SACRAMENTO/YOLO MOSQUITO
& VECTOR CONTROL DISTRICT
BOARD OF TRUSTEES REGULAR MEETING

8631 Bond Road
Elk Grove, CA 95624

AGENDA
October 18, 2022
10:00 AM

In compliance with the Americans with Disability Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, please contact the District office at (916) 685-1022 or (916) 685-5464 (fax). Requests must be made as early as possible, and at least one-full business day before the start of the meeting.
Documents and materials relating to an open session agenda item that are provided to the SYMVCD Board less than 72 hours prior to a regular meeting will be available for public inspection and copying at 8631 Bond Road, Elk Grove, Ca 95624. The documents will also be available on the agency's website at www.fightthebite.net.

***Note**: District Board Members, staff and the public will participate in this meeting via teleconference. In-person attendance at the District Offices will not be permitted, please refer to https://www.fightthebite.net/about/about-the-board/ for instructions on how to sign-in.

CALL TO ORDER:
- **Roll Call**
- **Pledge of Allegiance**

1. **Items for Approval by General Consent:**
   a. **Minutes of the September 20, 2022 Board of Trustees Meeting**
   b. **Expenditures for September 2022**
   c. **District Investment Report for Period Ending June 30, 2022**
   d. **Annual Cooperative Agreement Between the California Department of Public Health and the Sacramento-Yolo Mosquito and Vector Control District**

2. **Opportunity for Public Comment**
   This item is reserved for members of the public who wish to speak on items not on the agenda

3. **Reports to the Board**
   a. **Manager's Report**
   b. **Reports from District Departments**
      - **Lab/Surveillance**
      - **Ecological Management**
      - **Biological Control**

- **Larval and Adult Control**
- **Public Outreach**

4. **Board Review and Discussion of CalPERS Valuation Reports**

5. **Closed Session – Conference with Labor Negotiators (Government Code Section 54957.6 – Unrepresented Employee: Assistant Manager)**

6. **Board/Staff Reports and Requests**

7. **Adjournment**

Sacramento-Yolo Mosquito and Vector Control District

October 18, 2022 Board Meeting

1. Items for Approval by General Consent:

a. Minutes of the September 20, 2022 Board of Trustees Meeting;
b. Expenditures for September 2022;
c. District Investment Report for Period Ending June 30, 2022;
d. Annual Cooperative Agreement Between the California Department of Public Health and the Sacramento-Yolo Mosquito and Vector Control District;

Recommendation:

Approve the Items by General Consent

MINUTES OF THE SEPTEMBER 20, 2022 MEETING OF THE BOARD OF TRUSTEES OF THE SACRAMENTO-YOLO MOSQUITO & VECTOR CONTROL DISTRICT

Location: Virtual Meeting via Zoom
Time: 10:00 a.m.

Call to Order: The meeting was called to order by Board President Marcia Mooney at 10:01 a.m.

Trustees Present:

Marcia Mooney	President	Galt
Gar House	Vice President	Winters
Sean Denny	Secretary	Woodland
Janell Darroch		West Sacramento
Craig Burnett		Folsom
Lyndon Hawkins		Elk Grove
Jayna Karpinski-Costa		Citrus Heights
Raymond LaTorre		Sacramento
Bruce Eldridge		Yolo County
Staci Gardiner		Isleton
Charles Duty		Sacramento County
Robert McGarvey		Rancho Cordova

Trustee Denny joined the meeting at 10:22am. Trustee Barker was absent

Staff Present:

Gary Goodman	Manager
Jeni Buckman	Legal Counsel
Sarah Wheeler	Laboratory Director
Steve Ramos	Program Coordinator
Luz Robles	Public Information Officer
Tony Hedley	Fisheries Supervisor
Marty Scholl	Ecological Management Supervisor

Roll Call
This meeting was by video teleconference. Attendance was taken by Roll Call. All Trustees aside from Trustee Barker were in attendance and a quorum was present.

Pledge of Allegiance
All phones and electronic devices are requested to be silenced during the Pledge of Allegiance and for the duration of the meeting.

1. **Board Review and Consideration to Authorize the Board Meeting be Conducted by Teleconference**

   On a motion by Trustee Hawkins and seconded by Trustee Gardiner, the Board voted to approve this item. The vote was taken by roll call and the motion passed by the following votes: Ayes: 11, Noes: 0, Absent: 2

2. Items for Approval by General Consent

On a motion by Trustee Burnett and seconded by Trustee LaTorre, the Board voted to approve the General Consent Items. The vote was taken by roll call and the motion passed by the following vote: Ayes: 11, Noes: 0, Absent: 2

a. Minutes of the August 16, 2022 Board of Trustees Meeting
b. Expenditures for August 2022

3. Opportunity for Public Comment

This item is reserved for members of the public who wish to speak on items not on the agenda.

No Public was present in the meeting

4. Reports to the Board

Manager's Report: General Manager Gary Goodman gave an update on West Nile virus activity noting and the District's response. He noted that the virus activity is still well below what the District tends to have although there was an uptick in virus over the last few weeks since the last meeting. He discussed the new invasive species finds and that the District will be aggressively targeting these next few weeks as the latter months of summer and early fall tends to be their peak activity. He referenced the District received their CalPERS valuations recently and that the unfunded liability has gone down significantly, however the returns in the current fiscal year are not trending very well and we should anticipate a higher valuation next year as the reports are always one year behind. The District audit is expected to be completed in mid October with the hopes of a report to the Board by the end of the year.

Reports from District Departments: Written reports were provided in the Board packet from each department. Department supervisors gave an oral presentation and were available to answer any questions.

Lab/Surveillance: Laboratory Director, Sarah Wheeler provided an oral report in addition to her written report. The abundance of both *Culex tarsalis* and *Culex pipiens* is trending downward. West Nile virus activity is higher in Yolo County than in Sacramento, but both counties have lower activity WNV activity than 2021. When the number of pools tested thus far in 2022 is compared to the same time in 2021, 992 fewer pools were collected and tested in 2022. This can be attributed to two factors, first mosquito abundance, especially *Culex tarsalis* as measured by CO2 traps, is lower than previous years. Perhaps in part due to less rice production. The second factor is that lower than normal WNV activity is not prompting additional trapping as testing which is routinely done as a response to WNV activity. In the last month three of five of the Sentinel chicken flocks tested positive for WNV antibodies. The positive flocks were in Isleton, Knights Landing and Sacramento. The Flocks in Dunnigan and Rancho Murrieta have not tested positive for WNV antibodies. We anticipate that September will be a peak month for *Aedes aegypti* activity in Sacramento and Yolo Counties, two new infestations were discovered in South Natomas and Rio Linda. Technicians will continue trapping efforts to monitor known *Aedes aegypti* infestations and to surveil for new ones.

Ecological Management: Ecological Management Supervisor, Marty Scholl, provided an oral report in addition to his written report. Marty highlighted that staff have been working on removing beaver dams within Elder Creek in conjunction with Sacramento County. He submitted a warrant application to the Sacramento County Superior Court for an additional eight backyard pool properties. Staff will be utilizing the newly purchased swing boom mower attached to the District's trackloader tractor for brush cutting starting immediately. Cemetery inspections and treatments are in full swing with treatments of watersorb packets being added to any vases that are found to be holding water. Drought conditions are causing a higher instance of mosquito breeding due to competition for standing water. Fall flooding has begun with the CDFW Wildlife Area and CRP starting habitat flooding on select fields. The Wildlife Area will be re-flooding three of the harvested wild rice fields to provide early waterfowl habitat. This year due to a lack of water availability, only two privately owned duck clubs will be starting one field each early before October 1st and will be participating in the District's fall Flooding program. Staff will continue to communicate with all duck club and wetland owners as conditions may change rapidly. Both Leading Edge with the application drones and Farm Air are both ready for treatments as the need arises.

Biological Control: Fisheries Supervisor, Tony Hedley provided an oral report in addition to his written report. Tony reported on the fish stocking in rice fields and fish usage to date, regular fisheries maintenance activities and projects including dissolved oxygen levels and testing of ideal stocking rates. He also discussed the process of pond rehabilitation and included pictures showing the cleaning of the bottom of the ponds once drained.

Larval and Adult Control: Program Coordinator Steve Ramos provided an oral report in addition to his written report. Steve reported on department activities including Aerial Applications, Trials, Culex and West Nile Virus control, and Invasive Aedes control. Rice larvicide treatments are declining as water begins to drain from rice fields, but adult mosquito control activities should be expected to continue as mosquitoes lose harborage which may increase abundance in traps. Preparation for duck ponds and wetland treatments are underway as the District waits to see what water availability there will be due to ongoing drought conditions and curtailments. Control staff has been responding to Aedes detections with both early morning WALS, ULV treatments and continued trapping.

Public Outreach: Public Information Officer, Luz Maria Robles provided an oral report in addition to her written report. Luz talked about the Districts outreach efforts especially in light of the newest detections of invasive *Aedes* mosquitoes in the city of Sacramento. She talked about the District's swift response issuing a press release specific to this new detection while at the same reminding residents that West Nile virus is still a concern. Luz also discussed social media messaging specific to invasive mosquitoes, attending events in the current detection sites along with other regular outreach opportunities in September. Lastly she mentioned upcoming speaking opportunities and other collaboration efforts.

The Board went into closed session at 11:02am.

5. **Closed Session Conference with District Labor Negotiators (Ad Hoc Committee: (Trustees Burnett, Denny and Hawkins)) -Unrepresented Employee (Gov. Code § 54957.6): Manager**

The Board met in closed session to discuss the Manager's contract with the Ad Hoc Committee. The Board came out of closed session at 11:17am with no action taken.

6. Board Review and Consideration for Approval of Amendment to General Manager Employment Agreement

On a motion by Trustee Denny and seconded by Trustee McGarvey, the Board voted to approve a new amendment to the Manager's contract based on the recommendations of the Ad Hoc Committee. The vote was taken by roll call and the motion passed by the following vote: Ayes: 11, Noes: 0, Absent: 2

7. Board/Staff Reports and Requests

District Manager Gary Goodman informed the Board of the dates of the upcoming MVCAC meeting and AMCA annual meetings. Mr. Goodman gave an update on the recruitment process for the Administrative Manager and the Assistant Manager. He reminded the Board that the next Meeting of the Board will be on October 18th, 2022 and will be held via Zoom.

8. ADJOURNMENT

The meeting adjourned at 11:41am

I certify that the above minutes substantially reflect the general business and actions taken by the Board of Trustees at the September 20, 2022, meeting.

____

Gary Goodman, Manager

Approved as written, and/or corrected, by the Board of Trustees at the October 18th, 2022, meeting.

