1			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
C	NC	N/A	U	TOPPING SLAB TO WALLS OR FRAMES: Reinforced concrete topping slabs that interconnect the precast concrete diaphragm elements are doweled for transfer of forces into the shear wall or frame elements.	5.7.2	A.5.2.3			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Foundation System									
C	NC	N/A	U	DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil.		A.6.2.3			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
C	NC	N/A	U	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story.		A.6.2.4			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Status	Evaluation Statement			Tier 2 Reference	Commentary Reference	Comments			
Low, Moderate, and High Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)									
Seismic-Force-Resisting System									
C	NC	N/A	U	REINFORCING AT WALL OPENINGS: All wall openings that interrupt rebar have trim reinforcing on all sides.	5.5.3.1.5	A.3.2.4.3			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
C	NC	N/A	U	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than 30.	5.5.3.1.2	A.3.2.4.4			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Diaphragms (Stiff or Flexible)									
C	NC	N/A	U	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length.	5.6.1.3	A.4.1.4			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

C	NC	N/A	U	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft (1.2 m) long.	5.6.1.3	A.4.1.6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities.	5.6.1.4	A.4.1.7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Flexible Diaphragms						
C	NC	N/A	U	CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	5.6.2	A.4.2.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	SPANS: All wood diaphragms with spans greater than 12 ft (3.6 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft (9.2 m) and aspect ratios less than or equal to 3-to-1.	5.6.2	A.4.2.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft (12.2 m) and have aspect ratios less than 4-to-1.	5.6.3	A.4.3.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Connections						
C	NC	N/A	U	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors.	5.7.1.2	A.5.1.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

17.18IO Structural Checklist for Building Types URM: Unreinforced Masonry Bearing Walls with Flexible Diaphragms and URMa: Unreinforced Masonry Bearing Walls with Stiff Diaphragms

Table 17-37. Immediate Occupancy Structural Checklist for Building Types URM and URMa

Status				Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments
Very Low Seismicity							
Seismic-Force-Resisting System							
C	NC	N/A	U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 30 lb/in. ² (0.21 MPa) for clay units and 70 lb/in. ² (0.48 MPa) for concrete units.	5.5.3.1.1	A.3.2.5.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Connections							
C	NC	N/A	U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls, and the connections are able to develop the lesser of the shear strength of the walls or diaphragms.	5.7.2	A.5.2.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
C	NC	N/A	U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name _____
Project Number _____

Foundation System						
C	NC	N/A	U			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DEEP FOUNDATIONS: Piles and piers are capable of transferring the lateral forces between the structure and the soil.	A.6.2.3	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SLOPING SITES: The difference in foundation embedment depth from one side of the building to another does not exceed one story high.	A.6.2.4	

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference	Comments		
Low, Moderate, and High Seismicity (Complete the Following Items in Addition to the Items for Very Low Seismicity)						
Seismic-Force-Resisting System						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following: Top story of multi-story building 9 First story of multi-story building 15 All other conditions 13	5.5.3.1.2	A.3.2.5.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids.	5.5.3.4.1	A.3.2.5.3
Diaphragms (Stiff or Flexible)						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 15% of the wall length.	5.6.1.3	A.4.1.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 4 ft (1.2 m) long.	5.6.1.3	A.4.1.6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PLAN IRREGULARITIES: There is tensile capacity to develop the strength of the diaphragm at reentrant corners or other locations of plan irregularities.	5.6.1.4	A.4.1.7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DIAPHRAGM REINFORCEMENT AT OPENINGS: There is reinforcing around all diaphragm openings larger than 50% of the building width in either major plan dimension.	5.6.1.5	A.4.1.8
Flexible Diaphragms						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown

Project Name _____
 Project Number _____

C	NC	N/A	U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 1-to-1 in the direction being considered.	5.6.2	A.4.2.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	SPANS: All wood diaphragms with spans greater than 12 ft (3.6 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 30 ft (9.2 m) and aspect ratios less than or equal to 3-to-1.	5.6.2	A.4.2.3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	NONCONCRETE FILLED DIAPHRAGMS: Untopped metal deck diaphragms or metal deck diaphragms with fill other than concrete consist of horizontal spans of less than 40 ft (12.2 m) and have aspect ratios less than 4-to-1.	5.6.3	A.4.3.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
C	NC	N/A	U	OTHER DIAPHRAGMS: Diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Connections						
C	NC	N/A	U	STIFFNESS OF WALL ANCHORS:	5.7.1.2	A.5.1.4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. (3 mm) before engagement of the anchors.		
C	NC	N/A	U	BEAM, GIRDER, AND TRUSS SUPPORTS:	5.7.4.4	A.5.4.5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads.		

