

# ORANGE COUNTY FIRE AUTHORITY AGENDA

#### **Budget and Finance Committee Regular Meeting**

Wednesday, October 11, 2017 12:00 Noon

Orange County Fire Authority Regional Fire Operations and Training Center

> 1 Fire Authority Road Room AE117 Irvine, California 92602

Ed Sachs, Chair

Joe Muller, Vice Chair

Shelley Hasselbrink Gene Hernandez Al Murray Beth Swift Tri Ta

Bruce Channing - Ex Officio

This Agenda contains a brief general description of each item to be considered. Except as otherwise provided by law, no action or discussion shall be taken on any item not appearing on the following Agenda. Unless legally privileged, all supporting documents, including staff reports, and any writings or documents provided to a majority of the Budget and Finance Committee after the posting of this agenda are available for review at the Orange County Fire Authority Regional Fire Operations & Training Center, 1 Fire Authority Road, Irvine, CA 92602 or you may contact Sherry A.F. Wentz, Clerk of the Authority, at (714) 573-6040 Monday through Thursday, and every other Friday from 8 a.m. to 5 p.m. and available online at <a href="http://www.ocfa.org">http://www.ocfa.org</a>

If you wish to speak before the Budget and Finance Committee, please complete a Speaker Form identifying which item(s) you wish to address. Please return the completed form to the Clerk of the Authority. Speaker Forms are available on the counter noted in the meeting room.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, you should contact the Clerk of the Authority at (714) 573-6040. Notification 48 hours prior to the meeting will enable the Authority to make reasonable arrangements to assure accessibility to the meeting.

#### **CALL TO ORDER**

**PLEDGE OF ALLEGIANCE** by Director Swift

**ROLL CALL** 

#### **PUBLIC COMMENTS**

Any member of the public may address the Committee on items within the Committee's subject matter jurisdiction but which are not listed on this agenda during PUBLIC COMMENTS. However, no action may be taken on matters that are not part of the posted agenda. We request comments made on the agenda be made at the time the item is considered and that comments be limited to three minutes per person. Please address your comments to the Committee as a whole, and do not engage in dialogue with individual Committee Members, Authority staff, or members of the audience.

#### 1. PRESENTATIONS

No items.

#### 2. MINUTES

### A. Minutes for the August 9, 2017, Budget and Finance Committee Regular Meeting Submitted by: Sherry Wentz, Clerk of the Authority

#### Recommended Action:

Approve as submitted.

#### 3. CONSENT CALENDAR

#### A. Monthly Investment Reports

Submitted by: Tricia Jakubiak, Treasurer

#### Recommended Action:

In compliance with the investment policy of the Orange County Fire Authority and with Government Code Section 53646, review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

#### B. Orange County Employees' Retirement System Quarterly Status Update

Submitted by: Lori Zeller, Assistant Chief/Business Services Department

#### Recommended Action:

The Budget and Finance Committee requested to receive quarterly briefings on the actions taken by the Orange County Employees' Retirement System relating to financial issues, procedures, and business practices, it is recommended that the Committee receive and file the report.

#### C. Budget Adjustment and Award of RFP JA2172 for Extrication Tools

Submitted by: Brian Young, Assistant Chief/Operations Department

#### Recommended Action:

To approve funding for the purchase of updated extrication tools used to free victims from vehicles after vehicular accidents, it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Board of Directors authorize the following:

- 1. Approve a budget adjustment in the General Fund CIP (12110) increasing expenditures by \$666,293 for the purchase of Extrication tools.
- 2. Authorize the Purchasing Manager to issue a purchase order for the initial purchase of 19 sets of extrication rescue tools to Municipal Emergency Services, Inc., in the amount of \$666,293 (amount includes tax).
- 3. Authorize the Purchasing Manager to issue a blanket order for a three-year term to Municipal Emergency Services, Inc., for annual preventative maintenance for a not-to-exceed amount of \$40,665 over the three-year term (\$13,555 annually).
- 4. Authorize the Purchasing Manager to utilize the contract pricing for future budgeted purchases of extrication tools during the term of the contract.

#### 4. DISCUSSION CALENDAR

#### A. Acceptance of 2017 Department of Homeland Security/Federal Emergency Management Agency's Urban Search & Rescue Readiness Cooperative Agreement Funding

Presented by: Brian Young, Assistant Chief/Operations Department

#### Recommended Action:

To continue funding Urban Search & Rescue/California Task Force 5 it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Board of Directors take the following actions:

- 1. Approve and adopt the proposed Resolution entitled A RESOLUTION OF THE ORANGE COUNTY FIRE AUTHORITY BOARD OF DIRECTORS ACCEPTING THE FEMA NATIONAL URBAN SEARCH AND RESCUE (US&R) PROGRAM COOPERATIVE AGREEMENT TO PURCHASE US&R EQUIPMENT AND SUPPLIES, MAINTENANCE AND REPAIR OF US&R EQUIPMENT, TRAINING, AND PROGRAM ADMINISTRATION to accept the Department of Homeland Security/Federal Emergency Management Agency's Grant Readiness Cooperative Agreement funding.
- 2. Direct staff to increase revenue and appropriations in the amount of \$1,255,013 in the General Fund (Fund 121).

#### **B.** Updated Broker/Dealer List

Presented by: Tricia Jakubiak, Treasurer

#### Recommended Action:

To update the current list of broker/dealers that the Treasurer uses for competitive bidding of investment purchases it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee Meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Executive Committee approve the Broker/Dealer List, which includes FTN Financial Securities Corp., Raymond James Financial Services Inc., RBC Capital Markets, Stifel, Nicolaus & Company, Inc. and Wedbush Securities Inc. and authorize the List for a term of two years through October 31, 2019, as required by OCFA's Investment Policy.

#### C. 2017 Long Term Liability Study & Accelerated Pension Payment Plan

Presented by: Lori Zeller, Assistant Chief/Business Services Department

#### Recommended Action:

To continue the OCFA's long term liabilities and strategies for mitigating and/or funding the liabilities, it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Board of Directors:

- 1. Direct staff to continue the Accelerated Pension Payment Plan as indicated in the Updated Snowball Strategy.
- 2. Direct staff to return to the Board of Directors in January, with the mid-year financial review, to consider allocation of available unencumbered funds identified in the FY 2016/17 financial audit to OCFA's unfunded pension liability.

#### D. Special Procurement Contract for Behavioral Health Services

Presented by: Jonathan Wilby, Risk Manager/Human Resources Department Human Resources Committee Recommendation: APPROVE

Recommended Action:

To provide behavioral health services to OCFA personnel, it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Committee's recommendation that the Board of Directors:

- 1. Approve and authorize the Purchasing Manager to enter an agreement with The Counseling Team International for behavioral health services for a three-year period with the option of two additional one-year renewals, in an amount not to exceed \$150,000 annually (\$450,000 during the initial three-year period).
- 2. Approve the budget adjustment in the General Fund (Fund 121) increasing appropriations in the amount of \$150,000.

#### REPORTS

No items.

#### **COMMITTEE MEMBER COMMENTS**

**ADJOURNMENT** – The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, November 8, 2017, at 12:00 noon.

#### AFFIDAVIT OF POSTING

I hereby certify under penalty of perjury under the laws of the State of California, that the foregoing Agenda was posted in the lobby and front gate public display case of the Orange County Fire Authority, Regional Training and Operations Center, 1 Fire Authority Road, Irvine, CA, not less than 72 hours prior to the meeting. Dated this 5<sup>th</sup> day of October 2017.

Sherry A.F. Wentz, CMC Clerk of the Authority

#### **UPCOMING MEETINGS:**

Claims Settlement Committee Meeting

Thursday, October 26, 2017, 5:00 p.m.

Executive Committee Meeting

Thursday, October 26, 2017, 5:30 p.m.

Board of Directors Regular Meeting

Thursday, October 26, 2017, 6:00 p.m.

### MINUTES ORANGE COUNTY FIRE AUTHORITY

#### Budget and Finance Committee Regular Meeting Wednesday, August 9, 2017 12:00 Noon

#### Regional Fire Operations and Training Center Room AE117

1 Fire Authority Road Irvine, CA 92602

#### CALL TO ORDER

A regular meeting of the Orange County Fire Authority Budget and Finance Committee was called to order on August 9, 2017, at 12:00 p.m. by Chair Sachs.

#### PLEDGE OF ALLEGIANCE

Director Hernandez led the assembly in the Pledge of Allegiance to our Flag.

#### **ROLL CALL**

**Present:** Elizabeth Swift, Buena Park

Joseph Muller, Dana Point

Al Murray, Tustin

Ed Sachs, Mission Viejo

Shelley Hasselbrink, Los Alamitos Gene Hernandez, Yorba Linda

Tri Ta, Westminster

Bruce Channing, Ex Officio

**Absent:** None

#### Also present were:

Fire Chief Jeff Bowman Assistant Chief Lori Smith Clerk of the Authority Sherry Wentz Assistant Chief Dave Anderson Assistant Chief Lori Zeller

#### PUBLIC COMMENTS

Chair Sachs opened the Public Comments portion of the meeting. Chair Sachs closed the Public Comments portion of the meeting without any comments from the general public.

#### 1. PRESENTATIONS

#### A. Technology Task Force (F: 12.03P)

Assistant Chief Dave Anderson presented a PowerPoint presentation introducing the Technology Task Force.

Director Muller arrived at this point (12:04 p.m.)

#### 2. MINUTES

#### B. Minutes for the June 14, 2017, Budget and Finance Committee Regular Meeting (F: 12.02B2)

On motion of Director Swift and second by Director Hasselbrink, the Budget and Finance Committee voted unanimously by those present to approve the Minutes of the June 14, 2017, regular meeting as submitted. Directors Ta and Hernandez were recorded as abstentions, due to their absence from the meeting.

#### 3. CONSENT CALENDAR

#### A. Orange County Employees' Retirement System Quarterly Status Update (F: 17.06B)

At the Committee's request, Treasurer Tricia Jakubiak provided a brief overview on recent actions taken by the Orange County Employees' Retirement System's Board.

On motion of Director Ta and second by Director Hernandez, the Committee voted unanimously by those present to receive and file the report.

#### 4. DISCUSSION CALENDAR

#### **A. Monthly Investment Reports** (F: 11.10D2)

Treasurer Tricia Jakubiak provided an overview of the Monthly Investment Reports.

Director Murray arrived at this point (12:16 p.m.)

On motion of Director Ta and second by Director Hernandez, the Committee voted unanimously by those present to direct staff to place the item on the agenda for the Executive Committee meeting of August 24, 2017, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

#### **B.** Annual Investment Report (F: 11.10D1)

Treasurer Tricia Jakubiak introduced Assistant Treasurer Jane Wong who presented the Annual Investment Report.

On motion of Director Swift and second by Director Hernandez, the Committee voted unanimously by those present to direct staff to place the item on the agenda for the Executive Committee meeting of August 24, 2017, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the report.

**REPORTS** (F: 12.02B6)

No items.

#### **COMMITTEE MEMBER COMMENTS** (F: 12.02B4)

Director Swift reported attending the Orange County Board of Supervisor's meeting on Tuesday, August 8, 2017.

Director Murray noted that he was happy to be back from his recent trip to Alaska.

**ADJOURNMENT** – Chair Swift adjourned the meeting at 12:25 p.m. The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, September 13, 2017, at 12:00 noon.

Sherry A.F. Wentz, CMC Clerk of the Authority



## Orange County Fire Authority AGENDA STAFF REPORT

### **Budget and Finance Committee Meeting October 11, 2017**

Agenda Item No. 3A Consent Calendar

#### **Monthly Investment Reports**

#### **Contact(s) for Further Information**

Tricia Jakubiak, Treasurer <u>triciajakubiak@ocfa.org</u> 714.573.6301

Treasury & Financial Planning

Jane Wong, Assistant Treasurer janewong@ocfa.org 714.573.6305

#### **Summary**

This agenda item is a routine transmittal of the monthly investment reports submitted to the Committee in compliance with the investment policy of the Orange County Fire Authority and with Government Code Section 53646.

#### **Prior Board/Committee Action**

Not Applicable.

#### **RECOMMENDED ACTION(S)**

In compliance with the investment policy of the Orange County Fire Authority and with Government Code Section 53646, review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

#### **Impact to Cities/County**

Not Applicable.

#### **Fiscal Impact**

Not Applicable.

#### **Background**

Attached is the final monthly investment report for the month ended August 31, 2017. A preliminary investment report as of September 22, 2017, is also provided as the most complete report that was available at the time this agenda item was prepared.

#### **Attachment(s)**

Final Investment Report – August 2017/Preliminary Report – September 2017

# Orange County Fire Authority Monthly Investment Report



Final Report – August 2017

Preliminary Report – September 2017



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# Orange County Fire Authority Final Investment Report August 31, 2017



#### **EXECUTIVE SUMMARY**

#### Portfolio Activity & Earnings

During the month of August 2017, the size of the portfolio dropped further to \$145.1 million from \$162.9 million; this declining trend in the portfolio balance is typical during this time of year. Significant receipts for the month included cash contract payments, an apportionment of property taxes, intergovernmental agency payments, and charges for current services totaling \$6.7 million. Significant disbursements for the month included primarily two biweekly payrolls which were approximately \$10.0 million each with related benefits. Total August cash outflows amounted to approximately \$25.5 million. The portfolio's balance is expected to decrease further in the following month as there are no major receipts expected for September.

In August, the portfolio's yield to maturity (365-day equivalent) declined by 3 basis points to 1.04%. The effective rate of return decreased by 2 basis points to 1.02% for the month and edged down by 1 basis point to 1.03% for the fiscal year to date. The average maturity of the portfolio lengthened by 24 days to 93 days to maturity.

#### **Economic News**

The U.S. economy continued to grow moderately in August 2017, although mixed economic activity persisted. Employment conditions were slightly softer than expected due to Hurricane Harvey, but remained solid. There were a total of 156,000 new jobs created in August, and the unemployment rate edged up a notch to 4.4%, still at a low level. Both the Conference Board Consumer Confidence Index and the University of Michigan Consumer Sentiment Index climbed in August. Retail sales, on the other hand, unexpectedly dropped largely due to the effects of Hurricane Harvey. Both manufacturing and non-manufacturing activity increased for the month as well as durable goods orders while industrial production dropped. Housing activity also pulled back in August. The CPI (Consumer Price Index) continued to pick up, but remained low. On September 20, 2017, the Federal Open Market Committee met and voted to keep the federal funds rate unchanged at a target range of 1.00% – 1.25%. The Committee also upgraded its outlook on the economy. Currently, the market continues to expect one more rate increase this year at the Fed's December meeting.



#### **BENCHMARK COMPARISON AS OF AUGUST 31, 2017**

3 Month T-Bill: 1.03%

1 Year T-Bill:

1.23%

6 Month T-Bill: 1.13%

LAIF:

1.08%

OCFA Portfolio: 1.02%

#### **PORTFOLIO SIZE, YIELD, & DURATION**

	Current Month	Prior Month	<u>Prior Year</u>
Book Value-	\$145,096,004	\$162,867,749	\$145,605,919
Yield to Maturity (365 day)	1.04%	1.07%	0.67%
Effective Rate of Return	1.02%	1.04%	0.62%
Days to Maturity	93	69	176



# ORANGE COUNTY FIRE AUTHORITY Portfolio Management Portfolio Summary August 31, 2017

Orange County Fire Authority 1 Fire Authority Road Irvine, Irvine, CA 92602 (714)573-6301

(See Note 1 on page 9)

(See Note 2 on page 9)

Investments		Par Value	* ;	Market Value		Book Value	% of Portfolio	Term	Days to Maturity	YTM/C 360 Equiv.	YTM/C 365 Equiv.
Money Mkt Mutual Funds/Cash		3,762,000.00		3,762,000.00		3,762,000.00	2.58	1	1	0.523	0.530
Federal Agency Coupon Securities	Annual Control	35,000,000.00	1.	34,933,820.00		35,007,047.00	23.99	971	323	1.117	1.133
Federal Agency DiscAmortizing	•	27,000,000.00		26,980,740.00		26,982,596.25	18.49	160	26	0.908	0.920
Treasury Coupon Securities	and the second	9,000,000.00	F	8,996,400.00		8,999,243.05	6.17	209	75	0.904	0.916
Treasury Discounts -Amortizing	e e promision	10,000,000.00	4-1-6-6-66	9,975,200.00	1 12	9,973,750.00	6.84	∈∈170	90	1.055	1.070
Local Agency Investment Funds		61,173,154.34	18 1	61,108,351.84	1 2	61,173,154.34	41.93	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	1.069	1.084
Investments	14	5,935,154.34		145,756,511.84		145,897,790.64	100.00%	287	93	1.026	1.040
Cash	(See Note 4 on page 9)			· · · · · ·							
Passbook/Checking (not included in yield calculations)		-595,783.20		-595,783.20		-595,783.20		4. <b>0</b>	0	0.000	0.000
Total Cash and Investments	14	5,339,371.14		145,160,728.64		145,302,007.44		287	93	1.026	1.040
Total Earnings	August 31 Me	onth Ending		Fiscal Yea	r To Date						
Current Year		134,051.70		2	89,285.44	-					
Average Daily Balance	155	5,096,633.47		165,4	84,018.16						
Effective Rate of Return		1.02%			1.03%	6					

"I certify that this investment replort accurately reflects all pooled investments and is in compliance with the investment policy adopted by the Board of Directors to be effective on January 1, 2017. A copy of this policy is available from the Clerk of the Authority. Sufficient investment liquidity and anticipated revenues are available to meet budgeted expenditure requirements for the next thirty days and the next six months."

Patricia Jakubiak, Treasure

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above) GASB 31 Adjustment to Books (See Note 3 on page 9)

Total

\$ 145,302,007.44 \$ (206,003.82) \$ 145,096,003.62

#### **ORANGE COUNTY FIRE AUTHORITY**

# Portfolio Management Portfolio Details - Investments

August 31, 2017

(See Note 1 on page 9)

CUSIP	Investment	# lesuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/C 365, J	Days to <u>Maturi</u> Maturity Da
Money Mkt Mut	ual Funds/Cast	1		(See Note 4 on pa	ige 9)					
SYS528	528	Federated Treasury	Obligations		3,762,000.00	3,762,000.00	3,762,000.00	0.530	0.530	1
	8	ubtotal and Average	3,830,375.63	•	3,762,000.00	3,762,000.00	3,762,000.00		0.530	1
Federal Agency	Coupon Secui	rities								
3133EFJP3	869	Federal Farm Credit	t Bank Callable Anytime	10/15/2015	10,000,000.00	9,973,600.00	10,000,000.00	1.100	1.054	409 10/15/201
3133EGPD1	921	Federal Farm Credit	Bank Callable Anytime	04/20/2017	7,000,000.00	6,962,200.00	7,000,000.00	1.180	1.375	699 08/01/201
3134G7FK2	863	Fed Home Loan Mt	Corp	06/30/2015	9,000,000.00	8,992,800.00	9,000,000.00	1.100	1.065	203 03/23/201
3134GBHT2	922	Fed Home Loan Mt	Corp Callable 10-25-17	04/25/2017	9,000,000.00	9,005,220,00	9,007,047.00	1.625	1.100	54 10/25/201
		ubtotal and Average	36,008,878.21		35,000,000.00	34,933,820.00	35,007,047.00		1.133	323
Federal Agency	DiscAmortiz	ing								
313397LL3	917	Freddie Mac		04/20/2017	9,000,000.00	8,998,290.00	8,998,477.50	0.870	0.897	7 09/08/201
313397MA8	918	Freddie Mac		04/20/2017	9,000,000.00	8,994,780.00	8,995,327.50	0.890	0,918	21 09/22/201
313397NE7	919	Freddie Mac	_	04/20/2017	9,000,000.00	8,987,670.00	8,988,791.25	0.915	0,945	49 10/20/201
	8	ubtotal and Average	34,906,081.21		27,000,000.00	26,980,740.00	26,982,596.25		0.920	26
Treasury Coup	on Securities									
912828G20	920	Treasury Note		04/20/2017	9,000,000.00	8,996,400.00	8,999,243.05	0.875	0.916	75 11/15/201
	8	ubtotal and Average	8,999,091.66		9,000,000.00	8,996,400.00	8,999,243.05		0.916	75
Treasury Disco	unts -Amortizin	ıg								
912796ME6	923	US Treasury Bill		06/13/2017	10,000,000.00	9,975,200.00	9,973,750.00	1.050	1.070	90 11/30/201
	8	ubtotal and Average	9,969,375.00	• #	10,000,000.00	9,975,200.00	9,973,760.00		1.070	90
Local Agency Ir	vestment Fund	is								
SYS336	336	Local Agency Inveto	nt Fund		61,173,154.34	61,108,351.84	61,173,154.34	1.084	1.084	1
	5	ubtotal and Average	62,382,831.76	•	61,173,154.34	61,108,351.84	61,173,154.34		1.084	1
		Total and Average	155,096,633.47		145,935,154.34	145,756,511.84	145,897,790.64	<del></del>	1,040	93

#### **ORANGE COUNTY FIRE AUTHORITY**

#### Portfolio Management Portfolio Details - Cash August 31, 2017

CUSIP	Investment #	Issuer	Average Balance	Purchase Date		Par Value	4 1 9.	Market Value	° vare ta e ≧ sa en Book Value	Stated Rate		Days to Maturity	
Money Mkt Mu	ıtual Funds/Cash	** *				* .							
SYS10033	10033	Revolving Fund		07/01/2017		20,000.00		20,000.00	20,000.00		0.000	1	
SYS4	4	Union Bank		07/01/2017	*	-615,783.20		-615,783,20	-615,783.20	(See Note 4 on page 9)	0.000	1	
		Average Balance	0.00									0	
	Total Cash	and investments	155,096,633.47		14	45,339,371.14	14	45,160,728.64	145,302,007.44		1.040	93	

"We visualize problems and solutions through the eyes of those we serve."

# ORANGE COUNTY FIRE AUTHORITY Aging Report By Maturity Date As of September 1, 2017

Orange County Fire Authority 1 Fire Authority Road Irvine, Irvine, CA 92602 (714)573-6301

			Maturity Par Value	Percent of Portfolio	Current Book Value	Current Market Value
Aging Interval: 0 days	(09/01/2017 - 09/01/2017)	4 Maturities 0 Payments	64,339,371.14	44.28%.	64,339,371.14	64,274,568.64
Aging Interval: 1 - 30 days	(09/02/2017 - 10/01/2017)	2 Maturities 0 Payments	18,000,000.00	12.38%	17,993,805.00	17,993,070.00
Aging Interval: 31 - 60 days	(10/02/2017 - 10/31/2017 )	new year (1 Maturities (1750 Payments	9,000,000.00	6.19%:::	8,988,791.25	8,987,670.00
Aging Interval: 61 - 91 days	(11/01/2017 - 12/01/2017 )	2 Maturities 0 Payments	19,000,000.00	13.06%	18,972,993.05	18,971,600.00
Aging Interval: 92 - 121 days	(12/02/2017 - 12/31/2017 )	0 Maturities . 0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 122 - 152 days	(01/01/2018 - 01/31/2018)	0 Maturities 0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 153 - 183 days	(02/01/2018 - 03/03/2018)	0 Maturities 0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 184 - 274 days	(03/04/2018 - 06/02/2018)	1 Maturities 0 Payments	9,000,000.00	6.19%	9,000,000.00	8,992,800.00
Aging Interval: 275 - 365 days	(06/03/2018 - 09/01/2018)	0 Maturities 0 Payments	0.00	0.00%	0.00	0.00
Aging interval: 366 - 1095 days	(09/02/2018 - 08/31/2020 )	3 Maturities 0 Payments	26,000,000.00	17.90%	26,007,047.00	25,941,020.00
Aging Interval: 1096 days and after	(09/01/2020 - )	0 Maturities 0 Payments	0.00	0.00%	0.00	0.00
		Total for 13 Investments 0 Payments		100.00	145,302,007.44	145,160,728.64



#### **NOTES TO PORTFOLIO MANAGEMENT REPORT**

- Note 1: Market value of the LAIF investment is calculated using a fair value factor provided by LAIF. The MUFG Union Bank (formerly Union Bank) Trust Department provides market values of the remaining investments.
- Note 2: Book value reflects the cost or amortized cost before the GASB 31 accounting adjustment.
- Note 3: GASB 31 requires governmental entities to report investments at fair value in the financial statements and to reflect the corresponding unrealized gains/ (losses) as a component of investment income. The GASB 31 adjustment is recorded only at fiscal year end. The adjustment for June 30, 2017 includes a decrease of (\$68,353) to the LAIF investment and a decrease of (\$137,651) to the remaining investments.
- Note 4: The Federated Treasury Obligations money market mutual fund functions as the Authority's sweep account. Funds are transferred to and from the sweep account to/from OCFA's checking account in order to maintain a target balance of \$1,000,000 in checking. Since this transfer occurs at the beginning of each banking day, the checking account sometimes reflects a negative balance at the close of the banking day. The negative closing balance is not considered an overdraft since funds are available in the money market mutual fund. The purpose of the sweep arrangement is to provide sufficient liquidity to cover outstanding checks, yet allow that liquidity to be invested while payment of the outstanding checks is pending.



#### Local Agency Investment Fund (LAIF)

As of August 31, 2017, OCFA has \$61,173,154 invested in LAIF. The fair value of OCFA's LAIF investment is calculated using a participant fair value factor provided by LAIF on a quarterly basis. The fair value factor as of June 30, 2017 is 0.998940671. When applied to OCFA's LAIF investment, the fair value is \$61,108,352 or (\$64,802) below cost. Although the fair value of the LAIF investment is lower than cost, OCFA can withdraw the actual amount invested at any time.

LAIF is included in the State Treasurer's Pooled Money Investment Account (PMIA) for investment purposes. The PMIA market valuation at August 31, 2017 is included on the following page.



# State of California Pooled Money Investment Account Market Valuation 8/31/2017

Description	Service resident	arrying Cost Plus rued Interest Purch.		Fair Value	A	ccrued Interest
United States Treasury:						
Bills	\$	12,640,985,332.44	\$	12,685,145,000.00		NA
Notes	\$	19,724,870,888.39	\$	19,700,096,500.00	\$	28,550,338.00
Federal Agency:				·		
SBA	\$	890,893,140.28	\$	881,357,578.92	\$	940,960.41
MBS-REMICs	\$	37,538,927.77	\$	39,203,368.02	\$	176,145.80
Debentures	\$	1,414,303,546.45	\$	1,411,152,000.00	\$	4,517,750.05
Debentures FR	\$	<u> </u>	\$	-	\$	
Debentures CL	\$	150,000,000.00	\$	150,033,000.00	\$	466,736.00
Discount Notes	\$	11,142,008,485.84	\$	11,171,756,000.00		NA
GNMA	\$		\$	., <del>-</del>	\$	
Supranational Debentures	\$	349,845,968.23	\$	348,794,000.00	\$	1,549,479.50
Supranational Debentures FR	\$	50,000,000.00	\$	50,077,000.00	\$	97,465.28
CDs and YCDs FR	\$	625,000,000.00	\$	625,000,000.00	\$	1,758,732.68
Bank Notes	\$	900,000,000.00	ŝ	899,836,372.88	\$	3,597,861.11
CDs and YCDs	\$	13,575,000,000.00	\$	13,573,694,501.39	\$	38,666,444.42
Commercial Paper	\$	7,276,002,152.74	\$	7,290,266,833.32	Ť	NA
Corporate:	*, *		_		$\vdash$	
Bonds FR	\$		\$		\$	
Bonds	\$	-	Ť		\$	
	1		Ť	1	Ť	
Repurchase Agreements	\$		\$	· · · · · · · · · · · · · · · · · · ·	\$	<del>-</del>
Reverse Repurchase	\$		\$	-	\$	-
Time Deposits	\$	5,646,740,000.00	\$	5,646,740,000.00		NA NA
AB 55 & GF Loans	\$	704,430,000.00	\$	704,430,000.00		NA
TOTAL	\$	75,127,618,442.14	\$	75,177,582,154.53	\$	80,321,913.25

Fair Value Including Accrued Interest

\$ 75,257,904,067.78

Repurchase Agreements, Time Deposits, AB 55 & General Fund loans, and Reverse Repurchase agreements are carried at portfolio book value (carrying cost).



# Orange County Fire Authority Preliminary Investment Report September 22, 2017



# ORANGE COUNTY FIRE AUTHORITY Portfolio Management Portfolio Summary September 22, 2017

Orange County Fire Authority 1 Fire Authority Road Irvine, Irvine, CA 92602 (714)573-6301

(See Note 1 on page 18)

(See Note 2 on page 18)

			•		,	(	,				
Investments		Par Value		Market Value	•	Book Value	% of Portfolio	Term	Days to Maturity	YTM/C 360 Equiv.	YTM/0 365 Equiv
Money Mkt Mutual Funds/Cash	-	9,826,611.36		9,826,611.36	-	9,826,611.36	7.17	1	1	0.523	0.530
Federal Agency Coupon Securities		35,000,000.00		34,919,110.00		35,004,176.00	25.55	971	301	1.117	1.133
Federal Agency DiscAmortizing		9,000,000.00		8,993,610.00		8,993,823.75	6.57	183	27	0.932	0.945
Treasury Coupon Securities		9,000,000.00	<u></u>	8,997,390.00		8,999,465.09	6.57	209	53	0.904	0.916
Treasury Discounts -Amortizing	14.00	10,000,000.00	gradustic of	9,981,900.00	1994	9,980,166.67	7.29	170	68	1.055	1.070
Local Agency Investment Funds	4. No. 1	64,173,154.34	3.	64,105,173.86	Part .	64,173,154.34	46.85	1	1	1.069	1.084
Investments	136	6,999,765.70	est per a .	136,823,795.22	141.1	136,977,397.21	100.00%	287	88	1.021	1.036
Cash											
Passbook/Checking (not included in yield calculations)		465,825.74		465,825.74		465,825.74		.÷ 1 1	1	0.000	0.000
		7,465,591.44		137,289,620.96		137,443,222.95		287	88	1.021	1.036

Total Earnings	September 22 Month Ending	Fiscal Year To Date
Current Year	89,035.22	378,320.66
Average Daily Balance	144,581,886.07	160,009,650.23
Effective Rate of Return	1.02%	1.03%

"I certify that this investment report accurately reflects all pooled investments and is in compliance with the investment policy adopted by the Board of Directors to be effective on January 1, 2017. A copy of this policy is available from the Clerk of the Authority. Sufficient investment liquidity and anticipated revenues are available to meet budgeted expenditure requirements for the next thirty days and the next six months."

Patricia Jakubiak/Treasure

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above) GASB 31 Adjustment to Books (See Note 3 on page 18)

Total

\$ 137,443,222.95 \$ (206,003.82) \$ 137,237,219.13

#### **ORANGE COUNTY FIRE AUTHORITY**

# Portfolio Management Portfolio Details - Investments

September 22, 2017 (See Note 1 on page 18) (See Note 2 on page 18)

<u>-</u>	CUSIP	Investo	ent# lasuer	Average Balance	Purchase Date	Par Value		Market Value	Book Value	Stated Rate		Days to Maturity	
	Money Mkt Mutua	Funds/C	ash			,							
	SYS528	528	Federated Treasury Obl	gations		9,826,611.36		9,826,611,36	9,826,611.36	0.530	0.530	1	
٠,			Subtotal and Average	8,301,268.16		9,826,611.36		9,826,611.36	9,826,611.36		0.530	1	
_	Federal Agency C	oupon Se	curities										
	3133EFJP3	869	Federal Farm Credit Bar	K Callable Anviime	10/15/2015	10,000,000.00		9,978,000.00	10,000,000.00	1.100	1.054	387	10/15/2018
	3133EGPD1	921	Federal Farm Credit-Bai	k Callable Anytime	04/20/2017	7,000,000.00		6,948,760.00	7,000,000.00	1.180	1.375	677	08/01/2019
. ,	3134G7FK2	863	Fed Home Loan Mig Co	no ·	06/30/2015	9,000,000.00		8,990,550.00	9,000,000.00	1.100	1.065	181	03/23/2018
, .	3134GBHT2	922	Fed Home Loan Mtg Co	no Callable 10-25-17	04/25/2017	9,000,000.00	1.714	9,001,800.00	9,004,176,00	1,625	1,100	32	10/25/2019
		P. 136 3	Subtotal and Average	35,005,546.25		35,000,000.00		34,919,110.00	35,004,176.00		1.133	301	•
	Federal Agency D	iscAmo	rtizing										
	313397NE7	919	Freddie Mac		04/20/2017	9,000,000.00		8,993,610.00	8,993,823.75	0.915	0.945	27	10/20/2017
			Subtotal and Average	20,443,636.86		9,000,000.00		8,993,610.00	8,993,823.76		0.945	27	
_	Treasury Coupon	Securities					•		<u> </u>				
	912828G20	920	Treasury Note		04/20/2017	9,000,000.00		8,997,390.00	8,999,465.09	0.875	0.916	53	11/15/2017
			Subtotal and Average	8,999,369.12	-	9,000,000.00		8,997,390.00	8,999,485.09	٠	0.916	53	
_	Treasury Discount	ts -Amort	izing										
	912796ME6	923	US Treasury Bill		06/13/2017	10,000,000.00		9,981,900.00	9,980,166.67	1.050	1.070	68	11/30/2017
			Subtotal and Average	9,977,104.17		10,000,000.00		9,981,900.00	9,980,166.67		1.070	68	
_	Local Agency Inve	stment F	unds										
	SYS336	336	Local Agency Investmt Fu	ind		64,173,154.34		64,105,173.86	64,173,154.34	1.084	1.084	1	
	- •		Subtotal and Average	61,854,972.52	* ***	64,173,184.34		64,105,173.86	64,173,164.34		1.084	1	
-			Total and Average	144,581,886.07		136,999,765.70	***	136,823,795.22	136,977,397.21		1.036	88	

#### **ORANGE COUNTY FIRE AUTHORITY**

#### Portfolio Management Portfolio Details - Cash September 22, 2017

CUSIP	Investment # Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value		C Days to 5 Maturity
Money Mkt Mut	tual Funds/Cash		• • • •	•		·		
SYS10033	10033 Revolving Fund		07/01/2017	20,000.00	20,000.00	20,000.00	0.000	1
SYS4	4 Union Bank		07/01/2017	445,825.74	445,825.74	445,825.74	0.000	1
	Average Balance	0.00						1
	Total Cash and Investments	144,581,886.07		137,465,591.44	137,289,620.96	137,443,222.95	1.030	88

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# ORANGE COUNTY FIRE AUTHORITY Aging Report By Maturity Date As of September 23, 2017

Orange County Fire Authority 1 Fire Authority Road Irvine, Irvine, CA 92602 (714)573-6301

					. ·	Maturity Par Value	Percent of Portfolio	Current Book Value	Current Market Value
Aging Interval:	0 days	(09/23/2017 -	09/23/2017 )	4 Maturities	0 Payments	74,465,591.44	54.18%	74,465,591.44	74,397,610.96
Aging Interval:	1 - 30 days	(09/24/2017 -	10/23/2017 )	1 Maturities	0 Payments	9,000,000.00	6.54%	8,993,823.75	8,993,610.00
Aging Interval:	31 - 60 days	(10/24/2017 -	11/22/2017 )	1 Maturities	0 Payments	9,000,000.00	6.55%	8,999,465.09	8,997,390.00
Aging Interval:	61 - 91 days	(11/23/2017 -	12/23/2017 )	1 Maturities	0 Payments	10,000,000.00	7,26%	9,980,166.67	9,981,900.00
Aging Interval:	92 - 121 days	(12/24/2017 -	01/22/2018 )	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	122 - 152 days	(01/23/2018 -	02/22/2018 )	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging interval:	153 - 183 days	(02/23/2018 -	03/25/2018 )	1 Maturities	. 0 Payments	9,000,000.00	6.55%	9,000,000.00	8,990,550.00
Aging Interval:	184 - 274 days	(03/26/2018 -	06/24/2018 )	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	275 - 365 days	(06/25/2018 -	09/23/2018 )	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	366 - 1095 days	(09/24/2018 -	09/22/2020 )	3 Maturities	0 Payments	26,000,000.00	18.92%	26,004,176.00	25,928,560.00
Aging Interval:	1096 days and after	(09/23/2020 -	)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
		*		Total for 11 Investments	0 Payments	, <del>1, 1, 1, 1</del>	100.00	137,443,222.95	137,289,620.96



#### NOTES TO PORTFOLIO MANAGEMENT REPORT

- Note 1: Market value of the LAIF investment is calculated using a fair value factor provided by LAIF. The MUFG Union Bank Trust Department provides market values of the remaining investments.
- Note 2: Book value reflects the cost or amortized cost before the GASB 31 accounting adjustment.
- Note 3: GASB 31 requires governmental entities to report investments at fair value in the financial statements and to reflect the corresponding unrealized gains/ (losses) as a component of investment income. The GASB 31 adjustment is recorded only at fiscal year end. The adjustment for June 30, 2017 includes a decrease of (\$68,353) to the LAIF investment and a decrease of (\$137,651) to the remaining investments.
- Note 4: The Federated Treasury Obligations money market mutual fund functions as the Authority's sweep account. Funds are transferred to and from the sweep account to/from OCFA's checking account in order to maintain a target balance of \$1,000,000 in checking. Since this transfer occurs at the beginning of each banking day, the checking account sometimes reflects a negative balance at the close of the banking day. The negative closing balance is not considered an overdraft since funds are available in the money market mutual fund. The purpose of the sweep arrangement is to provide sufficient liquidity to cover outstanding checks, yet allow that liquidity to be invested while payment of the outstanding checks is pending.

#### **GLOSSARY**

#### **INVESTMENT TERMS**

Basis Point. Measure used in quoting yields on bonds and notes. One basis point is .01% of yield.

**Book Value**. This value may be the original cost of acquisition of the security, or original cost adjusted by the amortization of a premium or accretion of a discount. The book value may differ significantly from the security's current value in the market.

Commercial Paper. Unsecured short-term promissory notes issued by corporations, with maturities ranging from 2 to 270 days; may be sold on a discount basis or may bear interest.

Coupon Rate. Interest rate, expressed as a percentage of par or face value, that issuer promises to pay over lifetime of debt security.

Discount. The amount by which a bond sells under its par (face) value.

**Discount Securities**. Securities that do not pay periodic interest. Investors earn the difference between the discount issue price and the full face value paid at maturity. Treasury bills, bankers' acceptances and most commercial paper are issued at a discount.

Effective Rate of Return. Rate of return on a security, based on its purchase price, coupon rate, maturity date, and the period between interest payments.

**Federal Agency Securities**. Securities issued by agencies such as the Federal National Mortgage Association and the Federal Farm Credit Bank. Though not general obligations of the US Treasury, such securities are sponsored by the government and therefore have high credit ratings. Some are issued on a discount basis and some are issued with coupons.

Federal Funds. Funds placed in Federal Reserve banks by depository intuitions in excess of current reserve requirements. These depository institutions may lend fed funds to each other overnight or on a longer basis. They may also transfer funds among each other on a same-day basis through the Federal Reserve banking system. Fed Funds are considered to be immediately available funds.

Fed Funds Rate. The interest rate charged by one institution lending federal funds to another.

Federal Open Market Committee. The branch of the Federal Reserve Board that determines the direction of monetary policy.

Local Agency Investment Fund (LAIF). A California State Treasury fund which local agencies may use to deposit funds for investment and for reinvestment with a maximum of \$50 million for any agency (excluding bond funds, which have no maximum). It offers high liquidity because

deposits can be converted to cash in 24 hours and no interest is lost. Interest is paid quarterly and the State's administrative fee cannot to exceed 1/4 of a percent of the earnings.

Market value. The price at which the security is trading and could presumably be purchased or sold.

Maturity Date. The specified day on which the issuer of a debt security is obligated to repay the principal amount or face value of security.

Money Market Mutual Fund. Mutual funds that invest solely in money market instruments (short-term debt instruments, such as Treasury bills, commercial paper, bankers' acceptances, repurchase agreements and federal funds).

Par. Face value or principal value of a bond typically \$1,000 per bond.

Rate of Return. The amount of income received from an investment, expressed as a percentage. A market rate of return is the yield that an investor can expect to receive in the current interestrate environment utilizing a buy-and-hold to maturity investment strategy.

Treasury Bills. Short-term U.S. government non-interest bearing debt securities with maturities of no longer than one year. The yields on these bills are monitored closely in the money markets for signs of interest rate trends.

Treasury Notes. Intermediate U.S. government debt securities with maturities of one to 10 years.

Treasury bonds. Long-term U.S. government debt securities with maturities of 10 years or longer.

Yield. Rate of return on a bond.

Yield-to-maturity. Rate of return on a bond taking into account the total annual interest payments, the purchase price, the redemption value and the amount of time remaining until maturity.

#### **ECONOMIC TERMS**

Conference Board Consumer Confidence Index A survey that measures how optimistic or pessimistic consumers are with respect to the economy in the near future.

Consumer Price Index (CPI). A measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food and medical care. Changes in CPI are used to assess price changes associated with the cost of living.

**Durable Goods Orders.** An economic indicator released monthly that reflects new orders placed with domestic manufacturers for delivery of factory durable goods such as autos and appliances in the near term or future.

Gross Domestic Product. The monetary value of all the finished goods and services produced within a country's borders in a specific time period. It includes all of private and public consumption, government outlays, investments and exports less imports that occur within a defined territory.

Industrial Production. An economic indicator that is released monthly by the Federal Reserve Board. The indicator measures the amount of output from the manufacturing, mining, electric and gas industries.

ISM Institute for Supply Management (ISM) Manufacturing Index. A monthly index that monitors employment, production inventories, new orders and supplier deliveries.

ISM Non-manufacturing Index. An index based on surveys of non-manufacturing firms' purchasing and supply executives. It tracks economic data for the service sector.

Leading Economic Index. A monthly index used to predict the direction of the economy's movements in the months to come. The index is made up of 10 economic components, whose changes tend to precede changes in the overall economy.

National Federation of Independent Business Small Business Optimism Index. An index based on surveys of small business owners' plans and expectations regarding employment, capital, inventories, economic improvement, credit conditions, expansion, and earnings trends in the near term or future.

Producer Price Index. An index that measures the average change over time in the selling prices received by domestic producers for their output.

University of Michigan Consumer Sentiment Index. An index that measures the overall health of the economy as determined by consumer opinion. It takes into account an individual's feelings toward his or her own current financial health, the health of the economy in the short term and the prospects for longer term economic growth.



## Orange County Fire Authority AGENDA STAFF REPORT

### **Budget and Finance Committee Meeting October 11, 2017**

Agenda Item No. 3B Consent Calendar

#### Orange County Employees' Retirement System Quarterly Status Update

#### **Contact(s) for Further Information**

Lori Zeller, Assistant Chief <u>lorizeller@ocfa.org</u> 714.573.6020

**Business Services Department** 

Tricia Jakubiak, Treasurer triciajakubiak@ocfa.org 714.573.6301

Treasury & Financial Planning

#### **Summary**

This agenda item is a routine quarterly transmittal to the Committee to provide a report on actions taken by the Orange County Employees' Retirement System (OCERS) relating to financial issues, procedures, and business practices.

#### **Prior Board/Committee Action**

Not Applicable.

#### **RECOMMENDED ACTION(S)**

The Budget and Finance Committee requested to receive quarterly briefings on the actions taken by the Orange County Employees' Retirement System relating to financial issues, procedures, and business practices, it is recommended that the Committee receive and file the report.

#### **Impact to Cities/County**

Not Applicable.

#### **Fiscal Impact**

Not Applicable.

#### **Background**

Actions Taken/Financial Policies & Practices July – September 2017

#### OCERS BOARD OF RETIREMENT MEETING July 17, 2017:

# ILLUSTRATIONS OF RETIREMENT COSTS, UNFUNDED ACTUARIAL ACCRUED LIABILITY, AND FUNDED RATIO UNDER ALTERNATIVE ECONOMIC SCENARIOS

Segal presented its annual projections of contribution rates for the next 20 years given three different scenarios for investment returns in 2017 - 0%, 7.25%, and 14.5%. (Attachment 1)

#### SENSITIVITY ANALYSIS OF ALTERNATIVE ECONOMIC ASSUMPTIONS

A sensitivity analyses was presented that included the impact that changes to the assumed investment rate of return and the inflation rate assumption have on the Unfunded Actuarial Accrued Liability and on contribution rates and dollar amounts for both the employer and employees. (Attachment 2)

#### OCERS BOARD OF RETIREMENT MEETING August 21, 2017:

#### INITIAL DISUCUSSION OF TRIENNIAL STUDY OF ACTUARIAL ASSUMPTIONS

Every three years, the OCERS Board engages its actuary to conduct a study to determine if the assumptions used for projecting the costs and liabilities of the OCERS plan are matching actual experience. Any changes to assumptions will be applied to the December 31, 2017, Actuarial Valuation, first impacting rates to be set for July 1, 2019. This was a receive and file discussion ONLY. The adoption of any actuarial assumption changes will be on the Board's regularly scheduled administrative meeting of October 16, 2017.

The primary cost drivers in this report are possible changes to (1) the assumed rate of return (if OCERS earns less from the markets, it requires increased contributions from both employers and employees); (2) the projected inflation rate (lowering the inflation rate has both plus and minus impacts on the pensions liabilities); and (3) implementing "Generational Mortality" (any change in mortality that projects some individuals living longer than originally anticipated will create the need to collect additional contributions to pay retirement benefits for a longer period of time than originally assumed).

The three options being recommended for consideration are listed on pages 2-3, and the retirement contribution rate impacts for the three options are on pages 62-64 on Attachment 3.

#### EARLY PAYMENT OF EMPLOYER CONTRIBUTIONS PROGRAM - 2018

Every year, the OCERS Board is asked to renew a statutorily permitted program of allowing for a contribution discount if employer contributions are prepaid. Providing a discount rate equivalent to the current 7.25% assumed earnings rate at a time when future returns continue to be challenging did not seem prudent to OCERS since a failure to earn the 7.25% assumed investment return in the coming year would add to the Unfunded Actuarially Accrued Liability. For that reason, OCERS staff suggested and the Board approved a 4.5% discount rate (a repeat of the 2017 rate) for early payment of FY 2018 employer contributions.

#### OCERS INVESTMENT RETURN

OCERS year-to-date preliminary investment return, as of August, was 9.5%. OCERS is on a calendar year basis and has an assumed rate of return of 7.25%.

OCFA staff will continue to monitor actions taken by OCERS and will report back in January regarding actions taken during the next quarter.

**Attachment(s)** (On file with the Clerk of the Authority, available upon request.)

- 1. Segal Consulting Projections, July 7, 2017
- 2. Segal Consulting Sensitivity Analysis of Alternative Economic Assumptions, July 7, 2017
- 3. Segal Consulting Actuarial Experience Study, August 14, 2017



#### Memorandum

**DATE**: July 6, 2017

**TO**: Members, Board of Retirement

**FROM**: Brenda Shott, Assistant CEO-Finance and Internal Operations

SUBJECT: ILLUSTRATIONS OF RETIREMENT COSTS, UNFUNDED ACTUARIAL ACCRUED LIABILITY AND FUNDED

RATIO UNDER ALTERNATIVE ECONOMIC SCENARIOS

#### Recommendation

Receive and file.

#### **Background/Discussion**

Segal Consulting annually prepares an Illustration of Retirement Costs, Unfunded Actuarial Accrued Liability and Funded Ratio under Alternative Economic Scenarios. The illustrations cover a 20 year period to reflect the current 20 year amortization period. The information contained in the letter are not a guarantee of what rates will actually be in the future as rates are impacted by experience and changes in assumptions and funding policy. Mr. Paul Angelo will present this information to the Board at the July 17 meeting and staff will distribute the letter to plan sponsors.

#### **Submitted by:**



**Brenda Shott** 

Assistant CEO, Finance and Internal Operations



100 Montgomery Street Suite 500 San Francisco, CA 94104-4308 T 415.263.8283 www.segalco.com

Andy Yeung, ASA, MAAA, FCA, EA Vice President & Actuary ayeung@segalco.com

VIA E-MAIL AND USPS

July 7, 2017

Mr. Steve Delaney Chief Executive Officer Orange County Employees Retirement System 2223 Wellington Avenue Santa Ana, CA 92701-3101

Re: Illustrations of Retirement Costs, Unfunded Actuarial Accrued Liability and Funded Ratio under Alternative Investment Return Scenarios

Dear Steve:

As requested, we have developed 20-year illustrations of the employer contribution rates for OCERS under three sets of market investment return "scenarios" after December 31, 2016. In this letter, we have also provided the Unfunded Actuarial Accrued Liability (UAAL) in dollars and the funded ratio associated with those projected employer contribution rates. These results have been prepared using the results from the December 31, 2016 valuation approved by the Board at its meeting on June 12, 2017.

Please note that at the Board meeting on June 12, 2017, the Chair provided direction to Segal on alternative inflation and investment return <u>assumptions</u> for use in studying how sensitive the projection results under Scenario #2 below are to changes in economic assumptions. Those sensitivity illustrations (done for the OCERS plan as a whole and not by Rate Group) will be provided under a separate cover.

The three market rate of return scenarios are as follows:

> Scenario #1: 0.00% for 2017 and 7.25% thereafter.

> Scenario #2: 7.25% for all years.

> Scenario #3: 14.50% for 2017 and 7.25% thereafter.

Even though the financial impact is shown under only three hypothetical market investment return scenarios for 2017, the financial impact under other possible short-term market investment return scenarios may be approximated by interpolating or extrapolating using the results from the three scenarios shown.<sup>1</sup>

The various projections included are as follows:

- > The projected contribution rates for the aggregate plan are provided in Attachment A.
- The projected contribution rates for the eleven Rate Groups are provided in Attachment B.
- > The projected UAAL and funded ratio for the aggregate plan are provided in Attachment C.
- > The projected UAAL and funded ratio for the eleven Rate Groups are provided in Attachments D through N.
- > Also, we have included in Attachment O the projected contribution rates for the different plans within the eleven Rate Groups.

This projection also reflects the potential employer savings as current members leave employment and are replaced by new members covered under the tiers required by the California Public Employees' Pension Reform Act of 2013 (CalPEPRA) starting at January 1, 2013 (or January 1, 2015 for Rate Group #5). Please note that some of the changes made by CalPEPRA, such as the sharing of the total Normal Cost on a 50:50 basis, may result in employer savings for current members under the legacy plans. As those changes have not been implemented by the employers and the bargaining parties at OCERS, we have not reflected them in this illustration.

#### METHODS AND ASSUMPTIONS

The methods and actuarial assumptions we used to prepare the employer contribution rates, the UAAL and the funded ratio are as summarized below:

- > The illustrations are based on the actuarial assumptions and census data used in our December 31, 2016 valuation report for the Retirement Plan. With the exception of the market rates of return specified above, it is assumed that all actuarial assumptions would be met in the future and that there would be no change in the future for any of the actuarial assumptions adopted by the Board for the December 31, 2016 valuation.
- ➤ The detailed amortization schedule for OCERS' UAAL as of December 31, 2016 is provided in the valuation report. Any subsequent changes in the UAAL due to actuarial gains or losses (e.g., from investment returns on valuation value of assets greater or less than the assumed 7.25%) are amortized over separate 20-year periods.

<sup>&</sup>lt;sup>1</sup> For example, a hypothetical market investment return of 3.625% (i.e., one-half of 7.25%) is expected to result in a change in employer's contribution of about one-half of the difference between those shown for Scenarios #1 and #2, starting with the December 31, 2016 valuation.

> CalPEPRA prescribes new benefit formulas for members with a membership date on and after January 1, 2013 (or January 1, 2015 for Rate Group #5). For Rate Groups #1, #3, #5, #9, #10, #11 and #12, we have estimated the Normal Cost savings<sup>2</sup> associated with the enrollment of those members under the new 2.5% at 67 formula. The method we have applied this year to estimate the Normal Cost savings should be more robust than the simplified method we applied in the past.<sup>3</sup>

For new members within Rate Group #2, only the County's attorneys, San Juan Capistrano members<sup>4</sup> and OCERS Management members will receive the 2.5% at 67 formula while all other new members in Rate Group #2 will receive the "new" 1.62% at 65 formulas.<sup>5</sup> We assumed that the proportion of the payrolls for members who will receive the 2.5% at 67 formula, the Plan T "new" 1.62% at 65 formula and the Plan W "new" 1.62% at 65 formula in the future would remain unchanged from that observed at the December 31, 2016 valuation. As of December 31, 2016, payroll for active members in Rate Group #2 under these three formulas represented about 7.4%, 92.6% and 0.0% of the combined payroll for members under the 2.5% at 67 formula, the Plan T "new" 1.62% at 65 formula and the Plan W "new" 1.62% at 65 formula, respectively. We have estimated the Normal Cost savings<sup>2</sup> associated with the enrollment of new members under the three new formulas.<sup>6</sup>

For Rate Group #6, #7 and #8 members with a membership date on and after January 1, 2013, we have estimated the Normal Cost savings<sup>2</sup> associated with the enrollment of those members under the new 2.7% at 57 formula.

> We understand that, with the exception of new members who would be covered under the "new" 1.62% at 65 formulas, in the determination of pension benefits under the CalPEPRA formulas the maximum compensation that can be taken into account for new members on and after January 1, 2017 is equal to \$142,530 in 2017. To the extent this provision will limit compensation of the new members, our assumption that the total payroll will increase by 3.50% each year over the projection period (for use in determining the contribution rate for

<sup>&</sup>lt;sup>2</sup> We have estimated the potential employer Normal Cost savings assuming that the payroll for new members who would be covered after the December 31, 2016 valuation under the CalPEPRA tiers could be modeled by: (1) projecting the total December 31, 2016 payroll within each Rate Group using the 3.50% assumption used in the valuation to predict annual wage growth for amortizing the UAAL and (2) subtracting the projected closed group payroll from the current members in the December 31, 2016 valuation using the assumptions applied in the valuation to anticipate salary increases as well as termination, retirement (both service and disability) and other exits from active employment.

<sup>&</sup>lt;sup>3</sup> In the past, we estimated the savings by making a simplifying assumption that there would be a shift in the proportion of payroll such that active members would be replaced over 20 years (starting in 2013 or 2015 for Rate Group #5) by new CalPEPRA members on a prorated basis.

<sup>&</sup>lt;sup>4</sup> For San Juan Capistrano members with membership dates on or after January 1, 2016, they will be allowed to elect Plan W (1.62% at 65) in lieu of Plan U (2.5% at 67 formula). As of December 31, 2016, there were no members enrolled in Plan W.

<sup>&</sup>lt;sup>5</sup> The "new" 1.62% at 65 formula is the CalPEPRA Plan T for non-City of San Juan Capistrano members and the CalPEPRA Plan W for City of San Juan Capistrano members.

<sup>&</sup>lt;sup>6</sup> The payroll for new members is split between the 2.5% at 67 formula, the Plan T 1.62% at 65 formula and the Plan W 1.62% at 65 formula based on the proportion of payrolls under those formulas as of December 31, 2016.

the UAAL) may be overstated somewhat. Under that scenario, there would be an increase in the UAAL contribution rate as the amount required to amortize the UAAL will have to be spread over a somewhat smaller total payroll base.

> Other than the above adjustments to the Normal Costs from the new CalPEPRA formulas, we have not included any other adjustments for the pre-CalPEPRA members such as the anticipated reduction in proportion (and hence in the associated Normal Cost) of existing Tier 1 active members (with pension benefits based on final one year average formula) relative to the increase in proportion of existing Tier 2 active members (with pension benefits based on final three year average formula) for members in any Rate Group.

#### **OTHER CONSIDERATIONS**

Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

This study was prepared under the supervision of Andy Yeung, ASA, MAAA. I am a member of the American Academy of Actuaries and meet the qualification requirements to provide the opinion contained herein.

Please let us know if you have any questions.

Menny

Sincerely,

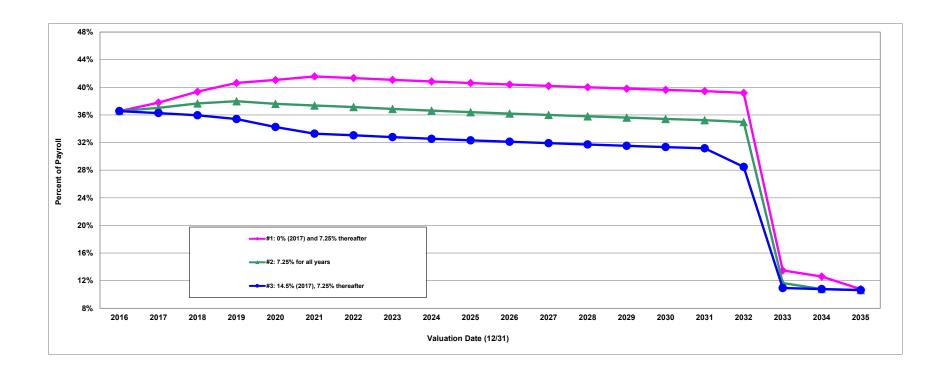
Andy Yeung

MYM/gxk Enclosures

cc: Suzanne Jenike

Brenda Shott

## Attachment A Projected Employer Rates Aggregate Plan



Valuation Date (12/31)															2030					
#1: 0% (2017) and 7.25% thereafter	36.6%	37.8%	39.4%	40.6%	41.1%	41.6%	41.4%	41.1%	40.8%	40.6%	40.4%	40.2%	40.0%	39.8%	39.6%	39.5%	39.2%	13.5%	12.6%	10.8%
#2: 7.25% for all years	36.6%	37.0%	37.7%	38.0%	37.6%	37.4%	37.1%	36.9%	36.6%	36.4%	36.2%	36.0%	35.8%	35.6%	35.4%	35.2%	35.0%	11.7%	10.8%	10.6%
#3: 14.5% (2017), 7.25% thereafter	36.6%	36.3%	36.0%	35.4%	34.3%	33.3%	33.1%	32.8%	32.5%	32.3%	32.1%	31.9%	31.7%	31.5%	31.4%	31.2%	28.5%	10.9%	10.8%	10.6%

There is an increase in the rates towards the end of the projection period in this letter compared to the rates towards the end of the projection period in our letter dated January 4, 2017 (which was based on the December 31, 2015 valuation). That increase is due to the change in methodology used to estimate the Normal Cost savings as described on page 3 of this letter.

### Attachment B Projected Employer Rates by Rate Group Scenario 1: 0% for 2017 and 7.25% thereafter

									Valu	ation Da	te (12/31	)								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
General																				
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	16.4%	17.3%	18.4%	19.3%	19.6%	20.0%	20.0%	19.9%	19.9%	19.9%	19.9%	19.9%	19.9%	19.8%	19.8%	19.8%	19.8%	8.9%	10.3%	8.8%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	33.7%	34.7%	36.1%	37.2%	37.6%	38.0%	37.7%	37.5%	37.2%	37.0%	36.8%	36.6%	36.4%	36.2%	36.0%	35.8%	35.5%	8.7%	8.0%	7.8%
RG #3 - Plans B, G, H and U (OCSD)	11.6%	11.4%	11.3%	12.9%	13.6%	14.3%	14.2%	14.1%	14.0%	13.8%	13.7%	13.6%	13.5%	13.5%	13.4%	13.3%	13.3%	13.2%	13.2%	13.1%
RG #5 - Plans A, B and U (OCTA)	25.5%	26.7%	28.3%	29.5%	30.0%	30.6%	30.6%	30.5%	30.5%	30.5%	30.4%	30.4%	30.4%	30.4%	30.4%	30.3%	30.2%	11.9%	13.1%	10.3%
RG #9 - Plans M, N and U (TCA)	23.8%	24.6%	25.6%	26.4%	26.7%	27.1%	27.0%	26.8%	26.7%	26.6%	26.5%	26.5%	26.4%	26.3%	26.3%	26.2%	26.1%	11.8%	12.3%	10.7%
RG #10 - Plans I, J, M, N and U (OCFA)	30.5%	31.5%	32.8%	33.7%	34.1%	34.5%	34.3%	34.1%	34.0%	33.8%	33.7%	33.5%	33.4%	33.2%	33.1%	33.0%	32.8%	10.0%	9.7%	9.6%
RG #11 - Plans M and N, future service, and U (Cemetery)	10.9%	10.9%	12.1%	13.3%	13.9%	14.5%	14.4%	14.3%	14.2%	14.2%	14.1%	14.1%	14.0%	13.9%	13.9%	13.8%	13.7%	13.7%	13.6%	13.5%
RG #12 - Plans G and H, future service, and U (Law Library)	22.7%	22.1%	23.2%	24.2%	24.5%	24.8%	24.5%	24.2%	23.9%	23.7%	23.5%	23.4%	23.2%	23.0%	23.0%	22.8%	22.6%	10.9%	10.8%	10.7%
Safety																				
RG #6 - Plans E, F and V (Probation)	47.8%	49.6%	51.6%	53.2%	53.9%	54.6%	54.4%	54.2%	54.0%	53.7%	53.5%	53.2%	52.9%	52.5%	52.2%	51.8%	51.4%	27.1%	22.3%	16.8%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.8%	65.2%	67.8%	69.8%	70.6%	71.5%	71.2%	70.9%	70.6%	70.4%	70.2%	70.0%	69.7%	69.5%	69.3%	69.1%	68.8%	31.5%	28.6%	20.4%
RG #8 - Plans E, F, Q, R and V (Fire Authority)	47.8%	49.3%	51.4%	53.0%	53.5%	54.0%	53.6%	52.7%	52.1%	51.6%	51.2%	50.8%	50.4%	50.0%	49.7%	49.2%	48.7%	21.2%	20.7%	16.8%

In the December 31, 2033 valuation, Rate Group #1 would be projected to have a small UAAL rate, which would be entirely offset by the favorable 18-month delay adjustment due to the significant decrease in the UAAL rate in the December 31, 2033 valuation. However, in the following year, the UAAL rate would no longer be offset by the 18-month delay adjustment so the employer rate increases in that year. By the December 31, 2035 valuation, there would no longer be a UAAL rate.

In addition, under this scenario, Rate Group #3 would be expected to use up the <u>entire</u> amount in the O.C. Sanitation District UAAL Deferred Account (that account has a balance of \$34,067,000 as of December 31, 2016) by the December 31, 2019 valuation.

Rates shown throughout these projections for Rate Group #12 have been adjusted for the future service only benefit enhancement.

Similar to prior projections, we have not taken into account the County Investment Account (that account has a balance of \$117,723,000 as of December 31, 2016) in these projections.

## Attachment B Projected Employer Rates by Rate Group Scenario 2: 7.25% for all years

									Valu	ation Da	te (12/31	)								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
General																				
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	16.4%	16.9%	17.4%	17.7%	17.6%	17.6%	17.6%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.4%	17.4%	17.4%	17.4%	8.8%	8.8%	8.8%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	33.7%	34.0%	34.5%	34.8%	34.4%	34.1%	33.9%	33.6%	33.4%	33.2%	33.0%	32.7%	32.5%	32.3%	32.2%	32.0%	31.7%	8.1%	8.0%	7.8%
RG #3 - Plans B, G, H and U (OCSD)	11.6%	11.4%	11.3%	11.1%	11.0%	10.9%	10.7%	10.6%	10.5%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%	9.7%	9.6%
RG #5 - Plans A, B and U (OCTA)	25.5%	26.0%	26.8%	27.3%	27.1%	27.1%	27.0%	27.0%	27.0%	27.0%	26.9%	26.9%	26.9%	26.9%	26.8%	26.8%	26.7%	10.3%	10.3%	10.3%
RG #9 - Plans M, N and U (TCA)	23.8%	24.1%	24.5%	24.8%	24.5%	24.4%	24.3%	24.2%	24.1%	24.0%	23.9%	23.8%	23.7%	23.7%	23.6%	23.5%	23.4%	10.7%	10.7%	10.7%
RG #10 - Plans I, J, M, N and U (OCFA)	30.5%	30.9%	31.4%	31.7%	31.5%	31.3%	31.1%	30.9%	30.7%	30.6%	30.4%	30.3%	30.1%	30.0%	29.9%	29.8%	29.6%	9.7%	9.7%	9.6%
RG #11 - Plans M and N, future service, and U (Cemetery)	10.9%	10.9%	10.8%	11.0%	10.8%	10.7%	10.6%	10.6%	10.5%	10.5%	10.5%	10.4%	10.4%	10.4%	10.3%	10.3%	10.3%	10.3%	10.2%	10.2%
RG #12 - Plans G and H, future service, and U (Law Library)	22.7%	21.3%	21.5%	21.6%	21.1%	20.7%	20.4%	20.1%	19.8%	19.6%	19.5%	19.3%	19.2%	19.0%	19.0%	18.9%	18.7%	8.2%	8.1%	8.0%
Safety																				
RG #6 - Plans E, F and V (Probation)	47.8%	48.7%	49.6%	50.2%	49.9%	49.7%	49.5%	49.3%	49.1%	48.8%	48.6%	48.3%	48.0%	47.7%	47.3%	47.0%	46.5%	22.2%	17.1%	16.8%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.8%	64.0%	65.1%	65.7%	65.2%	65.0%	64.7%	64.4%	64.1%	63.9%	63.7%	63.4%	63.2%	63.0%	62.8%	62.6%	62.3%	25.0%	20.5%	20.4%
RG #8 - Plans E, F, Q, R and V (Fire Authority)	47.8%	48.3%	49.1%	49.4%	48.8%	48.4%	47.9%	47.0%	46.4%	45.9%	45.5%	45.1%	44.8%	44.4%	44.0%	43.6%	43.1%	17.5%	17.2%	16.8%

Under this scenario, Rate Group #3 would be expected to use up only <u>some</u> of the amount in the O.C. Sanitation District UAAL Deferred Account (that account has a balance of \$34,067,000 as of December 31, 2016) by the December 31, 2035 valuation.

Rates shown throughout these projections for Rate Group #12 have been adjusted for the future service only benefit enhancement.

Similar to prior projections, we have not taken into account the County Investment Account (that account has a balance of \$117,723,000 as of December 31, 2016) in these projections.

### Attachment B Projected Employer Rates by Rate Group Scenario 3: 14.5% for 2017 and 7.25% thereafter

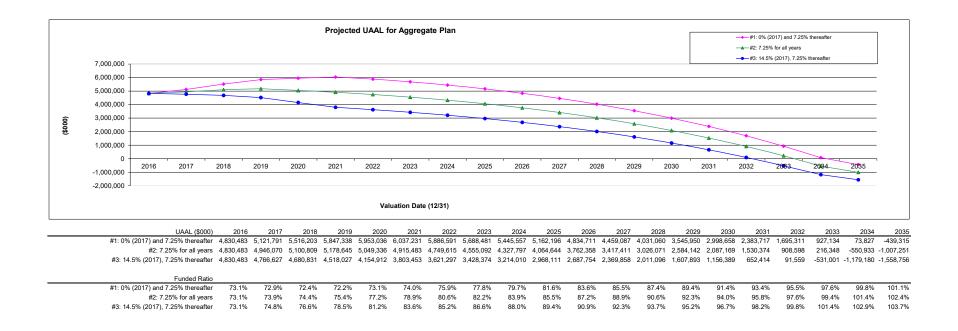
	Valuation Date (12/31) 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 203:																			
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
General																				
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	16.4%	16.4%	16.4%	16.2%	15.6%	15.2%	15.1%	15.1%	15.1%	15.1%	15.1%	15.0%	15.0%	15.0%	15.0%	15.0%	8.8%	8.8%	8.8%	8.8%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	33.7%	33.3%	32.9%	32.4%	31.3%	30.3%	30.1%	29.8%	29.6%	29.4%	29.1%	28.9%	28.7%	28.5%	28.3%	28.2%	27.9%	8.1%	8.0%	7.8%
RG #3 - Plans B, G, H and U (OCSD)	11.6%	11.4%	11.3%	11.1%	11.0%	10.9%	10.7%	10.6%	10.5%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%	9.7%	9.6%
RG #5 - Plans A, B and U (OCTA)	25.5%	25.4%	25.3%	25.0%	24.2%	23.6%	23.5%	23.5%	23.5%	23.4%	23.4%	23.4%	23.4%	23.3%	23.3%	23.3%	10.3%	10.3%	10.3%	10.3%
RG #9 - Plans M, N and U (TCA)	23.8%	23.6%	23.5%	23.1%	22.4%	21.8%	21.7%	21.6%	21.5%	21.4%	21.3%	21.2%	21.2%	21.1%	21.0%	21.0%	10.8%	10.7%	10.7%	10.7%
RG #10 - Plans I, J, M, N and U (OCFA)	30.5%	30.3%	30.1%	29.7%	28.8%	28.1%	27.9%	27.7%	27.5%	27.4%	27.2%	27.1%	26.9%	26.8%	26.7%	26.6%	26.4%	9.7%	9.7%	9.6%
RG #11 - Plans M and N, future service, and U (Cemetery)	10.9%	10.9%	10.8%	10.8%	10.7%	10.6%	10.6%	10.5%	10.5%	10.4%	10.4%	10.4%	10.4%	10.3%	10.3%	10.3%	10.2%	10.2%	10.2%	10.2%
RG #12 - Plans G and H, future service, and U (Law Library)	22.7%	20.7%	20.0%	19.3%	18.1%	17.1%	16.9%	16.6%	16.4%	16.3%	16.2%	16.1%	16.0%	15.9%	8.5%	8.4%	8.2%	8.2%	8.1%	8.0%
Safety																				I.
RG #6 - Plans E, F and V (Probation)	47.8%	47.9%	47.7%	47.2%	45.9%	44.8%	44.6%	44.4%	44.2%	43.9%	43.7%	43.4%	43.1%	42.8%	42.4%	42.1%	41.6%	17.5%	17.1%	16.8%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.8%	62.8%	62.4%	61.7%	59.9%	58.5%	58.2%	57.9%	57.6%	57.4%	57.2%	56.9%	56.7%	56.5%	56.3%	56.1%	55.8%	20.7%	20.5%	20.4%
RG #8 - Plans E, F, Q, R and V (Fire Authority)	47.8%	47.2%	46.7%	45.9%	44.1%	42.7%	42.3%	41.3%	40.7%	40.2%	39.8%	39.5%	39.1%	38.7%	38.3%	37.9%	18.0%	17.5%	17.2%	16.8%

Under this scenario, Rate Group #3 would be expected to use up <u>none</u> of the amount in the O.C. Sanitation District UAAL Deferred Account (that account has a balance of \$34,067,000 as of December 31, 2016) by the December 31, 2035 valuation.