____

Sean Denny, Board Secretary

Check History Report
Sorted By Check Number
Activity From: 9/1/2022 to 9/30/2022

Sacramento Yolo MVCD (SYC)

Bank Code: U US Bank

Check Number	Check Date	Vendor Number	Name	Check Amount	Check Type
056055	9/1/2022	0000504	US Bank	51,637.36	Auto
056056	9/13/2022	0002428	Benefit Coordinators Corp.	9,218.00	Auto
056057	9/13/2022	0000267	Kaiser Foundation Health Plan	47,528.60	Auto
056058	9/13/2022	0000957	Sutter Health Plus	10,100.12	Auto
056059	9/13/2022	0000531	Western Health Advantage	6,411.49	Auto
056060	9/13/2022	0000531	Western Health Advantage	802.09	Auto
056061	9/13/2022	0002584	A1 Towing	526.00	Auto
056062	9/13/2022	0000006	Adapco Inc	162,724.05	Auto
056063	9/13/2022	0002425	Aleshire & Wynder, LLP	319.00	Auto
056064	9/13/2022	0000014	Alhambra & Sierra Springs	75.40	Auto
056065	9/13/2022	0000018	ANDKO Building Maintenance Inc.	4,804.94	Auto
056066	9/13/2022	0000034	AutoZone Inc	1,260.21	Auto
056067	9/13/2022	0002541	Barnes Welding	1,129.39	Auto
056068	9/13/2022	0001019	Cintas Corporation	3,057.25	Auto
056069	9/13/2022	0000117	City of Woodland	635.12	Auto
056070	9/13/2022	0000119	Clarke Mosquito Control Products Inc	77,623.10	Auto
056071	9/13/2022	0000126	Complete Welders Supply Inc	1,846.09	Auto
056072	9/13/2022	0000128	Consolidated Communications	2,207.04	Auto
056073	9/13/2022	0000134	Cosumnes Community Services Dist	100.00	Auto
056074	9/13/2022	0002586	Elegant Oak Farm	300.00	Auto
056075	9/13/2022	0000184	Elk Grove Lock and Safe Company	116.01	Auto
056076	9/13/2022	0000186	Elk Grove Water District	348.78	Auto
056077	9/13/2022	0000502	ES Opco USA LLC	96,375.24	Auto
056078	9/13/2022	0000198	Factory Motor Parts Co	184.36	Auto
056079	9/13/2022	0000199	Farm Air Flying Service	98,871.15	Auto
056080	9/13/2022	0000202	Ferrellgas	26.03	Auto
056081	9/13/2022	0000958	GreatAmerica Financial Services	423.63	Auto
056082	9/13/2022	0001233	Grow West	205.48	Auto
056083	9/13/2022	0002540	Hippensteel Group	1,608.75	Auto
056084	9/13/2022	0000240	Hunt & Sons Inc	14,534.89	Auto
056085	9/13/2022	0000938	Jim Hesseltine's Tire Service, Inc.	442.36	Auto
056086	9/13/2022	0000277	Kimball Midwest	1,048.98	Auto
056087	9/13/2022	0000942	KQCA My58	15,210.00	Auto
056088	9/13/2022	0000497	MagneGas Welding Supply	89.08	Auto
056089	9/13/2022	0000306	Maita Chevrolet	2,008.31	Auto
056090	9/13/2022	0000356	OReilly Automotive Stores Inc	441.41	Auto
056091	9/13/2022	0000367	PG & E	227.25	Auto
056092	9/13/2022	0000370	Pitney Bowes	292.60	Auto
056093	9/13/2022	0000388	Republic Services #922	118.03	Auto
056094	9/13/2022	0002546	Resource Staffing Group	7,910.88	Auto
056095	9/13/2022	0000424	Safe Side Security	384.00	Auto
056096	9/13/2022	0000451	SMUD	5,576.51	Auto
056097	9/13/2022	0000454	Spark Creative Design	1,955.63	Auto
056098	9/13/2022	0001234	T-Mobile	1,453.88	Auto
056099	9/13/2022	0000492	Top Rank Heating Air Conditioning Inc	589.79	Auto
056100	9/13/2022	0002407	Valley Fire & Security	69.50	Auto
056101	9/13/2022	0000515	Valley Tire Center	51.99	Auto
056102	9/13/2022	0000518	Vector Disease Control International	52,083.33	Auto
056103	9/13/2022	0000526	VWR International Inc	178.16	Auto
056104	9/13/2022	0002585	Winters Community Corazon	50.00	Auto
056105	9/26/2022	0002541	Barnes Welding	5,444.18	Auto
056106	9/26/2022	0000038	Bartkiewicz Kronick & Shanahan	4,068.33	Auto
056107	9/26/2022	0001011	Buckmaster Office Solutions	131.77	Auto
056108	9/26/2022	0000126	Complete Welders Supply Inc	37.71	Auto

Check History Report
Sorted By Check Number
Activity From: 9/1/2022 to 9/30/2022

Sacramento Yolo MVCD (SYC)

Bank Code: U US Bank

Check Number	Check Date	Vendor Number	Name	Check Amount	Check Type
056109	9/26/2022	0000181	Elk Grove Dodge	32.44	Auto
056110	9/26/2022	0001479	Elk Grove Screen Printing	1,783.26	Auto
056111	9/26/2022	0001233	Grow West	75.10	Auto
056112	9/26/2022	0000240	Hunt & Sons Inc	15,721.28	Auto
056113	9/26/2022	0000938	Jim Hesseltine's Tire Service, Inc.	20.24	Auto
056114	9/26/2022	0002352	Kingsley Bogard, LLP	41,768.77	Auto
056115	9/26/2022	0002350	Linde Gas and Equipment INC.	290.68	Auto
056116	9/26/2022	0000315	Marty Scholl	389.07	Auto
056117	9/26/2022	0002543	Pacific4	2,540.65	Auto
056118	9/26/2022	0000516	Papé Machinery Inc.	625.36	Auto
056119	9/26/2022	0000367	PG & E	15.27	Auto
056120	9/26/2022	0002546	Resource Staffing Group	1,810.80	Auto
056121	9/26/2022	0000562	RKL eSolutions, LLC	1,487.50	Auto
056122	9/26/2022	0000454	Spark Creative Design	3,215.60	Auto
056123	9/26/2022	0000461	Stericycle Inc	91.82	Auto
056124	9/26/2022	0000475	Target Specialty Products	80,102.50	Auto
056125	9/26/2022	0000515	Valley Tire Center	26.00	Auto
056126	9/26/2022	0001471	Walker's Office Supply	332.55	Auto
056127	9/26/2022	0000529	Waste Management	235.48	Auto
056128	9/30/2022	0000043	Benefit Coordinators Corporation	3,372.54	Auto
056129	9/30/2022	0000084	CA State Disbursement Unit	350.00	Auto
056130	9/30/2022	0001035	Operating Engineers Local Union No. 3	1,206.00	Auto
W00294	9/1/2022	0000087	CalPERS Financial Reporting & Accounting Services	86,640.52	Wire Transfer
W00295	9/30/2022	0000511	US Treasury Internal Revenue Service	68,892.70	Wire Transfer
W00296	9/30/2022	0000176	EDD	18,015.87	Wire Transfer
W00297	9/30/2022	0000086	CalPERS 457 Plan	16,929.46	Wire Transfer
W00298	9/30/2022	0000087	CalPERS Financial Reporting & Accounting Services	83,338.09	Wire Transfer
W00299	9/30/2022	0000339	Nationwide Retirement Solutions	3,925.00	Wire Transfer
W00300	9/30/2022	0000339	Nationwide Retirement Solutions	1,550.00	Wire Transfer
			Bank U Total:	1,129,647.80	
			Report Total:	1,129,647.80	

I hereby authorize the use of my signature plate on
the above-listed warrants, 056055-056130, and EFTs

Signature Date

Marcia Mooney, President of the Board

Sacramento/Yolo M.V.C.D.
STATEMENT OF OPERATION

	3Months Ended September30 2022	*Annual Budget*	*Unused*
Revenue			
REVENUE	6,830.51	0.00	6,830.51
TOTAL Revenue	6,830.51	0.00	6,830.51
Expenditures			
SALARIES/BENEFITS/WC			
SALARIES/BENEFITS/WC	4,446,537.57	10,114,835.00	5,668,297.43
TOTAL Salaries	4,446,537.57	10,114,835.00	5,668,297.43
OPERATIONAL			
LIABILITY INSURANCE	240,624.00	240,624.00	0.00
AUDITING/FISCAL	0.00	18,000.00	18,000.00
COMMUNICATIONS	16,253.65	99,000.00	82,746.35
PUBLIC INFORMATION	135,469.12	595,500.00	460,030.88
STRUCTURE & GROUNDS	12,903.70	69,000.00	56,096.30
MEMBER/TRAINING	30,163.56	148,000.00	117,836.44
DISTRICT OFFICE EXPENSES	4,197.58	22,500.00	18,302.42
PROFESSIONAL SERVICES	98,732.20	297,000.00	198,267.80
MATERIALS & SUPPLIES	27,587.84	22,750.00	(4,837.84)
RENTS & LEASES - Admin	2,283.20	11,550.00	9,266.80
SAFETY PROGRAM	270.00	5,000.00	4,730.00
UTILITIES	20,219.70	120,000.00	99,780.30
AIRCRAFT SERVICES	286,063.26	1,074,000.00	787,936.74
ECOLOGICAL MANAGEMENT	28.62	14,700.00	14,671.38
MICROBIAL	563,493.35	1,200,000.00	636,506.65
INSECT GROWTH REGULATOR	498,986.28	1,133,000.00	634,013.72
INSECTICIDES	162,724.05	700,000.00	537,275.95
FISHERIES	5,224.00	36,000.00	30,776.00
GEOGRAPHIC INFO SYSTEMS	886.00	9,000.00	8,114.00
INFORMATION TECHNOLOGY	10,522.11	80,000.00	69,477.89
CONTROL OPERATIONS	6,384.17	66,000.00	59,615.83
VEHICLE PARTS/LABOR	32,315.73	121,000.00	88,684.27
LAB SERVICES	52,030.06	235,300.00	183,269.94
GAS & PETROLEUM	78,752.73	300,000.00	221,247.27
TOTAL Total Operational	2,286,114.91	6,617,924.00	4,331,809.09

Sacramento-Yolo
MOSQUITO & VECTOR
CONTROL DISTRICT

SACRAMENTO COUNTY
8631 Bond Road
Elk Grove, CA 95624

(800) 429-1022
www.FIGHTtheBITE.net

Sacramento-Yolo Mosquito and Vector Control District
Investment Report

The District investment policy authorizes District funds and monies to be invested in only one or a combination of the following institutions and investment types:

A. Yolo County Treasurer Investment Pool
B. State Treasurer's Local Agency Investment Fund (L.A.I.F.)
C. Member and Property Contingency Fund deposits with the Vector Control Joint Powers Agency (VCJPA)
D. Prefunding of Other Post-Employment Benefits (OPEB) through California Public Employer's Retiree Benefit Trust Program (CERBT)

As the District receives revenue from taxes and other resources, the funds are deposited with the Yolo County Treasurer. The following is the interest earnings, fund balances, and investments of the District for the quarter ending June 30, 2022.