Legend: C = Compliant, NC = Noncompliant, N/A = Not Applicable, U = Unknown



APPENDIX A – Photographs



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9

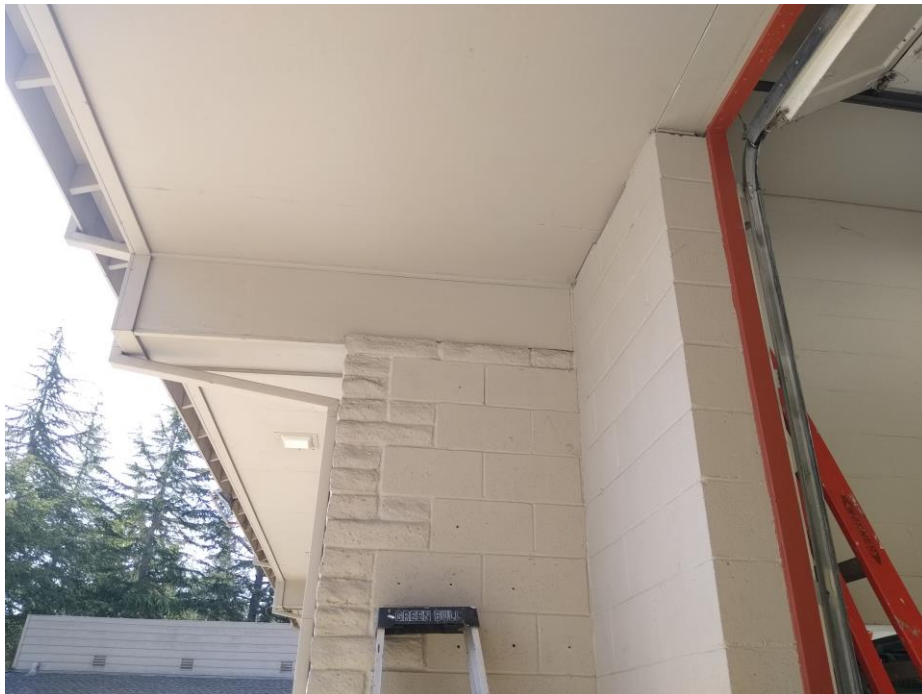


Photo 10



Photo 11



Photo 12

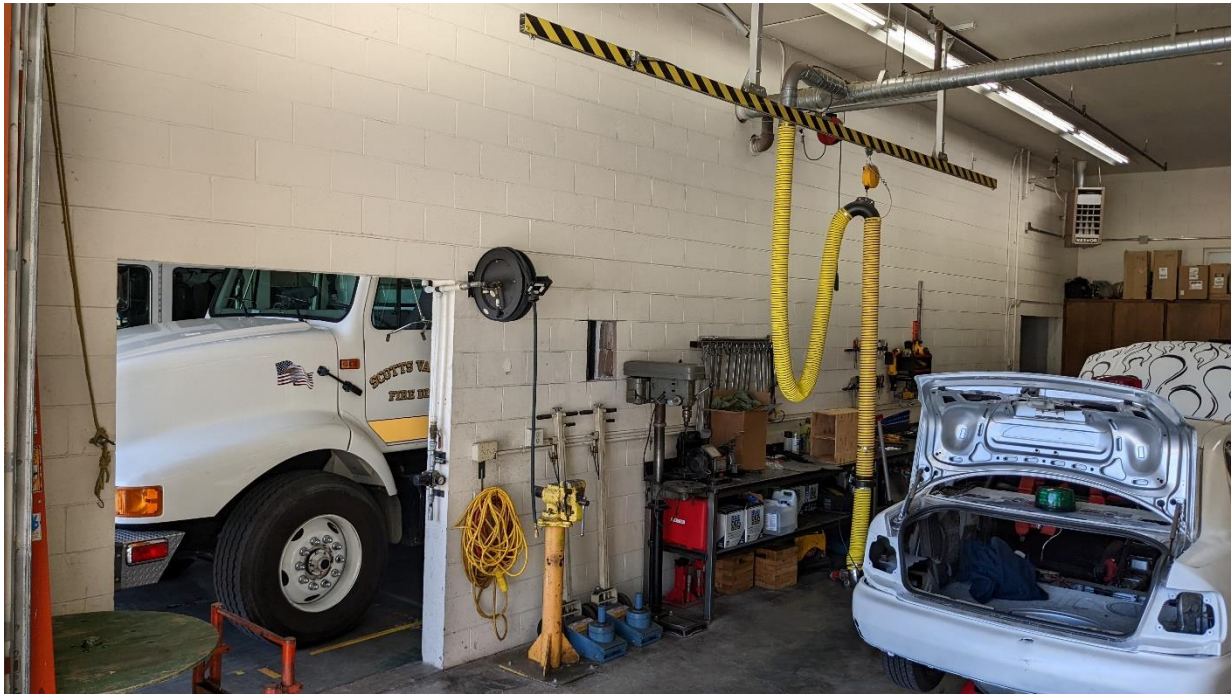


Photo 13



Photo 14



SCOTTS VALLEY FIRE PROTECTION DISTRICT

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

Date: October 12, 2022
To: Board of Directors
From: Chief Whittle
Subject: September Administrative Report

Administration

Annual TB testing and Flu shots were conducted at the end of the month.

Operations

E2512 (2012 Pierce) had the rear brakes replaced (shoes and drums) by an outside mechanic.

E2510 (2005 Pierce) was sent to High Tech Fire Apparatus in Oakdale for pump packing replacement as well as the replacement of other worn internal pump parts.

BC LoFranco spent 3 weeks at the Mosquito Fire on an assignment as a Safety Officer Trainee. BC LoFranco reported that he gained much experience and will be signed off as a Safety Officer as a result of his time on the incident.

There were several vehicle fires in the month of September. Crews were able to quickly extinguish all fires with no extension into the wildland.

BC Stubendorff is looking into the possibility of starting a UAS (Unmanned Aircraft System / Drone) program for the District which is currently in the fact finding phase. Several logistical hurdles remain including licensing, FAA authorizations, formal policies, procedures, operations, and training. BC Stubendorff has reached out to several agencies across California that have UAS programs and has received a considerable amount of information.

EMS

The new iGel airways have been placed in service on the engines replacing the King Tube. The iGel is a BLS airway that is more protective than an OPA and less invasive than the King Tube. Crews attended an in person county wide EMSIA training on application and use.