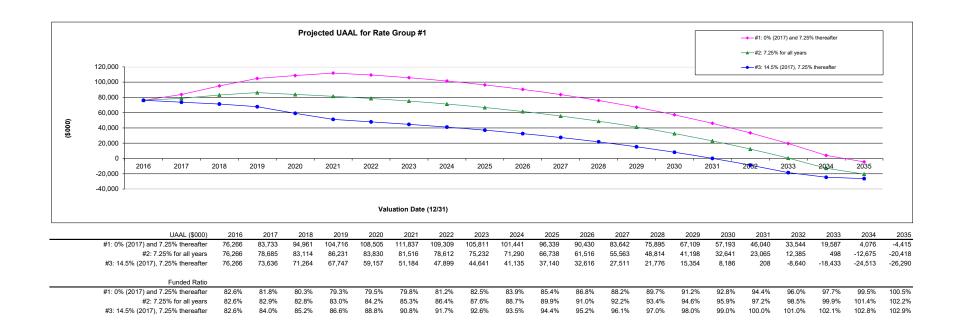
Rates shown throughout these projections for Rate Group #12 have been adjusted for the future service only benefit enhancement.

Similar to prior projections, we have not taken into account the County Investment Account (that account has a balance of \$117,723,000 as of December 31, 2016) in these projections.

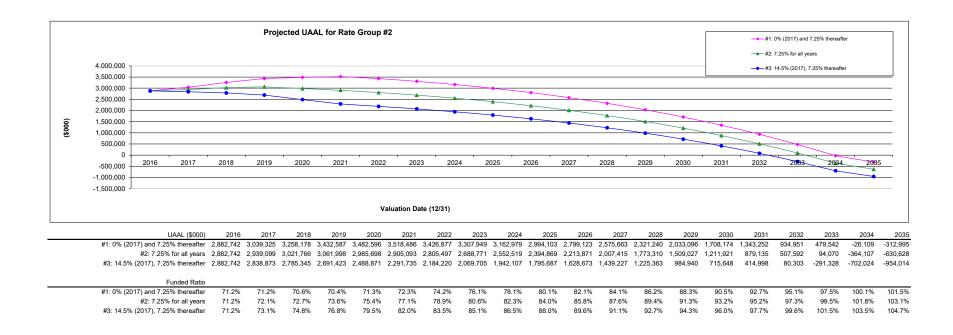
### Attachment C Projected UAAL and Funded Ratio for Aggregate Plan



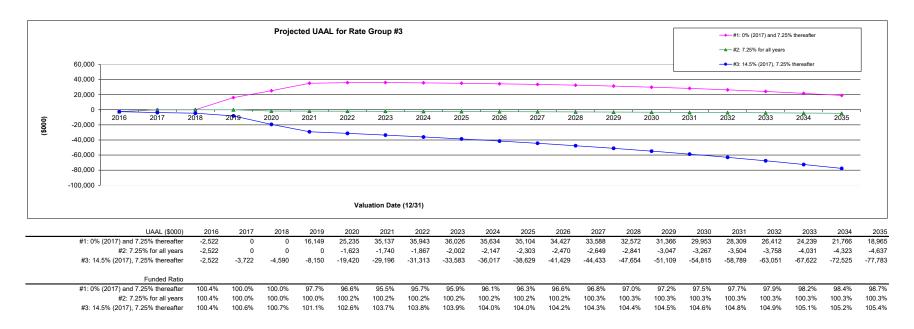
## Attachment D Projected UAAL and Funded Ratio for Rate Group #1 Plans A, B and U (non-OCTA, non-OCSD)



## Attachment E Projected UAAL and Funded Ratio for Rate Group #2 Plans I, J, O, P, S, T, U and W (County et al.)

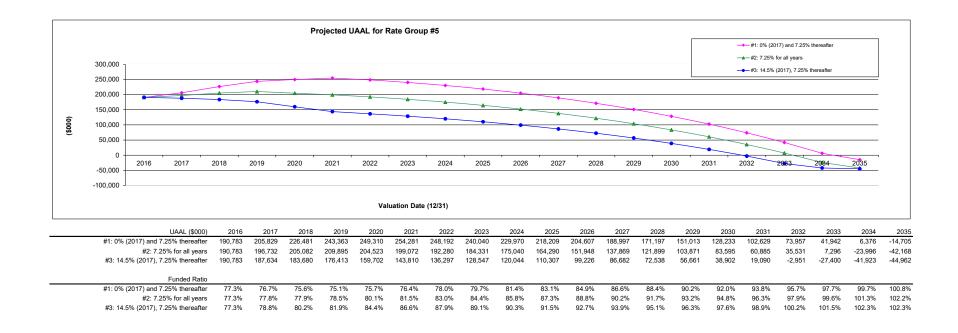


Attachment F
Projected UAAL and Funded Ratio for Rate Group #3
Plans B, G, H and U (OCSD)

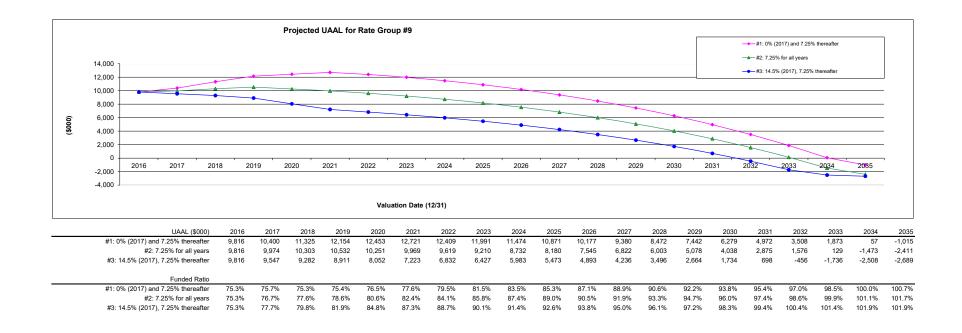


Unlike most of the other Rate Groups, Rate Group #3 has a UAAL under Scenario #1 due to the reemergence of their UAAL amortization layers starting with the December 31, 2019 valuation. While Rate Group #3 is overfunded as of the December 31, 2016 valuation, they are anticipated to have a restart amortization layer starting with the 2019 valuation under Scenario #1, which will not drop off until 20 years after that restart amortization layer is established.

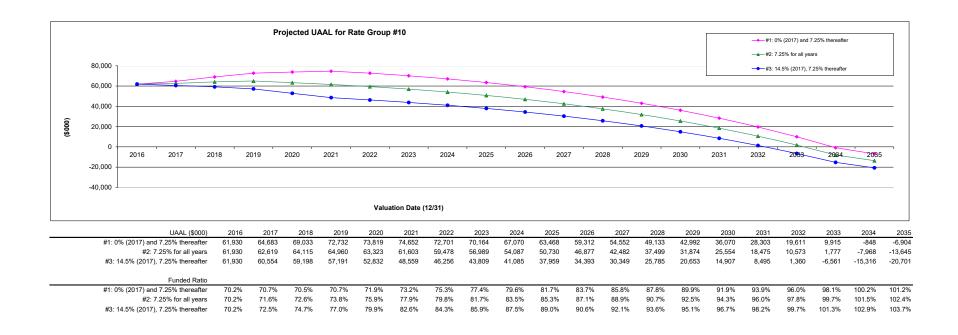
## Attachment G Projected UAAL and Funded Ratio for Rate Group #5 Plans A, B and U (OCTA)



## Attachment H Projected UAAL and Funded Ratio for Rate Group #9 Plans M, N and U (TCA)



## Attachment I Projected UAAL and Funded Ratio for Rate Group #10 Plans I, J, M, N and U (OCFA)

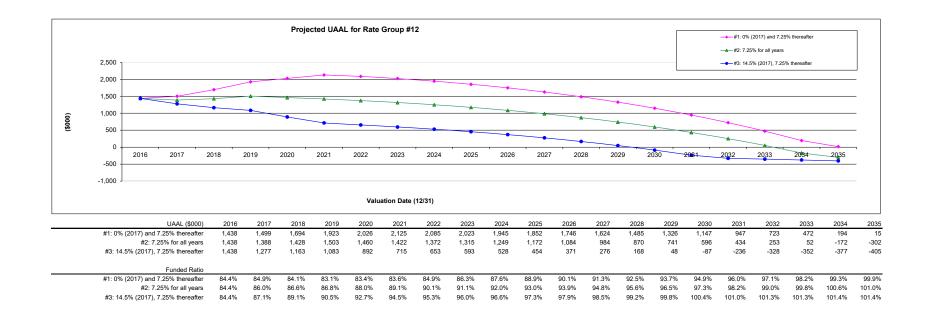


Attachment J
Projected UAAL and Funded Ratio for Rate Group #11
Plans M and N, future service, and U (Cemetery)

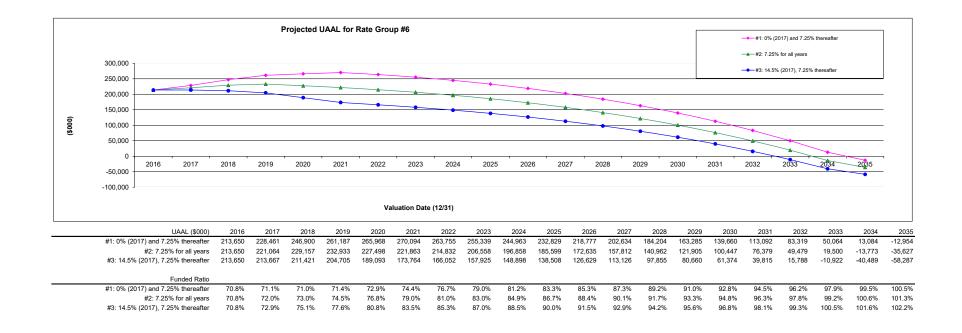


Unlike most of the other Rate Groups, Rate Group #11 has a UAAL under Scenario #1 due to the reemergence of their UAAL amortization layers starting with the December 31, 2018 valuation. While Rate Group #11 is overfunded as of the December 31, 2016 valuation, they are anticipated to have a restart amortization layer starting with the 2018 valuation under Scenario #1, which will not drop off until 20 years after that restart amortization layer is established.

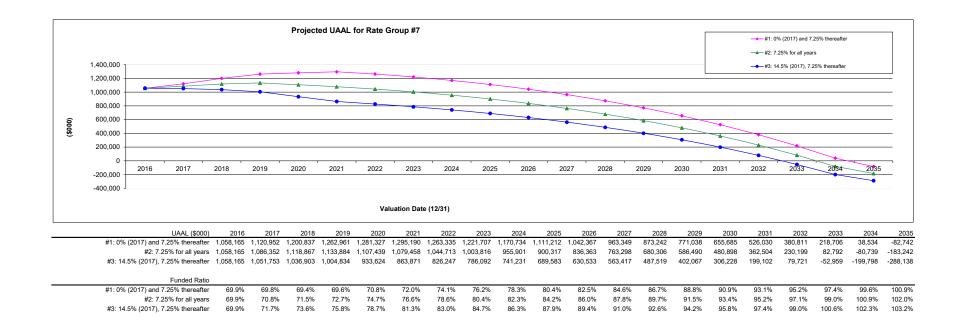
## Attachment K Projected UAAL and Funded Ratio for Rate Group #12 Plans G, H and U (Law Library)



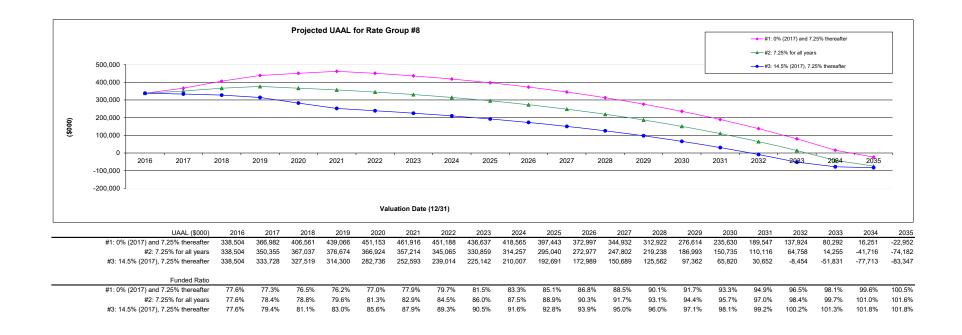
## Attachment L Projected UAAL and Funded Ratio for Rate Group #6 Plans E, F and V (Probation)



## Attachment M Projected UAAL and Funded Ratio for Rate Group #7 Plans E, F, Q, R and V (Law Enforcement)



## Attachment N Projected UAAL and Funded Ratio for Rate Group #8 Plans E, F, Q, R and V (Fire Authority)



### Attachment O Projected Employer Rates by Plans within each Rate Group Scenario 1: 0% for 2017 and 7.25% thereafter

									Valu	ation Da	te (12/31	)								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
General																				
RG #1 - Plans A and B	16.8%	17.7%	18.8%	19.7%	20.1%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.4%	9.6%	11.0%	9.5%
RG #1 - Plan U	15.9%	16.9%	18.0%	18.8%	19.2%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	19.6%	8.7%	10.1%	8.6%
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	16.4%	17.3%	18.4%	19.3%	19.6%	20.0%	20.0%	19.9%	19.9%	19.9%	19.9%	19.9%	19.9%	19.8%	19.8%	19.8%	19.8%	8.9%	10.3%	8.8%
RG #2 - Plans I and J	34.9%	36.3%	38.0%	39.4%	40.0%	40.6%	40.6%	40.6%	40.6%	40.6%	40.6%	40.6%	40.6%	40.6%	40.6%	40.5%	40.4%	13.8%	13.2%	13.2%
RG #2 - Plans O and P	27.3%	28.6%	30.3%	31.7%	32.3%	33.0%	33.0%	32.9%	32.9%	32.9%	32.9%	32.9%	32.9%	32.9%	32.9%	32.9%	32.8%	6.1%	5.5%	5.5%
RG #2 - Plan S	32.1%	33.4%	35.2%	36.5%	37.1%	37.8%	37.8%	37.8%	37.8%	37.8%	37.7%	37.7%	37.7%	37.7%	37.7%	37.7%	37.6%	10.9%	10.4%	10.4%
RG #2 - Plan T	28.3%	29.7%	31.4%	32.7%	33.4%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%	33.9%	33.9%	33.8%	7.2%	6.6%	6.6%
RG #2 - Plan U	30.0%	31.4%	33.1%	34.4%	35.1%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.6%	35.6%	35.5%	8.9%	8.3%	8.3%
RG #2 - Plan W	28.4% 33.7%	29.8% 34.7%	31.5% 36.1%	32.8% 37.2%	33.5% 37.6%	34.1% 38.0%	34.1% 37.7%	34.1% 37.5%	34.1% 37.2%	34.1% 37.0%	34.1% 36.8%	34.1% 36.6%	34.1% 36.4%	34.1% 36.2%	34.0% 36.0%	34.0% 35.8%	33.9% 35.5%	7.3% 8.7%	6.7% 8.0%	6.7% 7.8%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)																				
RG #3 - Plans G and H	12.3%	12.3%	12.3%	14.0%	14.9%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%
RG #3 - Plan B RG #3 - Plan U	10.2% 9.3%	10.2% 9.3%	10.2% 9.3%	12.0% 11.0%	12.8% 11.9%	13.7% 12.8%														
RG #3 - Plans B, G, H and U (OCSD)	9.3%	9.3%	11.3%	12.9%	13.6%	14.3%	14.2%	14.1%	14.0%	13.8%	13.7%	13.6%	13.5%	13.5%	13.4%	13.3%	13.3%	13.2%	13.2%	13.1%
RG #5 - Plans A and B RG #5 - Plan U	25.5% 25.0%	26.8% 26.3%	28.4% 27.9%	29.6% 29.1%	30.2% 29.7%	30.8% 30.3%	30.8% 30.3%	30.8% 30.3%	30.8% 30.3%	30.8% 30.3%	30.8% 30.3%	30.8% 30.2%	30.8% 30.2%	30.7% 30.2%	30.7% 30.2%	30.7% 30.2%	30.7% 30.2%	12.4% 11.9%	13.5%	10.8% 10.3%
RG #5 - Plans A, B and U (OCTA)	25.5%	26.3%	28.3%	29.1%	30.0%	30.5%	30.5%	30.5%	30.5%	30.5%	30.3%	30.4%	30.4%	30.4%	30.2%	30.2%	30.2%	11.9%	13.0% 13.1%	10.3%
, , ,																				
RG #9 - Plans M and N	24.8%	25.6%	26.8%	27.7%	28.2%	28.7%	28.7%	28.7%	28.7%	28.7%	28.7%	28.7%	28.7%	28.7%	28.7%	28.7%	28.6%	14.3%	14.9%	13.3%
RG #9 - Plan U	21.9%	22.7%	23.9%	24.8%	25.3%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	25.8%	25.7% 26.1%	11.4%	12.0%	10.4%
RG #9 - Plans M, N and U (TCA)	23.8%	24.6%	25.6%	26.4%	26.7%	27.1%	27.0%	26.8%	26.7%	26.6%	26.5%	26.5%	26.4%	26.3%	26.3%	26.2%		11.8%	12.3%	10.7%
RG #10 - Plans I and J	32.0%	33.1%	34.5%	35.6%	36.2%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%	36.6%	13.9%	13.6%	13.6%
RG #10 - Plans M and N	31.0%	32.1%	33.5%	34.7%	35.2%	35.8%	35.8%	35.8%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.7%	35.6%	12.9%	12.6%	12.6%
RG #10 - Plan U	27.3%	28.4%	29.9%	31.0%	31.6%	32.1%	32.1%	32.1%	32.1%	32.1%	32.1%	32.1%	32.1%	32.1%	32.1%	32.0%	32.0%	9.2%	9.0%	9.0%
RG #10 - Plans I, J, M, N and U (OCFA)	30.5%	31.5%	32.8%	33.7%	34.1%	34.5%	34.3%	34.1%	34.0%	33.8%	33.7%	33.5%	33.4%	33.2%	33.1%	33.0%	32.8%	10.0%	9.7%	9.6%
RG #11 - Plans M and N, future service	11.1%	11.1%	12.4%	13.6%	14.3%	14.9%	14.9%	14.9%	14.8%	14.8%	14.8%	14.8%	14.7%	14.7%	14.7%	14.6%	14.6%	14.6%	14.5%	14.5%
RG #11 - Plan U	10.0%	10.0%	11.2%	12.5%	13.1%	13.8%	13.8%	13.8%	13.7%	13.7%	13.7%	13.7%	13.6%	13.6%	13.6%	13.5%	13.5%	13.4%	13.4%	13.4%
RG #11 - Plans M and N, future service, and U (Cemetery)	10.9%	10.9%	12.1%	13.3%	13.9%	14.5%	14.4%	14.3%	14.2%	14.2%	14.1%	14.1%	14.0%	13.9%	13.9%	13.8%	13.7%	13.7%	13.6%	13.5%
RG #12 - Plans G and H, future service	23.0%	23.3%	25.0%	26.5%	27.3%	28.0%	28.0%		27.9%	27.9%	27.9%	27.9%	27.9%	27.8%	27.8%	27.8%	27.7%	16.1%	16.1%	16.0%
RG #12 - Plan U	17.3%	17.6%	19.3%	20.8%	21.6%	22.3%	22.3%	22.2%	22.2%	22.2%	22.2%	22.2%	22.1%	22.1%	22.1%	22.0%	22.0%	10.4%	10.3%	10.3%
RG #12 - Plans G and H, future service, and U (Law Library) Safety	22.7%	22.1%	23.2%	24.2%	24.5%	24.8%	24.5%	24.2%	23.9%	23.7%	23.5%	23.4%	23.2%	23.0%	23.0%	22.8%	22.6%	10.9%	10.8%	10.7%
RG #6 - Plans E and F	47.9%	49.9%	52.1%	53.8%	54.6%	55.5%	55.5%	55.5%	55.5%	55.5%	55.5%	55.5%	55.5%	55.5%	55.5%	55.4%	55.4%	31.4%	27.0%	21.9%
RG #6 - Plan V	41.3%	43.3%	45.4%	47.2%	48.0%	48.9%	48.9%	48.9%	48.9%	48.9%	48.9%	48.8%	48.8%	48.8%	48.8%	48.8%	48.7%	24.8%	20.4%	15.2%
RG #6 - Plans E, F and V (Probation)	47.8%	49.6%	51.6%	53.2%	53.9%	54.6%	54.4%	54.2%	54.0%	53.7%	53.5%	53.2%	52.9%	52.5%	52.2%	51.8%	51.4%	27.1%	22.3%	16.8%
RG #7 - Plans E and F	63.8%	66.4%	69.4%	71.7%	72.7%	73.9%	73.9%	73.8%	73.8%	73.8%	73.8%	73.8%	73.8%	73.8%	73.7%	73.7%	73.6%	36.4%	33.7%	25.6%
RG #7 - Plans Q and R	61.2%	63.8%	66.7%	69.0%	70.1%	71.2%	71.2%	71.2%	71.2%	71.2%	71.2%	71.2%	71.1%	71.1%	71.1%	71.1%	71.0%	33.8%	31.1%	23.0%
RG #7 - Plan V	57.6%	60.2%	63.1%	65.4%	66.5%	67.6%	67.6%	67.6%	67.6%	67.6%	67.6%	67.5%	67.5%	67.5%	67.5%	67.5%	67.3%	30.2%	27.5%	19.4%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.8%	65.2%	67.8%	69.8%	70.6%	71.5%	71.2%	70.9%	70.6%	70.4%	70.2%	70.0%	69.7%	69.5%	69.3%	69.1%	68.8%	31.5%	28.6%	20.4%
RG #8 - Plans E and F	49.1%	51.3%	53.9%	55.9%	56.8%	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	57.8%	57.7%	57.7%	57.6%	30.5%	30.4%	26.8%
RG #8 - Plans Q and R	44.1%	46.3%	48.9%	50.9%	51.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.8%	52.6%	25.5%	25.4%	21.9%
RG #8 - Plan V	37.1%	39.3%	41.9%	43.9%	44.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.7%	45.7%	45.6%	18.5%	18.4%	14.8%
RG #8 - Plans E, F, Q, R and V (Fire Authority)	47.8%	49.3%	51.4%	53.0%	53.5%	54.0%	53.6%	52.7%	52.1%	51.6%	51.2%	50.8%	50.4%	50.0%	49.7%	49.2%	48.7%	21.2%	20.7%	16.8%

Rates shown above have <u>not</u> been adjusted for employers with future service only benefit enhancement in Rate Group #2.

In the December 31, 2033 valuation, Rate Group #1 would be projected to have a small UAAL rate, which would be entirely offset by the favorable 18-month delay adjustment due to the significant decrease in the UAAL rate in the December 31, 2033 valuation. However, in the following year, the UAAL rate would no longer be offset by the 18-month delay adjustment so the employer rate increases in that year. By the December 31, 2035 valuation, there would no longer be a UAAL rate.

## Attachment O Projected Employer Rates by Plans within each Rate Group Scenario 2: 7.25% for all years

									Valu	ation Da	te (12/31	)								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
General																				
RG #1 - Plans A and B	16.8%	17.3%	17.8%	18.2%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.0%	9.5%	9.5%	9.5%
RG #1 - Plan U	15.9%	16.4%	16.9%	17.3%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	8.6%	8.6%	8.6%
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	16.4%	16.9%	17.4%	17.7%	17.6%	17.6%	17.6%	17.5%	17.5%	17.5%	17.5%	17.5%	17.5%	17.4%	17.4%	17.4%	17.4%	8.8%	8.8%	8.8%
RG #2 - Plans I and J	34.9%	35.6%	36.4%	36.9%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.7%	36.7%	36.6%	13.2%	13.2%	13.2%
RG #2 - Plans O and P	27.3%	27.9%	28.7%	29.3%	29.2%	29.1%	29.1%	29.1%	29.1%	29.1%	29.1%	29.1%	29.1%	29.1%	29.1%	29.1%	29.0%	5.5%	5.5%	5.5%
RG #2 - Plan S	32.1%	32.7%	33.6%	34.1%	34.0%	34.0%	34.0%	33.9%	33.9%	33.9%	33.9%	33.9%	33.9%	33.9%	33.9%	33.9%	33.8%	10.4%	10.4%	10.4%
RG #2 - Plan T	28.3%	29.0%	29.8%	30.3%	30.2%	30.2%	30.2%	30.2%	30.2%	30.2%	30.2%	30.2%	30.1%	30.1%	30.1%	30.1%	30.0%	6.6%	6.6%	6.6%
RG #2 - Plan U	30.0%	30.7%	31.5%	32.0%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.8%	31.8%	31.8%	31.8%	31.7%	8.3%	8.3%	8.3%
RG #2 - Plan W	28.4%	29.1%	29.9%	30.4%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.2%	30.2%	30.2%	30.2%	30.1%	6.7%	6.7%	6.7%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	33.7%	34.0%	34.5%	34.8%	34.4%	34.1%	33.9%	33.6%	33.4%	33.2%	33.0%	32.7%	32.5%	32.3%	32.2%	32.0%	31.7%	8.1%	8.0%	7.8%
RG #3 - Plans G and H	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%
RG #3 - Plan B	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%
RG #3 - Plan U	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%	9.3%
RG #3 - Plans B, G, H and U (OCSD)	11.6%	11.4%	11.3%	11.1%	11.0%	10.9%	10.7%	10.6%	10.5%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%	9.7%	9.6%
RG #5 - Plans A and B	25.5%	26.1%	26.9%	27.4%	27.3%	27.3%	27.3%	27.3%	27.3%	27.3%	27.2%	27.2%	27.2%	27.2%	27.2%	27.2%	27.2%	10.8%	10.8%	10.8%
RG #5 - Plan U	25.0%	25.6%	26.4%	26.9%	26.8%	26.8%	26.8%	26.8%	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	10.3%	10.3%	10.3%
RG #5 - Plans A, B and U (OCTA)	25.5%	26.0%	26.8%	27.3%	27.1%	27.1%	27.0%	27.0%	27.0%	27.0%	26.9%	26.9%	26.9%	26.9%	26.8%	26.8%	26.7%	10.3%	10.3%	10.3%
RG #9 - Plans M and N	24.8%	25.2%	25.7%	26.1%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	25.9%	13.3%	13.3%	13.3%
RG #9 - Plan U	21.9%	22.3%	22.8%	23.2%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.1%	23.0%	10.4%	10.4%	10.4%
RG #9 - Plans M, N and U (TCA)	23.8%	24.1%	24.5%	24.8%	24.5%	24.4%	24.3%	24.2%	24.1%	24.0%	23.9%	23.8%	23.7%	23.7%	23.6%	23.5%	23.4%	10.7%	10.7%	10.7%
RG #10 - Plans I and J	32.0%	32.5%	33.2%	33.6%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.4%	33.4%	33.4%	13.6%	13.6%	13.6%
RG #10 - Plans M and N	31.0%	31.5%	32.2%	32.6%	32.6%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.4%	12.6%	12.6%	12.6%
RG #10 - Plan U	27.3%	27.9%	28.5%	29.0%	28.9%	28.9%	28.9%	28.9%	28.9%	28.9%	28.9%	28.8%	28.8%	28.8%	28.8%	28.8%	28.7%	9.0%	9.0%	9.0%
RG #10 - Plans I, J, M, N and U (OCFA)	30.5%	30.9%	31.4%	31.7%	31.5%	31.3%	31.1%	30.9%	30.7%	30.6%	30.4%	30.3%	30.1%	30.0%	29.9%	29.8%	29.6%	9.7%	9.7%	9.6%
RG #11 - Plans M and N, future service	11.1%	11.1%	11.1%	11.3%	11.1%	11.2%	11.2%	11.2%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%
RG #11 - Plan U	10.0%	10.0%	10.0%	10.2%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
RG #11 - Plans M and N, future service, and U (Cemetery)	10.9%	10.9%	10.8%	11.0%	10.8%	10.7%	10.6%	10.6%	10.5%	10.5%	10.5%	10.4%	10.4%	10.4%	10.3%	10.3%	10.3%	10.3%	10.2%	10.2%
RG #12 - Plans G and H, future service	23.0%	22.6%	23.4%	24.0%	23.9%	23.9%	23.9%	23.8%	23.8%	23.8%	23.9%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	13.3%	13.3%	13.3%
RG #12 - Plan U	17.3%	16.9%	17.7%	18.3%	18.2%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	18.1%	7.6%	7.6%	7.6%
RG #12 - Plans G and H, future service, and U (Law Library)	22.7%	21.3%	21.5%	21.6%	21.1%	20.7%	20.4%	20.1%	19.8%	19.6%	19.5%	19.3%	19.2%	19.0%	19.0%	18.9%	18.7%	8.2%	8.1%	8.0%
Safety RG #6 - Plans E and F	47.9%	49.1%	50.1%	50.8%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.6%	50.5%	26.6%	21.9%	21.9%
RG #6 - Plan V	41.3%	42.4%	43.5%	44.2%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	43.9%	43.9%	43.9%	43.9%	43.9%	43.8%	19.9%	15.2%	15.2%
RG #6 - Plans E, F and V (Probation)	47.8%	48.7%	49.6%	50.2%	49.9%	49.7%	49.5%	49.3%	49.1%	48.8%	48.6%	48.3%	48.0%	47.7%	47.3%	47.0%	46.5%		17.1%	16.8%
. , ,	-																			
RG #7 - Plans E and F RG #7 - Plans Q and R	63.8%	65.2% 62.6%	66.7% 64.0%	67.6% 64.9%	67.4% 64.7%	67.3%	67.3%	67.3%	67.3% 64.7%	67.3% 64.7%	67.3% 64.7%	67.3% 64.6%	67.3% 64.6%	67.3% 64.6%	67.2% 64.6%		67.1% 64.5%	29.9% 27.3%	25.6% 23.0%	25.6% 23.0%
RG #7 - Plan V	61.2% 57.6%	59.0%	60.4%		61.1%	64.7% 61.1%	64.7% 61.1%	64.7% 61.1%	61.1%				61.0%	61.0%	61.0%		60.9%	23.7%	19.4%	23.0% 19.4%
	62.8%	64.0%	65.1%	61.3% 65.7%	65.2%	65.0%	64.7%	64.4%	64.1%	61.1% 63.9%	63.7%	63.4%	63.2%		62.8%	61.0% 62.6%	62.3%	25.0%	20.5%	20.4%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)																				
RG #8 - Plans E and F	49.1%	50.3%	51.5%	52.3%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.1%	52.0%	26.8%	26.8%	26.8%
RG #8 - Plans Q and R	44.1%	45.3%	46.5%	47.3%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%		47.1%	47.1%	47.1%	47.1%		47.0%		21.9%	21.9%
RG #8 - Plan V	37.1%	38.3%	39.5%	40.3%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%	40.1%		40.0%	14.8%	14.8%	14.8%
RG #8 - Plans E, F, Q, R and V (Fire Authority)	47.8%	48.3%	49.1%	49.4%	48.8%	48.4%	47.9%	47.0%	46.4%	45.9%	45.5%	45.1%	44.8%	44.4%	44.0%	43.6%	43.1%	17.5%	17.2%	16.8%

Rates shown above have <u>not</u> been adjusted for employers with future service only benefit enhancement in Rate Group #2.

Attachment O
Projected Employer Rates by Plans within each Rate Group
Scenario 3: 14.5% for 2017 and 7.25% thereafter

									Valu	ation Da	te (12/31	)								
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
General																				
RG #1 - Plans A and B	16.8%	16.8%	16.8%	16.6%	16.1%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.6%	15.6%	9.5%	9.5%	9.5%	9.5%
RG #1 - Plan U	15.9%	15.9%	15.9%	15.7%	15.2%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	8.6%	8.6%	8.6%	8.6%
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	16.4%	16.4%	16.4%	16.2%	15.6%	15.2%	15.1%	15.1%	15.1%	15.1%	15.1%	15.0%	15.0%	15.0%	15.0%	15.0%	8.8%	8.8%	8.8%	8.8%
RG #2 - Plans I and J	34.9%	34.8%	34.8%	34.5%	33.7%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	32.9%	32.9%	32.9%	32.9%	32.9%	32.8%	13.2%	13.2%	13.2%
RG #2 - Plans O and P	27.3%		27.1%	26.9%	26.0%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.2%	5.5%	5.5%	5.5%
RG #2 - Plan S	32.1%	32.0%	31.9%	31.7%	30.8%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%	30.1%	30.0%	10.4%	10.4%	10.4%
RG #2 - Plan T	28.3%	28.2%	28.2%	27.9%	27.0%	26.4%	26.4%	26.4%	26.4%	26.3%	26.3%	26.3%	26.3%	26.3%	26.3%	26.3%	26.2%	6.6%	6.6%	6.6%
RG #2 - Plan U	30.0%	29.9%	29.9%	29.6%	28.7%	28.1%	28.1%	28.1%	28.1%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	27.9%	8.3%	8.3%	8.3%
RG #2 - Plan W	28.4%	28.3%	28.3%	28.0%	27.1%	26.5%	26.5%	26.5%	26.5%	26.4%	26.4%	26.4%	26.4%	26.4%	26.4%	26.4%	26.3%	6.7%	6.7%	6.7% 7.8%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	33.7%	33.3%	32.9%	32.4%	31.3%	30.3%	30.1%	29.8%	29.6%	29.4%	29.1%	28.9%	28.7%	28.5%	28.3%	28.2%	27.9%	8.1%	8.0%	
RG #3 - Plans G and H	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%
RG #3 - Plan B	10.2% 9.3%	10.2% 9.3%	10.2% 9.3%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%	10.2%
RG #3 - Plan U RG #3 - Plans B, G, H and U (OCSD)	9.3%	9.3%	9.3%	9.3% 11.1%	9.3% 11.0%	9.3% 10.9%	9.3% 10.7%	9.3% 10.6%	9.3% 10.5%	9.3% 10.4%	9.3% 10.3%	9.3% 10.2%	9.3% 10.1%	9.3% 10.0%	9.3% 9.9%	9.3% 9.8%	9.3% 9.8%	9.3% 9.7%	9.3% 9.7%	9.3% 9.6%
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RG #5 - Plans A and B	25.5%	25.5%	25.4%	25.2%	24.4%	23.8%	23.7%	23.7%	23.7%	23.7%	23.7%	23.7%	23.7%	23.7%	23.7%	23.7%	10.8%	10.8%	10.8%	10.8%
RG #5 - Plan U	25.0% 25.5%	24.9% 25.4%	24.9% 25.3%	24.7% 25.0%	23.9% 24.2%	23.2% 23.6%	23.2% 23.5%	23.2% 23.5%	23.2% 23.5%	23.2% 23.4%	23.2% 23.4%	23.2% 23.4%	23.2% 23.4%	23.2% 23.3%	23.2% 23.3%	23.2% 23.3%	10.3% 10.3%	10.3% 10.3%	10.3% 10.3%	10.3% 10.3%
RG #5 - Plans A, B and U (OCTA)																				
RG #9 - Plans M and N	24.8%	24.7%	24.7%	24.5%	23.9%	23.4%	23.4%	23.4%	23.4%	23.4%	23.4%	23.4%	23.4%	23.4%	23.5%	23.5%	13.3%	13.3%	13.3%	13.3%
RG #9 - Plan U	21.9%	21.8%	21.8%	21.6%	21.0%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%	20.5%		20.6%	10.4%	10.4%	10.4%	10.4%
RG #9 - Plans M, N and U (TCA)	23.8%	23.6%	23.5%	23.1%	22.4%	21.8%	21.7%	21.6%	21.5%	21.4%	21.3%	21.2%	21.2%	21.1%	21.0%	21.0%	10.8%	10.7%	10.7%	10.7%
RG #10 - Plans I and J	32.0%	31.9%	31.8%	31.6%	30.9%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.2%	30.2%	30.2%	13.6%	13.6%	13.6%
RG #10 - Plans M and N	31.0%	30.9%	30.9%	30.6%	29.9%	29.3%	29.3%	29.3%	29.3%	29.3%	29.3%	29.3%	29.3%	29.3%	29.3%	29.3%	29.2%	12.6%	12.6%	12.6%
RG #10 - Plan U	27.3%	27.3%	27.2%	27.0%	26.3%	25.7%	25.7%	25.7%	25.7%	25.7%	25.7%	25.7%	25.6%	25.6%	25.6%	25.6%	25.5%	9.0%	9.0%	9.0%
RG #10 - Plans I, J, M, N and U (OCFA)	30.5%	30.3%	30.1%	29.7%	28.8%	28.1%	27.9%		27.5%	27.4%	27.2%	27.1%	26.9%	26.8%	26.7%	26.6%	26.4%	9.7%	9.7%	9.6%
RG #11 - Plans M and N, future service	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%	11.1%		11.1%	11.1%	11.1%	11.1%	11.1%
RG #11 - Plan U	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
RG #11 - Plans M and N, future service, and U (Cemetery)	10.9%	10.9%	10.8%	10.8%	10.7%	10.6%	10.6%	10.5%	10.5%	10.4%	10.4%	10.4%	10.4%	10.3%	10.3%	10.3%	10.2%	10.2%	10.2%	10.2%
RG #12 - Plans G and H, future service	23.0%	22.0%	21.9%	21.7%	20.9%	20.3%	20.4%	20.4%	20.4%	20.5%	20.6%	20.6%	20.7%	20.7%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
RG #12 - Plan U	17.3%	16.2%	16.1%	15.9%	15.1%	14.5%	14.6%	14.7%	14.7%	14.8%	14.8%	14.9%	14.9%	14.9%	7.6%	7.6%	7.6%	7.6%	7.6%	7.6%
RG #12 - Plans G and H, future service, and U (Law Library) Safety	22.7%	20.7%	20.0%	19.3%	18.1%	17.1%	16.9%	16.6%	16.4%	16.3%	16.2%	16.1%	16.0%	15.9%	8.5%	8.4%	8.2%	8.2%	8.1%	8.0%
RG #6 - Plans E and F	47.9%	48.2%	48.1%	47.8%	46.6%	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	45.7%	45.6%	21.9%	21.9%	21.9%
RG #6 - Plan V	41.3%	41.6%	41.5%	41.2%	40.0%	39.1%	39.1%	39.1%	39.1%	39.1%	39.1%	39.1%	39.1%	39.0%	39.0%	39.0%	39.0%	15.2%	15.2%	15.2%
RG #6 - Plans E, F and V (Probation)	47.8%	47.9%	47.7%	47.2%	45.9%	44.8%	44.6%	44.4%	44.2%	43.9%	43.7%	43.4%	43.1%	42.8%	42.4%	42.1%	41.6%	17.5%	17.1%	16.8%
RG #7 - Plans E and F	63.8%	64.0%	64.0%	63.5%	62.0%	60.8%	60.8%	60.8%	60.8%	60.8%	60.8%	60.8%	60.8%	60.8%	60.7%	60.7%	60.6%	25.6%	25.6%	25.6%
RG #7 - Plans Q and R	61.2%	61.4%	61.3%	60.9%	59.4%	58.2%	58.2%	58.2%	58.2%	58.2%	58.2%	58.1%	58.1%	58.1%	58.1%	58.1%	58.0%	23.0%	23.0%	23.0%
RG #7 - Plan V	57.6%	57.8%	57.7%	57.2%	55.8%	54.6%	54.6%	54.6%	54.6%	54.6%	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%	54.4%	19.4%	19.4%	19.4%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.8%	62.8%	62.4%	61.7%	59.9%	58.5%	58.2%	57.9%	57.6%	57.4%	57.2%	56.9%	56.7%	56.5%	56.3%	56.1%	55.8%	20.7%	20.5%	20.4%
RG #8 - Plans E and F	49.1%	49.2%	49.2%	48.8%	47.5%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%	26.8%	26.8%	26.8%	26.8%
RG #8 - Plans Q and R	44.1%	44.3%	44.2%	43.8%	42.5%	41.5%	41.4%		41.4%	41.4%	41.4%		41.4%	41.4%	41.4%	41.4%	21.9%	21.9%	21.9%	21.9%
RG #8 - Plan V	37.1%	37.2%	37.2%	36.8%	35.5%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	14.8%	14.8%	14.8%	14.8%
RG #8 - Plans E, F, Q, R and V (Fire Authority)	47.8%	47.2%	46.7%	45.9%	44.1%	42.7%	42.3%	41.3%	40.7%	40.2%	39.8%	39.5%	39.1%	38.7%	38.3%	37.9%	18.0%	17.5%	17.2%	16.8%

Rates shown above have <u>not</u> been adjusted for employers with future service only benefit enhancement in Rate Group #2.



### Memorandum

**DATE**: July 6, 2017

**TO**: Members, Board of Retirement

**FROM**: Brenda Shott, Assistant CEO-Finance and Internal Operations

SUBJECT: SENSITIVITY ANALYSIS OF ALTERNATIVE ECONOMIC ASSUMPTIONS

#### Recommendation

Receive and file.

### **Background/Discussion**

OCERS entered into a new contract with Segal in August 2016. As part of the new contract, Segal has agreed to provide up to four sensitivity analyses of alternative economic actuarial assumptions as part of the annual actuarial valuation report. After receiving recommendations of assumptions to be used in the analysis from Segal and a full Board discussion, the Board Chair provided direction to the actuary on the assumptions to be used in the sensitivity analyses at the June 12, 2017 Board meeting. The sensitivity analyses (attached) includes the impact that changes to the assumed investment rate of return and the inflation rate assumption have on the Unfunded Actuarial Accrued Liability and on contribution rates and dollar amounts for both the employer and employees. The sensitivity analysis is provided on an aggregate basis for OCERS as a whole rather than on an individual rate group basis. Paul Angelo will present the results of this analysis at the July 17, 2017 meeting.

### **Submitted by:**



**Brenda Shott** 

Assistant CEO, Finance and Internal Operations



100 Montgomery Street Suite 500 San Francisco, CA 94104-4308 T 415.263.8283 www.segalco.com

Andy Yeung, ASA, MAAA, FCA, EA Vice President & Actuary ayeung@segalco.com

VIA E-MAIL AND USPS

July 7, 2017

Mr. Steve Delaney Chief Executive Officer Orange County Employees Retirement System 2223 Wellington Avenue Santa Ana, CA 92701-3101

Re: Sensitivity Illustrations of Retirement Costs, Unfunded Actuarial Accrued Liability and Funded Ratio under Alternative Inflation and Investment Return Assumptions

Dear Steve:

As requested, we have developed 20-year illustrations of the employer contribution rates for OCERS under four alternative sets of inflation and investment return assumptions as if those assumptions were effective December 31, 2016. In this letter, we have also provided the Unfunded Actuarial Accrued Liability (UAAL) in dollars and the funded ratio associated with those projected employer contribution rates, as well the member contribution rates.

These results have been prepared based on the December 31, 2016 valuation approved by the Board at its meeting on June 12, 2017. The illustrations have been prepared for use in studying how sensitive the projection results are to changes in the economic assumptions used in the December 31, 2016 valuation. It is important to note that the above alternatives are not necessarily the assumptions we would recommend to the Board in the triennial experience study that is currently in progress.

The current inflation and investment return assumptions used in the December 31, 2016 valuation are as follows:

➤ Baseline: 7.25% investment return assumption and 3.00% inflation assumption.

<sup>&</sup>lt;sup>1</sup> The results provided for the baseline are the same as those provided under Scenario #2 in our letter also dated July 7, 2016 for OCERS as a whole.

The four alternative sets of inflation and investment return assumptions are as follows:

- > Alternative #1: 7.00% investment return assumption and 2.75% inflation assumption.
- > Alternative #2: 7.00% investment return assumption and 3.00% inflation assumption.
- ➤ Alternative #3: 6.75% investment return assumption and 3.00% inflation assumption.
- ➤ Alternative #4: 7.25% investment return assumption and 3.25% inflation assumption.

The various projections included are as follows:

- > The projected contribution rates for the aggregate plan are provided in Attachment A.
- > The projected UAAL and funded ratio for the aggregate plan are provided in Attachment B.
- > The projected member contribution rates for the aggregate plan are provided in Attachment C.

### **SUMMARY OF RESULTS**

The changes in the employer contribution rate (including the Normal Cost and UAAL components), the member contribution rate and the UAAL from the baseline for each of the alternatives are summarized below. The impact of the assumption changes is determined as if those assumptions were effective in the December 31, 2016 valuation.

Change in:	Alternative #1	Alternative #2	Alternative #3	Alternative #4
Investment Return*	-0.25%	-0.25%	-0.50%	0.00%
Inflation*	-0.25%	0.00%	0.00%	0.25%
Employer Rate				
Normal Cost Rate	0.08%	0.96%	2.00%	0.45%
UAAL Rate	<u>-0.02%</u>	2.09%	4.21%	<u>-0.07%</u>
Total Rate	0.06%	3.05%	6.21%	0.38%
Member Rate	0.01%	0.74%	1.55%	0.32%
UAAL (\$000s)	\$(17,160)	\$555,878**	\$1,138,641***	\$82,890

<sup>\*</sup> Relative to 7.25% investment return assumption and 3.00% inflation assumption used in the baseline.

#### METHODS AND ASSUMPTIONS

The methods and actuarial assumptions we used to prepare the employer contribution rates, the UAAL and the funded ratio are the same as those used in Scenario #2 in our letter titled

<sup>\*\*</sup> After a transfer of \$16,135,000 from the O.C. Sanitation District UAAL Deferred Account.

<sup>\*\*\*</sup> After a transfer of \$34,067,000 from the O.C. Sanitation District UAAL Deferred Account.

"Illustrations of Retirement Costs, Unfunded Actuarial Accrued Liability and Funded Ratio under Alternative Investment Return Scenarios" also dated July 7, 2017 with the exception of the following:

- > The illustrations are based on the actuarial assumptions and census data used in our December 31, 2016 valuation report for the Retirement Plan. With the exception of the inflation and investment return assumptions specified above, it is assumed that all actuarial assumptions would be met in the future and that there would be no change in the future for any of the actuarial assumptions adopted by the Board for the December 31, 2016 valuation. In particular, it is assumed that the actual future inflation and investment return experience under each of the four alternatives would follow the corresponding inflation and investment return assumed for that alternative.
- > The detailed amortization schedule for OCERS' UAAL as of December 31, 2016 is provided in the valuation report. The change in UAAL due to the changes in the inflation and investment return assumptions are amortized over a 20-year period as of December 31, 2016. Any subsequent changes in the UAAL due to actuarial gains or losses (e.g., from investment returns on valuation value of assets greater or less than the assumed rates) are amortized over separate 20-year periods.

### **OTHER CONSIDERATIONS**

Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

This study was prepared under the supervision of Andy Yeung, ASA, MAAA. I am a member of the American Academy of Actuaries and meet the qualification requirements to provide the opinion contained herein.

Please let us know if you have any questions.

Menny

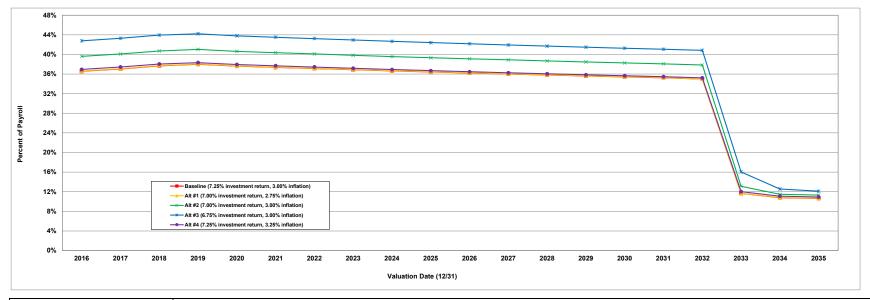
Sincerely,

Andy Yeung

MYM/gxk Enclosures

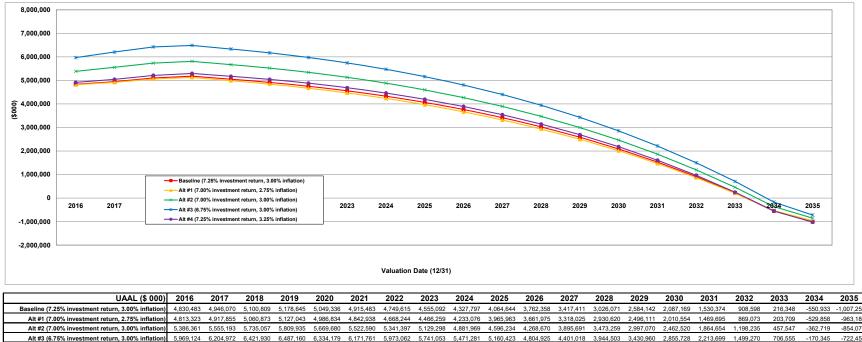
cc: Suzanne Jenike Brenda Shott

## Attachment A Projected Employer Rates Aggregate Plan



Valuation Date (12/31)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Baseline (7.25% investment return, 3.00% inflation)	36.6%	37.0%	37.7%	38.0%	37.6%	37.4%	37.1%	36.9%	36.6%	36.4%	36.2%	36.0%	35.8%	35.6%	35.4%	35.2%	35.0%	11.7%	10.8%	10.6%
Alt #1 (7.00% investment return, 2.75% inflation)	36.6%	37.1%	37.7%	38.0%	37.7%	37.4%	37.2%	36.9%	36.7%	36.4%	36.2%	36.0%	35.8%	35.6%	35.5%	35.3%	35.0%	11.7%	10.8%	10.7%
Alt #2 (7.00% investment return, 3.00% inflation)	39.6%	40.1%	40.7%	41.0%	40.6%	40.4%	40.1%	39.8%	39.6%	39.3%	39.1%	38.9%	38.7%	38.5%	38.3%	38.1%	37.8%	13.1%	11.5%	11.3%
Alt #3 (6.75% investment return, 3.00% inflation)	42.8%	43.3%	44.0%	44.2%	43.8%	43.5%	43.3%	42.9%	42.7%	42.4%	42.2%	41.9%	41.7%	41.5%	41.3%	41.1%	40.8%	16.0%	12.6%	12.1%
Alt #4 (7.25% investment return, 3.25% inflation)	36.9%	37.4%	38.0%	38.3%	37.9%	37.7%	37.4%	37.2%	36.9%	36.7%	36.5%	36.3%	36.1%	35.8%	35.7%	35.5%	35.2%	12.0%	11.1%	10.9%

Attachment B
Projected UAAL and Funded Ratio for Aggregate Plan

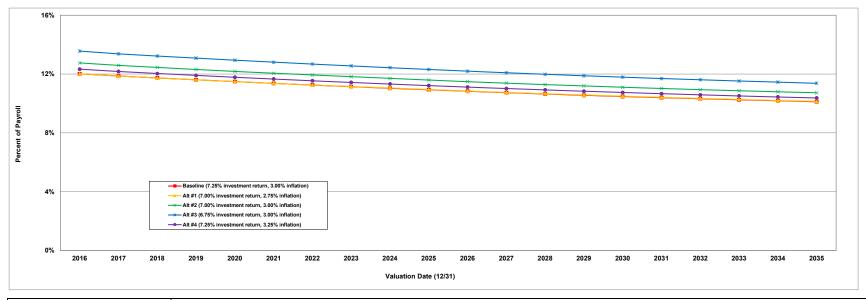


Alt #2 (7.00% investment return, 3.00% inflation)	5,386,361	5,555,193	5,735,057	5,809,935	5,669,680	5,522,590	5,341,397	5,129,298	4,881,969	4,596,234	4,268,670	3,895,691	3,473,259	2,997,070	2,462,520	1,864,654	1,198,235	457,547	-362,719	-854,070
Alt #3 (6.75% investment return, 3.00% inflation)	5,969,124	6,204,972	6,421,930	6,487,160	6,334,179	6,171,761	5,973,062	5,741,053	5,471,281	5,160,423	4,804,925	4,401,018	3,944,503	3,430,960	2,855,728	2,213,699	1,499,270	706,555	-170,345	-722,456
Alt #4 (7.25% investment return, 3.25% inflation)	4,913,373	5,045,003	5,212,425	5,296,331	5,172,078	5,042,494	4,879,944	4,687,386	4,460,632	4,196,459	3,891,285	3,541,321	3,142,562	2,690,534	2,180,457	1,607,241	965,295	248,654	-548,194	-1,023,920
Funded Ratio	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Baseline (7.25% investment return, 3.00% inflation)	73.1%	73.9%	74.4%	75.4%	77.2%	78.9%	80.6%	82.2%	83.9%	85.5%	87.2%	88.9%	90.6%	92.3%	94.0%	95.8%	97.6%	99.4%	101.4%	102.4%
Alt #1 (7.00% investment return, 2.75% inflation)	73.1%	73.9%	74.5%	75.4%	77.2%	78.9%	80.6%	82.2%	83.9%	85.5%	87.2%	88.8%	90.5%	92.2%	93.9%	95.7%	97.6%	99.4%	101.4%	102.5%
Alt #2 (7.00% investment return, 3.00% inflation)	70.9%	71.6%	72.1%	73.2%	75.1%	77.0%	78.8%	80.6%	82.3%	84.1%	85.9%	87.7%	89.4%	91.3%	93.1%	95.0%	96.9%	98.9%	100.9%	102.0%
Alt #3 (6.75% investment return, 3.00% inflation)	68.8%	69.2%	69.8%	71.0%	73.1%	75.0%	77.0%	78.9%	80.8%	82.7%	84.5%	86.4%	88.3%	90.3%	92.2%	94.2%	96.2%	98.3%	100.4%	101.7%
Alt #4 (7.25% investment return, 3.25% inflation)	72.7%	73.5%	74.1%	75.0%	76.8%	78.5%	80.2%	81.9%	83.6%	85.3%	87.0%	88.7%	90.4%	92.1%	93.9%	95.7%	97.5%	99.4%	101.3%	102.4%

Under Alternative #2, the UAAL as of December 31, 2016 is after a transfer of \$16,135,000 from the O.C. Sanitation District UAAL Deferred Account to pay off the UAAL resulting from the assumption changes. Rate Group #3 remains 100% funded as a result of the transfer.

Under Alternative #3, the UAAL as of December 31, 2016 is after a transfer of \$34,067,000 from the O.C. Sanitation District UAAL Deferred Account to pay off the UAAL resulting from the assumption changes. Rate Group #3 becomes underfunded, even after the transfer, due to the assumption changes.

### Attachment C Projected Member Rates Aggregate Plan



Valuation Date (12/31)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Baseline (7.25% investment return, 3.00% inflation)	12.0%	11.9%	11.7%	11.6%	11.5%	11.4%	11.3%	11.1%	11.0%	10.9%	10.8%	10.7%	10.6%	10.6%	10.5%	10.4%	10.3%	10.2%	10.2%	10.1%
Alt #1 (7.00% investment return, 2.75% inflation)	12.0%	11.9%	11.7%	11.6%	11.5%	11.4%	11.3%	11.2%	11.1%	10.9%	10.8%	10.8%	10.7%	10.6%	10.5%	10.4%	10.3%	10.3%	10.2%	10.1%
Alt #2 (7.00% investment return, 3.00% inflation)	12.8%	12.6%	12.5%	12.3%	12.2%	12.1%	11.9%	11.8%	11.7%	11.6%	11.5%	11.4%	11.3%	11.2%	11.1%	11.0%	10.9%	10.9%	10.8%	10.7%
Alt #3 (6.75% investment return, 3.00% inflation)	13.6%	13.4%	13.2%	13.1%	12.9%	12.8%	12.7%	12.6%	12.4%	12.3%	12.2%	12.1%	12.0%	11.9%	11.8%	11.7%	11.6%	11.5%	11.5%	11.4%
Alt #4 (7.25% investment return, 3.25% inflation)	12.3%	12.2%	12.0%	11.9%	11.8%	11.7%	11.5%	11.4%	11.3%	11.2%	11.1%	11.0%	10.9%	10.8%	10.7%	10.7%	10.6%	10.5%	10.4%	10.4%



# Orange County Employees Retirement System

### **ACTUARIAL EXPERIENCE STUDY**

Analysis of Actuarial Experience
During the Period
January 1, 2014 through December 31, 2016



100 Montgomery Street Suite 500 San Francisco, CA 94104-4308 T 415.263.8200 www.segalco.com

August 14, 2017

Board of Retirement Orange County Employees Retirement System 2223 Wellington Avenue Santa Ana, CA 92701

Re: Review of Actuarial Assumptions for the December 31, 2017 Actuarial Valuation

Dear Members of the Board:

We are pleased to submit this report of our review of the actuarial experience for the Orange County Employees Retirement System. This study utilizes the census data for the period January 1, 2014 to December 31, 2016 and provides the proposed actuarial assumptions, both economic and demographic, to be used in the December 31, 2017 valuation.

We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

Paul Angelo, FSA, MAAA, FCA, EA Senior Vice President and Actuary Andy Yeung, ASA, MAAA, FCA, EA

Vice President and Actuary

EK/jl

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### I. Introduction, Summary, and Recommendations

To project the cost and liabilities of the pension plan, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are modified, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions means that year's experience is treated as temporary and that, over the long run, experience will return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than recognizing gains or losses as they occur.

The use of realistic actuarial assumptions is important in maintaining adequate funding, while paying the promised benefit amounts to participants already retired and to those near retirement. The actuarial assumptions used do not determine the "actual cost" of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the economic and demographic actuarial assumptions and to compare the actual experience with that expected under the current assumptions during the three-year experience period from January 1, 2014 through December 31, 2016. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27 "Selection of Economic Assumptions for Measuring Pension Obligations" and ASOP No. 35, "Selection of Demographic and Other Non-Economic Assumptions for Measuring Pension Obligations." These Standards of Practice put forth guidelines for the selection of the various actuarial assumptions utilized in a pension plan actuarial valuation. Based on the study's results and expected future experience, we are recommending various changes in the current actuarial assumptions.

We are recommending changes in the assumptions for investment return, salary increases, retirement from active employment, retirement age for inactive vested members, reciprocity, preretirement mortality, post-retirement healthy and disabled life mortality, termination (refunds and deferred vested retirements), disability (non-service connected and service connected) and additional cashouts.

Our recommendations for the major actuarial assumption categories are as follows, along with reasonable alternative economic assumptions also developed in this report.

Pg#	Actuarial Assumption Categories	Recommendation
6	Inflation: Future increases in the Consumer Price Index (CPI), which drives investment returns and active member salary increases, as well as cost-of-living adjustments (COLAs) for retirees.	Maintain the assumed rate of price inflation at 3.00% per annum as discussed in Section III (A).  Alternative: Reduce price inflation to 2.75% per annum.
10	Investment Return: The estimated average future net rate of return on current and future assets of the System as of the valuation date. This rate is used to discount liabilities.	Reduce the current investment return assumption from 7.25% per annum to 7.00% per annum as discussed in Section III (B).  Alternative 1: 7.00% investment return with 2.75% inflation.  Alternative 2: 6.75% investment return with 2.75% inflation.
17	Individual Salary Increases: Increases in the salary of a member between the date of the valuation to the date of separation from active service. This assumption has three components:  Inflationary salary increases Real "across the board" salary increases Merit and promotional increases	Maintain the current inflationary salary increase assumption at 3.00% and maintain the current real "across the board" salary increase assumption at 0.50%. This means that the combined inflationary and real "across the board" salary increases will remain unchanged at 3.50%.  Alternative: 2.75% inflation and 3.25% combined inflationary and real "across the board" salary increases.  We recommend adjusting the merit and promotional rates of salary increase as developed in Section III (C) to reflect past experience. The recommended assumptions anticipate slightly higher salary increases for General and slightly lower salary increases for Safety.
24	Retirement Rates: The probability of retirement at each age at which participants are eligible to retire.  Other Retirement Related Assumptions including:  Percent married and spousal age differences for members not yet retired  Retirement age for inactive vested members  Future reciprocal members and reciprocal salary increases	We recommend adjusting the retirement rates to those developed in Section IV (A).  For active and inactive vested members, increase the percent married at retirement assumption for females from 50% to 55% and maintain the assumption at 75% for males. For inactive vested members, increase the assumed retirement age from 58 to 59 for General members and maintain the assumed retirement age at 53 for Safety members.  Reduce the current proportion of future terminated members expected to be covered by a reciprocal system from 20% to 15% for General members and from 30% to 25% for Safety members. In addition, increase the current reciprocal salary increase assumption from 4.25% to 4.50% for General members and maintain the current reciprocal salary increase assumption at 5.00% for Safety members.

Pg#	Actuarial Assumption Categories	Recommendation
39	Mortality Rates: The probability of dying at each age. Mortality rates are used to project life expectancies.	For members who retire from service, we recommend adjusting the rates as developed in Section IV (B) for General and Safety members and all beneficiaries to reflect a generational approach for anticipating future mortality improvement.
46		The disabled member mortality rates for General and Safety members have also been adjusted as developed in Section IV (C).
		The recommended pre-retirement mortality assumptions for General and Safety members have been adjusted as developed in Section IV (B). In addition, we recommend maintaining the assumption that all General pre-retirement deaths and 90% of Safety pre-retirement deaths are assumed to be non-service connected deaths.
49	Termination Rates: The probability of leaving employment at each age and receiving either a refund of member contributions or a deferred vested retirement benefit.	We recommend adjusting the termination rates to those developed in Section IV (D) to reflect a slightly lower incidence of termination for General All Other (non-OCTA) members, General OCTA members and Safety members. In addition, a lower proportion of members is expected to elect a withdrawal of member contributions with a higher proportion electing instead to receive a deferred vested benefit under the recommended assumptions.
55	Disability Incidence Rates: The probability of becoming disabled at each age.	We recommend adjusting the disability rates to those developed in Section IV (E) to reflect slightly higher incidence of disability for General All Other and Safety members and slightly lower incidence of disability for General OCTA members.
59	Additional Cashouts: Additional pay elements that are expected to be received during the member's final average earnings period.	We recommend adjusting the additional cashout assumptions to those developed in Section IV (F) to reflect recent years' experience.

We have estimated the impact of the recommended and alternative assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

Cost Impact of Recommended Assumptions			
Change in Costs	Contribution Rate	Estimated Annual Dollar Amount in Thousands*	
Total Normal Cost	3.68%	\$65,260	
Member Normal Cost	1.61%	\$28,559	
Employer Normal Cost	2.07%	\$36,701	
Employer UAAL Payments	5.87%	<u>\$103,710</u>	
Total for Employer	7.94%	\$140,411	

Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

Cost Impact of Alternative 1 Assumptions (7.00% Investment Return Assumption & 2.75% Inflation)			
<u>Change</u> in Costs	Contribution Rate	Estimated Annual Dollar Amount in Thousands*	
Total Normal Cost	1.88%	\$32,321	
Member Normal Cost	0.77%	\$13,232	
Employer Normal Cost	1.11%	\$19,089	
Employer UAAL Payments	3.53%	<u>\$61,450</u>	
Total for Employer	4.64%	\$80,539	

Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

Cost Impact of Alternative 2 Assumptions (6.75% Investment Return Assumption & 2.75% Inflation)			
<u>Change</u> in Costs	Contribution Rate	Estimated Annual Dollar Amount in Thousands*	
Total Normal Cost	3.77%	\$65,566	
Member Normal Cost	1.59%	\$27,567	
Employer Normal Cost	2.18%	\$37,999	
Employer UAAL Payments	5.84%	<u>\$102,078</u>	
Total for Employer	8.02%	\$140,077	

Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

The breakdown of the contribution impacts due only to the recommended demographic assumption changes (as recommended in Section IV of this report) and the contribution rate impacts (after implementing the demographic assumption changes) due to the recommended and alternative economic assumption changes (as recommended in Section III of this report), as well as the changes in funded status, are summarized in the following table.

Cost Impact			
	Recommended (7.00% Return & 3.00% Inflation)	Alternative 1 (7.00% Return & 2.75% Inflation)	Alternative 2 (6.75% Return & 2.75% Inflation)
Impact on Employer			
Change due to demographic assumptions	3.94%	3.94%	3.94%
Change due to economic assumptions	4.00%	0.70%	4.08%
Total change in employer rate	7.94%	4.64%	8.02%
Total estimated change in annual dollar amount (\$000s)	\$140,411	\$80,539	\$140,077
Impact on Member			
Change due to demographic assumptions	0.57%	0.57%	0.57%
Change due to economic assumptions	1.04%	0.20%	1.02%
Total change in member rate	1.61%	0.77%	1.59%
Total estimated change in annual dollar amount (\$000s)	\$28,559	\$13,232	\$27,567
Impact on UAAL and Funded Percentage			
Change in UAAL	\$1,404 million	\$763 million	\$1,385 million
Change in funded percentage	From 73.1% to 67.7%	From 73.1% to 70.1%	From 73.1% to 67.9%

Section II provides some background on the basic principles and methodology used for the experience study and for the review of the economic and demographic actuarial assumptions. A detailed discussion of each assumption and reasons for the proposed changes are found in Section III for the economic assumptions and Section IV for the demographic assumptions. The cost impact of the proposed changes is detailed in Section V.

# II. Background and Methodology

In this report, we analyzed both economic and demographic ("non-economic") assumptions. The primary economic assumptions reviewed are inflation, investment return, and salary increases. Demographic assumptions include the probabilities of certain events occurring in the population of members, referred to as "decrements," e.g., termination from service, disability retirement, service retirement, and death before and after retirement. In addition to decrements, other demographic assumptions reviewed in this study include the percentage of members with an eligible spouse or domestic partner, spousal age difference, percentage of members assumed to go on to work for a reciprocal system, reciprocal salary increases and additional cashouts.

## **Economic Assumptions**

Economic assumptions consist of:

- > Inflation: Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members.
- > Investment Return: Expected long-term rate of return on the System's investments after expenses. This assumption has a significant impact on contribution rates.
- > Salary Increases: In addition to inflationary increases, it is assumed that salaries will also grow by "across the board" real pay increases in excess of price inflation. It is also assumed that employees will receive raises above these average increases as they advance in their careers. These are commonly referred to as merit and promotional increases. Payments to amortize any Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase each year by the price inflation rate plus any "across the board" real pay increases that are assumed.

The setting of these economic assumptions is described in Section III.

## **Demographic Assumptions**

In order to determine the probability of an event occurring, we examine the "decrements" and "exposures" of that event. For example, taking termination from service, we compare the number of employees who actually terminate in a certain age and/or service category (i.e., the number of "decrements") with those who could have terminated (i.e., the number of "exposures"). For example, if there were 500 active employees in the 20-24 age group at the beginning of the year and 50 of them terminate during the year, we would say the probability of termination in that age group is 50 ÷ 500 or 10%.

The reliability of the resulting probability is highly dependent on both the number of decrements and the number of exposures. For example, if there are only a few people in a high age category at the beginning of the year (number of exposures), we would not lend as much credibility to the

probability of termination developed for that age category, especially if it is out of line with the pattern shown for the other age groups. Similarly, if we are considering the death decrement, there may be a large number of exposures in, say, the age 20-24 category, but very few decrements (actual deaths); therefore, we would not be able to rely heavily on the probability developed for that category.

One reason we use several years of experience for such a study is to have more exposures and decrements, and therefore more statistical reliability. Another reason for using several years of data is to smooth out fluctuations that may occur from one year to the next. However, we also calculate the rates on a year-to-year basis to check for any trend that may be developing in the later years.