Institution		Earnings	Total as of 06/30/2022
Yolo County Treasurer Investment Pool	0.828%*	$5,181.93	$1,433,069.87
L.A.I.F.	0.75%	$21,689.58	$14,229,604.88
VCJPA-Member Contingency Fund	1.54%	$(25,256.00)	$1,673,909.00
CERBT-Strategy 3		$(219,894.39)	$2,018,934.87
		District Total:	**$19,355,518.62**

**Rates are reflected as annualized earning rates.*

Sacramento-Yolo Mosquito & Vector Control District
CERBT Strategy 3
Entity #: SKB8-1375523307
Quarter Ended June 30, 2022

Market Value Summary:

	QTD Current Period	Fiscal Year to Date
Beginning Balance	$2,239,276.11	$2,263,350.19
Contribution	0.00	0.00
Disbursement	0.00	0.00
Transfer In	0.00	0.00
Transfer Out	0.00	0.00
Investment Earnings	(219,894.39)	(242,506.94)
Administrative Expenses	(258.09)	(1,102.36)
Investment Expense	(188.76)	(806.02)
Other	0.00	0.00
Ending Balance	$2,018,934.87	$2,018,934.87
FY End Contrib per GASB 74 Para 22	0.00	0.00
FY End Disbursement Accrual	0.00	0.00
Grand Total	$2,018,934.87	$2,018,934.87

Unit Value Summary:

	QTD Current Period	Fiscal Year to Date
Beginning Units	123,845.370	123,845.370
Unit Purchases from Contributions	0.000	0.000
Unit Sales for Withdrawals	0.000	0.000
Unit Transfer In	0.000	0.000
Unit Transfer Out	0.000	0.000
Ending Units	123,845.370	123,845.370
Period Beginning Unit Value	18.081224	18.275612
Period Ending Unit Value	16.302060	16.302060

Please note the Grand Total is your actual fund account balance at the end of the period, including all contributions per GASB 74 paragraph 22 and accrued disbursements. Please review your statement promptly. All information contained in your statement will be considered true and accurate unless you contact us within 30 days of receipt of this statement. If you have questions about the validity of this information, please contact CERBT4U@calpers.ca.gov.

Date	Description	Amount	Unit Value	Units	Check/Wire	Notes

Client Contact:
CERBT4U@CalPERS.ca.gov

County of Yolo
www.yolocounty.org

CHAD RINDE, CPA
Chief Financial Officer
TOM HAYNES
Assistant Chief Financial Officer

DEPARTMENT OF FINANCIAL SERVICES
625 Court Street, Room 102
PO BOX 1995
WOODLAND, CA 95776
PHONE: (530) 666-8190
FAX: (530) 666-8215
EMAIL: DFS@yolocounty.org

- *Financial Leadership*
- *Budget & Financial Planning*
- *Treasury & Finance*
- *Tax & Revenue Collection*
- *Financial Systems Oversight*
- *Accounting & Financial Reporting*
- *Internal Audit*
- *Procurement*

August 29, 2022

Mr. Gary Goodman
Sacramento-Yolo Mosquito Abatement District
8631 Bond Road
Elk Grove, CA 95624

Dear Mr. Goodman:

Listed below for your information and that of the Board of Directors, is data pertaining to interest earnings, fund balances and investments of the District for the quarter ended June 30, 2022. The Yolo County Treasurer's Investment Report is available electronically. Should you or the Board wish additional information or have any questions, please let me know.

PERIOD	YOLO COUNTY	LAIF	EARNINGS
Quarter ending June 30, 2022:	0.828%*		$ 5,181.93
Quarter ending June 30, 2022:		0.75%	$ 21,689.58

Placement of Funds as of June 30, 2022:

Yolo County Treasurer's Pool (Fund 6953)	$ 1,433,069.87
Flexible Spending Account	18,559.42
LAIF	14,229,604.88
Total	$ 15,681,234.17

*Rates are reflected above as annualized earning rates.

Sincerely,

Sou Xiong
Accounting Manager

Vector Control Joint Powers Agency

Member Contingency Fund

For the Quarter Ended

June 30, 2022

Member District	Balance at Beginning of Quarter	Contribution	(Withdrawals)	Interest Earned	Allocated Admin.	Balance at End of Quarter
Alameda County	356,439			(5,290)	(8)	351,141
Burney Basin	34,555			(513)	(1)	34,041
Butte County	322,393			(4,785)	(7)	317,601
Coachella Valley	844,429			(12,533)	(19)	831,877
Coalinga-Huron	7,679			(114)	0	7,565
Colusa	88,911			(1,320)	(2)	87,589
Compton Creek	67,265			(998)	(2)	66,265
Consolidated	413,488			(6,137)	(9)	407,342
Contra Costa	1,236,499		(440)	(18,348)	(28)	1,217,683
Durham	4,190			(62)	0	4,128
Fresno	213,278			(3,165)	(5)	210,108
Glenn County	41,571			(617)	(1)	40,953
Greater Los Angeles County	1,490,280			(22,118)	(33)	1,468,129
Lake County	136,426			(2,025)	(3)	134,398
Los Angeles County West	725,829			(10,772)	(16)	715,041
Marin-Sonoma	808,593			(12,001)	(18)	796,574
Monterey County	18,794			(279)	0	18,515
Napa County	1,302,274			(19,328)	(29)	1,282,917
Northwest	332,555			(4,936)	(7)	327,612
Orange County	426,950			(6,337)	(10)	420,603
Oroville	11,530			(171)	0	11,359
Pine Grove	31,344	819		(471)	(1)	31,691
Placer	233,133			(3,460)	(5)	229,668
Sacramento-Yolo	1,699,165			(25,218)	(38)	1,673,909
San Gabriel Valley	129,112			(1,916)	(3)	127,193
San Joaquin County	692,245			(10,274)	(15)	681,956
San Mateo County	482,798			(7,165)	(11)	475,622
Santa Barbara County	77,440			(1,149)	(2)	76,289
Shasta	250,681			(3,720)	(6)	246,955
Sutter-Yuba	350,142			(5,197)	(8)	344,937
Tehama County	269,670			(4,002)	(6)	265,662
Turlock	30,460			(452)	(1)	30,007
West Valley	308,635			(4,581)	(7)	304,047
Total	13,438,753	819	(440)	(199,454)	(300)	13,239,377

Notes:
Yield to maturity rate on the VCJPA portfolio is 1.54% as of the above date. As required by GASB 31, the allocated interest shown also reflects market value changes to the securities held in the portfolio. Therefore, the actual interest allocated to this fund, and all program year funds, may or may not equal the yield to maturity rate from quarter to quarter. However, the average overall allocated interest, over the life of this fund, should provide a close approximation.

TOMÁS J. ARAGÓN, M.D., Dr.P.H.
Director and State Public Health Officer

GAVIN NEWSOM
Governor

October 4, 2022

TO: Agencies Signatory to the Cooperative Agreement with the California Department of Public Health

SUBJECT: COOPERATIVE AGREEMENT WITH THE DEPARTMENT OF PUBLIC HEALTH

Please find enclosed a copy of the Cooperative Agreement between local agencies applying pesticides for public health purposes and the California Department of Public Health. The current Cooperative Agreement between our agencies shall expire on December 31, 2022. If your agency is interested in renewing this Cooperative Agreement for another year (through December 31, 2023), please return the enclosed form by December 31, 2022 to the Vector-Borne Disease Section (VBDS). Include the agency manager's signature in the appropriate space and the operator ID and/or license number to be listed on Monthly Summary Pesticide Use Reports (PR-ENF-060) for 2023. Please send to:

DEPARTMENT OF PUBLIC HEALTH
CDPH – Vector Borne Disease Section
850 Marina Bay Parkway
Richmond, CA 94804

VBDS will endorse the Cooperative Agreement and return a copy to your agency immediately. If your agency is not interested in continuing the Cooperative Agreement, please notify VBDS as soon as possible.

Thank you for your cooperation in this matter. If you require additional information or clarification, please contact your VBDS regional office or the Sacramento headquarters at (916) 552-9730.

Vicki L. Kramer

Vicki L. Kramer, Ph.D., Chief
Vector-Borne Disease Section

Enclosure

COOPERATIVE AGREEMENT
(PURSUANT TO SECTION 116180, HEALTH AND SAFETY CODE)

Date _______________

This Agreement between the California Department of Public Health and

____
(name and address of local vector control agency)

is effective on January 1, 2023 or on the subsequent date shown above, and expires December 31, 2023. It is subject to renewal by mutual consent thereafter.

Operator ID and/or license number to be listed on Monthly Summary Pesticide Use Reports (PR-ENF-060) for 2023:

Operator ID # ____ License # ____

This agreement may be canceled for cause by either party by giving 30 days advance notice in writing, setting forth the reasons for the termination.

Part I. Pesticides

The vector control agency named herein agrees:

1. To calibrate all application equipment using acceptable techniques before using, and to maintain calibration records for review by the County Agricultural Commissioner.

2. To seek the assistance of the County Agricultural Commissioner in the interpretation of pesticide labeling.

3. To maintain for at least two years for review by the County Agricultural Commissioner a record of each pesticide application showing the target vector, the specific location treated, the size of the source, the formulations and amount of pesticide used, the method and equipment used, the type of habitat treated, the date of the application, and the name of the applicator(s).

4. To submit to the County Agricultural Commissioner each month a Pesticide Use Report, on Department of Pesticide Regulation form PR-ENF-060. The report shall include the manufacturer and product name, the EPA registration number from the label, the amount of each pesticide used, the number of applications of each pesticide, and the total number of applications, per county, per month.

5. To report to the County Agricultural Commissioner and the California Department of Public Health, in a manner specified, any conspicuous or suspected adverse effects upon humans, domestic animals and other non-target organisms, or property from pesticide applications.

6. To require appropriate certification of its employees by the California Department of Public Health in order to verify their competence in using pesticides to control pest and vector organisms, and to maintain continuing education unit information for those employees participating in continuing education.

7. To be inspected by the County Agricultural Commissioner on a regular basis to ensure that local agency activities are in compliance with state laws and regulations relating to pesticide use.

Part II. Environmental Modification

The vector control agency named herein agrees:

To comply with requirements, as specified, of any general permit issued to the California Department of Public Health as the lead agency, pertaining to physical environmental modification to achieve pest and vector prevention.

For California Department of Public Health

____
Vicki Kramer, Ph.D.
Chief, Vector-Borne Disease Section

For Local Agency

____
Print Name and Title

____
Signature

Sacramento-Yolo Mosquito and Vector Control District

<u>October 18, 2022 Board Meeting</u>

3. <u>Reports to the Board</u>

- **a. Manager's Report**
- **b. Reports from District Departments**
    - **Lab/Surveillance (Sarah Wheeler)**
    - **Ecological Management (Marty Scholl)**
    - **Biological Control (Tony Hedley)**
    - **Larval and Adult Control (Steve Ramos)**
    - **Public Outreach (Luz Maria Robles)**

a. Manager's Report

The District's West Nile season is almost over. We typically only see a few positives throughout October and then will cease testing operations over the winter. Staff is following the Mosquito Borne Disease Management Plan to help respond to the remaining positive locations when the weather allows.

We are continuing to address the invasive species detections with the most abundant areas of Wilton and South Natomas. All of our invasive detections are being handled with increased surveillance, door to door inspections, and both larvicide and adulticide treatments where feasible. We anticipate that the behavior of the *Aedes aegypti* mosquito will slow down significantly as the weather cools.

