ORANGE COUNTY FIRE AUTHORITY
AGENDA

Budget and Finance Committee Meeting

Wednesday, October 10, 2018
12:00 Noon

Orange County Fire Authority
Regional Fire Operations and Training Center
1 Fire Authority Road
Room AE117
Irvine, California 92602

Joe Muller, Chair
Shelley Hasselbrink, Vice Chair
Ed Sachs Gene Hernandez Al Murray Don Sedgwick Tri Ta
Jennifer Cervantez - 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 http://www.ocfa.org

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 Hasselbrink

ROLL CALL

1. PRESENTATIONS
No items.

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.

2. MINUTES

A. Minutes for the September 12, 2018, Budget and Finance Committee Regular Meeting
Submitted by: Sherry Wentz, Clerk of the Authority

Recommended Action:
Approve as submitted.

3. CONSENT CALENDAR

A. Orange County Employees' Retirement System Quarterly Status Update
Submitted by: Lori Zeller, Deputy Chief/Administration & Support Bureau

Recommended Action:
Receive and file the report.

B. Acceptance of Funds from the 2017 Homeland Security Grant Program for an Administrative Fire Captain Assigned to the Orange County Intelligence Assessment Center
Submitted by: Dave Anderson, Deputy Chief/Emergency Operations Bureau

Recommended Action:
Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Approve and authorize the Fire Chief to execute any necessary agreement(s) to accept and administer the FY 2017 Homeland Security Grant Program.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget to increase revenues and expenditures by $160,000.

C. Acceptance of 2018 Department of Homeland Security/Federal Emergency Management Agency's Urban Search & Rescue Readiness Cooperative Agreement Funding
Submitted by: Dave Anderson, Deputy Chief/Emergency Operations Bureau

Recommended Action:
Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Approve and adopt the proposed Resolution to accept the Department of Homeland Security/Federal Emergency Management Agency's Grant Readiness Cooperative Agreement funding.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget increasing revenues and expenditures by $1,204,990.

4. DISCUSSION CALENDAR

A. Monthly Investment Reports
Submitted by: Patricia Jakubiak, Treasurer

Recommended Action:
Review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

B. Acceptance of 2017 CAL FIRE Fire Prevention Grant for Remote Wildfire Cameras and Meteorological Sensors
Submitted by: Dave Anderson, Deputy Chief/Emergency Operations Bureau

Recommended Action:
Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Accept the 2017 CAL FIRE Fire Prevention Grant for Remote Wildfire Cameras and Meteorological Sensors.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget increasing revenues and expenditures by $90,000.

C. Acceptance of 2017 CAL FIRE Fire Prevention Grant for Invasive Tree Pest Mitigation and Fuels Reduction
Submitted by: Dave Anderson, Deputy Chief/Emergency Operations Bureau

Recommended Action:
Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:
1. Accept the 2017 CAL FIRE Fire Prevention Grant for Invasive Tree Pest Mitigation and Fuels Reduction.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget increasing revenues and expenditures by $5,454,898.

REPORTS
No items.

COMMITTEE MEMBER COMMENTS

ADJOURNMENT – The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, November 14, 2018, 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 4th day of October 2018.

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

UPCOMING MEETINGS:

Claims Settlement Committee Meeting	Thursday, October 25, 2018, 5:00 p.m.
Executive Committee Meeting	Thursday, October 25, 2018, 5:30 p.m.
Board of Directors Meeting	Thursday, October 25, 2018, 6:00 p.m.

AGENDA ITEM NO. 2A

MINUTES
ORANGE COUNTY FIRE AUTHORITY

Budget and Finance Committee Regular Meeting
Wednesday, September 12, 2018
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 September 12, 2018, at 12:00 p.m. by Chair Muller.

PLEDGE OF ALLEGIANCE
Director Sachs led the assembly in the Pledge of Allegiance to our Flag.

ROLL CALL

Present: Shelley Hasselbrink, Los Alamitos
Gene Hernandez, Yorba Linda
Joseph Muller, Dana Point
Al Murray, Tustin
Ed Sachs, Mission Viejo
Don Sedgwick, Laguna Hills
Tri, Ta, Westminster

Absent: None

Also present were:

Deputy Chief Lori Zeller	Deputy Chief Dave Anderson
Fire Chief Brian Fennessy	Assistant Clerk of the Authority Martha Halvorson

PUBLIC COMMENTS (F: 12.02B3)
Chair Muller opened the Public Comments portion of the meeting. Chair Muller closed the Public Comments portion of the meeting without any comments from the general public.

1. **PRESENTATIONS**
   No items.

2. **MINUTES**

   A. Minutes for the July 11, 2018, Budget and Finance Committee Regular Meeting
   (F: 12.02B2)

   On motion of Director Hernandez and second by Director Murray, the Budget and Finance Committee voted unanimously by those present to approve the Minutes of the July 11, 2018, regular meeting as submitted. Director Ta was recorded as an abstention due to his absence from the meeting.

3. **CONSENT CALENDAR (**Agenda Item No. 3A was pulled from the Consent Calendar for separate consideration.)

   A. Fourth Quarter Financial Newsletter (F: 15.07)

   Director Sedgwick pulled this item from the Consent Calendar for clarification on the Community Risk Reduction fees.

   On motion of Director Sedgwick 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 September 27, 2018, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the report.

   B. Annual Investment Report (F: 11.10D1)

   On motion of Director Ta and second by Director Murray, the Committee voted unanimously by those present to direct staff to place the item on the agenda for the Executive Committee meeting of September 27, 2018, with the Budget and Finance Committee's recommendations that the Executive Committee receive and file the report.

4. **DISCUSSION CALENDAR**

   A. Monthly Investments Reports (F: 11.10D2)

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

   On motion of Vice Chair Hasselbrink and second by Director Ta, the Committee voted unanimously by those present to direct staff to place the item on the agenda for the Executive Committee meeting of September 27, 2018, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

B. **Carryover of FY 2017/18 Uncompleted Projects and Use of Unexpended Fund Balance** (F: 15.04 FY 2017/18)

Deputy Chief Lori Zeller provided an overview of the Carryover of FY 2017/18 Uncompleted Projects and Use of Unexpended Fund Balance.

On motion of Director Sachs and second by Director Murray, the Committee voted unanimously to form an Ad Hoc Committee separate of the Budget and Finance Committee to review and discuss policy-level direction relating to cost control measures on behalf of cash contract cities.

On motion of Director Sachs and second by Director Murray, the Committee voted unanimously by those present to direct staff to place the item on the agenda for the Board of Directors meeting of September 27, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors authorize the following proposed carryover budget adjustments:

1. Approve a budget adjustment in the General Fund (121) increasing revenues by $500,000 and expenditures by $5,517,226.
2. Approve a budget adjustment in the General Fund CIP (12110) increasing expenditures by $1,330,777.
3. Approve a budget adjustment in the Fire Stations and Facilities Fund (123) increasing expenditures by $1,946,642.
4. Approve a budget adjustment in the Communications and Information Systems Fund (124) increasing expenditures by $2,957,040.
5. Approve a budget adjustment in the Fire Apparatus Fund (133) increasing expenditures by $3,972,280.
6. Approve a budget adjustment transferring $875,000 from the General Fund (121) to the General Fund CIP (12110) to ensure sufficient fund balance in the fund to complete the projects.

REPORTS
No items.

COMMITTEE MEMBER COMMENTS (F: 12.02B4)
There were no Committee Member comments.

ADJOURNMENT – Chair Muller adjourned the meeting at 12:31 p.m. The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, October 10, 2018, at 12:00 noon.

Martha Halvorson, CMC
Assistant Clerk of the Authority

Orange County Fire Authority

AGENDA STAFF REPORT

Budget and Finance Committee Meeting — **Agenda Item No. 3A**
October 10, 2018 — **Consent Calendar**

Orange County Employees' Retirement System Quarterly Status Update

Contact(s) for Further Information

Lori Zeller, Deputy Chief Administration & Support Bureau	lorizeller@ocfa.org	714.573.6020
Tricia Jakubiak, Treasurer Treasury & Financial Planning	triciajakubiak@ocfa.org	714.573.6301

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)

Receive and file the report.

Impact to Cities/County

Not Applicable.

Fiscal Impact

Not Applicable.

Background

Actions Taken/Financial Policies & Practices July – September 2018

OCERS BOARD OF RETIREMENT MEETING July 16, 2018:

Early Payment of Employer Contributions Program - 2019

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 7.0% 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 7.0% 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 and 2018 rate) for early payment of fiscal year 2019 employer contributions (Attachment 1).

Sensitivity Analysis of Alternative Economic Assumptions
Paul Angelo of Segal Consulting asked the Board for suggestions as to various economic assumptions it wanted to see used in testing current actuarial assumptions. The results of this analysis including the impact the assumptions have on contribution rates was shared with the Board at its September 2018 Strategic Planning Workshop (Attachment 2).

Illustrations of Retirement Costs
Segal presented its annual projections of contribution rates for the next 20 years given three different scenarios for investment returns in 2018 (0%, 7.0%, and 14.0%) (Attachment 3).

OCERS INVESTMENT RETURN

OCERS' return for August was .53% and the year-to-date return was 3.0%. OCERS is on a calendar year basis and has an assumed rate of return of 7.0%.

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)
1. OCERS Memorandum on Early Payment of Employer Contributions Program-2019, July 3, 2018
2. Segal Consulting Sensitivity Analysis of Alternative Economic Assumptions, July 16, 2018
3. Segal Consulting Projections, July 3, 2018

Memorandum

DATE: July 3, 2018

TO: Members of the Board of Retirement

FROM: Brenda Shott, Assistant CEO, Finance and Internal Operations and Molly Murphy, CIO

SUBJECT: **EARLY PAYMENT OF EMPLOYER CONTRIBUTIONS PROGRAM - 2019**

Recommendation

Approve the terms of a prepayment discount program for the advance payment of employer contributions, including the discount rate to be used, for contribution year July 2019 through June 2020.