A new EMS medical bag is in trial use on E2511. Engineer Willem Post came up with the concept and the new bag would standardize ALS complements on all apparatus. The goal was to replace the traditional Pelican Box with a more ergonomic bag that could be simply configured for ease of use.

Board of Directors

Robert Campbell Edward Harmon Joseph Parker Russ Patterson Daron Pisciotta

The District purchased a Mechanical CPR Device (Lucas Device) through Stryker. The crews demoed a Lucas Device for 4 months over much of the spring and summer with much success. The new LUCAS device is expected to arrive in early December. Once arrived the device will be placed on the Battalion Chief unit.

Training

Engineer Casey Avila has been working diligently on his Acting Captain program and has been working as Captain on the engine for several shifts. He will be continuing the training through October.

A-Shift station 1 attended an Electrical and Natural Gas Bus Training at the Santa Cruz Metro.

Crews attended a county wide rope rescue training at the Watsonville training center.

Captain Cortes facilitated PCF interviews. 5 candidates were selected to progress to the background process.

FF Shaughnessy is progressing through the driving portion of his probationary training. His license test is coming up soon. FF Vandiver has completed his probationary training requirements. Both firefighters are ahead of schedule in their career development.

DFM Collins gave crews a tour of the new performance arts center located next to the Scotts Valley Library. Crews also toured the new Target store prior to opening. Captain Sundermier is working on developing a new pre plan for the store.

Prevention

Deputy Fire Marshal Collins completed 8 annual inspections/re-inspections.

Erin completed 29 construction inspections and 11 misc. inspections including defensible space and complaints.