# III. Economic Assumptions

#### A. Inflation

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be times when "riskless" investments return more or less than inflation, but over the long term, investment market forces will generally require an issuer of fixed income securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so our analysis included a review of historical information. Following is an analysis of 15 and 30 year moving averages of historical inflation rates:

# HISTORICAL CONSUMER PRICE INDEX – 1930 TO 20161 (U.S. City Average - All Urban Consumers)

	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
15-year moving averages	2.5%	3.4%	4.5%
30-year moving averages	3.1%	3.9%	4.8%

The average inflation rates have continued to decline gradually over the last several years due to the relatively low inflationary period over the past two decades. Also, the later of the 15-year averages during the period are lower as they do not include the high inflation years of the mid-1970s and early 1980s.

Based on information found in the Public Plans Data website, which is produced in partnership with the National Association of State Retirement Administrators (NASRA), the median inflation assumption used by 142 large public retirement funds in their 2015 fiscal year valuations was 3.00%. In California, San Mateo County uses an inflation assumption of 2.50%, CalPERS, CalSTRS, Contra Costa County, Los Angeles County, and two other 1937 Act CERL systems use an inflation assumption of 2.75%, San Joaquin County uses an inflation assumption of 2.90% while OCERS and eleven other 1937 Act CERL systems use an inflation assumption of 3.00%.

OCERS' investment consultant, Meketa, anticipates an annual inflation rate of 2.60%, while the average inflation assumption provided by Meketa and seven other investment advisory firms retained by Segal's California public sector clients was 2.32%. Note that, in general, investment consultants use a time horizon<sup>2</sup> for this assumption that is shorter than the time horizon of the actuarial valuation.

Source: Bureau of Labor Statistics - Based on CPI for All items in U.S. city average, all urban consumers, not seasonally adjusted (Series Id: CUUR0000SA0)

After removing an outlier, the time horizon used by the remaining seven investment consultants included in our review range from 10 years to 30 years. Most of those investment consultants use 10 years and Meketa uses 20 years.

To find a forecast of inflation based on a longer time horizon, we referred to the 2017 report on the financial status of the Social Security program.<sup>3</sup> The projected average increase in the Consumer Price Index (CPI) over the next 75 years under the intermediate cost assumptions used in that report was 2.60%. (Besides projecting the results under the intermediate cost assumptions using an inflation of 2.60%, alternative projections were also made using a lower and a higher inflation assumption of 2.00% and 3.20%, respectively.)

We also compared the yields on the thirty-year inflation indexed U.S. Treasury bonds to comparable traditional U.S. Treasury bonds. As of June 2017, the difference in yields is about 1.87%, which provides a measure of market expectations of inflation.

# Based on all of the above information, we recommend that the current 3.00% annual inflation assumption be maintained for the December 31, 2017 actuarial valuation.

The setting of the inflation assumption using the information outlined above is a somewhat subjective process, and Segal does not apply a specific weight to each of the metrics in determining our recommended inflation assumption. Based on a consideration of all these metrics, we have recently been recommending the same 3.00% inflation assumption in our experience studies for our California based public retirement system clients.

However, we note that the metrics presented above could also lead to a lower inflation assumption, and that in particular Segal would find 2.75% to be a reasonable inflation assumption. As discussed on the previous page of this report, several large California public retirement systems have recently adopted a 2.75% inflation assumption in their valuations, including one system (Contra Costa County ERA) that is a Segal client.

## Retiree Cost of Living Increases

In the last valuation, as of December 31, 2016, consistent with the 3.00% annual inflation assumption used by the Board for that valuation, the Board used a 3.00% cost-of-living adjustment for all retirees.

## Consistent with our recommended inflation assumptions, we also recommend maintaining the current assumptions to value the post-retirement cost-of-living adjustments (COLA).

In developing the COLA assumption, we also considered the results of a stochastic approach that would attempt to account for the possible impact of low inflation that could occur before COLA banks are able to be established for the member. Although the results of this type of analysis might justify the use of a lower COLA assumption, we are not recommending that at this time. The reasons for this conclusion include the following:

The results of the stochastic modeling are significantly dependent on assuming that lower levels of inflation will persist in the early years of the projections. If this is not assumed, then the stochastic modeling will produce results similar to our proposed COLA assumptions.

Source: Social Security Administration - The 2017 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds

Source: Board of Governors of the Federal Reserve System

 Using a lower long-term COLA assumption based on a stochastic analysis would mean that an actuarial loss would occur even when the inflation assumption of 3.00% is met in a year. We question the reasonableness of this result.

We do not see the stochastic possibility of COLAs averaging less than those predicted by the assumed rate of inflation as a reliable source of cost savings that should be anticipated in our COLA assumptions. Therefore, we continue to recommend setting the COLA assumptions based on the long-term annual inflation assumption, as we have in prior years.

#### **B. Investment Return**

The investment return assumption is comprised of two primary components, inflation and real rate of investment return, with adjustments for expenses and risk.

#### Real Rate of Investment Return

This component represents the portfolio's incremental investment market returns over inflation. Theory has it that as an investor takes a greater investment risk, the return on the investment is expected to also be greater, at least in the long run. This additional return is expected to vary by asset class and empirical data supports that expectation. For that reason, the real rate of return assumptions are developed by asset class. Therefore, the real rate of return assumption for a retirement association's portfolio will vary with the Board's asset allocation among asset classes.

The following is the System's current target asset allocation and the assumed real rate of return assumptions by asset class. The first column of real rate of return assumptions are determined by reducing Meketa's total or "nominal" 2017 return assumptions by their assumed 2.60% inflation rate. The second column of returns (except for Core Infrastructure, Natural Resources, Risk Mitigation, Mezzanine/Distressed Debts and Private Equity) represents the average of a sample of real rate of return assumptions. The sample includes the expected annual real rate of return provided to us by Meketa and seven other investment advisory firms retained by Segal's public sector clients. We believe these averages are a reasonable consensus forecast of long-term future market returns in excess of inflation.5

Note that, just as for the inflation assumption, in general the time horizon used by the investment consultants in determining the real rate of return assumption is shorter than the time horizon encompassed by the actuarial valuation.

## OCERS' TARGET ASSET ALLOCATION AND ASSUMED ARITHMETIC REAL RATE OF RETURN ASSUMPTIONS BY ASSET CLASS AND FOR THE PORTFOLIO

Asset Class	Percentage of Portfolio	Meketa' Assumed Real Rate of Return <sup>6</sup>	Average Assumed Real Rate of Return from a Sample of Consultants to Segal's California Public Sector Clients <sup>7</sup>
Global Equity	35.0%	7.11%	6.38%
Core Bonds	13.0%	0.98%	1.03%
High Yield Bonds	4.0%	4.18%	3.52%
Bank Loan	2.0%	3.40%	2.86%
TIPS	4.0%	1.18%	0.96%
Emerging Market Debt	4.0%	3.99%	3.78%
Real Estate	10.0%	5.92%	4.33%
Core Infrastructure	2.0%	5.48%	5.48%8
Natural Resources	10.0%	7.86%	7.86% <sup>8</sup>
Risk Mitigation	5.0%	4.66%	4.66%8
Mezzanine/Distressed Debts	3.0%	6.53%	6.53% <sup>8</sup>
Private Equity	8.0%	9.48%	9.48%8
Total	100.0%	5.73%	5.27%

The above are representative of "indexed" returns and do not include any additional returns ("alpha") from active management. This is consistent with the Actuarial Standard of Practice No. 27, Section 3.6.3.d, which states:

"Investment Manager Performance - Anticipating superior (or inferior) investment manager performance may be unduly optimistic (or pessimistic). The actuary should not assume that superior or inferior returns will be achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy unless the actuary believes, based on relevant supporting data, that such superior or inferior returns represent a reasonable expectation over the measurement period."

The following are some observations about the returns provided above:

- 1. The investment consultants to our California public sector clients have each provided us with their expected real rates of return for each asset class, over various future periods of time. However, in general, the returns available from investment consultants are projected over time periods shorter than the durations of a retirement plan's liabilities.
- 2. Using a sample average of expected real rate of returns allows the System's investment return assumption to reflect a broader range of capital market information and should help reduce year to year volatility in the investment return assumption.

Derived by reducing Meketa's nominal rate of return assumptions by their assumed 2.60% inflation rate.

These are based on the projected arithmetic returns provided by Meketa and seven other investment advisory firms serving the county retirement system of Orange and 16 other city and county retirement systems in California. These return assumptions are gross of any applicable investment expenses.

For these asset classes, Meketa's assumption is applied in lieu of the average because there is a larger disparity in returns for these asset classes among the firms surveyed and using Meketa's assumption should more closely reflect the underlying investments made specifically for OCERS.

3. Therefore, we recommend that the 5.27% portfolio real rate of return be used to determine the System's investment return assumption. This is 0.06% lower than the return that was used three years ago in the review to prepare the recommended investment return assumption for the December 31, 2014 valuation. The difference is due to changes in the System's target asset allocation (-0.08%), changes in the real rate of return assumptions provided to us by the investment advisory firms (-0.07%) and the interaction effect between these changes (+0.09%).

#### System Expenses

For funding purposes, the real rate of return assumption for the portfolio needs to be adjusted for investment and administrative expenses expected to be paid from investment income. The following table provides the investment and administrative expenses in relation to the actuarial value of assets for the five years ending December 31, 2016.

# ADMINISTRATIVE AND INVESTMENT EXPENSES AS A PERCENTAGE OF VALUATION VALUE OF ASSETS (Dollars in 000's)

Plan Year	Valuation Value of Assets <sup>9</sup>	Administrative Expenses	Investment Expenses <sup>10</sup>	Administrative %	Investment %	Total %
2009	\$7,748,380	\$10,893	\$34,819	0.14	0.45	0.59
2010	8,154,687	12,448	68,02711	0.15	0.83	0.9811
2011	8,672,592	15,479	39,023	0.18	0.45	0.63
2012	9,064,355	14,295	40,992	0.16	0.45	0.61
2013	9,469,208	14,904	38,759	0.16	0.41	0.57
2014	10,417,125	11,905	41,487	0.11	0.40	0.51
2015	11,449,911	12,521	54,532	0.11	0.48	0.59
2016	12,228,009	16,870	80,81012	0.14	0.66	0.8012
Last	Experience Stu	dy Five-Year Avera	ge (2009 – 2013)	0.16	0.52	0.68
Current	Experience Stu	dy Five-Year Avera	ge (2012 – 2016)	0.14	0.48	0.62
				Re	commendation	0.80

The average administrative and investment expenses percentage over this five-year period in the current experience study is 0.62% of the valuation value of assets (over the five-year period in the last experience study, that average was 0.68%). However, the total expenses percentage went up to 0.80% for plan year 2016 when the "at-source" investment managed fees started to be disclosed in the financial statements instead of being treated as a reduction in the investment

As of beginning of plan year.

Net of securities lending expenses. Because we do not assume any additional net return for this program, we effectively assume that any securities lending expenses will be offset by related income.

We understand that the 2010 investment expenses included some one-time expenses such as foreign tax expense that is expected to be offset by future tax reclaim.

Per OCERS, the increase in the investment expenses for plan year 2016 is primarily due to the reporting of the "atsource" investment management fees in the financial statement that were previously netted against the investment returns.

returns. Taking into account how the investment expenses are reported starting with the 2016 plan year, we believe that it is reasonable to increase the future expense component from 0.60% used in the last review in 2014 to 0.80%.

We understand that this increase reflects a change in how expensed are reported, and not an increase in the level of actual expenses. This means that, for comparison purposes, it may be helpful to consider a restatement of our 2014 analysis reflecting the higher 0.80% expense component. We have included those restated values in the analysis that follows.

Note related to investment expenses paid to active managers – As cited above, under Section 3.6.3.d of ASOP No. 27, the effect of an active investment management strategy should be considered "net of investment expenses...unless the actuary believes, based on relevant data, that such superior or inferior returns represent a reasonable expectation over the measurement period." For OCERS, nearly all of the investment expenses were paid for expenses associated with active managers.

We have not performed a detailed analysis to measure how much of the investment expenses paid to active managers might have been offset by additional returns ("alpha") earned by that active management. However, we observed based on information provided in the CAFR that the total fund return on a net of investment expense basis was lower than the policy benchmark by about 0.6% over the last five years. We will work with the System's staff to determine whether future studies might potentially exclude the level of investment expenses for active managers that are expected to be offset by investment returns. For now, we will continue to use the current approach that any "alpha" that may be identified would be treated as an increase in the risk adjustment and corresponding confidence level. For example, 0.25% of alpha would increase the confidence level by 3% (see discussions that follow on definitions of risk adjustment and confidence level).

#### Risk Adjustment

The real rate of return assumption for the portfolio is adjusted to reflect the potential risk of shortfalls in the return assumptions. The System's asset allocation determines this portfolio risk, since risk levels are driven by the variability of returns for the various asset classes and the correlation of returns among those asset classes. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment.

The purpose of the risk adjustment (as measured by the corresponding confidence level) is to increase the likelihood of achieving the actuarial investment return assumption in the long term. 13 The 5.27% expected real rate of return developed earlier in this report was based on expected mean or average arithmetic returns. This means there is a 50% chance of the actual return in each year being at least as great as the average (assuming a symmetrical distribution of future returns). The risk adjustment is intended to increase that probability somewhat above the 50% level. This is consistent with our experience that retirement plan fiduciaries would generally prefer that returns exceed the assumed rate more often than not. Note that, based on the investment return assumptions recently adopted by systems that have been analyzed under this model, we observe a confidence level generally in the range of 50% to 60%.

This type of risk adjustment is sometimes referred to as a "margin for adverse deviation."

Three years ago, the Board adopted an investment return assumption of 7.25%. That return implied a risk adjustment of 0.48%, reflecting a confidence level of 56% that the actual average return over 15 years would not fall below the assumed return, assuming that the distribution of returns over that period follows the normal statistical distribution.<sup>14</sup>

In our model, the confidence level associated with a particular risk adjustment represents the likelihood that the actual average return would equal or exceed the assumed value over a 15-year period. For example, if we set our real rate of return assumption using a risk adjustment that produces a confidence level of 60%, then there would be a 60% chance (6 out of 10) that the average return over 15 years will be equal to or greater than the assumed value. The 15-year time horizon represents an approximation of the "duration" of the fund's liabilities, where the duration of a liability represents the sensitivity of that liability to interest rate variations.

If we use the same 56% confidence level from our last study to set this year's risk adjustment, based on the current long-term portfolio standard deviation of 12.95% provided by Meketa, the corresponding risk adjustment would be 0.51%. Together with the other investment return components, this would result in an investment return assumption of 6.96%, which is lower than the current assumption of 7.25%.

Based on the general practice of using one-quarter percentage point increments for economic assumptions, we evaluated the effect on the confidence level of other alternative investment return assumptions. In particular, a net investment return assumption of 7.00%, together with the other investment return components, would produce a risk adjustment of 0.47%, which corresponds to a confidence level of 55%. This is slightly lower than the confidence level of 56% used in OCERS' last study for the December 31, 2014 valuation. This analysis supports reducing the current assumption from 7.25% to 7.00%. Note that this comparison does not reflect any restatement of the 2014 analysis for higher reported investment expenses.

The table below shows OCERS' investment return assumptions and for the years when this analysis was performed, the risk adjustments and corresponding confidence levels compared to the values for prior studies. For comparison purposes we have included values for 2014-2016 both as originally developed and after restatement for higher reported investment expenses. For any given investment return assumption, higher expenses will mean a lower risk adjustment and so a lower confidence level. As shown below, with an expense component of 0.80% instead of 0.60% the 2014-2016 investment return of 7.25% would have had a confidence level of 53% rather than 56%.

Based on an annual portfolio return standard deviation of 12.30% provided by the prior investment consultant in 2014. Strictly speaking, future compounded long-term investment returns will tend to follow a log-normal distribution. However, we believe the Normal distribution assumption is reasonable for purposes of setting this type of risk adjustment.

#### HISTORICAL INVESTMENT RETURN ASSUMPTIONS, RISK ADJUSTMENTS AND CONFIDENCE LEVELS BASED ON ASSUMPTIONS ADOPTED BY THE BOARD

Year Ending December 31	Investment Return	Risk Adjustment	Corresponding Confidence Level
2004 - 2007	7.75%	0.39%	56%
2008 - 2010	7.75%	0.80%	61%
2011	7.75%	-0.23%	<50%
2012 - 2013	7.25%	0.34%	55%
2014 - 2016	7.25%	0.48%	56%
2014 - 2016 (restated)	7.25%	0.28%	53%
2017 (Recommended)	7.00%	0.47%	55%

As we have discussed in prior experience studies, the risk adjustment model and associated confidence level is most useful as a means for comparing how the System has positioned itself relative to risk over periods of time. 15 The use of a 55% confidence level should be considered in context with other factors, including:

- As noted above, the confidence level is more of a relative measure than an absolute measure, and so can be reevaluated and reset for future comparisons.
- The confidence level is based on the standard deviation of the portfolio that is determined and provided to us by Meketa. The standard deviation is a statistical measure of the future volatility of the portfolio and so is itself based on assumptions about future portfolio volatility and can be considered somewhat of a "soft" number.
- > A confidence level of 55% is within the range of about 50% to 60% that corresponds to the risk adjustments used by most of Segal's other California public retirement system clients. Most public retirement systems that have recently reviewed their investment return assumptions have seen decreases in their confidence level even though they adopted more conservative investment return assumptions for their valuations.
- As with any model, the results of the risk adjustment model should be evaluated for reasonableness and consistency. This is discussed in the later section on "Comparison with Other Public Retirement Systems".

Taking into account the factors above, our recommendation is to reduce the net investment return assumption from 7.25% to 7.00%. As noted above, this return implies a 0.47% risk adjustment, reflecting a confidence level of 55% that the actual average return over 15 years would not fall below the assumed return.

In particular, it would not be appropriate to use this type of risk adjustment as a measure of determining an investment return rate that is "risk-free."

#### Recommended Investment Return Assumption

The following table summarizes the components of the investment return assumption developed in the previous discussion. For comparison purposes, we have also included similar values from the last study, both before and after restatement for higher reported investment expenses.

#### CALCULATION OF NET INVESTMENT RETURN ASSUMPTION

	Recommended Value	Restated Expenses	Adopted Value
Assumption Component	December 31, 2017	December 31, 2014	December 31, 2014
Inflation	3.00%	3.00%	3.00%
Plus Average Real Rate of Return	5.27%	5.33%	5.33%
Minus Expense Adjustment	(0.80%)	(0.80%)	(0.60%)
Minus Risk Adjustment	(0.47%)	(0.28%)	(0.48%)
Total	7.00%	7.25%	7.25%
Confidence Level	55%	53%	56%

Based on this analysis, our recommended investment return assumption is a decrease from 7.25% to 7.00% per annum to maintain a confidence level associated with this assumption at a level consistent with values developed in prior reviews of this assumption.

#### Comparing with Other Public Retirement Systems

One final test of the recommended investment return assumption is to compare it against those used by other public retirement systems, both in California and nationwide.

We note that a 7.00% investment return assumption is becoming more common among California public sector retirement systems. In particular, five County employees retirement systems (Contra Costa, Fresno, Mendocino, Sacramento and Santa Barbara) use a 7.00% earnings assumption. Furthermore, the CalPERS Board has approved a reduction in the earnings assumption from 7.50% to 7.00% over the next three years. In addition, CalSTRS recently adopted a 7.25% earnings assumption for the 2016 valuation (down from 7.50%) and a 7.00% earnings assumption for the 2017 valuation.

The following table compares OCERS' recommended net investment return assumption against those of the nationwide public retirement systems that participated in the National Association of State Retirement Administrators (NASRA) 2016 Public Fund Survey for 142 large public retirement funds in their 2015 fiscal year valuations:

		NASRA 20	16 Public Fun	id Survey <sup>16</sup>
Assumption	OCERS	Low	Median	High
Net Investment Return	7.00%	4.29%	7.50%	8.50%

The detailed survey results show that more than one-half of the systems have an investment return assumption in the range of 6.75% to 7.75%, and over half of those systems have used an

Public Plans Data website - Produced in partnership with the National Association of State Retirement Administrators (NASRA)

assumption of 7.50%. The survey also notes that several plans have reduced their investment return assumption during the last year. State systems outside of California tend to change their economic assumptions less frequently and so may lag behind emerging practices in this area.

In summary, we believe that both the risk adjustment model and other considerations indicate a lower earnings assumption. The recommended assumption of 7.00% provides for a risk margin within the risk adjustment model consistent with recent OCERS practice, and it is consistent with OCERS' current practice relative to other public systems.

## **Alternative Economic Assumptions**

As we noted above in our discussion of the inflation assumption, the metrics presented in that section could also lead to an inflation assumption lower that our recommended 3.00%, and in particular Segal would find 2.75% to be a reasonable inflation assumption. In this section we present for the Board's consideration alternative investment return assumptions based on an inflation component of 2.75%.

We note that several California public retirement systems have lowered their inflation assumptions at the same time that they lowered their investment return assumptions. Whether this results in more conservative or more aggressive assumptions depends on the change in the real return, i.e., the difference between the two assumptions. We have analyzed two sets of alternative economic assumptions in the table below.

#### ALTERNATIVE INFLATION AND INVESTMENT RETURN ASSUMPTIONS

Assumption Component	Recommended 7.00% Investment 3.00% Inflation	Alternative 1 7.00% Investment 2.75% Inflation	Alternative 2 6.75% Investment 2.75% Inflation
Inflation	3.00%	2.75%	2.75%
Plus Portfolio Real Rate of Return	5.27%	5.27%	5.27%
Minus Expense Adjustment	(0.80%)	(0.80%)	(0.80%)
Minus Risk Adjustment	(0.47%)	(0.22%)	(0.47%)
Total	7.00%	7.00%	6.75%
Confidence Level	55%	53%	55%

Segal would find any of these three sets of economic assumptions to be reasonable.

## C. Salary Increase

Salary increases impact plan costs in two ways: (i) by increasing members' benefits (since benefits are a function of the members' highest average pay) and future normal cost collections; and (ii) by increasing total active member payroll which in turn generates lower UAAL contribution rates. The components of the salary increase assumption are discussed below.

As an employee progresses through his or her career, increases in pay are expected to come from three sources:

1. **Inflation:** Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces will require an employer to maintain its employees' standards of living.

As discussed earlier in this report, we are recommending that the assumed rate of inflation be maintained at 3.00% per annum. This inflation component is used as part of the salary increase assumption.

Real "Across the Board" Pay Increases: These increases are typically termed 2. productivity increases since they are considered to be derived from the ability of an organization or an economy to produce goods and services in a more efficient manner. As that occurs, at least some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees "across the board". The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real "across the board" pay increases have averaged about 0.6% - 0.9% annually during the last ten to twenty years.

We also referred to the annual report on the financial status of the Social Security program published in July 2017. In that report, real "across the board" pay increases are forecast to be 1.2% per year under the intermediate assumptions.

The real pay increase assumption is generally considered a more "macroeconomic" assumption, that is not necessarily based on individual plan experience. We note that the actual pay increases over the past five years were less than CPI increases, as shown below. However, this recent experience may not be a credible predictor of future experience.

Valuation Date	Actual Average Pay Increase <sup>17</sup>	Actual Change in CPI <sup>18</sup>
December 31, 2012	0.03%	2.04%
December 31, 2013	-0.83%	1.08%
December 31, 2014	2.22%	1.35%
December 31, 2015	-1.22%	0.91%
December 31, 2016	6.66%	1.89%
Average <sup>19</sup>	1.37%	1.45%

Considering these factors, we recommend maintaining the real "across the board" salary increase assumption at 0.50%. This means that the combined inflation and "across the board" salary increase assumption will remain unchanged at 3.50%.

Note that under the alternative 2.75% inflation assumption, the combined inflation and "across the board" salary increase assumption would decrease from 3.50% to 3.25%.

Reflects the increase in average salary for members at the beginning of the year versus those at the end of the year. It does not reflect the average salary increases received by members who worked the full year.

Based on the change in the Annual CPI for the Los Angeles-Riverside-Orange County area compared to the prior

In the last experience study, the actual average increased in salary was 1.56% while the actual average change in CPI was 1.24% during the five-year period ending on December 31, 2013.

3. Merit and Promotional Increases: As the name implies, these increases come from an employee's career advances. This form of pay increase differs from the previous two, since it is specific to the individual. For OCERS, there are service-specific merit and promotional increases.

The annual merit and promotional increases are determined by measuring the actual increases received by members over the experience period, net of the inflationary and real "across the board" pay increases. Increases are measured separately for General and Safety members. This is accomplished by:

- a. Measuring each continuing member's actual salary increase over each year of the experience period;
- b. Excluding any members with large increases (in the case of OCERS, we have excluded increases greater than 50%) or any decreases during any particular year;
- Categorizing these increases according to member demographics; c.
- d. Removing the wage inflation component from these increases (assumed to be equal to the increase in the members' average salary during the year);
- Averaging these annual increases over the three-year experience period; and e.
- f. Modifying current assumptions to reflect some portion of these measured increases reflective of their "credibility."

To be consistent with the other economic assumptions, these merit and promotional assumptions should be used in combination with the 3.50% assumed inflation and real "across the board" increases.

The following table shows the General members' actual average merit and promotional increases by years of service over the three-year period from January 1, 2014 through December 31, 2016 along with the actual average increases based on combining the current three-year period with the three years from the prior experience study. The current and proposed assumptions are also shown. The actual average total salary increases for the most recent three-year period were reduced by the actual average inflation plus "across the board" increase (i.e., wage inflation, estimated as the increase in average salaries) for each year over the current three-year experience period (2.4% on average).

# **GENERAL** MERIT AND PROMOTIONAL INCREASES (Actual vs. Proposed Assumption)

	Rate (%)					
Years of Service	Current Assumption	Actual Average Increase (Last 3 Years)	Actual Average Increase from Current and Prior Study	Proposed Assumption		
Less than 1	10.00	6.48	7.78	9.00		
1	7.25	7.14	7.67	7.25		
2	6.00	6.61	6.05	6.00		
3	4.75	5.76	4.90	5.00		
4	4.00	4.62	4.13	4.00		
5	3.25	3.70	3.48	3.50		
6	2.25	3.17	2.99	2.50		
7	2.00	2.91	2.69	2.25		
8	1.50	2.76	2.29	1.75		
9	1.25	2.55	1.97	1.50		
10	1.25	1.95	1.64	1.50		
11	1.25	2.04	1.55	1.50		
12	1.25	1.83	1.43	1.50		
13	1.25	1.81	1.45	1.50		
14	1.25	1.64	1.57	1.50		
15	1.25	1.72	1.54	1.50		
16	0.75	1.51	1.14	1.00		
17	0.75	1.56	1.11	1.00		
18	0.75	1.87	1.28	1.00		
19	0.75	1.48	0.91	1.00		
20 & over	0.75	1.37	1.09	1.00		

The following table provides the same information for Safety members. The actual average total salary increases for the most recent three-year period were reduced by the actual average inflation plus "across the board" increase (i.e., wage inflation, estimated as the increase in average salaries) for each year over the current three-year experience period (3.8% on average).

# SAFETY MERIT AND PROMOTIONAL INCREASES (Actual vs. Proposed Assumption)

	Rate (%)					
Years of Service	Current Assumption	Actual Average Increase (Last 3 Years)	Actual Average Increase from Current and Prior Study	Proposed Assumption		
Less than 1	14.00	13.91	13.92	14.00		
1	10.00	6.23	10.66	10.00		
2	8.50	5.67	7.13	7.75		
3	6.75	4.80	5.18	6.00		
4	5.25	6.61	6.06	5.50		
5	4.50	4.22	4.86	4.50		
6	3.50	3.93	4.26	3.75		
7	3.25	3.12	3.53	3.25		
8	2.25	2.68	2.64	2.50		
9	2.25	2.21	2.41	2.25		
10	1.75	1.61	2.14	1.75		
11	1.75	1.59	1.70	1.75		
12	1.75	1.24	1.60	1.75		
13	1.75	1.69	1.68	1.75		
14	1.75	1.41	1.69	1.75		
15	1.75	1.67	2.26	1.75		
16	1.50	1.53	1.65	1.50		
17	1.50	1.89	2.07	1.50		
18	1.50	2.23	2.26	1.50		
19	1.50	2.19	2.00	1.50		
20 & over	1.50	1.28	1.78	1.50		

Charts 1 and 2 provide a graphical comparison of the actual merit and promotional increases, compared to the proposed and current assumptions. The charts also show the actual merit and promotional increases based on an average of both the current and previous three-year experience periods. This is discussed above. Chart 1 shows this information for General members and Chart 2 for Safety members.

Based on this experience, we are proposing slight increases overall in the merit and promotional salary increases for General and slight decreases overall in the merit and promotional increases for Safety members. Overall, salary increases are assumed to be higher for General members and lower for Safety members since we are not recommending a change to the price inflation assumption or the "across the board" assumption.

#### Active Member Payroll

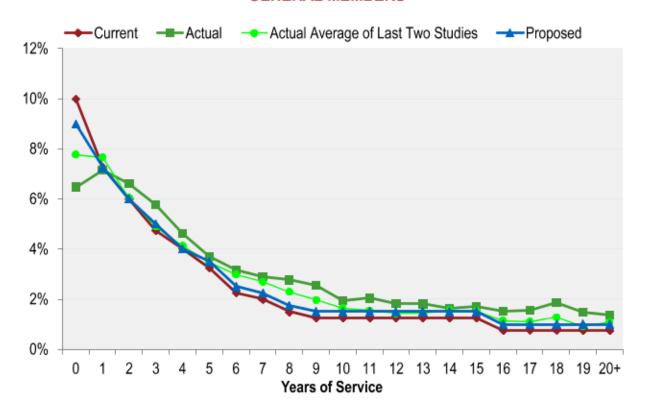
Projected active member payrolls are used to develop the UAAL contribution rate. Future values are determined as a product of the number of employees in the workforce and the average pay for all employees. The average pay for all employees increases only by inflation and real "across the board" pay increases. The merit and promotional increases are not an influence, because this average pay is not specific to an individual.

Under the Board's current practice, the UAAL contribution rate is developed by assuming that the total payroll for all active members will increase annually over the amortization periods at the same assumed rates of inflation plus real "across the board" salary increase assumptions as are used to project the members' future benefits.

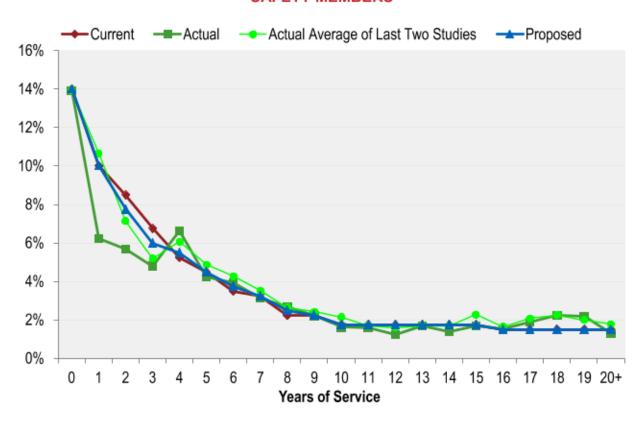
We recommend that the active member payroll increase assumption be maintained at 3.50% annually, consistent with the combined inflation plus real "across the board" salary increase assumptions.

Note that under the alternative 2.75% inflation assumption, the active member payroll increase assumption would decrease from 3.50% to 3.25%.

**CHART 1: MERIT AND PROMOTIONAL SALARY INCREASE RATES GENERAL MEMBERS** 



**CHART 2: MERIT AND PROMOTIONAL SALARY INCREASE RATES** SAFETY MEMBERS



# IV. Demographic Assumptions

#### A. Retirement Rates

The age at which a member retires from service (i.e., who did not retire on a disability pension) will affect both the amount and duration of the benefits that will be paid to that member as well as the period over which funding must take place. Following prior practice, we have continued to use age as a predictor as to when a member would retire from OCERS. Subsequent to our last experience study, we were asked to consider whether other factors such as service could be a better predictor in determining when a member would retire. We have reviewed the retirement experience using service and documented in the following sub-section why we would not recommend a change to use service at this time.

The System's current retirement rates for the non-CalPEPRA Plans<sup>20</sup> are separated into:

- General Enhanced
- (2) General Non-Enhanced<sup>21</sup>
- (3) General SJC (2.0% @ 57 under §31676.12)
- (4) Safety Law Enforcement (3.0% @ 50 under §31664.1)
- (5) Safety Law Enforcement (3.0% @ 55 under §31664.2)
- (6) Safety Fire (3.0% @ 50 under §31664.1)
- (7) Safety Fire (3.0% @ 55 under §31664.2)
- (8) Safety Probation (3.0% @ 50 under §31664.1)

For members who are covered under the CalPEPRA Plans, the retirement rates are separated into:

- CalPEPRA General
- (2) CalPEPRA Safety Probation
- (3) CalPEPRA Safety Law Enforcement
- (4) CalPEPRA Safety Fire

The tables on the following pages show the observed service retirement rates for each of the above non-CalPEPRA categories based on the actual experience over the past three years. The observed service retirement rates were determined by comparing those members who actually retired from service to those eligible to retire from service. This same methodology is followed throughout this report and was described in Section II. Also shown are the current rates assumed and the rates we propose:

<sup>20</sup> CalPEPRA or California Public Employees' Pension Reform Act of 2013 imposed lower benefit tiers for General and Safety members together with other changes.

These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (§31676.01).

	Rate of Retirement (%)						
	G	eneral Enhance	ed	Gen	eral Non-Enhar	nced	
Age	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate	
Under 49	0.00	0.00	0.00	0.00	0.00	0.00	
49*	0.00	55.56**	30.00	0.00	100.00***	25.00	
50	2.50	2.69	2.50	2.50	1.42	2.00	
51	2.00	1.92	2.00	2.50	0.00	2.00	
52	2.00	2.98	2.50	2.50	0.58	2.00	
53	2.00	2.67	2.50	2.50	3.47	2.75	
54	5.00	7.46	5.50	2.50	3.61	2.75	
55	15.00	15.11	15.00	3.00	3.80	3.25	
56	10.00	9.73	10.00	3.50	3.98	3.50	
57	10.00	9.20	10.00	5.00	6.09	5.50	
58	10.00	11.51	11.00	5.00	6.84	5.50	
59	11.00	10.78	11.00	7.00	5.50	6.50	
60	12.00	13.28	12.00	9.00	9.47	9.25	
61	12.00	11.35	12.00	10.00	17.16	12.00	
62	15.00	12.75	14.00	16.00	16.94	16.00	
63	16.00	13.79	16.00	16.00	12.28	16.00	
64	16.00	16.83	16.00	18.00	16.82	18.00	
65	21.00	26.80	22.00	21.00	24.72	22.00	
66	22.00	21.75	22.00	26.00	32.84	28.00	
67	23.00	23.81	23.00	21.00	26.32	24.00	
68	23.00	21.67	23.00	21.00	30.23	24.00	
69	23.00	16.67	23.00	21.00	10.00	20.00	
70	40.00	19.67	25.00	30.00	26.67	20.00	
71	40.00	15.31	25.00	30.00	29.63	25.00	
72	40.00	7.41	25.00	30.00	15.38	25.00	
73	40.00	13.70	25.00	30.00	37.50	25.00	
74	40.00	20.75	25.00	30.00	14.29	25.00	
75 & Over	100.00	21.85	100.00	100.00	30.00	100.00	

<sup>\*</sup> These rates are applicable to General members with 30 or more years of service.

<sup>\*\*</sup> Based on 5 members who retired during the last 3 years.

<sup>\*\*\*</sup>Based on 1 member who retired during the last 3 years.

As shown above, we are recommending slight increases in the retirement rates at early ages and decreases in the retirement rates at later ages for General Enhanced members and overall slight increases in the retirement rates for General Non-Enhanced members.

Chart 3 that follows later in this section compares actual experience with the current and proposed rates of retirement for General Enhanced members and Chart 4 has the same data for General Non-Enhanced members.

	Rate of Retirement (%)					
	Safety Law Enforcement (31664.1)*			Safety Fire (31664.1)**		
Age	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate
49***	10.00	16.39	12.00	0.00	1.56	2.00
50	16.00	20.30	18.00	6.00	4.60	5.00
51	16.00	20.57	18.00	8.00	6.15	7.00
52	16.00	16.91	17.00	9.00	10.13	9.50
53	16.00	18.49	17.00	10.00	12.00	10.50
54	22.00	17.20	22.00	16.00	7.23	15.00
55	22.00	22.06	22.00	19.00	14.49	18.00
56	20.00	13.64	20.00	20.00	21.43	20.00
57	20.00	25.81	20.00	23.00	14.63	21.00
58	20.00	22.73	20.00	30.00	25.58	28.00
59	26.00	25.00	26.00	30.00	26.09	28.00
60	45.00	18.18	35.00	45.00	20.00	30.00
61	45.00	26.32	35.00	45.00	11.11	30.00
62	45.00	40.00	40.00	45.00	18.18	35.00
63	45.00	28.57	40.00	45.00	25.00	35.00
64	45.00	40.00	40.00	45.00	0.00	35.00
65 & Over	100.00	43.75	100.00	100.00	0.00	100.00

Retirement rate is 100% after a Safety Law Enforcement member accrues a benefit of 100% of final average earnings.

As shown above, we are recommending slight increases in the retirement rates at early ages and decreases in the retirement rates at later ages for Safety Law Enforcement (3.0% @ 50 under §31664.1) members and decreases overall in the retirement rates for Safety Fire (3.0% @ 50 under §31664.1) members.

Chart 5 that follows later in this section compares actual experience with the current and proposed rates of retirement for Safety Law Enforcement (3.0% @ 50 under §31664.1) members and Chart 6 has the same data for Safety Fire (3.0% @ 50 under §31664.1) members.

<sup>\*\*</sup> Retirement rate is currently assumed at 100% after a Safety Fire member accrues a benefit of 100% of final average earnings. However, we are recommending removing this assumption as we only observed a 20% retirement rate for those Safety Fire members who accrued a benefit of 100% of final average earnings during the last three years.

<sup>\*\*\*</sup> These rates are applicable to Safety members with 20 or more years of service.

	Rate of Retirement (%)					
	Sa	fety Probation (31664	.1)*			
Age	Current Rate	Actual Rate	Proposed Rate			
49	0.00	2.86	0.00			
50	3.00	6.90	3.25			
51	3.00	3.70	3.25			
52	4.00	8.51	4.25			
53	4.00	4.26	4.25			
54	6.00	13.16	7.00			
55	11.00	14.71	12.00			
56	11.00	9.38	12.00			
57	17.00	21.43	18.00			
58	20.00	17.39	18.00			
59	20.00	14.29	18.00			
60	20.00	23.81	20.00			
61	20.00	7.69	20.00			
62	25.00	33.33	25.00			
63	50.00	30.00	40.00			
64	50.00	20.00	40.00			
65 & Over	100.00	33.33	100.00			

Retirement rate is 100% after a Safety Probation member accrues a benefit of 100% of final average earnings.

As shown above, we are recommending slight increases in the retirement rates at early ages and decreases in the retirement rates at later ages for Safety Probation members.

Chart 7 that follows later in this section compares actual experience with the current and proposed rates of retirement for Safety Probation members.

For General SJC under (2.0% @ 57 under §31676.12), Safety Law Enforcement (3.0% @ 55 under §31664.2) and Safety Fire (3.0% @ 55 under §31664.2), we do not have credible experience from the past three years to propose new rates based on actual retirement from members of the newer plans. However, we are recommending lowering some of the rates at later ages currently used for those plans to commensurate with the overall later retirement assumptions that we observed and are recommending from the other older plans.

	Rate of Retirement (%)							
	General SJC (31676.12)		Enford	Safety Law Enforcement (31664.2)*		Safety Fire (31664.2)**		
Age	Current Rate	Proposed Rate	Current Rate	Proposed Rate	Current Rate	Proposed Rate		
50	3.00	3.00	11.50	11.50	8.00	8.00		
51	3.00	3.00	12.00	12.00	10.00	10.00		
52	3.00	3.00	12.70	12.70	11.00	11.00		
53	3.00	3.00	17.90	17.90	12.00	12.00		
54	3.00	3.00	18.80	18.80	14.00	14.00		
55	4.00	4.00	30.70	30.70	24.00	24.00		
56	5.00	5.00	20.00	20.00	23.00	23.00		
57	6.00	6.00	20.00	20.00	27.00	27.00		
58	7.00	7.00	25.00	25.00	27.00	27.00		
59	9.00	9.00	30.00	30.00	36.00	36.00		
60	11.00	11.00	100.00	40.00	100.00	40.00		
61	13.00	13.00	100.00	40.00	100.00	40.00		
62	15.00	15.00	100.00	40.00	100.00	40.00		
63	15.00	15.00	100.00	40.00	100.00	40.00		
64	20.00	20.00	100.00	40.00	100.00	40.00		
65	20.00	20.00	100.00	100.00	100.00	100.00		
66	24.00	24.00	100.00	100.00	100.00	100.00		
67	24.00	24.00	100.00	100.00	100.00	100.00		
68	24.00	24.00	100.00	100.00	100.00	100.00		
69	24.00	24.00	100.00	100.00	100.00	100.00		
70	100.00	50.00	100.00	100.00	100.00	100.00		
71	100.00	50.00	100.00	100.00	100.00	100.00		
72	100.00	50.00	100.00	100.00	100.00	100.00		
73	100.00	50.00	100.00	100.00	100.00	100.00		
74	100.00	50.00	100.00	100.00	100.00	100.00		
75 & Over	100.00	100.00	100.00	100.00	100.00	100.00		

<sup>\*</sup> Retirement rate is 100% after a Safety Law Enforcement member accrues a benefit of 100% of final average earnings.

Chart 8 compares the current rates with the proposed rates of retirement for General SJC under (2.0% @ 57 under §31676.12). Chart 9 has the same data for Safety Law Enforcement (3.0% @ 55 under §31664.2). Chart 10 has the same data for Safety Fire (3.0% @ 55 under §31664.2).

<sup>\*\*</sup> Retirement rate is currently assumed at 100% after a Safety Fire member accrues a benefit of 100% of final average earnings. However, we are recommending removing this assumption to be consistent to what we proposed for the Non-CalPEPRA Safety Fire members covered under §31664.1.

Note that effective January 1, 2013, new CalPEPRA formulas were implemented for new General and Safety tiers. For these new formulas, we do not have credible experience from the past three years to propose new rates based on actual retirement from members of the newer plans. However, we have lowered our recommended rates for CalPEPRA General and Safety formulas at later ages so that those rates will remain comparable to the proposed retirement rates we are recommending for the non-CalPEPRA General and Safety formulas.

	Rate of Retirement (%)								
		PRA – ieral	CalPEPRA – Safety Probation*					PRA – Fire**	
Age	Current Rate	Proposed Rate	Current Rate	Proposed Rate	Current Rate	Proposed Rate	Current Rate	Proposed Rate	
50	0.00	0.00	2.50	2.50	11.00	11.00	6.50	6.00	
51	0.00	0.00	2.50	2.50	11.50	11.50	8.00	7.00	
52	4.00	4.00	3.00	3.00	12.00	12.00	9.00	9.00	
53	1.50	1.50	3.00	3.00	16.00	16.00	10.00	10.00	
54	1.50	1.50	5.50	5.50	17.00	17.00	12.00	11.50	
55	2.50	2.50	10.00	10.00	28.00	28.00	21.00	21.00	
56	3.50	3.50	10.00	10.00	18.00	18.00	20.00	20.00	
57	5.50	5.50	15.00	15.00	17.50	17.50	22.00	22.00	
58	7.50	7.50	20.00	20.00	22.00	22.00	25.00	25.00	
59	7.50	7.50	20.00	20.00	26.00	26.00	31.50	30.00	
60	7.50	7.50	100.00	40.00	100.00	40.00	100.00	40.00	
61	7.50	7.50	100.00	40.00	100.00	40.00	100.00	40.00	
62	14.00	14.00	100.00	40.00	100.00	40.00	100.00	40.00	
63	14.00	14.00	100.00	40.00	100.00	40.00	100.00	40.00	
64	14.00	14.00	100.00	40.00	100.00	40.00	100.00	40.00	
65	18.00	18.00	100.00	100.00	100.00	100.00	100.00	100.00	
66	22.00	22.00	100.00	100.00	100.00	100.00	100.00	100.00	
67	23.00	23.00	100.00	100.00	100.00	100.00	100.00	100.00	
68	23.00	23.00	100.00	100.00	100.00	100.00	100.00	100.00	
69	23.00	23.00	100.00	100.00	100.00	100.00	100.00	100.00	
70	30.00	25.00	100.00	100.00	100.00	100.00	100.00	100.00	
71	30.00	25.00	100.00	100.00	100.00	100.00	100.00	100.00	
72	30.00	25.00	100.00	100.00	100.00	100.00	100.00	100.00	
73	30.00	25.00	100.00	100.00	100.00	100.00	100.00	100.00	
74	30.00	25.00	100.00	100.00	100.00	100.00	100.00	100.00	
75 & Over	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	

<sup>\*</sup> Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

<sup>\*\*</sup> Retirement rate is currently assumed at 100% after a Safety Fire member accrues a benefit of 100% of final average earnings. However, we are recommending removing this assumption to be consistent to what we proposed for the Non-CalPEPRA Safety Fire members.

For ages where we are extending the retirement rates in the two tables above, we did not reduce the retirement rates to the level used for the older plans with credible experience since the current rates for those plans are already less than 100%.

Chart 11 compares the current rates with the proposed rates of retirement for CalPEPRA General members. Chart 12 has the same data for CalPEPRA Safety Probation members. Chart 13 has the same data for CalPEPRA Safety Law Enforcement members. Chart 14 has the same data for CalPEPRA Safety Fire members.

## Use of Age-Based Versus Service-Based Retirement Assumptions

We have also looked into the desirability of developing and applying the retirement assumptions based on service instead of age at retirement. The table below is based on a high-level review by combining the retirement experience for all OCERS General members covered under various formulas and all OCERS Safety members covered under various formulas. For General members, the actual retirement experience shows relatively higher retirement rates for members immediately upon reaching the minimum age or service requirement for a retirement benefit (i.e., attaining age 70 regardless of service or attaining age 50 with 10 or more years of retirement service credit) whereas from 10 years of service to 25 years of service, the retirement rates are very flat. For Safety members, the retirement rates are very volatile with no discernable pattern for members with less than 25 years of service.

The above analyses can be improved if we introduce age as additional variable to use in summarizing the experience. This is exactly the case for CalPERS as their retirement assumptions are developed and applied based on both a member's age and service. We believe CalPERS is able to develop retirement assumptions based on both age and service because it is a significantly larger entity with more exposures and decrements, allowing them to break down the experience into smaller groups. If we were to split the experience for OCERS by age and service, we do not believe we would have as much reliable experience to make credible recommended retirement assumptions.

	Rate of Ret	tirement (%)
Years of Service	Actual Rate - General Members	Actual Rate - Safety Members
0 - 4	0.00	0.00
5 - 9	47.59	100.00
10 – 14	6.64	8.11
15 – 19	6.75	8.54
20 – 14	8.63	4.29
25 – 19	11.87	15.59
30 – 14	18.57	31.77
35 – 39	29.17	20.59
40 & over	29.17	0.00

#### **Deferred Vested Members**

In prior valuations, deferred vested General and Safety members were assumed to retire at age 58 and 53, respectively. The average age at retirement over the current three years period in this experience study was 58.8 for General and 53.1 for Safety. We recommend increasing the assumption for General members from age 58 to age 59 and maintaining the current assumption for Safety members at age 53.

For members who terminate with less than five years of service after January 1, 2003 and are not vested, we assume they would retire at age 70 for both General and Safety if they decide to leave their contributions on deposit as permitted by §31629.5.

## Reciprocity

It is currently assumed that 20% of future General and 30% of future Safety deferred vested members would go on to work for a reciprocal system and receive 4.25% compensation increases for General and 5.00% for Safety per annum from termination until their date of retirement. Based on the actual experience that 13% of General and 23% of Safety members went on to work for a reciprocal system as of December 31, 2016, we recommend decreasing the reciprocity assumption for General members from 20% to 15% and decreasing the reciprocity assumption for Safety members from 30% to 25%. Based on our ultimate recommended merit and promotional salary increase assumption of 1.00% for General and 1.50% for Safety (and our recommended economic assumptions), we propose that a 4.50% (i.e., 3.00% inflation plus 0.50% "across the board" plus 1.00% merit and promotional) for General and 5.00% (i.e., 3.00% inflation plus 0.50% "across the board" plus 1.50% merit and promotional) salary increase assumption be utilized to anticipate salary increases (under the reciprocal system) from termination from OCERS to the expected date of retirement.

#### Survivor Continuance Under Unmodified Option

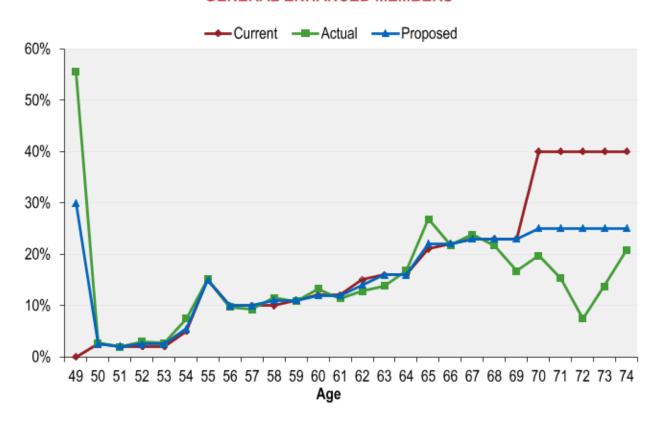
In prior valuations, it was assumed that 75% of all active male members and 50% of all active female members who selected the unmodified option would be married or have an eligible domestic partner when they retired. According to the experience of members who retired during the last three years, about 72% of all male members and 55% of all female members were married or had a domestic partner at retirement. We recommend continuing the assumptions that 75% of active male members will be married or have a domestic partner when they retire and increasing the assumption that 50% of active female members will be married or have a domestic partner when they retire to 55%.

Since the value of the survivor's continuance benefit is dependent on the survivor's age and sex, we must also have assumptions for the age and sex of the survivor. Based on the experience during the three-year period, we believe that it is reasonable to continue to assume a three-year age difference for the survivors age as compared to the member's age. Since the majority of survivors are expected to be of the opposite sex, even with the inclusion of domestic partners, we will continue to assume that the survivor's sex is the opposite of the member.

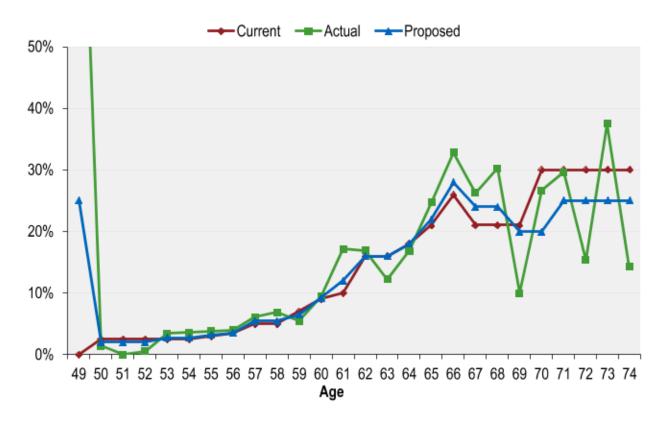
The proposed assumption for the age of the survivor and recommended assumption are shown below. These assumptions will continue to be monitored in future experience studies.

Survivor Ages – Current Assumptions						
	Survivor's Age as Compared to Member's Age					
Current Actual Age Recommended Beneficiary Sex Assumption Difference Assumption						
Male	3 years older	2.8 years older	No change			
Female	3 years younger	2.5 years younger	No change			

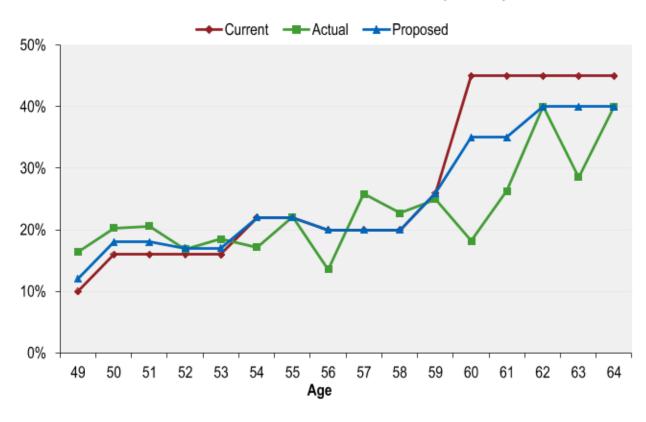
# **CHART 3: RETIREMENT RATES GENERAL ENHANCED MEMBERS**



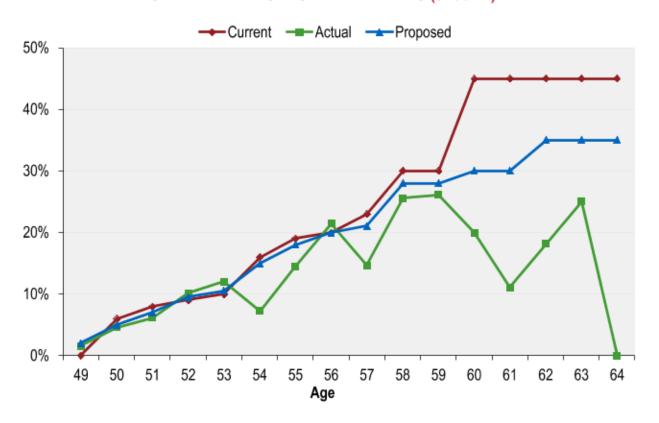
#### **CHART 4: RETIREMENT RATES GENERAL NON-ENHANCED MEMBERS**



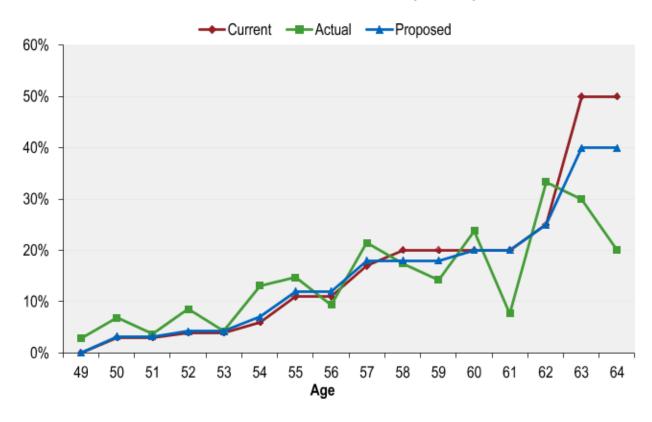
**CHART 5: RETIREMENT RATES** SAFETY LAW ENFORCEMENT MEMBERS (31664.1)



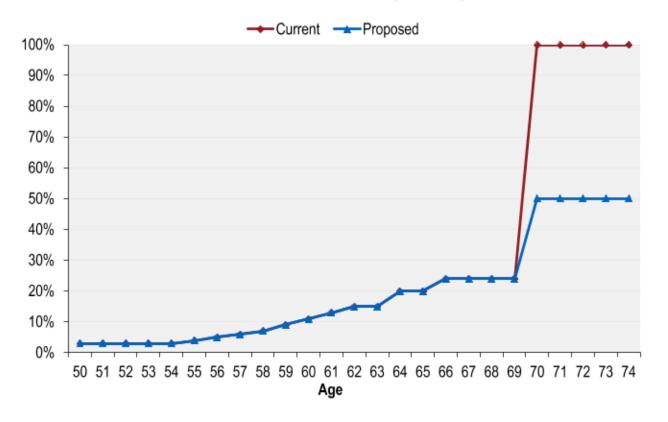
## **CHART 6: RETIREMENT RATES SAFETY FIRE AUTHORITY MEMBERS (31664.1)**



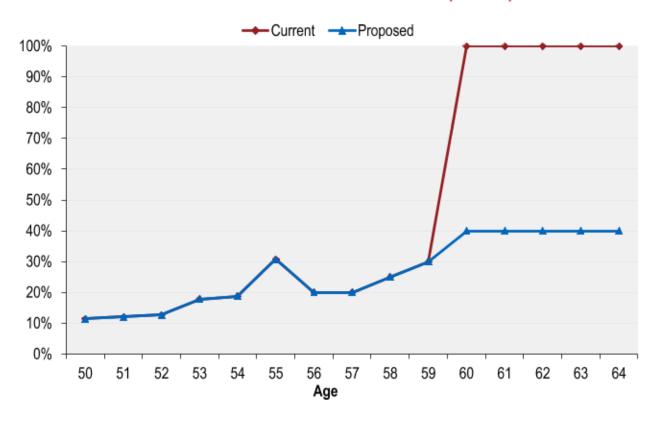
**CHART 7: RETIREMENT RATES SAFETY PROBATION MEMBERS (31664.1)** 



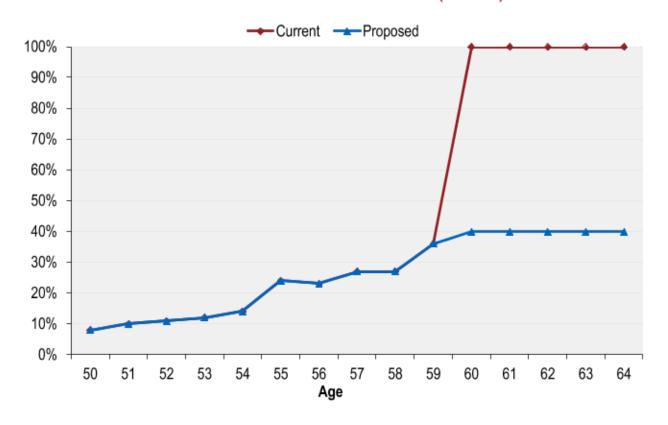
## **CHART 8: RETIREMENT RATES GENERAL SJC MEMBERS (31676.12)**



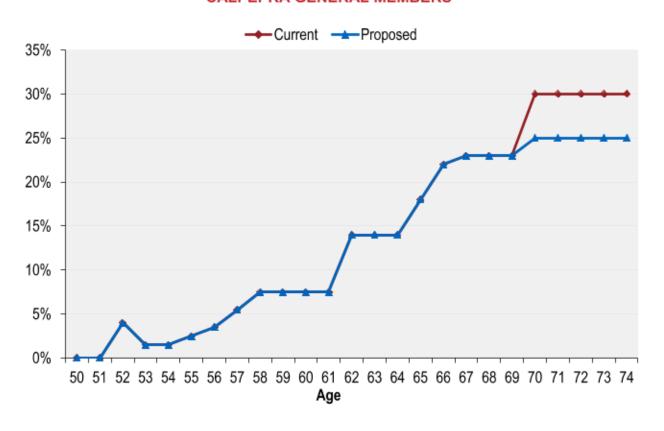
**CHART 9: RETIREMENT RATES SAFETY LAW ENFORCEMENT MEMBERS (31664.2)** 



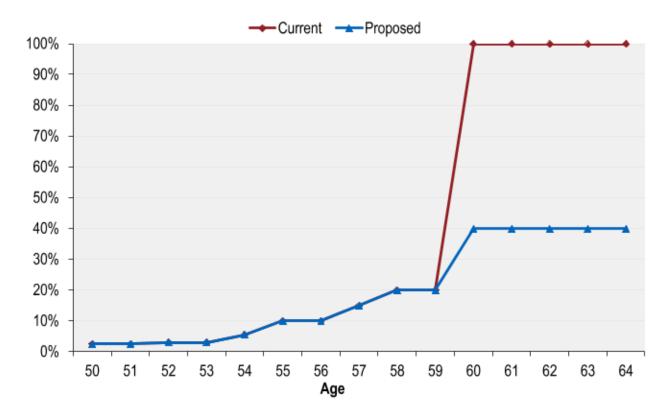
## **CHART 10: RETIREMENT RATES SAFETY FIRE AUTHORITY MEMBERS (31664.2)**



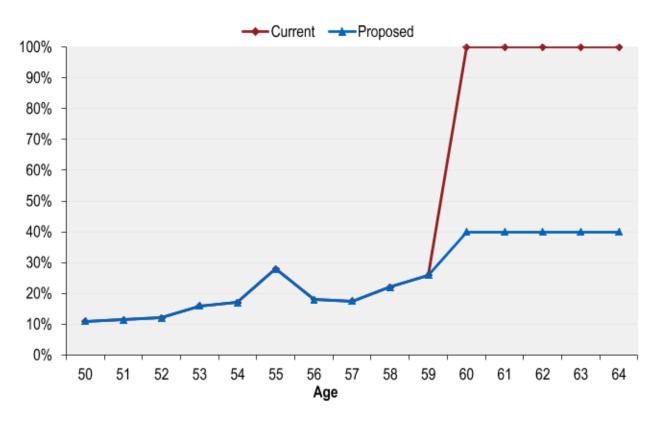
**CHART 11: RETIREMENT RATES CALPEPRA GENERAL MEMBERS** 



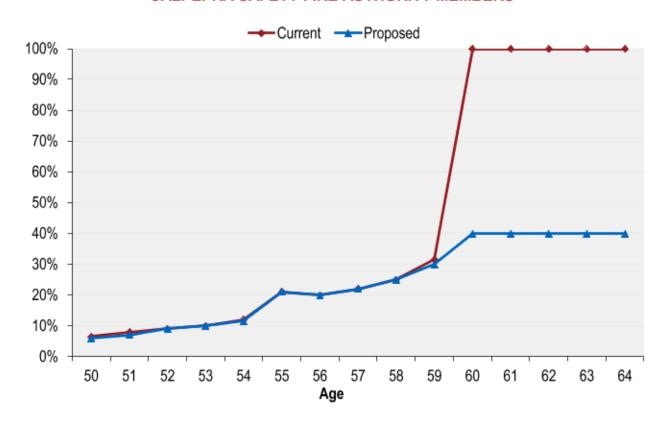
#### **CHART 12: RETIREMENT RATES CALPEPRA SAFETY PROBATION MEMBERS**



**CHART 13: RETIREMENT RATES CALPEPRA SAFETY LAW ENFORCEMENT MEMBERS** 



# **CHART 14: RETIREMENT RATES CALPEPRA SAFETY FIRE AUTHORITY MEMBERS**



## **B. Mortality Rates - Healthy**

The "healthy" mortality rates project the life expectancy of a member who retires from service (i.e., who did not retire on a disability pension). Also, the "healthy" pre-retirement mortality rates project what proportion of members will die before retirement. For General members, the table currently being used for post-service retirement mortality rates is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale BB to 2020 with no age adjustments. For Safety members, the table currently being used for post-service retirement mortality rates is the RP-2000 Combined Healthy Mortality Table (separate tables for males and females) projected with Scale BB to 2020 with ages set back two years. All General and Safety beneficiaries are assumed to have the same mortality of a General member of the opposite sex who has taken a service (non-disabled) retirement.

The Society of Actuaries (SOA) has published the RP-2014 family of mortality tables and associated mortality improvement scales. Within that family of mortality tables, there are mortality rates developed for annuitants on a "headcount" weighted basis that weight all retirees at the same age the same way without regard to the level of benefits those annuitants are receiving from a retirement plan. Mortality rates are also developed for annuitants on a "benefit" weighted basis, with higher credibility assigned to experience from annuitants receiving larger benefits. The headcount-weighted basis is the more common practice currently and is the approach used by Segal in the past for its California public system clients (including OCERS) and by other public sector actuaries in California.

As for the mortality improvement scales, they can be applied in one of two ways. Historically, the more common application is to use a "static" approach to anticipate a fixed level of mortality improvement for all annuitants receiving benefits from a retirement plan. This is in contrast to a "generational" approach where each future year has its own mortality table that reflects the forecasted improvements, using the published improvement scales. While the static approach is still used by some of Segal's California public system clients, as well as CalPERS, the "generational" approach is the emerging practice within the actuarial profession.

A generational mortality table provides dynamic projections of mortality experience for each cohort of retirees. For example, the mortality rate for someone who is 65 next year will be slightly less than for someone who is 65 this year. In general, using generational mortality anticipates increases in the cost of the Plan over time as participants' life expectancies are projected to increase. This is in contrast to updating a static mortality assumption with each experience study as we have proposed in prior experience studies.

The SOA is in the process of collecting data from public sector plans so that they can develop mortality tables based on public sector experience comparable to the RP-2014 mortality tables developed using data collected from private and multi-employer plans. Furthermore, after publishing the two-dimensional MP-2014 life expectancy improvement scale, the SOA replaced it with the two-dimensional MP-2015 life expectancy improvement scales to remove some of the conservatism built into the MP-2014 scale and to better reflect the most recent data of mortality improvement from the Social Security Administration. We understand that the Retirement Plans Experience Committee of the Society of Actuaries (RPEC) intends to publish annual updates to their mortality improvement scales. Improvement scale MP-2016 is the latest improvement scale available.

We recommend that given the trend in the retirement industry to move towards generational mortality, it would be reasonable for the Board to adopt the Headcount-Weighted RP-2014 mortality table (adjusted for OCERS experience), and project the mortality improvement generationally using the MP-2016 mortality improvement scale. Once the SOA has included data from public sector plans in developing the new tables, we will also include a discussion with the Board on whether to consider the benefit weighted mortality rates in a future experience study.

As an illustration of the relative effect of these approaches, we have provided in the table below the approximate change in the total employer and member contribution rates based on the different approaches to build in margin for future mortality improvements.

	Employer and Member Contribution Rate Impact Combined
Headcount Weighted RP-2014 Family of Tables – Static Approach with Increased Margin*	3.5% of payroll
Benefit Weighted RP-2014 Family of Tables – Static Approach without Increased Margin	5.1% of payroll
Headcount Weighted RP-2014 Family of Tables – Generational Approach	4.3% of payroll

Includes an increased margin of 20% to anticipate the move towards a "generational" approach.

In order to use more actual OCERS experience in our analysis, we have used experience for a nine-year period by using data from the current (from January 1, 2014 to December 31, 2016) and the last two (from January 1, 2011 to December 31, 2013 and January 1, 2008 to December 31, 2010) experience study periods to study this assumption. We have continued to examine the mortality experience with all beneficiaries included since combining General healthy retirees and all General and Safety beneficiaries would provide more exposures and would increase the credibility of the results.

# **Pre-Retirement Mortality**

In prior experience studies, the pre-retirement mortality rates for active members were set equal to the post-retirement mortality rates for retirees since the actual number of deaths among active members was not large enough to provide a statistically credible analysis. However, this approach is not compatible with our current proposal because the post-retirement RP-2014 Healthy Annuitant table does not include rates for ages below 50.

From the RP-2014 family of tables, we recommend that pre-retirement mortality follow the Headcount-Weighted RP-2014 Employee Mortality Table (separate tables for males and females) times 80%, projected generationally with the two-dimensional scale MP-2016. The 80% scaling factor is to account for the lower incidences of observed pre-retirement death on the combined General and Safety workforce relative to the standard table.

Currently, our assumption is that all General member pre-retirement deaths are non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected and the other 10% are assumed to be service connected. Based on actual experience during the last three years (with 100% non-service connected deaths for General and 90% non-service connected deaths for Safety), we recommended maintaining the current assumption for both General and Safety members.

## Post- Retirement Mortality (Service Retirements)

Among all retired members, the actual deaths compared to the expected deaths under the current assumptions for the last nine years is shown in the table below. We also show the deaths under proposed assumptions. In prior years we have generally set the mortality assumption using a static mortality projection so that actual deaths will be at least 10% greater than those assumed. As noted above, we are recommending the use of a generational mortality table rather than static mortality. A generational mortality table incorporates a more explicit assumption for future mortality improvement. Accordingly, the goal is to start with a mortality table that closely matches the current experience (without a margin for future mortality improvement), and then reflect mortality improvement by projecting lower mortality rates in future years. That is why the current actual to expected ratios shown in the table below for General (including all beneficiaries) and Safety are 98% and 97%, respectively. In future years these ratios should remain around 100%, as long as actual mortality improved at the same rates as anticipated in the generational mortality tables. The actual deaths compared to the expected deaths under the current and proposed assumptions for the last nine years are as follows:

	Genera	l Members –	Healthy	Safety Members - Healthy		
Gender	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
Male	913	921	1,000	115	126	130
Female	1,029	1,081	1,098	10	11	11
Total	1,942	2,002	2,098	125	137	141
Actual / Expected	103%		95%	110%		97%

	All Beneficiaries – Healthy					
Gender	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths			
Male	135	179	139			
Female	440	475	468			
Total	575	654	607			
Actual / Expected	114%		108%			

	General Members and All Beneficiaries – Healthy			Safety	Safety Members - Healthy		
Gender	Current Proposed Expected Actual Expected Deaths Deaths		Current Expected Deaths	Actual Deaths	Proposed Expected Deaths		
Male	1,048	1,100	1,139	115	126	130	
Female	1,469	1,556	1,566	10	11	11	
Total	2,517	2,656	2,705	125	137	141	
Actual / Expected	106%		98%	110%		97%	

For General service retirees and all beneficiaries, the ratio of actual to expected deaths was 106% during the nine-year period. We recommend updating the current table to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) with no age adjustments. This will bring the current actual to expected ratio to 98%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

For Safety service retirees, the ratio of actual to expected deaths was 110% during the nine-year period. We recommend updating the current table to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) with ages set back four years. This will bring the current actual to expected ratio to 97%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

All of this is consistent with ASOP 35 as we anticipate expected future improvement in life expectancy using the generational approach.