Background

On July 17, 2017 Government Code Section 31582 was amended by the passage of SB 671 which was introduced by Senator Moorlach. This section of the Government Code relates to county's employee retirement contributions. The amended Government Code Section 31582 (b) and (c) (the Code) states:

> (b) "*The board of supervisors may authorize the county auditor to make an advance payment of all or part of the county's estimated annual contribution to the retirement fund, provided that the payment is made not later than 30 days after the commencement of the county's fiscal year. This subdivision does not prevent the board of supervisors from authorizing the county auditor to make an advance payment for the estimated annual county contributions for an additional year or partial year if the advance payment is made no later than 30 days after the commencement of the county fiscal year for which the advance payment is made. If the advance is only a partial payment of the county's estimated annual contribution, remaining transfers to the retirement fund shall be made at the end of each month or at the end of each pay period until the total amount required for the year is contributed. Transfers shall be adjusted at the end of the fiscal year to reflect the actual contribution required for that year.*
>
> *(c) A district subject to Section 31585 may also authorize an advance payment of all or part of the district's estimated annual contribution to the retirement fund, provided that the payment is made no later than 30 days after the commencement of the district's fiscal year. This subdivision does not prevent the governing body of a district from authorizing the district to make an advance payment for the estimated annual district contributions for an additional year or partial year if the advance payment is made no later than 30 days after the commencement of the district fiscal year for which the advance payment is made. If the advance is only a partial payment of the district's estimated annual contribution, payments to the retirement fund shall be made at the end of each month or at the end of each pay period until the total amount required for the year is contributed. This amount shall be adjusted at the end of the fiscal year to reflect the actual contribution required for that year.*"

In connection with the Code, OCERS has annually offered plan sponsors the opportunity to receive a discount on their employer contributions if they paid their contributions early with a lump sum payment. The program dates back to Fiscal Year 2005-2006, and is brought back to the Board annually for consideration on the program terms to offer for the next year. Timely consideration of the program is appropriate now, in order to give plan sponsors adequate time to plan funding for a lump sum payment in January, should the plan be approved for the upcoming contribution year.

Plan sponsor interest in such a program remains high as eleven of the thirteen plan sponsors with active members elected to prepay contributions of $475M for Fiscal Year 2018-2019 (Superior Court and OCERS are the two employers who do not participate). An early payment program is primarily a tool for plan sponsor budget management, rather than a long-term funding technique for the system. Prepaid contributions allow OCERS to deploy cash on a more concentrated basis; however, they also increase OCERS' internal cash flow and short-term cash overlay portfolio risk, and challenge the efficiency of dollar cost averaging during periods of volatile markets. The Board approved revised program provisions in 2014 (for FY15-16) which reduced investment related risks. Specifically, the discount rate offered to the plan sponsors for prepaying their contributions was reduced from 7.25% down to 5.8% (which equates to a 20% rate reduction from the actuarial assumed rate of return). The rationale behind the reduced rate primarily centers around the theory that during "ripe, full-value market periods" in which most stock indexes are trading at levels materially above the prior market-cycle peak with valuation metrics above historical averages *and* the national real per capita GDP materially exceeds the prior business cycle peak the Board should enact a risk-reduction policy by reducing the prepayment discount rate. Based on the market conditions in 2015, the Board again approved the same discount rate of 5.8% in for FY16-17, and reduced the discount rate to 4.5% for FY17-18 and FY18-19.

Discussion

Participation in the Contribution Prepayment Program

The Contribution Prepayment Program allows employers to pay their upcoming year's contribution in a lump sum prior to the beginning of the employers' fiscal year. Employers who prepay their contributions in January pay their full year of contributions six months prior to when their first bi-weekly payment would otherwise be due. Should an employer who had previously participated in the prepayment program decide to opt out of the program this year, they would make no employer contributions from January 2019 through June 2019. This is because they would have paid their full year of contributions for FY18-19 in January 2018 and the FY19-20 contributions would not be due until after the first pay period in July 2019. OCERS has also allowed the prepayment to be made in July at half the discount rate. This option has not been utilized by employers in the past.

Prepayment Discount Rate

Employer contributions rates are calculated by the System's actuary in the annual actuarial valuation assuming that contributions are collected in installments between July and June of the employer fiscal year for which the rates are effective. Since that means they are received, on average, at the middle of that fiscal year, the actuary determines the rates assuming that the contributions will earn only one-half of the investment return assumption (currently 7% per year) during the fiscal year they are contributed. If instead, for example, an employer pays all estimated employer contributions in July, at the beginning of the fiscal year when installments were assumed to have begun, it would be appropriate to provide a half-year of interest credit because the contributions will be in the fund generating investment income for (on average) an additional one-half year. For purposes of this program we have termed this interest credit as a "prepayment discount".

The annual rate used for applying a prepayment discount has generally been the annual assumed rate of return used in the applicable actuarial valuation for the system (as this is the rate that the actuary used when calculating the contribution rate). The practice surrounding prepayment of contributions varies across the '37 Act Systems as many systems have recently made changes to how they administer their programs. Some of the systems use their assumed rate of return as a prepayment discount (Contra Costa, Merced, Sonoma San Mateo), there are a some systems that use a fraction of the assumed rate (Stanislaus, Tulare, San Bernardino and Los Angeles) a few systems offer the program but with no discount (Kern and Santa Barbara) and several systems either don't offer a prepayment option or do not have any employers that want to participate (Mendicino, San Joaquin, Imperial, and Marin).

The actual discount amount provided to the plan sponsor is calculated as a function of both the annual rate and the timing of when OCERS receives payment of the contributions (discounted cash flows). For example, payments received in July would be discounted using one-half the approved discount rate in the discounted cash flow calculation because OCERS would have assumed to earn on average one-half year of additional investment income at the assumed earnings rate on contributions received during the period. Prepayments of contributions made in January (which has been the practice at OCERS), six months prior to the beginning of the contribution year, would be discounted using the full annual discount rate because the prepaid contributions would be on deposit for an additional six months prior to the beginning of the fiscal year and so, on average, would be received a full year earlier than if paid in installments during the contribution year.

From an actuarial perspective, the prepayment program, as originally designed (using the assumed rate of return as the discount rate for prepayment of contributions), resulted in equivalent mathematical funding into the system. As described above, normally, the employer and the members make their contributions to OCERS at the end of every pay period. For that reason, in the actuarial valuation, the actuary determines the contribution rates by assuming contributions will earn only about one-half year of interest during the year they are contributed, to account for the collection of the contributions, on the average, at around the middle of the year. That interest calculation is done using the long-term investment return assumption, currently 7%. (The actuary also adds interest to account for the 18-month delay in implementing rates from the date of the valuation to the beginning of the following fiscal year.) As such, if the employer were to make its contributions at the beginning of the fiscal year (or earlier), it would be actuarially neutral to provide an interest credit calculated using the same 7% that is built into the contribution rates.

However, from an investment perspective, the prepaid contributions are invested in a derivatives overlay program that will synthetically replicate the OCERS' asset allocation strategy, thus ensuring that all funds are immediately participating in global markets. As benefit payments are paid and investment opportunities are funded, the dollars invested in the overlay program will be drawn down throughout the year. While the prepayment program should not introduce any additional risks to achieving long-term investment assumption of 7%, the prepayment program does present a market timing risk with prepaid contributions coming in one lump sum rather than in installments throughout the year that can then be invested into the market using a dollar cost averaging methodology. This risk should be tolerable in the long-term but should be recognized in the short-term.

Calculation of prepayment amount

There are several factors needed to calculate the discounted prepayment amount when contributions are paid early. Projected payroll amounts are the starting point for calculating the prepayment amount and are provided by plan sponsors for each rate group or plan they participate in and are prepaying contributions. The projected payroll amount (as estimated by the plan sponsors) is multiplied by the employer's contribution rate for the applicable rate group. Per the Code, only employer contributions paid by the employer and credited to the employer's account (not the employee's account) are eligible for the discount. More specifically, reverse pick up arrangements whereby employees pay a portion of the employer's required contribution and employer pick up arrangements whereby employers pay a portion of employee's required contribution are excluded from the prepayment discount program. The resulting product is then divided by one plus the discount rate.

OCERS' staff compares the projected contribution amount to actual contributions throughout the period in order to ensure that the annual required contribution is collected.

Any investment variation caused by the timing of the contributions becomes a part of the normal actuarial valuation process – i.e., rates for the future will rise and fall based on the assets in the system. Therefore, no adjustment of the early contribution payment is made on the basis of actual returns during the year.

Minimum Amount to participate

In addition to identifying an appropriate discount factor the Board has also adopted plan provisions that define the minimum prepayment amounts and established contribution payment time frames. The previously adopted polices required that employers prepay at least 50% of the estimated annual contribution in order to be eligible for the discount and established that prepaid contributions be received by either January 15th or July 15th.

Conclusion:

Staff recommends that the Board approve an early payment discount on employer contributions paid by the employer for contribution year July 2019 through June 2020 with the following terms:

a) Use a discount rate of 4.5% when calculating the present value of discounted cash flows if payment is received by January 15, 2019 or 2.25% if payment is received after January 15, 2019 but before July 15, 2020
b) Contributions not paid early must be paid pro rata over the year with no discount being credited
c) OCERS' staff will compare the payroll estimates used to calculate the prepayment amount for each participating plan sponsor to actual payroll each pay period. Should actual payroll be 5% greater than estimated payroll for four consecutive pay periods, the plan sponsor will be required to pay additional contributions each pay period for the additional salary above the projected salary used to calculate the prepayment (no discount would be applied to the additional amount)
d) Plan sponsors that have more than one plan or rate group are required to provide the estimated pensionable salary separately for each plan or group
e) Only employer contributions paid by the employer are eligible for the prepaid discount program (employee pick-ups and reverse pick-ups are ineligible)
f) The application of the prepayment of contributions will be applied to pay periods 2019-15 through 2020-14
g) OCERS will reconcile the prepaid contributions to the actual contributions at the end of the contribution year. Any overpayments will be made available to either apply to the following year's prepayment of employer contributions or to the current year's bi-weekly employer contributions (Note: overpayments cannot be applied to employee contributions). Any under payments will be collected from the employer.