The District auditors are coming in on the 19^{th}-21^{st} to gather reports for their analysis. We will present their findings to the Board at a future meeting.

The District is working with our benefit broker, Alliant, on open enrollment healthcare rates.

b. Reports from District Departments

- **Lab/Surveillance (Sarah Wheeler)**
- **Ecological Management (Marty Scholl)**
- **Biological Control (Tony Hedley)**
- **Larval and Adult Control (Steve Ramos)**
- **Public Outreach (Luz Maria Robles)**

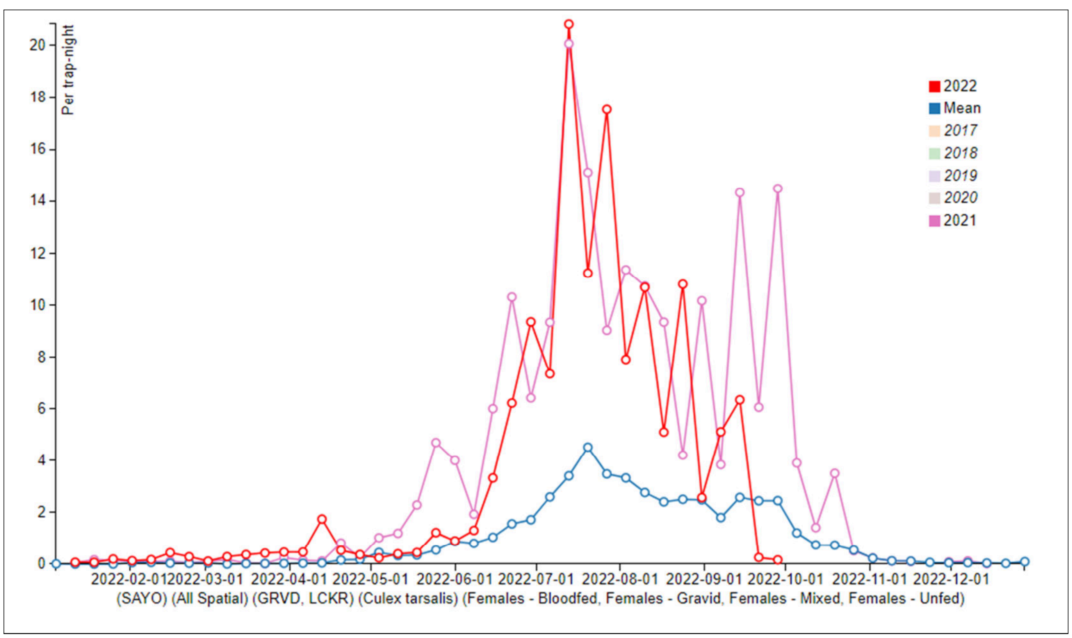
LABORATORY
Monthly Report October 2022 Board Meeting

<u>Insectary</u>:

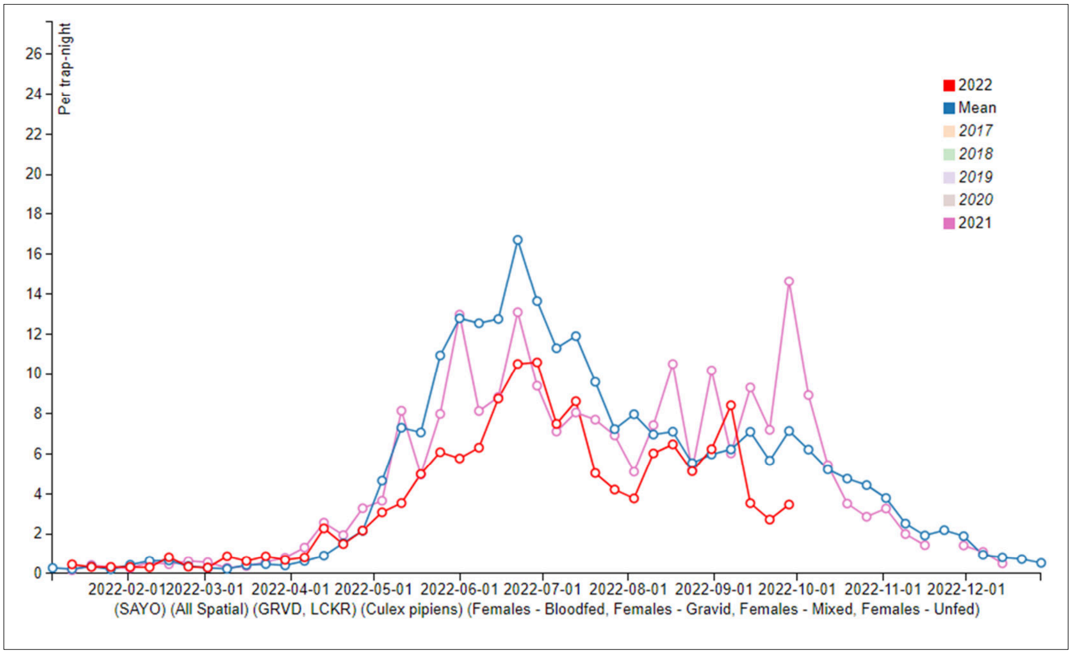
Species	Name	Origin	Resistance Status
Culex tarsalis	KNWR	Kern National Wildlife Refuge (2009)	susceptible
Culex quinquefasciatus	CQ1	Merced, CA (1950s)	susceptible
Culex pipiens	WCP	Woodland, CA (2017)	resistant: pyrethrins/pyrethroids, methoprene, and spinosad
Culex tarsalis	VFCT	Vic Fazio Yolo Wildlife Area (2020)	resistant: pyrethrins/pyrethroids
Culex pipiens		South Sacramento (2021)	status under investigation
Aedes sierrensis		Sonoma County (2016)	susceptible

<u>2022 Surveillance update through 9/30/2022:</u>

Weekly mosquito collections – The following graphs show overall *Culex tarsalis* and *Culex pipiens* abundance from gravid traps and locker traps placed in permanent locations throughout Sacramento and Yolo Counties.

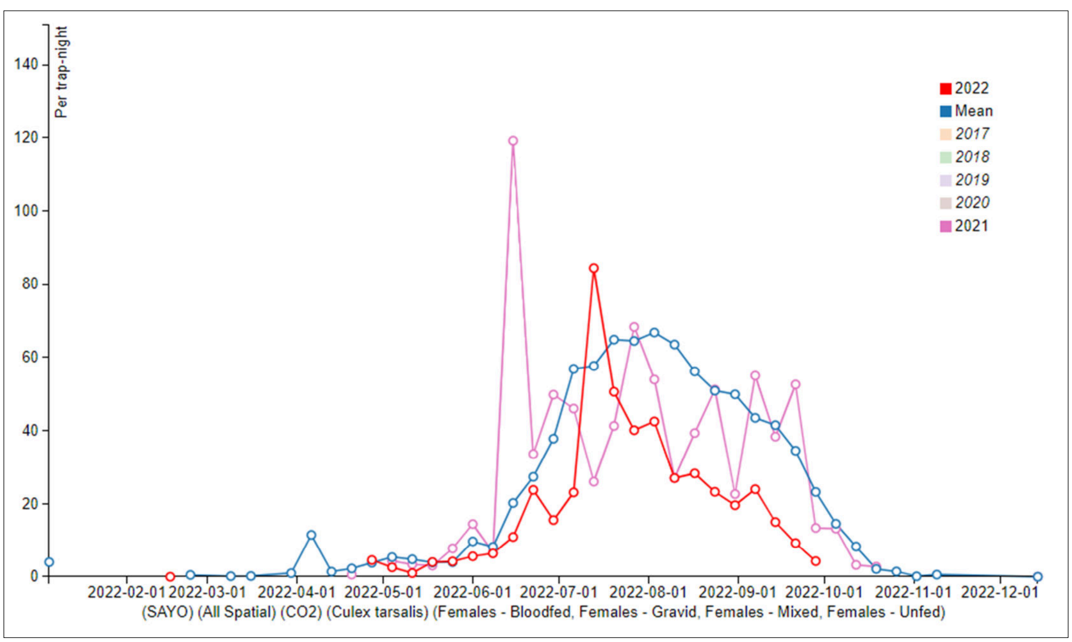


Weekly *Culex tarsalis* abundance traps in locker and gravid traps

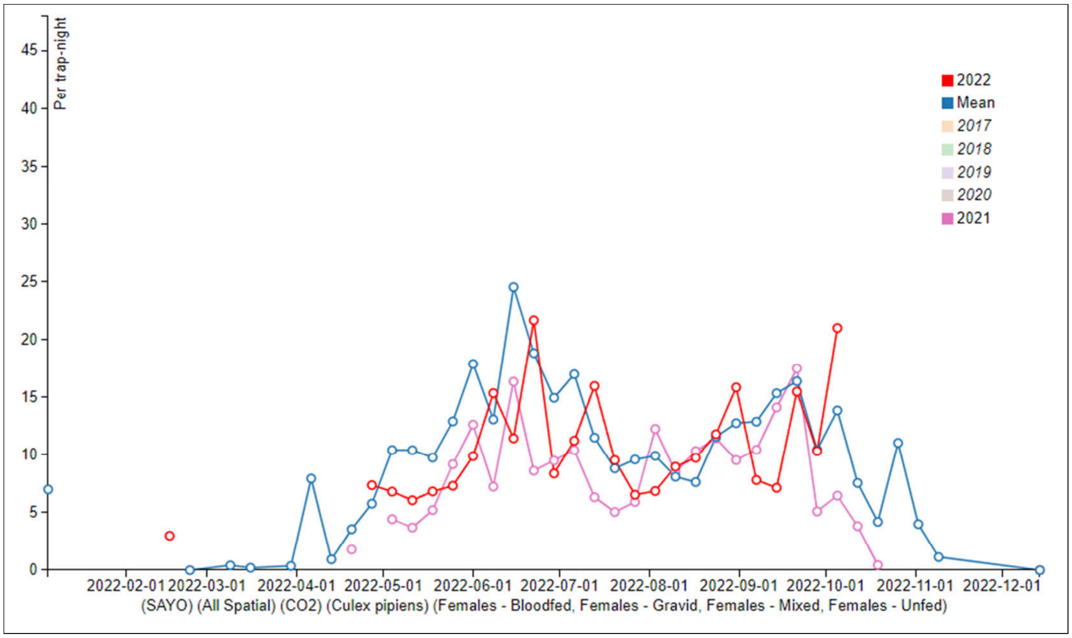


Weekly *Culex pipiens* abundance traps in locker and gravid traps

Encephalitis virus surveillance (EVS) – The following graphs show the number of *Culex tarsalis* and *Culex pipiens* that were collected in CO_2-baited EVS traps run in established and West Nile virus response locations for a single night, then tested for West Nile virus.