Chart 15 compares actual to expected deaths for General members and all beneficiaries under the current and proposed assumptions over the last nine years. Experience shows that there were more deaths than predicted by the current table.

Chart 16 has the same comparison for Safety members. Experience shows that there were more deaths than predicted by the current table.

Chart 17 shows the life expectancies (i.e. expected future lifetime) under the current and the proposed tables for General members and all beneficiaries.

Chart 18 shows the same information for Safety members.

The expected deaths (Charts 15 and 16) and life expectancies (Charts 17 and 18) under the proposed generational mortality table are based on mortality rates from 2014 which is the base year of the table. In practice, life expectancies will be assumed to increase based on applying the mortality improvement scale.

#### Comparison to CalPERS' Mortality Table

Following prior practice, we have continued to use the mortality tables published by the SOA but adjusted to reflect OCERS' mortality experience in recommending the post-retirement mortality tables. Subsequent to our last experience study, we were asked whether or not it could have been appropriate to start with the mortality tables used by CalPERS for their participating employers and members and modify them for use at OCERS. We have addressed that question in this section.

When comparing OCERS' mortality experience over the past nine years against the CalPERS mortality table with no age adjustment, the actual to expected ratios are 115% for General members (including beneficiaries), 96% for Safety members and 114% when combining both General and Safety members. The reason why the actual and expected ratios differed significantly between General and Safety members is that CalPERS does not develop separate mortality tables between different membership classes (i.e., General and Safety) for members who retired from service retirement.

It is our understanding from conversations with CalPERS staff that CalPERS is considering moving towards using different mortality tables for General and Safety members in their valuations at some future time. In addition, they are also considering moving to a generational approach to anticipate future mortality improvements which is our understanding of the reason why they are currently considering about a 20% margin in selecting their mortality assumptions. After taking the above factors into account, we believe that the tables we have proposed (using the SOA mortality tables as a starting point) provide a better predictor for mortality experience for OCERS.

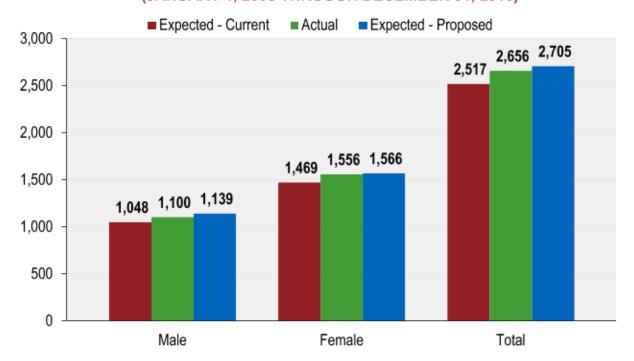
#### Mortality Table for Member Contributions, Optional Forms of Payment and Reserves

There are administrative reasons why a generational mortality table is more difficult to implement for determining age-based member contribution rates, optional forms of payment and reserves. One emerging practice is to approximate the use of a generational mortality table by the use of a static table with projection of the mortality improvement over a period that is close to the duration of the benefit payments for active members. We would recommend the use of this approximation.

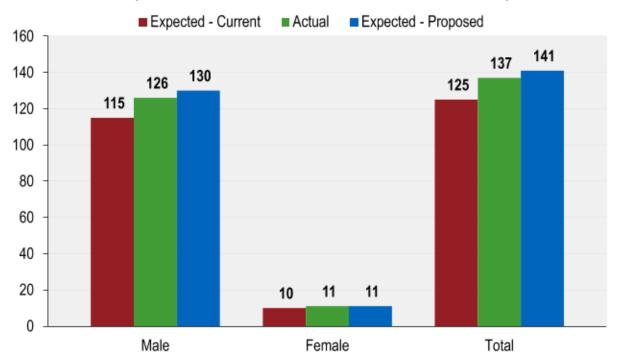
We recommend that the mortality table used for determining contributions for General members be updated to a blended table based on the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the twodimensional mortality improvement scale MP-2016, weighted 40% male and 60% female. This is based on the proposed valuation mortality table for General members and the actual gender distribution of General members. For all beneficiaries, we recommend the same tables as General members but weighted 60% male and 40% female.

We also recommend an update to the mortality table for Safety members to be the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016 set back four years, weighted 80% male and 20% female. This is based on the proposed mortality table for Safety members and the actual gender distribution for the current Safety members.

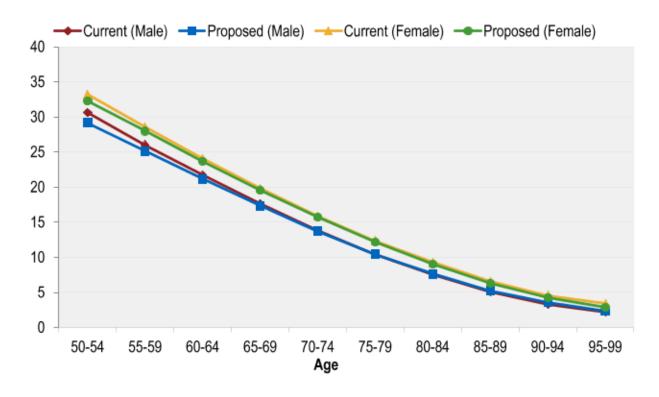
## **CHART 15: POST-RETIREMENT DEATHS** NON - DISABLED GENERAL MEMBERS AND ALL BENEFICIARIES (JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)



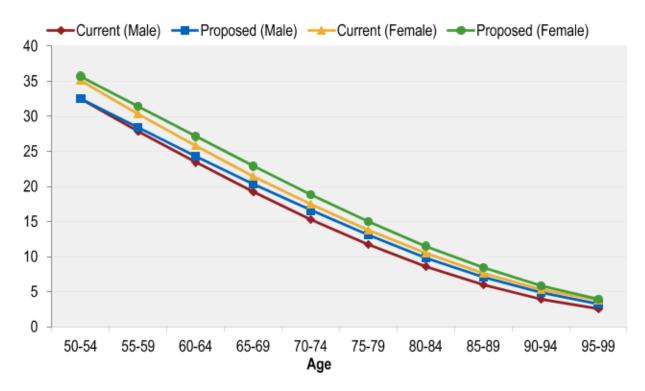
**CHART 16: POST-RETIREMENT DEATHS** NON - DISABLED SAFETY MEMBERS (JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)



#### **CHART 17: LIFE EXPECTANCIES** NON - DISABLED GENERAL MEMBERS AND BENEFICIARIES



**CHART 18: LIFE EXPECTANCIES** NON - DISABLED SAFETY MEMBERS



#### C. Mortality Rates - Disabled

Since mortality rates for disabled members can vary from those of healthy members, a different mortality assumption is often used. For General members, the table currently being used is the RP-2000 Combined Healthy Mortality Table, projected with scale BB to 2020, set forward six years for males and set forward three years for females. For Safety members, the table currently being used is the RP-2000 Combined Healthy Mortality Table, projected with scale BB to 2020.

The number of actual deaths compared to the number expected under the current and proposed assumption for the last nine years are as provided in the table below.

	General - Disabled			Safety - Disabled		
Gender	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths	Current Expected Deaths	Actual Deaths	Proposed Expected Deaths
Male	124	122	121	37	52	48
Female	73	93	97	3	1	5
Total	197	215	218	40	53	53
Actual / Expected	109%		99%	132%		100%

Based on the actual experience from the last nine years, we recommend changing the mortality table for General disabled members to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) set forward five years. This will bring the current actual to expected ratio to 99%. This table is then projected generationally with the twodimensional mortality improvement scale MP-2016.

Likewise, based on the actual experience, we recommend changing the mortality table for Safety disabled members to the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females). This will bring the current actual to expected ratio to 100%. This table is then projected generationally with the two-dimensional mortality improvement scale MP-2016.

Chart 19 compares actual to expected deaths under both the current and proposed assumptions for disabled General members over the last nine years. Experience shows that there were more deaths than predicted by the current table.

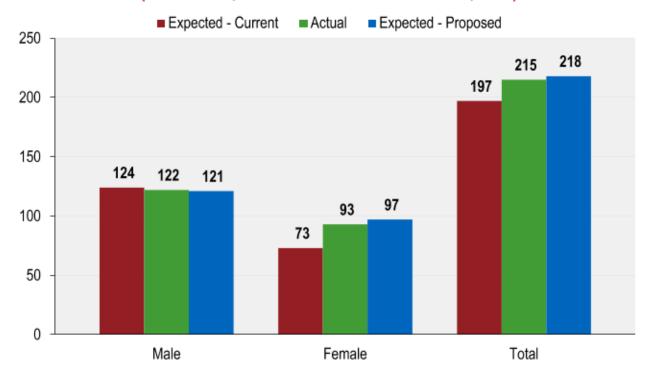
Chart 20 has the same comparison for Safety members. Experience shows that there were more deaths than predicted by the current table.

Chart 21 shows the life expectancies under both the current and proposed tables for General members.

Chart 22 shows the same information for Safety members.

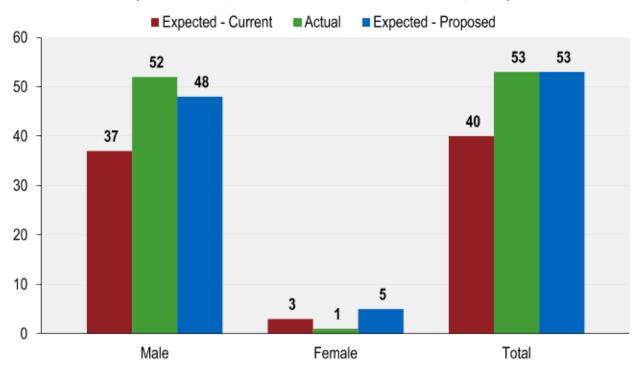
#### **CHART 19: POST-RETIREMENT DEATHS DISABLED GENERAL MEMBERS**

#### (JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)

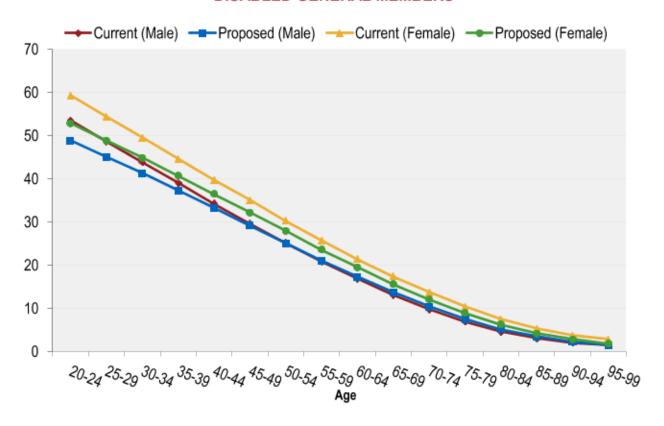


### **CHART 20: POST-RETIREMENT DEATHS DISABLED SAFETY MEMBERS**

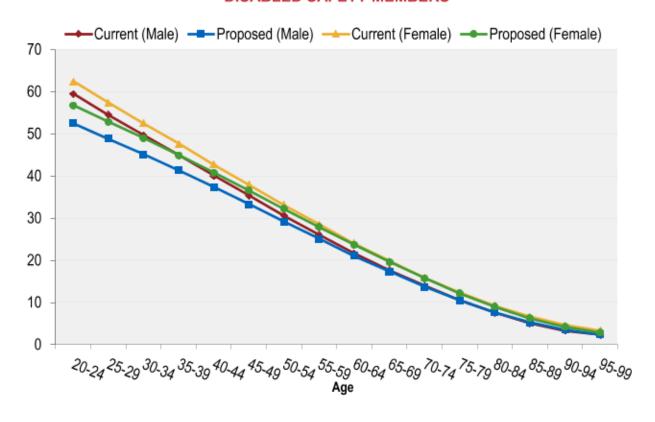
#### (JANUARY 1, 2008 THROUGH DECEMBER 31, 2016)



#### **CHART 21: LIFE EXPECTANCIES DISABLED GENERAL MEMBERS**



#### **CHART 22: LIFE EXPECTANCIES DISABLED SAFETY MEMBERS**



#### **D. Termination Rates**

Termination rates include all terminations for reasons other than death, disability, or retirement. Under the current assumptions there is an overall incidence of termination assumed, combined with assumptions, based on the plan membership and years of service. There is also another set of assumptions to anticipate the percentage of members who will withdraw their contributions and members who will leave their contributions on deposit and receive a deferred vested benefit.

We have developed rates for the following four groups: (1) General All Other, (2) General OCTA, (3) Safety Law Enforcement and Fire and (4) Safety Probation. The termination experience over the last three years is shown by years of service in the following tables. We also show the current and proposed assumptions.

	Termination Rate (%)						
	G	eneral All Oth	er		General OCTA		
Years of Service	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate	
Less than 1	11.00	11.13	11.00	17.50	18.29	17.50	
1	8.00	6.93	7.50	13.50	7.73	11.00	
2	7.00	6.17	6.50	10.50	6.63	9.00	
3	5.00	5.05	5.00	10.00	3.96	8.50	
4	4.00	6.26	4.50	9.00	1.69	7.50	
5	3.75	5.70	4.25	7.00	10.00	7.00	
6	3.50	4.25	3.75	5.00	2.33	4.50	
7	3.00	3.62	3.25	5.00	2.48	4.00	
8	2.75	3.51	3.00	4.00	2.91	3.50	
9	2.50	2.87	2.75	3.50	2.50	3.00	
10	2.25	2.56	2.50	3.50	2.83	3.00	
11	2.00	2.00	2.00	3.50	1.37	3.00	
12	2.00	1.79	2.00	3.00	3.57	3.00	
13	1.75	1.94	1.75	3.00	0.76	2.50	
14	1.75	1.01	1.50	3.00	2.42	2.50	
15	1.75	1.27	1.40	3.00	2.82	2.50	
16	1.50	0.95	1.30	3.00	0.00	2.00	
17	1.50	1.00	1.20	2.75	1.04	1.80	
18	1.50	0.67	1.10	2.75	2.86	1.60	
19	1.50	0.75	1.00	2.75	1.79	1.40	
20 or more	1.25	0.41	0.90	1.75	0.63	1.20	

	Termination Rate (%)						
	Sa	fety Law and F	ire	S	Safety Probation	on	
Years of Service	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate	
Less than 1	4.00	6.28	4.50	16.00	10.00	14.00	
1	3.00	1.06	2.50	13.00	15.15	13.00	
2	2.00	1.83	2.00	10.00	10.00	10.00	
3	1.00	2.67	1.50	6.00	0.00	5.00	
4	1.00	1.52	1.25	4.00	0.00	4.00	
5	1.00	0.00	1.00	3.50	10.00	3.50	
6	0.95	1.83	0.95	3.00	0.00	2.75	
7	0.90	0.24	0.90	2.50	0.91	2.00	
8	0.85	0.23	0.85	2.25	1.83	2.00	
9	0.80	0.86	0.80	2.00	0.00	1.75	
10	0.75	1.20	0.75	1.75	2.83	1.75	
11	0.65	1.36	0.65	1.75	0.00	1.50	
12	0.60	0.88	0.60	1.50	0.54	1.25	
13	0.50	0.00	0.55	1.25	0.50	1.00	
14	0.50	0.32	0.50	1.00	0.56	0.75	
15	0.50	0.00	0.45	1.00	1.26	0.75	
16	0.50	0.00	0.40	1.00	0.00	0.75	
17	0.50	0.67	0.35	0.50	0.00	0.25	
18	0.50	0.00	0.30	0.50	0.00	0.25	
19	0.50	0.00	0.25	0.50	0.00	0.25	
20 or more	0.25	0.08	0.20	0.50	0.00	0.25	

Chart 23 compares actual to expected terminations over the past three years for both the current and proposed assumptions for General All Other, General OCTA, Safety Law Enforcement and Fire and Safety Probation members.

Chart 24 shows the actual termination rates over the past three years compared to the current and proposed assumptions for General All Other members.

Chart 25-27 shows the same information as Chart 24, but for General OCTA, Safety Law and Fire and Safety Probation members.

Based upon the recent experience, we have decreased the termination rates overall for General All Other members, General OCTA members, Safety Law and Fire members and Safety Probation members.

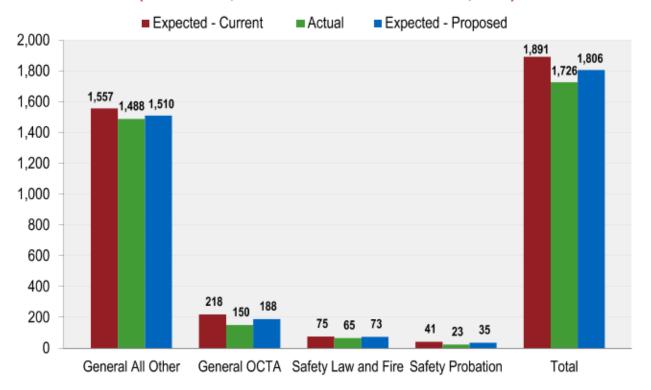
The following table shows the currently assumed, actual and proposed assumed percentages for members who withdraw their contributions. In the past, for the four membership categories just discussed, there was a separate assumption for members with fewer than five years of service versus those with five or more years of service. Based on the experience observed during the past three years, we are recommending a more detailed assumption for members with five or more years of service. The assumed percentages for members who leave their contributions on deposit and receive a deferred vested benefit is equal to 100% minus the percentage of those assumed to withdraw.

	Election for Withdrawal of Contributions						
	General All Other				General OCTA		
Years of Service	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate	
0-4	40%	25%	35%	45%	33%	40%	
5-9	25%	31%	30%	35%	33%	35%	
10-14	25%	27%	25%	35%	28%	30%	
15 or more	25%	18%	20%	35%	13%	20%	

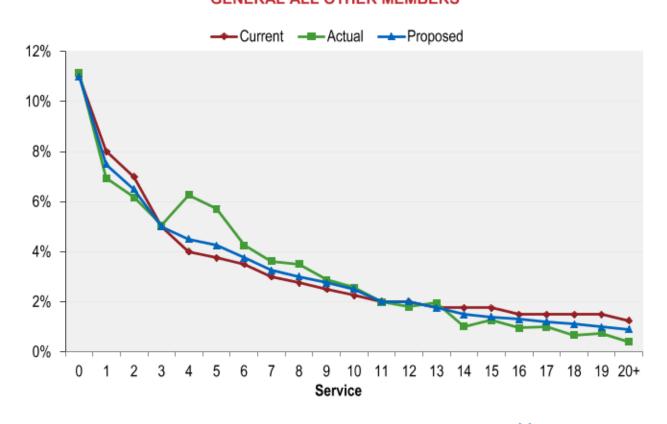
		Election for Withdrawal of Contributions					
	Safety Law and Fire			\$	Safety Probation		
Years of Service	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate	
0-4	20%	12%	20%	40%	20%	25%	
5-9	20%	55%	20%	30%	0%	25%	
10-14	20%	11%	20%	30%	0%	25%	
15 or more	20%	25%	20%	30%	50%	25%	

#### **CHART 23: ACTUAL NUMBER OF TERMINATIONS** COMPARED TO EXPECTED

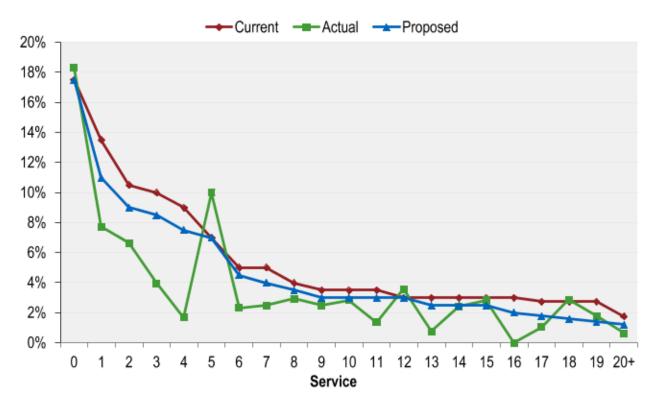
#### (JANUARY 1, 2014 THROUGH DECEMBER 31, 2016)



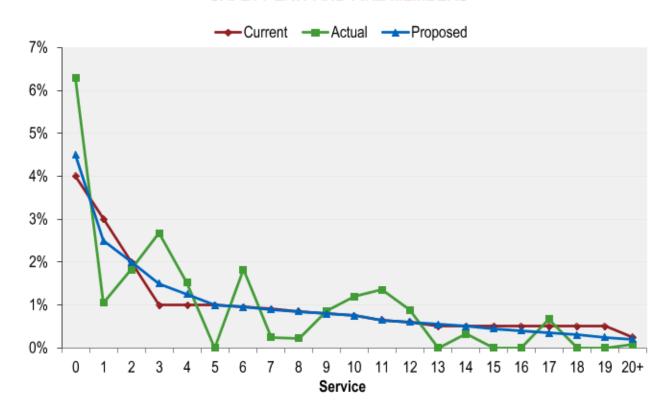
**CHART 24: TERMINATION RATES** GENERAL ALL OTHER MEMBERS



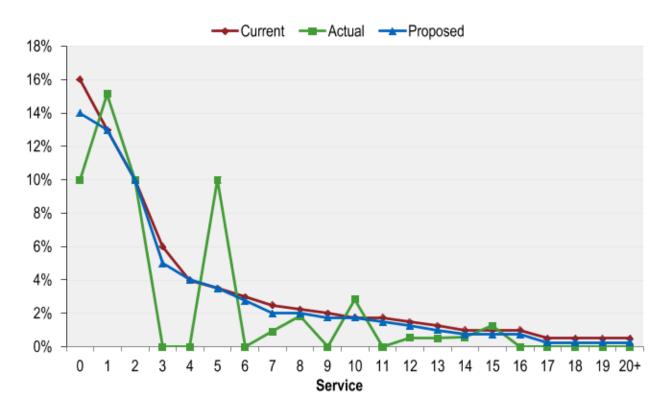
#### **CHART 25: TERMINATION RATES GENERAL OCTA MEMBERS**



#### **CHART 26: TERMINATION RATES** SAFETY LAW AND FIRE MEMBERS



### **CHART 27: TERMINATION RATES** SAFETY PROBATION MEMBERS



### E. Disability Incidence Rates

When a member becomes disabled, he or she may be entitled to at least a 50% pension (service connected disability), or a pension that depends upon the member's years of service (non-service connected disability). The following summarizes the actual incidence of combined service and non-service connected disabilities over the past three years compared to the current and proposed assumptions for both service connected and non-service connected disability incidence:

	Disability Incidence Rate (%)						
	G	eneral All Oth	er		General OCTA		
Age	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate	
20 – 24	0.00	0.00	0.00	0.00	0.00	0.00	
25 – 29	0.00	0.03	0.00	0.00	0.00	0.00	
30 – 34	0.01	0.00	0.01	0.05	0.00	0.05	
35 – 39	0.05	0.05	0.05	0.30	0.00	0.30	
40 – 44	0.10	0.09	0.10	0.40	0.00	0.40	
45 – 49	0.12	0.16	0.15	0.45	0.91	0.45	
50 – 54	0.15	0.19	0.20	0.50	0.24	0.50	
55 – 59	0.20	0.37	0.25	0.90	0.72	0.75	
60 – 64	0.35	0.28	0.35	1.75	1.54	1.60	
65 – 69	0.35	0.24	0.35	1.75	0.53	1.60	

	Disability Incidence Rate (%)					
	Sa	fety Law and F	ire	S	afety Probatio	n
Age	Current Rate	Actual Rate	Proposed Rate	Current Rate	Actual Rate	Proposed Rate
20 – 24	0.00	0.00	0.00	0.00	0.00	0.00
25 – 29	0.02	0.00	0.02	0.05	0.00	0.05
30 – 34	0.05	0.00	0.05	0.10	0.00	0.10
35 – 39	0.20	0.15	0.20	0.10	0.16	0.10
40 – 44	0.30	0.07	0.25	0.10	0.48	0.15
45 – 49	0.50	0.49	0.50	0.20	0.65	0.25
50 – 54	1.20	1.98	1.50	0.20	0.40	0.30
55 – 59	2.50	3.70	3.00	0.25	0.67	0.50
60 – 64	7.00	5.45	6.00	0.00	0.00	0.00
65 – 69	0.00	7.32	7.00	0.00	0.00	0.00

Chart 28 compares the actual number of service connected and non-service connected disabilities over the past three years to that expected under both the current and proposed assumptions. The proposed disability rates were adjusted to reflect the past three years experience.

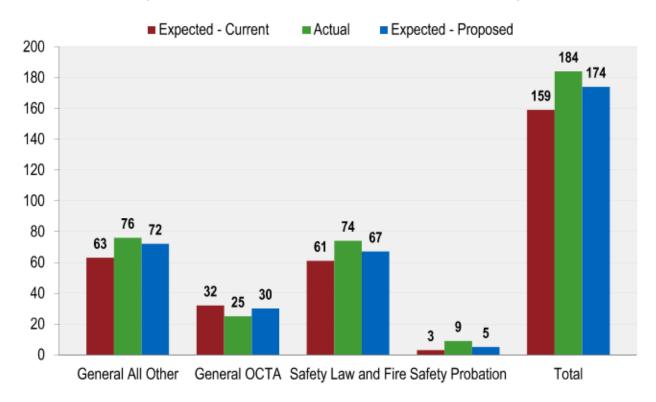
Chart 29 shows actual disablement rates, compared to the assumed and proposed rates for General All Other members. Charts 30-32 graph the same information as Chart 29, but for General OCTA, Safety Law and Fire and Safety Probation members.

The following table shows the currently assumed, actual and proposed assumed percentages for service versus non-service connected disability for the groups.

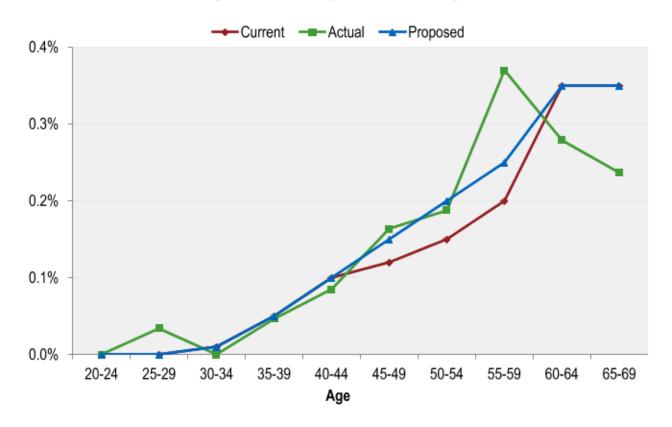
	Service vs. Non-Service Connected Disability					
	Disablements	Disablements Receiving Non-Service Connected Disability				
	Current Assumption	Actual Percentage	Proposed Assumption	Proposed Assumption		
General All Other	55%	61%	60%	40%		
General OCTA	65%	68%	65%	35%		
Safety Law and Fire	100%	100%	100%	0%		
Safety Probation	100%	67%	75%	25%		

## CHART 28: ACTUAL NUMBER OF DISABILITIES COMPARED TO EXPECTED

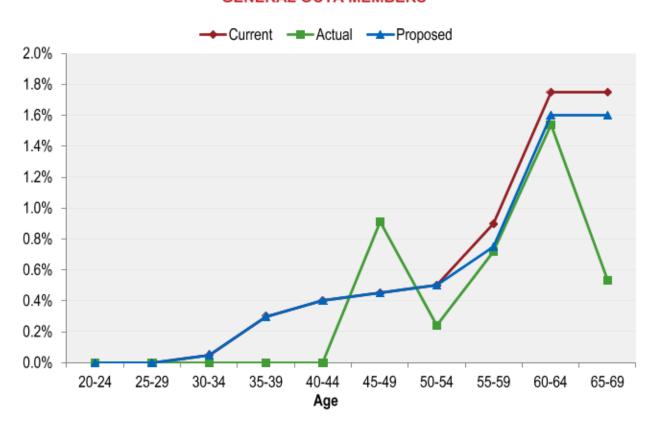
(JANUARY 1, 2014 THROUGH DECEMBER 31, 2016)



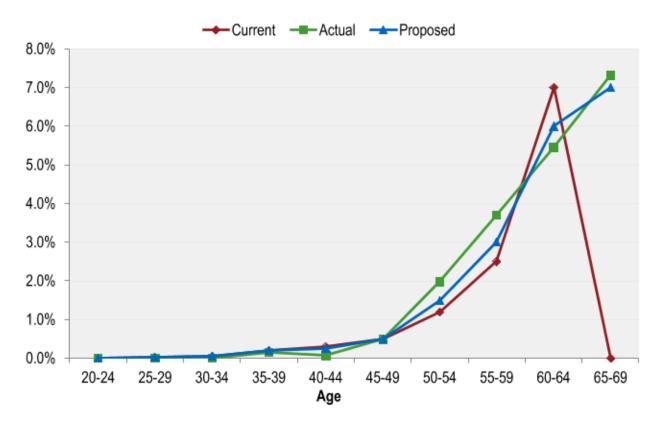
#### **CHART 29: DISABILITY INCIDENCE RATES GENERAL ALL OTHER MEMBERS**



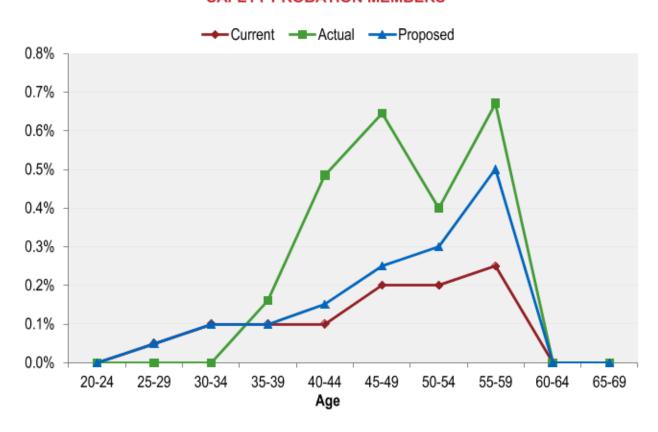
**CHART 30: DISABILITY INCIDENCE RATES GENERAL OCTA MEMBERS** 



#### **CHART 31: DISABILITY INCIDENCE RATES** SAFETY LAW AND FIRE MEMBERS



**CHART 32: DISABILITY INCIDENCE RATES** SAFETY PROBATION MEMBERS



#### F. Additional Cashouts

In response to the California Court ruling in the Ventura cases, several additional pay elements were included as Earnable Compensation. 22 These additional pay elements fall into two categories:

- > Ongoing Pay Elements Those that are expected to be received relatively uniformly over a member's employment years; and
- Terminal Pay Elements Those that are expected to be received only during the member's final average earnings pay period.

The first category is recognized in the actuarial calculations by virtue of being included in the current pay of active members. The second category requires a separate actuarial assumption to anticipate its impact on a member's retirement benefit.

In this study, we have been provided with final average salaries determined by OCERS before ("FAS – Base")<sup>23</sup> as well as after ("FAS – Final")<sup>24</sup> including the terminal pay elements for members who retired during the last three years. We have studied the impact of including these pay elements by taking the ratio of "FAS - Final" to "FAS - Base". Members covered under CalPEPRA plans are not eligible to receive leave cashouts.

The current and recommended additional cashout assumptions are provided in the following table:

	Final One Year Salary			Final Three Year Salary		
Membership	Current Assumption	Actual Rate	Proposed Assumption	Current Assumption	Actual Rate	Proposed Assumption
General Members	3.50%	2.46%	3.00%	2.80%	2.85%	2.80%
Safety Probation	3.80%	5.98%	3.80%	2.80%	3.43%	3.40%
Safety Law Enforcement	5.20%	6.63%	5.20%	4.70%	4.59%	4.60%
Safety Fire	2.00%	0.00%	2.00%	2.00%	1.65%	1.70%

Note that we have maintained the current cashout assumptions for Safety members from "Final One Year Salary" plans due to the low level of actual experience that we observed during the last three years.

We understand that these amounts would only be applicable for legacy members enrolled in the non-CalPEPRA

Per OCERS, this is calculated by the System using base earnable salary plus those reported pensionable pay items (regularly included in the annual actuarial valuation) based on the highest system-calculated FAS period.

<sup>&</sup>lt;sup>24</sup> Per OCERS, this is equal to "FAS – Base" plus all eligible pensionable pay items that had not been formerly transmitted to OCERS from the employer.

# V. Cost Impact

The tables below show the changes in the average employer and member contribution rates due to the recommended and alternative assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

Cost Impact of Recommended Assumptions						
<u>Change</u> in Costs	Contribution Rate	Estimated Annual Dollar Amount in Thousands*				
Total Normal Cost	3.68%	\$65,260				
Member Normal Cost	1.61%	\$28,559				
Employer Normal Cost	2.07%	\$36,701				
Employer UAAL Payments	5.87%	\$103,710				
Total for Employer	7.94%	\$140,411				

Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

Cost Impact of Alternative 1 Assumptions (7.00% Investment Return Assumption & 2.75% Inflation)						
Change in Costs	Contribution Rate	Estimated Annual Dollar Amount in Thousands*				
Total Normal Cost	1.88%	\$32,321				
Member Normal Cost	0.77%	\$13,232				
Employer Normal Cost	1.11%	\$19,089				
Employer UAAL Payments	3.53%	<u>\$61,450</u>				
Total for Employer	4.64%	\$80,539				

Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

Cost Impact of Alternative 2 Assumptions (6.75% Investment Return Assumption & 2.75% Inflation)						
Change in Costs  Estimated Annu Dollar Amount Thousands*						
Total Normal Cost	3.77%	\$65,566				
Member Normal Cost	1.59%	\$27,567				
Employer Normal Cost	2.18%	\$37,999				
Employer UAAL Payments	<u>5.84%</u>	<u>\$102,078</u>				
Total for Employer	8.02%	\$140,077				

Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

The breakdown of the contribution impacts due only to the recommended demographic assumption changes (as recommended in Section IV of this report) and the contribution rate impacts (after implementing the demographic assumption changes) due to the recommended and alternative economic assumption changes (as recommended in Section III of this report), as well as the changes in funded status, are summarized in the following table.

Cost Impact				
	Recommended (7.00% Return & 3.00% Inflation)	Alternative 1 (7.00% Return & 2.75% Inflation)	Alternative 2 (6.75% Return & 2.75% Inflation)	
Impact on Employer				
Change due to demographic assumptions	3.94%	3.94%	3.94%	
Change due to economic assumptions	4.00%	0.70%	4.08%	
Total change in employer rate	7.94%	4.64%	8.02%	
Total estimated change in annual dollar amount (\$000s)	\$140,411	\$80,539	\$140,077	
Impact on Member				
Change due to demographic assumptions	0.57%	0.57%	0.57%	
Change due to economic assumptions	<u>1.04%</u>	0.20%	<u>1.02%</u>	
Total change in member rate	1.61%	0.77%	1.59%	
Total estimated change in annual dollar amount (\$000s)	\$28,559	\$13,232	\$27,567	
Impact on UAAL and Funded Percentage				
Change in UAAL	\$1,404 million	\$763 million	\$1,385 million	
Change in funded percentage	From 73.1% to 67.7%	From 73.1% to 70.1%	From 73.1% to 67.9%	

Considered separately, the changes in economic assumptions accounted for about one-half of the overall cost impact to the plan. Of the various economic assumption changes, the most significant cost impact is from the investment return assumption change. Of the various demographic assumption changes, the most significant cost impact is from the mortality assumption change.

We have also analyzed in the tables below the average employer and member contribution rate impacts by rate groups due to the recommended assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

Increases in Employer Contribution Rates (% of Payroll) under Recommended Assumptions					
Rate Group	Normal Cost	UAAL	Total	Estimated Dollar Amounts <sup>(1)</sup> (in 000s)	
Rate Group #1 (non-OCTA, non-OCSD)	1.87%	3.49%(2)	5.36%	\$4,462	
Rate Group #2 (County et al.)	1.92%	5.50%	7.42%	\$79,640	
Rate Group #3 (OCSD)	1.77%	1.06%(3)	2.83%	\$1,865	
Rate Group #5 (OCTA)	2.02%	5.03%	7.05%	\$7,393	
Rate Group #9 (TCA)	1.53%	3.22%	4.75%	\$325	
Rate Group #10 (OCFA)	1.90%	4.42%	6.32%	\$1,698	
Rate Group #11 (Cemetery)	1.77%	2.71%(4)	4.48%	\$63	
Rate Group #12 (Law Library)	1.60%	4.39%	5.99%	\$71	
Rate Group #6 (Probation)	3.20%	9.16%	12.36%	\$8,054	
Rate Group #7 (Law Enforcement)	2.67%	9.45%	12.12%	\$26,599	
Rate Group #8 (Fire Authority)	2.09%	6.31%	8.40%	\$10,241	
Total All Rate Groups Combined	2.07%	5.87%	7.94%	\$140,411	

<sup>(1)</sup> Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

<sup>(4)</sup> If Rate Group #11 had not been overfunded prior to the changes in assumptions, the UAAL contribution rate impact due to the changes in assumptions would have been 4.36% of payroll.

Increases in Average Member Contribution Rates (% of Payroll) under Recommended Assumptions					
Rate Group	Current	Proposed	Difference	Estimated Dollar Amounts <sup>(1)</sup> (in 000s)	
Rate Group #1 (non-OCTA, non-OCSD)	8.62%	10.19%	1.57%	\$1,310	
Rate Group #2 (County et al.)	11.10%	12.58%	1.48%	\$15,943	
Rate Group #3 (OCSD)	11.52%	12.98%	1.46%	\$967	
Rate Group #5 (OCTA)	9.35%	10.71%	1.36%	\$1,434	
Rate Group #9 (TCA)	10.08%	11.43%	1.35%	\$93	
Rate Group #10 (OCFA)	11.03%	12.59%	1.56%	\$420	
Rate Group #11 (Cemetery)	8.87%	10.26%	1.39%	\$20	
Rate Group #12 (Law Library)	13.06%	14.49%	1.43%	\$17	
Rate Group #6 (Probation)	15.53%	17.81%	2.28%	\$1,486	
Rate Group #7 (Law Enforcement)	16.39%	18.46%	2.07%	\$4,540	
Rate Group #8 (Fire Authority)	15.44%	17.35%	1.91%	\$2,329	
Total All Rate Groups Combined	12.01%	13.62%	1.61%	\$28,559	

<sup>(1)</sup> Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

<sup>(2)</sup> Before adjusting for UAAL allotted to U.C.I and Department of Education.

<sup>(3)</sup> The UAAL for Rate Group #3 after reflecting the recommended assumptions has been partially offset by the OCSD UAAL Deferred Account of \$34,067,000 as of December 31, 2016. If Rate Group #3 had not been overfunded prior to the changes in assumptions and if the OCSD UAAL Account was not available to offset the change in UAAL due to the changes in assumptions, the UAAL Contribution rate impact due to the changes in assumptions would have been 5.36% of payroll.

We have also analyzed in the tables below the average employer and member contribution rate impacts by rate groups due to the Alternative 1 (7.00% investment return and 2.75% inflation) assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

Increases in Employer Contribution Rates (% of Payroll) under Alternative 1 Assumptions					
Rate Group	Normal Cost	UAAL	Total	Estimated Dollar Amounts <sup>(1)</sup> (in 000s)	
Rate Group #1 (non-OCTA, non-OCSD)	1.18%	2.30%(2)	3.48%	\$2,866	
Rate Group #2 (County et al.)	1.08%	3.41%	4.49%	\$47,504	
Rate Group #3 (OCSD)	0.97%	0.00%(3)	0.97%	\$628	
Rate Group #5 (OCTA)	1.37%	3.22%	4.59%	\$4,756	
Rate Group #9 (TCA)	0.88%	1.96%	2.84%	\$191	
Rate Group #10 (OCFA)	1.08%	2.62%	3.70%	\$973	
Rate Group #11 (Cemetery)	1.01%	0.99%(4)	2.00%	\$28	
Rate Group #12 (Law Library)	0.86%	2.83%	3.69%	\$44	
Rate Group #6 (Probation)	1.93%	5.84%	7.77%	\$4,980	
Rate Group #7 (Law Enforcement)	1.12%	5.50%	6.62%	\$14,169	
Rate Group #8 (Fire Authority)	0.63%	3.10%	3.73%	\$4,400	
Total All Rate Groups Combined	1.11%	3.53%	4.64%	\$80,539	

<sup>(1)</sup> Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

<sup>(4)</sup> If Rate Group #11 had not been overfunded prior to the changes in assumptions, the UAAL contribution rate impact due to the changes in assumptions would have been 2.56% of payroll.

Increases in Average Member Contribution Rates (% of Payroll) under Alternative 1 Assumptions						
Rate Group	Current	Proposed	Difference	Estimated Dollar Amounts <sup>(1)</sup> (in 000s)		
Rate Group #1 (non-OCTA, non-OCSD)	8.62%	9.56%	0.94%	\$767		
Rate Group #2 (County et al.)	11.10%	11.85%	0.75%	\$7,864		
Rate Group #3 (OCSD)	11.52%	12.26%	0.74%	\$477		
Rate Group #5 (OCTA)	9.35%	10.11%	0.76%	\$784		
Rate Group #9 (TCA)	10.08%	10.79%	0.71%	\$48		
Rate Group #10 (OCFA)	11.03%	11.86%	0.83%	\$216		
Rate Group #11 (Cemetery)	8.87%	9.59%	0.72%	\$10		
Rate Group #12 (Law Library)	13.06%	13.79%	0.73%	\$9		
Rate Group #6 (Probation)	15.53%	16.53%	1.00%	\$627		
Rate Group #7 (Law Enforcement)	16.39%	17.16%	0.77%	\$1,598		
Rate Group #8 (Fire Authority)	15.44%	16.16%	0.72%	\$832		
Total All Rate Groups Combined	12.01%	12.78%	0.77%	\$13,232		

<sup>(1)</sup> Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

<sup>(2)</sup> Before adjusting for UAAL allotted to U.C.I and Department of Education.

<sup>(3)</sup> The UAAL for Rate Group #3 after reflecting the recommended assumptions has been offset by the OCSD UAAL Deferred Account of \$34,067,000 as of December 31, 2016. If Rate Group #3 had not been overfunded prior to the changes in assumptions and if the OCSD UAAL Account was not available to offset the change in UAAL due to the changes in assumptions, the UAAL Contribution rate impact due to the changes in assumptions would have been 2.81% of payroll.

We have also analyzed in the tables below the average employer and member contribution rate impacts by rate groups due to the Alternative 2 (6.75% investment return and 2.75% inflation) assumption changes as if they were applied to the December 31, 2016 actuarial valuation.

Increases in Employer Contribution Rates (% of Payroll) under Alternative 2 Assumptions					
Rate Group	Normal Cost	UAAL	Total	Estimated Dollar Amounts <sup>(1)</sup> (in 000s)	
Rate Group #1 (non-OCTA, non-OCSD)	1.92%	3.48%(2)	5.40%	\$4,460	
Rate Group #2 (County et al.)	2.01%	5.48%	7.49%	\$79,313	
Rate Group #3 (OCSD)	1.84%	1.00%(3)	2.84%	\$1,851	
Rate Group #5 (OCTA)	2.12%	4.99%	7.11%	\$7,372	
Rate Group #9 (TCA)	1.65%	3.26%	4.91%	\$332	
Rate Group #10 (OCFA)	1.99%	4.39%	6.38%	\$1,691	
Rate Group #11 (Cemetery)	1.87%	2.72%(4)	4.59%	\$64	
Rate Group #12 (Law Library)	1.71%	4.43%	6.14%	\$72	
Rate Group #6 (Probation)	3.40%	9.17%	12.57%	\$8,102	
Rate Group #7 (Law Enforcement)	2.87%	9.39%	12.26%	\$26,520	
Rate Group #8 (Fire Authority)	2.32%	6.27%	8.59%	\$10,300	
Total All Rate Groups Combined	2.18%	5.84%	8.02%	\$140,077	

<sup>(1)</sup> Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

<sup>(4)</sup> If Rate Group #11 had not been overfunded prior to the changes in assumptions, the UAAL contribution rate impact due to the changes in assumptions would have been 4.38% of payroll.

Increases in Average Member Contribution Rates (% of Payroll) under Alternative 2 Assumptions						
Rate Group	Current	Proposed	Difference	Estimated Dollar Amounts <sup>(1)</sup> (in 000s)		
Rate Group #1 (non-OCTA, non-OCSD)	8.62%	10.20%	1.58%	\$1,298		
Rate Group #2 (County et al.)	11.10%	12.59%	1.49%	\$15,733		
Rate Group #3 (OCSD)	11.52%	13.00%	1.48%	\$960		
Rate Group #5 (OCTA)	9.35%	10.71%	1.36%	\$1,408		
Rate Group #9 (TCA)	10.08%	11.41%	1.33%	\$90		
Rate Group #10 (OCFA)	11.03%	12.59%	1.56%	\$412		
Rate Group #11 (Cemetery)	8.87%	10.24%	1.37%	\$19		
Rate Group #12 (Law Library)	13.06%	14.50%	1.44%	\$17		
Rate Group #6 (Probation)	15.53%	17.66%	2.13%	\$1,361		
Rate Group #7 (Law Enforcement)	16.39%	18.33%	1.94%	\$4,160		
Rate Group #8 (Fire Authority)	15.44%	17.21%	1.77%	\$2,109		
Total All Rate Groups Combined	12.01%	13.60%	1.59%	\$27,567		

<sup>(1)</sup> Based on December 31, 2016 projected annual payrolls as determined under each set of assumptions.

<sup>(2)</sup> Before adjusting for UAAL allotted to U.C.I and Department of Education.

<sup>(3)</sup> The UAAL for Rate Group #3 after reflecting the recommended assumptions has been partially offset by the OCSD UAAL Deferred Account of \$34,067,000 as of December 31, 2016. If Rate Group #3 had not been overfunded prior to the changes in assumptions and if the OCSD UAAL Account was not available to offset the change in UAAL due to the changes in assumptions, the UAAL Contribution rate impact due to the changes in assumptions would have been 5.31% of payroll.

# **Appendix A: Current Actuarial Assumptions**

## **Economic Assumptions**

Net Investment Return:	7.25%, net of investment expenses and administration expenses.
Member Contribution Crediting Rate:	5.00%, compounded semi-annually.
Consumer Price Index:	Increase of 3.00% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.
Payroll Growth:	Inflation of 3.00% per year plus "across the board" real salary increases of 0.50% per year.
Increase in Section 7522.10 Compensation Limit:	Increase of 3.00% per year from the valuation date.

## Individual Salary Increases<sup>1</sup>

#### Annual Rate of Compensation Increase (%)

Inflation: 3.00% per year; plus "across the board" salary increases of 0.50% per year; plus the following merit and promotional increases:

per year, plus the following ment and promotional moreases.				
Years of Service	General	Safety		
Less than 1	10.00	14.00		
1	7.25	10.00		
2	6.00	8.50		
3	4.75	6.75		
4	4.00	5.25		
5	3.25	4.50		
6	2.25	3.50		
7	2.00	3.25		
8	1.50	2.25		
9	1.25	2.25		
10	1.25	1.75		
11	1.25	1.75		
12	1.25	1.75		
13	1.25	1.75		
14	1.25	1.75		
15	1.25	1.75		
16	0.75	1.50		
17	0.75	1.50		
18	0.75	1.50		
19	0.75	1.50		
20 and Over	0.75	1.50		

In addition to the individual salary increase assumptions, we have applied an average two hours of additional salary annually for leap-year salary adjustment.

#### **Demographic Assumptions**

#### Mortality Rates – Healthy

- > General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020
- > Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years

#### Mortality Rates - Disabled

- > General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set forward six years for males and set forward three years for females
- > Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020

#### Mortality Rates – Beneficiaries

> Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who is receiving a service (non-disability) retirement

The mortality tables shown above were determined to contain about a 10% margin to reflect future mortality improvement, based on a review of the mortality experience as of the measurement date.

#### **Member Contribution Rates**

- > General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 weighted, 40% male and 60% female
- > Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020 with ages set back two years, weighted 80% male and 20% female

#### **Mortality Rates Before Retirement**

	Rate (%)				
	Gen	eral	Saf	ety	
Age	Male	Female	Male	Female	
25	0.04	0.02	0.04	0.02	
30	0.04	0.02	0.04	0.02	
35	0.07	0.04	0.06	0.04	
40	0.10	0.07	0.09	0.06	
45	0.14	0.11	0.12	0.09	
50	0.20	0.16	0.18	0.14	
55	0.34	0.25	0.27	0.21	
60	0.59	0.41	0.48	0.33	
65	1.00	0.76	0.82	0.60	

All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of  $pre-retirement\ deaths\ are\ assumed\ to\ be\ non-service\ connected.\ The\ other\ 10\%\ are\ assumed\ to\ be$ service connected

### **Disability Incidence Rates**

	Rate (%)					
Age	General All Other <sup>1</sup>	General OCTA <sup>2</sup>	Safety Law & Fire <sup>3</sup>	Safety Probation <sup>3</sup>		
20	0.00	0.00	0.00	0.00		
25	0.00	0.00	0.01	0.03		
30	0.01	0.03	0.04	0.08		
35	0.03	0.20	0.14	0.10		
40	0.08	0.36	0.26	0.10		
45	0.11	0.43	0.42	0.16		
50	0.14	0.48	0.92	0.20		
55	0.18	0.74	1.98	0.23		
60	0.29	1.41	5.20	0.10		

<sup>&</sup>lt;sup>1</sup> 55% of General All Other disabilities are assumed to be service connected disabilities. The other 45% are assumed to be non-service connected.

<sup>2 65%</sup> of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.

<sup>100%</sup> of Safety Law Enforcement, Fire and Probation disabilities are assumed to be service connected disabilities.

#### **Termination Rates**

	Rate (%)				
Years of Service	General All Other <sup>1</sup>	General OCTA <sup>2</sup>	Safety Law & Fire <sup>3</sup>	Safety Probation <sup>4</sup>	
0	11.00	17.50	4.00	16.00	
1	8.00	13.50	3.00	13.00	
2	7.00	10.50	2.00	10.00	
3	5.00	10.00	1.00	6.00	
4	4.00	9.00	1.00	4.00	
5	3.75	7.00	1.00	3.50	
6	3.50	5.00	0.95	3.00	
7	3.00	5.00	0.90	2.50	
8	2.75	4.00	0.85	2.25	
9	2.50	3.50	0.80	2.00	
10	2.25	3.50	0.75	1.75	
11	2.00	3.50	0.65	1.75	
12	2.00	3.00	0.60	1.50	
13	1.75	3.00	0.50	1.25	
14	1.75	3.00	0.50	1.00	
15	1.75	3.00	0.50	1.00	
16	1.50	3.00	0.50	1.00	
17	1.50	2.75	0.50	0.50	
18	1.50	2.75	0.50	0.50	
19	1.50	2.75	0.50	0.50	
20 +	1.25	1.75	0.25	0.50	

<sup>40%</sup> of all terminated members with less than 5 years of service and 25% of all terminated members with 5 or more years of service will choose a refund of contributions.

<sup>45%</sup> of all terminated members with less than 5 years of service and 35% of all terminated members with 5 or more years of service will choose a refund of contributions.

<sup>&</sup>lt;sup>3</sup> 20% of all terminated members with less than 5 years of service and 20% of all terminated members with 5 or more years of service will choose a refund of contributions.

<sup>4 40%</sup> of all terminated members with less than 5 years of service and 30% of all terminated members with 5 or more years of service will choose a refund of contributions.

#### **Retirement Rates**

	Rate (%)							
		General				Safety		
Age	Enhanced	Non- Enhanced <sup>1</sup>	SJC (31676.12)	Law (31664.1) <sup>2</sup>	Law (31664.2) <sup>2</sup>	Fire (31664.1) <sup>2</sup>	Fire (31664.2) <sup>2</sup>	Probation <sup>2</sup>
49	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0
50	2.5	2.5	3.0	16.0	11.5	6.0	8.0	3.0
51	2.0	2.5	3.0	16.0	12.0	8.0	10.0	3.0
52	2.0	2.5	3.0	16.0	12.7	9.0	11.0	4.0
53	2.0	2.5	3.0	16.0	17.9	10.0	12.0	4.0
54	5.0	2.5	3.0	22.0	18.8	16.0	14.0	6.0
55	15.0	3.0	4.0	22.0	30.7	19.0	24.0	11.0
56	10.0	3.5	5.0	20.0	20.0	20.0	23.0	11.0
57	10.0	5.0	6.0	20.0	20.0	23.0	27.0	17.0
58	10.0	5.0	7.0	20.0	25.0	30.0	27.0	20.0
59	11.0	7.0	9.0	26.0	30.0	30.0	36.0	20.0
60	12.0	9.0	11.0	45.0	100.0	45.0	100.0	20.0
61	12.0	10.0	13.0	45.0	100.0	45.0	100.0	20.0
62	15.0	16.0	15.0	45.0	100.0	45.0	100.0	25.0
63	16.0	16.0	15.0	45.0	100.0	45.0	100.0	50.0
64	16.0	18.0	20.0	45.0	100.0	45.0	100.0	50.0
65	21.0	21.0	20.0	100.0	100.0	100.0	100.0	100.0
66	22.0	26.0	24.0	100.0	100.0	100.0	100.0	100.0
67	23.0	21.0	24.0	100.0	100.0	100.0	100.0	100.0
68	23.0	21.0	24.0	100.0	100.0	100.0	100.0	100.0
69	23.0	21.0	24.0	100.0	100.0	100.0	100.0	100.0
70	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
71	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
72	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
73	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
74	40.0	30.0	100.0	100.0	100.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).

Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings.

## Retirement Rates (continued)

	Rate (%)					
	General		Safety			
Age	CalPEPRA 2.5% @ 67	CalPEPRA Probation Formula <sup>1</sup>	CalPEPRA Law Formula <sup>1</sup>	CalPEPRA Fire Formula <sup>1</sup>		
50	0.0	2.5	11.0	6.5		
51	0.0	2.5	11.5	8.0		
52	4.0	3.0	12.0	9.0		
53	1.5	3.0	16.0	10.0		
54	1.5	5.5	17.0	12.0		
55	2.5	10.0	28.0	21.0		
56	3.5	10.0	18.0	20.0		
57	5.5	15.0	17.5	22.0		
58	7.5	20.0	22.0	25.0		
59	7.5	20.0	26.0	31.5		
60	7.5	100.0	100.0	100.0		
61	7.5	100.0	100.0	100.0		
62	14.0	100.0	100.0	100.0		
63	14.0	100.0	100.0	100.0		
64	14.0	100.0	100.0	100.0		
65	18.0	100.0	100.0	100.0		
66	22.0	100.0	100.0	100.0		
67	23.0	100.0	100.0	100.0		
68	23.0	100.0	100.0	100.0		
69	23.0	100.0	100.0	100.0		
70	30.0	100.0	100.0	100.0		
71	30.0	100.0	100.0	100.0		
72	30.0	100.0	100.0	100.0		
73	30.0	100.0	100.0	100.0		
74	30.0	100.0	100.0	100.0		
75	100.0	100.0	100.0	100.0		

Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings

Retirement Age and Benefit for Deferred Vested	For deferred vested members, assumption:	we make the fo	llowing retirement		
Members:	' .	58			
	_	3			
	We assume that 20% of future deferred vested members are assume 4.25% compensation Safety per annum.	reciprocal. For re	eciprocals, we		
Liability Calculation for Current Deferred Vested Members:	Liability for a current deferred vested member is calculated based on salary, service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have 3 or more years of service, we used an average salary. For those members without salary information that have less than 3 years of service or for those members without service information, we assumed a refund of account balance.				
Future Benefit Accruals:	1.0 year of service per year of employment. There is no assumption to anticipate conversion of unused sick leave at retirement.				
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.				
Definition of Active Member:	All active members of OCERS	as of the valuat	ion date.		
Form of Payment:	All members are assumed to elect the unmodified option at retirement.				
Percent Married:	75% of male members and 50 be married at retirement or tim				
Age of Spouse:	Female (or male) three years y	younger (or olde	r) than spouse.		
Additional Cashout	Non-CalPEPRA Formulas				
Assumptions:	Additional compensation a during a member's final av percentages used in this va	erage earnings			
		Final One Year Salary	Final Three Year Salary		
	General Members	3.50%	2.80%		
	Safety Probation	3.80%	2.80%		
	Safety Law Enforcement	5.20%	4.70%		
	Safety Fire 2.00% 2.00%				
	The additional cashout ass and disability retirements.	sumptions are th	e same for service		
	CalPEPRA Formulas				
	None				

# **Appendix B: Proposed Actuarial Assumptions**

## **Economic Assumptions**

Net Investment Return:	7.00%, net of investment expenses and administration expenses.
Member Contribution Crediting Rate:	5.00%, compounded semi-annually.
Consumer Price Index:	Increase of 3.00% per year, retiree COLA increases due to CPI subject to a 3.0% maximum change per year.
Payroll Growth:	Inflation of 3.00% per year plus "across the board" real salary increases of 0.50% per year.
Increase in Section 7522.10 Compensation Limit:	Increase of 3.00% per year from the valuation date.

## Individual Salary Increases<sup>1</sup>

Annual Rate of Compensation Increase (%)
ation: 3.00% per year; plus "across the board" salary increases of 0.50%

per year; plus the following merit and promotional increases:						
Years of Service	General	Safety				
Less than 1	9.00	14.00				
1	7.25	10.00				
2	6.00	7.75				
3	5.00	6.00				
4	4.00	5.50				
5	3.50	4.50				
6	2.50	3.75				
7	2.25	3.25				
8	1.75	2.50				
9	1.50	2.25				
10	1.50	1.75				
11	1.50	1.75				
12	1.50	1.75				
13	1.50	1.75				
14	1.50	1.75				
15	1.50	1.75				
16	1.00	1.50				
17	1.00	1.50				
18	1.00	1.50				
19	1.00	1.50				
20 and Over	1.00	1.50				

In addition to the individual salary increase assumptions, we have applied an average two hours of additional salary annually for leap-year salary adjustment.

#### **Demographic Assumptions**

#### Mortality Rates – Healthy

- General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale
- > Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set back four years, projected generationally with the two-dimensional MP-2016 projection scale

#### Mortality Rates - Disabled

- General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward five years, projected generationally with the two-dimensional MP-2016 projection scale
- Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally with the two-dimensional MP-2016 projection scale

#### Mortality Rates - Beneficiaries

> Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who is receiving a service (non-disability) retirement

#### **Pre-Retirement Mortality Rates**

> General and Safety Members: Headcount-Weighted RP-2014 Employee Mortality Table times 80%, projected generationally with the two-dimensional MP-2016 projection scale

#### **Member Contribution Rates**

- General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016, weighted 40% male and 60% female
- > Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional mortality improvement scale MP-2016 set back four years, weighted 80% male and 20% female

The RP-2014 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

### **Mortality Rates Before Retirement**

	Rate (%)				
Age	Male	Female			
25	0.05	0.02			
30	0.05	0.02			
35	0.05	0.03			
40	0.06	0.04			
45	0.10	0.07			
50	0.17	0.11			
55	0.27	0.17			
60	0.45	0.24			
65	0.78	0.36			
70	1.27	0.59			

Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates.

All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected. The other 10% are assumed to be service connected.

### **Disability Incidence Rates**

	Rate (%)					
Age	General All Other <sup>1</sup>	General OCTA <sup>2</sup>	Safety Law & Fire <sup>3</sup>	Safety Probation <sup>4</sup>		
20	0.00	0.00	0.00	0.00		
25	0.00	0.00	0.01	0.03		
30	0.01	0.03	0.04	0.08		
35	0.03	0.20	0.14	0.10		
40	0.08	0.36	0.23	0.13		
45	0.13	0.43	0.40	0.21		
50	0.18	0.48	1.10	0.28		
55	0.23	0.65	2.40	0.42		
60	0.31	1.26	4.80	0.20		

<sup>60%</sup> of General All Other disabilities are assumed to be service connected disabilities. The other 40% are assumed to be non-service connected.

<sup>2 65%</sup> of General OCTA disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.

<sup>3 100%</sup> of Safety Law Enforcement and Fire disabilities are assumed to be service connected disabilities.

<sup>4 75%</sup> of Safety Probation disabilities are assumed to be service connected disabilities. The other 25% are assumed to be non-service connected.

### **Termination Rates**

	Rate (%)					
Years of Service	General All Other	General OCTA	Safety Law & Fire	Safety Probation		
0	11.00	17.50	4.50	14.00		
1	7.50	11.00	2.50	13.00		
2	6.50	9.00	2.00	10.00		
3	5.00	8.50	1.50	5.00		
4	4.50	7.50	1.25	4.00		
5	4.25	7.00	1.00	3.50		
6	3.75	4.50	0.95	2.75		
7	3.25	4.00	0.90	2.00		
8	3.00	3.50	0.85	2.00		
9	2.75	3.00	0.80	1.75		
10	2.50	3.00	0.75	1.75		
11	2.00	3.00	0.65	1.50		
12	2.00	3.00	0.60	1.25		
13	1.75	2.50	0.55	1.00		
14	1.50	2.50	0.50	0.75		
15	1.40	2.50	0.45	0.75		
16	1.30	2.00	0.40	0.75		
17	1.20	1.80	0.35	0.25		
18	1.10	1.60	0.30	0.25		
19	1.00	1.40	0.25	0.25		
20 +	0.90	1.20	0.20	0.25		

## **Proportion of Total Termination Assumed to Withdraw Contributions**

	Election for Withdrawal of Contributions (%)						
Years of Service	General All Other	General OCTA	Safety Law and Fire	Safety Probation			
0 – 4	35.0	40.0	20.0	25.0			
5 – 9	30.0	35.0	20.0	25.0			
10 – 14	25.0	30.0	20.0	25.0			
15 or more	20.0	20.0	20.0	25.0			

#### **Retirement Rates**

	Rate (%)							
		General			Safety			
Age	Enhanced	Non- Enhanced <sup>1</sup>	SJC (31676.12)	Law (31664.1) <sup>2</sup>	Law (31664.2) <sup>2</sup>	Fire (31664.1)	Fire (31664.2)	Probation <sup>2</sup>
48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49	30.00	25.00	0.00	12.00	0.00	2.00	0.00	0.00
50	2.50	2.00	3.00	18.00	11.50	5.00	8.00	3.25
51	2.00	2.00	3.00	18.00	12.00	7.00	10.00	3.25
52	2.50	2.00	3.00	17.00	12.70	9.50	11.00	4.25
53	2.50	2.75	3.00	17.00	17.90	10.50	12.00	4.25
54	5.50	2.75	3.00	22.00	18.80	15.00	14.00	7.00
55	15.00	3.25	4.00	22.00	30.70	18.00	24.00	12.00
56	10.00	3.50	5.00	20.00	20.00	20.00	23.00	12.00
57	10.00	5.50	6.00	20.00	20.00	21.00	27.00	18.00
58	11.00	5.50	7.00	20.00	25.00	28.00	27.00	18.00
59	11.00	6.50	9.00	26.00	30.00	28.00	36.00	18.00
60	12.00	9.25	11.00	35.00	40.00	30.00	40.00	20.00
61	12.00	12.00	13.00	35.00	40.00	30.00	40.00	20.00
62	14.00	16.00	15.00	40.00	40.00	35.00	40.00	25.00
63	16.00	16.00	15.00	40.00	40.00	35.00	40.00	40.00
64	16.00	18.00	20.00	40.00	40.00	35.00	40.00	40.00
65	22.00	22.00	20.00	100.00	100.00	100.00	100.00	100.00
66	22.00	28.00	24.00	100.00	100.00	100.00	100.00	100.00
67	23.00	24.00	24.00	100.00	100.00	100.00	100.00	100.00
68	23.00	24.00	24.00	100.00	100.00	100.00	100.00	100.00
69	23.00	20.00	24.00	100.00	100.00	100.00	100.00	100.00
70	25.00	20.00	50.00	100.00	100.00	100.00	100.00	100.00
71	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
72	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
73	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
74	25.00	25.00	50.00	100.00	100.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).

 $Retirement\ rate\ is\ 100\%\ after\ a\ member\ accrues\ a\ benefit\ of\ 100\%\ of\ final\ average\ earnings.$ 

## **Retirement Rates (continued)**

	Rate (%)					
	General		Safety			
Age	CalPEPRA 2.5% @ 67	CalPEPRA Probation Formula <sup>1</sup>	CalPEPRA Law Formula <sup>1</sup>	CalPEPRA Fire Formula		
50	0.00	2.50	11.00	6.00		
51	0.00	2.50	11.50	7.00		
52	4.00	3.00	12.00	9.00		
53	1.50	3.00	16.00	10.00		
54	1.50	5.50	17.00	11.50		
55	2.50	10.00	28.00	21.00		
56	3.50	10.00	18.00	20.00		
57	5.50	15.00	17.50	22.00		
58	7.50	20.00	22.00	25.00		
59	7.50	20.00	26.00	30.00		
60	7.50	40.00	40.00	40.00		
61	7.50	40.00	40.00	40.00		
62	14.00	40.00	40.00	40.00		
63	14.00	40.00	40.00	40.00		
64	14.00	40.00	40.00	40.00		
65	18.00	100.00	100.00	100.00		
66	22.00	100.00	100.00	100.00		
67	23.00	100.00	100.00	100.00		
68	23.00	100.00	100.00	100.00		
69	23.00	100.00	100.00	100.00		
70	25.00	100.00	100.00	100.00		
71	25.00	100.00	100.00	100.00		
72	25.00	100.00	100.00	100.00		
73	25.00	100.00	100.00	100.00		
74	25.00	100.00	100.00	100.00		
75	100.00	100.00	100.00	100.00		

Retirement rate is 100% after a member accrues a benefit of 100% of final average earnings

Retirement Age and Benefit for Deferred Vested	For deferred vested members, assumption:	we make the fo	llowing retirement					
Members:	' .	59						
	_	53						
	We assume that 15% of future deferred vested members are assume 4.50% compensation Safety per annum.	reciprocal. For r	eciprocals, we					
Liability Calculation for Current Deferred Vested Members:	salary, service, and eligibility for the Retirement System. For the information that have 3 or more average salary. For those men have less than 3 years of servi	Liability for a current deferred vested member is calculated based or salary, service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have 3 or more years of service, we used an average salary. For those members without salary information that have less than 3 years of service or for those members without service information, we assumed a refund of account balance.						
Future Benefit Accruals:	1.0 year of service per year of to anticipate conversion of unu							
Unknown Data for Members:	Same as those exhibited by m characteristics. If not specified							
Definition of Active Member:	All active members of OCERS	as of the valuat	ion date.					
Form of Payment:	All members are assumed to e retirement.	elect the unmodi	fied option at					
Percent Married:	75% of male members and 55 be married at retirement or tim							
Age of Spouse:	Female (or male) three years y	younger (or olde	r) than spouse.					
Additional Cashout	Non-CalPEPRA Formulas							
Assumptions:	Additional compensation a during a member's final av percentages used in this va	erage earnings						
		Final One Year Salary	Final Three Year Salary					
	General Members	3.00%	2.80%					
	Safety Probation	3.80%	3.40%					
	Safety Law Enforcement	5.20%	4.60%					
	Safety Fire	2.00%	1.70%					
	The additional cashout ass and disability retirements.	sumptions are th	e same for service					
	CalPEPRA Formulas							
	None							



# Orange County Fire Authority AGENDA STAFF REPORT

# **Budget and Finance Committee Meeting October 11, 2017**

Agenda Item No. 3C Consent Calendar

## **Budget Adjustment and Award of RFP JA2172 for Extrication Tools**

#### **Contact(s) for Further Information**

Brian Young, Assistant Chief <u>brianyoung@ocfa.org</u> 714.573.6014

**Operations Department** 

Ken Cruz, Division Chief <u>kencruz@ocfa.org</u> 714.573.6761

#### **Summary**

This agenda item is submitted for approval of funding for the purchase of gas powered hydraulic extrication rescue tools from Municipal Emergency Services, Inc.(MES), the number one ranked firm in the Request for Proposals (RFP) process.

#### **Prior Board/Committee Action**

Not Applicable.