Erin met with the SVHS haunted house coordinators to ensure fire code safety for this year's event.

Finalized the Fire Code Ordinance with the FPOs and preparing to submit to the County Board of Supervisors for approval.

Erin met with all three shifts for pre-plan tours of the Performing Arts Theater/Library assembly occupancies.

October 1st we will begin invoicing and collecting all SV City plan review fees.

An email was sent to the City of Scotts Valley regarding access and traffic concerns at the new Target shopping center which could impact emergency response.

Chief Report

I met with Branciforte Fire Director Landon to discuss Scotts Valley Fire's position in the annexation process and to address some of the misinformation that has recently been discussed in the media.

I attended the BRN community informational meeting regarding the BRN-SCO annexation and answered question from the residents of Branciforte.

Santa Cruz County LAFCO has contracted with consulting firm AP Triton to conduct a Santa Cruz County Fire Service Study. The county Chiefs met with AP Triton VP of Operations Kurt Latipow to discuss our level of participation. The study is focused on potential annexations in South County.

Scotts Valley Fire Protection District

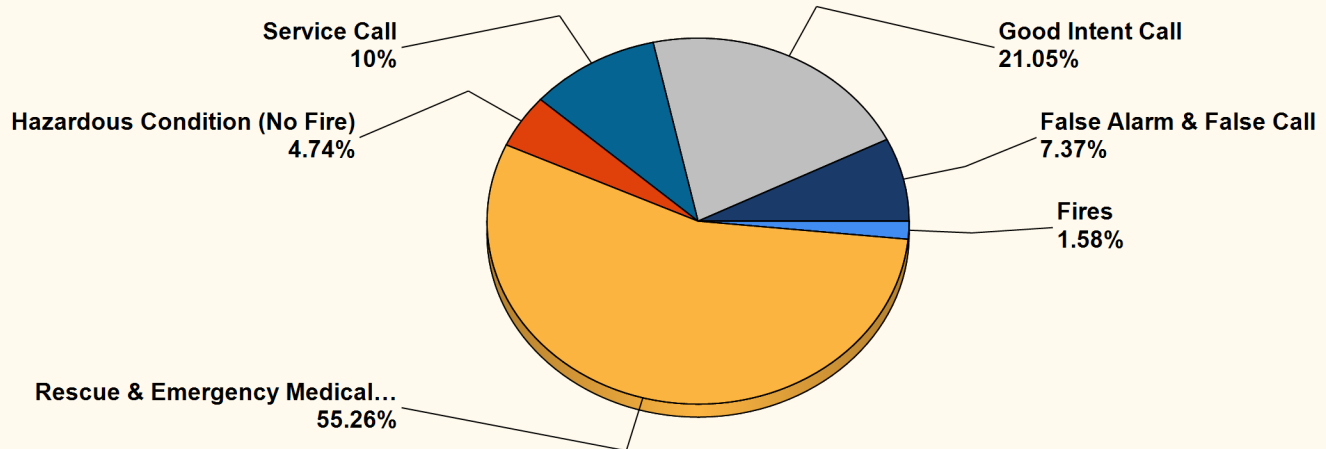
Scotts Valley, CA

This report was generated on 10/4/2022 7:22:49 AM



Breakdown by Major Incident Types for Date Range

Zone(s): All Zones | Start Date: 09/01/2022 | End Date: 09/30/2022



MAJOR INCIDENT TYPE	# INCIDENTS	% of TOTAL
Fires	3	1.58%
Rescue & Emergency Medical Service	105	55.26%
Hazardous Condition (No Fire)	9	4.74%
Service Call	19	10%
Good Intent Call	40	21.05%
False Alarm & False Call	14	7.37%
TOTAL	190	100%

Only REVIEWED and/or LOCKED IMPORTED incidents are included. Summary results for a major incident type are not displayed if the count is zero.