Submitted by:

Brenda M Shott

Brenda Shott

Assistant CEO, Finance and Internal Operations

Molly A. Murphy, CFA

Chief Investment Officer

Approved by:

Steve Delaney

Chief Executive Officer

Employer Prepayment Program

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

July 16, 2018

Molly Murphy, CFA

Background

- Government Code Section 31582 (b) and (c) (the Code) states: "The board of supervisors may authorize the county auditor to make an advance payment of all or part of the county's /district's estimated annual contribution to the retirement fund…"

- The System's actuary sets employer contributions rates that assume contributions will earn only one-half year of investment return in the year they are made, recognizing that contributions are collected in installments throughout the fiscal year

- If an employer pays a lump sum prior to the beginning of the fiscal year (or earlier), the employer receives a "prepayment discount" to recognize that the contributions are expected to generate more investment income than was anticipated when the rates were set

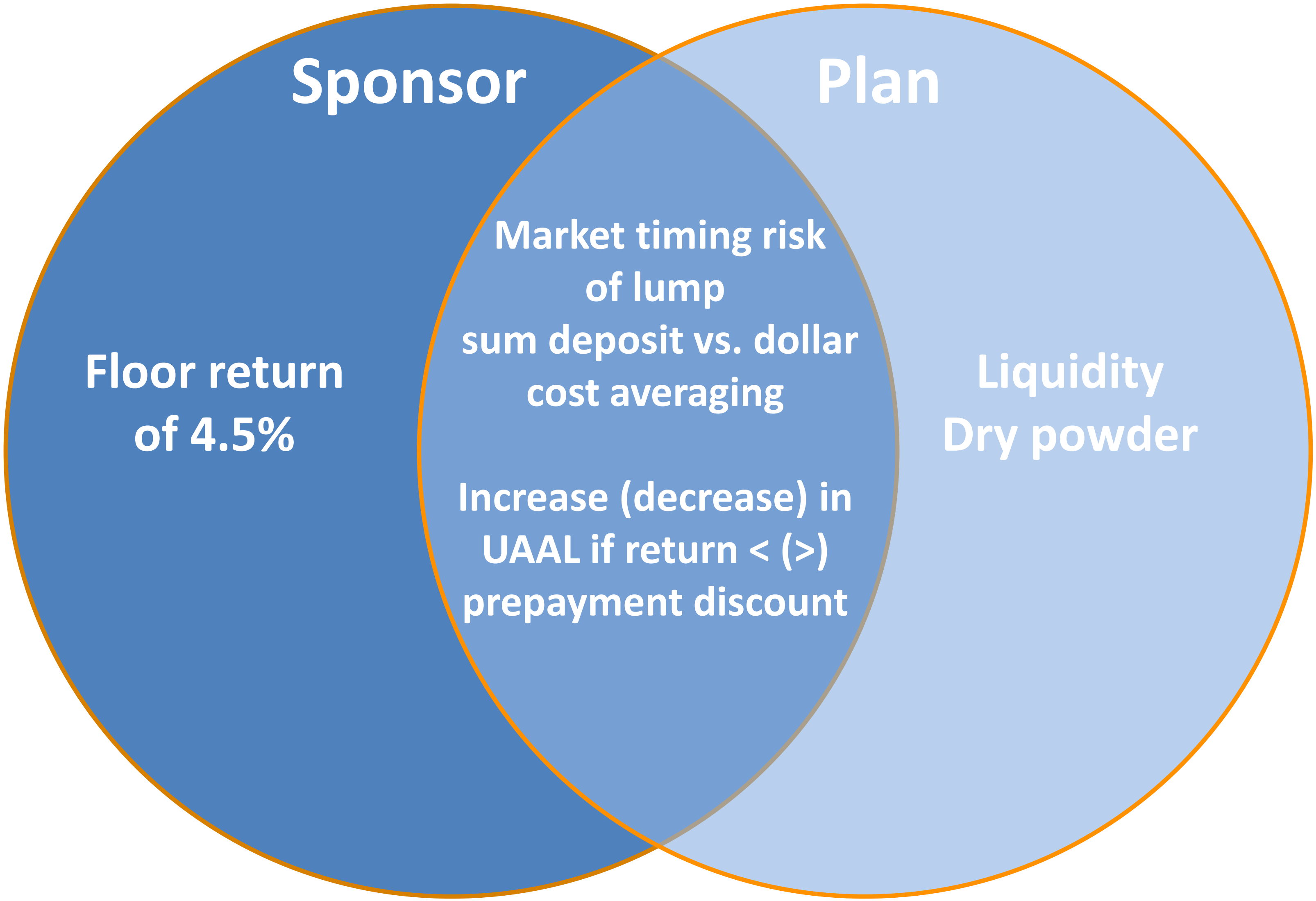
Background

- OCERS' prepayment program dates back to FY05-06
- OCERS has annually offered plan sponsors a prepayment discount on their contributions via an early lump sum payment
- OCERS' prepayment discount for FY18-19: 4.5%
- Since the program's inception, OCERS has reduced the prepayment discount two times

	FY05-06...14-15	FY15-16	FY16-17	FY17-18	FY18-19
Prepayment Discount	7.25%	5.80%	5.80%	4.50%	4.50%

- In 2017, OCERS surveyed 26 CA plans:
  - 15 responded and 8 offered a prepayment program
  - Prepayment discount rates ranged from their respective actuarial rate, (e.g., 7.25%) down to 1.75%

Analysis: Risks & Rewards



Analysis: Rate Optimization

20-Year Expected Returns[1]

Asset Class	OCERS Adopted Asset Allocation Policy (%)
Global Public Equity	35
Private Equity	8
Core Fixed Income	17
Credit	13
Real Assets	22
Risk Mitigation	5
Cash	0
20-Year Expected Return (Geometric)	*7.8*
Standard Deviation	*13.0*
Probability of achieving at least a 7.25% return[2]	*57.4*
Probability of achieving at least a 4.50% return[3]	*87.8*

[1] 20-Year Expected Returns based on Meketa's 2016 Annual Asset Study

[2] Probability of achieving at least a 7.25% annualized return over the next 20 years

[3] Probability of achieving at least a 4.50% annualized return over the next 20 years

Recommendation

- **Perspective**
  - Prepayments represent ~ $400 million/$15.8 billion portfolio, or ~2.5% of OCERS' Plan assets

- **Benefit/Opportunity**
  - Additional liquidity to Plan may improve opportunistic investing options

- **Recommendation**
  - Maintain the 4.5% discount rate
  - Keep prepayments at Parametric's cash overlay program to immediately equitize cash & hold to meet outflows during the year

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

ORANGE COUNTY OCERS EMPLOYEES RETIREMENT SYSTEM

Attachment 2

Memorandum

DATE: July 16, 2018

TO: Members, Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

SUBJECT: **SENSITIVITY ANALYSES OF ALTERNATIVE ECONOMIC ASSUMPTIONS**

Written Report

Background/Discussion

OCERS entered into a new contract with Segal Consulting (Segal) in August 2016. Under the new contract, Segal agreed to provide up to four sensitivity analyses of alternative economic actuarial assumptions as part of the annual actuarial valuation process. The sensitivity analyses are provided on an aggregate basis for OCERS as a whole rather than on an individual rate group basis. After receiving from Segal recommendations on assumptions to be used in the analyses and a full Board discussion at the June 12, 2017 Board meeting the Board Chair provided direction to the actuary on the assumptions to be used in the 2017 sensitivity analyses. Those sensitivity analyses were delivered in Segal's July 7, 2017 letter and presented to the Board on July 17, 2017.

Segal has again proposed a set of sensitivity analyses for 2018 (attached) consistent with the new economic assumptions adopted by the Board in 2017. Paul Angelo will present the recommendations at the July 16, 2018 meeting and again seek direction from the Board Chair on which analyses to perform in 2018. Those sensitivity analyses will be presented to the Board at the Board's September 2018 educational retreat and will be informational only. As we are not presently in an actuarial assumption review period, the sensitivity analyses are simply to provide further context for the economic assumptions currently in use.