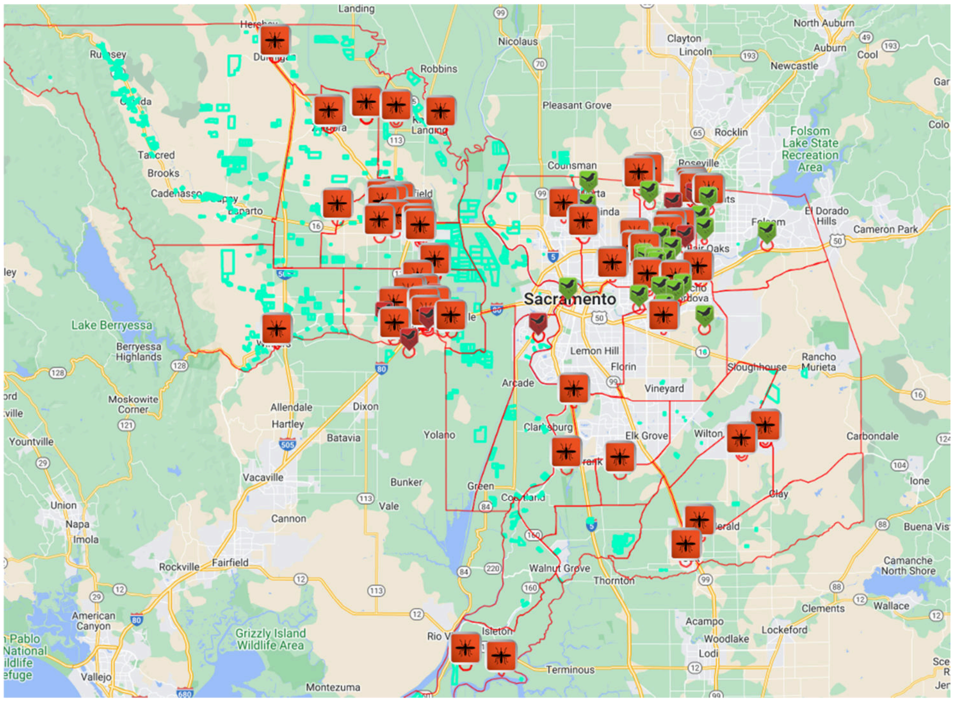
Culex tarsalis in CO_2 traps



Culex pipiens in CO_2 traps

West Nile virus (WNV) testing – 5,088 mosquito pools of *Culex tarsalis* and *Culex pipie*ns were tested for WNV, Overall, 41 and 64 pools were positive from Sacramento and Yolo County, respectively. West Nile virus (WNV) activity is higher in Yolo County than in Sacramento, compared to the same week last year there are 8 more WNV-positive pools in Yolo County and 83 less in Sacramento County.

Dead birds – Overall, 326 dead birds have been collected and tested. In total, 61 birds tested positive for WNV. Compared to the same week last year there are 14 more WNV-positive dead birds in Yolo County and 53 fewer in Sacramento County. The dead bird call center will close for the year on October 14. This will conclude dead bird surveillance for 2022.



Cumulative 2022 Detections of WNV positive mosquito pools and dead birds.

Sentinel chickens – Thus far, three out of five sentinel chicken flocks have seroconverted to WNV positive, indicating exposure to WNV-infected mosquito bites. The following table shows the cumulative 2022 sentinel chicken results. Chickens will remain deployed until mid – late October.

Flock location	County	Flock size	WNV seroconversions	Date of first seroconversion
Iselton	Sacramento	5	5	8/11/2022
Gibson Ranch	Sacramento	5	1	9/6/2022
Rancho Murieta	Sacramento	5	0	
Knights Landing	Yolo	5	3	8/8/2022
Dunnigan	Yolo	5	0	

Rice Surveillance – Counter traps are still in the field to monitor abundance levels; they will remain until fields are drained and/or WNV activity abates.

Human disease response surveillance – During September three human cases of WNV and two cases of malaria were reported in Sacramento County. Investigations for the most recent WNV case is under investigation. Previous investigations are now complete without detection of WNV or malaria activity.

Tick surveillance – Tick flagging is scheduled to begin in November.

***Aedes aegypti* trapping effort in Sacramento and Yolo Counties -** Biogents (BG) Sentinel traps are primarily used for *Aedes aegypti* surveillance. These traps are run continuously within the cities where *Aedes aegypti* populations have established including: Elk Grove, Winters, and Sacramento (Arden/Arcade, Rosemont, and Elder Creek communities). BG traps are also set for a single night to detect new infestations and further define current infestations. The following table shows the cumulative 2022 BG trapping effort and *Aedes aegypti* detections.

		Total trap nights		
City	**County**	**Single night**	**Constant operation**	**# *Aedes aegypti* collected**
Antelope	Sacramento	5		
Carmichael	Sacramento	18		
Citrus Heights	Sacramento	59		
Courtland	Sacramento	3		
Davis	Yolo	61		
Elk Grove	Sacramento	239	1242	198
Elverta	Sacramento	4		
Fair Oaks	Sacramento	91		
Folsom	Sacramento	68		
Galt	Sacramento	32		
Gold River	Sacramento	6		
Isleton	Sacramento	1		
Mather	Sacramento	2		
North Highlands	Sacramento	9		
Orangevale	Sacramento	56		1
Rancho Cordova	Sacramento	25		
Rancho Murieta	Sacramento	50		
Rio Linda	Sacramento	21		40
Sacramento	Sacramento	952	1686	565
Sloughhouse	Sacramento	1		
Walnut Grove	Sacramento	4		
West Sacramento	Yolo	30		
Wilton	Sacramento	1		
Winters	Yolo	290	557	348
Woodland	Yolo	78		1

The California Arbovirus Surveillance Bulletin #26 Week 39 Friday, September 30, 2022

2021 & 2022 YTD West Nile Virus Comparisons		
	2021	**2022**
Total No. Dead Bird Reports	4,500	4,138
No. Positive Counties	33	31
No. Human Cases	62	81
No. Positive Dead Birds / No. Tested	198 / 1,420	166 / 1,125
No. Positive Mosquito Pools / No. Tested	2,191 / 33,726	2,925 / 34,191
No. Seroconversions / No. Tested	79 / 4,924	123 / 4,384

YTD WNV Activity by Element and County, 2022

County	Humans	Horses	Dead Birds	Mosquito Pools	Sentinel Chickens
Butte	3		2	39	27
Colusa					3
Contra Costa			1	2	5
Fresno	14		2	291	
Imperial				1	
Kern	10	3		97	
Kings	5			105	
Lake			2	7	3
Los Angeles	12		37	441	14
Madera	2		2	127	
Merced	6		1	20	16
Napa				1	
Nevada		1	1		
Orange	4		1	31	
Placer			5	88	
Riverside			3	116	
Sacramento		1	37	40	6
San Bernardino			7	79	
San Joaquin	3	1	1	197	
San Luis Obispo		1			
Santa Clara			22	21	
Shasta			1	39	1
Solano	2		9	12	
Sonoma	1				
Stanislaus	8			65	
Sutter			4	31	16
Tehama	2	1			6
Tulare	5	3	2	999	10
Ventura			1		
Yolo	3		24	64	3
Yuba	1		1	12	13
Totals	**81**	**11**	**166**	**2,925**	**123**

ECOLOGICAL MANAGEMENT DEPARTMENT
Monthly Report for the October 2022 Board Meeting

Stormwater / Wetland Program

CA Department of Water Resources (DWR) Sherman and Twitchell Islands: Staff met with the DWR Wetland Engineering and Maintenance team to discuss long term vegetation and water management of the Delta Island permanent wetlands. Staff provided UAS imagery onsite to help determine how dry the wetland cells had become and where to begin concentrating routine maintenance to restore open water once refilled. DWR will start with a single smaller wetland cell this year to test the feasibility of late season maintenance.

Twitchell Island Permanent Wetlands

Pool Program

Staff received an Inspection and Enforcement Warrant for eight additional backyard unmaintained swimming pools and served prior to the return date. The City of Elk Grove Code Enforcement Department and POP officer team, the City of Rancho Cordova Code Enforcement and Police Departments, the City of Sacramento Police and Sacramento County Sheriff Departments were very instrumental with assisting the District in serving these Warrants.

Fall Flooding

Staff has been assisting Control Operations with coordinating drone and conventional air treatments on newly flooded wetlands. Five privately owned properties participated in the District's Fall Flooding Cost share program which ended on October 7th. The majority of available water for fall flooding this year has been concentrated to the Yolo Bypass and Delta Island areas.

Agricultural Program

Staff continue work on multiple agricultural access projects around the greater south Sacramento and Yolo County areas utilizing District equipment.

Staff cleared an unmaintained perimeter road and added a drain with a gate valve on a local wetland property to give District technicians full access around the property. The District will work the property owner to keep it maintained until a reconstruction by Ducks Unlimited and Stone lakes NWR occurs hopefully within the next couple of years.

Cleared dense brush

New culvert with gate valve

BIOLOGICAL CONTROL
Monthly Report for October 2022 Board Meeting

The District stocked just over 161 lbs of mosquitofish in the month of September, of that total, 140 lbs were stocked into wetlands by the Fisheries department. During an average season, we see over two thousand acres of wetlands and duck clubs requests for mosquitofish. Our treatment goal is to have a stocking rate of greater than one half pound per acre with an estimated fall stocking total of 500-1000 pounds of mosquitofish available. The priority wetlands in our District are Vic Fazio , Stone Lakes Wildlife Area and Cosumnes River Preserve all of which are a mile or less flight distance to residential populations. The Fisheries department also continued to gather weekly data for all of our ongoing projects including traditional fertilization techniques, crayfish control and the use of solar aerators to maintain dissolved oxygen levels. Daily activities such as medical treatments and tank cleaning were also performed as necessary to maintain the high quality of our fish population.

Log of Treatment Applied for September

Material	AMT	Area Treated	Treatments
Mosquitofish	161.625 lbs	540.557 Acres	149

Log of Treatment Applied for the year 2022 running total.

Material	AMT	Area Treated	Treatments
Mosquitofish (*Gambusia affinis*)	2,942.31 lbs	11,899.3 Acres	2,829
Guppies (*Poecilia reticulata*)	.2 lbs	.011 Acres	3

Fisheries Budget

Total	Spent	Remaining	% Spent
36,000.00	7,205.82	28,794.18	20%

Fairly typical wetland, organic open water with dense vegetation along edges and dead vegetation throughout the wetland breaking down making ideal habitat for mosquito breeding.

CONTROL OPERATIONS
Monthly Report for October 2022 Board Meeting

Culex and West Nile Virus (WNV) Control

September marks the beginning of rice harvest preparation for many of the county's growers. As rice fields drain there is less habitat available for gravid females to lay eggs. Less stagnant water in rice coupled with shorter days and cooler nights has had an impact on mosquito populations that is reflected in lower nightly BG Counter traps. Mosquito samples and birds are still testing positive for WNV and District staff continues to respond with ULV treatments and larvicide applications, however the District has seen a decrease in WNV in September when compared to August. Catch basin work continues as basins are still producing high numbers of *Culex pipiens* in urban areas, basin treatments can go well into October or November depending on the weather conditions.