emergencyreporting.com
Doc Id: 553
Page # 1 of 2

Detailed Breakdown by Incident Type

INCIDENT TYPE	# INCIDENTS	% of TOTAL
111 - Building fire	1	0.53%
131 - Passenger vehicle fire	1	0.53%
162 - Outside equipment fire	1	0.53%
320 - Emergency medical service, other	1	0.53%
321 - EMS call, excluding vehicle accident with injury	96	50.53%
322 - Motor vehicle accident with injuries	5	2.63%
323 - Motor vehicle/pedestrian accident (MV Ped)	1	0.53%
324 - Motor vehicle accident with no injuries.	2	1.05%
412 - Gas leak (natural gas or LPG)	1	0.53%
424 - Carbon monoxide incident	1	0.53%
444 - Power line down	5	2.63%
460 - Accident, potential accident, other	1	0.53%
463 - Vehicle accident, general cleanup	1	0.53%
511 - Lock-out	1	0.53%
550 - Public service assistance, other	3	1.58%
553 - Public service	8	4.21%
554 - Assist invalid	6	3.16%
571 - Cover assignment, standby, moveup	1	0.53%
600 - Good intent call, other	1	0.53%
611 - Dispatched & cancelled en route	25	13.16%
622 - No incident found on arrival at dispatch address	4	2.11%
632 - Prescribed fire	1	0.53%
651 - Smoke scare, odor of smoke	7	3.68%
653 - Smoke from barbecue, tar kettle	1	0.53%
671 - HazMat release investigation w/no HazMat	1	0.53%
715 - Local alarm system, malicious false alarm	1	0.53%
733 - Smoke detector activation due to malfunction	4	2.11%
743 - Smoke detector activation, no fire - unintentional	4	2.11%
745 - Alarm system activation, no fire - unintentional	4	2.11%
746 - Carbon monoxide detector activation, no CO	1	0.53%
TOTAL INCIDENTS:	190	100%

Only REVIEWED and/or LOCKED IMPORTED incidents are included. Summary results for a major incident type are not displayed if the count is zero.



Scotts Valley Fire Protection District

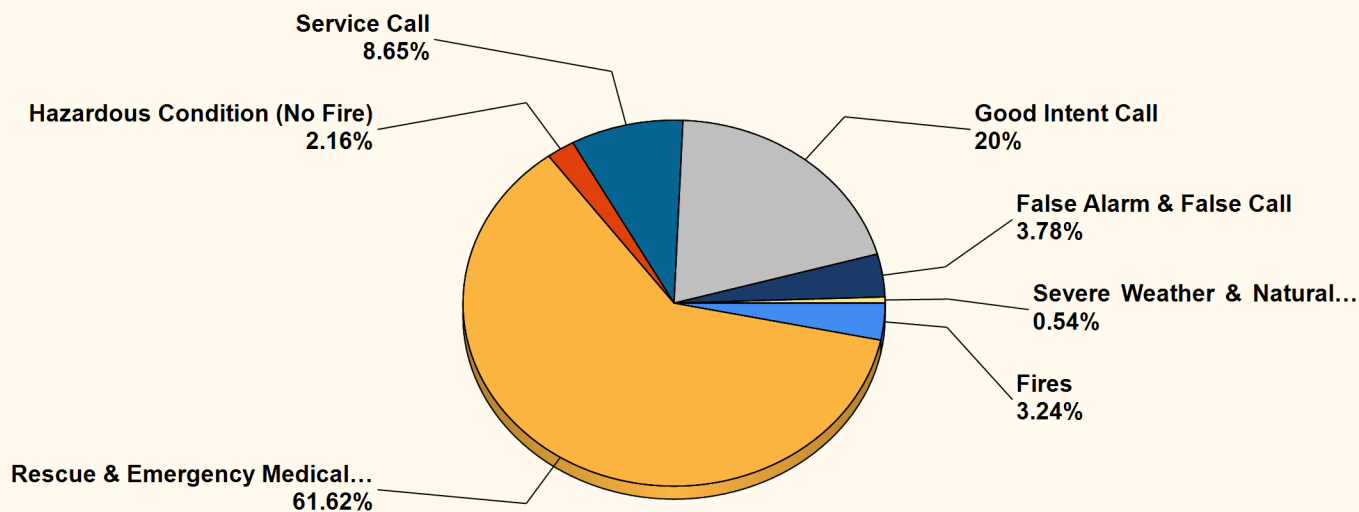
Scotts Valley, CA

This report was generated on 10/4/2022 7:25:41 AM



Breakdown by Major Incident Types for Date Range

Zone(s): All Zones | Start Date: 09/01/2021 | End Date: 09/30/2021



MAJOR INCIDENT TYPE	# INCIDENTS	% of TOTAL
Fires	6	3.24%
Rescue & Emergency Medical Service	114	61.62%
Hazardous Condition (No Fire)	4	2.16%
Service Call	16	8.65%
Good Intent Call	37	20%
False Alarm & False Call	7	3.78%
Severe Weather & Natural Disaster	1	0.54%
TOTAL	185	100%

Only REVIEWED and/or LOCKED IMPORTED incidents are included. Summary results for a major incident type are not displayed if the count is zero.