#### **RECOMMENDED ACTION(S)**

To approve funding for the purchase of updated extrication tools used to free victims from vehicles after vehicular accidents, it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Board of Directors authorize the following:

- 1. Approve a budget adjustment in the General Fund CIP (12110) increasing expenditures by \$666,293 for the purchase of Extrication tools.
- 2. Authorize the Purchasing Manager to issue a purchase order for the initial purchase of 19 sets of extrication rescue tools to Municipal Emergency Services, Inc., in the amount of \$666,293 (amount includes tax).
- 3. Authorize the Purchasing Manager to issue a blanket order for a three-year term to Municipal Emergency Services, Inc., for annual preventative maintenance for a not-to-exceed amount of \$40,665 over the three-year term (\$13,555 annually).
- 4. Authorize the Purchasing Manager to utilize the contract pricing for future budgeted purchases of extrication tools during the term of the contract.

#### **Impact to Cities/County**

The proposed adjustments to the FY 2017/18 budget will have no impact to cash contract city charges.

#### **Fiscal Impact**

Approval of the requested adjustment will increase appropriations in the General Fund CIP (12110) by \$666,293. Funding for the annual preventative maintenance cost is included in the approved FY 2017/18 budget.

#### **Background**

Extrication tools, commonly referred to as "Jaws of Life" or "Rescue Tool", are most frequently used by firefighters to assist in the removal of victims from vehicles after vehicular accidents. Extrication tool sets typically include hydraulically-operated tools that consist of a spreader, cutter, push/pull ram, telescoping rams of various lengths, and a power unit. OCFA's current fleet of extrication tools range from 12 to 25 years in age and are in need of replacement. The existing extrication tools have become increasingly incapable of cutting through the newer forms of ultrahigh strength alloys and composite metals being used in vehicles manufactured in recent years causing equipment failures such as broken blades and cutter stalls. Most extrication tool manufacturers recommend replacement every ten years. The replacement of the current extrication tools will provide increased efficiency and effectiveness, resulting in improved patient outcomes.

The need for updated extrication tools was established by the Equipment Committee more than a year ago, when the Committee first sought grant funding for the purchase through the Assistance to Firefighters Grant Program. Recently, we learned that we were not successful in our grant request; however, the need for updated tool complements remains. Staff conducted a competitive procurement process to replace the extrication tools.

#### RFP Process

On January 4, 2017, RFP JA2172 was issued for the purchase of gas powered hydraulic extrication tools. Representatives from six companies attended the non-mandatory pre-proposal meeting and five firms (Fire Etc., LN Curtis & Sons, Municipal Emergency Services, Fire Service Specification & Supply, and Diamondback Fire & Rescue) submitted proposals on or before the January 26, 2017, deadline. Additional information about the evaluation process is provided in Attachment 1.

#### Conclusion and Recommendation for Award

Based upon the evaluation results and the Best and Final Offer, staff is recommending award of contract to Municipal Emergency Services, Inc., for the initial purchase of new extrication tool sets in the amount of \$666,293. Staff is also requesting approval to establish an annual blanket order contract for the annual preventative maintenance of the extrication tools in the amount of \$13,555 annually or \$40,665 for a three-year period. In addition, staff is requesting approval to utilize the contract pricing for the purchase of any additional extrication tools that are budgeted during the term of the contract. It should be noted that while this award is based on a competitive solicitation process, in order to standardize equipment future purchases will become sole source.

With an appropriation of approximately \$666,293, the OCFA can replace the entire complement of extrication tools on all trucks currently equipped, and provide additional sets for training and back-up.

#### Attachment(s)

- 1. Summary of Evaluation Process and Results
- 2. Municipal Emergency Services Proposal Submission (on file in the Office of the Clerk and available upon request)

### Orange County Fire Authority JA2172 – Gas Powered Hydraulic Extrication Tools

#### Evaluation

An evaluation team consisting of two Battalion Chiefs, one Fire Captain, one Fire Apparatus Engineer, and one staff member from the Service Center evaluated the written proposals. Each proposal was evaluated based on the criteria and point structure as defined in the RFP: statement of qualifications (10), project approach/scope of work (10), technical specifications (35), references (5), overall responsiveness (5), and proposed cost (25). Fire Etc., was deemed nonresponsive as they did not submit all of the required forms with their proposal. Four companies were invited to participate in an interview/product demonstration (25). Based on the combined scores of the written proposal evaluation and interviews, the top three companies were invited to participate in the equipment field trial (75) for their proposed extrication tools. Eight evaluators were selected from the field to evaluate each extrication tool during the field trial. Each vendor provided one set of extrication tools meeting the RFP specifications and provided the group training on their specific tools. Evaluators then performed hands on training by completing specific tasks with each of the different extrication tools. To keep the evaluations fair, all tasks were performed on four of the same model vehicles. Upon completion of the field trial, a best and final offer was requested from the highest ranked firm, Municipal Emergency Services offering the Genesis Extrication Tool System.

#### Best and Final Offers

As a result of the Best and Final Offer request, Municipal Emergency Services offered a reduction to the unit prices of each extrication tool from their original proposal. The reduction in price resulted in savings of approximately 3% per rescue tool set. In addition, MES also offered to include one loaner set of tools to the Service Center, at no charge to OCFA, for the duration of the contract.

#### **Scoring**

Final evaluation scores, including BAFO pricing, resulted in Municipal Emergency Services (offering Genesis Extrication Tools) as the overall number one ranked firm, as shown on the following pages.

# Orange County Fire Authority JA2172 – Gas Powered Hydraulic Extrication Tools

**Evaluation Scoring Summary** 

_ · · · · · · · · · · · · · · · · · · ·	Municipal Emergency Services				Fire Service Specification & Supply					
		Genesis	Rescue	Systems		Holmatro				
Total Proposal Cost		\$	706,957.91	*			\$	443,356.7	7	
Evaluator #	1	2	3	4	5	1	2	3	4	5
A. Overall Responsiveness (5)	5	5	4	4.5	2.5	4.25	5	4	5	2.5
B. Statement of Qualifications (10)	10	10	8	7	10	10	9	8.5	9	10
C. References (5)	5	5	2.5	5	2.5	5	4.5	2.5	5	2.5
D. Project Approach/Scope of Work (10)	10	10	9	7	10	9	9 35	8	9	9.5
E. Technical Specifications (35)	28	35	28	31.5	30	28		28	31.5	30
F. Warranty/Maintenance Services (10)	10	10	9	6	10	5	10	8	8	10
G. Proposed Costs (25)	15.83	15.83	15.83	15.83	15.83	25	25	25	25	25
H. Interviews (25)	-	20	17.5	21.25	-	-	25	25	25	-
I. Field Trial (75)	60.85	60.85	60.85	60.85	60.85	42.75	42.75	42.75	42.75	42.75
Total Points	144.68	171.68	154.68	158.93	141.68	129	165.25	151.75	160.25	132.25
Proposal Ranking	1	1	1	2	1	2	2	2	1	2
Sum of Proposal Rankings			6			9				

<sup>\*</sup>Best and Final Offer pricing based on increased quantities

	LN Curtis & Sons Hurst				Diamondback Fire & Rescue Amkus					
Total Proposal Cost		\$	620,318.7	1			\$	583,778.7	73	
Evaluator #	1	2	3	4	5	1	2	3	4	5
A. Overall Responsiveness (5)	4.5	5	4	5	2.5	2	4.5	3.5	5	0
B. Statement of Qualifications (10)	10	10	8	8	10	7	10	7	7	10
C. References (5)	5	5	2.5	5	2.5	3	5	2.5	5	2.5
D. Project Approach/Scope of Work (10)	9	9	7	9	9.5	5	10	8	9	10
E. Technical Specifications (35)	28	35	28	31.5	30	17.5	28	24.5	31.5	10
F. Warranty/Maintenance Services (10)	8	10	7	8.5	10	8	10	7	8	10
G. Proposed Costs (25)	17.87	17.87	17.87	17.87	17.87	18.99	18.99	18.99	18.99	18.99
H. Interviews (25)	-	20	18.75	17.50	-	-	10	10	10	-
I. Field Trial (75)	37	37	37	37	37	-	-	-	-	-
Total Points	119.37	148.87	130.12	139.37	119.37	61.49	96.49	81.49	94.49	61.49
Proposal Ranking	3	3	3	3	3	4	4	4	4	4
Sum of Proposal Rankings		15 20								

# Orange County Fire Authority JA2172 – Gas Powered Hydraulic Extrication Tools

**Unit Pricing per Each Extrication Tool** 

Cant I Items per Luch L		rgency Services	Fire Service Spec. & Supply	LN Curtis & Sons	Diamondback Fire & Rescue
	Genesis Res	cue Systems	Holmatro	Hurst	Amkus
	Proposal Pricing	BAFO Pricing	Proposal Pricing	Proposal Pricing	Proposal Pricing
Gas Power Unit	\$5,768.00	\$5,646.15	\$4,420.00	\$5,906.27	\$7,766.00
Spreader	\$7,000.00	\$6,757.69	\$4,312.00	\$6,152.19	\$6,452.00
Curved Blade Cutter	\$6,336.00	\$6,119.23	\$3,516.00	\$4,554.06	\$6,314.00
Straight Blade Cutter (Item Deleted)	\$2,304.00	-	\$2,065.00	\$4,554.06	\$1,400.00
16/31 Telescoping Ram (Item Added)	-	\$3,465.38	-	-	-
19/51 Telescoping Ram	\$6,216.00	\$6,003.85	\$2,659.00	\$3,905.98	\$2,409.00
Push/Pull Ram	\$2,384.00	\$2,242.31	\$1,934.00	\$2,592.31	\$2,231.00
Ram Accessory Kit	\$1,424.00	\$1,215.38	\$1,407.00	\$901.31	\$987.00
Hydraulic Hoses	\$1,200.00	\$1,153.85	\$486.00	\$944.99	\$942.00
Extended Warranty	N/A	N/A	N/A	\$6,499.00	N/A
Annual Preventative Maintenance	\$15,215.00	\$13,555.00	\$15,725.00	\$10,710.00	\$8,415.00

<sup>\*</sup>BAFO Pricing resulted in savings of approximately 3% per rescue tool set.



Municipal Emergency Services, Inc. 4343 Viewridge Ave # A San Diego, CA 92123 602-402-3668

January 25th, 2017

Orange County Fire Authority James Aguila, Assistant Purchasing Agent, OCFA Purchasing Department 1 Fire Authority Road Irvine, CA 92602

Subject: Attachment A- Letter of Transmittal for RFP JA2172

The company responding to RFP JA2172 is Municipal Emergency Services, Inc., also referred to as MES.

#### **Executive Summary:**

If MES is selected as the successful bidder, we are prepared to comply with all requirements set forth by the Orange County Fire Authority RFP JA2172. Our proposal shall remain valid for not less than one hundred and eighty (180) days from 1-26-2017.

#### **About MES**

Municipal Emergency Services, Inc. (MES) is the largest distributor of firefighting equipment to fire departments and first responders in the United States. Our team has over 8,000 hours of first responder training and we are the largest dealer for Genesis Rescue Systems in the United States. Currently MES serves over 20,000 fire departments nationwide through 138 outside sales representatives and we hold several contracts to provide Genesis Rescue Systems in large Metro areas across the U.S. With sales exceeding \$3 million annually.

#### **Financial Details:**

MES is the largest distributor of first responder products in the United States. The company operates on revenues of over \$125MM per year. We maintain favorable status with all of our suppliers and have an excellent credit history with them. MES is financially capable of supplying the equipment requested on this bid.

#### ATTACHMENT B: OFFEROR'S INFORMATION

Please complete and/or provide all requested information. If the proposal is submitted by a corporation, please provide an additional attachment that states the names of the officers who can sign an agreement on behalf of the corporation and whether more than one officer must sign. If the proposal if by a partnership or a joint venture, state the names and addresses of all general partners and joint venture parties. If the respondent is a sole proprietorship or another entity that does business under a fictitious name, the proposal shall be in the real name of the respondent with a designation following showing "DBA (the fictitious name)," provided however, that no fictitious name shall be used unless there is a current registration with the Orange County Recorder.

The undersigned, as respondent, declares that all documents regarding this proposal have been examined and accepted and that, if awarded, will enter into a contract with the Orange County Fire Authority.

FIRM'S LEGAL NAME: Municipal Emergency Services Inc.								
FIRM PARENT OR OWNERSHIP: Same as above								
ADDRESS: 4343 Viewridge Ave # A, San Diego, CA 92123								
FIRM TELEPHONE #: 602-402-3668 FIRM F	-AX #: 1-866-333-5907							
FIRM'S TAX I.D. NUMBER: 65-1051374 INCORPORATED: YES X NO								
LEGAL FORM OF COMPANY: (partnership, corporation, joint ve	nture): C Corporation							
LENGTH OF TIME YOUR FIRM HAS BEEN IN BUSINESS:	15 Years							
LENGTH OF TIME AT CURRENT LOCATION: California Bra	nch- 7 Years							
NUMBER OF EMPLOYEES: 300 NUMBER OF	CURRENT CLIENTS: Over 1,000							
Management person responsible for direct contact with the C service required for this Request for Proposal (RFP).	·							
	Regional Vice President							
TELEPHONE #: 602-402-3668  E-MAIL: brichardson@mesfire.com								
Person responsible for the day-to-day servicing of the account.								
NAME: Bill Zamudio TITLE:	Account Manager							
TELEPHONE #: 858-715-4639 E-MAIL:	bzamudio@mesfire.com							
	· -							



Municipal Emergency Services, Inc. 4343 Viewridge Ave # A San Diego, CA 92123 602-402-3668

January 25th, 2017

Orange County Fire Authority James Aguila, Assistant Purchasing Agent, OCFA Purchasing Department 1 Fire Authority Road Irvine, CA 92602

Subject: Attachment B- Corporation Officer and Signer Information

MES Fire is classified as a C Corporation, and the following individuals are officers of the company and have corporate authorization to provide a proposal and sign an agreement on behalf of the corporation, Municipal Emergency Services, Inc.

Barry Richardson Regional Vice President Mobile: 602-402-3668

Toll Free Fax: 866-333-5907

E Mail: <u>brichardson@mesfire.com</u>

David Mooney Vice President, Western Zone

Mobile: 360-953-7773

E Mail: dmooney@mesfire.com

John Skaryak

Vice President Sales & Marketing

Mobile: 704-236-7161

E Mail: <u>iskaryak@mesfire.com</u>

Thomas Hubregsen

President

Office: 203-364-0620

E Mail: thubregsen@mesfire.com

#### ATTACHMENT C: CERTIFICATION OF PROPOSAL

In responding to RFP JA2172 – Gas Hydraulic Extrication Tools, the undersigned Offeror(s) agrees to provide services for OCFA per the specifications. Offeror further agrees to the terms and conditions specified herein the following terms and conditions that are a part of this proposal and any resulting contract. If there are any exceptions they must be stated in an attachment included with the offer.

- A. The Offeror hereby certifies that the individual signing the submittal is an authorized agent for the Offeror and has the authority to legally bind the Offeror to the Contract. Signature below verifies that the Offeror has read, understands, and agrees to the conditions contained herein and on all of the attachments and agenda.
- B. The submission of the offer did not involve collusion or other anti-competitive practices.
- C. The Offeror has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, meal or service to a public servant in connection with the submitted offer.
- D. The Offeror shall not discriminate against any employee or applicant for employment in violation of Federal or State law.
- E. The Offeror complies fully with the Federal Debarment Certification regarding debarment suspension, ineligibility and voluntary exclusion.

#### INDEPENDENT PRICE DETERMINATION:

I certify that this offer is made without prior understanding, arrangement, agreement, or connection with any corporation, firm or person submitting an offer for the same services, and is in all respects fair and without collusion or fraud. I certify that I have not entered into any arrangement or agreement with any Orange County Fire Authority public officer. I understand collusive bidding is a violation of State and Federal law and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of this offer and certify that I am authorized to sign this agreement for the offeror.

#### TO THE ORANGE COUNTY FIRE AUTHORITY:

The Undersigned hereby offers and shall furnish the equipment in compliance with all terms, scope of work, conditions, specifications, and amendments in the Request for Proposal which is incorporated by reference as fully set forth herein. The representations herein are made under penalty of perjury.

Municipal Emergen	cy Services Inc.	
ADDRESS: 4343 Viewridge Ave # A		
CITY: San Diego	STATE: CA	ZIP CODE: 92123
SIGNATURE OF PERSON AUTHORIZED TO SIGN:	Vichal	DATE: <u>1-25-2017</u>
PRINTED NAME: TITLE: Bory	Richardson	
Regio	nal Vice Preside	ent

#### ATTACHMENT D: PARTY AND PARTICIPANT DISCLOSURE FORMS

**Campaign Contributions Disclosure:** In conformance with the statutory requirements of the State of California Government Code Section 84308, part of the Political Reform Act and Title 2, California Code of Regulations 18438 through 18438.8, regarding campaign contributions to members of appointed Boards of Directors, Offeror is required to complete the attached Party and Participant Disclosure Forms and submit as part of the proposal, **if applicable**.

Offeror is required to submit only one copy of the completed form(s) as part of its proposal. This/these form(s) should be included in the original RFP. The Offeror and subcontractors must complete the form entitled "Party Disclosure Form". Lobbyists or agents representing the Offeror in this procurement must complete the form entitled "Participant Disclosure Form". Reporting of campaign contributions is a requirement from the proposed submittal date up and until the OCFA Board of Directors takes action.

# ORANGE COUNTY FIRE AUTHORITY BOARD OF DIRECTORS

**Gene Hernandez, Chairman**City of Yorba Linda

**Dave Harrington, Director**City of Aliso Viejo

Joseph Muller, Director City of Dana Point

Michele Steggell, Director City of La Palma

Laurie Davies, Director City of Laguna Niguel

Leah Basile, Director City of Lake Forest

Ed Sachs, Director City of Mission Viejo

Carol Gamble, Director City of Rancho Santa Margarita

\*TBD

City of San Juan Capistrano

\*TBD

City of Seal Beach

Al Murray, Director City of Tustin

**Tri Ta, Director**City of Westminster

Todd Spitzer, Director County of Orange

Todd Snitzer Director

\*New Board members to be determined

Elizabeth Swift, Vice Chairman

City of Buena Park

Rob Johnson, Director City of Cypress

Jeffrey Lalloway, Director City of Irvine

Don Sedgwick, Director City of Laguna Hills

Noel Hatch, Director City of Laguna Woods

Shelley Hasselbrink, Director City of Los Alamitos

Craig Green, Director
City of Placentia

**Bob Baker, Director** City of San Clemente

Vicente Sarmiento, Director City of Santa Ana

David John Shawver, Director City of Stanton

> **Bill Nelson, Director** City of Villa Park

Lisa Bartlett, Director County of Orange

#### **PARTY DISCLOSURE**

The attached <u>Party Disclosure Form</u> must be completed and submitted by the Offeror and subcontractors with the proposal by all firms subject to the campaign contribution disclosure requirements.

The <u>Participant Disclosure Form</u> must be completed by lobbyists or agents representing the Offeror in this procurement.

It is anticipated that a recommendation for award of this contract will be presented to the Board of Directors of the OCFA for approval.

#### **IMPORTANT NOTICE**

Basic Provisions of Government Code Section 84308

- A. If you are an applicant for, or the subject of, any contract award, you are prohibited from making a campaign contribution of more than \$250 to any board member. This prohibition begins on the date the solicitation is initiated, and the prohibition ends three months after a final decision is rendered by the Board of Directors. In addition, no board member may solicit or accept a campaign contribution of more than \$250 from you during this period.
- B. These prohibitions also apply to your agents, and, if you are a closely held corporation, to your majority shareholder as well. These prohibitions also apply to your subcontractor(s), joint venturer(s), and partner(s) in this proceeding. Also included are parent companies and subsidiary companies directed and controlled by you, and political action committees directed and controlled by you.
- C. You must file the attached disclosure form and disclose whether you or your agent(s) have in the aggregate contributed more than \$250 to any board member during the 12-month period preceding the contract award.
- D. If you or your agent have in the aggregate contributed more than \$250 to any individual board member during the 12 months preceding the decision on the contract award or proceeding, that board member must disqualify himself or herself from the decision. However, disqualification is not required if the board member returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a party in the proceeding. The Party Disclosure Form should be completed and filed with your proposal, or with the first written document you file or submit after the proceeding commences.
  - 1. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements<sup>1</sup> for use, including all entitlements for land use, all contracts<sup>2</sup> (other than competitively bid, labor or personal employment contracts), and all franchises.
  - 2. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit or other entitlement for use. If an individual acting as an agent is also acting in his or her capacity as an employee or member of a law, architectural, engineering, consulting firm, or similar business entity, both the business entity and the individual are "agents."

- To determine whether a campaign contribution of more than \$250 has been made by you, campaign contributions made by you within the preceding 12 months must be aggregated with those made by your agent within the preceding 12 months or the period of the agency, whichever is shorter. Contributions made by your majority shareholder (if a closely held corporation), your subcontractor(s), your joint venturer(s), and your partner(s) in this proceeding must also be included as part of the aggregation. Campaign contributions made to different directors are not aggregated.
- 4. A list of the members of the Board of Directors is provided in this attachment.

This notice summarizes the major requirements of Government Code Section 84308 of the Political Reform Act and 2 Cal. Adm. Code Sections 18438-18438.8 as it relates to contract awards.

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<sup>&</sup>lt;sup>1</sup> Entitlement for the purposes of this form refers to contract award.

<sup>&</sup>lt;sup>2</sup> All Contracts for the purposes of this form refer to the contract award of this specific solicitation.

Orange County Fire Authority

RFP JA2172 – Extrication Tools

	PARTY DISCLOSURE FORM
Party's Name:	Municipal Emergency Services Inc.
Party's Address:	4343 Viewridge Ave # A
	San Diego, CA 92123
Party's Telephon	e: <u>602-402-3668</u>
Solicitation Title a	and Number: RFP JA2172- Extrication Tools
Based on the par	ty disclosure information provided, are you or your firm subject to party disclosures?
No X If no, che form.	eck the box and sign below.   [] If yes, check the box, sign below and complete the
	25th, 2017
Dute.	Signature of Party and/or Agent
To be complete months. Attach	ed only if campaign contributions have been made in the preceding twelve (12) additional copies if needed.
Board Member(s contribution(s) in	) to whom you and/or your agent made campaign contributions and dates of the preceding 12 months:
Name of Membe	r:
Name of Contrib	outor (if other than Party):
Date(s):	
Name of Membe	r:
Name of Contrib	outor (if other than Party):
Date(s):	
Amount(s):	
Name of Membe	r:
Name of Contrib	outor (if other than Party):

#### PARTICIPANT (AGENT) DISCLOSURE

The <u>Participant Disclosure Form</u> must be completed by lobbyists or agents representing the Offeror in this procurement. (Please see next page for definitions of these terms.)

It is anticipated that a recommendation for award of this contract will be presented to the Board of Directors of the OCFA for approval.

#### **IMPORTANT NOTICE**

Basic Provisions of Government Code Section 84308

A. If you are a participant in a proceeding involving any contract award, you are prohibited from making a campaign contribution of more than \$250 to any board member. This prohibition begins on the date you begin to actively support or oppose an application for contract award pending before the OCFA or any of its affiliated agencies, and continues until three months after a final decision is rendered on the application or proceeding by the Board of Directors.

No board member may solicit or accept a campaign contribution of more than \$250 from you and/or your agency during this period if the board member knows or has reason to know that you are a participant.

- B. The attached disclosure form must be filed if you or your agent has contributed more than \$250 to any board member for the OCFA or any of its affiliated agencies during the 12-month period preceding the beginning of your active support or opposition (The disclosure form will assist the board members in complying with the law).
- C. If you or your agent have made a contribution of more than \$250 to any board member during the 12 months preceding the decision in the proceeding, that board member must disqualify himself or herself from the decision. However, disqualification is not required if the member returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a participant in the proceeding.

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The Participant Disclosure Form should be completed and filed with the proposal submitted by a party, or should be completed and filed the first time that you lobby in person, testify in person before, or otherwise directly act to influence the vote of the board members of the OCFA or any of its affiliated agencies.

- 1. An individual or entity is a "participant" in a proceeding involving an application for a license, permit or other entitlement for use if:
  - a. The individual or entity is not an actual party to the proceeding, but does have a significant financial interest in the Authority's or one of its affiliated agencies' decisions in the proceeding.

#### AND

- b. The individual or entity, directly or through an agent, does any of the following:
  - Communicates directly, either in person or in writing, with a board member of the OCFA or any of its affiliated agencies for the purpose of influencing the member's vote on the proposal;
  - 2) Communicates with an employee of the OCFA or any of its affiliated agencies for the purpose of influencing a member's vote on the proposal; or
  - 3) Testifies or makes an oral statement before the Board of Directors of the OCFA or any of its affiliated agencies.
- 2. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use; all contracts (other than competitively bid, labor, or personal employment contracts) and all franchises.
- 3. Your "agent" is someone who represents you in connection with a proceeding for this proposed involving a contract award. If an agent acting as an employee or member of a law, architectural, engineering, or consulting firm, or a similar business entity or corporation, both the business entity or corporation and the individual are agents.
- 4. To determine whether a campaign contribution of more than \$250 has been made by a participant or his or her agent, contributions made by the participant within the preceding 12 months shall be aggregated with those made by the agent within the preceding 12 months or the period of the agency, whichever is shorter. Campaign contributions made to different members are not aggregated.
- 5. A list of the members of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 and 2 Cal. Adm. Code Sections 18438-18438.8.

## PARTICIPANT DISCLOSURE FORM

To be completed only if campaign contributions have been made in the preceding twelve (12)

months. Attach additional copies if needed.
Prime's Firm Name:
Party's Name:
Party's Address:
Party's Telephone:
Solicitation Title and Number:
Date: Signature of Party and/or Agent
Signature of Party and/or Agent
Board Member(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:
Name of Member:
Name of Contributor (if other than Party):
Date(s):
Amount(s):
Name of Member:
Name of Contributor (if other than Party):
Date(s):
Amount(s):
Name of Member:
Name of Contributor (if other than Party):
Date(s):
Amount(s):

Attach an IRS W-9 Form with submittal	Orange County Fire Authority	RFP JA2172 – Extrication Tools
	ATTACHMENT E: IRS W-9 FORM	
Attach an IRS W-9 Form with submittal		
	Attach an IRS W-9 Form with submittal	

Form (Rev. December 2014)
Department of the Treasury
Internal Revenue Service

# Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.										
	MUNICIPAL EMERGENCY SERVICES INC										
2											
age											
o u	3 Check appropriate box for federal tax classification; check only one of the following seven boxes:					exemp					
e IS OI	☐ Individual/sole proprietor or ☐ C Corporation ☐ S Corporation ☐ Partnership single-member LLC	Trus	st/es	tate	ins	tructio	ns on	page	3):		, 500
typ	Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partners	ship) ▶				empt p	200			_	
Print or type See Specific Instructions on page	Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the tax classification of the single-member owner.	n the line a	abov	e for	744435	emptio de (if a		FAT	CA	eport	ing
돌류	☐ Other (see instructions) ▶				(App	olies to ac	counts	maintain	ed ou	tside th	e U.S.)
- SH	5 Address (number, street, and apt. or suite no.)	Request	er's	name	and a	addres	s (opt	ional)			
bec	7 POVERTY ROAD 85H BENNET SQUARE (PO BOX 656)										
e <b>S</b>	6 City, state, and ZIP code	1									
Se	SOUTHBURY, CT 06488										
	7 List account number(s) here (optional)										
	REMIT TO ADDRESS: SUITE 3135, 75 REMITTANCE DRIVE, CHICAGO, IL 60	675-313	5								
Pa											
Enter	your TIN in the appropriate box. The TIN provided must match the name given on line 1 to av	/oid	Soc	cial s	ecurit	y num	ber				
back	up withholding. For individuals, this is generally your social security number (SSN). However, f	for a								$\top$	
resid	ent alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other es, it is your employer identification number (EIN). If you do not have a number, see <i>How to ge</i>	r eta				-		-			
	in page 3.		or			-					
Note	. If the account is in more than one name, see the instructions for line 1 and the chart on page	4 for	Em	ploy	er ide	ntifica	tion n	umbe	er		
guide	lines on whose number to enter.	4 5 1 0 5				1	1 3 7 4				
			6	5	-	1 0	5	1	3	1	4
Pai	t II Certification										
Unde	r penalties of perjury, I certify that:										
1. Th	ne number shown on this form is my correct taxpayer identification number (or I am waiting for	r a numb	er to	be	issue	d to n	ne); a	nd			
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and											
3. 18	m a U.S. citizen or other U.S. person (defined below); and										
4. Th	e FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting	ng is corr	ect.								
beca intere gene	fication instructions. You must cross out item 2 above if you have been notified by the IRS t use you have failed to report all interest and dividends on your tax return. For real estate trans est paid, acquisition or abandonment of secured property, cancellation of debt, contributions trally, payments other than interest and dividends, you are not required to sign the certification	actions, to an indi	item vidu	al re	oes r	ot ap	ply. F	or m	ortg	age RA), a	and
0:	ictions on page 3.										
Sigr Her	Signature of A	ate ▶	11	12	1	7					

#### **General Instructions**

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

#### Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- · Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued).
- 2. Certify that you are not subject to backup withholding, or
- 3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
- 4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

#### ATTACHMENT F: STATEMENT OF QUALIFICATIONS

Offerors shall prepare a statement of qualifications that shows the ability, capacity, experience, and skill of the Offeror, their staff, and their employees to provide the equipment and perform the services required within the specified time.

- 1. Submit a list of customers currently using proposed equipment.
- 2. What is the earliest guaranteed delivery date for equipment (state in calendar days after receipt of the purchase order)?
- 3. State the location of the OEM.
- 4. Does the OEM have a Local Dealer or Representative?

If so, who?

Name:

Address:

Number of Years' Experience providing equipment:

State the number of years continuously representing this OEM?

5. Who will provide warranty repairs for this equipment?

Name:

Address:

Number of Years' Experience:

6. Does the Dealer have a mobile technician?

If so, how many?

If so, is there an additional cost for use?

If so, what is the minimum charge per trip?

7. Does the Dealer or OEM offer tools for temporary use while customer owned tools are being serviced?

If so, is there an additional cost?

If so, what is the minimum charge?

- 8. List any other services or capabilities that your company may offer?
- 9. Provide a minimum five (5) references, for projects cited as related experience. At least three (3) of these references are for worked performed in the last eighteen (18) months prior to submission of proposal. Each reference must specifically address equipment provided that should be correlated with the requirements of this RFP.
  - · Agencies name,
  - Equipment provided,
  - Number of Equipment provided,
  - · Project dates,
  - Agency contact name, title, telephone number and email.



## **Attachment F: Statement of Qualifications**

- 1. Submit a list of customers currently using proposed equipment. Please see attached user list.
- 2. What is the earliest guaranteed delivery date for equipment (state in calendar days after receipt of the purchase order)? Earliest delivery time for order is 45 days.
- 3. State the location of the OEM. Location of Genesis Rescue Systems is Kettering, Ohio.
- 4. Does the OEM have a Local Dealer or Representative? Yes

Name: Municipal Emergency Services

Address: 4343 View Ridge Suite A San Diego, CA 92123

Number of Years' Experience providing equipment: MES has been providing fire equipment and service since 2002.

State the number of years continuously representing this OEM? MES has represented Genesis Rescue Systems since 2013.

5. Who will provide warranty repairs for this equipment?

Name: Municipal Emergency Services

Address: 4343 View Ridge Suite A San Diego, CA 92123

Number of Years' Experience: 4 years

6. Does the Dealer have a mobile technician? Yes

If so, how many? 2 mobile service technicians

If so, is there an additional cost for use? Warranty repairs come at zero cost to OCFA. The only cost to OCFA is the annual rescue tool service.



If so, what is the minimum charge per trip? No trip charge will be billed to OCFA for warranty repair. Travel cost is included in price of annual service contract.

7. Does the Dealer or OEM offer tools for temporary use while customer owned tools are being serviced? Yes

If so, is there an additional cost? No cost for any loaner tools.

If so, what is the minimum charge? No charge for loaner tools.

- 8. List any other services or capabilities that your company may offer? MES offers free training for auto extrication. Training administered from a factory representative of Genesis Rescue Systems. If OCFA wants to conduct their own yearly service of their hydraulic tools, Genesis will train your staff to do so at no cost to OCFA.
- 9. Provide a minimum five (5) references, for projects cited as related experience. At least three (3) of these references are for worked performed in the last eighteen (18) months prior to submission of proposal. Each reference must specifically address equipment provided that should be correlated with the requirements of this RFP.

#### References:

- Agencies name, City of Minneapolis
- Equipment provided, C365, S49, P/P Ram, Tele Ram, Outlaw Pump, Battery Combination Tools.
- Number of Equipment provided, 12 sets of conventional gas hydraulics, 5 battery tools.
- Project dates, Purchase 2016
- Agency contact name, Capt. Dominic Rigart (612-369-8250)



- Agencies name, City of Chula Vista
- Equipment provided, C365, S49, 3-stage Ram, P/P Ram, Outlaw Pump, Battery Tool Sets.
- Number of Equipment provided, 3 sets of conventional gas hydraulics, battery tools.
- Project dates, Purchased 2016
- Agency contact name, Capt. David Acosta (619-993-0232)
- Agencies name, Miami Dade Fire & Rescue
- Equipment provided, C365, S49, Tele Ram, PP Ram, Outlaw Pump
- Number of Equipment provided, 126 conventional gas hydraulic sets
- Project dates, Purchased 2016
- Agency contact name, LT. Matthew Livingstone (772-285-8300)
- Agencies name, City of Mesa
- Equipment provided, C365, S49, 3-stage Ram, Outlaw Pump, Battery Tools
- Number of Equipment provided, 4 sets conventional gas hydraulics, battery tool
- Project dates, Purchased 2016
- Agency contact name, Equipment Coordinator, Jay Woodward (480-797-1230)



- Agencies name, Town of Maricopa
- Equipment provided, C365, S49, 3-stage Ram, Outlaw Pump
- Number of Equipment provided, 3 conventional gas hydraulic sets
- Project dates, Purchased 2015
- Agency contact name, Capt. Will Sherwood (480-293-4129)
- Agencies name, City of San Diego
- Equipment provided, 14c Battery Combination Tool
- Number of Equipment provided, 25
- Project dates, Purchased 2016
- Agency contact name, Capt. Ahman Grayson (619-218-8549)
- Agencies name, City of San Francisco
- Equipment provided, Complete Sets of Battery Tools
- Number of Equipment provided, 23 Sets
- Project dates, Purchased 2016
- Agency contact name, BC Anthony Rivera (415-439-3783)

# Genesis Rescue City Reference List

TERITORY/DEALER	STATE	CITY	POPULATION
EMC	MN	Minneapolis FD	392,880
EMC	OK	Oklahoma City FD	599,199
EMC	UT	Salt Lake City FD	189,314
EMC / MES Fire	CA	LA County FD US&R	9,963,000
HRS	ОН	Cincinatti City FD	296,550
HRS	VA	Virgina Beach FD	447,021
EMC	IL	Joliet FD	148,268
RSI	FL	Tallahassee FD	186,971
EMC / MES Fire	AZ	Scottsdale FD	223,514
HRS	IN	Gary FD	79,170
HRS	IN	Richmond FD	36,599
EMC / MES Fire	AZ	Mesa FD	452,084
EMC / MES Fire	AZ	Tempe FD	166,842
EMC / MES Fire	AZ	Page FD	7,316
EMC / MES Fire	AZ	Rural/Metro FD	NA
EMC / MES Fire	CA	Big Bear FD	5,116
HRS	MI	Grand Rapids FD	190,411
HRS	ОН	Columbus FD	780,000
HRS	ОН	Dayton FD	141,000
EMC	FL	Maimi Dade FD	2,600,000
EMC / MES Fire	CA	Orange County FD US&R	3,100,000
EMC	GA	Dekalb County FD	713,340
EMC	PA	Pittsburgh FD	305,851
EMC / MES Fire	CA	Chula Vista FD	256,780
EMC / MES Fire	CO	Aurora FD	345,803
EMC / MES Fire	CO	Pueblo FD	108,249
EMC / MES Fire	CA	San Franciso City FD	837,442
EMC / MES Fire	NM	Rio Rancho FD	91,956
EMC / MES Fire	UT	West Jordan FD	110,077
EMC / MES Fire	CA	Sacramento City US&R	479,686
EMC / MES Fire	CA	San Diego City FD	1,356,000
EMC / MES Fire	AZ	Gilbert FD	229,972
EMC / MES Fire	AZ	Chandler FD	249,146
EMC / MES Fire	CO	Breckenridge FD	4,684
EMC / MES Fire	CO	Colorado US&R Task Force 1	NA
EMC / MES Fire	WY	Casper FD	59,628

EMC / MES Fire	WY	Larime FD	31,814
EMC / MES Fire	CA	Atwater / CALFIRE	28,818
EMC / MES Fire	CA	Menlo Park FD	33,071
EMC / MES Fire	CA	Diamond Springs FD	11,037
EMC / MES Fire	OR	Clackamas FD	6,965
EMC / MES Fire	OR	Dallas FD	14,807
EMC / MES Fire	WA	Yakima FD	93,257
EMC / MES Fire	MO	Kalisspell FD	20,972
EMC / MES Fire	WA	Newman Lake FD	39,296
EMC / MES Fire	WA	South Bay FD	25,325
EMC / MES Fire	AZ	Eloy FD	16,996
EMC / MES Fire	AZ	Surprise FD	123,546

#### ATTACHMENT G: PROJECT APPROACH/SCOPE OF WORK

**Project Approach/Scope of Work:** Offerors shall provide a detailed response to the following objectives that describes how the Respondent intends to provide the requested services set forth in the Section 2: Scope of Work.

#### **Section 2.8.1 Initial Product Warranties:**

a. Describe the proposed equipment's product warranty that is included with the initial purchase. Include information on the warranty duration, items and services covered under the warranty, and any coverage exclusions.

#### **Section 2.8.2 Extended Warranty:**

- a. Describe extended warranty and service options available to OCFA.
- b. Describe the process for initiating warranty related services.
- c. State amount of time in hours before OEM or dealer will respond to any requests for warranty repair.
- d. Provide information on on-site services response times, provisions for loaner equipment, etc.
- e. Provide information on the number of local qualified field technicians available to service OCFA's contract?
- f. State the location of the authorized service center where off-site repairs will take place.
- g. What is the typical turnaround time for equipment sent to the service center for repair?

#### **Section 2.8.3 Preventative Maintenance Program:**

- a. Provide information on your firm's preventative maintenance program. Include information on proposed maintenance cycles, included services, exclusions, and any requirements on the part of OCFA.
- b. Identify who will perform maintenance work, and describe how and where preventative maintenance is performed.

#### **Section 2.8.4 Device Repairs:**

- a. Include a cost schedule for repairs that fall outside warranty and service agreements. Descriptions should include labor and parts costs schedules.
- b. The proposal should also indicate conditions under which equipment will be repaired on-site or will require shipping to another location, turn-around times for repairs, availability of loaner equipment while equipment is out-of-service, and responsibility for packing and shipping costs and services.

#### **Section 2.9 Implementation Requirements:**

- a. **2.8.1 Delivery:** What is the estimated delivery lead time for the initial purchase of 17 Gas Hydraulic Rescue Tool Sets after receipt of Purchase Order?
- b. **2.8.2 Training Requirements:** Describe in detail, your firm's training program. This description shall include, but not be limited to, the training curriculum, estimated time required for each training session, background of instructors and include samples materials appropriate to the training.



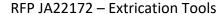
## ATTACHMENT G: PROJECT APPROACH/SCOPE OF WORK

#### **Section 2.8.1 Initial Product Warranties:**

a. Describe the proposed equipment's product warranty that is included with the initial purchase. Include information on the warranty duration, items and services covered under the warranty, and any coverage exclusions. Genesis Rescue Systems offers lifetime warranty against defects in materials and workmanship for lifetime of original ownership. Genesis assumes costs of repair and/or replacement of any defect not meeting standards set forth to manufacture specification. There will be no cost for parts, labor, shipping when deemed a warranted repair. Yearly hydraulic rescue tool service is required to meet guidelines of warranty. Annual service can conducted either by MES service tech or trained service OCFA member. Items not covered for incidental or consequential use such as; whip hoses, couplers and handles. Cutter blades and spreader tips are covered for life in the event you snap or break one, no questions asked.

#### **Section 2.8.2 Extended Warranty:**

- a. Describe extended warranty and service options available to OCFA. No extended warranty needed with Genesis lifetime warranty in place at time of purchase. OCFA required to maintain annual service contract to maintain lifetime warranty.
- b. Describe the process for initiating warranty related services. Genesis has dedicated Operations Manager in each region. Their responsibility includes warranty issue's and taking care of individual needs of each department. Once contact is made that manager will take care of all arrangements for repair and loaner tool. Satisfaction of the customer is paramount.
- c. State amount of time in hours before OEM or dealer will respond to any requests for warranty repair. All repair/warranty issue's will be addressed within 24 hours of notification. Within 24 hours of contact if a service technician can't arrive and address issue's, a loaner tool will be either hand delivered by MES or shipped overnight to OCFA at no cost to OCFA. OCFA maintains tool until your tool is repaired and delivered back to you, loaner service is free of charge.





- d. Provide information on on-site services response times, provisions for loaner equipment, etc. Warranty and/or out of service equipment, loaner tools are either hand delivered or shipped within 24 hours of contact. If service technicians are out on other service calls the operations manager for Genesis arranges solution to meet needs of agreement. MES has warehouses in CA, CO and AZ which houses equipment for loaner specifically regarding warranty and/or service needs.
- e. Provide information on the number of local qualified field technicians available to service OCFA's contract? There are 2 certified technicians available for region of southern California. Technicians information; Brian Little (623-764-5732) and Jerry Swift (480-220-4624).
- f. State the location of the authorized service center where off-site repairs will take place. MES has 3 separate locations for service. OCFA service area MES San Diego CA. The other 2 locations are in Tempe AZ and Denver CO.
- g. What is the typical turnaround time for equipment sent to the service center for repair?

  Normal turnaround time for repair within 10-14 business days, if unable to repair onsite.

#### **Section 2.8.3 Preventative Maintenance Program:**

a. Provide information on your firm's preventative maintenance program. Include information on proposed maintenance cycles, included services, exclusions, and any requirements on the part of OCFA. MES has a complete full service division dedicated to Genesis Rescue Tools. Maintaining Genesis Lifetime Warranty requires annual service by a certified hydraulic technician. OCFA will decide time of year which, MES will schedule the service and make rounds to each station conducting service. Service Tech will have loaner tools to place on apparatus while service in progress to ensure in-service during service for that company. If OCFA decides on certifying one of their own members, OCFA will



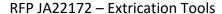
create their schedule for service to meet their needs.

Identify who will perform maintenance work, and describe how and where preventative maintenance is performed. All service and/or repairs are addressed on location, if repair can't be remedied onsite a loaner tool is issued for department use. Annual service is scheduled in advance, OCFA will choice month best suiting operational needs, MES will repeat service every year maintaining lifetime warranty. OCFA has choice if annual service is conducted in house. Genesis will send a member back to factory for service training.

#### **Section 2.8.4 Device Repairs:**

- a. Include a cost schedule for repairs that fall outside warranty and service agreements.

  Descriptions should include labor and parts costs schedules. Genesis offers a free training program for simple hydraulic tool repair, it's completely OCFA decision if simple wear and tear repairs are conducted in house. Training would offer ability for OCFA to replace couplers, whip hoses, exchange cutter blades, handle guards. Please see attached cost schedule for parts and labor (if OCFA chooses not to do in house basic repairs). Please see attached cost proposal.
- b. The proposal should also indicate conditions under which equipment will be repaired on-site or will require shipping to another location, turn-around times for repairs, availability of loaner equipment while equipment is out-of-service, and responsibility for packing and shipping costs and services. Preference of MES and Genesis Rescue Systems service would consist of on-site repair, if repair cannot be remedied on-site loaner tool will be issued until OCFA tool returned. Turn-around times for off-site repairs average 10-14 days. Loaner tools with 24 hours of notification either hand delivered or shipped to OCFA. MES is responsible for pick up and drop off for loaner and repair tools. If repair needed and deemed incidental all repairs can be handled onsite. MES service van carries full line of replacement parts. If any incidental repair requires shipping OCFA will be responsible for costs.





#### **Section 2.9 Implementation Requirements:**

- a.2.8.1 Delivery: What is the estimated delivery lead time for the initial purchase of 17 Gas Hydraulic Rescue Tool Sets after receipt of Purchase Order? Delivery of equipment within 60 days. Genesis delivery time is 45 days with receipt of order.
- b. 2.8.2 Training Requirements: Describe in detail, your firm's training program. This description shall include, but not be limited to, the training curriculum, estimated time required for each training session, background of instructors and include samples materials appropriate to the training. Genesis will mold the in-service training to meet the needs of OCFA. In-service training consists on use of equipment and daily checks for all 3 shifts. OCFA will determine the length and time required to complete training for your department. Extrication "Train the Trainer" program also available to OCFA at your request. Training would cover all todays latest techniques on bread and butter extrication. Please see attached flyer for training. Jerry Swift heads operations including training for Genesis Rescue Systems. Jerry has traveled to 23 different countries conducting training and dedicated to the program he developed.





# Genesis Rescue Systems Warranty

(This is a Limited Warranty. Please read it carefully)

#### WHO IS PROTECTED

The Genesis Limited Warranty provides, with few exceptions, that all Genesis Rescue Tools and parts are warranted against defects in materials and workmanship for the lifetime of the tools. If we determine that one of the Rescue Tools is defective, we will, at our option, repair or replace any of the components.

#### **EXCLUSIONS**

This Warranty is limited and protects only the original owner and covers all defects in material and workmanship with exceptions specified as follows: (1) damage caused by accident, any unreasonable use or neglect (including the lack of periodic and necessary maintenance), deterioration, wear and tear, or mishandling; (2) damage occurring during shipment (claims should be presented to the carrier); (3) damage to or deterioration of any accessory other than Genesis accessories (4) damage and breakages from failure to follow instructions contained in your owner's manual and use of tools in operations other than reasonable extrication and other rescue; (5) damage resulting from repairs or alterations by someone other than Genesis. or an authorized Genesis. Service Center.

#### **TO OBTAIN WARRANTY PERFORMANCE**

If your Genesis product ever needs service, write or call your Genesis Service Center. You may be asked to send your unit to the factory for repair. Please do not ship your product without prior authorization. This warranty is exclusive and Genesis makes no other warranty of any kind whatsoever, expressed or implied, with respect to the products sold by it, whether as to merchantability, fitness for a particular purpose or any matter. No distributor, agent, employee, or representative of Genesis has any authority whatsoever, to bind to any affirmation, representation or warranty concerning Genesis products or parts, except as stated herein.

#### WHO PAYS FOR WHAT

Genesis will pay labor and material for a period of one year and thereafter all material expense for all repairs covered by this warranty, for the lifetime of the equipment, as long as you own and properly maintain and handle the equipment subject to the discussed exclusions. If necessary repairs are not covered by this warranty, or if a unit is examined which is not in need of repair, you will be charged for the repairs or the examination. You must pay any shipping charges incurred in getting your Genesis products to and from an Genesis Service Center, or to the factory.

#### **EXCLUSION OF CERTAIN DAMAGES**

Genesis liability is limited to the replacement at our option, of any defective product and shall in no event include incidental or consequential commercial damages of any kind. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion of incidental or consequential damages, so th above limitations and exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state. The purpose of this exclusive remedy shall be to provide the buyer with repair or replacement of products or parts sold by Genesis which have been found to be defective in materials or workmanship. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as Genesis is willing and able to repair or replace said defective products or parts in the prescribed manner.

# REPAIR PRICING



WWW.GENESISRESCUE.COM

# PROPOSAL FOR COST SCHEDULE FOR REPAIRS

Part Number	Description	Price Each
ART.106.252.7	PLASTIC WEBER HANDLE GUARD	\$10.00
ART.OSC.BK	BLACK WHIP END	\$95.00
810.181.7	HANDLE STAR KNOB SCREW	\$15.00
284.874.0	D-HANDLE C-365 CUTTER	\$392.00
284.874.0	D-HANDLE ALL-9 CUTTER	\$392.00
285.091.5	D-HANDLE C-236 NXTGEN CUTTER	\$495.00
1062396	SIDE-HANDLE S-53 SPREADER	\$125.00
1060295	TOP-HANDLE S-53 SPREADER	\$320.00
ART.590.200.1	OSC MALE W/ DUST CAP	\$190.00
ART.590.100.2	OSC FEMALE W/DUST CAP	\$210.00
ART.182.303.5	BLADE ALL-9 CUTTER	\$980.00
ART.105.048.5	BLADE C-365 CUTTER	\$980.00
ART.107.850.2	BLADE C-236 NXTGEN CUTTER (WITH INSERT)	\$1,290.00
ART.107.598.3	INSERT C-236 NEXTGEN CUTTER	\$290.00







# FREE TRAINING OPPORTUNITY Company Level Extrication Training

The entire year of 2017

Genesis Rescue Systems and MES Fire
Is offering complimentary "Company Level" classes.

You pick the topic and provide the vehicles We will bring the Instructors, equipment and scenarios- *FREE!* 

# **Pick Your Topic**

Intermediate / Advanced Stabilization: This class covers basic vehicle preparation, stabilization using cribbing & chocks and moves into Tension Buttress Stabilization using the Kodiak Systems or equipment found on your department apparatus. Once the fundamentals are mastered, vehicles will be placed in precarious positions to test the abilities of the crew. This class requires a machine on-site capable of positioning vehicles; such as an end-loader.

Maximizing Hydraulic Tool Use: This class will show rescuers how to utilize the full capabilities of their spreaders, cutters & rams. Evolutions will include: Purchase point techniques on late model automobiles, side wall removal, roof removals, 5th door maneuvers, 3rd door maneuvers, dash lifts & dash roll ups. Tips on what to avoid, coordinating an extrication plan (IAP) & how to handle new exotic metals will also be covered.

"ROLL OVER" Incidents: Simple extrications take a new twist when the car is no longer on all four wheels. This class will deal with handling cars on their roofs, hoods, sides, under larger vehicles and against objects such as barriers, walls and poles. We will cover Tension Buttress Stabilization, 5th door maneuvers, tunneling and floor pan removal.

## FREE TRAINING REQUEST FORM

The training conducted will run 4-8 consecutive hours. The maximum students allowed in one class will be 10. One free training class will be provided per department **through Dec 31**st **2017**. It is highly recommended that a rescue mannequin is provided for the class. The hosting department should supply at least three, four door vehicles for maximum training opportunities. For additional information, contact Jerry Swift 480-220-4624 Genesis Rescue Systems Regional Operations Manager or your local MES Dealer 480-967-6100

Date:	Dates Available for Training:
Department Name:	
Department Address:	
Location of Training S	ite:
Fire Chief Name:	Training Officer:
Person In-Charge of H	ydraulic Rescue Tools:
Name of Person Requ	esting Class:
E-mail Address:	Phone Number:
TOPIC SELECTION (Cr	eck One):

- INTERMEDIATE / ADVANCED STABILIZATION
- MAXIMIZING HYDRAULIC TOOL USE
- ROLL OVER INCIDENTS
- AIR-BAG OPERATIONS



EMAIL REQUEST BACK TO JERRY. <u>J.swift@live.com</u>
OR CALL 480-220-4624

VISIT www.GenesisRescue.com to download FREE Training Videos!



## **ATTACHMENT H: EQUIPMENT SPECIFICATIONS**

### ATTACHMENT H: EQUIPMENT SPECIFICATIONS

The purpose of this specification is to establish the minimum requirements for Gas Hydraulic Extrication Tools and related components to be used by the Orange County Fire Authority. It is not the intention of this agency to write out vendors of similar or equal equipment of the types specified. This section describes OCFA expectations for the equipment to be acquired.

### PROPOSER RESPONSE TO RFP GUIDELINES

**Specification – Proposer's Response:** All proposers are required to indicate whether or not they meet the entirety of each specification by placing a checkmark ( $\checkmark$ ) in the "Meets specification exactly- YES or NO" space at the end of each numbered section. If the proposer is not going to furnish the item **EXACTLY** as is described in this specification, they must indicate a **NO** ( $\checkmark$ ) even though they may feel they are providing an alternative item that equals or exceeds the requirements of this specification. For each "EXCEPTION" taken, the proposer must include a detailed technical description of what they will furnish as well as a full explanation of why the exception equals or exceeds the item in the specifications. For scoring purposes this should be written on the lines provided under each section. If more space is needed the proposer should reference the location of the full explanation.

Each proposer is ultimately responsible to ensure that their proposal fully complies with all requirements. All items submitted should be current production year, new, never used and be the manufacturer's latest design, equipped as specified and include all of the latest features. The equipment offered should conform to the basic requirements listed. All proposals should include all of the manufacturer's standard items as shown on manufacturer's printed/published literature.

**Exceptions –** All exceptions, deviations, or variances from the specifications should be expressly identified and listed on the lines provided under each item. If more space is needed, write the specification item number and notes on a separate sheet. The absence of an explanation in the provided lines may result in a lower overall score and be considered non-compliant. All exceptions will be detailed in explanation to clearly indicate what the proposer is offering. Approved exceptions will not be considered as refusal or reluctance to comply. All indications of "NO" will be considered for the merit of the explanation provided. The total number of "NO" responses will not be considered as negative toward the manufacturer, dealer, or their proposal. "NO" indications WITHOUT EXPLANATION will be considered as unwilling to comply and will be graded as such. Furthermore; if "YES" is indicated and it is otherwise indicated that the specification is not met it will result in a lower overall score. **All exceptions, alternates, or suggested substitutions with an associated cost, whether a cost increase or decrease, should not be documented on the proposal document, but should be submitted along with the Pricing Page uploaded separately.** 

### **Exception Example**

The basic warranty for tools and parts should be warranted against defects in materials and workmanship for the lifetime of the tools. A sample of the warranty should be provided with the proposal.

opoda	Meets Specifications Exactly: YES NO✓
Acceptable Response	If no, explain: Proposer does not offer a lifetime warranty. Our base warranty is three years. Full details can be found on the exceptions Page – Continue to exception # - 1.0
Unacceptable Response	If no, explain: We do not have this warranty Continue to exception # - 1.0

### 3.1 GASOLINE POWERED HYRAULIC TOOLS

**General** – Proposal for the Gasoline Powered Hydraulic tools should include the following pieces of equipment at a minimum.

- Power Unit High Pressure, 10,500 psi, Gasoline Powered
- High Pressure Spreader
- High Pressure Curved Blade Cutter
- High Pressure Lightweight Straight Blade Cutter
- High Pressure 3 Stage Telescoping Ram
- High Pressure Single Piston Push/Pull Ram
- High Pressure Extension Hoses
- Push/Pull Ram Accessory Kit

Each piece of equipment should meet or exceed the requirements of the most current version of NFPA 1936. Failure to meet the NFPA standard must be noted within the explanation space provided under each specified tool below. Testing data, measurements and weights should be shown in the spaces provided for each tool.

The basic warranty for tools and parts including but not limited to blades and tips should be warranted against defects in materials and workmanship for the lifetime of the tools unless otherwise specified within this RFP. A sample of the warranty should be provided with the proposal. Any exceptions to this warranty should be included in response and referenced below.

Meets Specifications Exactly:	YESX	NO	
Explanation if "NO":			
Continue to exception # -			

### 3.2 POWER UNIT Genesis Simo Outlaw Pump w/Electric

Four Cycle Simultaneous Power U	nit						
Length	18		Inche	es			
Width	18		Inche	es			
Weight w/ Full Fluids	98.5		lbs.				
Operating Pressure	10,500		PSI				
Fuel Type (Circle All Available)	Gas	Yes		Diesel	Yes	Electric	Yes
Hydraulic Fluid Type	Mineral Oil Hydraulic Fluid						
Engine Make	Honda						
Engine Horse Power	6.5		HP				
Number of Tools Simultaneously	1			or		2 - Y	ES
Coupler Type (Circle One)	Single -	YES		or			
NFPA 1936 Compliant	Yes			or			
Noise Production / Decibel Level	3 feet - 86 dE	3	F	ull Powe	er	15 feet - 77	dB

### **Specifications**

Meets Specifications Exactly:

- Power unit should be a 4 stroke gasoline motor and produce 10,500 PSI
- The power unit will consist of a hydraulic pump in a reservoir driven by an engine.
- The reservoir capacity must be able to support two tools simultaneously and utilize mineral oil or equivalent.
- The engine may have an electronic ignition for ease of starting and low maintenance requirements.
- The muffler shall have a spark arrestor to limit ignition sources.
- The engine may be outfitted with both electric and pull cord starter.
- The integral generator charges the battery while the engine is running.
- The unit shall be able to provide power to operate two (2) tools simultaneously or one (1) tool in overdrive and shall be equipped with control valves to allow switching from two (2) tool operation to a one (1) tool use in overdrive operation.
- Each tool shall be able to operate independently and be able to obtain full pressure and flow at the same time.

NO

• The power unit shall have two (2) quick-connect couplings with dust caps.

YFS

- The couplings shall allow for disconnection and changing of tools under pressure.
- The power unit shall have rubber anti-vibration feet to limit unwanted movement.

Explanation if "NO":
List competitive advantages: Simo pump equipped w/overdrive feature. Pump w/electric
start. Pump uses Honda motor and meets all California emitions. Pump equipped with single
OSC coupler. Overdrive feature runs tools twice as fast and builds pressure twice as fast.
Continue to exception # -

### Alternate 1 Power Unit - Genesis Outlaw 6.5hp Pump

Four Cycle Simultaneous Power U	nit		
Length	18	Inches	
Width	14.8	Inches	
Weight w/ Full Fluids	67	lbs.	
Operating Pressure	10,500	PSI	
Fuel Type (Circle All Available)	Gas - Yes	Diesel Yes	Electric Yes
Hydraulic Fluid Type	Mineral Oil Hydraulic Fluid		
Engine Make	Honda		
Engine Horse Power	6.5	HP	
Number of Tools Simultaneously	1	or	2 - YES
Coupler Type (Circle One)	Single	or	
NFPA 1936 Compliant	Yes	or	
Noise Production / Decibel Level	3 feet - 86 dB	Full Power	15 feet - 77 dB

### **Specifications**

Meets Specifications Exactly:

- Power unit should be a 4 stroke gasoline motor and produce 10,500 PSI
- The power unit will consist of a hydraulic pump in a reservoir driven by an engine.
- The reservoir capacity must be able to support two tools simultaneously and utilize mineral oil or equivalent.
- The engine may have an electronic ignition for ease of starting and low maintenance requirements.
- The muffler shall have a spark arrestor to limit ignition sources.
- The engine may be outfitted with both electric and pull cord starter.
- The integral generator charges the battery while the engine is running.
- The unit shall be able to provide power to operate two (2) tools simultaneously or one (1) tool in overdrive and shall be equipped with control valves to allow switching from two (2) tool operation to a one (1) tool use in overdrive operation.
- Each tool shall be able to operate independently and be able to obtain full pressure and flow at the same time.

NO

• The power unit shall have two (2) quick-connect couplings with dust caps.

YFS

- The couplings shall allow for disconnection and changing of tools under pressure.
- The power unit shall have rubber anti-vibration feet to limit unwanted movement.

Explanation if "NO":
List competitive advantages: Simo pump standard with overdrive allowing double tool speed
which builds pressure twice as fast. Small compact design creates more compartment space.
Highest flow rates possible offered of all Genesis pumps, equipped with single connection OSC.
Continue to exception # -

### 3.3 SPREADER (updated) Genesis S53 Spreader

Meets Specifications Exactly: YES X

High Pressure Spreader	Simo		Overdrive
Length	35.2	Inches	
Width	11.8	Inches	
Depth	8.5	Inches	
Weight	45.2	lbs.	
Spreading Distance	31.5	Inches	
Highest Spreading Force (HSF)	18,277	PSI	
Lowest Spreading Force (LSF)	11,870	PSI	
Highest Pulling Force (HPF)	14,837	PSI	
Lowest Pulling Force (LPF)	8,678	PSI	
Time- Fully close to Max Spread	13.2	Seconds	7.4
Time – Max Spread to Fully Close	9.1	Seconds	7
Operating Pressure	10,500	PSI	10,500
Coupler Type (Circle One)	Single	or	
NFPA 1936 Compliant	Yes	or	

### **Specifications**

- The High Pressure Spreading tool shall operate at 10,500 PSI, being consistent with the power unit.
- The tool shall produce a spreading distance of no less than 30 inches
- The tips are to have multi-function surfaces for improved gripping and peeling of different materials.
- The tips are to be removable for ease of repair or replacement but will be locked in place with removable pins.
- Arms of the tool with removable tips shall accommodate 3/8" chain hooks and lock into place with pins.
- The arms of the tool shall be made of aluminum alloy and attach with removable links for ease of repair or replace.
- The body of the tool shall be an aluminum alloy for its lightweight, strength and durability. The tool shall have a handle across the center allow easy manipulation.
- The valve/trigger control mechanism must provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The spreader tool shall be protected by a pressure relief valve that prevents it from being over pressurized.

NO

Explanation if "NO":
List competitive advantages: All Genesis tools offer a variable speed push/button control
operation. Spreader tips have variable angle gripping surface with a 3 spikes added to
each tip. S53 has a collapsible handle which allows movement in tight to reach areas
enhancing rescuer options of positioning. Handle guard ensures no accidental activation.
Continue to exception # -

### 3.3 SPREADER (updated) Alternate 1 Spreader - Genesis S49 Spreader

High Pressure Spreader	Simo		Overdrive
Length	33.5	Inches	
Width	9.7	Inches	
Depth	8.2	Inches	
Weight	45.2	lbs.	
Spreading Distance	28	Inches	
Highest Spreading Force (HSF)	13,725	PSI	
Lowest Spreading Force (LSF)	11,025	PSI	
Highest Pulling Force (HPF)	10,800	PSI	
Lowest Pulling Force (LPF)	8,555	PSI	
Time- Fully close to Max Spread	13.6	Seconds	8
Time – Max Spread to Fully Close	9.1	Seconds	7.8
Operating Pressure	10,500	PSI	10,500
Coupler Type (Circle One)	Single	or	
NFPA 1936 Compliant	Yes	or	

### **Specifications**

Masta Cusalfisations Fusation

- The High Pressure Spreading tool shall operate at 10,500 PSI, being consistent with the power unit.
- The tool shall produce a spreading distance of no less than 30 inches
- The tips are to have multi-function surfaces for improved gripping and peeling of different materials.
- The tips are to be removable for ease of repair or replacement but will be locked in place with removable pins.
- Arms of the tool with removable tips shall accommodate 3/8" chain hooks and lock into place with pins.
- The arms of the tool shall be made of aluminum alloy and attach with removable links for ease of repair or replace.
- The body of the tool shall be an aluminum alloy for its lightweight, strength and durability. The tool shall have a handle across the center allow easy manipulation.
- The valve/trigger control mechanism must provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The spreader tool shall be protected by a pressure relief valve that prevents it from being over pressurized.

Meets Specifications Exactly: YES _ NO
Explanation if "NO": Spreader meets all specifications except spreading distance, S49 has
28 inches of spreading distance.
List competitive advantages: Push/button variable speed control. Lightweight and compact,
collapsable side handle, high rated performance ratings. Spreader tips are removable for ease
of adding chain package w/hooks.
Continue to exception # -

### 3.4 CURVED BLADE CUTTER Genesis ALL 9 Cutter

High Pressure Curved Blade Cutte	er Simo		Overdrive
Length	33.7	Inches	
Width	10.8	Inches	
Depth	9.2	Inches	
Weight	48.3	lbs.	
Max Opening	7.1	Inches	
Max Cutting Force	369,000	PSI	369,000
Time- Fully close to Max Spread	8	Seconds	4
Time – Max Spread to Fully Close	8.8	Seconds	4.4
Operating Pressure	10,500	PSI	10,500
Blade Description	Forged tool steel	curved blade design.	
Coupler Type (Circle One)	Single	or	
NFPA 1936 Compliant	Yes	or	
NFPA Test Data: A 9,	B_9, C	9 , D 9 ,	E 9

### **Specifications**

Moote Creations Evently

- The cutter opening shall be no less than 7 inches from tip to tip at full spread.
- The cutting blades shall have a curved design to maximize cutting force
- Operating pressure shall be consistent with power unit and operate at 10,500 psi.
- The cutter blades shall be constructed of forged metal from a solid piece of material providing strength and durability.
- The cutter must provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The cutter shall utilize mineral oil or equivalent as the driving fluid.
- The cutter tool body shall be constructed out of forged aluminum for is lightweight, strength and durability.
- Cutting tool shall have a quick-connect pigtail coupling with dust cap.
- Cutter shall have two handles. One located on the center balance point and one at the rear providing control of the tool. Rear handle should have a guard providing protection to the operator.
- Tool speeds and NFPA testing performance should be documented. NFPA "A"-"E" ratings should meet or exceed a minimum score of eight (8) on each test. Vendor to provide third party NFPA testing verification.

meets Specifications Exactly: TES NO
Explanation if "NO":
List competitive advantages: Highest NFPA rated cutter of any manufacture. Rotatable 360
handle, handle is ergonomically friendly for ease of use. Push/button control allows for precision
control of tool in and around the patient during extrication. Cutter has LED lights .
Continue to exception # -

### Alternate 1 Cutter: Genesis C365 Cutter

High Pressure Curved Blade Cutte		Overdrive	
Length	31.9	Inches	
Width	10	Inches	
Depth	9.3	Inches	
Weight	48.5	lbs.	
Max Opening	6.9	Inches	
Max Cutting Force	365,000	365,000	
Time- Fully close to Max Spread	8	4	
Time – Max Spread to Fully Close	8.8	4.4	
Operating Pressure	10,500	10,500	
Blade Description	Forged tool steel	pelican tip curved bla	ide
Coupler Type (Circle One)	Single		
NFPA 1936 Compliant	Yes	or	
NFPA Test Data: A 8,	B <u>9</u> , C_	8 , D 9 ,	E9

### **Specifications**

- The cutter opening shall be no less than 7 inches from tip to tip at full spread.
- The cutting blades shall have a curved design to maximize cutting force
- Operating pressure shall be consistent with power unit and operate at 10,500 psi.
- The cutter blades shall be constructed of forged metal from a solid piece of material providing strength and durability.
- The cutter must provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The cutter shall utilize mineral oil or equivalent as the driving fluid.
- The cutter tool body shall be constructed out of forged aluminum for is lightweight, strength and durability.
- Cutting tool shall have a quick-connect pigtail coupling with dust cap.
- Cutter shall have two handles. One located on the center balance point and one at the rear providing control of the tool. Rear handle should have a guard providing protection to the operator.
- Tool speeds and NFPA testing performance should be documented. NFPA "A"-"E" ratings should meet or exceed a minimum score of eight (8) on each test. Vendor to provide third party NFPA testing verification.

Meets Specifications Exactly: YES NOX
Explanation if "NO": Cutter meets all specifications except cutter opening, cutter opening
6.9 inches.
List competitive advantages: Second highest NFPA performing cutter on the market.
Rotable 360 degree handle, lights on front of cutter allowing operator a clear view before cutting
Cutter blades of forged tool steel backed by a lifetime warranty of breaking.
Continue to exception # -

### Orange County Fire Authority 3.4 CURVED BLADE CUTTER RFP JA2172 – Extrication Tools

Alternate 2 Cutter: Genesis C236 Cutter NexGen

High Pressure Curved Blade Cutte	r Simo		Overdrive
Length	33	Inches	
Width	10.6	Inches	
Depth	9.4	Inches	
Weight	44.8	lbs.	
Max Opening	7.9	Inches	
Max Cutting Force	236,000	236,000	
Time- Fully close to Max Spread	7.8	3.4	
Time – Max Spread to Fully Close	8	3.9	
Operating Pressure	10,500	10,500	
Blade Description	Forged tool blade	with insert curved bl	ade
Coupler Type (Circle One)	Single		
NFPA 1936 Compliant	Yes	or	
NFPA Test Data: A 8,	B <u>9</u> , C_	<u>8</u> , D <u>9</u> ,	E9

### **Specifications**

- The cutter opening shall be no less than 7 inches from tip to tip at full spread.
- The cutting blades shall have a curved design to maximize cutting force
- Operating pressure shall be consistent with power unit and operate at 10,500 psi.
- The cutter blades shall be constructed of forged metal from a solid piece of material providing strength and durability.
- The cutter must provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The cutter shall utilize mineral oil or equivalent as the driving fluid.
- The cutter tool body shall be constructed out of forged aluminum for is lightweight, strength and durability.
- Cutting tool shall have a quick-connect pigtail coupling with dust cap.
- Cutter shall have two handles. One located on the center balance point and one at the rear providing control of the tool. Rear handle should have a guard providing protection to the operator.
- Tool speeds and NFPA testing performance should be documented. NFPA "A"-"E" ratings should meet or exceed a minimum score of eight (8) on each test. Vendor to provide third party NFPA testing verification.