Submitted by:

Steve Delaney
Chief Executive Officer

Segal Consulting

Orange County Employees Retirement System (OCERS)

Alternative Economic Assumptions for Use in 2018 Sensitivity Analyses

July 16, 2018

Paul Angelo, FSA, EA, MAAA, FCA

Segal Consulting

5536116v2

Review of Scope and Terminology (from new Actuarial Standard on Risk Assessments)

- Scenario testing – impact of occurrence of possible event(s)
  - For example, illustrations prepared each year to show impact of one year of favorable or unfavorable market return
  - Metrics studied, both by rate group and for entire plan
    - Employer contribution rate
    - Funded ratio
    - Unfunded Actuarial Accrued Liability
  - Scenario test will be repeated using results from 12/31/17 valuation
- Sensitivity testing – impact of change in actuarial assumption(s)
  - Same metrics but using alternative long term economic assumptions (i.e., different from those used in 12/31/17 valuation)
  - Now performed every year, even if no experience study
  - Results only for entire plan

OCERS Scenario Testing – Impact due to One Year of Favorable or Unfavorable Market Return

- Under three hypothetical market returns for year following valuation
  - 0.00%
  - 7.00% (current baseline)
  - 14.00%
- Metrics studied (by Rate Group)
  - Employer contribution rate
  - Funded ratio
  - Unfunded Actuarial Accrued Liability
- Can be useful as a budgeting tool for the employer
  - Next year's employer contribution rate can be estimated as actual year-to-date market return becomes available from OCERS
- Scenario testing will be updated using results and assumptions from 12/31/17 valuation

OCERS Sensitivity Testing – Hypothetical Impact of Alternative Economic Assumptions

- Metrics studied (for the entire System) – first done in 2017
  - Employer contribution rate
  - Funded ratio
  - Unfunded Actuarial Accrued Liability
- Illustrates "what if" impact of changes to economic assumptions

1. Inflation (2.75% used in 12/31/17 valuation)
   - COLA increases for retirees
   - Component of salary increases for actives and wage increases for amortizing UAAL
   - Component of investment return assumption
2. Real return (4.25% used in 12/31/17 valuation)
3. Investment return (7.00% used in 12/31/17 valuation)

- In practice, only two alternative assumptions are identified
  - Since Inflation + Real Return = Investment Return

OCERS Economic Assumptions

	12/31/17 Valuation		12/31/14-16 Valuation		12/31/12-13 Valuation		12/31/11 Valuation	
	Return	Pay*	Return	Pay*	Return	Pay*	Return	Pay*
Price Inflation	2.75%	2.75%	3.00%	3.00%	3.25%	3.25%	3.50%	3.50%
Real Wages	n/a	0.50%	n/a	0.50%	n/a	0.50%	n/a	0.25%
Net Real Return	4.25%	n/a	4.25%	n/a	4.00%	n/a	4.25%	n/a
Total	7.00%	3.25%	7.25%	3.50%	7.25%	3.75%	7.75%	3.75%

* Excludes Merit and Promotion component of assumed individual salary increases

Sensitivity Testing – PRIOR YEAR (2017)
Alternative Economic Assumptions

Proposed by Segal	Inflation	Real Return	Investment Return
Baseline	3.00%	4.25%	7.25%
Alt #1: Lower inflation (only)	2.75%	4.25%	7.00%
Alt #2: Lower real return (only)	3.00%	4.00%	7.00%
Alt #3: Lower inflation and lower real return	2.75%	4.00%	6.75%
Alt #4: Much lower inflation and lower real return	2.50%	4.00%	6.50%

Selected by OCERS	Inflation	Real Return	Investment Return
Baseline	3.00%	4.25%	7.25%
Alt #1: Lower inflation only (as proposed)	2.75%	4.25%	7.00%
Alt #2: Lower real return only (as proposed)	3.00%	4.00%	7.00%
Alt #3: Same inflation and much lower real return	3.00%	3.75%	6.75%
Alt #4: Higher inflation and lower real return	3.25%	4.00%	7.25%

Sensitivity Testing – Proposed 2018 Alternative Economic Assumptions

➢ Includes #3 as proposed last year and #4 as selected by OCERS

- All adjusted relative to new (baseline) actuarial assumptions

Proposed by Segal	**Inflation**	**Real Return**	**Investment Return**
Baseline (current assumptions)	2.75%	4.25%	7.00%
Alt #1: Lower inflation only	2.50%	4.25%	6.75%
Alt #2: Lower real return only	2.75%	4.00%	6.75%
Alt #3: Lower inflation and lower real return	2.50%	4.00%	6.50%
Alt #4: Higher inflation and lower real return	3.00%	4.00%	7.00%

➢ The above alternatives are not necessarily assumptions Segal would recommend in any future triennial experience study

Memorandum

DATE: July 13, 2018

TO: Members, Board of Retirement

FROM: Steve Delaney, Chief Executive Officer

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

Written Report

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:

OCERS B.M.S - Approved

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Brenda Shott

Assistant CEO, Finance and Internal Operations

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

VIA E-MAIL and USPS

July 3, 2018

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, 2017. 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, 2017 valuation approved by the Board at its meeting on June 18, 2018.

The three market rate of return scenarios used in this letter are as follows:

- Scenario #1: 0.0% for 2018 and 7.0% thereafter.
- Scenario #2: 7.0% for all years.
- Scenario #3: 14.0% for 2018 and 7.0% thereafter.

Even though the financial impact is shown under only three hypothetical market investment return scenarios for 2018, 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.[1]

[1] For example, a hypothetical market investment return of 3.50% (i.e., one-half of 7.00%) 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, 2017 valuation.

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.
- The projected contribution rates for the different plans within the eleven Rate Groups are provided in Attachment O.

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, 2017 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, 2017 valuation.
- The detailed amortization schedule for OCERS' UAAL as of December 31, 2017 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 7.00%) are amortized over separate 20-year periods.
- An adjustment has been made in the illustrations to reflect the long-term impact on OCERS of the three-year phase-in of the UAAL cost increase due to the changes in actuarial assumptions adopted by the Board starting with the December 31, 2017 valuation. The first year of the three-year phased-in contribution rates would apply to fiscal year 2019-2020, based on the December 31, 2017 valuation.

- CalPEPRA prescribes new benefit formulas for members with a membership date on or 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[2] associated with the enrollment of those members under the new 2.5% at 67 formula.

  For new members within Rate Group #2, only the County's attorneys, San Juan Capistrano members[3] 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.[4] 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, 2017 valuation. As of December 31, 2017, payroll for active members in Rate Group #2 under these three formulas represented about 7.4%, 92.5% and 0.1% 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[2] associated with the enrollment of new members under the three new formulas.[5]

  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[2] 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, 2018 is equal to $145,666 in 2018. To the extent this provision will limit covered compensation of the new members, our assumption that the total payroll will increase by 3.25% each year over the projection period (for use in determining the contribution rate for the UAAL) may be overstated somewhat. If so, then 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.

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[2] We have estimated the potential employer Normal Cost savings assuming that the payroll for new members who would be covered after the December 31, 2017 valuation under the CalPEPRA tiers could be modeled by: (1) projecting the total December 31, 2017 payroll within each Rate Group using the 3.25% 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, 2017 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.

[3] 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, 2017, there was one member enrolled in Plan W.

[4] 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.

[5] 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, 2017.

- 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 my supervision and 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.

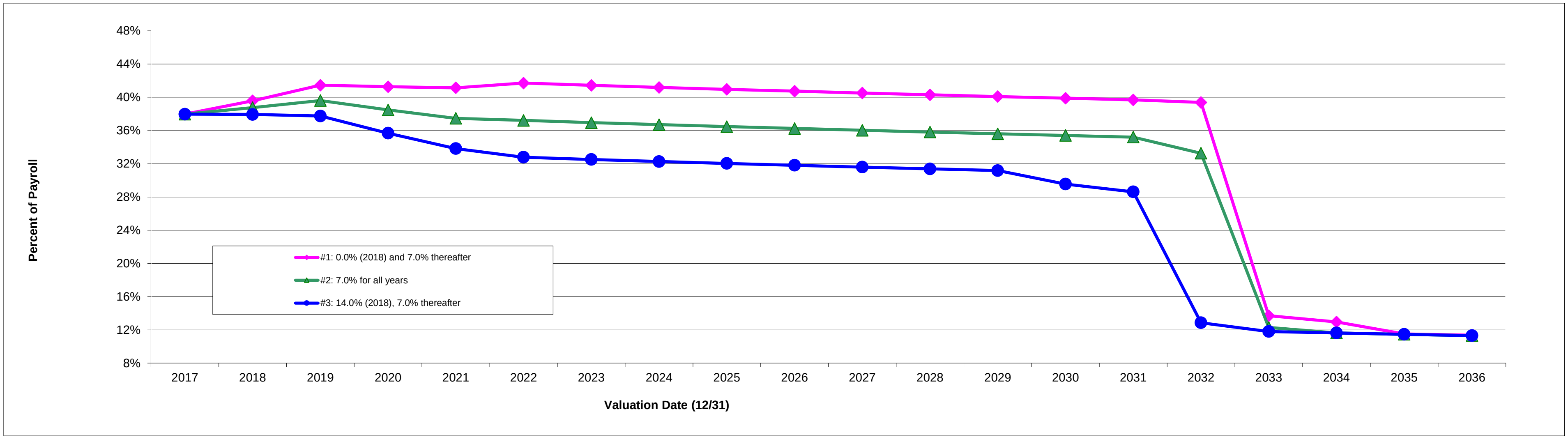
Sincerely,

Andy Yeung

MYM/bqb
Enclosures

cc: Suzanne Jenike
Brenda Shott

Attachment A
Projected Employer Rates
Aggregate Plan



Valuation Date (12/31)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	38.0%	39.6%	41.5%	41.3%	41.1%	41.7%	41.4%	41.2%	41.0%	40.7%	40.5%	40.3%	40.1%	39.9%	39.7%	39.4%	13.7%	13.0%	11.5%	11.4%
#2: 7.0% for all years	38.0%	38.8%	39.6%	38.5%	37.5%	37.2%	37.0%	36.7%	36.5%	36.3%	36.0%	35.8%	35.6%	35.4%	35.2%	33.3%	12.3%	11.6%	11.5%	11.3%
#3: 14.0% (2018), 7.0% thereafter	38.0%	37.9%	37.8%	35.7%	33.8%	32.8%	32.5%	32.3%	32.0%	31.8%	31.6%	31.4%	31.2%	29.6%	28.6%	12.9%	11.8%	11.6%	11.5%	11.3%

Attachment B
Projected Employer Rates by Rate Group
Scenario 1: 0.0% for 2018 and 7.0% thereafter