Detailed Breakdown by Incident Type

INCIDENT TYPE	# INCIDENTS	% of TOTAL
111 - Building fire	1	0.54%
113 - Cooking fire, confined to container	1	0.54%
131 - Passenger vehicle fire	2	1.08%
140 - Natural vegetation fire, other	1	0.54%
141 - Forest, woods or wildland fire	1	0.54%
321 - EMS call, excluding vehicle accident with injury	103	55.68%
322 - Motor vehicle accident with injuries	5	2.7%
323 - Motor vehicle/pedestrian accident (MV Ped)	2	1.08%
324 - Motor vehicle accident with no injuries.	3	1.62%
356 - High-angle rescue	1	0.54%
412 - Gas leak (natural gas or LPG)	2	1.08%
444 - Power line down	1	0.54%
463 - Vehicle accident, general cleanup	1	0.54%
510 - Person in distress, other	1	0.54%
550 - Public service assistance, other	1	0.54%
553 - Public service	10	5.41%
554 - Assist invalid	4	2.16%
600 - Good intent call, other	1	0.54%
611 - Dispatched & cancelled en route	29	15.68%
622 - No incident found on arrival at dispatch address	2	1.08%
651 - Smoke scare, odor of smoke	2	1.08%
653 - Smoke from barbecue, tar kettle	1	0.54%
671 - HazMat release investigation w/no HazMat	2	1.08%
700 - False alarm or false call, other	4	2.16%
730 - System malfunction, other	1	0.54%
743 - Smoke detector activation, no fire - unintentional	2	1.08%
800 - Severe weather or natural disaster, other	1	0.54%
TOTAL INCIDENTS:	185	100%

Only REVIEWED and/or LOCKED IMPORTED incidents are included. Summary results for a major incident type are not displayed if the count is zero.



Scotts Valley Fire Protection District

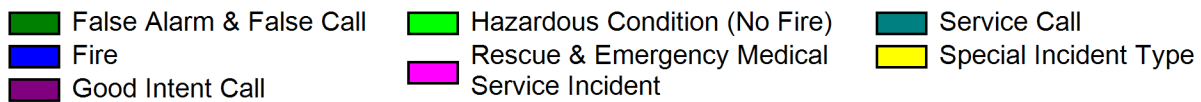
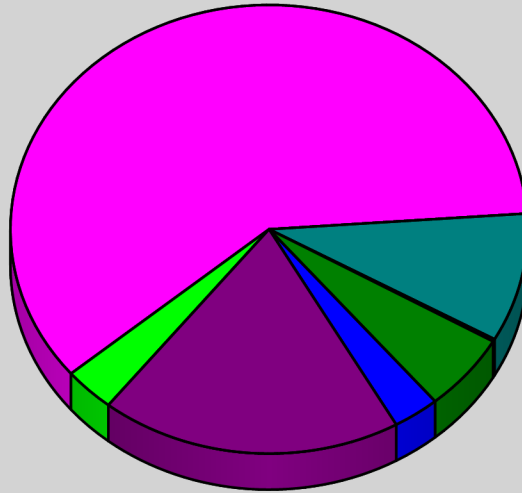
Scotts Valley, CA

This report was generated on 10/4/2022 7:24:46 AM



Major Incident Types by Month for Date Range

Start Date: 01/01/2022 | End Date: 12/31/2022



INCIDENT TYPE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG
False Alarm & False Call	9	9	7	9	11	7	13	12
Fire	2	4	6	5	4	5	7	10
Good Intent Call	44	32	31	42	38	23	37	21
Hazardous Condition (No Fire)	7	7	4	6	5	6	5	4
Rescue & Emergency Medical Service Incident	114	86	108	100	122	119	115	114
Service Call	16	7	17	12	24	18	24	15
Special Incident Type						1	1	
Total	192	145	173	174	204	179	202	176