Meets Specifications Exactly: YES NO
Explanation if "NO":
List competitive advantages: Cutter blades have inserts that are meant to chip away verse
gouge cutter blades, maintaing a sharp cutting surface improves cutter performance. Inserts
offer costs savings verse replacing cutter blades, blades can be exchanged in the field.
Continue to exception # -

### 3.5 STRAIGHT BLADE CUTTER Genesis C50 Mini Cutter

High Pressure Lightweight Straigh	Overdrive				
Length	13.4	13.4 Inches			
Width	2.8	Inches			
Depth	5.2	Inches			
Weight	9.9	lbs.			
Max Opening	1.8	1.8 Inches			
Max Cutting Force	31,000	31,000			
Time- Fully close to Max Spread	3.5	2.7			
Time – Max Spread to Fully Close	3.1	2.5			
Operating Pressure	10,500	10,500			
Blade Description	Forged tool stee	е			
Coupler Type (Circle One)	Single	or			
NFPA 1936 Compliant	Yes	or			
NFPA Test Data: A 4,	B <u>3</u> , C_	2 , D 4 ,	E <u>3</u>		

### **Specifications**

- The lightweight straight blade cutter shall operate at 10,500 psi.
- The cutter jaws shall have an opening of at least 1.5 inches.
- The trigger/valve mechanism shall have a "deadman" valve whereby stopping operation when finger pressure is released.
- The body of the cutter shall be made of high strength aircraft grade, aluminum alloy.
- The cutters blade shall be made of forged steel.
- Tool speeds and NFPA testing performance should be documented. NFPA "A"-"E" ratings should meet or exceed a minimum score of six (6) on each test. Vendor to provide third party NFPA testing verification.

Meets Specifications Exactly: YES NO _X_
Explanation if "NO": According to bid specification under NFPA minimum score of six on
each NFPA "A"-"E" categorized test, unaware of any manufacture meeting this specification
for a mini cutter with opening no less than 1.5in.
List competitive advantages: Added capability to hard to reach ares of entrapment around
patient. Cutter lightweight, easy to operate with one hand, fine trigger control for accurate cuts.
Highest NFPA performance ratings of any mini cutter offered.
Continue to exception # -

### 3.6 THREE STAGE TELESCOPING RAM Genesis 3-Stage tele-Ram

Three Stage Telescoping Ram	Simo		Overdrive		
Length Closed	18.9	18.9 Inches			
Length Fully Extended	51.6	Inches			
Width	8.7	Inches			
Depth	4.3	Inches			
Weight	38.6	lbs.			
Stage 1 Operation Max PSI	60,500	PSI	60,500		
Stage 2 Operation Max PSI	29,000	PSI	29,000		
Stage 3 Operation Max PSI	10,200	10,200 PSI			
Operating Pressure	10,500 PSI		10,500		
Time – Fully close to Max Spread	41	Seconds	21		
Time – Max Spread to Fully Close	24 Seconds		20		
Coupler Type (Circle One)	Single	or			
NFPA 1936 Compliant	Yes	or			

### **Specifications**

- The ram shall extend to a distance of no less than 50 inches.
- The extension ram shall have an operating pressure of 10,500 psi and that is consistent with power unit.
- The ram shall provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The ram tool shall have aggressive hardened steel feet for durability, gripping and to minimize slippage.
- The extension ram shall have a quick-connect pigtail with dust cap.
- The ram tool shall have a dual pilot check valve. This is to prevent accidental movement of the piston rod in the event of a loss of power.

Meets Specifications Exactly: YES NO
Explanation if "NO":
List competitive advantages: Ram offers maximum use of three rams in one. Push/button
finger control allows minmal effort to operate ram with little firefighter fatigue.
Continue to exception # -

### 3.7 SINGLE PISTON PUSH/PULL RAM Genesis Push/Pull 41" Ram

Single Piston Push/Pull Ram	Simo		Overdrive
Length Closed	25.4	Inches	
Length Fully Extended	41.5	Inches	
Width	4	Inches	
Depth	8	Inches	
Weight	35.7	lbs.	
Max Pushing Force	32,300	PSI	
Max Pulling Force	10,300	PSI	
Operating Pressure	10,500	PSI	10,500
Time – Fully close to Max Extended	18.5	Seconds	9
Time – Max Extended to Fully Close	9.5	Seconds	8.9
Coupler Type (Circle One)	Single	or	
NFPA 1936 Compliant	Yes	or	

### **Specifications**

- This single piston extension ram should have a minimum open of around 35 inches.
- The operating pressure shall be 10,500 psi and consistent with power unit.
- The ram must provide a "deadman" actuator whereby the tool stops functioning when finger pressure on the trigger is released.
- The ram tool shall have aggressive hardened steel feet for durability, gripping and minimize slippage.
- The extension ram shall have a quick-connect pigtail with dust cap.
- The push/pull ram shall accept accessories to allow attachment of extensions, chain shackles and different size heads.

Meets Specifications Exactly: YES X NO NO
Explanation if "NO":
List competitive advantages: Light weight and universal. Only push/pull ram to offer a ram
accessory kit with V-heads. Push/button finger controls allow speed of ram to meet rescuer
expectation of controlled lift.
Continue to exception # -

### 3.8 PUSH/PULL RAM ACCESSORY KIT

Accessory Kit for Push/Pull Ram							
Extensions - 3	Yes	or					
Pulling Chain Hooks	Yes	or					
Pulling Adapters	Yes	or					
Heads	Yes	or					

### **Specifications**

The	push/ρι	ıll ram	accessory	∕ kit	shall	include	the	items	listed	above.

Meets Specifications Exactly: YES _X NO
Explanation if "NO":
List competitive advantages: Ram accessory works with both ram and spreader offered in
this RFP. Genesis offers a patented V-head with slip-fit which adapts to both bottom and top of
ram. The V-head takes the place of rocker panel supports, V-head will pierce rocker channel to
exact position and angle of ram for safety and gain point of contact throughout your throw of push
Continue to exception # -

### 3.9 HYDRAULIC HOSES

High Pressure Extension Hoses							
Hose Length	32' per section	Feet					
Quantity Proposed per Power Unit	2	Each					
List colors available	Red and Yello						
Coupler Type (Circle One)	Single - Yes	or					
NFPA 1936 Compliant	Yes	or					

### **Specifications**

- Each hose to be at least 30 feet in length and will be equipped with quick-connect couplings on both ends.
- Couplings to allow disconnect and reconnect tools while system is under pressure.
- The hose shall be equipped with bend restriction device on both ends to alleviate kinking.
- Hose shall be of a single line to allow ease of storage and deployment.
- Hoses should be of the highest quality available from the manufacture.
- Dealer should supply hose specifications and warranty within this proposal

Meets Specifications Exactly: YESX NO
Explanation if "NO":
List competitive advantages: Single line hose offers a light weight alternative to twin line
hose. Offered in bright colors easily seen in aluminated nighttime operations. Coaxial hose is
NFPA complaint, construction of high density thermoplastic construction with bend resistant fibe
Continue to exception # -
3.10 WARRANTY
of the products. Proposal should include all warranty documents for each tool as well as all requirements for maintaining the warranty throughout the life of the products. (Additional warranty or logistical services that the proposer might provide above and beyond the requirements of this specification should be listed below.)
Meets Specifications Exactly: YESX NO
Explanation if "NO":
List competitive advantages: Gensis Rescue Tools are lifetime warranted to origional owner
for lifetime. OCFA to maintain lifetime warranty have rescue tools sewrviced once a year by a
certified technician. Technician can be either dealer or department trained personal.
Continue to exception # -

### **3.11 PARTS**

Circle the most appropriate answer:								
1.	<ol> <li>All or most parts are OEM specific and therefore are not available the vendors.</li> </ol>	hrough	multiple					
Parts	ts list is included as requested: (Circle one) YES or							

For ease of maintenance and parts accessibility, OCFA desires that parts be commercially available through multiple suppliers when possible. If the parts are commercially available it should be noted in the questionnaire. The dealer should provide a full parts list for all equipment specified within this RFP. The parts list should also include any crossover model/item numbers.

### **Additional Features**

Information on additional features, specifications, or capabilities not specifically addressed in the equipment specifications above shall be provided in this section for review and consideration.

### **Supplemental Documentation**

Any supplemental documentation which supports the proposed equipment shall be included in this section. This may include, but is not limited to:

- a. Product specifications
- b. User guides
- c. Configuration guides
- d. Maintenance guides

# Genesis Open & Close times based on 50' hose lengths

Tool	Simo Open	Simo Close	Simo Overdrive Open	Simo Overdrive Close
19-51 3 Stage Ram Art.593.413.3	41	24	21	20
41" Push Pull Art.041.900.1	18.5	9.5	9	8.9
All-9 Cutter Art.593.535.0	8.0	8.8	4.0	4.4
C-365 Cutter Art.105.048.4	8.0	8.8	4.0	4.4
C-236 Cutter Art.106.949.8	7.8	8.0	3.4	3.9
C-50 Mini Cutter Art.283.339.5	3.5	3.1	2.7	2.5
S-53 Spreader Art.105.812.5	13.2	9.1	7.4	7
S-49 Spreader Art.593.363.3	13.6	9.1	8.0	7.8
Decibel Reading	3 Feet	15 Feet		
Mach III Simo Honda GX120 5.5 hp Art.593.509.1	86 dB	77 dB		
Additional Notes. These times may vary based on th	e type of nose, conne	ctions, length of hose	e and coupler selecte	eu.
Additional Notes: These times may vary based on th	e type of hose, conne	ctions, length of hose	e and coupler selecte	ed.

ART.011.520.5

# GENESIS

WWW.GENESISRESCUE.COM

### PUSH-PULL RAM AND SPREADER ACCESSORY KIT





These kits add a whole new dimension to our selection of rams. All of our ram accessories are designed to do specific jobs making special rescue situations easier.

### **CONTENTS**

ANGLED "V" HEAD	
"X" HEAD	
10" EXTENSION	
5" EXTENSION	
3" SLIP FIT EXTENSION	1
SPANNER WRENCH	
PULLING SHACKLES A	AND PINS
PULLING ADAPTERS	
10 FOOT CHAIN	
12 FOOT CHAIN	



# ART.059.991.3HE

### **CERTIFICATIONS**

- NFPA 1936:2015 COMPLIANT
- ISO 9001:2008



RESCUE SYSTEMS

WWW.GENESISRESCUE.COM

### MACH III OUTLAW WITH ELECTRIC START





This pump features two tool connections and two tool simultaneous use.

The Mach III OUTLAW has two seperate pumping circuits that operate independently. This pump is available with a Honda gas engine with electric start. The Mach III OUTLAW has our patented Overdrive feature. This feature allows one tool to be used at twice the speed by combining the flow from both pump circuits into one, giving that tool more power to cut or spread.

### **SPECIFICATIONS**

ART.059.991.3HE - 5.5 HP MOTOR

LENGTH(IN/MM) - 17.75/451 WIDTH(IN/MM) - 17.25/435 DEPTH(IN/MM) - 25/635

WEIGHT(LBS/KGS) - 96/43.5 WITH FLUID OPERATING PRESSURE MAX(PSI/BAR) - 10,500/720 ENGINE - HONDA 5.5

**BATTERY TYPE - 12VDC 18AH** 

SHIPPING WEIGHT(LBS/KGS) - 106/48 BOX SIZE(FT3/M3) - 6.25/.177 BOX DIMENSION(IN/MM) - 24x18x25-610x457x635 ART.059.991.E65 - 6.5 HP MOTOR

LENGTH(IN/MM) - 17.75/451 WIDTH(IN/MM) - 17.25/435 DEPTH(IN/MM) - 25/635

WEIGHT(LBS/KGS) - 98.5/44.7 WITH FLUID OPERATING PRESSURE MAX(PSI/BAR) - 10,500/720 ENGINE - HONDA 6.5

**BATTERY TYPE - 12VDC 18AH** 

SHIPPING WEIGHT(LBS/KGS) - 109/49.4 BOX SIZE(FT3/M3) - 6.25/.177 BOX DIMENSION(IN/MM) - 24x18x25-610x457x635



# **Mach III Outlaw**

P/N: ART.593.508.1

Technical Report Number 71.308.593

### **Specifications**

Length (in/mm)	18/457
Width (in/mm)	14.8/376
Depth (in/mm)	18.8/478
Weight (lbs/kgs)	67/30.4
Operating Pressure (psi/bar)	10,500/720
Hydraulic Fluid Type	Mineral
Hydraulic Fluid Capacity (gal/l)	1.5/6
Engine Type	6.5 HP Honda
NFPA Compliant	Yes

Independently Tested and Certified to NFPA 1936 by:





### **Features**

- Two Tool Connection Two Tool Simultaneous Use
- Two Separate Pumps that Operate Independently
- World Patented Overdrive Feature Allows One Tool to be Operated at Twice the Speed
- Easy to Read Fluid Sight Glass
- Lightweight and Dependable
- 20 Degree Angle of Operation
- Low Oil level Safety Shut Off
- 2 Safety Bypass Valves Hydraulic fluid



NFPA 1936:2015 COMPLIANT

ISO 9001:2008



RESCUE SYSTEMS

WWW.GENESISRESCUE.COM

# SINGLE LINE COAXIAL HOSE





Genesis Single Line Co-axial hose offers the convenience of "hot swapping" of tools. The tools can be changed with the hoses charged. This allows the rescuers to change tools at the end of the hose without relieving the fl ow of hydraulic fl uid at the pump. The "pressure" and the "return" hoses are housed in a single unit, allowing more convenient hose usage and storage.

**MATERIAL - THERMOPLASTIC** 



Part Number	Description	Weight (lbs - kgs)	Max Pres- sure PSI - Bar	NFPA Compliant
ART.105.260.2	16' SINGLE LINE COAXIAL HOSE YELLOW	17 - 3.3	10,500-720	Yes
ART.105.260.5	16' SINGLE LINE COAXIAL HOSE RED	17 - 3.3	10,500-720	Yes
ART.105.260.3	32' SINGLE LINE COAXIAL HOSE YELLOW	17 - 5.5	10,500-720	Yes
ART.105.260.6	32' SINGLE LINE COAXIAL HOSE RED	17 - 5.5	10,500-720	Yes
ART.105.260.4	50' SINGLE LINE COAXIAL HOSE YELLOW	17 - 7.7	10,500-720	Yes
ART.105.260.7	50' SINGLE LINE COAXIAL HOSE RED	17 - 7.7	10,500-720	Yes





IGTH(IN/MM) - 35.2/895

**OTH(IN/MM)** - 11.8/300

PTH(IN/MM) - 8.5/215

IGHT(LBS/KGS) - 45.2/20.5

ERATING PRESSURE(PSI/BAR) - 10,500/720

READING DISTANCE(IN/MM) - 31.5/800

X SPREADING FORCE(LBF/KN) - 94,644/421

X PULLING FORCE(LBF/KN) - 22,480/100

PA 1936 COMPLIANT - YES

PA 1936 LEVEL RATING - N/A

WEST SPREADING FORCE(LBF/KN) - 11,870/52.8

CHEST SPREADING FORCE(LBF/KN) - 18,277/81.3

WEST PULLING FORCE(LBF/KN) - 8,678/38.6

SHEST PULLING FORCE(LBF/KN) - 14,837/66



# **S53 SPREADER**

PART #: ART.105.812.5

CERTIFICATE #: Z2B 14 04 62475 014

### **NFPA RATING**

HSF HIGHEST SPREADING FORCE								<b>\</b>	
LBF	3K	5K	7K	9K	11K	13K	15K	17K	

HSF = 18,277

LSF LOWEST SPREADING FORCE					>	<			
LBF	3K	5K	7K	9K	11K	13K	15K	17K	

LSF = 11,870

HPF HIGHEST PULLING FORCE						>	<b>V</b>		
LBF	3K	5K	7K	9K	11K	13K	15K	17K	

HPF = 14,837

LPF LOWEST PULLING FORCE			>	<b>\</b>					
LBF	3K	5K	7K	9K	11K	13K	15K	17K	

LPF = 8,678

### ADDED VALUE OF NFPA 1936 COMPLIANCE

purchasing a new rescue tool system you are g a ten year commitment to your department. stem you choose will be in use for at least ten Certainly our tools will last much longer than ars, but after this period of time new advances these tools obsolete. Over this ten year periuill use your rescue system hundreds, if not nds of times. Each time you go out on a call red to know your rescue tool system is going to n as well as it did when it was first purchased.

### ntent of NFPA 1936

even years of work, on August 13, 1999, the ssued NFPA 1936 Standard on Powered Rescue rstems, 1999 Edition. This standard was designed are fire & rescue departments a better way to are rescue tool systems and to guarantee the of compliant systems. To be compliant a tool ndergo rigorous testing. The following are a few tests our spreaders had to endure to receive 936compliance.

### ading and Pulling Performance Test

PA needed to address the inconsistencies in pecifications published by the various resol manufactures. Some manufactures will 1 forces measured or calculated at points on eader that are, for all practical purposes, are ble. Spreading forces published as "per arm" stantly misleading. Although this manufacturer ot instruct you to multiply the published "force n" times two, this is what the end user usually es. This is not correct and is one of the reasons PA developed a spreading and pulling pernce test. This test was devised in order to bring nity to spreading tool specifications. These tests e your department with legitimate means of aring compliant tools. The forces are measured eading as HSF (highest spreading force) and LSF t spreading force). For pulling they are meaas HPF (highest pulling force) and LPF (lowest force). No longer do you have to compare ling forces that are achieved in unusable placng the spread, or on the spreader arm. This also ers the blatant misrepresentation of spreading listed "per arm".

lest the tool's spreading force is measured 1 from the end of the tip at 10 uniformly spaced

points, ranging from the closed position to 95% of the maximum opening. The value of the highest point is referred to as the highest spreading force (HSF) and the lowest point as the lowest spreading force (LSF). A similar test is performed to determine the pulling force. This is done by measuring the pulling force at 10 uniformly spaced points, ranging from the full open to 95% of the closed position. The value for the highest point is referred to as the highest pulling force (HPF) and the lowest point as the lowest pulling force (LPF). This gives a very precise way to measure these forces and a meaningful way of comparing them.

### **Overload Test**

To ensure user safety and proof of proper design, the spreader is put through an overload test. This test is done in the spread- ing and pulling direction of the tool. To test the spreading direction a load of 150 % of the HSF is applied to the tips of the tool for 1 minute. After that a

pulling test is performed. A load of 150% of the HPF is applied for 1 minute. After this test the tool is operated and checked for leaks or other defects.

### **Dynamic Endurance Test**

This test is designed to prove the integrity and longevity of the tool. In this test the tool undergoes 1000 continuous op- eration cycles while under a spreading load equal to 80% of the LSF and while under a pulling load equal to 80% of the LPF. After this test the tool is subjected to a

load equal to 110% of the HSF in the spreading direction, then a force equal to 110% of the HPF in the pulling direction. At this time the tool is disconnected from the power unit to simulate a sudden power loss. Any creep of the tool will be measured. The control valve will be operated in all three positions (open, neutral and close) for 3 minutes each. If there is over 5 mm of creep the tool fails the test.

### **Endurance Test**

This test is designed to prove the integrity of the deadman control. The tool is subjected to 5000 cycles at no-load. A cycle is defined as the activation of the control for opening and closing the tool and its r lease, allowing the control to return to the neutral position.

### Overpressurization Relief Device

According to the NFPA 1936 standard, only tools with an extension area of the activating piston rod assembly that is greater than 1.5 times the retract area of the piston rod assembly, is required to have an overpressurization relief device. In general what this means is that usually only hydraulic rams will need this device. As an added feature all Genesis rescue tools come with an over pressurization relief device built into the control

assembly. At American Rescue Technology we believe that this relief device is essential to all rescue tools. This device protects the rescuer against catastrophic failures of the tool and personal injury.

It is a requirement of NFPA 1936 that the manufacturer publish the performance specifications of each tool in accordance with the standard, therefore if you're considering purchasing new rescue tools be sure to request the NFPA performance specifications of each tool. If they cannot supply you this information rest assured those tools are not NFPA compliant. You should require all rescue tool companies to give detailed performance specifications, printed by the manufacturer, that conform to NFPA 1936. If their tools are not compliant ask why. NFPA 1936 was issued to stop companies from providing misleading performance figures, and help departments purchasing rescue

equipment to get a high quality rescue system that performs as specified, from the first day it is put into service until the day it is replaced. This standard was written for you, use it and feel assure



RESCUE SYSTEMS

2780 CULVER AVE
KETTERING, OHIO 45414
TEL: 1.937.293.6240
FAX: 1.937.293.7049
WWW.GENESISRESCUE.COM



NFPA 1936:2015 COMPLIANT

ISO 9001:2008



RESCUE SYSTEMS

WWW.GENESISRESCUE.COM

# SINGLE LINE COAXIAL HOSE





Genesis Single Line Co-axial hose offers the convenience of "hot swapping" of tools. The tools can be changed with the hoses charged. This allows the rescuers to change tools at the end of the hose without relieving the fl ow of hydraulic fl uid at the pump. The "pressure" and the "return" hoses are housed in a single unit, allowing more convenient hose usage and storage.

**MATERIAL - THERMOPLASTIC** 



Part Number	Description	Weight (lbs - kgs)	Max Pres- sure PSI - Bar	NFPA Compliant
ART.105.260.2	16' SINGLE LINE COAXIAL HOSE YELLOW	17 - 3.3	10,500-720	Yes
ART.105.260.5	16' SINGLE LINE COAXIAL HOSE RED	17 - 3.3	10,500-720	Yes
ART.105.260.3	32' SINGLE LINE COAXIAL HOSE YELLOW	17 - 5.5	10,500-720	Yes
ART.105.260.6	32' SINGLE LINE COAXIAL HOSE RED	17 - 5.5	10,500-720	Yes
ART.105.260.4	50' SINGLE LINE COAXIAL HOSE YELLOW	17 - 7.7	10,500-720	Yes
ART.105.260.7	50' SINGLE LINE COAXIAL HOSE RED	17 - 7.7	10,500-720	Yes





### **Specifications**

Length Closed(in/mm)	25.4/646
Width (in/mm)	4.0/101
Depth (in/mm)	8.0/204
Weight (lbs/kgs)	35.7/16.2
Length Open (in/mm)	41.5/1054
Max. Spreading Force (lbs/kN)	32,300/143.7
Max. Pulling Force (lbs/kN)	10,300/45.8
Operating Pressure (psi/bar)	10,500/720
NFPA Compliant	Yes
HSF (lbs/kN)	32,300/143.7
LSF (lbs/kN)	32,300/143.7
HPF (lbs/kN)	10,300/45.8
LPF (lbs/kN)	10,300/45.8
Travel Distance (in/mm)	16.1/408
Opening Time (sec)	12.1
Closing Time (sec)	5.2

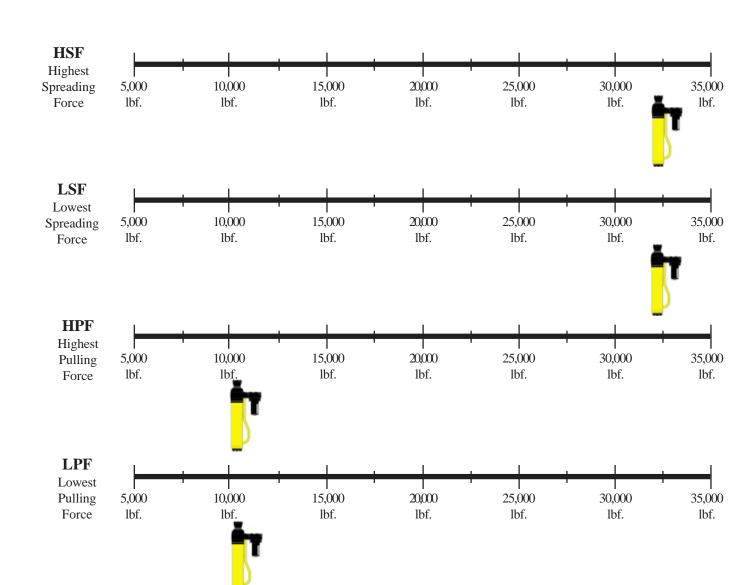
Independently Tested and Certified to NFPA 1936 by:



# 41" Ram

P/N: ART.041.900.1

Technical Report Number 71.308.593



# The Added Value of NFPA 1936 Compliance

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### The Intent of NFPA 1936

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### **Spreading and Pulling Performance Test**

This test was devised in order to bring uniformity to spreading tool specifications. These tests provide your department with legitimate means of comparing compliant tools. The forces are measured for spreading as HSF (highest spreading force) and LSF (lowest spreading force). For pulling they are measured as HPF (highest pulling force) and LPF (lowest pulling force).

In this test the ram's spreading force is measured at the end of the attachment at 3 uniformly spaced points, ranging from the closed position to 95% of the maximum opening. The value of the highest point is referred to as the highest spreading force (HSF) and the lowest point as the lowest spreading force (LSF). A similar test is performed to determine the pulling force. This is done by measuring the pulling force at 3 uniformly spaced points, ranging from the full open to 95% of the closed position. The value for the highest point is referred to as the highest pulling force (HPF) and the lowest point as the lowest pulling force (LPF). This gives a very precise way to measure these forces and a meaningful way of comparing them.

### **Endurance Test**

This test is designed to prove the integrity of the deadman control. The tool is subjected to 5000 cycles at no-load. A cycle is defined as the activation of the control for opening and closing the tool and its release, allowing the control to return to the neutral position.

### Overload Test

To ensure user safety and proof of proper design, the ram is put through an overload test. This test is done in the spreading and pulling direction of the tool. To test the spreading direction a load of 150 % of the HSF is applied to the ends of the tool for 1 minute. After that a pulling test is performed. A load of 150% of the HPF is applied for 1 minute. After this test the tool is operated and checked for leaks or other defects.

### **Dynamic Endurance Test**

This test is designed to prove the integrity and longevity of the tool. In this test the tool undergoes 1000 continuous operation cycles while under a spreading load equal to 80% of the LSF and while under a pulling load equal to 80% of the LPF. After this test the tool is subjected to a load equal to 110% of the HSF in the spreading direction, then a force equal to 110% of the HPF in the pulling direction. At this time the tool is disconnected from the power unit to simulate a sudden power loss. Any creep of the tool will be measured. The control valve will be operated in all three positions (open, neutral and close) for 3 minutes each. If there is over 5 mm of creep the tool fails the test.

### **Ram Bend Test**

This test is designed to determine how resistant the ram is to bending. An external off-center load equal to 125% of the spreading force measured at 95% of its full extension is applied to the ram while the ram is extended 95% of its stoke. The load is applied at a point not more than 1/2" from the farthest edge of the pushing surfaces and in the same radial plane.

Applying a load this way tests the integrity of the piston rod. After this load is applied the tool is tested to see if it can reach its highest spreading force (HSF) and/or highest pulling force (HPF). If it can still produce these forces, not leak, and show no visible signs of damage; then the ram passes the test.

### **Overpressurization Relief Device**

According to the NFPA 1936 standard, only tools with an extension area of the activating piston rod assembly that is greater than 1.5 times the retract area of the piston rod assembly, is required to have an overpressurization relief device. In general what this means is that usually only hydraulic rams will need this device. As an added feature all Genesis rescue tools come with an overpressurization relief device built into the control assembly. At American Rescue Technology we believe that this relief device is essential to all rescue tools. This device protects the rescuer against catastrophic failures of the tool and personal injury.

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2780 Culver Ave. Kettering, OH 45429 (937) 293-6240 Tel. (937) 293-7049 Fax www.genesisrescue.com



# C 365 Cutter

P/N: ART.105.048.4

**Z2B** 11 02 62475 010

### **Specifications**

Length (in/mm): 31.9/811 Width (in/mm): 10.7/273 Height (in/mm): 9.3/237 Weight (lbs/kg): 48.5/22 Max. Opening (in/mm): 6.9/175 Max. Cutting Force (lbs/kN): 365,000/1622 Max. Op. Pressure (psi/bar): 10,500/720 NFPA Compliant: NFPA 1936 Level Rating: A8/B9/C8/D9/E9

"B" A-36 HR Flat Bar

1/4 x 1/2

3/8"

 $1/4 \times 1$ 1/4 x 2

5/8"

 $1/4 \times 3$ 

3/4"

1/4 x 4

7/8"

 $3/8 \times 3$ 

3/8 x 4

 $3/8 \times 5$ 

1 1/2"

3/8 x 6

1 3/4"

Yes

Sch. 40 A-53 Gr. B **Round Pipe** 

"C"

3/8"

3/4"

1/2"

2 1/2"

1 1/4"



3 1/2"

**Independently Tested** and Certified to NFPA 1936 by:



"D" A-500 Grade B **Square Tubing** 











1 1/4"











"E"

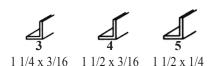
A-36 **Angle Iron** 





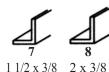














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### **Overload Test**

To ensure user safety and proof of proper design, the cutter is put through an overload test. This test is achieved by applying 150% of the rated system pressure to the cutter. On a 10,000 psi system the input pressure is raised to 15,000 psi. After this pressure is applied, the tool is operated. The tool shall be operational for one operation cycle. This cycle is from the fully opened position to the fully closed position then back to fully opened. During this operation the tool shall be fully functional with no leaks. This tests all internal seals and pressure vessels (ie. cylinder body).

### **Cutting Test**

The cutting test was devised to give a standardized way of evaluating cutters. The results allow the department to evaluate the performance of a cutter. This test requires that the cutter cuts 12 pieces of the largest material in each of the five catagories. The tool is only allowed one set of cutting blades and each cut is made in a single continuous motion completely severing the piece of material. In order to pass this test a cutter must cut a minimum of 60 pieces of material of at least the minimum size in each category.

This is an example of a cutting test result as you see below. If the cutter cuts . . .

"A": a 3/4" round bar "B": a 1/4" x 4" flat bar

"C": a 2" ID schedule 40 pipe

"D": a 1" x .08" wall thickness square tubing

"E": a 1 1/2" x 3/16" thick angle iron

the performance level of the cutter would be:

### A4/B5/C6/D3/E4

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This test is designed to prove the integrity of the deadman control and the cutter over its lifetime. The tool is subjected to 5000 cycles at no-load. A cycle is defined as the activation of the control for opening and closing the tool and its release, allowing the control to return to the neutral position. After this test the tool is subjected to the integrity test.

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Revised May 2010



# C-236 Cutter

P/N: ART.593.585.7

**Certificate Number** 028-71352879

"A"
<b>A-36 HR</b>
<b>Round Bar</b>



















1 3/4"

**Specifications** 

33/838
10.4/265
9.3/236
43.9/19.9
8.0/204
236,250/1050
10,500/720
Yes
A8/B9/C8/D9/E9



<b>\-36</b>	HR
₹lat	Rar



 $1/4 \times 3$ 

 $1/4 \times 4$ 

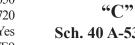
 $3/8 \times 3$ 











Sch. 40 A-53 Gr. B **Round Pipe** 



















**Independently Tested** and Certified to NFPA 1936 by:



"D" A-500 Grade B **Square Tubing** 





























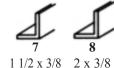
















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"E": a 1 1/2" x 3/16" thick angle iron

the performance level of the cutter would be:

### A4/B5/C6/D3/E4

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Revised March 2010



# All 9 Cutter

P/N: ART.593.535.0

028-71352879

~ P	
Length (in/mm):	33.7/855
Width (in/mm):	10.8/273
Height (in/mm):	9.2/234
Weight (lbs/kg):	48.3/21.9
Max. Opening (in/mm):	7.1/180
Max. Cutting Force (lbs/kN):	369,000/1640
Max. Op. Pressure (psi/bar):	10,500/720
NFPA Compliant:	Yes
NEDA 1026 Lavel Dating:	4.0/D0/C0/D0/E0

•
1
3/8"



















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NFPA 1936 Level Rating:	A9/B9/C9/D9/E9



A-36	HK
Flat	Bar



 $1/4 \times 3$ 

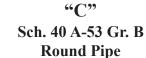
 $1/4 \times 4$ 

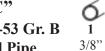
 $3/8 \times 3$ 





























**Independently Tested** and Certified to



"D" A-500 Grade B **Square Tubing** 





















"E"

A-36 **Angle Iron** 





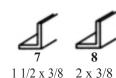
















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# Revised March 2010 HSF Highest

# S49-XL Spreader

P/N: ART.593.363.3

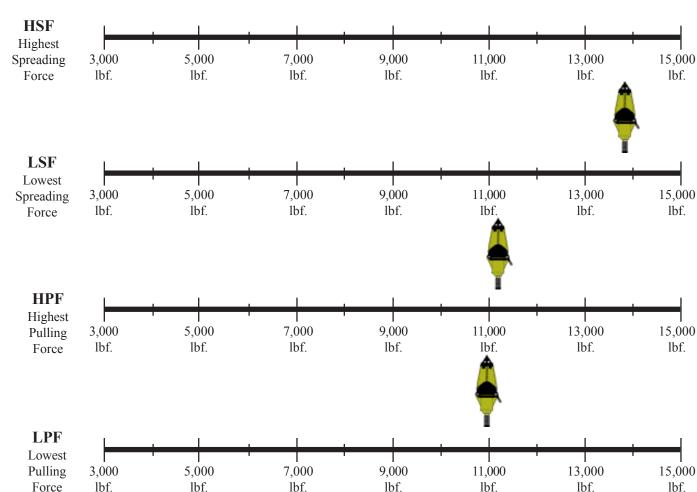
**Certificate Number Z2B 07 01 62475 003** 

### **Specifications**

Length (in/mm)	33.5/851
Width (in/mm)	9.7/245
Depth (in/mm)	8.2/208
Weight (lbs/kgs)	45.2/20.5
Spreading Distance (in/mm)	28/710
Spreading Force Up To (lbs/kN)	74,115/329.4
Pulling Force Up To (lbs/kN)	10,935/48.6
Operating Pressure (psi/bar)	10,500/720
NFPA Compliant	Yes
HSF (lbs/kN)	13,455/59.8
LSF (lbs/kN)	11,250/50.0
HPF (lbs/kN)	10,935/48.6
LPF (lbs/kN)	8,887/39.5

### Independently Tested and Certified to NFPA 1936 by:





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### The Intent of NFPA 1936

After seven years of work, on August 13, 1999, the NFPA issued NFPA 1936 Standard on Powered Rescue Tool Systems, 1999 Edition. This standard was designed to ensure fire & rescue departments a better way to compare rescue tool systems and to guarantee the quality of compliant systems. To be compliant a tool must undergo rigorous testing. The following are a few of the tests our spreaders had to endure to receive NFPA 1936 compliance.

### **Spreading and Pulling Performance Test**

The NFPA needed to address the inconsistencies in force specifications published by the various rescue tool manufactures. Some manufactures will publish forces measured or calculated at points on the spreader that are, for all practical purposes, are unusable. Spreading forces published as "per arm" are blatantly misleading. Although this manufacturer does not instruct you to multiply the published "force per arm" times two, this is what the end user usually assumes. This is not correct and is one of the reasons the NFPA developed a spreading and pulling performance test.

This test was devised in order to bring uniformity to spreading tool specifications. These tests provide your department with legitimate means of comparing compliant tools. The forces are measured for spreading as HSF (highest spreading force) and LSF (lowest spreading force). For pulling they are measured as HPF (highest pulling force) and LPF (lowest pulling force). No longer do you have to compare spreading forces that are achieved in unusable places during the spread, or on the spreader arm. This also uncovers the blatant misrepresentation of spreading forces listed "per arm".

In this test the tool's spreading force is measured 1 inch in from the end of the tip at 10 uniformly spaced points, ranging from the closed position to 95% of the maximum opening. The value of the highest point is referred to as the highest spreading force (HSF) and the lowest point as the lowest spreading force (LSF). A similar test is performed to determine the pulling force. This is done by measuring the pulling force at 10 uniformly spaced points, ranging from the full open to 95% of the closed position. The value for the highest point is referred to as the highest pulling force (HPF) and the lowest point as the lowest pulling force (LPF). This gives a very precise way to measure these forces and a meaningful way of comparing them.

### **Overload Test**

To ensure user safety and proof of proper design, the spreader is put through an overload test. This test is done in the spreading and pulling direction of the tool. To test the spreading direction a load of 150 % of the HSF is applied to the tips of the tool for 1 minute. After that a pulling test is performed. A load of 150% of the HPF is applied for 1 minute. After this test the tool is operated and checked for leaks or other defects.

### **Dynamic Endurance Test**

This test is designed to prove the integrity and longevity of the tool. In this test the tool undergoes 1000 continuous operation cycles while under a spreading load equal to 80% of the LSF and while under a pulling load equal to 80% of the LPF. After this test the tool is subjected to a load equal to 110% of the HSF in the spreading direction, then a force equal to 110% of the HPF in the pulling direction. At this time the tool is disconnected from the power unit to simulate a sudden power loss. Any creep of the tool will be measured. The control valve will be operated in all three positions (open, neutral and close) for 3 minutes each. If there is over 5 mm of creep the tool fails the test.

### **Endurance Test**

This test is designed to prove the integrity of the deadman control. The tool is subjected to 5000 cycles at no-load. A cycle is defined as the activation of the control for opening and closing the tool and its release, allowing the control to return to the neutral position.

### **Overpressurization Relief Device**

According to the NFPA 1936 standard, only tools with an extension area of the activating piston rod assembly that is greater than 1.5 times the retract area of the piston rod assembly, is required to have an overpressurization relief device. In general what this means is that usually only hydraulic rams will need this device. As an added feature all Genesis rescue tools come with an overpressurization relief device built into the control assembly. At American Rescue Technology we believe that this relief device is essential to all rescue tools. This device protects the rescuer against catastrophic failures of the tool and personal injury.

It is a requirement of NFPA 1936 that the manufacturer publish the performance specifications of each tool in accordance with the standard, therefore if you're considering purchasing new rescue tools be sure to request the NFPA performance specifications of each tool. If they cannot supply you this information rest assured those tools are not NFPA compliant. You should require all rescue tool companies to give detailed performance specifications, printed by the manufacturer, that conform to NFPA 1936. If their tools are not compliant ask why. NFPA 1936 was issued to stop companies from providing misleading performance figures, and help departments purchasing rescue equipment to get a high quality rescue system that performs as specified, from the first day it is put into service until the day it is replaced. This standard was written for you, use it and feel assured that you have purchased a high quality rescue tool system.



2780 Culver Ave. Kettering, OH 45429 (937) 293-6240 Tel. (937) 293-7049 Fax www.genesisrescue.com



Length (in/mm)
Width (in/mm)
Height (in/mm)
Weight (lbs/kgs)
Opening (in/mm)
Max. Cutting Force (lbs/kN)
Max. Operating Pressure (psi/bar)
NFPA 1936 Compliant
NFPA Level Rating
Open Time (Sec)
Close Time (Sec)
Shipping Weight (lbs/kg)
Box Size (ft³/M³)
Box Dimensions (in/mm)

13.4/341 2.8/70 5.2/131 9.9/4.5 1.8/45 31,000/138 10,500/720 Yes A4/B3/C2/D4/E3 2 3 12/5.4 .69/.020 21 x 12 x 4.75 533 x 305 x 121

**Features:** Constructed of high strength, aircraft grade, aluminum alloy forgings with a wear resistant anodized finish. The blades on the C-50 Cutter are forged steel. The C-50 Cutter has a variable speed, "deadman" control with load holding capability and over-pressurization relief.





19/52 3 STAGE TELESCOPIC RAM

### SPECIFICATIONS:

LENGTH (in/mm): 18.9/480

WIDTH (in/mm): 8.7/221

4.3/109 DEPTH (in/mm):

WEIGHT (lbs/kgs): 38.6/17.5

LENGTH OPEN (in/mm): 51.6/1310

OPERATING PRESSURE (psi/bar): 10,500/720

1ST STAGE MAX FORCE (lbf/KN): 60,500/269

2ND STAGE MAX FORCE (lbf/KN): 29,000/129

3RD STAGE MAX FORCE (lbf/KN): 10,200/45.4

NFPA COMPLIANT: YES

SHIPPING WT (lbs/kgs): 45/20.4

BOX SIZE  $(ft^3/M^3)$ : 0.91/0.026

BOX DIMENSIONS (in/mm): 27.5x9.5x6/

699x241x152















# CERTIFICATE

No. Z2 16 11 62475 026

Holder of Certificate: American Rescue Technology Inc.

2780 Culver Ave Kettering OH 45429

USA

Production Facility(ies):

40028, 62475

Certification Mark:



Product: Hydraulic appliances, hand operated

(Rams)

Model(s): 19" LD RAM (W/OSC); 23" LD RAM (W/OSC);

30" RAM (W/OSC); 33" RAM (W/OSC);

71" CROSSRAM (W/OSC), 51" RAM (W/OSC); 65" RAM (W/OSC); 29"/47" RAM (W/OSC);

12"/24" RAM (W/OSC); 12"/24" XL RAM (W/OSC); 20"/44" XL RAM (W/OSC); 21"/46" RAM (W/OSC); 23"/49" XL RAM (W/OSC); 23"/50" XL RAM (W/OSC); 26"/59" RAM (W/OSC); 26"/59" XL RAM (W/OSC); 19"/52" XL RAM (W/OSC); TOE JACK; 21" RAM;

31" RAM; 41" RAM; 55" RAM

Parameters: Nominal pressure: 70 MPa

further parameters see attachment 1 - 22.

Tested according to: NFPA 1936:2015

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. See also notes overleaf.

Test report no.:

028-713060613-501

Valid until:

2021-11-14

Date, 2016-11-29

(Gerhard Hintereder)

Page 1 of 23



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#### CERTIFICATE

No. Z2 16 03 62475 022

Holder of Certificate: American Rescue Technology Inc.

2780 Culver Ave Kettering OH 45429

USA

Production Facility(ies):

62475, 40028

Certification Mark:



Product: Hydraulic appliances, hand operated

Power unit

Model(s): MACH III MINI SIMO; MACH III MINI SIMO W/OSC;

MACH IV SIMO WITH HOSE REELS W/OSC;

MACH IV SIMO WITH COAXIAL HOSE REELS W/OSC: M1X MINI PUMP (Electric 110V); M1X MINI PUMP W/OSC;

M1X MINI PUMP W/OSC (Electric 110V); B COMPACT W/OSC; E COMPACT W/OSC; MACH III OUTLAW; MACH III OUTLAW W/OSC; M1X MINI PUMP; M1X MINI PUMP W/OSC

Parameters: 70 MPa Nominal pressure:

Further parameters see attachment 1 - 13

Tested according to: NFPA 1936:2015

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. See also notes overleaf.

Test report no.: 028-713060613-101-1

Valid until: 2021-03-17

Date, 2016-03-29 ( Gerhard Hintereder )

Page 1 of 14



#### Attachment 1 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### **Parameter**

Type:

MACH III MINI SIMO

Article number:

ART.059.991.3E

Technical Data

Type of engine:

Electric motor 230 VAC/ 50Hz

Supply rate/high pressure:

2 x 0,55 l/min / 70 MPa

Supply rate/low pressure:

2 x 2,15 l/min / 15 MPa

Turbo

Supply rate/high pressure: Supply rate/low pressure:

1 x 1,1 l/min / 70 MPa 1 x 4,3 l/min / 15 MPa

Hydraulic oil:

according to factory standard 61000137

Power: Idle-speed:

1,3 kW 3000 rpm

Valve equipment:

2x dump valves

Nominal pressure:

70 MPa

Geometrical Data

Length:

436 mm

Width:

319 mm

Height:

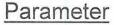
447 mm

Total weight:

31 kg

### **(** CERTIFICADO **( CEPTU D N K A T** • 删 **(** CERTIFICATE ZERTIFIKAT +

#### Attachment 2 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.





Type: MACH III MINI SIMO W/OSC

Article number: ART.593.510.5

Technical Data

Type of engine: Electric motor 230 VAC/ 50Hz

Supply rate/high pressure: 2 x 0,55 l/min / 70 MPa Supply rate/low pressure: 2 x 2,15 l/min / 15 MPa

Turbo

Supply rate/high pressure: 1 x 1,1 I/min / 70 MPa Supply rate/low pressure: 1 x 4,3 l/min / 15 MPa

Hydraulic oil: according to factory standard 61000137

Power: 1,3 kW Idle-speed: 3000 rpm

Valve equipment: 2x dump valves

70 MPa Nominal pressure:

Geometrical Data

436 mm Length: Width: 319 mm Height: 447 mm

Total weight: 31 kg

#### Attachment 3 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type: MACH IV SIMO WITH HOSE REELS W/OSC

Article number: ART.107.871.8

Technical Data

Type of engine: Electric motor 230 VAC/ 50Hz

Supply rate/high pressure: 2 x 1,2 l/min / 70 MPa Supply rate/low pressure: 2 x 2,3 l/min / 20 MPa

Turbo

Supply rate/high pressure: 1 x 2,6 l/min / 70 MPa Supply rate/low pressure: 1 x 4,6 l/min / 20 MPa

Hydraulic oil: according to factory standard 61000137

Power: 2,0 kW ldle-speed: 1500 rpm

Valve equipment: 2x dump valves

Maximal load:

Sound power level L(wA): 95,6 dB(A) Sound pressure level L(pA): 82,1 dB(A)

Nominal pressure: 70 MPa

Geometrical Data

Length: 720 mm Width: 440 mm Height: 500 mm

Total weight: 78,5 kg

# **ERTIFIKAT** ◆

#### Attachment 4 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type:

MACH IV SIMO WITH COAXIAL

HOSE REELS W/OSC

Article number:

ART.106.928.3

Technical Data

Type of engine:

Electric motor 230 VAC/ 50Hz

Supply rate/high pressure:

2 x 1,2 l/min / 70 MPa

Supply rate/low pressure:

2 x 2,3 l/min / 20 MPa

Turbo

Supply rate/high pressure: Supply rate/low pressure:

1 x 2,6 l/min / 70 MPa 1 x 4,6 I/min / 20 MPa

Hydraulic oil:

according to factory standard 61000137

Power: Idle-speed: 2.0 kW

Valve equipment:

1500 rpm 2x dump valves

Maximal load:

Sound power level L(wA):

95,6 dB(A)

Sound pressure level L(pA):

82,1 dB(A)

Nominal pressure:

70 MPa

Geometrical Data

Length:

736 mm

Width: Height: 440 mm 499 mm

Total weight:

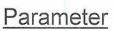
74 kg

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## CERTIFICAT

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#### Attachment 5 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.





Type: M1X MINI PUMP (Electric 110V);

Article number: ART.593.265.3

Technical Data

Type of engine: Electric motor 100 VAC, 50/60 Hz

Supply rate/high pressure: 1 x 0,5 l/min / 70 MPa Supply rate/low pressure: 1 x 2,3 l/min / 15 MPa

Hydraulic oil: according to factory standard 61000137

Power: 0,6 kW Idle-speed: 2780rpm

Valve equipment: 1x dump valves

Maximal load:

Sound power level L(wA): 80 dB(A) Sound pressure level L(pA): - dB(A)

70 MPa Nominal pressure:

Geometrical Data

Length: 413 mm Width: 288 mm 385 mm Height:

Total weight: 20,5 kg

# ZERTIFIKAT

#### Attachment 6 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type: M1X MINI PUMP W/OSC

Article number: ART.593.492.3

Technical Data

Type of engine: Electric motor 230 VAC, 50 Hz

Supply rate/high pressure: 1 x 0,5 l/min / 70 MPa Supply rate/low pressure: 1 x 2,3 l/min / 15 MPa

Hydraulic oil: according to factory standard 61000137

Power: 0,5 kW Idle-speed: 2800 rpm

Valve equipment: 1x dump valves

Maximal load:

Sound power level L(wA): 80 dB(A) Sound pressure level L(pA): - dB(A)

Nominal pressure: 70 MPa

Geometrical Data

Length: 413 mm Width: 288 mm Height: 385 mm

Total weight: 20,5 kg

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#### Attachment 7 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type: M1X MINI PUMP W/OSC (Electric 100V)

Article number: ART.593.513.1

Technical Data

Type of engine: Electric motor 100 VAC, 50/60Hz

Supply rate/high pressure: 1 x 0,5 l/min / 70 MPa Supply rate/low pressure: 1 x 2,3 l/min / 15 MPa

Hydraulic oil: according to factory standard 61000137

Power: 0,6 kW Idle-speed: 2780 rpm

Valve equipment: 1x dump valves

Maximal load:

Sound power level L(wA): 80 dB(A) Sound pressure level L(pA): - dB(A)

Nominal pressure: 70 MPa

Geometrical Data

Length: 413 mm Width: 288 mm Height: 385 mm

Total weight: 20,5 kg

#### Attachment 8 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type: B COMPACT W/OSC

Article number: ART.106.808.1

Technical Data

Type of engine: Electric motor 28 VDC

Supply rate/high pressure: 1 x 0,5 l/min / 70 MPa Supply rate/low pressure: 1 x 3,2 l/min / 10 MPa

Hydraulic oil: according to factory standard 61000137

Power: 0.5 kW

Valve equipment: 1x dump valves

Maximal load:

Sound power level L(wA): 95,6 dB(A) Sound pressure level L(pA): 82,1 dB(A)

Nominal pressure: 70 MPa

Geometrical Data

Length: 512 mm
Width: 200 mm
Height: 314 mm

Total weight: 11,9 kg

#### Attachment 9 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type:

E COMPACT W/OSC

Article number:

ART.105.035.4

Technical Data

Type of engine:

Electric motor 230 VAC, 50/60 Hz

Supply rate/high pressure: Supply rate/low pressure:

1 x 0.6 l/min / 70 MPa 1 x 2,7 l/min / 15 MPa

Hydraulic oil:

according to factory standard 61000137

Power:

1.5 kW

Valve equipment:

1x dump valves

Maximal load:

Sound power level L(wA): Sound pressure level L(pA): 91,2 dB(A) 78,8 dB(A)

Nominal pressure:

70 MPa

Geometrical Data

Length:

415 mm

Width:

195 mm

Height:

316 mm

Total weight:

12,5 kg

#### Attachment 10 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: MACH III OUTLAW

Article number: ART.593.338.2E

Technical Data

Type of engine: Electric motor 220 VAC/ 50Hz

Supply rate/high pressure: 2 x 0,55 l/min / 70 MPa Supply rate/low pressure: 2 x 2,15 l/min / 14 MPa

Turbo

Supply rate/high pressure: 1 x 1,1 l/min / 70 MPa Supply rate/low pressure: 1 x 4,3 l/min / 14 MPa

Hydraulic oil: according to factory standard 61000137

Power: 1,3 kW Idle-speed: 3000 rpm

Valve equipment: 2x dump valves

Nominal pressure: 70 MPa

Geometrical Data

Length: 559 mm
Width: 305 mm
Height: 508 mm

Total weight: 43,5 kg

#### Attachment 11 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type: MACH III OUTLAW W/OSC

Article number: ART.593.508.1E

Technical Data

Type of engine: Electric motor 220 VAC/ 50Hz

Supply rate/high pressure: 2 x 0,55 l/min / 70 MPa Supply rate/low pressure: 2 x 2,15 l/min / 14 MPa

Turbo

Supply rate/high pressure: 1 x 1,1 l/min / 70 MPa Supply rate/low pressure: 1 x 4,3 l/min / 14 MPa

Hydraulic oil: according to factory standard 61000137

Power: 1,3 kW ldle-speed: 3000 rpm

Valve equipment: 2x dump valves

Nominal pressure: 70 MPa

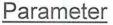
Geometrical Data

Length: 559 mm Width: 305 mm Height: 508 mm

Total weight: 43,5 kg

# ZERTIFIKAT +

#### Attachment 12 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.





Type: M1X MINI PUMP

Article number: ART.593.292.0

Technical Data

Type of engine: Electric motor 220 VAC, 50 Hz

Supply rate/high pressure: 1 x 0,5 l/min / 70 MPa Supply rate/low pressure: 1 x 2,3 l/min / 15 MPa

Hydraulic oil: according to factory standard 61000137

Power: 0,5 kW Idle-speed: 2800 rpm

Valve equipment: 1x dump valves

Maximal load:

Sound power level L(wA): 80 dB(A) Sound pressure level L(pA): - dB(A)

Nominal pressure: 70 MPa

Geometrical Data

Length: 414 mm Width: 293 mm Height: 427 mm

Total weight: 21,1 kg

### **(** CERTIFICADO **(** CEPTUФИКАТ 删 牔 CERTIFICATE ERTIFIKAT

#### Attachment 13 to Certificate No. Z2 16 03 62475 022 Firm: American Rescue Technology Inc.



#### Parameter

Type: M1X MINI PUMP W/OSC

Article number: ART.593.512.1

Technical Data

Type of engine: Electric motor 220 VAC, 50 Hz

Supply rate/high pressure: 1 x 0,5 l/min / 70 MPa Supply rate/low pressure: 1 x 2,3 l/min / 15 MPa

Hydraulic oil: according to factory standard 61000137

Power: 0.5 kW Idle-speed: 2800 rpm

Valve equipment: 1x dump valves

Maximal load:

Sound power level L(wA): 80 dB(A) Sound pressure level L(pA): - dB(A)

Nominal pressure: 70 MPa

Geometrical Data

Length: 414 mm Width: 293 mm Height: 427 mm

Total weight: 21,1 kg

Munich, 2015-03-29



#### CERTIFICATE

No. Z2 16 03 62475 023

Holder of Certificate: American Rescue Technology Inc.

> 2780 Culver Ave Kettering OH 45429

USA

Production Facility(ies):

Product:

62475, 40028

Certification Mark:



Hydraulic appliances, hand operated

Spreaders

Model(s): SL45-XL (W/OSC); S40XL (W/OSC);

S55 (W/OSC); S49XL (W/OSC); S53-XL (W/OSC); S60-XL (W/OSC); S80-XL (W/OSC); S20 (W/OSC)

Parameters: Nominal pressure: 70 MPa

Further parameters see attachment 1 - 8

Tested according to: NFPA 1936:2015

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. See also notes overleaf.

Test report no .: 028-713060613-401

Valid until: 2021-03-17

Date. 2016-03-29 (Gerhard Hintereder)

Page 1 of 9



Attachment 1 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: SL45-XL (W/OSC)

Art. No.: ART.107.137.3

Technical data

Width of opening: 600 mm Pulling distance: 441 mm

Spreading force:

1 - Lowest spreading force (LSF) 34,8 kN 2 - Highest spreading force (HSF) 47,0 kN

Pulling force:

1 - Lowest pulling force (LPF) 27,9 kN 2 - Highest pulling force (HPF 45,0 kN

Dimension:

Length: 766 mm Width: 243 mm Height: 196 mm

Total Weight: 14,6 kg

Nominal pressure: 70 MPa

Page 2 of 9

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Attachment 2 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: S40XL (W/OSC)

Art. No.: ART.593.080.4

Technical data

Width of opening: 700 mm Pulling distance: 563 mm

Spreading force:

1 - Lowest spreading force (LSF) 49,0 kN 2 - Highest spreading force (HSF) 61,9 kN

Pulling force:

1 - Lowest pulling force (LPF) 40,1 kN 2 - Highest pulling force (HPF 50,5 kN

Dimension:

Length: 791 mm Width: 248 mm Height: 199 mm

Total Weight: 20,3 kg

Nominal pressure: 70 MPa

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# CERTIFICAT CERTIFICADO

Attachment 3 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: S55 (W/OSC)

Art. No .: ART.593.618.7

Technical data

810 mm Width of opening: Pulling distance: 666 mm

Spreading force:

1 - Lowest spreading force (LSF) 43,5 kN 2 - Highest spreading force (HSF) 52,8 kN

Pulling force:

1 - Lowest pulling force (LPF) 29,5 kN 2 - Highest pulling force (HPF 43,0 kN

Dimension:

Length: 854 mm 245 mm Width: Height: 199 mm

Total Weight: 20,5 kg

Nominal pressure: 70 MPa

Page 4 of 9

#### Attachment 4 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### **Parameter**

S49XL (W/OSC) Type:

Art. No .: ART.593.364.1

Technical data

Width of opening: 710 mm Pulling distance: 561 mm

Spreading force:

1 - Lowest spreading force (LSF) 49,0 kN 2 - Highest spreading force (HSF) 61,0 kN

Pulling force:

1 - Lowest pulling force (LPF) 38,0 kN 2 - Highest pulling force (HPF 48,0 kN

Dimension:

Length: 766 mm Width: 243 mm Height: 199 mm

Total Weight: 19,9 kg

Nominal pressure: 70 MPa

Page 5 of 9

Attachment 5 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: S53-XL (W/OSC)

Art. No.: ART.105.812.5

Technical data

Width of opening: 800 mm Pulling distance: 645 mm

Spreading force:

1 - Lowest spreading force (LSF)2 - Highest spreading force (HSF)52,8 kN81,3 kN

Pulling force:

1 - Lowest pulling force (LPF) 38,6 kN 2 - Highest pulling force (HPF 66,0 kN

Dimension:

Length: 836 mm
Width: 299 mm
Height: 216 mm

Total Weight: 20,3 kg

Nominal pressure: 70 MPa

Page 6 of 9

Attachment 6 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: S60-XL (W/OSC)

Art. No.: ART.593.168.1

Technical data

Width of opening: 810 mm Pulling distance: 643 mm

Spreading force:

1 - Lowest spreading force (LSF) 63,0 kN 2 - Highest spreading force (HSF) 84,7 kN

Pulling force:

1 - Lowest pulling force (LPF) 45,2 kN 2 - Highest pulling force (HPF 63,5 kN

Dimension:

Length: 856 mm Width: 329 mm Height: 213 mm

Total Weight: 24,7 kg

Nominal pressure: 70 MPa

Page 7 of 9

Attachment 7 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: S80-XL (W/OSC)

Art. No.: ART.593.070.7

Technical data

Width of opening: 620 mm Pulling distance: 444 mm

Spreading force:

1 - Lowest spreading force (LSF) 87,7 kN 2 - Highest spreading force (HSF) 115,5 kN

Pulling force:

1 - Lowest pulling force (LPF) 60,0 kN 2 - Highest pulling force (HPF 95,8 kN

Dimension:

Length: 749 mm
Width: 329 mm
Height: 213 mm

Total Weight: 25,1 kg

Nominal pressure: 70 MPa

Page 8 of 9

#### Attachment 8 to Certificate No. Z2 16 03 62475 023 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: S20 (W/OSC)

Art. No.: ART.182.286.1

Technical data

Width of opening: 61 mm

Spreading force:

Highest spreading force (HSF) 248 kN

Dimension:

Length: 609 mm
Width: 150 mm
Height: 120 mm

Total Weight: 9,3 kg

Nominal pressure: 70 MPa

Munich, 2016-03-29

Gerhard Hintereder

Page 9 of 9





#### CERTIFICATE

No. Z2 16 03 62475 021

Holder of Certificate: American Rescue Technology Inc.

> 2780 Culver Ave Kettering OH 45429

USA

Production Facility(ies):

62475, 40028

Certification Mark:





Product: Hydraulic appliances, hand operated

Rescue cutters cutting tool

Model(s): C30 (W/OSC); C50 (W/OSC);

C105 (W/OSC; C140LD (W/OSC); C160 (W/OSC); C165 (W/OSC);

C185 (W/OSC); C185NXTgen (W/OSC);

C220 (W/OSC); C236 (W/OSC);

C236SL NXTgen (W/OSC); C270 (W/OSC);

C365 (W/OSC); ALL 9 (W/OSC);

MASS TRANSIT (W/OSC)

Parameters: Nominal pressure: 70 MPa

Further parameters see attachment 1 - 15

Tested according to: NFPA 1936:2015

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. See also notes overleaf.

Test report no.: 028-713060613-201

Valid until: 2021-03-17

Date, 2016-03-29 ( Gerhard Hintereder )

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Attachment 1 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: C30 (W/OSC)

Art. No.: ART.283.667.0

Technical data

Width of opening: 30 mm

Dimension:

Length: 388 mm
Width: 71 mm
Height: 129 mm

Total Weight: 3,9 kg

Nominal pressure: 70 MPa

Cutting class: A3, B2, C1, D2, E2

Page 2 of 16

Attachment 2 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: C50 (W/OSC)

Art. No.: ART.283.464.2

Technical data

Width of opening: 48 mm

Dimension:

Length: 423 mm Width: 71 mm Height: 138 mm

Total Weight: 4,3 kg

Nominal pressure: 70 MPa

Cutting class: A4, B3, C2, D4, E3

Page 3 of 16

Attachment 3 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: C105 (W/OSC)

Art. No .: ART.593.678.0

Technical data

Width of opening: 100 mm

Dimension:

Length: 575 mm Width: 184 mm Height: 205 mm

Total Weight: 9,3 kg

Nominal pressure: 70 MPa

Cutting class: A5, B4, C5, D6, E6

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Attachment 4 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: C140LD (W/OSC)

Art. No .: ART.107.565.2

Technical data

Width of opening: 143 mm

Dimension:

Length: 669 mm 175 mm Width: Height: 222 mm

Total Weight: 7,9 kg

70 MPa Nominal pressure:

Cutting class: A5, B3, C3, D6, E7

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CEPTUФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Attachment 5 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type:

C160 (W/OSC)

Art. No.:

ART.105.053.9

Technical data

Width of opening:

160 mm

Dimension:

Length:

712 mm

Width:

225 mm

Height:

196 mm

Total Weight:

14,6 kg

Nominal pressure:

70 MPa

Cutting class:

A7, B7, C6, D7, E8

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Attachment 6 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.

#### **Parameter**

Type: C165 (W/OSC)

Art. No .: ART.593.207.6

Technical data

Width of opening: 150 mm

Dimension:

Length: 711 mm Width: 225 mm Height: 202 mm

Total Weight: 16,3 kg

70 MPa Nominal pressure:

Cutting class: A8, B6, C6, D7, E9

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Attachment 7 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: C185 (W/OSC)

Art. No.: ART.105.922.6

Technical data

Width of opening: 180 mm

Dimension:

Length: 740 mm
Width: 232 mm
Height: 206 mm

Total Weight: 17,6 kg

Nominal pressure: 70 MPa

Cutting class: A7, B9, C7, D9, E9

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Attachment 8 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: C185NXTgen (W/OSC)

Art. No .: ART.105.922.6

Technical data

Width of opening: 180 mm

Dimension:

Length: 740 mm Width: 232 mm Height: 206 mm

Total Weight: 17,8 kg

70 MPa Nominal pressure:

Cutting class: A7, B9, C7, D9, E9

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Attachment 9 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: C220 (W/OSC)

Art. No .: ART.106.337.2

Technical data

220 mm Width of opening:

Dimension:

Length: 728 mm Width: 236 mm Height: 196 mm

Total Weight: 14,4 kg

Nominal pressure: 70 MPa

Cutting class: A6, B7, C6, D8, E8

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Attachment 10 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type: C236 (W/OSC)

Art. No .: ART.593.585.7

Technical data

Width of opening: 200 mm

Dimension:

833 mm Length: Width: 265 mm Height: 217 mm

Total Weight: 19,9 kg

Nominal pressure: 70 MPa

Cutting class: A8, B9, C8, D9, E9

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Attachment 11 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### <u>Parameter</u>

Type: C236SL NXTgen (W/OSC)

Art. No.: ART.106.949.8

Technical data

Width of opening: 200 mm

Dimension:

Length: 833 mm
Width: 260 mm
Height: 162 mm

Total Weight: 19,8 kg

Nominal pressure: 70 MPa

Cutting class: A8, B9, C8, D9, E9

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Attachment 12 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



#### **Parameter**

Type:

C270 (W/OSC)

Art. No .:

ART.593.209.2

Technical data

Width of opening:

280 mm

Dimension:

Length:

762 mm

Width:

225 mm

Height:

202 mm

Total Weight:

17,0 kg

Nominal pressure:

70 MPa

Cutting class:

A7, B8, C7, D8, E9

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Attachment 13 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



### <u>Parameter</u>

Type: C365 (W/OSC)

Art. No.: ART.105.048.4

Technical data

Width of opening: 170 mm

Dimension:

Length: 811 mm
Width: 298 mm
Height: 221 mm

Total Weight: 22,0 kg

Nominal pressure: 70 MPa

Cutting class: A8, B9, C8, D9, E9

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Attachment 14 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



### <u>Parameter</u>

Type: ALL 9 (W/OSC)

Art. No.: ART.593.535.0

Technical data

Width of opening: 180 mm

Dimension:

Length: 855 mm
Width: 298 mm
Height: 223 mm

Total Weight: 22,5 kg

Nominal pressure: 70 MPa

Cutting class: A9, B9, C9, D9, E9

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Attachment 15 to Certificate No. Z2 16 03 62475 021 Firm: American Rescue Technology Inc.



### <u>Parameter</u>

Гуре:	MASS TRANSIT	(W/OSC)
	1111 100 1111 111011 1	100100

Art. No.: ART.593.616.0

Technical data

Width of opening: 120 mm

Dimension:

Length: 585 mm Width: 205 mm Height: 247 mm

Total Weight: 19,5 kg

Nominal pressure: 70 MPa

Cutting class: A4, B3, C5, D6, E6

Munich, 2016-03-29

Gerhard Hintereder

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\$ 620,736.91

**Total** 

### **ATTACHMENT I: PRICING PAGE**

The pricing request is for the initial purchase of 17 Gas Powered Hydraulic Rescue Tool Sets. Pricing for each component tool shall be **COMPLETE** and include **ALL** costs associated with delivery, setup, training and implementation of the equipment.

### **Initial One-Time Purchase**

Item	Description	Qty	UOM	Unit Price	Total
3.2	Gas Power Unit Outlaw w/elec start	17	Each	\$ 6272.00	\$ 106,624.00
3.3	Spreader S53	17	Each	\$ 7000.00	\$ 119,000.00
3.4	Curved Blade Cutter All 9	17	Each	\$ 6336.00	\$ 107,712.00
3.5	Straight Blade Cutter C50	17	Each	\$ 2304.00	\$ 39,168.00
3.6	Three Stage Telescoping Ram 19/51	17	Each	\$ 6216.00	\$ 105,672.00
3.7	Single Piston Push/Pull Ram 41"	17	Each	\$ 2384.00	\$ 40,528.00
3.8	Push/Pull Ram Accessory Kit	17	Each	\$ 1424.00	\$ 24,208.00
3.9	Hydraulic Hoses Single Line	51	Each	\$ 1200.00	\$ 61,200.00
				Sales Tax (8%)	\$ 45,980.51

Describe the warranty and duration of the warranty included in the initial purchase price:

Genesis Rescue Systems are warranted for lifetime of ownership against workmanship and defects.

\* PLEASE NOTE PRICING REFLECTS A TRADE-IN DISCOUNT OF \$29,355.60

### **Extended Warranty and Maintenance Service**

Item No	Description	Qty	UOM	Price per Year	Total
1	Extended Warranty	2	Year	\$ <b>0</b>	\$ <b>0</b>
2	Annual Preventative Maintenance Service	3	Year	\$ 15,215	\$ 45,645.00
				Grand Total	\$ 45,645.00

**PRICING:** Pricing shall include all labor, materials, supplies, supervision, handling and transportation charges and all charges incidental to the requested work excluding Sales Tax.

**PRICE CHANGES:** Contract pricing shall remain fixed for the initial one (1) year term of the contract. Price changes after the first year of the contract shall be negotiated, but shall <u>not</u> exceed the most recent available 12-month period for the Los Angeles-Riverside-Orange County, CA Consumer Price Index (CPI). Vendors must provide verifiable documentation from the manufacturer for any price changes in excess of the CPI. Any such requests must include dated manufacturer list prices at the time that the bid was submitted and dated manufacturer lists prices

# ATTACHMENT I: PRICING PAGE Alternate 1 Rescue Tool Package

The pricing request is for the initial purchase of 17 Gas Powered Hydraulic Rescue Tool Sets. Pricing for each component tool shall be COMPLETE and include ALL costs associated with delivery, setup, training and implementation of the equipment.

### **Initial One-Time Purchase**

Item	Description	Qty	UOM	Unit Price	Total
3.2	Gas Power Unit Outlaw 6.5hp	17	Each	\$ 5768.00	\$ 98,056.00
3.3	Spreader S49	17	Each	\$ 5600.00	\$ 95,200.00
3.4	Curved Blade Cutter C236	17	Each	\$ 6256.00	\$ 106,352.00
3.5	Straight Blade Cutter C50	17	Each	\$ 2304.00	\$ 39,168.00
3.6	Three Stage Telescoping Ram 19/51	17	Each	\$ 6216.00	\$ 105,672.00
3.7	Single Piston Push/Pull Ram 41"	17	Each	\$ 2384.00	\$ 40,528.00
3.8	Push/Pull Ram Accessory Kit	17	Each	\$ 1424.00	\$ 24,208.00
3.9	Hydraulic Hoses Single Line	51	Each	\$ 1200.00	\$ 61,200.00
				Sales Tax (8%)	\$ 43,417.18
				Total	\$ 586,131.98

### Describe the warranty and duration of the warranty included in the initial purchase price:

Genesis Rescue Systems are warranted for lifetime of ownership against workmanship and defects.