	Valuation Date (12/31)																			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General																				
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	18.3%	19.6%	21.0%	21.0%	21.1%	21.5%	21.5%	21.5%	21.5%	21.5%	21.4%	21.4%	21.4%	21.4%	21.4%	21.3%	10.1%	11.6%	10.1%	10.1%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	35.3%	36.8%	38.6%	38.3%	38.2%	38.6%	38.4%	38.1%	37.9%	37.7%	37.4%	37.2%	37.0%	36.8%	36.6%	36.3%	9.3%	8.8%	8.6%	8.4%
RG #3 - Plans B, G, H and U (OCSD)	12.5%	12.3%	12.4%	12.2%	12.2%	13.0%	12.9%	12.8%	12.7%	12.6%	12.5%	12.4%	12.3%	12.3%	12.2%	12.1%	12.1%	12.0%	12.0%	11.9%
RG #5 - Plans A, B and U (OCTA)	28.0%	29.6%	31.5%	31.5%	31.6%	32.2%	32.2%	32.1%	32.1%	32.1%	32.0%	32.0%	32.0%	31.9%	31.9%	31.8%	12.6%	13.8%	11.4%	11.4%
RG #9 - Plans M, N and U (TCA)	24.5%	25.3%	26.3%	26.2%	26.1%	26.5%	26.3%	26.2%	26.0%	25.9%	25.8%	25.8%	25.7%	25.6%	25.6%	25.4%	11.6%	11.3%	11.3%	11.2%
RG #10 - Plans I, J, M, N and U (OCFA)	29.0%	30.3%	31.8%	31.8%	31.7%	32.2%	32.1%	31.9%	31.8%	31.7%	31.5%	31.4%	31.3%	31.2%	31.0%	30.8%	11.2%	11.1%	11.0%	10.9%
RG #11 - Plans M and N, future service, and U (Cemetery)	12.5%	13.4%	14.6%	14.6%	14.6%	15.2%	15.2%	15.2%	15.1%	15.1%	15.0%	15.0%	15.0%	15.0%	15.0%	14.9%	14.9%	14.9%	14.9%	14.8%
RG #12 - Plans G and H, future service, and U (Law Library)	13.9%	13.6%	14.0%	13.6%	13.3%	13.9%	13.6%	13.3%	13.0%	12.8%	12.6%	12.4%	12.2%	12.2%	12.1%	11.9%	11.8%	11.8%	11.7%	11.6%
Safety																				
RG #6 - Plans E, F and V (Probation)	52.3%	55.1%	58.2%	58.2%	58.2%	59.0%	58.8%	58.6%	58.3%	58.1%	57.8%	57.4%	57.1%	56.7%	56.3%	55.8%	30.2%	25.1%	18.4%	18.0%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.4%	65.0%	67.9%	67.7%	67.5%	68.4%	68.1%	67.8%	67.5%	67.3%	67.0%	66.8%	66.5%	66.3%	66.1%	65.7%	29.9%	27.1%	20.5%	20.3%
RG #8 - Plans E, F, Q, R and V (OCFA)	46.2%	47.9%	49.8%	49.4%	49.1%	49.8%	49.1%	48.5%	48.1%	47.7%	47.2%	46.9%	46.4%	46.0%	45.6%	45.1%	18.3%	17.9%	17.6%	17.2%

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.

In addition, under this scenario, Rate Group #3 would be expected to use up the entire amount in the O.C. Sanitation District UAAL Deferred Account (that account has a balance of $14,871,000 as of December 31, 2017) 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 $134,417,000 as of December 31, 2017) in these projections.

Attachment B
Projected Employer Rates by Rate Group
Scenario 2: 7.0% for all years

	Valuation Date (12/31)																			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General																				
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	18.3%	19.1%	19.9%	19.3%	18.9%	18.8%	18.8%	18.8%	18.8%	18.8%	18.7%	18.7%	18.7%	18.7%	18.7%	18.6%	10.1%	10.1%	10.1%	10.1%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	35.3%	36.0%	36.8%	35.7%	34.8%	34.5%	34.2%	34.0%	33.7%	33.5%	33.3%	33.1%	32.8%	32.6%	32.4%	32.1%	8.9%	8.8%	8.6%	8.4%
RG #3 - Plans B, G, H and U (OCSD)	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%	11.0%	10.9%	10.9%	10.8%	10.8%	10.7%
RG #5 - Plans A, B and U (OCTA)	28.0%	28.9%	29.9%	29.0%	28.3%	28.3%	28.2%	28.2%	28.2%	28.1%	28.1%	28.1%	28.0%	28.0%	28.0%	27.9%	11.5%	11.5%	11.4%	11.4%
RG #9 - Plans M, N and U (TCA)	24.5%	24.8%	25.2%	24.5%	23.9%	23.8%	23.6%	23.5%	23.4%	23.3%	23.2%	23.2%	23.1%	23.0%	22.9%	22.8%	11.3%	11.3%	11.3%	11.2%
RG #10 - Plans I, J, M, N and U (OCFA)	29.0%	29.5%	30.2%	29.3%	28.4%	28.3%	28.1%	28.0%	27.9%	27.7%	27.6%	27.5%	27.3%	27.2%	27.1%	11.3%	11.2%	11.1%	11.0%	10.9%
RG #11 - Plans M and N, future service, and U (Cemetery)	12.5%	12.8%	13.1%	12.4%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #12 - Plans G and H, future service, and U (Law Library)	13.9%	13.1%	12.6%	12.2%	11.8%	11.5%	11.3%	11.1%	10.9%	10.7%	10.6%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%
Safety																				
RG #6 - Plans E, F and V (Probation)	52.3%	54.1%	56.0%	54.7%	53.6%	53.4%	53.2%	52.9%	52.7%	52.4%	52.1%	51.8%	51.4%	51.0%	50.6%	50.1%	24.5%	18.7%	18.4%	18.0%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.4%	63.8%	65.1%	63.4%	61.9%	61.6%	61.3%	61.0%	60.7%	60.5%	60.2%	60.0%	59.7%	59.5%	59.3%	58.9%	23.1%	20.6%	20.5%	20.3%
RG #8 - Plans E, F, Q, R and V (OCFA)	46.2%	46.8%	47.2%	45.5%	44.0%	43.6%	42.8%	42.3%	41.8%	41.4%	41.0%	40.6%	40.2%	39.8%	39.4%	18.7%	18.3%	17.9%	17.6%	17.2%

Under this scenario, Rate Group #3 would be expected to use up none of the amount in the O.C. Sanitation District UAAL Deferred Account (that account has a balance of $14,871,000 as of December 31, 2017) by the December 31, 2036 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 $134,417,000 as of December 31, 2017) in these projections.

Attachment B
Projected Employer Rates by Rate Group
Scenario 3: 14.0% for 2018 and 7.0% thereafter

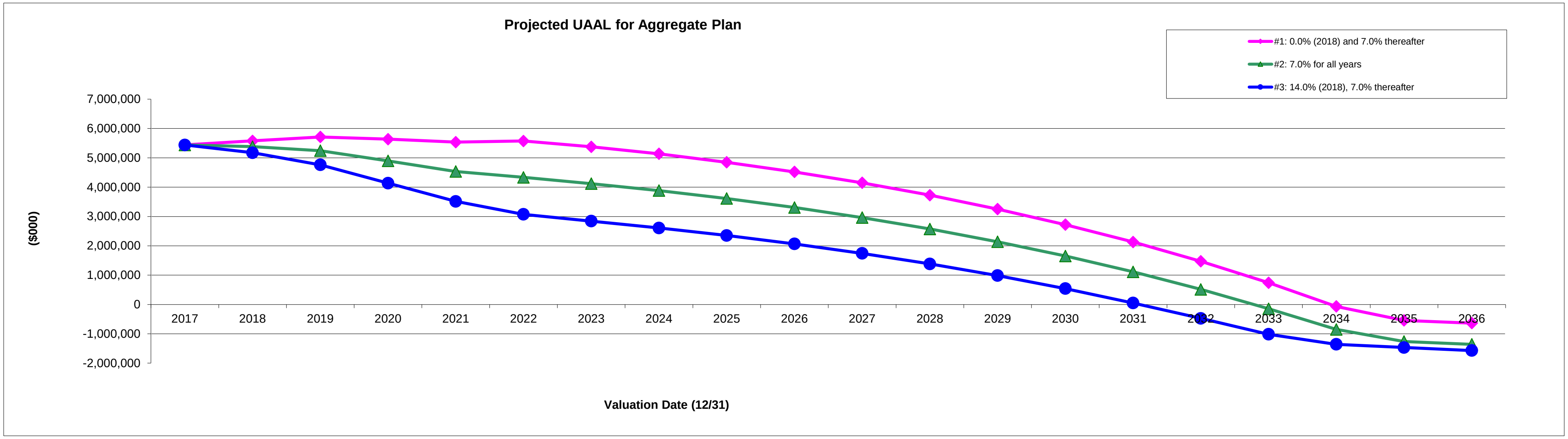
	Valuation Date (12/31)																			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General																				
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	18.3%	18.6%	18.7%	17.6%	16.6%	16.1%	16.1%	16.1%	16.1%	16.1%	16.0%	16.0%	16.0%	10.2%	10.2%	10.1%	10.1%	10.1%	10.1%	10.1%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	35.3%	35.3%	35.1%	33.1%	31.4%	30.4%	30.1%	29.9%	29.6%	29.4%	29.1%	28.9%	28.7%	28.5%	28.3%	9.1%	8.9%	8.8%	8.6%	8.4%
RG #3 - Plans B, G, H and U (OCSD)	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%	11.0%	10.9%	10.9%	10.8%	10.8%	10.7%
RG #5 - Plans A, B and U (OCTA)	28.0%	28.1%	28.2%	26.5%	25.1%	24.4%	24.3%	24.3%	24.2%	24.2%	24.2%	24.1%	24.1%	24.1%	11.5%	11.5%	11.5%	11.5%	11.4%	11.4%
RG #9 - Plans M, N and U (TCA)	24.5%	24.3%	24.1%	22.8%	21.6%	21.0%	20.8%	20.7%	20.6%	20.5%	20.4%	20.3%	20.3%	20.2%	11.5%	11.4%	11.3%	11.3%	11.3%	11.2%
RG #10 - Plans I, J, M, N and U (OCFA)	29.0%	28.8%	28.5%	26.8%	25.2%	24.3%	24.2%	24.0%	23.9%	23.8%	23.6%	23.5%	23.4%	11.5%	11.4%	11.3%	11.2%	11.1%	11.0%	10.9%
RG #11 - Plans M and N, future service, and U (Cemetery)	12.5%	12.1%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #12 - Plans G and H, future service, and U (Law Library)	13.9%	13.1%	12.6%	12.2%	11.8%	11.5%	11.3%	11.1%	10.9%	10.7%	10.6%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%
Safety																				
RG #6 - Plans E, F and V (Probation)	52.3%	53.1%	53.7%	51.3%	49.0%	47.7%	47.5%	47.3%	47.0%	46.7%	46.5%	46.1%	45.8%	45.4%	45.0%	44.5%	19.2%	18.7%	18.4%	18.0%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.4%	62.5%	62.3%	59.1%	56.3%	54.8%	54.5%	54.2%	53.9%	53.7%	53.4%	53.2%	52.9%	52.7%	52.5%	21.0%	20.8%	20.6%	20.5%	20.3%
RG #8 - Plans E, F, Q, R and V (OCFA)	46.2%	45.6%	44.6%	41.6%	38.9%	37.3%	36.6%	36.0%	35.6%	35.2%	34.8%	34.4%	34.0%	19.5%	19.1%	18.7%	18.3%	17.9%	17.6%	17.2%