Only REVIEWED incidents included



emergencyreporting.com

Doc Id: 495

Page # 1 of 2

INCIDENT TYPE	SEP	OCT	TOTAL
False Alarm & False Call	14	1	92
Fire	3	2	48
Good Intent Call	40	3	311
Hazardous Condition (No Fire)	9		53
Rescue & Emergency Medical Service Incident	105	7	990
Service Call	19	1	153
Special Incident Type		1	3
Total	190	15	1650

Only REVIEWED incidents included





Michelle Mayfield <mmayfield@scottsvalleyfire.com>

THANK YOU!

1 message

Patrice Fernald <patriceferald@sbcglobal.net>
To: info@scottsvalleyfire.com

Hello Scotts Valley Fire Department,

A big THANK YOU for coming to Baymonte Christian School to cool us off! We loved it! It was SO hot that day and we all really appreciated you showing up with a huge truck full of cold water

We appreciate YOU!!!

THANK YOU!

Sincerely,

Patrice Fernald (PE Teacher)
And Baymonte Christian School



SV FIRE DEPARTMENT THANK YOU!



From: Baymonte
Christian School



City of Yreka

701 Fourth Street • Yreka, CA 96097
(530) 841-2386 • FAX (530) 842-4836



August 16, 2022

Multi-Agency Support
Providers - McKinney Fire

Greetings from Yreka!

The City of Yreka wishes to express its heartfelt gratitude for the support numerous professionals, from a multitude of agencies, provided during the McKinney fire. This tragic and violent fire seriously impacted residents, the community, and government with some even losing their lives. We are also aware that some of your firefighters were injured in the line of duty. We wish them a full recovery! We want to thank and recognize the professionals who gave time, and extreme effort while risking their lives, and being away from their families, to help protect the City of Yreka during this raging fire.

The McKinney fire was a very tragic event being considered the deadliest wildfire in California in 2022, and the second most destructive of the year, thus far. Sadly, human lives perished, approximately 185 structures were destroyed, and 60,392 acres burned during this unforgiving wildfire. As you might imagine, this event rocked the core of who we are as a community. Your persistence in fighting this fire, and commitment to the greater good were determining factors in keeping our community safe and calm. The sacrifices and hard work of your fire and emergency response professionals/teams saved lives! Thank you for making a difference in the lives of City of Yreka residents and surrounding areas.

We offer our most sincere appreciation for your assistance when this community needed it most. We are forever indebted to all of you for your commitment, and persistence in fighting the McKinney fire.

With sincere gratitude,

Duane Kegg, Yreka Mayor for the City Council





Ron Whittle <rwhittle@scottsvalleyfire.com>

Fwd: Compliment for last night's crew on 2511

1 message

Ron Whittle <rgwhittle@gmail.com>

Wed, Sep 14, 2022 at 1:18 PM

To: Ron Whittle <rwhittle@scottsvalleyfire.com>

Ron

Sent from my iPhone

Begin forwarded message:

From: Jeff Hill <jhill@cruzio.com>

Date: September 14, 2022 at 07:02:26 PDT

To: rgwhittle@gmail.com

Subject: Compliment for last night's crew on 2511

Hi Ron,

Jeff Hill from the Sportsmen's Club here.

Last night my wife had a medical issue at around 1:30 AM. I called 911, and Engine 2511 was dispatched. The crew was thorough, professional and very helpful and caring. It was a great relief to have such competent help quickly available.

She's probably going to be in Dominican for a couple days.

Jeff Hill
jhill@cruzio.com
(408) 859-2103



With sincere gratitude for all you do

Dear Scotts Valley Fire Department,

World Gratitude Day is this week and our 1440 employees want to express our appreciation for all you do to keep our campus and community safe!

Sincerely,

Katie D.

Katie R.

Janet

Deborah Boh

Jyn Stephens
Caroline Ocasio

Lalita Deboil

STEVE CLARK

Christina McQueen

Mackenzie Murphy

1440
MULTIVERSITY

1440.ORG • CREATING HOPE FOR LIVING WELL

Jim Johnston

YANER

Jasmine Schurick