Aerial Applications

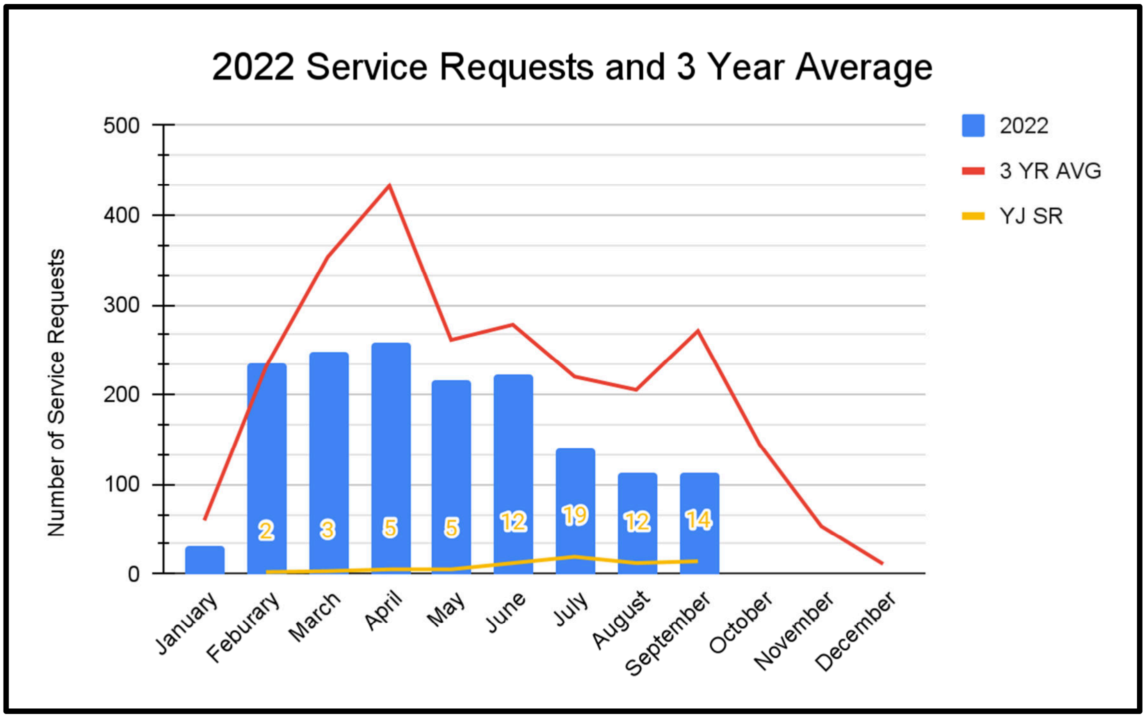
Our contractor, VDCI treated just under 150,000 acres for adult mosquitos in September due to WNV and abundance of adult mosquitoes detected in rice growing areas. Typically the District sees aerial ULV treatments begin to slow in October as adult mosquito population's decrease. Aerial larvicide treatments are focused on wetland and reflooded rice field treatments during this time of year. These treatments will consist of single brood material such as BTI granules and some residual products using Methoprene or Spinosad for long term control.

Invasive Aedes Control

The areas of Winters and South Natomas have been the focus for aedes response through September. These two areas have had consistent adult and larval detections prompting larvicide and adulticide responses from the District followed by post application trapping and door to door inspections. Other areas throughout the District are still being monitored with trapping performed by the lab and the aedes crew.

District Trials

The Districts trial work evaluating Methoprene products used in yard drain and basin environments will continue through October. Field trials assessing the new larvicide, Skeeter, which uses the active ingredients of garlic and soybean oil are currently being performed in catch basins, this trial will also continue until product failure is determined.



Larvicide Applications thru September 30th				
	2022		2021	
Locations/Roles	Treatments	Acres	Treatments	Acres
Sacramento County	6,901	13,556	6,849	12,835
Sac County Aerial	24 Orders	19,295	33 Orders	18,077
Sac County Drone Treatments	39 orders	1,699	32 orders	1,726
Yolo County	1,254	4,385	1,479	7,606
Yolo County Aerial	41 Orders	74,970	66 Orders	126,970
Yolo County Drone Treatments	14 Orders	1,560	31 Orders	2,298
CB Treated	88,355	--	181,110	--
CB Inspected -not treated	130,309	--	166,043	--

Aerial Adulticide Summary thru September 30th				
	2022		2021	
County	# Applications	Acres	# Applications	Acres
Sacramento Ag	21	146,574	19	132,840
Sacramento Urban	0	0	0	0
Yolo Ag	52	313,186	49	418,243
Yolo Urban	0	0	0	0

Adulticide Summary through September 30th, 2022 compared to: 2021

	2022	2021
Contract Acres (our portion) =	530,000	530,000
Acres used =	459,760	551,083
Acres remaining =	(70,240)	(-21,083)
% Acres used =	86%	104%
% Acres remaining =	14%	0%

San Joaquin County MVCD has used 145,178 acres of their 190,000 acre contract commitment.
Placer MVCD has used 125,099 acres of their 100,000 acre commitment.
Turlock MAD has used 61,831 acres of their 180,000 acre commitment.
Merced MAD had used 12,003 acres

PUBLIC INFORMATION AND EDUCATION
Monthly Report for the October 2022 Board Meeting

Invasive Mosquitoes:
Invasive mosquitoes continue to be detected in south Natomas along Northgate Blvd. along with other areas in City of Sacramento. This newest infestation is proving to be a large one and we are doing significant outreach in this community with social media and public outreach events. *Aedes aegypti* are now permanently established in many areas in Sacramento County along with the City of Winters in Yolo County. As part of our ongoing outreach efforts we have sent out postcards to specific neighborhoods that are being affected in order to increase awareness of the issue and to facilitate the work being done by field crews as they conduct door-to-door inspections. We updated the door hangers to include a texting number specific to *Aedes* where residents can text to set up an appointment time for a home inspection. Nextdoor and targeted social media ads and posts will continue thru the end of October.

Events:
October has become a very busy month for events due to the ongoing detections of invasive mosquitoes and our public outreach response. Events will continue to be done until the end of the month when the season traditionally ends and the weather cools down significantly. One of the largest events we have attended this month is the Giant Pumkin Festival in Elk Grove. This is a very large community event that draws huge crowds and is one of our most successful events we attend. Many of the attendees know about our District because they are residents of the city; however we were still able to answer many questions about the recent spread of invasive mosquitoes and West Nile virus activity during the last few months.

Upcoming October events:
October 15: Folsom Family Expo
October 15: Winters Public Safety Festival
October 16: Binational Health Week “Celebrando Nuestra Salud” health fair in Sacramento
October 26: Trunk of Treat in Citrus Heights
October 30: Natomas Autumn Festival

Social media and Nextdoor

As a result of the ongoing detections of invasive mosquitoes, social media messages specific to *Aedes aegypti* continue to be posted on all outlets along with Facebook posts that are boosted and targeted specifically to residents located within the detection areas. In addition, we also used Nextdoor to post specific messages regarding the invasive mosquito findings and included photos of backyard sources, District staff knocking on doors and interacting with residents. We continue to post regular content specific to West Nile virus, encouraging residents to sign up for spraying notifications, use of repellent, etc. as part of our general social media outreach.

Advertising Campaign
Since the advertising campaign has recently come to an end, we will begin evaluating the 2022 advertising buy with our media consultant Luken Benjamin. In addition, we are having preliminary meetings with advertising representatives from various media outlets to review the campaign and begin discussing ideas for next year.

Repellent and Materials Distribution:
We continue to receive requests for materials and repellent from community organizations. Most recently we donated items to a 5K run sponsored by a non-profit organization called My Sister's House which seeks to eliminate domestic violence in the Asian and Pacific Islander community. Repellent and materials were also provided for the civic engagement division of the city of Sacramento for outreach at their city sponsored events.

Government affairs:
As part of our ongoing detection of invasive mosquitoes as well as WNV activity, we continue to keep local elected officials informed by sending them regular email updates with our findings and response activities.

Presentations:
A presentation was given to the Natomas Rotary Club on October 7th. and we will be reaching out to the Natomas Garden Club to schedule speaking opportunities soon.

MVCAC Public Relations Committee
An abstract titled Building EXTRA-ordinary Campaigns: Best Practices to enhance Fight the Bite Messaging has been submitted for a presentation at the upcoming 2023 MVCAC meeting. As part of the PR Committee standing charges, I am involved in a new photography project that has the goal of working with a photographer to obtain high resolution and quality photos of mosquitoes, field technicians at work, mosquito breeding sources and other photos to be used for materials and social media that can be used by MVCAC and all Districts. We are currently gathering quotes and in the beginning stages of this project.

Sacramento-Yolo Mosquito and Vector Control District

October 18, 2022 Board Meeting

4. Board Review and Discussion of CalPERS Valuation Report

Staff Report:
Each year CalPERS performs an Annual Valuation for each participating agency that is used to set the employer and employee contributions rates for each contracted benefit formula for the fiscal year. This report, dated as of June 30, 2021 (always one full year behind) is used to set the rates for the 2023-2024 fiscal year. In addition, the valuation report is used to update the unfunded liability that is invoiced as an annual amount rather than a percentage of the monthly payroll reported to CalPERS. This change was implemented by CalPERS in the 2015-2016 fiscal year.

Percentage of Payroll
The District has two tiers of retirement programs. Tier 1 is referred to as the classic plan and Tier 2 is for those employees hired after January 1, 2013 under the Public Employees Pension Reform Act (PEPRA).

The Tier 1 (2.5% at 55) employer normal cost rate for 22/23 will be 22.52%.

The Tier 2 (2% at 62) employer normal cost rate for 22/23 will be 8.03%.

The Tier 2 (PEPRA) number is significantly lower than the Tier 1 (Classic) plan due to the fact that the District currently pays the employee portion of retirement (~8%) for classic members and the classic plan is a richer benefit plan that PEPRA.

Unfunded Accrued Liability (UAL)
The UAL is a significant concern for the District and its future finances, however the Board and staff have committed to trying to make additional discretionary payments (ADP) on an annual basis to help reduce the uncertainty of the fund each year. The District has also worked to pay the UAL for Tier 2 off each year as the amount at the moment is still small and we don't want to see its growth get out of hand which will cost the District more interest in the future.

The UAL is not a fixed amount and will fluctuate every year due to the ever-changing investment returns and the profile of our plans. We currently have 42 active employees and 80 retirees in the Tier 1 fund while the Tier 2 fund has 24 active employees.

The Tier 1 fund is currently 86.2% funded vs. 81.1% last year.

The Tier 2 fund is currently 107.6% funded vs. 89.3% last year.

While the numbers look very good for this valuation, the last year has not been as kind for CalPERS investments. CalPERS has been presenting various webinars over the last couple of months since these valuations were published with the sobering news to expect significant drops in the value of the portfolios over the next year. They were letting agencies know that the next valuations will not be as favorable and to expect higher normal costs and payments over the next 5 years. The District is in a good position with their commitment to paying the UAL down but we should be prepared for higher costs in the future.