Under this scenario, Rate Group #3 would be expected to use up none of the amount in the O.C. Sanitation District UAAL Deferred Account (that account has a balance of $14,871,000 as of December 31, 2017) by the December 31, 2036 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 $134,417,000 as of December 31, 2017) in these projections.

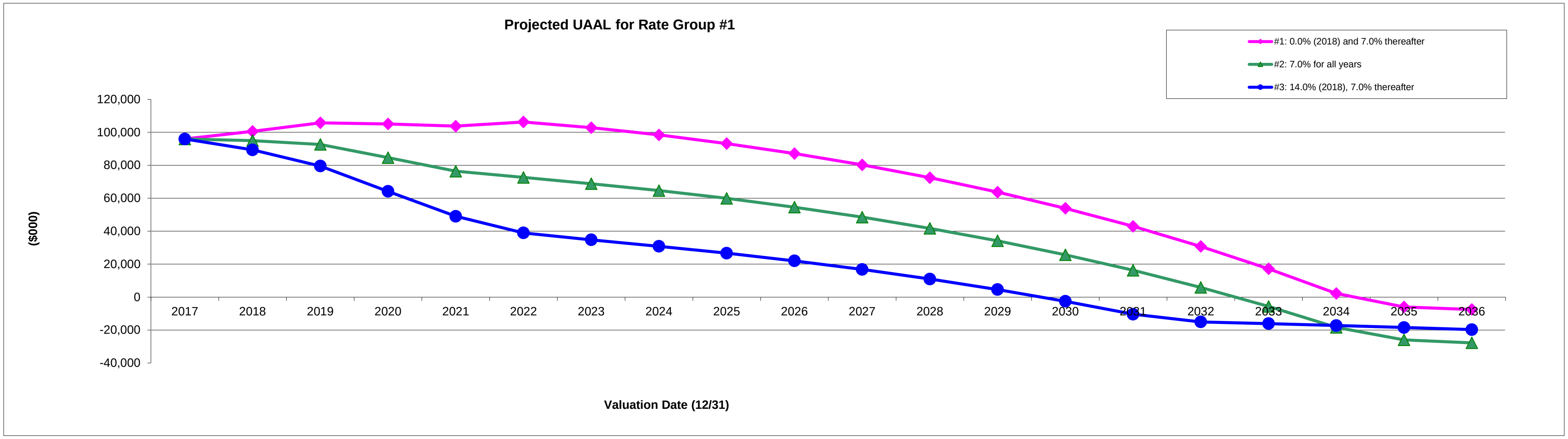
Attachment C
Projected UAAL and Funded Ratio for Aggregate Plan



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	5,438,302	5,577,765	5,712,362	5,636,773	5,534,382	5,574,889	5,377,296	5,136,322	4,848,995	4,520,647	4,147,767	3,726,542	3,252,928	2,722,530	2,130,525	1,471,812	741,003	-65,956	-543,505	-635,125
#2: 7.0% for all years	5,438,302	5,380,477	5,244,434	4,895,215	4,533,827	4,333,402	4,119,996	3,883,569	3,613,760	3,307,580	2,961,928	2,573,543	2,138,746	1,653,668	1,114,238	515,897	-146,146	-849,557	-1,260,541	-1,356,905
#3: 14.0% (2018), 7.0% thereafter	5,438,302	5,174,635	4,760,695	4,136,735	3,515,158	3,072,624	2,841,830	2,607,768	2,352,632	2,065,555	1,743,835	1,384,568	984,715	540,867	49,411	-472,643	-1,015,325	-1,357,333	-1,466,535	-1,569,194

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	72.3%	73.1%	73.8%	75.4%	77.0%	77.9%	79.7%	81.5%	83.3%	85.1%	86.9%	88.7%	90.5%	92.4%	94.3%	96.2%	98.1%	100.2%	101.3%	101.4%
#2: 7.0% for all years	72.3%	74.0%	75.9%	78.6%	81.2%	82.9%	84.5%	86.0%	87.5%	89.1%	90.6%	92.2%	93.8%	95.4%	97.0%	98.7%	100.4%	102.1%	103.0%	103.1%
#3: 14.0% (2018), 7.0% thereafter	72.3%	75.0%	78.2%	82.0%	85.4%	87.8%	89.3%	90.6%	91.9%	93.2%	94.5%	95.8%	97.1%	98.5%	99.9%	101.2%	102.5%	103.3%	103.4%	103.6%

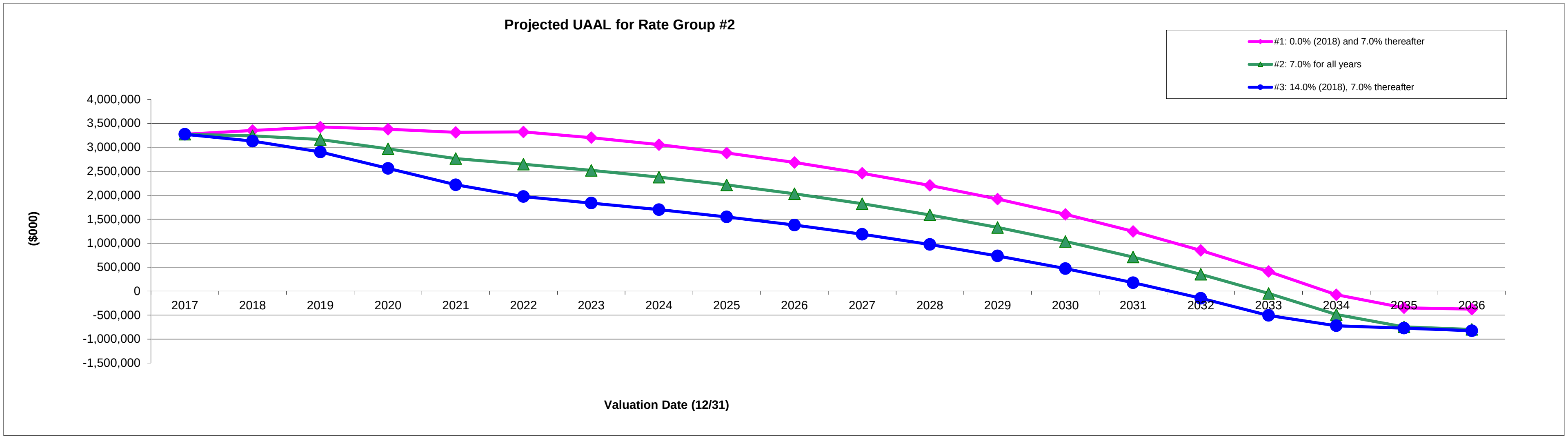
Attachment D
Projected UAAL and Funded Ratio for Rate Group #1
Plans A, B and U (non-OCTA, non-OCSD)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	95,943	100,543	105,735	105,072	103,723	106,266	102,786	98,434	93,158	87,112	80,235	72,460	63,706	53,896	42,942	30,743	17,196	2,234	-5,934	-7,496
#2: 7.0% for all years	95,943	94,937	92,627	84,624	76,403	72,628	68,789	64,639	59,911	54,553	48,509	41,727	34,146	25,692	16,295	5,876	-5,648	-18,323	-25,923	-27,738
#3: 14.0% (2018), 7.0% thereafter	95,943	89,331	79,517	64,160	49,057	38,969	34,777	30,826	26,658	21,991	16,786	10,997	4,577	-2,527	-10,362	-15,038	-16,090	-17,217	-18,422	-19,711

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	80.2%	80.3%	80.3%	81.4%	82.5%	82.9%	84.3%	85.6%	87.0%	88.3%	89.7%	91.1%	92.5%	93.9%	95.3%	96.8%	98.2%	99.8%	100.6%	100.7%
#2: 7.0% for all years	80.2%	81.4%	82.8%	85.0%	87.1%	88.3%	89.5%	90.5%	91.6%	92.7%	93.8%	94.9%	96.0%	97.1%	98.2%	99.4%	100.6%	101.8%	102.5%	102.6%
#3: 14.0% (2018), 7.0% thereafter	80.2%	82.5%	85.2%	88.6%	91.7%	93.7%	94.7%	95.5%	96.3%	97.1%	97.8%	98.6%	99.5%	100.3%	101.1%	101.6%	101.6%	101.7%	101.8%	101.8%