### \* PLEASE NOTE PRICING REFLECTS A TRADE-IN DISCOUNT OF \$27,669.20

### **Extended Warranty and Maintenance Service**

Item No	Description	Qty	UOM	Price per Year	Total
1	Extended Warranty	2	Year	\$ <b>0</b>	\$ 0
2	Annual Preventative Maintenance Service	3	Year	\$ 15,215.00	\$ 45,645.00
				Grand Total	\$ 45,645.00

PRICING: Pricing shall include all labor, materials, supplies, supervision, handling and transportation charges and all charges incidental to the requested work excluding Sales Tax.

PRICE CHANGES: Contract pricing shall remain fixed for the initial one (1) year term of the contract. Price changes after the first year of the contract shall be negotiated, but shall not exceed the most recent available 12-month period for the Los Angeles-Riverside-Orange County, CA Consumer Price Index (CPI). Vendors must provide verifiable documentation from the manufacturer for any price changes in excess of the CPI. Any such requests must include dated manufacturer list prices at the time that the bid was submitted and dated manufacturer lists prices

### ATTACHMENT I: PRICING PAGE Alternate 2 Rescue Tool Package

The pricing request is for the initial purchase of 17 Gas Powered Hydraulic Rescue Tool Sets. Pricing for each component tool shall be **COMPLETE** and include **ALL** costs associated with delivery, setup, training and implementation of the equipment.

### **Initial One-Time Purchase**

Item	Description		UOM	Unit Price	Total
3.2	Gas Power Unit Outlaw 6.5hp	17	Each	\$ 5768.00	\$ 98,056.00
3.3	Spreader S49	17	Each	\$ 5600.00	\$ 95,200.00
3.4	Curved Blade Cutter C365	17	Each	\$ 6336.00	\$ 107,712.00
3.5	Straight Blade Cutter C50	17	Each	\$ 2304.00	\$ 39,168.00
3.6	Three Stage Telescoping Ram 19/51	17	Each	\$ 6216.00	\$ 105,672.00
3.7	Single Piston Push/Pull Ram 41"	17	Each	\$ 2384.00	\$ 40,528.00
3.8	Push/Pull Ram Accessory Kit	17	Each	\$ 1424.00	\$ 24,208.00
3.9	Hydraulic Hoses Single Line	51	Each	\$ 1200.00	\$ 61,200.00
				Sales Tax (8%)	\$ 43,520.54
				Total	\$587 527 34

### Describe the warranty and duration of the warranty included in the initial purchase price:

Genesis Rescue Systems are warranted for lifetime of ownership against workmanship and defects.

### \* PLEASE NOTE PRICING REFLECTS A TRADE-IN DISCOUNT OF \$27,737.20

### **Extended Warranty and Maintenance Service**

Item No	Description	Qty	UOM	Price per Year	Total
1	Extended Warranty	2	Year	\$ <b>0</b>	\$ <b>0</b>
2	Annual Preventative Maintenance Service	3	Year	\$ 15,215	\$ 45,645.00
				Grand Total	\$ 45,645.00

**PRICING:** Pricing shall include all labor, materials, supplies, supervision, handling and transportation charges and all charges incidental to the requested work excluding Sales Tax.

**PRICE CHANGES:** Contract pricing shall remain fixed for the initial one (1) year term of the contract. Price changes after the first year of the contract shall be negotiated, but shall <u>not</u> exceed the most recent available 12-month period for the Los Angeles-Riverside-Orange County, CA Consumer Price Index (CPI). Vendors must provide verifiable documentation from the manufacturer for any price changes in excess of the CPI. Any such requests must include dated manufacturer list prices at the time that the bid was submitted and dated manufacturer lists prices

at the time the increase was requested. OCFA's determination will be final. OCFA may request a price decrease should a change in the market conditions warrant such an adjustment and any reductions provided to the vendor from the manufacturer must be passed on to OCFA as soon as it is effective.

### **CURRENT EQUIPMENT - BUY BACK / TRADE-IN PRICING**

OCFA desires proposals to include trade-in / buy back pricing for the existing extrication tools equipment which are in good working condition, however, inclusion of trade-in/buy back pricing is not a requirement for award of contract. Each offeror shall state within the terms of the submitted proposal their policy pertaining to buyback/exchange programs relative to equipment currently in use by the OCFA.

ITEM DESCRIPTION	QUANTITY	BUY BACK / TRADE IN PRICE OFFERED PER UNIT	TOTAL PRICE
Hurst – 5K psi Cutters JL 500	10	\$ n/a	\$ n/a
Hurst – 5K psi Cutters JL- MOC II	4	\$ n/a	\$ na/
Hurst – 5K psi Spreaders KL32	14	\$ n/a	\$ n/a
Hurst – 5K psi Small Ram JL 20 C	14	\$ n/a	\$ n/a
Hurst - 5K psi Medium Ram JL 30 C	14	\$ n/a	\$ n/a
Hurst – 5K psi Large Ram JL 60C	14	\$ <sub>n/a</sub>	\$ n/a
Hurst – 5K psi Power Unit ML-4G Mini Mate Simo	14	\$ n/a	\$ n/a
Hurst – 5K psi Supply Hoses Dual Hose with Streamline couplings	42	\$ n/a	\$ n/a
Holmatro – Cutters 4050 NCT	2	\$ n/a	\$ n/a
Holmatro – Spreaders 4260 UL	2	\$ n/a	\$ n/a
Holmatro – Ram 4050	2	\$ n/a	\$ n/a
Holmatro – Ram 4350	2	\$ n/a	\$ n/a
Holmatro – Power Unit DPU – 30 10.5K psi	2	\$ n/a	\$ n/a
Holmatro – Hoses CORE	6	\$ n/a	\$ n/a
Tot	\$29,355.60		

Provide any additional trade-in / buy back information for OCFA to consider:

Pricing sheet reflects trade-in allowance. MES offering addition premium if offered trade-in applied to 18th set of same rescue tool set outlined in this RFP, MES agree's to zero the balance of the difference on the 18th set. Example: if price of new set \$34,000, \$29,355.60 will be applied and MES will zero out the remaining cost for this 18th set.

GOVERNMENT / CO-OPERATIVE CONTRACT: Is your pricing based on a Government or Co-
operative contract? YESNOX
If yes, please provide details of which agency and contract the pricing is based on:

Orange County Fire Authority	RFP JA21/2 – Extrication Tools

**PAYMENT TERMS:** Subsequent to delivery and acceptance of delivery, the supplier must submit an invoice for payment. Invoices can be sent electronically to: ap@ocfa.org or mailed to:

Orange County Fire Authority Attention: Accounts Payable PO Box 53008 Irvine. CA 92619

Invoices shall include the Company's Federal Tax ID#, Blanket Order #, quantity & description of the product delivered, the delivery location, date of delivery and price. Payment shall be made within thirty (30) days after receipt of accurate invoice. Invoices are to be submitted in arrears for goods provided. OCFA will endeavor to honor any "prompt payment discounts" when appropriately earned. Payment discounts must be clearly indicated in the bid submission. Payment discount periods shall be computed from the date of receipt of the material/service or correct invoice, whichever is later, to the date OCFA's warrant is mailed.



# REQUEST FOR BEST AND FINAL OFFER RFP JA2172 Gas Powered Hydraulic Extrication Tools

DATE BEST AND FINAL OFFERS REQUESTED: JULY 18, 2017
DUE DATE FOR BEST AND FINAL OFFER: JULY 25, 2017

Municipal Emergency Services Inc.

brichardson@mesfire.com

Dear Barry Richardson,

Your firm, Municipal Emergency Services Inc., submitted a proposal in response to the above referenced Request for Proposal (RFP) issued by the Orange County Fire Authority (OCFA). Municipal Emergency Services, has been selected as a finalist for further consideration in the RFP process. As part of the negotiation process, the Orange County Fire Authority is exercising the right to request a Best and Final Offer (BAFO) for further evaluation and consideration.

Municipal Emergency Services Inc., is invited to submit its BAFO for consideration in the award determination process. Best and Final Offers must be received no later than 10:00 A.M. July 25, 2017. The BAFO may be submitted by email with a signed original to follow in the mail.

The purpose of the Best and Final Offer is to allow both OCFA and your firm to make any modifications to the required specifications, terms or conditions, of the contract before making the final decision in the award. In addition, the BAFO also provides your firm an opportunity to make final adjustments to the proposed pricing included in your original proposal.

Best and Final Offers must be received by the Orange County Fire Authority - Purchasing Section no later than the deadline specified above. Please submit your response to this request via e-mail to: <a href="mailto:jamesaguila@ocfa.org">jamesaguila@ocfa.org</a>. The Best and Final Offer will further assist in making our final award recommendation.

Thank you again for your continued interest in doing business with Orange County Fire Authority.

Best Regards,

James Aguila

Assistant Purchasing Agent

### TO THE ORANGE COUNTY FIRE AUTHORITY:

The Undersigned hereby amends the original proposal as indicated in this Best and Final Offer and shall provide the Cardiac Monitors/Defibrillators and AEDs in compliance with all terms, conditions, specifications, and amendments in the Request for Proposal which is incorporated by reference as if fully set forth herein. The representations herein are made under penalty of perjury.

Dany Vicharchen	July 24,2017	
Signature of Person Authorized to Sign	Date	
Barry Richardson	Regional Vice President	
Printed Name	Title	

Please provide a response to the following questions:

1.	evaluation pr		osals were to be valid for a minimum of 180 days. The proposa n July 24, 2017. Please state if Municipal Emergency Services December 31, 2017?
	Yes, Municipa	al Emergency Services, Inc. w	rill extend our proposal through December 31,2017.
2.	year of the co for the Los A held for multip	ontract shall be negotiated, b ngeles-Riverside-Orange Co	initial (1) year term of the contract. Price changes after the first out shall not exceed the most recent available 12-month period ounty, CA Consumer Price Index (CPI). If BAFO pricing will be w many years MES is offering to hold pricing? Please describe , if any?
	Municipal Em	ergency Services,Inc. will hole	d our pricing for the first year of the contract. However each
	subsequent y	ear prices may increase per th	ne local CPI used by Orange County.
3.	proposal? Pl		very lead time for the extrication tools since the original ated delivery lead time will be after receipt of order.  ARO.
4.	Please list the	e original date of manufactur	e for each of the following:
	a.	Outlaw Simo Pump 6.5H	Year 2012
	b.	C365 Cutter	Year 2011
	C.	32" S53 Spreader	Year 2013
	d.	19/51 Telescoping Ram	Year 2012
	e.	16/31 Telescoping Ram	_Year 2006
	f.	31" Push/Pull Ram	_Year 2010
5.	Does MES ar	nticipate any upcoming upda	tes or changes to the proposed extrication tools?
	Not at this tim	ne.	
	<del></del>		
			2

6.	What is the average life expectancy for the quoted extrication tools?							
	Average life expectancy for all tools is about 10 years depending on use.							
7.	"Piggyback" Clause: please indicate whether Municipal Emergency Services Inc., is willing to extend the same prices, terms, and conditions of the proposal to other public agencies.							
	Municipal Emergency Services, Inc. does agree to the "Piggyback Clause" contained within our proposal to other public agencies.							
Please	e provide response to the following "Service" related questions:							
8.	What is the estimated call response time for calls made during business hours?							
	Any phone call will be returned the same business day. However our goal is between 1-3 hours.							
9.	What is the estimated response time for on-site local field service support?  Response time will be within 24 hours of notification. If a service technician cannot arrive, and address the							
	issue within 24 hours, a loaner tool will be delivered to OCFA within 24 hours. OCFA maintains possession of the loaner tool until the repaired tool is delivered back to OCFA.							
10.	What are the hours of operation for your customer service help line to initiate needed work orders on field repairs?							
	Normal business hours is Monday through Friday 8:00 A.M. to 5:00 P.M. However for emergency situations							
	OCFA may call the cell number of Barry Richardson at 602-402-3668 24 hours a day, seven days a week.							
11.	Is MES willing to provide OCFA's Service Center with a "loaner" set of tools for the duration of the contract?							
	Municipal Emergency Services, Inc. does agree to offer a set of loaner tools for the duration of the contract.							

### **BEST AND FINAL OFFER PRICING**

The initial proposal pricing that was submitted is provided below with an additional section provided for a BAFO adjustment.

Item	Description	Qty	UOM	Unit Price	Total
3.2	Gas Power Unit Outlaw Simo Pump 6.5hp	17	Each	\$5,768.00	\$98,056.00
3.3	Spreader 32" S53	17	Each	\$7,000.00	\$119,000.00
3.4	Curved Blade Cutter C365	17	Each	\$6,336.00	\$107,712.00
3.5	Straight Blade Cutter Item Removed from RFP	17	Each	\$2,304.00	\$39,168.00
3.6	Telescoping Ram 19/51	17	Each	\$6,216.00	\$105,672.00
3.7	Push/Pull Ram 41"	17	Each	\$2,384.00	\$40,528.00
3.8	Ram Accessory Kit	17	Each	\$1,424.00	\$24,208.00
3.9	Hydraulic Hoses Single Line	51	Each	\$1,200.00	\$61,200.00
				Subtotal	\$595,544.00
				Sales Tax (8%)	\$47,643.52
				Total	\$643,187.52

As discussed during our meeting on June 26, 2017, OCFA is requesting pricing for the following Extrication Equipment. Do not include any trade-in discounts in the unit pricing below. Trade-in offers shall be evaluated separately. Please provide your Best and Final Offer pricing:

Item	Description		Qty	UOM	Unit Price	Total
3.2	Gas Power Unit	Outlaw Simo Pump 6.5hp	20	Each	\$5,646.15	\$112,923.00
3.3	Spreader	32" S53	20	Each	\$6,757.69	\$135,153.80
3.4	Curved Blade Cutter	C365	20	Each	\$6,119.23	\$122,384.60
3.5	Telescoping Ram	16/31	20	Each	\$3,465.38	\$69,307.60
3.6	Telescoping Ram	19/51	20	Each	\$6,003.85	\$120,077,00
3.7	Push/Pull Ram	31"	7	Each	2,242.31	\$15,696.17
3.8	Ram Accessory Kit		6	Each	1,215.38	\$7,292.28
3.9	Hydraulic Hoses	32' Single Line	60	Each	1,153.85	\$69,231.00
					Subtotal	\$652,065.45
					Sales Tax (7.75%)	\$50,535.07
					Total	\$702,600.52

Provide the Annual Preventative Maintenance Service cost per Equipment:

Item	Description	Qty	UOM	Unit Price	Total
3.2	Gas Power Unit Outlaw Simo Pump 6.5hp	20	Each	\$250.00	\$5,000.00
3.3	Spreader 32" \$5	20	Each	\$100.00	\$2,000.00
3.4	Curved Blade Cutter C365	20	Each	\$100.00	\$2,000.00
3.5	Telescoping Ram 16/3	L 20	Each	\$65.00	\$1,300.00
3.6	Telescoping Ram 19/5	L 20	Each	\$65.00	\$1,300.00
3.7	Push/Pull Ram 31'	7	Each	\$65.00	\$455.00
3.8	Ram Accessory Kit	6	Each	No Charge	No Charge
3.9	Hydraulic Hoses 32' Single Line	60	Each	\$25.00	\$1,500.00
			Gra	nd Total Per Year	\$13,555.00

### **CURRENT EQUIPMENT - BUY BACK / TRADE-IN PRICING**

OCFA desires proposals to include trade-in / buy back pricing for the existing extrication tools equipment which are in good working condition, however, inclusion of trade-in/buy back pricing is not a requirement for award of contract. Each offeror shall state within the terms of the submitted proposal their policy pertaining to buyback/exchange programs relative to equipment currently in use by the OCFA. Include the per unit price for each line item listed below.

ITEM DESCRIPTION	QUANTITY	BUY BACK / TRADE IN PRICE OFFERED PER UNIT	TOTAL PRICE
Hurst – 5K psi Cutters JL 500	10	\$	\$Please read special notes
Hurst – 5K psi Cutters JL- MOC II	4	\$	\$Please read special notes
Hurst – 5K psi Spreaders KL32	14	\$	\$ Please read special notes
Hurst – 5K psi Small Ram JL 20 C	14	\$	\$ Please read special notes
Hurst - 5K psi Medium Ram JL 30 C	14	\$	\$ Please read special notes
Hurst – 5K psi Large Ram JL 60C	14	\$	\$ Please read special notes
Hurst – 5K psi Power Unit ML-4G Mini Mate Simo	14	\$	\$ Please read special notes
Hurst – 5K psi Supply Hoses Dual Hose with Streamline couplings	42	\$	\$ Please read special notes
Holmatro – Cutters 4050 NCT	2	\$	\$ Please read special notes
Holmatro – Spreaders 4260 UL	2	\$	\$ Please read special notes
Holmatro – Ram 4050	2	\$	\$Please read special notes
Holmatro – Ram 4350	2	\$	\$ Please read special notes
Holmatro – Power Unit DPU – 30 10.5K psi	2	\$	\$Please read special notes
Holmatro – Hoses CORE	\$Please read special notes		
	Total Trade	-in / Buy Back Price Offered	\$Please read special notes

Provide any additional trade-in/buy back information for OCFA to consider:

Please read the attached letter for clarification on our offer for trade-in equipment.



July 24, 2017

Orange County Fire Authority OCFA Purchasing Department 1 Fire Authority Road Irvine, CA. 926024

RE: RFP JA2172 Gas Powered Hydraulic Extrication Tools Subject: Best and Final Offer — Clarification Buy Back / Trade-In Pricing

Dear Mr. Aquila,

MES will provide one set of Genesis Rescue Tools for all trade in equipment as listed in the Best and Final offer by OCFA. We realize that the quantities listed for Trade-In / Buy Back on the Best and Final offer may be an estimate of quantities, and actual numbers can vary. The set of Genesis Rescue Tools that we are offering to cover all items for the Trade-In consist of one each: Outlaw 6.5 Power Unit, S53 Spreader, C365 Cutter, 15/3", 19/51", and 31" Rams, Ram Accessory Kit, and Two 32 Foot Hydraulic Genesis OSC Hoses. This is a value of \$32,603.85

The Trade-In items shall be shipped back to the address listed below at the expense of the Orange County Fire Authority. If you have any questions, please do not hesitate to let me know.

Ship to Address; Equipment Management Company 22824 W. Winchester Dr. Channahon, IL. 60410

Respectfully,

Barry Richardson

Regional Vice President Municipal Emergency Services



# Orange County Fire Authority AGENDA STAFF REPORT

**Budget and Finance Committee Meeting October 11, 2017** 

Agenda Item No. 4A Discussion Calendar

### Acceptance of 2017 Department of Homeland Security/Federal Emergency Management Agency's Urban Search & Rescue Readiness Cooperative Agreement Funding

### **Contact(s) for Further Information**

Brian Young, Assistant Chief brianyoung@ocfa.org 714.573.6012

**Operations Department** 

Mike Petro, Battalion Chief mikepetro@ocfa.org 949.837.7468

US&R Program Manager

### **Summary**

This item is submitted for approval and acceptance of the 2017 Readiness Cooperative Agreement funding from the Department of Homeland Security/Federal Emergency Management Agency's (DHS/FEMA) National Urban Search and Rescue (US&R) Program.

### **Prior Board/Committee Action**

Not Applicable.

### **RECOMMENDED ACTION(S)**

To continue funding Urban Search & Rescue/California Task Force 5 it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Board of Directors take the following actions:

- 1. Approve and adopt the proposed Resolution entitled A RESOLUTION OF THE ORANGE COUNTY FIRE AUTHORITY BOARD OF DIRECTORS ACCEPTING THE FEMA NATIONAL URBAN SEARCH AND RESCUE (US&R) PROGRAM COOPERATIVE AGREEMENT TO PURCHASE US&R EQUIPMENT AND SUPPLIES, MAINTENANCE AND REPAIR OF US&R EQUIPMENT, TRAINING, AND PROGRAM ADMINISTRATION to accept the Department of Homeland Security/Federal Emergency Management Agency's Grant Readiness Cooperative-Agreement funding.
- 2. Direct staff to increase revenue and appropriations in the amount of \$1,255,013 in the General Fund (Fund 121).

### **Impact to Cities/County**

Not Applicable.

### **Fiscal Impact**

\$1,255,013 increase in General Fund (Fund 121) revenue and appropriations in the FY 2017/18 budget.

### **Background**

California Task Force 5 (CA TF-5), located in Orange County and sponsored by the Orange County Fire Authority, is one of 28 National US&R Task Forces. CA TF-5 has used past Cooperative Agreement funds and activation reimbursements to equip and train the task force members for various missions, including but not limited to: rescuing victims in collapsed structures, responding to natural disasters, and attacks by weapons of mass destruction/terrorist responses.

Currently, CA TF-5 maintains a response capability that includes apparatus and equipment supply inventory worth approximately \$8 million. There is also a personnel cadre of over 220 members, composed of a civilian element of structural engineers, disaster canines, and physicians, as well as firefighters from the participating agencies of Anaheim, Orange, and the OCFA.

DHS/FEMA has authorized an initial funding of \$1,161,013 to each US&R Task Force for the administration of an approved National Urban Search and Rescue Response System. In addition to the initial funding that has been awarded to each US&R Task Force, an additional \$94,000 has been awarded to CA TF-5 for the Task Force members that participate and support the national program in leadership positions. Total grant funding for CA TF-5 is as follows:

Grant Funding Component	Component Amount	Total Grant Funding
Base funding provided to each US&R Task Force:		
Administration	350,603	
Training (including travel expenses)	221,101	
Equipment/Cache (acquisition, modifications)	188,788	
Storage and Maintenance	400,521	
Subtotal		\$1,161,013
Additional funding components provided to CA TF-5 only:		
Administration - National US&R Logistics Leader	12,000	
Administration - Two National Incident Support Team Leaders	12,000	
Administration - Deputy Operations Leader	4,000	
Administration - Documentation Sub Group Leader	4,000	
Administration - National Task Force Representative and Grants Meeting	50,000	
Administration - National Incident Support Team Representative	12,000	
Subtotal		\$94,000
Total Grant Funding Awarded to CA TF-5		\$1,255,013

The final total of \$1,255,013 for CA TF-5 is the seventh highest total provided to any National US&R Team. The Cooperative Agreement funding continues the development and maintenance of the National US&R Response System resources to be prepared to provide qualified, competent US&R personnel in support of all US&R activities/incidents under the Federal Response Plan.

This Cooperative Agreement funding is available for use beginning October 1, 2017, through September 29, 2020.

### Attachment(s)

**Proposed Resolution** 

#### **RESOLUTION NO. 2017-XX**

A RESOLUTION OF THE ORANGE COUNTY FIRE AUTHORITY BOARD OF DIRECTORS ACCEPTING THE FEMA NATIONAL URBAN SEARCH AND RESCUE (US&R) PROGRAM COOPERATIVE AGREEMENT TO PURCHASE US&R EQUIPMENT AND SUPPLIES, MAINTENANCE AND REPAIR OF US&R EQUIPMENT, TRAINING, AND PROGRAM ADMINISTRATION

WHEREAS, the Orange County Fire Authority is one of only 28 agencies in the country selected to participate in the Federal Emergency Management Agency's (FEMA's) National Urban Search and Rescue (US&R) Response System, and

WHEREAS, OCFA entered into a tri-party agreement with FEMA and California's Office of Emergency Services (Cal OES), who provides oversight and additional support for the program, and

WHEREAS, currently Orange County US&R/CA Task Force 5 maintains a response capability including apparatus and equipment supply inventory worth approximately \$8 million, and

WHEREAS, Orange County US&R/CA Task Force 5 maintains a personnel cadre of over 220 members that includes a civilian element of structural engineers, disaster search canines, physicians, as well as firefighters from the participating agencies of Anaheim, Orange, and the OCFA, and

WHEREAS, FEMA has authorized a funding award of \$1,255,013 which is available for use beginning October 1, 2017, through September 29, 2020, for preparedness issues related to the Urban Search and Rescue Program.

NOW, THEREFORE BE IT RESOLVED, that the Board of Directors of the Orange County Fire Authority does hereby resolve to accept the FEMA US&R Cooperative Agreement to be utilized for such things as procurement of US&R equipment and supplies, maintenance and repair of US&R equipment, training, and program administration. Additionally, these funds can be used for associated travel expenses for task force personnel to attend US&R related training courses, exercises, meetings, and for the management and administration of US&R activities. This includes expenses relating to task force maintenance, development, record-keeping, and correspondence.

PASSED, APPROVED, AND ADOPTED this 26th day of October 2017.

	Elizabeth Swift, CHAIR Board of Directors	
ATTEST:		
SHERRY A. F. WENTZ, CMC	<del></del>	
Clerk of the Authority		



# Orange County Fire Authority AGENDA STAFF REPORT

# **Budget and Finance Committee Meeting October 11, 2017**

Agenda Item No. 4B Discussion Calendar

### **Updated Broker/Dealer List**

### **Contact(s) for Further Information**

Patricia Jakubiak, Treasurer Treasury & Financial Planning triciajakubiak@ocfa.org

714.573.6301

### **Summary**

This annual agenda item is submitted to the Committee to request approval to update the current list of broker/dealers that the Treasurer uses for competitive bidding of investment purchases.

### **Prior Board/Committee Action**

The Broker/Dealer list was approved by the Executive Committee on October 15, 2015.

### **RECOMMENDED ACTION(S)**

To update the current list of broker/dealers that the Treasurer uses for competitive bidding of investment purchases it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee Meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Executive Committee approve the Broker/Dealer List, which includes FTN Financial Securities Corp., Raymond James Financial Services Inc., RBC Capital Markets, Stifel, Nicolaus & Company, Inc. and Wedbush Securities Inc. and authorize the List for a term of two years through October 31, 2019, as required by OCFA's Investment Policy.

### **Impact to Cities/County**

Not Applicable.

### **Fiscal Impact**

Not Applicable.

### **Background**

On August 9, 2017, OCFA sent a Request for Qualifications (RFQ) for broker/dealer services through the Planet Bids website. Only one qualified bidder, Stifel Nicolaus & Company, Inc. submitted a response by the August 31 due date.

The proposal was evaluated by the Treasurer and Assistant Treasurer based on the following selection criteria and weighting set forth in the RFQ:

•	Branch office in California	(10 points)
•	Experience/resumes	(50 points)
•	FINRA certification	(10 points)
•	Primary or regional dealer	(10 points)
•	Form 10-K or financials (net capital position)	(20 points)

The firm scored well in the evaluation, and is being recommended as an addition to OCFA's approved list of qualified broker/dealers. This list shall remain in effect for two years until October 31, 2019, as required by OCFA's Investment Policy. Staff has the ability to discontinue use of the approved brokers at any time and prior to the conclusion of the two-year period.

The attached Financial Industry Regulatory Authority (FINRA) reports provide additional information on any disclosure events where the firm was named as a respondent. In reviewing the FINRA reports, staff placed emphasis on information specific to the Lead Broker assigned to OCFA, and noted that the Lead Broker from each recommended firm has no disclosure events in FINRA.

The following firms are already on OCFA's list of approved broker/dealers: FTN Financial Securities Corp., Raymond James Financial Services, Inc., RBC Capital Markets, LLC, and Wedbush Securities, Inc. These broker's FINRA reports are updates, since their last review in either 2014 or 2015. Since this is the first review of Stifel, Nicolaus & Company, Inc., its FINRA report is more comprehensive dating back to 1961.

### **Attachment(s)**

- 1. Summary of FINRA regulatory event report for FTN Financial Securities Corp.
- 2. Summary of FINRA regulatory event report for Raymond James Financial Services Inc.
- 3. Summary of FINRA regulatory event report for RBC Capital Markets, LLC
- 4. Summary of FINRA regulatory event report for Stifel, Nicolaus & Company, Inc.
- 5. Summary of FINRA regulatory event report for Wedbush Securities Inc.

# FTN Financial Securities Corp. Firm Profile

Year Formed 1998

**2016 Revenues** \$1.3 Billion

Number of Employees 4,300

Types of Businesses

Number of Countries 1

Orange County Clients Include County of Orange, San Clemente, Santa

Ana, Stanton, Tustin

**Lead Broker's Securities Industry** 28 years

**Experience** 

**Lead Broker's FINRA\* Disclosure Events** -0-

### FTN Financial Securities Corp. FINRA\* Broker Check Report December 9, 2014 – August 1, 2017

A	Disclosure E	Disclosure Events Pending							
	None								
В	Disclosure E	Events Where	Claim was Upheld						
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>					
	None								
С	Disclosure E	Events Where	Firm Paid Fine Witl	nout Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>					
	None								

# Raymond James Financial Services, Inc. Firm Profile

Year Formed 1973

**2016 Revenues** \$5.4 Billion

Number of Employees 11,900

Types of Businesses 15

Number of Countries 10

Orange County Clients Include Huntington Beach, Irvine, Lake Forest,

Orange County Water District, San

Clemente, Santa Ana

**Lead Broker's Securities Industry** 

**Experience** 

14 years

-0-

**Lead Broker's FINRA\* Disclosure Events** 

\*FINRA- Financial Industry Regulatory Authority

# Raymond James Financial Services, Inc. FINRA\* Broker Check Report December 9, 2014 – August 1, 2017

A	Disclosure Events Pending							
	None							
В	Disclosure E	vents Where	Claim was Upheld					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>				
	None							
С	Disclosure E	vents Where	Firm Paid Fine Wit	hout Admitting or Denying the Findings				
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>				
	5/18/16	5/18/16	Annuities	Firm failed to establish policies and procedures to detect and report suspicious transactions related to its clearing firm.				
	3/8/16	3/8/16	No Product	Firm caused newly hired registered representatives from other firms to disclose customer nonpublic personal information without first knowing if customer consent was obtained.				
	9/16/15	9/16/15	Auction Rate Securities (ARS)	Firm did not adequately disclose all of the risks of ARS. On February 13, 2008, a number of ARS auctions failed, resulting in an overall market collapse that left thousands of investors, including the firm's customers in Hawaii, holding ARS that they have, in some cases, not been able to liquidate.				
	7/6/15	7/6/15	Mutual Funds	Firm disadvantaged certain retirement plan and charitable organization customers that were eligible to purchase Class A shares in mutual funds without a front end sales charge. Instead they were sold a different class of shares with higher fees and expenses.				

# RBC Capital Markets, LLC Firm Profile

Year Formed	2010
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**2016 Revenues** \$31 Billion

Number of Employees 80,000

Types of Businesses 21

Number of Countries 38

Orange County Clients Include County of Orange

**Lead Broker's Securities Industry** 30 years **Experience** 

**Lead Broker's FINRA\* Disclosure Events** -0-

<sup>\*</sup>FINRA- Financial Industry Regulatory Authority

# RBC Capital Markets, LLC FINRA\* Broker Check Report August 31, 2015 – August 1, 2017

Α	Disclosure E	Disclosure Events Pending							
	None								
В	Disclosure E	vents Where	Claim was Upheld						
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>					
	8/31/16	8/31/16	No Product	Firm served as a financial advisor to Rural/Metro Corp. in its sale to a private equity firm. RBC's fairness opinion contained false and misleading information concerning RBC's valuation analysis.					
	7/22/16	7/22/16	No Product	Employees accepted orders for transactions and were not properly licensed in the state of Louisiana.					
	3/17/16	3/17/16	No Product	Same as above in Oklahoma.					
	11/11/2015	4/11/16	Options	Firm failed to close out numerous fail-to-deliver positions on a timely basis.					
С	Disclosure E	vents Where	Firm Paid Fine Wit	hout Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>					
	5/3/17	5/3/17	Corporate and Municipal Debt Securities	Firm reported transactions to the Order Audit Trail System (OATS) incorrectly. Firm also failed to report to the Trade and Reporting Compliance Engine (TRACE) transactions that were required. Firm failed to notify its customer that the municipal securities transaction was in an amount below the minimum denomination.					
	12/21/16	12/21/16	No Product	Firm failed to retain electronic records in WORM format ("write once, read many").					
	11/3/16	11/3/16	No Product	Firm overstated its advertised trade volume due to a computer coding error.					
	10/19/16	10/19/16	Unspecified Securities	Firm failed to transmit reportable order events to OATS.					

# RBC Capital Markets, LLC FINRA Broker Check Report August 31, 2015 – August 1, 2017

С	Disclosure l	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	7/29/16	7/29/16	Block Trade	In 2014, firm executed a block trade that was not reported to the Chicago Board of Trade within the time limit and was reported incorrectly.			
	6/10/16	6/10/16	No Product	Firm did not follow FINRA rules when mediating a dispute with a claimant. Firm failed to establish, maintain, and enforce supervisory procedures to achieve compliance with FINRA rules.			
	5/4/16	5/4/16	Unspecified Securities	Firm transmitted orders to the OATS system that were incorrect and incomplete.			
	4/4/16	4/4/16	Unit Investment Trusts	Firm failed to apply sales charge discounts to certain eligible customers.			
	3/31/16	3/31/16	Corporate Debt	Firm failed to report TRACE transactions within the time required by FINRA.			
	3/1/16	3/1/16	No Product	Firm failed to amend or timely amend, the form U4 (used by registered representatives to become licensed in a state) to report unsatisfied tax liens and civil judgements.			

# Stifel, Nicolaus & Co., Inc. Firm Profile

Year Formed 1890

**2016 Revenues** \$730 Million

Number of Employees 5,543

Types of Businesses 24

**Number of Countries** 5

Orange County Clients Include Irvine, Irvine Ranch Water District,

Huntington Beach, Orange

**Lead Broker's Securities Industry** 30 years

**Experience** 

**Lead Broker's FINRA\* Disclosure Events** -0-

<sup>\*</sup>FINRA- Financial Industry Regulatory Authority

Α	Disclosure E	Disclosure Events Pending				
	None					
В	Disclosure E	vents Where	Claim was Upheld			
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>		
	2/24/10	7/14/15	Auction Rate Securities (ARS)	Firm failed to supervise registered agents.		
	4/30/15	6/8/15	Options	Firm failed to register several proprietary trading individuals.		
	6/18/15	6/18/15	Municipal Debt	As an underwriter, the firm conducted inadequate due diligence and as a result, sold municipal securities on the basis of materially misleading disclosure documents.		
	3/25/14	3/25/14	No Product	Firm failed to adequately supervise an agent in Nebraska.		
	12/26/12	5/29/13	Options	Firm failed to register the minimum number of individuals as proprietary trader principals.		
	4/14/10	4/14/10	ARS	Firm failed to supervise the sale of ARS in Indiana.		
	6/23/10	6/23/10	ARS	Same as above in Puerto Rico.		
	4/12/10	4/12/10	ARS	Same as above in North Dakota.		
	5/4/10	5/4/10	ARS	Same as above in Montana.		
	5/18/10	5/18/10	ARS	Same as above in Mississippi.		
	4/27/10	4/27/10	ARS	Same as above in Kentucky.		
	8/29/12	8/29/12	ARS	Same as above in Illinois.		

В	Disclosure Events Where Claim was Upheld				
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>	
	8/7/12	8/7/12	ARS	Firm failed to supervise the sale of ARS in Pennsylvania.	
	5/29/12	5/29/12	ARS	Same as above in Georgia.	
	4/19/12	4/23/12	ARS	Same as above in Florida.	
	6/27/11	6/27/11	ARS	Same as above in Maryland.	
	5/24/11	5/24/11	No Product	Firm failed to adequately disclose its policy and procedures to certain clients.	
	4/14/11	4/14/11	ARS	Firm failed to supervise the sale of ARS in Ohio.	
	2/3/11	2/3/11	ARS	Same as above in Nevada.	
	1/31/11	1/31/11	ARS	Same as above in Minnesota.	
	2/17/11	2/17/11	ARS	Same as above in Oregon.	
	10/4/10	10/4/10	ARS	Same as above in South Carolina.	
	12/8/10	12/8/10	ARS	Same as above in Wisconsin.	
	10/27/10	10/27/10	ARS	Same as above in Alaska.	
	5/27/10	10/29/10	ARS	Same as above in New Jersey.	
	10/19/10	10/19/10	ARS	Same as above in Arkansas.	
	9/29/10	9/29/10	ARS	Same as above in Michigan.	
	9/24/10	9/24/10	ARS	Same as above in Maine.	

В	Disclosure Events Where Claim was Upheld				
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>	
	9/14/10	9/14/10	ARS	Firm failed to supervise the sale of ARS in the U.S. Virgin Islands.	
	9/23/10	9/23/10	ARS	Same as above in Connecticut.	
	8/10/10	8/10/10	ARS	Same as above in Rhode Island.	
	8/19/10	8/19/10	ARS	Same as above in Kansas.	
	8/24/10	8/24/10	ARS	Same as above in Colorado.	
	7/19/10	7/19/10	ARS	Same as above in Oklahoma.	
	7/8/10	7/8/10	ARS	Same as above in Delaware.	
	6/28/10	6/28/10	ARS	Same as above in West Virginia.	
	6/1/10	6/1/10	ARS	Same as above in Utah.	
	6/16/10	6/16/10	ARS	Same as above in Tennessee.	
	5/10/10	5/10/10	ARS	Same as above in Nebraska.	
	5/25/10	5/25/10	ARS	Same as above in Louisiana.	
	5/5/10	5/5/10	ARS	Same as above in California.	
	5/13/10	5/13/10	ARS	Same as above in Alabama.	
	4/19/10	4/19/10	ARS	Same as above Iowa.	
	4/19/10	4/19/10	ARS	Same as above in South Dakota.	

В	Disclosure Events Where Claim was Upheld				
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>	
	4/22/10	4/22/10	ARS	Firm failed to supervise the sale of ARS in Vermont.	
	4/26/10	4/26/10	ARS	Same as above in Washington.	
	3/10/10	3/10/10	No Product	Firm failed to supervise a Missouri registered agent.	
	1/22/10	1/22/10	ARS	Firm failed to supervise the sale of ARS in Missouri.	
	3/17/03	6/13/03	Other	Firm failed to establish and maintain appropriate procedures for supervision and control over the activities of trading floor employees. Firm did not preserve required books and records. Firm did not prevent employees with inactive registrations from performing duties.	
	10/2/01	5/16/02	Credit Card Product	Firm failed to supervise agents engaged in dishonest and unethical business practices in Indiana.	
	6/1/95	6/1/95	No Product	Agents sold securities in Massachusetts without being registered.	
	7/17/84	4/16/85	No Product	As a result of accounting and bookkeeping errors, the firm violated the rules of fair practice.	
	10/18/91	10/18/91	No Product	Firm failed to properly supervise its business activities by employing a statutorily disqualified person.	
	6/14/83	9/20/84	No Product	Employee violated the rules of fair practice when he failed to make a bonafide public distribution of shares of Gott Corp.	
	11/13/75	1/28/77	No Product	Registered representative made unsuitable investment recommendations to customers and misstated material fact thereby committing fraud.	
	2/25/75	1/18/76	Mutual Funds	Firm engaged in unsuitable mutual fund transactions.	

В	Disclosure Events Where Claim was Upheld				
	<u>Initiated</u>	Resolved	<b>Product Type</b>	<u>Description</u>	
	7/27/72	8/30/72	No Product	Firm failed to report National Association of Securities Dealers Automated Quotations (NASDAQ) volume.	
	11/5/62	6/13/83	No Product	Firm violated Regulation "T" of the Federal Reserve Board. Regulation T governs investors' cash accounts and the amount of credit that brokerage firms and dealers may extend to customers for the purchase of securities.	
	12/3/91	7/21/92	No Product	Firm failed to supervise an employee who deposited a customer's check into his own account.	
	7/13/60	8/12/60	No Product	Firm violated Regulation "T" of the Federal Reserve Board.	
	4/23/70	11/3/71	No Product	Firm violated National Association of Securities Dealers (NASD) rules regarding free- riding Interpretation. Free riding is the practice of buying and selling stocks or other securities without actually having the capital to cover the trade.	
	3/3/70	11/3/71	No Product	Same as above.	
	3/3/70	10/4/71	No Product	Same as above.	
	2/14/72	10/28/73	No Product	Same as above. Firm also failed to register an officer as a principal and provided inadequate supervision.	
	4/8/69	4/8/69	No Product	Firm violated NASD rules regarding free-riding and Regulation "T" of the Federal Reserve Board.	
	2/16/84	7/31/84	No Product	Firm failed to make a bonafide public distribution of shares of Integrated Software Systems Corp.	
	10/21/81	6/23/83	No Product	Firm's Compliance Director failed to conduct an annual inspection of 5 offices on a timely basis.	
	11/14/61	5/19/62	No Product	Firm violated NASD rules regarding free-riding interpretation.	

С	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>		
	6/27/17	6/27/17	Municipal Debt	Firm failed to provide timely disclosure to a municipal issuer that the firm was serving as both Financial Advisor and Placement Agent on its bond issue.		
	3/13/17	3/13/17	Other	Firm failed to adopt and implement adequate policies and procedures to track and disclose the trading practices of its subadvisors. When the subadvisors executed trades with firms other than Stifel, the costs were higher for Stifel's clients and not disclosed.		
	5/25/16	12/30/16	Annuities / Equities	Firm failed in some instances to make, maintain, and preserve book and records.		
	4/11/16	4/11/16	Other	Firm made errors in computing customer reserve deposit requirements resulting in inaccurate records.		
	3/24/16	3/24/16	Municipal Debt	Firm executed a customer transaction in a municipal security in an amount lower than the minimum denomination.		
	3/3/16	3/24/16	Other	On several occasions, the firm placed a proprietary buy or sell order while having a customer order for the same security that could have been executed at the same price.		
	1/5/16	1/5/16	Other	Firm failed to supervise the written communications of institutional salespersons that constituted "research reports" when the individuals were not licensed as research analysts.		
	10/27/15	10/27/15	Mutual Funds	Firm disadvantaged certain retirement plan and charitable organization customers that were eligible to purchase Class A shares without a sales charge and instead were sold shares with a sales charge.		
	7/2/15	7/2/15	No Product	An individual associated with the firm was not registered in Florida as a financial advisor.		

С	Disclosure l	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	6/10/15	6/10/15	No Product	Firm failed to report the correct symbol indicating whether transactions were a buy or sell.			
	3/4/15	3/4/15	Common & Preferred Stock	Firm failed to display immediately customer limit orders in the NASDAQ system. A limit order is direction given to a broker to buy or sell a security or commodity at a specified price or better.			
	12/23/14	12/23/14	Other	Firm did not execute orders fully and promptly for a customer and, therefore, did not obtain the most favorable price.			
	11/3/14	11/3/14	Non-Investment Grade Bonds	Firm sold bonds in an amount below the minimum denomination specified in the official statement.			
	10/21/14	10/21/14	Other	Firm failed to report trades correctly and executed short sales without borrowing the securities or making arrangements to borrow the securities in the future so it could be delivered on the due date.			
	9/25/14	9/25/14	Options	Firm failed to immediately display customer limit orders in the NASDAQ system.			
	9/22/14	9/22/14	Penny Stocks	Firm failed to establish and implement an adequate anti-money laundering program to detect and report suspicious activity.			
	6/2/14	6/2/14	Other	Firm reported on transactions it was not required to report; and lacked supervisory procedures to ensure compliance.			
	4/2/14	4/2/14	Agency Bonds	Firm sold agency bonds to customers at an unfair price.			
	2/27/14	2/27/14	Other	As managing underwriter, firm failed to report new issue offerings in Trade Reporting and Compliance Engine (TRACE) within FINRA's timeframes.			
	12/23/13	12/23/13	No Product	An investment advisor associated with the firm was not registered to conduct business in Florida.			

С	Disclosure I	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	1/9/14	1/9/14	Non Traditional Exchange Traded Funds (ETFs)	Firm allowed registered representatives to recommend non-traditional ETFs to customers without its representatives conducting adequate due diligence on the products. Customers who held the investments for a long period of time experienced net losses.			
	12/23/13	12/23/13	Other	Firm did not execute customer's order at the most favorable price.			
	9/27/13	9/27/13	Other	Firm reported inaccurate information on customer confirmation.			
	8/6/2013	8/6/13	Corporate Debt/ Municipal Securities	Firm failed to buy and sell securities at a fair price and most favorable to its customers.			
	8/6/13	8/6/13	No Product	Firm failed to timely report events to the Order Audit Trail System (OATS) and transmitted inaccurate, incomplete, or improperly formatted reports. Customers' confirmations were inaccurate.			
	8/6/13	8/6/13	Other	Firm incorrectly entered orders into the NASDAQ system.			
	9/28/12	9/28/12	Agency Debt Securities	Firm failed to report transactions within 15 minutes of the execution time.			
	3/26/12	3/26/12	No Product	Firm failed to reasonably supervise a former registered representative who sold unregistered securities.			
	1/24/12	1/24/12	No Product	Firm failed to supervise an agent who sold unregistered securities, failed to disclose material facts to investors, and made material misstatements.			
	10/27/10	10/27/10	Corporate Debt	The firm bought and sold corporate bonds from or to customers at an unfair price. Firm incorrectly reported transactions.			

С	Disclosure I	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings					
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	9/23/10	9/23/10	Unit Investment Trusts	Before, during, and shortly after its merger with Stifel, Ryan Beck and Co. failed to apply sales charge discounts to customers.			
	9/18/09	9/18/09	ARS	Firm failed to post last sale reports on several transactions in Virginia.			
	9/18/07	9/18/07	Other	Firm acquired part of Legg Mason Wood Walker's capital markets business and continued to trade under two market maker symbols instead of combining under one symbol.			
	9/12/07	9/12/07	Municipal Debt	Firm failed to report transactions within 15 minutes of time of trade.			
	8/21/07	8/21/07	No Product	Firm failed to immediately display customer limit orders in NASDAQ's system.			
	3/7/07		Municipal Debt	Firm failed to file G-36 forms with the Municipal Securities Rule Making Board (MSRB) in a timely manner. Under MSRB Rule G-36, underwriters in a primary offering of municipal securities must send 2 copies of the Official Statement and Form G-36 to the MSRB no later than 10 days after purchase agreement is signed.			
	8/23/06	10/26/06	Other	Firm failed to adhere to the principles of good business practices by providing customers' nonpublic personal information to a third party without entering into an agreement with the third party on the use of the information.			
	9/2/05	9/2/05	Municipal Debt	Firm failed to file form G-36 with the MSRB in a timely manner.			
	1/28/05	1/28/05	No Product	Firm failed to immediately display customer limit orders in the NASDAQ system. Firm also entered information into the OATS system incorrectly.			
	6/17/04	6/17/04	No Product	Firm failed to establish a supervisory system to prevent late day trading.			
	10/10/02	10/10/02	Over The Counter (OTC) Equities	Firm failed to immediately display customer limit orders in the NASDAQ system.			

### Stifel, Nicolaus & Co., Inc. FINRA Broker Check Report November 14, 1961 – August 1, 2017

С	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings						
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	2/13/02	2/13/02	OTC Equities	Firm failed to execute orders upon presentment and thereby failed to honor its published quote.			
	3/15/01	8/22/01	No Product	Due to a clerical error, certain transactions were not reported by close of business.			
	3/20/01	3/20/01	Mutual Funds	A former broker made unsuitable recommendations to public customers who were also sold mutual fund shares with a higher sales charge than was necessary.			
	2/25/99	2/25/99	Other	Firm failed to report high yield debt transactions.			
	2/13/97	2/13/97	No Product	Firm failed to include all negotiated municipal underwritings on original filing of Form G-37/38. Rule G37/38 prohibit political contributions related to the sale of municipal securities.			
	7/29/76	3/9/77	No Product	Firm directed by Securities and Exchange Commission (SEC) to revise its compliance procedures.			
	4/2/92	6/3/92	No Product	Firm failed to report NASDAQ volume in certain securities.			
	2/25/87	2/25/87	No Product	Two individuals were acting as principals without having the proper qualifications.			
	4/3/86	6/24/86	No Product	Firm failed to report NASDAQ volume.			
	1/27/86	4/1/86	No Product	Same as above.			
	12/22/83	12/22/83	No Product	Firm failed to properly supervise a former registered representative who executed unauthorized trading in a customer's account.			

# Wedbush Securities Inc. Firm Profile

Year Formed 1955

Revenues N/A

Number of Employees 800

Types of Businesses 18

Number of Countries 1

Orange County Clients Include Aliso Viejo and Lake Forest

**Lead Broker's Securities Industry** 29 Years **Experience** 

Lead Broker's FINRA\* Disclosure Events -0-

<sup>\*</sup>FINRA- Financial Industry Regulatory Authority

### Wedbush Securities Inc. FINRA\* Broker Check Report July 28, 2015 – August 1, 2017

Α	Disclosure	Disclosure Events Pending					
	None						
В	Disclosure	Events W	here Claim was Upl	held			
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	9/29/16	9/29/16	N/A	From 1983-1988, firm cleared trades in Tennessee without being registered as a Broker-Dealer.			
	6/13/16	10/12/16	Options	Firm failed to mark orders with proper origin code.			
	5/18/16	6/17/16	Commodity Futures	Firm failed to report large trade positions.			
	3/1/16	3/23/16	Options	Firm failed to report option positions correctly.			
С	Disclosure	Events W	here Firm Paid Fine	Without Admitting or Denying the Findings			
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	3/31/17	3/31/17	Debt – Municipal	Firm failed to report information about purchase and sale supervisory transactions within 15 minutes, failed to enforce written procedures, and did not review cancel and late trade reports daily to weekly.			

### Wedbush Securities Inc. FINRA Broker Check Report July 28, 2015 – August 1, 2017

С	Disclosure Events Where Firm Paid Fine Without Admitting or Denying the Findings						
	<u>Initiated</u>	Resolved	Product Type	<u>Description</u>			
	12/20/16	12/20/16	Stocks	Firm failed within 10 seconds of execution to transmit sale reports and supervise trade reporting.			
	2/25/16	2/25/16	Exchange Traded Funds (ETFs)	Firm failed to take sufficient follow-up actions to address a client Broker-Dealer's recurring trade fails.			
	10/1/15	12/30/15	Unspecified	Firm failed to detect and prevent customers engaged in repeated manipulative trading activity. Firm's compliance systems and personnel were insufficient.			
	9/22/15	9/22/15	Unspecified	Firm transmitted to FINRA's Order Audit Trail System (OATS) reports that contained inaccurate, incomplete, or improperly formatted data.			



### Orange County Fire Authority AGENDA STAFF REPORT

### **Budget and Finance Committee Meeting October 11, 2017**

Agenda Item No. 4C Discussion Calendar

## 2017 Long Term Liability Study & Accelerated Pension Payment Plan

#### **Contact(s) for Further Information**

Lori Zeller, Assistant Chief <u>lorizeller@ocfa.org</u> 714.573.6020

**Business Services Department** 

Tricia Jakubiak, Treasurer <u>triciajakubiak@ocfa.org</u> 714.573.6301

Treasury & Financial Planning

#### **Summary**

This annual agenda item is submitted to provide information on the Orange County Fire Authority's (OCFA) total long term liabilities and strategies for mitigating and/or funding the liabilities.

#### **RECOMMENDED ACTION(S)**

To continue the OCFA's long term liabilities and strategies for mitigating and/or funding the liabilities, it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Budget and Finance Committee's recommendation that the Board of Directors:

- 1. Direct staff to continue the Accelerated Pension Payment Plan as indicated in the Updated Snowball Strategy.
- 2. Direct staff to return to the Board of Directors in January, with the mid-year financial review, to consider allocation of available unencumbered funds identified in the FY 2016/17 financial audit to OCFA's unfunded pension liability.

#### **Impact to Cities/County**

Strategic planning to reduce liabilities where possible, and provide early funding for those liabilities which cannot be reduced, will assist OCFA in sustaining frontline emergency services for our member agencies and the citizens we serve.

#### **Fiscal Impact**

The Adopted Budget for FY 2017/18 includes a \$13.5 million payment for the Accelerated Pension Payment Plan. The accelerated payments proposed herein are recommended in a manner which minimizes the impact to cash contract city charges. Continuous pursuit of the recommended actions will lower OCFA's salary and benefit costs over the long term, ultimately reducing OCFA's expenditure budget and positively impacting our annual charges to cash contract cities.

#### **Background**

In order to determine an agency's financial stability, one must look at all of its long-term obligations or liabilities, not just pensions. The Liability Study (Attachment 1) examines all of OCFA's long-term liabilities, with primary focus on pension liability.

#### Accelerated Pension Payment Plan

In 2017, to evaluate progress associated with the accelerated funding of OCFA's pension liability (Unfunded Actuarially Accrued Liability, or UAAL), OCFA requested OCERS' actuary, Segal Consulting, to estimate the impact on OCFA's UAAL amortization period based on an updated accelerated funding plan, which included the following five strategies:

- 1. Contributing an additional \$9,814,477 from FY 2016/17 unencumbered fund balance with an additional \$3 million each year thereafter
- 2. Continuing to contribute additional funds each year using projected savings that will be realized under the Public Employees' Pension Reform Act (PEPRA) with \$1,886,420 in FY 2017/18 and continuing in different amounts until OCFA's funding goal is achieved
- 3. Continuing to contribute an additional \$3 million in 2017/18 and increasing by \$2 million each year until it reaches \$15 million and continuing at \$15 million thereafter
- 4. Continuing to contribute \$1 million per year from surplus fund balance available in the Workers' Compensation Self Insurance Fund in FY 2017/18 and for three more years thereafter
- 5. Contributing \$7,633,021 in FY 2017/18 from General Fund surplus and continuing in different amounts until OCFA's funding goal is achieved

At the request of the Board of Directors, Segal Consulting was also asked to determine the following:

- How much OCFA saved in interest annually since 2013 by making additional payments towards its UAAL?
- When would OCFA achieve 85% funding and 100% funding, if it continued to make additional UAAL payments under its Snowball Plan?

The actuary reported back that OCFA has saved \$11.5 million in interest by making additional payments towards its UAAL and will achieve 85% funding by December 31, 2020, and 100% funding by December 31, 2027, assuming all other actuarial inputs are held constant.

The OCFA has already taken steps to reduce some of its long-term liabilities and accelerate funding of other liabilities. Staff is committed to continue seeking additional ways to mitigate liability impacts, fund the accrued liabilities, and ensure the long-term viability of the organization.

#### **Attachment(s)**

- 1. 2017 Long Term Liability Study
- 2. Updated Snowball Strategy



# 2017 LIABILITY STUDY

OCFA'S LONG TERM LIABILITES

#### OCFA'S LONG TERM LIABILITY STUDY

#### I. OBJECTIVE

One of the key components of fiscal responsibility is prudent management of long-term liabilities. The objective of this annual study is to provide an accurate assessment of the OCFA's *total* long-term obligations and continuously identify strategies to reduce and/or fund the liabilities.

#### II. BACKGROUND

OCFA's long term liabilities include:

- 1. Defined Benefit Pension Plan
- 2. Defined Benefit Retiree Medical Plan
- 3. Lease Purchase Agreements (helicopters)
- 4. Workers Compensation Claims
- 5. Accrued Compensated Absences (accumulated sick and vacation payouts)

OCFA's biggest long-term challenges are pensions, retiree medical for retired employees, and workers' compensation claims. Both the Defined Benefit Pension Plan and the Defined Benefit Retiree Medical Plan currently have unfunded liability balances, as further described below.

#### **DEFINED BENEFIT PENSION PLAN**

In a defined benefit plan, employees receive specific benefits upon retirement, based on a pre-established formula. For example, a pension plan may provide retirees an annual retirement income which is determined in accordance with an agreed-upon formula, such as a predetermined percentage of annual earnings multiplied by the number of years of service.

The OCFA participates in the Orange County Employees' Retirement System (OCERS), a cost sharing multiple-employer, defined benefit pension plan. All OCFA regular, full-time and part-time employees become members of OCERS upon employment, and the OCFA makes periodic contributions to OCERS as part of the funding process. The contributions submitted to OCERS are divided into employer and employee contributions. The combination of these contributions and investment income from OCERS' investments are structured to fund the employees' retirement benefits by the time the employees retire.

The OCFA's employees are distributed into two employee categories for purposes of retirement benefits, identified as Safety members and General members. Both the Safety and General categories include three tiers of retirement benefit formulas each, depending on date of hire:

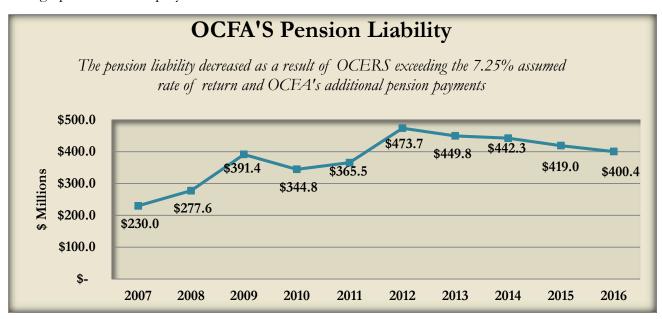
	Hired Prior to July 1, 2012	Hired Between July 1, 2012 – Dec. 31, 2012	Hired on or after Jan. 1, 2013 (w/out reciprocity)
Safety	3% @ 50	3% @ 55	2.7% @ 57

	Hired Prior to July 1, 2011	Hired Between July 1, 2011 – Dec. 31, 2012	Hired on or after Jan. 1, 2013 (w/out reciprocity)
General	2.7% @ 55	2% @ 55	2.5% @ 67

#### OCFA Retirement Costs, Liabilities and Funding

OCFA's annual retirement costs (mandatory costs plus voluntary accelerated payments) represent approximately \$77 million or 22% of the Authority's FY 2017/18 General Fund budget. Each year, the Authority receives its retirement rates from OCERS. The total retirement rate has two components: the Normal Cost Component plus the current year's cost for the Unfunded Actuarial Accrued Liability (UAAL). The Normal Cost Component is the cost to pay for the current year's value of retirement benefits as earned. The UAAL Component is the accrued liability for past services which were not funded by prior contributions and investments.

The UAAL is determined by the actuary and is the difference between the present value of accrued liabilities and the value of assets as of a specific date. This amount changes over time as a result of changes in accrued benefits, pay levels, rates of return on investments, changes in actuarial assumptions, and changes in the demographics of the employee base.



Based on the December 31, 2016, valuation by OCERS, the Authority's total UAAL was \$400.4 million with \$338.5 million or 85% attributed to Safety members and \$62 million or 15% attributed to General members. OCFA's plan is 77% funded. The OCFA reduces its UAAL over time as part of the annual required pension contribution to OCERS as shown below:

**General Members** (2.7% @ 55, 2.0% @ 55, and 2.5% @ 67 combined)

Employer Rate *	<b>2016 Valuation</b> (FY 18/19 rates)	<b>2015 Valuation</b> (FY 17/18 rates)
Normal Cost	12.19%	12.05%
<u>UAAL</u>	<u>18.35%</u>	<u>20.53%</u>
Total	30.54%	32.58%

**Safety Members** (3.0% at 50, 3% @ 55 and 2.7% @ 57 combined)

Employer Rate *	<b>2016 Valuation (</b> FY 18/19 rates)	<b>2015 Valuation</b> (FY 17/18 rates)
Normal Cost	22.54%	25.62%
<u>UAAL</u>	<u>22.27%</u>	<u>22.41%</u>
Total	47.81%	48.03%

<sup>\*</sup> Totals do not include *Employee Rates*, which vary based on age of entry and retirement formula. *Employee Rates* range from 6.52% - 16.01% for General and 8.86% - 20.26% for Safety (See Exhibit A). Rates are also after adjustment for additional UAAL contributions made in 2014, 2015 and 2016.

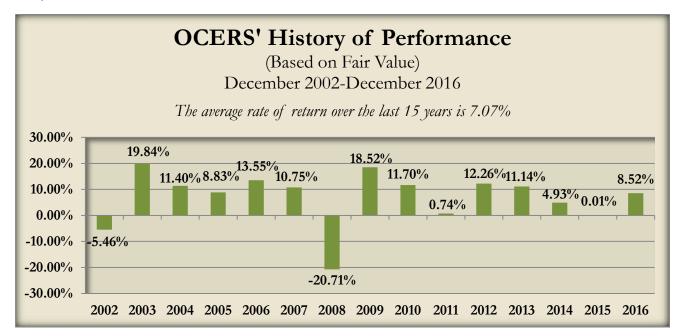
Two events have the greatest impact on plan funding: (1) plan changes, namely benefit formula changes and (2) differing actual experience requiring a modification in assumptions to reflect reality such as life expectancy. Other assumptions that impact the funding and UAAL include:

- 1. The assumed rate of return
- 2. The rate of increase in salaries
- 3. Member mortality
- 4. The age at which members choose to retire
- 5. How many members become disabled
- 6. How many members terminate their service earlier than anticipated

The assumed rate of return, also known as the discount rate, is a critical issue impacting OCFA's UAAL. The higher the discount rate, the lower the present value of pension assets needed to meet future pension obligations. A lower discount rate increases the current unfunded pension liabilities. In 2013, the OCERS Board voted to lower the interest rate assumption from 7.75% to 7.25% which increased OCFA's annual retirement costs by \$7.5 million. This increase was phased in over a two-year period starting in FY 2014/15.

In 2016, OCERS actual return was 8.52%, slightly above its assumed rate of return of 7.25% which helps to lower the UAAL. In addition, OCFA paid \$13.5 million in additional contributions which lowered OCFA's UAAL by \$18.6 million from \$419.0 million in 2015 to \$400.4 million in 2016. Of the \$18.6 million decline in the UAAL, Safety's UAAL decreased by \$18.3 million and General's UAAL decreased by \$309,000.

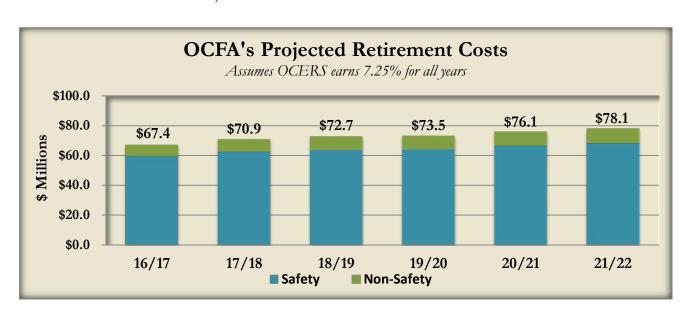
The following chart shows a history of OCERS' investment performance over the past fifteen years. Although there have been years in which OCERS exceeded its assumed rate of return, the years in which OCERS incurred significant losses, such as the 21% loss in 2008, have a dramatic negative impact. OCERS' average return for the 15 years reflected below is 7.07%, which is below its assumed rate of return of 7.25%. When OCERS' actual return falls below its assumed rate of return, OCFA incurs higher retirement rates/costs.



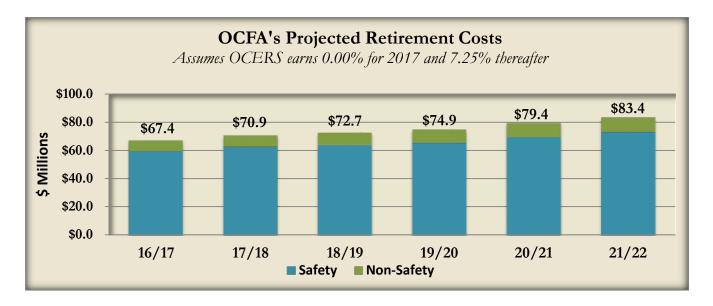
OCERS' investment return also impacts the funding level of the entire system, as demonstrated in the following chart. After the 21% loss in 2008, OCERS UAAL increased and its funding level began to drop. The funding level started to improve in 2013 when OCERS rate of return exceeded the assumed rate of return.

OCERS' Schedule of Funding Progress  (Dollars in Thousands)					
	OCE	RS' funding level d	continues to improve		
Actuarial Valuation Date December 31	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (b)	Total UAAL (b-a=c)	Funded Ratio (a/b)	
2001	\$4,586,844	\$4,843,899	\$257,055	94.69%	
2002	4,695,675	5,673,754	978,079	82.76%	
2003	4,790,099	6,099,433	1,309,334	78.53%	
2004	5,245,821	7,403,972	2,158,151	70.85%	
2005	5,786,617	8,089,627	2,303,010	71.53%	
2006	6,466,085	8,765,045	2,298,960	73.77%	
2007	7,288,900	9,838,686	2,549,786	74.08%	
2008	7,748,380	10,860,715	3,112,335	71.34%	
2009	8,154,687	11,858,578	3,703,891	68.77%	
2010	8,672,592	12,425,873	3,753,281	69.79%	
2011	9,064,355	13,522,978	4,458,623	67.03%	
2012	9,469,208	15,144,888	5,675,680	62.52%	
2013	10,417,125	15,785,042	5,367,917	65.99%	
2014	11,449,911	16,413,124	4,963,213	69.76%	
2015	12,228,009	17,050,357	4,822,348	71.72%	
2016	13,102,978	17,933,461	4,830,483	73.06%	
	· · · · · · · · · · · · · · · · · · ·				

The chart below ZLI assumes OCERS will earn its assumed rate of return of 7.25% in 2017 and future years. This chart should be contrasted with the chart on the following page to demonstrate the significant impact on retirement contribution rates, when OCERS does not earn its assumed rate of return.



The chart below assumes OCERS will not earn its assumed rate of return, and instead will earn 0.00% in 2017 and 7.25% in future years. Note the increased retirement contributions that would result starting in FY 2019/20 in the event OCERS has a year of 0.00% returns. This data is presented to demonstrate the potential negative impacts that can (and do) occur from time to time when the system earns less than assumed; however, it's important to note that OCERS' year-to-date 2017 preliminary return as of August, is 9.5%.



OCFA has taken steps to increase employee contributions, reduce benefits by establishing new tiers, and accelerate the paydown of the UAAL with the long-term goal to ensure adequate pension funding. However, other factors (such as OCERS' investment performance) are beyond the OCFA's control, yet these factors have a significant impact on determining retirement rates, and ensuring adequate funding.

#### Accelerated Pension UAAL Payment Plan

In September 2013, the OCFA Board of Directors approved an Accelerated Pension UAAL Payment Plan. The accelerated plan will have the following benefits:

- Results in OCFA's pension liability being paid off sooner
- Earlier and larger contributions into the pension system result in greater investment income earned
- Greater investment income earned results in less money paid by the employer over the long term

OCFA's accelerated payment plan originally involved three components including (1) use of year-end fund balance available, (2) contributing additional funds each year using savings achieved under PEPRA or other annual actuarial gains, and (3) contributing an additional \$1 million per year in budgeted funds, with the annual budget allocation building to \$5 million per year by year 5.

In FY15/16, the plan was modified to include the following:

- Contributing an additional \$1 million each year starting in 2016/17 and increasing by \$2 million each year until it reaches \$15 million and continuing at \$15 million thereafter
- Contributing \$1 million per year from surplus fund balance available in the Workers' Compensation Self Insurance Fund starting in 2016/17 for 5 years

In FY16/17, the plan was modified to include the following:

- Contributing \$7,633,021 in FY 2017/18 from General Fund surplus and continuing in different amounts until OCFA's funding goal is achieved
- Reduced the accelerated funding goal from 100% to 85% for OCFA's pension liability with the added policy to redirect accelerated payment dollars to OCFA's retiree medical liability after achieving the 85% target for the pension liability

To date, OCFA has made the following additional payments towards its UAAL:

```
FY 13/14 $ 5.5 million
FY 14/15 21.3 million
FY 15/16 15.4 million
FY 16/17 13.5 million
Total $55.7 million
```

The outcomes from the accelerated payment plan implementation in FY 2013/14 through Fiscal year 2016/17 along with OCFA's anticipated future year accelerated payments were submitted to OCERS' actuary to determine:

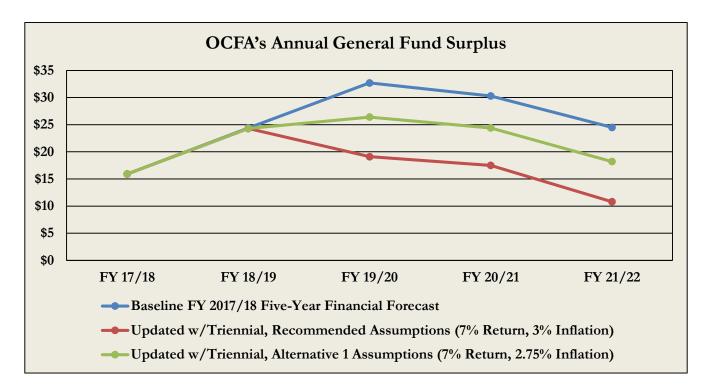
- 1. How much OCFA saved in interest annually since 2013 by making additional payments towards its UAAL?
- 2. When would OCFA achieve 85% funding and 100% funding if it continued to make additional UAAL payments under its Snowball Plan?