Recommendation:
Information Only

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

Miscellaneous Plan of the Sacramento-Yolo Mosquito and Vector Control District (CalPERS ID: 1375523307)
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	14.56%	$672,151
Projected Results		
2024-25	*14.6%*	*$640,000*

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,

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

Actuarial Valuation
as of June 30, 2021

for the
Miscellaneous Plan
of the
Sacramento-Yolo Mosquito and Vector Control District

(CalPERS ID: 1375523307)

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

Table of Contents

Section 1

Plan Specific Information for the Miscellaneous Plan of the Sacramento-Yolo Mosquito and Vector Control District

(CalPERS ID: 1375523307)
(Rate Plan ID: 262)

Table of Contents

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 Sacramento-Yolo Mosquito and Vector Control 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 Sacramento-Yolo Mosquito and Vector Control 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.

MAY SHUANG YU, ASA, MAAA
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 Sacramento-Yolo Mosquito and Vector Control 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 Sacramento-Yolo Mosquito and Vector Control 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	**14.56%**
Plus	
Required Payment on Amortization Bases[1]	**$672,151**
Paid either as	
1) Monthly Payment	**$56,012.58**
Or	
2) Annual Prepayment Option*	**$650,401**

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).

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

Development of Normal Cost as a Percentage of Payroll	Fiscal Year 2022-23	Fiscal Year 2023-24
Base Total Normal Cost for Formula	19.55%	21.30%
Surcharge for Class 1 Benefits[2]		
a) FAC 1	0.62%	0.72%
b) 75% IDR	0.53%	0.50%
Phase out of Normal Cost Difference[3]	0.00%	0.00%
Plan's Total Normal Cost	20.70%	22.52%
Formula's Expected Employee Contribution Rate	7.96%	7.96%
Employer Normal Cost Rate	12.74%	14.56%

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 $672,151. 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
$541,205	$672,151	$0	$672,151	$1,213,356

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	$541,205	$672,151	$306,056	$978,207	$1,519,412

[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)	$56,473,251	$60,018,871
2. Entry Age Accrued Liability (AL)	50,975,497	53,818,177
3. Plan's Market Value of Assets (MVA)	38,599,879	46,406,937
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	12,375,618	7,411,240
5. Funded Ratio [(3) / (2)]	75.7%	86.2%

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 262 Results					
Normal Cost %	14.56%	14.6%	14.6%	14.6%	14.6%	14.6%
UAL Payment	$672,151	$640,000	$574,000	$503,000	$411,000	$433,000

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 262. 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	$5,455,103	$5,309,587
Estimated Employer Normal Cost	$614,089	$669,085
Required Payment on Amortization Bases	$920,938	$672,151
Estimated Total Employer Contributions	$1,535,027	$1,341,236
Estimated Total Employer Contribution Rate (illustrative only)	28.14%	25.26%

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	$17,521,072
Transferred Members	1,131,380
Terminated Members	1,091,265
Members and Beneficiaries Receiving Payments	34,074,460
Total	$53,818,177

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	$53,818,177
2.	Projected UAL balance at 6/30/2021	12,199,115
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)] ÷ [(3) - (4)] × (5)	(6,008,168)
8.	Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6)	(217,601)
9.	Plan's New (Gain)/Loss as of 6/30/2021: (7) + (8)	(6,225,769)
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) ÷ (3) × (10)	156,341
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) ÷ (3) × (12)	1,281,553
14.	Offset due to Funding Risk Mitigation	(1,331,670)
15.	Plan's Net Investment (Gain): (7) – (14)	(4,676,498)

[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)	$7,411,240
17.	Plan's Share of Pool's MVA: (1) - (16)	$46,406,937

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	Escala-tion 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	4,979,927	2,493,708	2,741,462	197,333	2,723,949	197,711
Non-Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	(45,932)	(3,202)	(45,746)	(3,290)	(45,457)	(3,299)
Share of Pre-2013 Pool UAL	6/30/13	No Ramp		2.80%	1	410,672	424,802	(410)	0	(438)	(453)
Assumption Change	6/30/14	100%	Up/Down	2.80%	13	2,229,668	224,207	2,149,581	230,372	2,057,677	232,925
Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	(3,686,473)	(250,079)	(3,678,711)	(256,956)	(3,663,315)	(257,452)
Non-Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	4,212	286	4,203	294	4,185	294
Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	2,291,132	151,505	2,290,358	155,672	2,285,225	155,841
Non-Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	(195,863)	(12,952)	(195,797)	(13,308)	(195,358)	(13,322)
Assumption Change	6/30/16	100%	Up/Down	2.80%	15	873,064	64,242	866,042	82,511	839,663	83,269
Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	2,798,249	146,360	2,837,276	187,981	2,835,944	188,032
Non-Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	(364,104)	(19,044)	(369,182)	(24,460)	(369,008)	(24,466)
Assumption Change	6/30/17	100%	Up/Down	2.80%	16	983,475	53,545	995,016	73,357	986,867	92,457
Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	(1,389,543)	(54,607)	(1,427,599)	(74,812)	(1,447,362)	(93,469)
Non-Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	(76,166)	(2,993)	(78,252)	(4,101)	(79,335)	(5,123)
Assumption Change	6/30/18	80%	Up/Down	2.80%	17	1,570,500	57,269	1,618,110	88,266	1,636,924	118,531
Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	(418,122)	(11,114)	(435,069)	(17,130)	(446,951)	(22,805)
Method Change	6/30/18	80%	Up/Down	2.80%	17	433,019	15,790	446,146	24,337	451,333	32,681
Non-Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	221,475	5,887	230,451	9,074	236,744	12,079
Investment (Gain)/Loss	6/30/19	60%	Up Only	0.00%	18	214,551	4,691	224,293	9,382	229,849	13,820
Non-Investment (Gain)/Loss	6/30/19	No Ramp		0.00%	18	219,019	19,986	213,258	19,986	207,105	19,636

Schedule of Plan's Amortization Bases (Continued)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion 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	975,706	0	1,042,054	22,826	1,089,324	44,779
Non-Investment (Gain)/Loss	6/30/20		No Ramp	0.00%	19	170,649	0	182,253	16,662	177,427	16,363
Assumption Change	6/30/21		No Ramp	0.00%	20	156,341	(25,977)	193,818	(26,704)	234,595	21,096
Net Investment (Gain)	6/30/21	20%	Up Only	0.00%	20	(4,676,498)	0	(4,994,500)	0	(5,334,126)	(114,655)
Non-Investment (Gain)/Loss	6/30/21		No Ramp	0.00%	20	(217,601)	0	(232,398)	0	(248,201)	(22,319)
Risk Mitigation	6/30/21		No Ramp	0.00%	1	1,281,553	(26,391)	1,395,972	(27,130)	1,518,935	1,569,729
Risk Mitigation Offset	6/30/21		No Ramp	0.00%	1	(1,331,670)	0	(1,422,224)	0	(1,518,935)	(1,569,729)
Total						**7,411,240**	**3,255,919**	**4,550,405**	**670,162**	**4,167,260**	**672,151**

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)

	Current Amortization Schedule		Alternate Schedules: 10 Year Amortization		Alternate Schedules: 5 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2023	4,167,260	672,151	4,167,260	568,829	4,167,260	978,207
6/30/2024	3,756,007	640,477	3,862,783	568,829	3,439,715	978,207
6/30/2025	3,349,518	573,801	3,537,601	568,828	2,662,697	978,208
6/30/2026	2,984,296	503,106	3,190,308	568,829	1,832,840	978,207
6/30/2027	2,667,299	410,627	2,819,398	568,829	946,554	978,208
6/30/2028	2,424,316	433,422	2,423,266	568,828		
6/30/2029	2,141,256	456,860	2,000,198	568,829		
6/30/2030	1,814,723	480,947	1,548,360	568,828		
6/30/2031	1,441,095	505,712	1,065,798	568,828		
6/30/2032	1,016,466	471,443	550,422	568,829		
6/30/2033	598,377	434,539				
6/30/2034	189,999	196,353				
6/30/2035						
6/30/2036						
6/30/2037						
6/30/2038						
6/30/2039						
6/30/2040						
6/30/2041						
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		**5,779,438**		**5,688,286**		**4,891,037**
Interest Paid		**1,612,178**		**1,521,026**		**723,777**
Estimated Savings				**91,152**		**888,401**

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	10.657%	$524,072	N/A
2017 - 18	10.698%	623,794	N/A
2018 - 19	11.206%	764,980	N/A
2019 - 20	11.936%	918,232	0
2020 - 21	12.900%	655,963	343,106
2021 - 22	12.73%	806,844	
2022 - 23	12.74%	918,217	
2023 - 24	14.56%	672,151	

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	$36,109,275	$25,984,610	$10,124,665	72.0%	$4,159,769
06/30/2013	36,986,189	28,180,725	8,805,464	76.2%	4,069,939
06/30/2014	40,398,541	32,139,699	8,258,842	79.6%	3,857,061
06/30/2015	41,722,970	31,549,332	10,173,638	75.6%	3,653,363
06/30/2016	43,292,385	30,280,412	13,011,973	69.9%	3,695,877
06/30/2017	45,050,159	32,027,515	13,022,644	71.1%	3,737,267
06/30/2018	48,169,015	33,353,036	14,815,979	69.2%	3,790,313
06/30/2019	49,570,862	38,146,773	11,424,089	77.0%	3,851,971
06/30/2020	50,975,497	38,599,879	12,375,618	75.7%	3,640,106
06/30/2021	53,818,177	46,406,937	7,411,240	86.2%	3,421,533

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	14.6%	14.6%	14.6%	14.6%	14.6%
UAL Contribution	$684,000	$705,000	$768,000	$856,000	$1,107,000
10.8% (95th percentile)					
Normal Cost Rate	14.9%	15.2%	15.4%	15.7%	16.0%
UAL Contribution	$602,000	$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	14.56%	14.6%
UAL Contribution	$672,151	$914,000
(5.2)% (1 standard deviation loss)		
Normal Cost Rate	14.56%	14.6%
UAL Contribution	$672,151	$777,000

- 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	28.41%	22.52%	18.05%
b) Accrued Liability	$60,934,297	$53,818,177	$47,920,024
c) Market Value of Assets	$46,406,937	$46,406,937	$46,406,937
d) Unfunded Liability/(Surplus) [(b) - (c)]	$14,527,360	$7,411,240	$1,513,087
e) Funded Ratio	76.2%	86.2%	96.8%

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	23.66%	22.52%	20.50%
b) Accrued Liability	$55,569,652	$53,818,177	$49,609,571
c) Market Value of Assets	$46,406,937	$46,406,937	$46,406,937
d) Unfunded Liability/(Surplus) [(b) - (c)]	$9,162,715	$7,411,240	$3,202,634
e) Funded Ratio	83.5%	86.2%	93.5%

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	22.89%	22.52%	22.18%
b) Accrued Liability	$54,984,520	$53,818,177	$52,747,958
c) Market Value of Assets	$46,406,937	$46,406,937	$46,406,937
d) Unfunded Liability/(Surplus) [(b) - (c)]	$8,577,583	$7,411,240	$6,341,021
e) Funded Ratio	84.4%	86.2%	88.0%