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



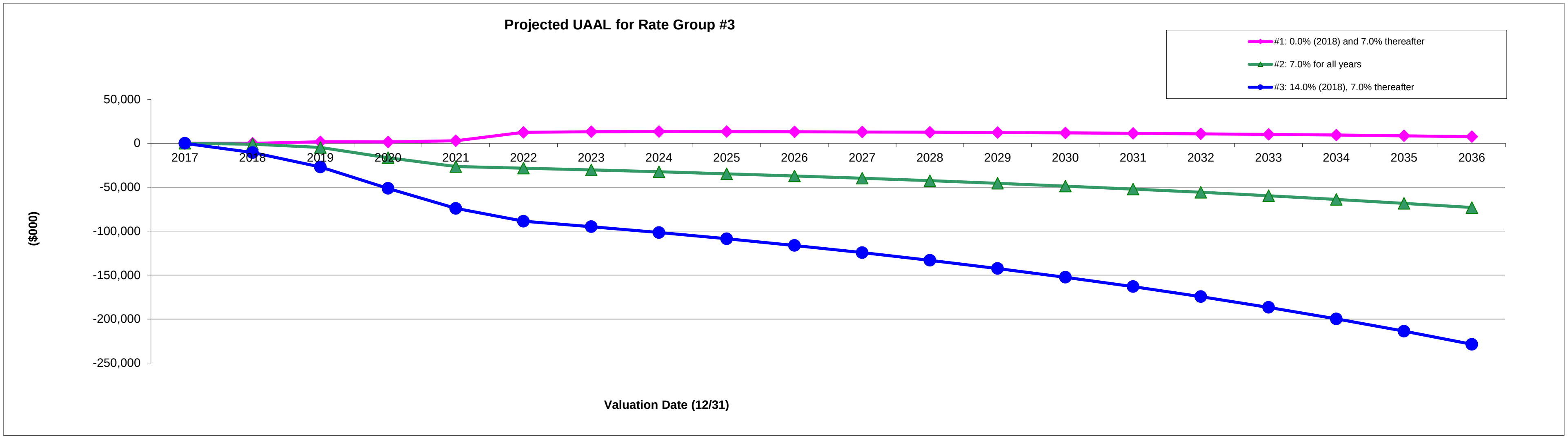
UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
#1: 0.0% (2018) and 7.0% thereafter	3,271,320	3,350,013	3,423,669	3,376,367	3,311,752	3,320,375	3,199,957	3,054,091	2,880,970	2,683,229
#2: 7.0% for all years	3,271,320	3,238,880	3,162,934	2,968,355	2,765,185	2,646,003	2,518,335	2,376,428	2,214,388	2,030,405
#3: 14.0% (2018), 7.0% thereafter	3,271,320	3,127,747	2,902,187	2,560,298	2,218,572	1,971,553	1,836,632	1,698,747	1,547,786	1,377,561

UAAL ($000)	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	2,458,741	2,205,216	1,920,273	1,601,272	1,245,290	849,266	410,000	-74,903	-347,973	-375,751
#2: 7.0% for all years	1,822,602	1,589,036	1,327,464	1,035,548	710,862	350,628	-48,055	-487,080	-745,452	-797,634
#3: 14.0% (2018), 7.0% thereafter	1,186,441	972,676	734,462	469,701	176,216	-148,331	-506,453	-721,377	-771,874	-825,905

Funded Ratio	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
#1: 0.0% (2018) and 7.0% thereafter	70.1%	70.9%	71.6%	73.3%	74.9%	75.9%	77.8%	79.6%	81.5%	83.4%
#2: 7.0% for all years	70.1%	71.8%	73.8%	76.5%	79.1%	80.8%	82.5%	84.2%	85.8%	87.5%
#3: 14.0% (2018), 7.0% thereafter	70.1%	72.8%	75.9%	79.7%	83.2%	85.7%	87.2%	88.7%	90.1%	91.5%

Funded Ratio	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	85.4%	87.3%	89.3%	91.4%	93.5%	95.7%	98.0%	100.4%	101.6%	101.7%
#2: 7.0% for all years	89.2%	90.9%	92.6%	94.4%	96.3%	98.2%	100.2%	102.3%	103.5%	103.7%
#3: 14.0% (2018), 7.0% thereafter	92.9%	94.4%	95.9%	97.5%	99.1%	100.8%	102.5%	103.5%	103.6%	103.8%

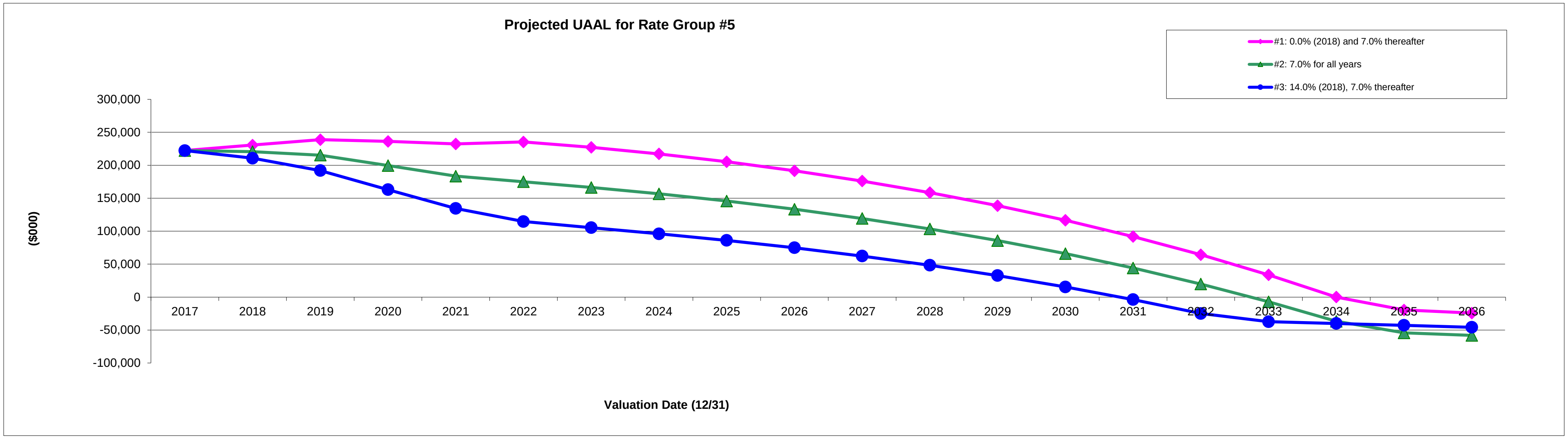
Attachment F
Projected UAAL and Funded Ratio for Rate Group #3
Plans B, G, H and U (OCSD)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	0	0	1,625	1,480	2,830	12,441	13,135	13,413	13,273	13,084	12,845	12,552	12,200	11,783	11,295	10,731	10,083	9,345	8,508	7,563
#2: 7.0% for all years	0	-1,006	-4,760	-16,419	-26,489	-28,343	-30,328	-32,450	-34,722	-37,153	-39,753	-42,536	-45,513	-48,699	-52,108	-55,756	-59,659	-63,835	-68,303	-73,085
#3: 14.0% (2018), 7.0% thereafter	0	-10,565	-26,961	-51,273	-74,053	-88,682	-94,890	-101,532	-108,640	-116,244	-124,381	-133,088	-142,404	-152,373	-163,039	-174,451	-186,663	-199,729	-213,710	-228,670
Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	100.0%	100.0%	99.8%	99.8%	99.7%	98.5%	98.5%	98.6%	98.6%	98.7%	98.8%	98.9%	98.9%	99.0%	99.1%	99.2%	99.3%	99.3%	99.4%	99.5%
#2: 7.0% for all years	100.0%	100.1%	100.6%	102.1%	103.2%	103.3%	103.4%	103.5%	103.5%	103.6%	103.7%	103.8%	103.9%	104.0%	104.2%	104.3%	104.4%	104.6%	104.7%	104.9%
#3: 14.0% (2018), 7.0% thereafter	100.0%	101.5%	103.6%	106.6%	109.1%	110.4%	110.6%	110.8%	111.1%	111.3%	111.6%	111.9%	112.3%	112.6%	113.0%	113.4%	113.9%	114.3%	114.8%	115.4%

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 100% funded as of the December 31, 2017 valuation, they are anticipated to have a restart amortization layer starting with the December 31, 2019 valuation under Scenario #1, which will not drop off until 20 years after that restart amortization layer is established.

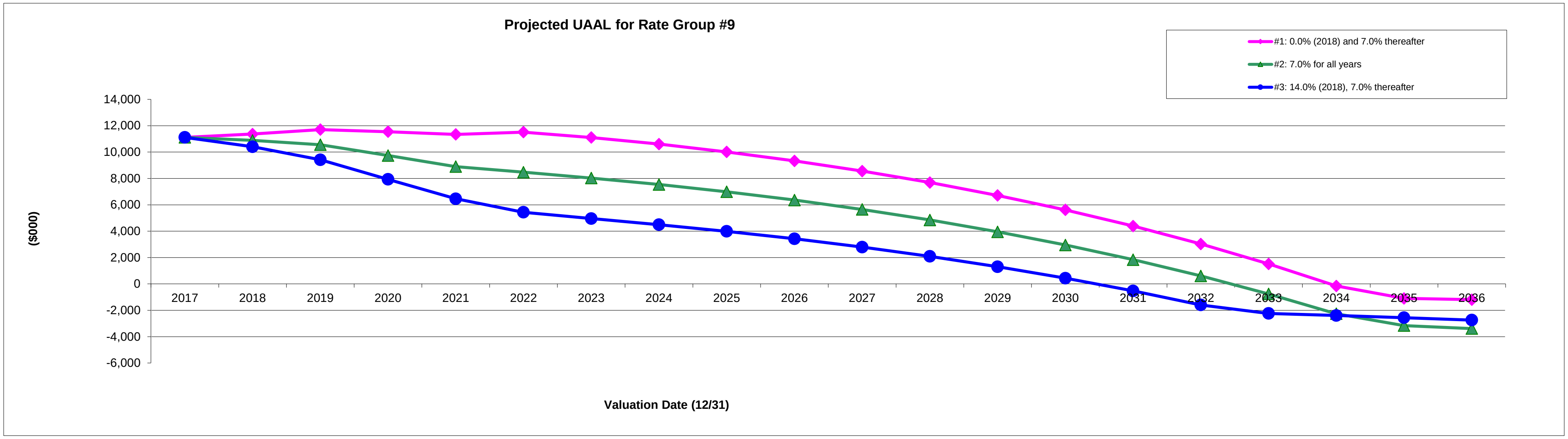
Attachment G
Projected UAAL and Funded Ratio for Rate Group #5
Plans A, B and U (OCTA)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	222,244	230,665	238,763	236,183	232,357	235,344	227,226	217,246	205,280	191,593	176,044	158,472	138,706	116,561	91,839	64,326	33,793	72	-19,546	-24,223
#2: 7.0% for all years	222,244	220,649	215,329	199,587	183,420	175,052	166,302	156,688	145,716	133,271	119,225	103,444	85,775	66,066	44,150	19,838	-7,058	-36,668	-54,224	-58,020
#3: 14.0% (2018), 7.0% thereafter	222,244	210,633	191,891	162,981	134,455	114,714	105,321	96,063	86,082	74,866	62,311	48,300	32,718	15,437	-3,690	-24,804	-37,302	-39,914	-42,707	-45,697