The actuary reported back that OCFA has saved \$11.5 million in interest by making additional payments towards its UAAL and will achieve 85% funding by December 31, 2020 and 100% funding by December 31, 2027, assuming all other actuarial inputs are held constant. The noted \$11.5 million in interest savings has accumulated, as shown below, in correlation with our accelerated payments:

```
CY 2014 $ 1,012,937
CY 2015 2,084,402
CY 2016 3,295,068
CY 2017 4,285,036
Total $11,466,202
```

All of the above strategies will reduce the OCFA's existing UAAL more rapidly, and effectively shorten the weighted-average amortization period. Shortening the amortization period will have many benefits to OCFA. Although it causes our employer contributions to rise during the accelerated payment period, it results in our liability being paid off sooner. Earlier payments of contributions will result in greater investment income earned and less money paid from the employer over the long-term.

Staff evaluated the affordability of these accelerated payment options, using the OCFA's long term financial forecast. OCERS is currently completing a Triennial Experience Study to assess changes needed to its long-term actuarial assumptions. Primary changes under consideration include a reduction to the discount rate (potentially from 7.25% to 7.00%) and changes to mortality tables. Staff evaluated the potential impacts from the Triennial Study through alternative versions of the OCFA's five-year financial forecast. In all scenarios, OCFA remains financially healthy with a continued ability to sustain the accelerated pension payment plan.



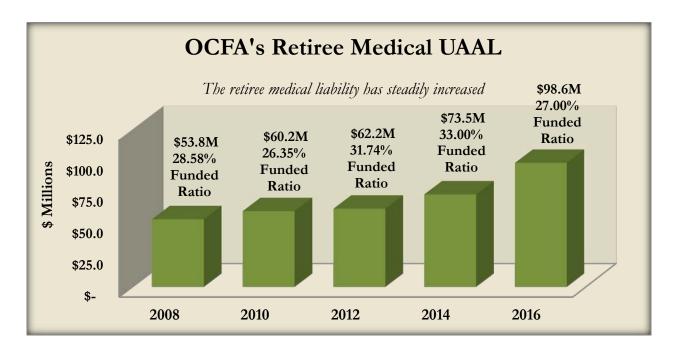
We concluded that combining multiple strategies yields positive benefits for OCFA, while also retaining flexibility in the event that OCFA's financial environment should change significantly in the coming years.

#### DEFINED BENEFIT RETIREE MEDICAL PLAN

In addition to the OCFA's retirement plan administered by OCERS, the OCFA provides a post-employment medical retirement plan (Retiree Medical Plan) for certain employees. Employees hired prior to January 1, 2007, are in a *defined benefit plan* that provides a monthly grant toward the cost of retirees' health insurance coverage based on years of service. The Plan's assets are held in an irrevocable trust for the exclusive benefit of Plan participants and are invested by OCERS. As such, if OCERS does not earn its assumed rate of return of 7.25%, the UAAL increases. Current active employees hired prior to January 1, 2007, are required to contribute 4% of their gross pay toward the Retiree Medical Plan.

Based on an actuarial study prepared by Nyhart Epler as of July 1, 2016, the OCFA's Unfunded Actuarial Accrued Liability (UAAL) for the Retiree Medical defined benefit plan is \$98.6 million. The UAAL is impacted by future retirees, spouses of retirees, a maximum 5% annual increase in the medical grant, the investment return of the trust, and the underlying assumptions such as the mortality tables.

Under the Government Accounting Standards Board (GASB) Statement No. 45, OCFA is required to have an actuarial valuation performed on its Retiree Medical Plan every two years.



Note: Does not include implicit subsidy and uses OCERS assumed rate of return of 7.75% up to 2012 and 7.25% thereafter.

The benefit provided under the OCFA's Retiree Medical Plan is a negotiated benefit included in the various Memorandums of Understanding and the Personnel & Salary Resolution for employees hired prior to January 1, 2007.

The OCFA has previously approached funding issues and plan sustainability issues relating to this Plan collaboratively with its labor groups in order to identify options for improving the funding status. Similar to previous approaches, following receipt of the 2012 Actuarial Study for this Plan, management met with representatives of all three labor groups to review the findings. In 2013, we gathered ideas from labor for options that may be considered in the future to improve the funding status of the Plan and had the actuary perform a special actuarial study to evaluate the various options and associated impacts on plan funding. The results of the special study were shared with each of the labor groups.

On November 17, 2016, the OCFA Board directed staff to continue the Accelerated Pension Payment Plan as indicated in the Updated Snowball Strategy, with a modification to alter the funding target from 100% to 85%, and redirect accelerated payment dollars to Retiree Medical after achieving the 85% target.

In April 2017, the OCFA Board approved the renewed Health Plan Agreement with the Orange County Professional Firefighters Association. The 5-year term of the Agreement is from January 1, 2017 to December 31, 2021. One of the related provisions is as follows:

... to continue return of "excess fund balance" to OCFA with returned funds to be allocated to OCFA's Retiree Medical Trust Fund.

Periodic discussions on this topic continue with management and labor seeking options for continued future funding of the plan.

#### DEFINED CONTRIBUTION RETIREE MEDICAL PLAN

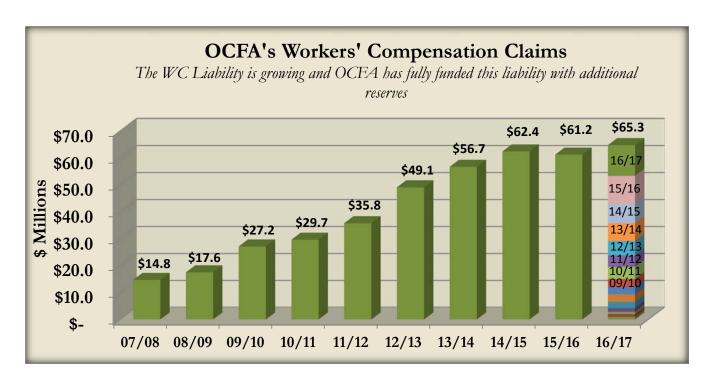
For employees hired on or after January 1, 2007, the OCFA created a *defined contribution plan* that is administered by SelectAccount. The Plan provides for the reimbursement of medical, dental, and other healthcare expenses of retirees. Employees are required to contribute 4% of their gross pay. Account assets are invested as directed by the participant and all contributions, investment income, realized gains and losses are credited to the individual's account. Under this plan structure, there is no UAAL.

#### LEASE PURCHASE AGREEMENTS

A Lease Purchase Agreement is a form of long-term debt used by government agencies to acquire buildings, vehicles, equipment and other capital assets. Within this type of lease, a lessee can apply lease payments annually toward the purchase of the property. In December 2008, the OCFA entered into a ten-year Lease Purchase Agreement to purchase two helicopters and related equipment for a purchase price of \$21.5 million. In 2011, OCFA refinanced the helicopters and lowered its interest rate from 3.76% to 2.58% saving \$444,000 over the remaining six years of the lease. As of June 30, 2017, \$3.7 million remains due, including interest and principal. The final maturity is in September 2018.

#### WORKERS' COMPENSATION CLAIMS

In March 2002, OCFA implemented a workers' compensation self-insurance program. A separate fund called Fund 190: Self Insurance was established in May 2003 to track funding and expenditures for workers' compensation claims liability. The funding sources include revenue from the General Fund and interest earnings. The required funding levels are determined by an independent actuarial study. As of June 30, 2017, OCFA's total workers' compensation liability is \$65.3 million. Although the workers' compensation program represents a large liability for OCFA, it is important to note that it is a *fully-funded* liability. OCFA has \$76.5 million set-aside in reserves to pay this liability as the various medical claims and bills become due, reflecting a funding surplus of \$11.2 million.



The outstanding liability reflected in the above chart reflects the fact that although the entire future cost of claims is recorded in the year of injury, the actual payment of that claim does not occur immediately. The cash flow payments for many workers' compensation cases occur slowly over time; therefore, it is a natural occurrence that the unpaid liability for a self-insured system will grow as the unpaid liabilities stack on top of each other over the years (as demonstrated by the color-coding of the FY 16/17 bar in the above chart). Upon maturity of a self-insured system, the amount of unpaid liability should level out (as demonstrated in the above chart in the most recent years), and continued increases at that point in time are more likely driven by other forces, such as increased medical costs, increased claim activity, legislative changes and case law.

The workers' compensation liability reflects the present value of estimated outstanding losses at the 50% confidence level. A confidence level is the statistical certainty that an actuary believes funding will be sufficient. For example, a 50% confidence level means that the actuary believes funding will be sufficient in five out of ten years. OCFA's Board-adopted Workers' Compensation Funding Policy sets the funding at the 50% confidence level.

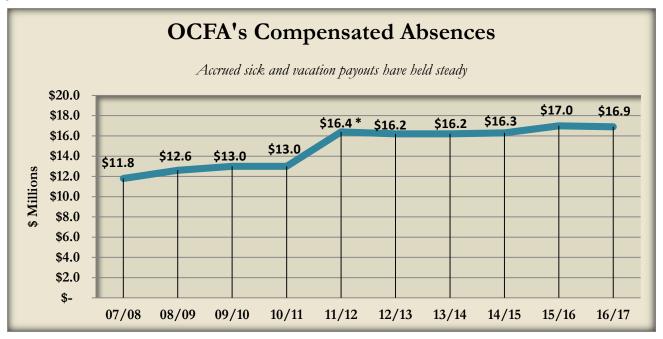
There are several factors that contribute to the liability including workers' compensation reform that increased the statute of limitation for cancer from five to ten years; injury presumption for safety personnel; an aging workforce which contributes to a longer recovery time and higher permanent disability benefits; increased medical costs; and an increase to the workforce in 2012 with the addition of the City of Santa Ana. Santa Ana reimburses OCFA for injuries that initially occurred on or before April 20, 2012.

#### ACCRUED COMPENSATED ABSENCES

Compensated absences are commonly described as paid time off made available to employees in connection with sick and vacation time. If employees do not use all such compensated absences, a liability is accrued for the unused portion. The OCFA's policy allows employees to accumulate earned but unused sick and vacation pay benefits.

OCFA's labor agreements allow employees to cash out sick and vacation time throughout their career with the exception of Local 3631 Firefighter unit which can only cash out vacation time; however, the majority of sick and vacation payouts occur at the time an employee retires.

The OCFA has budgeted \$3.9 million for sick and vacation payouts in FY 2017/18 based on historical trends and expected retirements. OCFA's total liability for compensated absences as of June 30, 2017, is \$16.9 million.



\* FY 11/12 includes Santa Ana General Leave Balances; Santa Ana reimburses OCFA for uses of transferred Leave Balances.

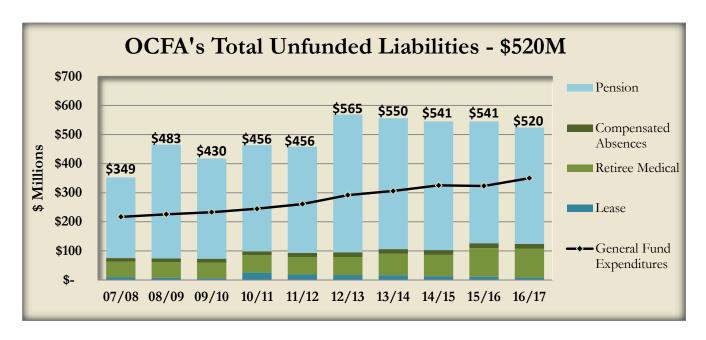
#### III. SUMMARY

OCFA's total long term, unfunded liabilities as of June 30, 2017,\* are as follows:

	\$ Amount in Millions	% of Total
Defined Benefit Pension Plan *	\$ 400.4	77.0%
Defined Benefit Retiree Medical Plan	98.6	19.0
Helicopter Lease Purchase Agreement	3.7	.71
Accrued Compensated Absences	16.9	3.3
Total	\$519.6	100.0%

<sup>\*</sup>Note: the valuation date for the pension plan is December 31, 2016, instead of June 30, 2017, consistent with OCERS' calendar year basis for financial reporting.

When OCFA presented its first Liability Study to the Board in September 2012, the Board directed staff to identify strategies to lower and/or mitigate OCFA's long term liabilities. As shown in the chart below, as some of these strategies have been implemented, OCFA has reduced its total long term, unfunded obligations in the last few years.



Note: Workers Compensation was removed since it is fully funded by a reserve fund.

#### ACTIONS TAKEN

OCFA has already taken several steps to manage its long-term obligations:

- 1. During 2015 and 2016, OCFA completed negotiations with all four labor groups resulting in increased employee contributions towards retirement.
- 2. On June 26, 2014, the Board approved an Alternative Dispute Resolution process for disputed workers' compensation cases, also known as a Carve-Out program. The State has approved the program and it was implemented on October 1, 2014.
- 3. On September 26, 2013, the Board approved a strategy to expedite the pay down of OCFA's pension liability. Under this Plan, the actuary, the Segal Company, estimates this liability will be paid by 2026/27. To date, OCFA has made an additional \$45 million in payments to OCERS to lower its UAAL.
- 4. Completed a special actuarial study relating to the OCFA's Retiree Medical Defined Benefit Plan to evaluate options for potential plan amendments which could improve plan funding, subject to future negotiation with OCFA's labor groups. The results of the study were shared with the labor groups.
- 5. Evaluated the financial feasibility of paying off the outstanding lease financing obligations associated with the OCFA's helicopters, as part of the 2014/15 budget development process.
- 6. Directed staff to evaluate options for mitigating the budget and liability impacts of payouts for accumulated sick and vacation balances, subject to future negotiation with OCFA's labor groups.
- 7. Used a trigger formula during down economic cycles to connect pay raises for all OCFA employees to OCFA's financial health.
- 8. Implemented lower retirement formulas for all labor groups.
- 9. Refinanced the helicopter lease to lower the interest rate.

- 10. Implemented annual prepayment of retirement contributions to achieve a discount.
- 11. Provided a study to the Board of Directors regarding the feasibility of Pension Obligation Bonds.
- 12. Provided a study to the Board of Directors regarding the feasibility of changing automatic Cost of Living Allowance (COLA) increases for pensions; transmitted a copy of the report to the County Board of Supervisors and OCERS Board of Retirement, for their consideration of potential cost-containment actions relating to Pension COLAs under the authority granted by the '37 Act.

#### RECOMMENDATIONS

Recommended actions pending approval of this staff report include:

- 1. Direct staff to continue the Accelerated Pension Payment Plan as indicated in the Updated Snowball Strategy.
- 2. Direct staff to return with the mid-year financial review to consider allocation of available unencumbered funds identified in the FY 2016/17 financial audit to OCFA's unfunded pension liability.

#### **CONCLUSION**

In order to strategically fund long-term liabilities, OCFA must continue to strategically balance present-day needs with future commitments. The goal is for OCFA's budget over the long-term to fund all of its long-term liabilities

#### Exhibit A

#### **OCFA Member Retirement Contributions**

#### Safety Members' Retirement

#### Firefighter Safety members:

Effective September 2016, 2017, 2018, and 2019, employees will pay an additional 3.50%, 3.49%, 2.00%, and 0.54% in employee retirement contributions, respectively, increasing their employee contributions from 11% to 20.53% depending upon their age of entry. Employees hired on or after January 1, 2013, when PEPRA was enacted will continue to be subject to PEPRA requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

#### **Chief Officer Safety members:**

Effective July 2016, 2017, 2018, and 2019, employees will pay an additional 3.50%, 3.49%, 3.30%, and 0.93% in employee retirement contributions, respectively, increasing the employee contributions from 9% to 20.22% depending upon their age of entry. Thereafter, these employees will pay any subsequent increases in the employee retirement contributions. Employees hired on or after January 1, 2013, when PEPRA was enacted will continue to be subject to PEPRA requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

#### General Members' Retirement

#### **OCEA** members:

Effective March 2015, 2016 and 2017, employees hired prior to January 1, 2013, will pay an additional 2%, 2.5% and 3% in employee retirement contributions, respectively, increasing the employee contributions from 9% to 16.5%, depending upon their age of entry. Thereafter, these employees will pay any subsequent increases in the cost for employee retirement contributions. Employees hired after PEPRA was enacted will continue to be subject to PEPRA requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

#### Administrative Management members:

Effective July 2015, January 2016, and January 2017, employees hired prior to January 1, 2013, will pay an additional 4%, 2%, and 2.25% in employee retirement contributions, respectively, increasing the employee retirement contributions from 8.25% to 16.5%, depending upon their age of entry. Thereafter, these employees will pay any subsequent increases in the cost for employee retirement contributions. Employees hired after PEPRA was enacted will continue to be subject to PEPRA requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

#### **Executive Management:**

Some members of Executive Management fall under Safety and others fall under General member categories. Regardless, all Executive Management employees who are not subject to the provisions of PEPRA were paying 9% in employee retirement contributions prior to March 2015. Effective March 2015, they began phased-in increases to their contribution rate with a 2% increase in employee contributions in year one, a 2.5% increase in year two and payment of full member contributions in year three, which vary based on age of entry.

# Orange County Fire Authority Expedited Payment of UAAL Snowball Effect of Multiple Strategies

			Estin	nated Annual UAAL P	Sources				
Years From Start of Plan	Remaining Years to Completion	Fiscal Year	Unencumbered Fund Balance Available	Annual Savings from PEPRA Reductions to Retirement Contribution Rates	Budget Increase of \$1M, grows by \$2M/year to \$15M	Budget Increase of \$1M/year Funded by Excess W/C Reserves	50% of General Fund Surplus	Annual Snowball Amount	Cumulative Expedited UAAL Payment
			Part A	Part B	Part C	Part D	Part E		
1		13/14	3,000,000	2,500,000	-	-	-	5,500,000	5,500,000
2		14/15	21,290,238	-	-	-	-	21,290,238	26,790,238
3		15/16	12,609,380	2,802,122	-	-	-	15,411,502	42,201,740
4		16/17	9,814,477	1,653,114	1,000,000	1,000,000		13,467,591	55,669,331
5	1	17/18	3,000,000	1,886,420	3,000,000	1,000,000	7,633,021	16,519,441	72,188,772
6	2	18/19	3,000,000	3,167,397	5,000,000	1,000,000	10,230,177	22,397,574	94,586,346
7	3	19/20	3,000,000	1,648,658	7,000,000	1,000,000	14,339,774	26,988,432	121,574,778
8	4	20/21	3,000,000	2,368,859	9,000,000	1,000,000	13,134,904	28,503,763	150,078,542
9	5	21/22	3,000,000	3,279,280	11,000,000		10,080,929	27,360,209	177,438,751
10	6	22/23	3,000,000	4,787,217	13,000,000		9,082,740	29,869,957	207,308,708
11	7	23/24	3,000,000	5,772,547	15,000,000		8,552,338	32,324,885	239,633,592
12	8	24/25	3,000,000	6,814,115	15,000,000		7,534,358	32,348,473	271,982,065
13	9	25/26	3,000,000	14,242,631	15,000,000		4,913,467	37,156,098	309,138,163
14	10	26/27	3,000,000	19,647,456	15,000,000		3,241,322	40,888,778	350,026,941
			76,714,095	70,569,816	109,000,000	5,000,000	88,743,030	350,026,941	

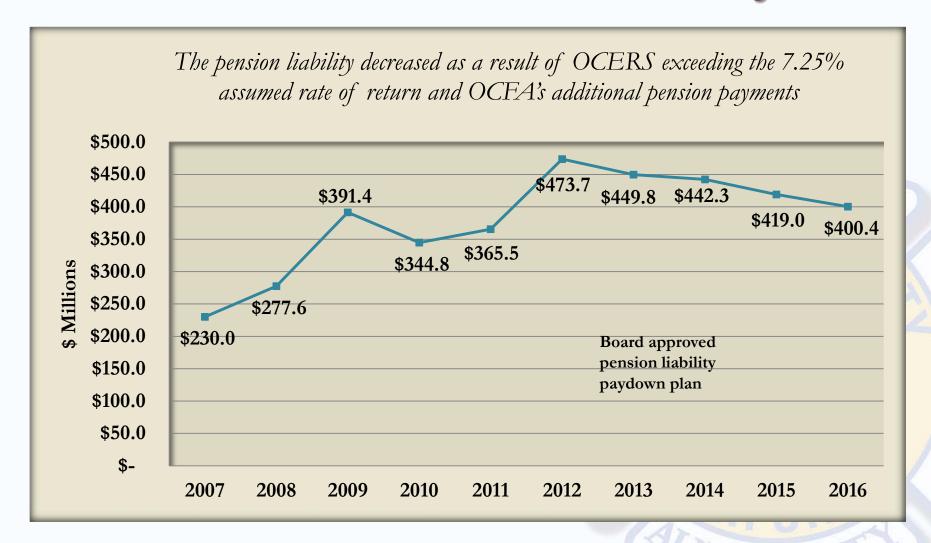


# Background

# OCFA's long term liabilities include:

- 1. Defined Benefit Pension Plan
- 2. Defined Benefit Retiree Medical Plan
- 3. Lease Purchase Agreements (helicopters)
- 4. Workers Compensation Claims
- 5. Accrued Compensated Absences (sick and vacation payouts)

# **OCFA's Pension Liability**

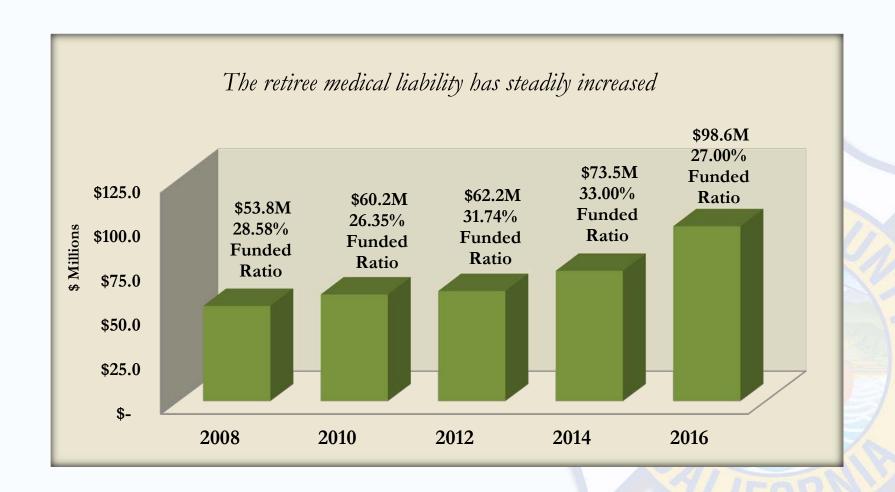


## Accelerated Pension Liability Payment Plan \$11.5 million in interest savings

		Part A	Part B	Part C	Part D	Part E		
Years	Fiscal Year	Year End Fund Balance Available	Annual Savings from Reductions to Projected Retirement Rates (PEPRA)	Budget Increase of \$1M, Growing by \$2M Annually to \$15M	Budget Increase of \$1M/year from Excess Workers' Comp. Reserves	50% of General Fund Surplus	Annual Snowball Amount	Cumulative Accelerated Pension Payments
	13/14	3,000,000	2,500,000	-	-		5,500,000	5,500,000
	14/15	21,290,238	-	-	-		21,290,238	26,790,238
	15/16	12,609,380	2,802,122	-	-		15,411,502	42,201,740
	16/17	9,814,477	1,653,114	1,000,000	1,000,000		13,467,591	55,669,331
1	17/18	3,000,000	1,886,420	3,000,000	1,000,000	7,633,021	16,519,441	72,188,772
2	18/19	3,000,000	3,167,397	5,000,000	1,000,000	10,230,177	22,397,574	94,586,346
3	19/20	3,000,000	1,648,658	7,000,000	1,000,000	14,339,774	26,988,432	121,574,778
4	20/21	3,000,000	2,368,859	9,000,000	1,000,000	13,134,904	28,503,763	150,078,542
5	21/22	3,000,000	3,279,280	11,000,000	-	10,080,929	27,360,209	177,438,751
6	22/23	3,000,000	4,787,217	13,000,000	-	9,082,740	29,869,957	207,308,708
7	23/24	3,000,000	5,772,547	15,000,000	-	8,552,338	32,324,885	239,633,592
8	24/25	3,000,000	6,814,115	15,000,000	-	7,534,358	32,348,473	271,982,065
9	25/26	3,000,000	14,242,631	15,000,000	-	4,913,467	37,156,098	309,138,163
10	26/27	3,000,000	19,647,456	15,000,000	-	3,241,322	40,888,778	350,026,941
		76,714,095	70,569,816	109,000,000	5,000,000	88,743,030	350,026,941	

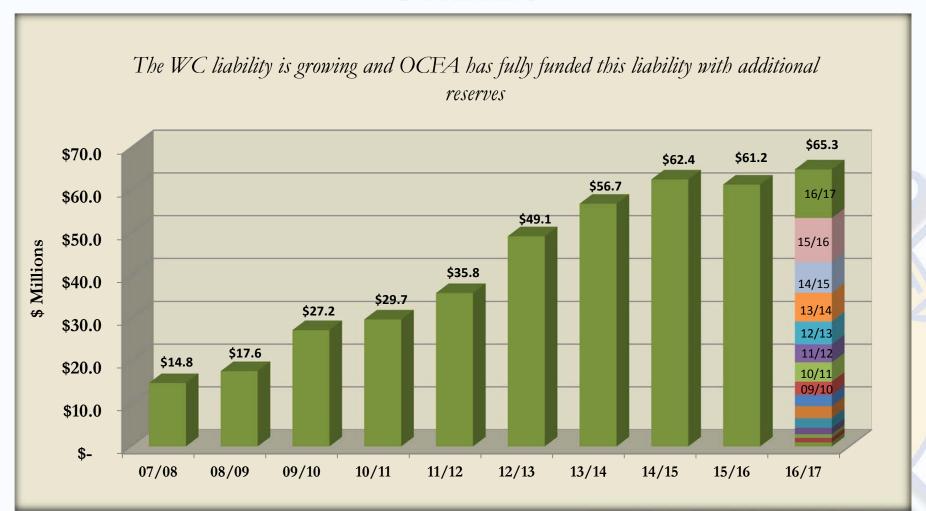
85% funding by 12/21/2020, 100% funding by 12/31/2027

# **OCFA's Retiree Medical Liability**



Note: Does not include implicit subsidy and uses OCERS assumed rate of return of 7.75% up to 2012 and 7.25% thereafter.

# OCFA's Workers' Compensation Claims

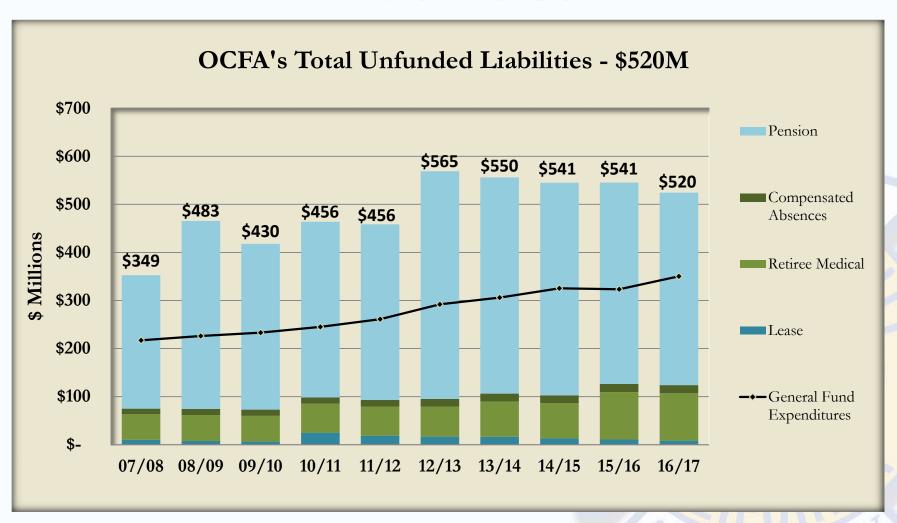


# **OCFA's Compensated Absences**



\*FY 11/12 corrected to include Santa Ana General Leave Balances. The City reimburses OCFA for uses of transferred Leave Balances.

# OCFA's Total Unfunded Liabilities



Note: Workers Compensation was removed since it is fully funded by a reserve fund.

## Recommendations

# Recommended actions pending approval of this staff report include:

- 1. Direct staff to continue the Accelerated Pension Liability Payment Plan.
- 2. Direct staff to return with the mid-year financial review to consider allocation of available unencumbered funds identified in the FY2016/17 financial audit towards the OCFA's unfunded pension liability.



### Orange County Fire Authority AGENDA STAFF REPORT

### **Budget and Finance Committee Meeting October 11, 2017**

Agenda Item No. 4D Discussion Calendar

#### **Special Procurement Contract for Behavioral Health Services**

#### **Contact(s) for Further Information**

Brigette Gibb, Director <u>brigettegibb@ocfa.org</u> 714.573.6353

**Human Resources** 

Jonathan Wilby, Risk Manager jonathanwilby@ocfa.org 714.573.6832

#### **Summary**

This agenda item is submitted to recommend approval of a special procurement contract with The Counseling Team International (TCTI) to provide behavioral health services to OCFA personnel.

#### **Prior Board/Committee Action**

#### **Human Resources Committee Recommendation:** APPROVE

At its regular October 3, 2017, meeting, the Human Resources Committee reviewed and unanimously recommended approval of this item.

#### **RECOMMENDED ACTION(S)**

To provide behavioral health services to OCFA personnel, it is recommended that the Committee review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 26, 2017, with the Committee's recommendation that the Board of Directors:

- 1. Approve and authorize the Purchasing Manager to enter an agreement with The Counseling Team International for behavioral health services for a three-year period with the option of two additional one-year renewals, in an amount not to exceed \$150,000 annually (\$450,000 during the initial three-year period).
- 2. Approve the budget adjustment in the General Fund (Fund 121) increasing appropriations in the amount of \$150,000.

#### **Impact to Cities/County**

Not Applicable.

#### **Fiscal Impact**

Funding for the proposed behavioral health services is not included in the FY 2017/18 budget; therefore, a budget adjustment is necessary to fund the contract award.

#### **Background**

The OCFA felt the severe impact of a fire department suicide on December 13, 2016, when one of our firefighters committed suicide. This was not an isolated event. Firefighters in the United States are three times more likely to die by suicide than by line of duty deaths, according to the National Fallen Firefighters Foundations (NFFF), an organization chartered by Congress to honor and provide support to the families of firefighters killed on the job.

The Firefighter Behavioral Health Alliance estimates approximately 30 percent of the nation's 1.3 million career and volunteer firefighters suffer from post-traumatic stress disorder (PTSD), with 132 suicides by active and former United States firefighters and paramedics reported last year.

The numbers; however, could be much higher because there is no official database tracking suicide by firefighters and paramedics. Very few departments report these incidents, and very few first responders ask for help due to the stigmas that come along with showing any type of perceived weakness, whether physical or mental. Traditional Employee Assistance Programs have not met the needs of first responders and have been underutilized due to their lack of understanding of a first responder's unique occupational stressors, inability to create a relationship and gain trust from first responders, and restrictions on use.

The OCFA identified this fire service issue as a top priority and included a Fiscal Year 2016/17 domain objective to establish a program that addresses the impact of PTSD in OCFA personnel. A Joint Labor Management (JLM) workgroup was established that included a member of the Executive Team, Orange County Professional Firefighters Association, Local 3631 representatives, Chief Officer Association representative, and the Risk Manager. The workgroup conducted a gap analysis between the organizational needs and current programs in place to address behavioral health issues.

The JLM unanimously recommends the OCFA contract with TCTI to provide behavioral health services. TCTI has provided employee support services to address the unique stressors of law enforcement, fire, emergency services, and government agencies since 1985. TCTI is unique in providing the full spectrum of behavioral health and wellness services, training, critical incident stress management support, and on-call counseling for public safety personnel and family members sharing their homes.

TCTI will provide the following services described in the Statement of Work (Attachment 2):

- Comprehensive counseling services for first responders, dispatchers, and eligible family members living within the home
- Consultation with supervisors regarding problem employees and/or any aspect of the behavioral health and wellness services
- Follow-up sessions with employees involved in critical incidents
- Initial orientation for all levels of the organization, including management, employees, and their eligible dependents
- Health fair attendance
- Consultation services
- Critical incident intervention
- Peer support team training and support
- Critical incident stress management team training and support
- Peer support consultation

TCTI has responded to major disasters and critical incidents such as:

- Oklahoma City bombing
- Hurricane Andrew
- Hurricane Katrina
- Los Angeles riots
- Bureau of Alcohol, Tobacco, Firearms and Explosives incident in Waco, Texas

- Columbine High School shooting
- Springfield High School shooting
- Santee High School shooting
- Cajon High School shooting
- Red Lake High School shooting
- World Trade Center terrorist attack
- Pentagon terrorist attack
- Riverside County's United States Forest Service deaths in the Esperenza Fire
- Seal Beach beauty salon shooting
- SoCal Edison workplace violence shooting
- San Bernardino terrorist attack

They currently provide full service counseling for employees and their family members to over 91 public agencies in California (Attachment 3).

#### **Attachment(s)**

- 1. Special Procurement Request Form
- 2. Statement of Work
- 3. Full Service Counseling Public Agency Clients

Page | 1

#### **OCFA Special Procurement Justification Form**

The Purchasing Ordinance of the Orange County Fire Authority requires competitive bids and proposals for service and commodity contracts. A special procurement is defined as a purchase, where due to unusual or special circumstances, it would be in the best interest of the OCFA to accomplish the procurement without compliance with the competitive bidding requirements. Special Procurements are not applicable to construction services. The using department requesting a special procurement shall provide written evidence to support a special procurement determination. This form is to be submitted with the purchase requisition to Purchasing with any special procurement requests.

#### **SECTION I - INSTRUCTIONS**

- 1. Written justification on this form will be completed by the requesting department and submitted with the purchase requisition.
- 2. The request must be approved by the section manager and assistant chief prior to submitting the request to the purchasing manager.
- 3. All special procurement forms must be submitted to the Purchasing Manager and then reviewed and approved by the Assistance Chief, Business Services.
- 4. All special procurements exceeding \$50,000 (life of contract) require Executive Committee approval. In this case, the special procurement form must be submitted to the Executive Committee as an attachment to the staff report.
- 5. The approved special procurement justification form will be included in the contract file.

SECTION II – REQUEST INFORMATION		
Department/Section:	Requested By:	Date:
Human Resources/Risk Management	Jonathan Wilby	10/26/17
Recommended Vendor:	Vendor Contact:	Vendor's E-mail Address:
The Counseling Team International (TCTI)	Julie Castro Koot, CFO	cteamjulie@aol.com
Vendor Address:		Vendor's Telephone #:
1881 Business Center Drive, Suite 11 & 12, San	Bernardino, CA 92408	•
Type of Contract: ☐ One-time ☐ Multi-Year	Contract Term (Dates):	Contract Amount:
☐ Renewal ☐ Amendment ☐ Increase	11/1/17- 10/31/22	\$150,000/year (not to exceed)
If the contract type is a Renewal, Amendment or Increas	Attachments:	
information with this request (PO, BO, previous approve	□Yes ■No	
and dollar amount).		
		7

#### **SECTION III – JUSTIFICATION**

1.	Provide a detailed description of the prod	uct or service requested.	Describe what it is.	Attach additional sh	eet
	if necessary.				

Confidential short-term comprehensive counseling services to fire personnel and their eligible family members living in the home, training on a wide variety of topics affecting public safety personnel, 24/7/365 standby status to provide a behavioral health professional to participate on the critical incident stress management (CISM) team, and team support.

Please state the reasoning for the special procurement and the special circumstances of why it would be in the
best interest of OCFA to accomplish the procurement without a competitive bidding process. Provide a
summary of findings (research and analysis) including any supporting documentation which validates your
recommendation and demonstrates the nature of this request. Attach additional sheet if necessary.

TCTI has provided employee support services to address the unique stressors of law enforcement, fire, emergency services and government agencies since 1985. TCTI is unique in providing a full spectrum of behavioral health and wellness services, training, critical incident stress

nanagement, and on-call counseling for pr	ablic salety personnel. TO IT currently provides of	
amily members of over ninety-one public agenc	ies in Southern California including the Association of C	Orange County Deputy Sheriffs Departme
rvine Police Department, Newport Beach F	ire Department, Anaheim Fire Department, and Sa	an Bernardino County Fire Departme
	o get the best pricing (e.g., did you simply lor provide a discount)? Please provide the	
Negotiations were made with the vend	dor for best pricing. The vendor agreed to re	emove all travel expenses withou
ncreasing pricing in other area	as.	*
lot applicable.		
pecial Procurement Request Submit	ted by:	
	ted by:	DATE
REQUESTORS NAME  Jonathan Wilby	SIGNATURE  (MA)	DATE 10/2/17
REQUESTORS NAME  Jonathan Wilby  DIVISION CHIEF/SECTION MANAGER NAME		DATE 10/2/17- DATE
REQUESTORS NAME  Jonathan Wilby  DIVISION CHIEF/SECTION MANAGER NAME  Jonathan Wilby	SIGNATURE  SIGNATURE  SIGNATURE	10/2/17 DATE
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Jonathan Wilby DIVISION CHIEF/SECTION MANAGER NAME  Jonathan Wilby ASSISTANT CHIEF NAME  Brigette Gibb  Urchasing Manager's Comments:	SIGNATURE SIGNATURE SIGNATURE SIGNATURE SIGNATURE	10/2/17  10/2/12  DATE  10/2/17  DATE
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Jonathan Wilby  DIVISION CHIEF/SECTION MANAGER NAME  Jonathan Wilby  ASSISTANT CHIEF NAME  Brigette Gibb   urchasing Manager's Comments:  PURCHASING	SIGNATURE	10/2/17  10/2/12  DATE  10/2/17  DATE

# STATEMENT OF WORK

#### A. BEHAVIORAL HEALTH AND WELLNESS SERVICES

- a. The Counseling Team International (TCTI) shall provide confidential short-term comprehensive counseling services to fire personnel and their eligible family members living in the home. Short-term counseling is determined by the Mental Health Professional (MHP) on a case by case basis. If it is determined that the issues require long-term (i.e. acute or chronic emotional disorders) then the Mental Health Professional can refer accordingly.
- b. TCTI will include a preliminary evaluation, case evaluations and overall well-being. Some problems include, but are not limited to:
  - Marriage, family and relationship conflicts
    TCTI will provide counseling for those employees/eligible dependents that
    have concerns or problems with their spouse, child, family member, friend,
    or significant other.

In a fast-paced society in which so much value is placed on material possessions, it is sometimes difficult for people to maintain loving, caring relationships. Those closest to us receive all the messages we send - both positive and negative. Making sure we are effectively communicating can be of vital importance. If someone has a concern or problem with a spouse, child, family member, friend, or significant other, TCTI's Behavioral Health and Wellness Services may be the place to begin sorting out and clearing up these problems.

- Alcohol and/or Substance Abuse
  TCTI will provide counseling, which can reduce the high social and
  financial costs of health problems, absenteeism and poor work performance
  associated with alcohol abuse. Problem drinking is becoming a more
  apparent and talked about problem. One out of every ten people who drinks
  is an alcoholic. TCTI has two (2) mental health professionals that are
  certified as Substance Abuse Professionals (SAP).
  - a. If a referral is indicated, TCTI shall determine which referral sources will be most appropriate to meet the needs of the employee and shall assist the employee by providing at least two referral choices, when available. TCTI has a public safety AA group that meets once a week at our Headquarters office. TCTI also has the referrals for public safety AA group locations throughout California.
  - b. TCTI shall assist the employee in accessing a referral source and shall provide follow-up within thirty days to determine whether services have been received and if the referral was appropriate and useful.

# Supervisor Referrals

TCTI will ensure that the supervisor or person referring the employee be kept apprised of the following (with the appropriate release of information form signed by the employee):

- Whether the employee made and/or kept the EAP appointment
- Whether the employee accepted or rejected the EAP's recommendation
- The employee's progress and status

### **Stress Management**

TCTI's mental health professionals can often help treat any difficulties experienced as a result of coping with high levels of stress. Cognitive behavioral therapy is often an effective form of therapy for stress, as the technique can help change negative thought patterns that develop as a result of stress, helping the employee in treatment find new ways of thinking about stressful events that may not have such negative effect.

# Anger Management

TCTI's anger management therapy aims to reduce the feelings anger creates by allowing individuals to explore possible causes, triggers and confront any underlying issues. Available in the form of group or one-on-one sessions, anger management therapy works to address specific types of anger issues, for example, relationships, work-related or adolescent anger, using methods such as cognitive behavioral therapy or mindfulness.

#### **Retirement Issues**

It is no secret that retirement can be stressful for those in fire service. Even for those who have planned carefully, the prospect can be intimidating. Retirement worries can easily be distracting and make them less productive at work. A lack of planning might also compel someone to remain on the job longer than they would like – or perhaps should. That's why TCTI's retirement counseling services can be so valuable. Financial counseling focuses on basic savings and spending plans, benefit contribution schedules, payout projections. Non-financial counseling addresses a range of psychological and practical issues surrounding retirement, such as coping with the loss of identity, pursuing "bridge" jobs, exploring volunteer possibilities, and discussing housing issues. For aging employees who resist retiring, behavioral health and wellness services can help workers cope with unique workplace challenges to keep them productive and happy in their jobs.

#### Additional list of issues:

- Anxiety\Panic Attacks
- Addictive Behaviors
- Bereavement,
- Career Concerns
- Child and Elder Care
- Co-workers
- Critical Incidents
- Depression
- PTSD/PTS/PTI
- Disability
- Disciplinary
- Domestic Violence
- Medical Problems
- Parents
- Suicidal Ideations
- Supervisor or subordinate
- Work issues
- c. If a referral is found necessary, TCTI shall determine which referral sources will be most appropriate to meet the needs of the firefighter and shall assist the firefighter in accessing their behavioral health care services. These outpatient problems include, but not limited to:
  - High risk addictive behaviors
  - Chemical dependency
  - Severe Mental Disorders
  - Suicidal

TCTI will provide follow-up within thirty days to determine whether services have been received and if the referral was appropriate and useful.

d. TCTI's mental health professionals are trained in Eye Movement Desensitization and Reprocessing (EMDR).

The purpose of EMDR is to enable a cognitive restructuring approach to reduce stress in people with Post Traumatic Stress Disorder (PTSD). EMDR treatment along with a full treatment plan has had very positive results.

Dream interpretation has been a part of Psychotherapy since the beginning of psychology. EMDR is a new technique similar to what happens naturally when you are in REM sleep. When a person sleeps they process information. Dr. Francine Shapiro found that this same process could be simulated while the person is awake. According to an article written by Judith Boore published in The California Therapist

- in June of 1993, "EMDR seems to allow the brain to complete the processing that was left unfinished after the traumatic event."
- e. To schedule an appointment call TCTI at 800-222-9691 between the hours of 7:30am and 4:30pm Monday through Friday. TCTI's staff is available to provide comprehensive counseling services in a convenient and timely manner. TCTI staff will take a small intake over the phone to match the fire personnel or eligible family member with the mental health professional. TCTI will offer an appointment within five (5) days from their call. They will then come to the office at the prescribed time where a counseling session will take place.
- f. TCTI will provide training for the chief, executive management and captains, related to the program. TCTI will also meet with union representative to explain TCTI's services. They will receive a short training session on how the program works, and how he or she can relate to the program and support it. It is important for all of the above to work together as part of a team. Training them together supports teamwork.
- g. TCTI will provide initial orientation training to all fire personnel related to the program. We believe that this is a very important aspect, which gives the employee an opportunity to find out who we are and learn about our program.
- h. TCTI will maintain the confidentiality of all fire personnel and their eligible family members living in the home referred for counseling. The cornerstone of every successful Behavioral Health and Wellness Program is the pledge of confidentiality; without it, there is no credibility. Employees will not reveal their personal problems if there are no clear legal guidelines about confidentiality. Confidentiality means that all personal information parted will be respected and safeguarded. It may be used only in a responsible manner for the purpose of helping in rehabilitating the person. TCTI is HIPPA compliant and secure our records in accordance with our professional code of ethics, Federal Regulations and state laws. We have a top of the line alarm system installed, which protects our records. TCTI also has a "Secure File Transfer Protocol" as part of our security for our network. This prevents any outside intently from being able to access confidential information. TCTI will not reveal the names or identities of the fire personnel or eligible family members who come to the program voluntarily.
- i. TCTI designed a website with the user in mind. We currently offer over 75 Articles, Handouts and Surveys or Tests to utilize on various topics as well as Links to help fire service personnel. TCTI also has a partnership with Firestrong supporters and partners with Firestrong.org website.
- j. TCTI will provide unlimited referral services. Child care (adoption, child safety and day care), Elder care (in-home care givers, support groups, meal services, transportation services and any other issue regarding elderly care), Pet care, Chemical dependency, etc.

#### B. TRAINING

TCTI is able to provide a wide variety of training classes. This educational approach can service as a proactive measure, as well as a follow-up tool for the department. Classes can be tailored to fit your specific needs and can range from 2 to 8 hours. Training programs can provide the OCFA information and skills that will maximize their ability to function as a team and to continue to develop productive careers.

# Alcohol & Drug Awareness in the Workplace (Substance Abuse)

This class in substance abuse is designed to help firefighters recognize and understand the signs and symptoms of addictive behavior. In addition, they will learn about how the family system participates in keeping the addiction alive and ways to establish interventions. Through identifying and understanding the behavioral cues of substance abuse, they will become better equipped to help someone suffering from an addiction.

#### **Anger Management**

This class is geared towards firefighters in order to identify the anger response and to learn techniques for managing anger, either at home or on the job. They will understand the phases of anger and will learn effective ways of redirecting anger for the well-being of their personal health, their relationships with family and friends, and improve their overall job performance.

# Assisting Children in the Aftermath of a Tragedy

Any tragic situation, whether it is witnessing violence at home or school, or losing a loved one, or experiencing a natural disaster can be incredibly impactful on the life of a child. This class is designed to assist firefighters with understanding how children react to tragic experiences based on their age level, and the kind of trauma these experiences leave behind. Firefighters will be provided with information, tools and resources on how to assist a child going through a tragic experience and will learn how to help that child cope and manage with the situation.

# **Burnout/Compassion Fatigue**

This class is designed to raise the awareness of burnout and compassion fatigue for those who work as a firefighter, and will provide firefighters with ways to avoid and/or effectively cope with burnout and compassion fatigue. They will learn about the personality types that are vulnerable to these two syndromes and will be equipped with the knowledge of their symptoms and associated behavior patterns.

# **Coping with Divorce**

A divorce can be one of the most painful life experiences anyone can go through. This class is designed to help firefighters understand the primary reasons for divorce, the feelings and emotions experienced by both partners, the effects it can have on children and how to pick up the pieces and move on with life.

#### **Coping with Grief**

This class helps promote understanding of the grief and bereavement process, as well as explain techniques for managing the symptoms an individual may experience. Firefighters

will learn and understand the different phases of grief and bereavement, and will be provided with ways to survive, or help others survive, this type of response.

### **Coping with Reactions to Critical Incidents**

This class defines critical incidents and cites several possible incidents that can be categorized as "critical". The effects of critical incidents will be explained, such as perceptual distortion, shock and disruption, emotional numbing, hostility and anger, fear, depression, etc. All of these have the potential to cause negative outcomes and can lead to burnout and compassion fatigue. Coping skills will be given to help firefighters balance their effects and learn to move on in a healthy way after experiencing a critical incident.

### **Dealing with Depression**

This class helps participants recognize the signs and symptoms associated with depressed behavior. They will explore the different symptoms of depression between men and women and learn techniques for assessing depression symptomology. In addition, participants will learn about the different coping strategies and treatments available for depression.

### **Eye Movement Desensitization and Reprocessing (EMDR)**

This class will discuss the specifics surrounding EMDR therapy and how it has been used to help reduce stress in firefighters with Post Traumatic Stress Disorder (PTSD). The success of EMDR treatments appear to be due to the fact that the directed eye movements diffuse and weaken negative imagery, which strengthens the client's positive imagery and beliefs. The class will provide firefighters with a better awareness of the EMDR technique and will give Peer Supporters another tool as an option when they refer peers for outside/additional help.

#### **Healing After the Affair**

This class is designed to assist firefighters with the ability to understand what an affair is, how common they are, some typical feelings to recognize in the faithful and unfaithful partner, and what couples should do to in order to rebuild and handle the situation together.

# **How to Handle Holiday Stress**

With any approaching holiday season there are various ways stress can become harmful. This class will give specific tips on how to identify stressors related to holidays, and will help firefighters understand the possible effects stress can have on their psychological and physiological well-being. Firefighters will also learn about the stages of stress and some of the external factors that may trigger the stress response, and will be provided with tools designed to assist with handling stressful situations effectively.

#### **Hypertensive Sleep Issues**

This class will inform firefighters about the importance of sleep for good physical and mental health. This class will also help them understand the positive effects sleep has on the body and the negative effects caused by sleep deficiency, and will provide tips and suggestions on improving sleep quality and getting the appropriate amount of sleep needed to function properly on the job and in their personal lives.

# In the Line-of-Duty Death

This course is designed to provide practical direction to firefighters operating in a managerial/ supervisory role during a line of duty death. Roles and responsibilities are explained as they relate to planning, operations, logistics and financial aspects of the incident. This course also discusses grief and its impact on the department involved, as well as the potential for secondary psychological trauma.

## **Posttraumatic Stress Disorder (PTSD)**

PTSD is severe anxiety that can develop after exposure to one or more events that cause psychological trauma. It is an extreme but natural reaction to a traumatic event or series of traumatic events, and something that can become a serious condition for firefighters. This class will describe PTSD, the symptoms of a suffering individual, and treatment options like EMDR therapy that can help those suffering with the condition cope effectively with it.

#### **Posttraumatic Growth**

Posttraumatic growth is both a process and an outcome that is developed out of the cognitive process used to cope with traumatic events. This class was developed to help firefighters understand posttraumatic growth, and will provide the tools necessary to ensure success in the healing process after experiencing trauma.

# Resiliency

This class will help participants understand the importance of resiliency in their lives, both personal and professional. This class will help participants understand the different types and methods of resilient behavior and will inform them of the components of having a resilient personality in order to face life's challenges with a strong and positive sense of well-being.

#### Social Media: The Impact on Relationships and Families

This class explains the impact social media has on interpersonal communication and the relationships we share with our significant others, our children and our families. It has changed the way we communicate with each other and has affected our lives and the lives of those around us, causing a rift in how we normally communicate. This class will help firefighters understand the benefits and the risks associated with social media use, and will provide tips on how to limit the negative effects of social media while still keeping pace with the newest trends in technology.

#### **Stress Management for Firefighters**

This class is designed to help firefighters understand the effects stress can have on their psychological and physiological well-being. They will learn about the stages of stress and some of the external factors that can trigger stress responses. Overall, firefighters will learn about the symptoms associated with stress and ways to effectively cope with stressful situations.

# **Suicide Prevention & Intervention**

This class is designed to raise awareness and provide practical intervention techniques. In addition to understanding the myths and reasons behind suicide, it's also imperative to assess the lethality of the suicidal person. This program will give firefighters assessment questions based off the "QPR model" to ask the suicidal person in order to help them de-escalate. This

class will also assist firefighters and those who are on the Peer Support team become better equipped and prepared to help in such a critical moment in one's life!

Experts agree that 80%-90% of those individuals completing suicide often communicate their suicidal intent to someone. To the untrained, these usually subtle communications are often ignored, which is why a successful intervention, applied by those trained in suicide prevention and intervention skills, has been proven to save lives. Peers, supervisors, and administrators are in ideal positions to monitor the psychological wellness of their firefighters, and the training and awareness techniques provided in this class will help provide the confidence necessary to recognize the suicidal danger signs in order to ask the right questions at the right time. In simple terms, Ask a question, save a life!

#### The Benefits of Mindfulness

This class will help firefighters understand the benefits of mindful thinking and how it is used to improve physical and mental health. They will also learn about self-focus in order to increase positive self-thinking and develop a heightened self-awareness, and understand how mindful behavior can assist with decreasing symptoms of stress, anxiety and depression.

# The Dynamics of Fear

This class deconstructs the reaction of fear from its usefulness to its descent into a feeling of vulnerability and lack of control. From the initial incitement, to the moment of resolve, to the response, a myriad of feelings, emotions and external factors play out instantaneously. Participants are given mental rehearsal techniques to help stay in control in an out-of-control situation.

#### Wellness in the Workplace & at Leisure

This course is designed to promote employee wellness by providing firefighters with an understanding of the types of stressors that occur in their professional and personal lives. They will be able to apply the skills they learn concerning diet, exercise and healthy habits, including the benefits of obtaining good sleep, to their daily lives in the effort to promote their overall wellness.

#### C. BASIC PEER SUPPORT TRAINING (3-DAYS)

International Critical Incident Stress Management (ICISF) Certified and Continuing Education for Fire Personnel EMSA/ICEMA

a. The Basic Peer Support training brings firefighters together that have been selected as peer supporters by their departments or agencies on a volunteer basis from all ranks and positions within the fire service. Throughout this class participants will acquire supportive skills, which are designed to help them assist their co-workers who are experiencing a variety of life crisis situations, who feel comfortable talking to someone that has "been there" and understands what it's like to work "their jobs".

Peer support provides a way for employees and their family members to confidentially talk about personal/professional problems with specially trained coworkers who understand and want to help. Their primary function is to LISTEN,

ASSESS and whenever necessary, REFER to the "helping triad" consisting of peer support, chaplains, and mental health professionals.

# Class Topics

- Developing a Peer Support Program
- Self-Disclosure
- Active Listening/Paraphrasing
- Crisis Intervention Techniques
- Dealing with Depression and Suicide Situations
- Grief and Mourning
- Line-of-Duty-Deaths
- Critical Incident Stress Management
- **■** Eye Movement Desensitization and Reprocessing (EMDR)
- Diversity in Public Safety (LGBTQIA)
- Substance Abuse
- Role Play
- b. TCTI will provide peer support program consultations for the department. TCTI strongly encourages departments to use a steering committee in the formation of the departments program to provide organizational guidance and structure. TCTI provides licensed mental health professionals for peer support consultations, who are knowledgeable in the culture of fire personnel.

# D. ADVANCED PEER SUPPORT (2-DAYS)

International Critical Incident Stress Management (ICISF) Certified and Continuing Education for Fire Personnel EMSA/ICEMA

The Advanced Peer Support training is designed to enhance skills learned in the Basic Peer Support course, strengthen current skills of Peer Supporters, introduce new topics and learn ways to help keep the Peer Support team healthy and strong. An overview of the signs, symptoms and treatment recommendations for Posttraumatic Stress Disorder (PTSD) will be covered, and a treatment option known as Eye Movement Desensitization and Reprocessing (EMDR) will be identified and explored. Fire personnel will also learn about Suicide Prevention and Intervention and will obtain a 4-hour Gatekeeping QPR certificate, as well as ways to be prepared on handling difficult debriefing situations.

# **Class Topics**

- Understanding PTSD
- Learn the differences between Posttraumatic Stress and PTSD
- Review Eye Movement Desensitization and Reprocessing (EMDR)
- Develop skills for dealing with suicidal peers
- Develop skills for handling difficult debriefings
- Reinforce basic Peer Support skills
- Discover ways to keep your Peer Support team healthy

# E. BASIC CRITICAL INCIDENT STRESS MANAGEMENT (CISM) (2-DAYS) International Critical Incident Stress Management (ICISF) Certified and Continuing Education for Fire Personnel EMSA/ICEMA

The Basic CISM training program is designed to present the core elements of a comprehensive, systematic and multi-component crisis intervention curriculum. The 2-day course prepares participants to understand a wide range of crisis intervention services including pre and post incident crisis education, significant other support services, psychological first aid (on-scene support services), crisis intervention for individuals, Rest Information Transition Services (RITS) after large-scale traumatic incidents, small group defusings and the group intervention known as Critical Incident Stress Debriefing (CISD). The Basic CISM course specifically prepares participants to provide several of these interventions, specifically RITS, defusings and the CISD. The need for appropriate follow-up services and referrals when necessary is also described. Considerable evidence gathered to date strongly supports the multi-component crisis intervention strategy, which is discussed in this course.

Basic CISM training is open to any person who wishes to know more about crisis intervention techniques such as the CISD. Fire service personnel will benefit from the Basic CISM training and use it as a tool throughout their fire service career. In the world of CISM the "Standard of Care" is to have those in the fire service ICISF trained and certified.

# Class Topics

- Types of Critical Incidents
- Critical Incident Stress
- Stress Preventatives
- Demobilizations
- Defusings
- 7 Phases of Debriefings

# F. 24/7/365 STAND BY STAUS (SBS) CRITICAL INCIDENT STRESS MANAGEMENT

TCTI will provides (3) mental health professionals to be available for call-out services every day of the week for immediate response 24/7/365 Stand-by-Status (SBS) at any time. TCTI's mental health professionals are certified through the International Critical Incident Stress Foundation (ICISF) and in Eye Movement Desensitization and Reprocessing (EMDR).

A critical incident is any event or experience, usually unexpected which has the power to overwhelm the defenses of an individual. TCTI can instruct supervisors how to understand the origins of stress in the fire service, how it is manifested and can learn what steps could be taken to manage the effects of critical incident stress.

# What is a Critical Incident Stress Defusing/Debriefing?

A defusing or debriefing is a confidential, non-evaluative discussion of the incident with a Mental Health Professional who understands the dynamic thoughts and reactions involved with traumatic events. Participants learn to understand their reactions and to strengthen their coping mechanisms.

We work with the fire service to stop reactions before they start and to confine them before they spread to other employees.

A Critical Incident Stress debriefing can lessen the emotional impact on personnel exposed to the critical incident. It can accelerate recovery from the event before harmful stress reactions damage work performance, health, work and family relations.

It can reduce sick leave, tardiness and Worker's Compensation claims.

# Examples of possible critical incidents are:

- Serious injury, death, or suicide of a fellow co-worker
- Shootings (including both shooting or being shot at, whether anyone was hit or not)
- Any other serious threat to the life of you or your co-worker
- Any incident in which circumstances are unusual
- Any incident in which sights and sounds are distressing
- Any catastrophic event/major disasters
- Rescuing a victim, where pain and suffering is obvious
- Mass casualty event
- Knowing the victim
- Death, injury, or abuse of a child
- Contact with communicative diseases, e.g. AIDS/Hepatitis B
- Major traffic accident
- Death of a close family member
- Sudden Infant Death Syndrome
- Toxic chemical fire/explosion
- **Extreme** attempts where lives are lost
- Hostage or barricaded situation
- Physical or Sexual Assault
- Victim of a violent crime
- Robbery
- Incidents that attract extremely unusual or possible derogatory news media coverage
- Witness to a Violent Crime
- Food Tampering
- Gruesome Homicide
- Animal Cruelty
- Natural Disasters
- Emergency Room Assaults

Protocol for Responding to a CISM Call:

- 1. Name of person requesting call out
- 2. Incident location and how many involved
- 3. Location for Critical Incident Stress Management (CISM) services
- 4. Specific directions
- 5. Estimated time the department will be ready for CISM services
- 6. Nature of the incident and brief details
- 7. Always ask if Dispatchers will be involved.
- 8. If the department wants a *Chaplain* to be notified by TCTI
- 9. If the department wants *Peer Support* to be notified by TCTI

Protocol for The Counseling Team International Responding Mental Health Professional:

- 1. Give approximate estimated time of arrival
- 2. Carry pocket Kleenex
- 3. Upon arrival, locate the point of contact and introduce yourself
- 4. Depending on the situation (severity), spend as much time with point of contact to establish comfortable rapport
- 5. Have point of contact designate a "room" for the debriefing, with as much privacy as is practical
- 6. While waiting to start the debriefing, make yourself available. Make telephone calls, talk to management, and get briefed by those in charge. Include in gathering information regarding individuals involved; i.e.,
  - i. Other critical incidents
  - ii. Work or personal difficulties
  - iii. Level of involvement
- 7. Re-contact the point of contact to advise them of the completion of the debriefing.
- 8. Call or speak to Fire Chief or Battalion Chief to give recommendations, and for consultation.

#### G. COST

Upon signing this contract between the Orange County Fire Authority and The Counseling Team International (TCTI), TCTI shall provide the following services:

- a. Comprehensive Counseling Services for approximately 1,100 employees and their eligible family members living within the home.
- b. Supervisor Referrals provide consultations with supervisors regarding problem employees and/or any aspect of the Behavioral Health and Wellness Services.
- c. Follow-up Sessions for employees involved in Critical Incidents.
- d. TCTI will conduct an initial orientation for all levels, including management concerning services provided by the Behavioral Health and Wellness Services for no charge. TCTI will provide all literature for management, employees and their eligible dependents, i.e., brochures, flyers, supervisor handbooks, business cards, etc...

- e. TCTI will attend one health fair a year at no charge.
- f. Consultation services. This service is included in the professional counseling portion of this contract.

All services above will not exceed the annual amount of \$92,400.00. The billing will be based on a "fee for service" rate at the billable rate of \$95.00 per hour, not to exceed \$7,700.00 per month.

#### Additional Services not included in the amount above:

- a. Critical Incident Intervention provide 24-hour on-call Critical Incident Debriefing services at the reduced rate of \$200.00 per hour.
- b. Training provide a wide variety of training classes at the reduced rate of \$150.00 per hour.
- c. 3-Day Basic Peer Support: \$299.00 per student (ICISF Certified and ICEMA/EMSA)
   24 participant minimum if hosting a training. The training can be opened to outside agencies
- d. 2-Day Advance Peer Support: \$199.00 per student (ICISF Certified and ICEMA/EMSA)
   24 participant minimum if hosting a training. The training can be opened to outside agencies
- e. 2-Day Basic Critical Incident Stress Management (CISM) \$199.00 per student (ICISF Certified and ICEMA/EMSA)

  24 participant minimum if hosting a training. The training can be opened to outside agencies
- f. Peer Support Consultation: \$75.00 per hour
- g. Peer Support Meetings (Quarterly) \$110.00 per hour
- h. Peer Support Candidate Interviews: \$110.00 per hour

# TCTI Office Locations

Counseling Services can be provided at one of the following offices:

Brea  135 So. State College Blvd., Suite 200, Brea, CA  Carlsbad  7220 Avenida Encinas, Suite #125, Carlsbad, CA 92011  Claremont  428 W. Harrison, #101A, Claremont, CA . 91711  Corona  4160 Temescal Canyon Rd., Suite 309, Corona, CA 92883  Costa Mesa  3151 Airway Avenue, Ste D-2, Costa Mesa, CA 92626  Irvine  4199 Campus Dr., #550, Irvine, CA 92612  Murrieta  39755 Murrieta Hot Springs Rd, Suite D160, Murrieta, CA 92563  Newhall  25050 Peachland Ave., Suite 250, Newhall CA 91321
Carlsbad 7220 Avenida Encinas, Suite #125, Carlsbad, CA 92011  Claremont  428 W. Harrison, #101A, Claremont, CA . 91711  Corona  4160 Temescal Canyon Rd., Suite 309, Corona, CA 92883  Costa Mesa  3151 Airway Avenue, Ste D-2, Costa Mesa, CA 92626  Irvine  4199 Campus Dr., #550, Irvine, CA 92612  Murrieta  39755 Murrieta Hot Springs Rd, Suite D160, Murrieta, CA 92563  Newhall
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39755 Murrieta Hot Springs Rd, Suite D160, Murrieta, CA 92563 Newhall
Newhall
25050 Peachland Ave Suite 250 Newhall CA 91321
ESOS I CACITATA TIVET, BATTO ESO, NOMINIT STI STORE
Palm Desert
HMS Plaza West, 74-075 El Paseo, Bldg. A, Suite A-9, Palm Desert, CA 92270
Palm Springs
193 S. Civic Dr., Ste. 6, Palm Springs, CA 92262
Rancho Cucamonga
7365 Carnelian St., Suite 202, Rancho Cucamonga, CA 91730
Rancho Santa Margarita
30021 Tomas, Ste. 300, Rancho Santa Margarita, CA 92688
San Bernardino
1881 Business Center Dr. Suites 11 & 12, San Bernardino, CA 92408
San Diego-Mission Valley
444 Camino Del Rio South, Suite 215, San Diego, CA 92108
San Dimas
150 N. Walnut Ave., Suite E, San Dimas, CA 91773
Santa Barbara
Creekside Plaza Office Building, 5290 Overpass Rd/. #107, Santa Barbara, CA 93111
Santa Barbara — Montecito
539 San Ysidro Rd., Santa Barbara. CA 93108
Upland
818 N. Mountain Ave., Suite 219, Upland, CA 91786
Ventura
701 E. Santa Clara St., Suite 43, Ventura, CA 93001

# Victorville

15415 Anacapa Road, #7 Victorville, CA 92392

# Mental Health Professional Staff that will be performing one or more services under the Behavior Health and Wellness Program:

ATALLA, Tiffany
BOHL, Nancy
BURRELL, Alejandrina
CHAPMAN, Audree
CLACK, Andy
DE LEON, Sara
DEVOR, Kendra
DONCKELS, Jim
HAAS, Kristin
HILL, Shonna
KAHLE, Deana
KLOOS, Barbara
KLYVER, Nels
KUKLINSKY, Carla
LEE, Cherylynn
MARVIN, Mark W.
MCAFEE, Wayne
MCCOY, Tammy
McLAIN, Stacy
MILLS, Jonathan
NEGRONI, Alana
OHS, Mynda
OOSTYEN, Jeff
OPPEDISANO, Albert
RAMQUIST, Elizabeth
RATHBUN, Julie
REYNOSO, Gina
RILEY, Deandra
ROBINSON, Angelika
RODRIGUEZ, Vanessa
RONAN, Angela
SHERMAN, Ed
SILVERIA, Debbie
STEIGER, Amanda
STEPANIAN, Nicholle
STROUD, Phyllis
STURM, Wisconsin
UTHOFF, Michael
WALLIS, Christa
WEEKS, Jennifer

WELLBROCK, Kathleen WILKINSON, Sarah

# The Counseling Team International (TCTI) Full Service Counseling Public Agency Clients

Anaheim Fire Department	
Anaheim Police Department	
Association of Orange Co. Deputy	
Sheriffs	
Alhambra Police Department	
Alhambra Fire Department	
Apple Valley Fire Department	
Banning Police Department	
Barstow Fire Department	
Barstow Police Department	
Bell Gardens Police Department	
Big Bear Lake Fire Protection District	
Beaumont Police Department	
Bureau of Indian Affairs	
Bureau of Land Management	
Cal Fire	
California Highway Patrol	
Colton Fire Department	
Colton Police Department	
Cathedral City Fire Department	-
Cathedral City Police Department	
Chino Police Department	
Confire Corona Fire Department	_
Corona RD (Sworn Only)	
Corona PD (Sworn Only)	
Covina Police Department	
Chino Valley Fire Department	
Cypress Police Department	
El Cajon Police Department	
Fontana Fire Department	
Fontana Police Department	
Fontana Unified School District Police	2
Department	
Fullerton Police Department	
Glendale Fire Department	
Garden Grove Police Department	
Glendale Fire Department	
Glendora Police Department	
Hemet Fire Department	
Hemet Police Department	
Imperial Beach Fire Department	
Irvine Police Department	
La Mesa Fire Department	
La Mesa Police Department	
Laverne Fire Department	
Laverne Police Department	
Montclair Fire Department	
Montclair Police Department	
Murrieta Fire Department	
Murrieta Police Department	
Newport Beach Fire Department	
Newport Beach Fire Department Newport Beach Police Department	
Newport Beach Police Department	
Newport Beach Police Department North Co. Fire Department National City Police Department	
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Department/Agency	
Riverside Fire Department	
Riverside Police Department	
Riverside Sheriff's Association	
Riverside County Sheriff's	
Department	
Seal Beach Police Department	
San Bernardino County Fire	
Department	
San Bernardino Police Department	
San Bernardino Co. Probation	
San Bernardino Sheriff's Department	_
San Bernardino Unified School Police	•
Department	
San Diego District Attorney's Office	
San Diego Co. Probation	
San Diego Sheriff's Department	
Santa Ana Police Department	
Santa Barbara Police Foundation	
Santa Barbara Police Department	
Santa Barbara Probation Department	t
Santa Barbara Fire Department	
Santa Barbara Sheriff's Department	
Santa Fe Springs Fire Department	
San Manuel Band of Indians Fire	
Department	
San Manuel Band of Indians Police	Ī
Department	
Torrance Fire Department	
U.S. Department of Agriculture	
U.S. Forest Service	
Ventura Probation Department	
West Cities Communication	
West Covina Police Department	
Whittier Police Department	