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	$31,555,928	$34,074,460
2. Total Accrued Liability	50,975,497	53,818,177
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.62	0.63

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	45	42
2. Number of Retirees	78	80
3. Support Ratio [(1) / (2)]	0.58	0.53

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	$38,599,879	$46,406,937
2. Payroll	3,640,106	3,421,533
3. Asset Volatility Ratio (AVR) [(1) / (2)]	10.6	13.6
4. Accrued Liability	$50,975,497	$53,818,177
5. Liability Volatility Ratio (LVR) [(4) / (2)]	14.0	15.7

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	0.63	0.66	8.6	12.1
06/30/2018	0.61	0.65	8.8	12.7
06/30/2019	0.58	0.65	9.9	12.9
06/30/2020	0.62	0.58	10.6	14.0
06/30/2021	0.63	0.53	13.6	15.7

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%
$46,406,937	$114,286,534	40.6%	$67,879,597	$94,263,842	49.2%	$47,856,905

[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	45	42
Average Attained Age	46.79	46.84
Average Entry Age to Rate Plan	30.77	30.54
Average Years of Credited Service	16.49	16.79
Average Annual Covered Pay	$80,891	$81,465
Annual Covered Payroll	$3,640,106	$3,421,533
Present Value of Future Payroll	$30,628,975	$30,573,537
Transferred Members	14	12
Separated Members	22	22
Retired Members and Beneficiaries		
Counts*	78	80
Average Annual Benefits*	$34,376	$35,779

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)
- Increased IDR Allowance to 75% of Compensation (75% IDR)

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	Misc	Misc	
Demographics				
Actives	No	Yes	No	
Transfers/Separated	Yes	Yes	No	
Receiving	Yes	Yes	Yes	
Benefit Provision				
Benefit Formula	2% @ 55	2.5% @ 55		
Social Security Coverage	No	No		
Full/Modified	Full	Full		
Employee Contribution Rate		8.00%		
Final Average Compensation Period	One Year	One Year		
Sick Leave Credit	Yes	Yes		
Non-Industrial Disability	Improved	Improved		
Industrial Disability	Increased	Increased		
Pre-Retirement Death Benefits				
Optional Settlement 2	Yes	Yes		
1959 Survivor Benefit Level	Level 3	Level 3		
Special	Yes	Yes		
Alternate (firefighters)	No	No		
Post-Retirement Death Benefits				
Lump Sum	$5000	$5000	$5000	
Survivor Allowance (PRSA)	No	No	No	
COLA	2%	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 Miscellaneous Plan of the Sacramento-Yolo Mosquito and Vector Control District (CalPERS ID: 1375523307)
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	8.03%	$0	8.00%
Projected Results			
2024-25	*8.0%*	*$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,

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

Actuarial Valuation
as of June 30, 2021

for the
PEPRA Miscellaneous Plan
of the
Sacramento-Yolo Mosquito and Vector Control District

(CalPERS ID: 1375523307)

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

Table of Contents

Section 1

Plan Specific Information
for the
PEPRA Miscellaneous Plan
of the
Sacramento-Yolo Mosquito and Vector Control District

(CalPERS ID: 1375523307)
(Rate Plan ID: 26232)

Table of Contents

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 Sacramento-Yolo Mosquito and Vector Control 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 Sacramento-Yolo Mosquito and Vector Control 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.

MAY SHUANG YU, ASA, MAAA
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 Sacramento-Yolo Mosquito and Vector Control 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 Sacramento-Yolo Mosquito and Vector Control 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	**8.03%**
Plus	
Required Payment on Amortization Bases[1]	**$0**
Paid either as	
1) Monthly Payment	**$0.00**
Or	
2) Annual Prepayment Option*	**$0**
Required PEPRA Member Contribution Rate	**8.00%**

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).

** Only the UAL portion of the employer contribution can be prepaid **(which must be received in full no later than July 31)**.*

For additional detail regarding the determination of the required PEPRA member contribution rate see section on PEPRA Member Contribution Rates.

Development of Normal Cost as a Percentage of Payroll	Fiscal Year 2022-23	Fiscal Year 2023-24
Base Total Normal Cost for Formula	14.22%	15.43%
Surcharge for Class 1 Benefits[2]		
a) 75% IDR	0.65%	0.60%
Phase out of Normal Cost Difference[3]	0.00%	0.00%
Plan's Total Normal Cost	14.87%	16.03%
Plan's Employee Contribution Rate	7.50%	8.00%
Employer Normal Cost Rate	7.37%	8.03%

[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
$127,880	$0	$0	$0	$127,880

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)	$2,875,955	$3,766,045
2. Entry Age Accrued Liability (AL)	870,781	1,234,163
3. Plan's Market Value of Assets (MVA)	777,686	1,327,949
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	93,095	(93,786)
5. Funded Ratio [(3) / (2)]	89.3%	107.6%

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 26232 Results					
Normal Cost %	8.03%	8.0%	8.0%	8.0%	8.0%	8.0%
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 26232. 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	$5,455,103	$5,309,587
Estimated Employer Normal Cost	$614,089	$669,085
Required Payment on Amortization Bases	$920,938	$672,151
Estimated Total Employer Contributions	$1,535,027	$1,341,236
Estimated Total Employer Contribution Rate (illustrative only)	28.14%	25.26%

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	$1,055,905
Transferred Members	99,481
Terminated Members	78,777
Members and Beneficiaries Receiving Payments	0
Total	$1,234,163

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	$1,234,163
2.	Projected UAL balance at 6/30/2021	49,281
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)] ÷ [(3) - (4)] × (5)	(171,051)
8.	Plan's Share of Pool's Non-Investment (Gain)/Loss: (1) ÷ (3) × (6)	(4,990)
9.	Plan's New (Gain)/Loss as of 6/30/2021: (7) + (8)	(176,041)
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) ÷ (3) × (10)	3,585
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) ÷ (3) × (12)	29,389
14.	Offset due to Funding Risk Mitigation	(50,861)
15.	Plan's Net Investment (Gain): (7) – (14)	(120,190)

[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)	($93,786)
17.	Plan's Share of Pool's MVA: (1) - (16)	$1,327,949

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	Escala-tion 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	(93,786)	11,524	(112,073)	(22,193)	(96,759)	0
Total						**(93,786)**	**11,524**	**(112,073)**	**(22,193)**	**(96,759)**	**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)

			Alternate Schedules			
	Current Amortization Schedule		N/A Year Amortization		N/A Year Amortization	
Date	**Balance**	**Payment**	**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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6/30/2046						
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
2016 - 17	6.649%	$85	N/A
2017 - 18	6.628%	163	N/A
2018 - 19	6.946%	576	N/A
2019 - 20	7.494%	1,185	0
2020 - 21	7.526%	5,975	41,586
2021 - 22	7.38%	6,473	
2022 - 23	7.37%	2,721	
2023 - 24	8.03%	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
06/30/2013	$3,013	$4,042	($1,029)	134.2%	$110,340
06/30/2014	33,541	36,237	(2,696)	108.0%	421,622
06/30/2015	95,048	91,149	3,899	95.9%	516,123
06/30/2016	172,012	153,265	18,747	89.1%	664,592
06/30/2017	300,619	282,648	17,971	94.0%	736,081
06/30/2018	489,042	447,456	41,586	91.5%	873,325
06/30/2019	648,653	586,733	61,920	90.5%	1,125,307
06/30/2020	870,781	777,686	93,095	89.3%	1,388,614
06/30/2021	1,234,163	1,327,949	(93,786)	107.6%	1,465,907

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	8.0%	8.0%	8.0%	8.0%	8.0%
UAL Contribution	$0	$230	$1,800	$4,600	$8,900
10.8% (95th percentile)					
Normal Cost Rate	8.2%	8.4%	8.6%	8.8%	8.5%
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	8.03%	8.0%
UAL Contribution	$0	$5,600
(5.2)% (1 standard deviation loss)		
Normal Cost Rate	8.03%	8.0%
UAL Contribution	$0	$1,700

- 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	20.08%	16.03%	12.95%
b) Accrued Liability	$1,558,066	$1,234,163	$988,890
c) Market Value of Assets	$1,327,949	$1,327,949	$1,327,949
d) Unfunded Liability/(Surplus) [(b) - (c)]	$230,117	($93,786)	($339,059)
e) Funded Ratio	85.2%	107.6%	134.3%

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	16.90%	16.03%	14.57%
b) Accrued Liability	$1,299,669	$1,234,163	$1,118,088
c) Market Value of Assets	$1,327,949	$1,327,949	$1,327,949
d) Unfunded Liability/(Surplus) [(b) - (c)]	($28,280)	($93,786)	($209,861)
e) Funded Ratio	102.2%	107.6%	118.8%

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	16.32%	16.03%	15.77%
b) Accrued Liability	$1,257,756	$1,234,163	$1,212,404
c) Market Value of Assets	$1,327,949	$1,327,949	$1,327,949
d) Unfunded Liability/(Surplus) [(b) - (c)]	($70,193)	($93,786)	($115,545)
e) Funded Ratio	105.6%	107.6%	109.5%

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	$0	$0
2. Total Accrued Liability	870,781	1,234,163
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	23	24
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	$777,686	$1,327,949
2. Payroll	1,388,614	1,465,907
3. Asset Volatility Ratio (AVR) [(1) / (2)]	0.6	0.9
4. Accrued Liability	$870,781	$1,234,163
5. Liability Volatility Ratio (LVR) [(4) / (2)]	0.6	0.8

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	0.4	0.4
06/30/2018	0.00	N/A	0.5	0.6
06/30/2019	0.00	N/A	0.5	0.6
06/30/2020	0.00	N/A	0.6	0.6
06/30/2021	0.00	N/A	0.9	0.8

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%
$1,327,949	$3,404,867	39.0%	$2,076,918	$2,322,054	57.2%	$994,105

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	23	24
Average Attained Age	33.15	33.22
Average Entry Age to Rate Plan	29.89	29.38
Average Years of Credited Service	3.32	3.79
Average Annual Covered Pay	$60,375	$61,079
Annual Covered Payroll	$1,388,614	$1,465,907
Present Value of Future Payroll	$16,314,197	$18,438,473
Transferred Members	3	3
Separated Members	2	5
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:

- Increased IDR Allowance to 75% of Compensation (75% IDR)

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	7.50%	
Final Average Compensation Period	Three Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Improved	
Industrial Disability	Increased	
Pre-Retirement Death Benefits		
Optional Settlement 2	Yes	
1959 Survivor Benefit Level	Level 3	
Special	Yes	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$5000	
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.

		Basis for Current Rate		Rates Effective July 1, 2023			
Rate Plan Identifier	**Benefit Group Name**	**Total Normal Cost**	**Member Rate**	**Total Normal Cost**	**Change**	**Change Needed**	**Member Rate**
26232	Miscellaneous PEPRA Level	15.026%	7.50%	16.03%	1.004%	Yes	8.00%

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

Sacramento-Yolo Mosquito and Vector Control District

October 18, 2022 Board Meeting

5. **Closed Session – Conference with Labor Negotiators (Government Code Section 54957.6 – Unrepresented Employee: Assistant Manager)**