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	75.7%	76.0%	76.4%	77.7%	79.1%	79.8%	81.4%	83.0%	84.6%	86.2%	87.9%	89.5%	91.2%	92.9%	94.6%	96.4%	98.2%	100.0%	101.0%	101.2%
#2: 7.0% for all years	75.7%	77.1%	78.7%	81.2%	83.5%	85.0%	86.4%	87.7%	89.1%	90.4%	91.8%	93.2%	94.6%	96.0%	97.4%	98.9%	100.4%	101.9%	102.8%	102.9%
#3: 14.0% (2018), 7.0% thereafter	75.7%	78.1%	81.0%	84.6%	87.9%	90.2%	91.4%	92.5%	93.5%	94.6%	95.7%	96.8%	97.9%	99.1%	100.2%	101.4%	102.0%	102.1%	102.2%	102.3%

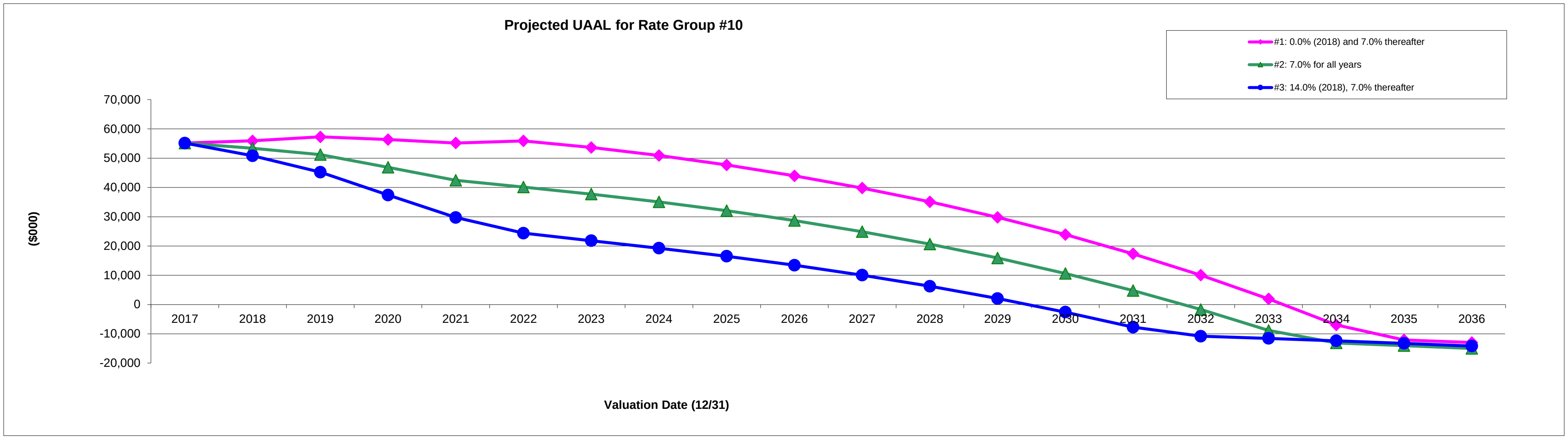
Attachment H
Projected UAAL and Funded Ratio for Rate Group #9
Plans M, N and U (TCA)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	11,115	11,368	11,702	11,543	11,339	11,511	11,106	10,608	10,012	9,332	8,561	7,691	6,713	5,617	4,393	3,030	1,517	-155	-1,098	-1,193
#2: 7.0% for all years	11,115	10,886	10,558	9,735	8,896	8,471	8,029	7,543	6,989	6,360	5,649	4,850	3,954	2,953	1,840	606	-759	-2,259	-3,161	-3,382
#3: 14.0% (2018), 7.0% thereafter	11,115	10,404	9,415	7,929	6,457	5,436	4,958	4,490	3,989	3,425	2,794	2,090	1,305	434	-530	-1,594	-2,236	-2,392	-2,560	-2,739

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	74.8%	75.9%	76.7%	78.5%	80.2%	81.1%	82.9%	84.6%	86.3%	88.0%	89.6%	91.2%	92.7%	94.2%	95.7%	97.2%	98.7%	100.1%	100.9%	100.9%
#2: 7.0% for all years	74.8%	76.9%	79.0%	81.9%	84.5%	86.1%	87.6%	89.0%	90.4%	91.8%	93.1%	94.4%	95.7%	97.0%	98.2%	99.4%	100.7%	101.9%	102.5%	102.5%
#3: 14.0% (2018), 7.0% thereafter	74.8%	77.9%	81.3%	85.2%	88.7%	91.1%	92.3%	93.5%	94.5%	95.6%	96.6%	97.6%	98.6%	99.6%	100.5%	101.5%	102.0%	102.0%	102.0%	102.0%

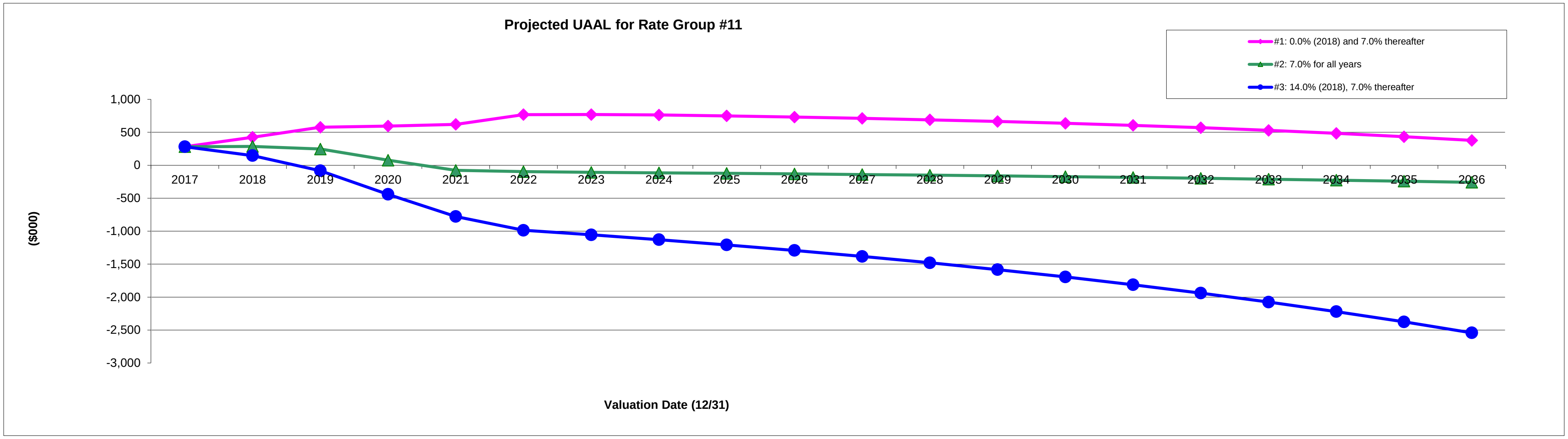
Attachment I
Projected UAAL and Funded Ratio for Rate Group #10
Plans I, J, M, N and U (OCFA)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	55,160	55,937	57,270	56,358	55,191	55,897	53,654	50,924	47,676	43,980	39,798	35,088	29,807	23,907	17,337	10,038	1,955	-6,953	-12,095	-12,942
#2: 7.0% for all years	55,160	53,382	51,242	46,887	42,462	40,142	37,727	35,086	32,090	28,710	24,910	20,657	15,913	10,636	4,782	-1,694	-8,841	-13,086	-14,002	-14,983
#3: 14.0% (2018), 7.0% thereafter	55,160	50,827	45,214	37,420	29,738	24,394	21,804	19,254	16,515	13,455	10,046	6,257	2,057	-2,588	-7,712	-10,802	-11,559	-12,368	-13,233	-14,160

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	76.1%	77.1%	77.9%	79.4%	80.9%	81.7%	83.3%	85.0%	86.6%	88.3%	89.9%	91.5%	93.1%	94.7%	96.4%	98.0%	99.6%	101.3%	102.1%	102.2%
#2: 7.0% for all years	76.1%	78.2%	80.2%	82.9%	85.3%	86.8%	88.3%	89.6%	91.0%	92.3%	93.7%	95.0%	96.3%	97.7%	99.0%	100.3%	101.7%	102.4%	102.5%	102.5%
#3: 14.0% (2018), 7.0% thereafter	76.1%	79.2%	82.5%	86.3%	89.7%	92.0%	93.2%	94.3%	95.4%	96.4%	97.5%	98.5%	99.5%	100.6%	101.6%	102.2%	102.2%	102.3%	102.3%	102.4%

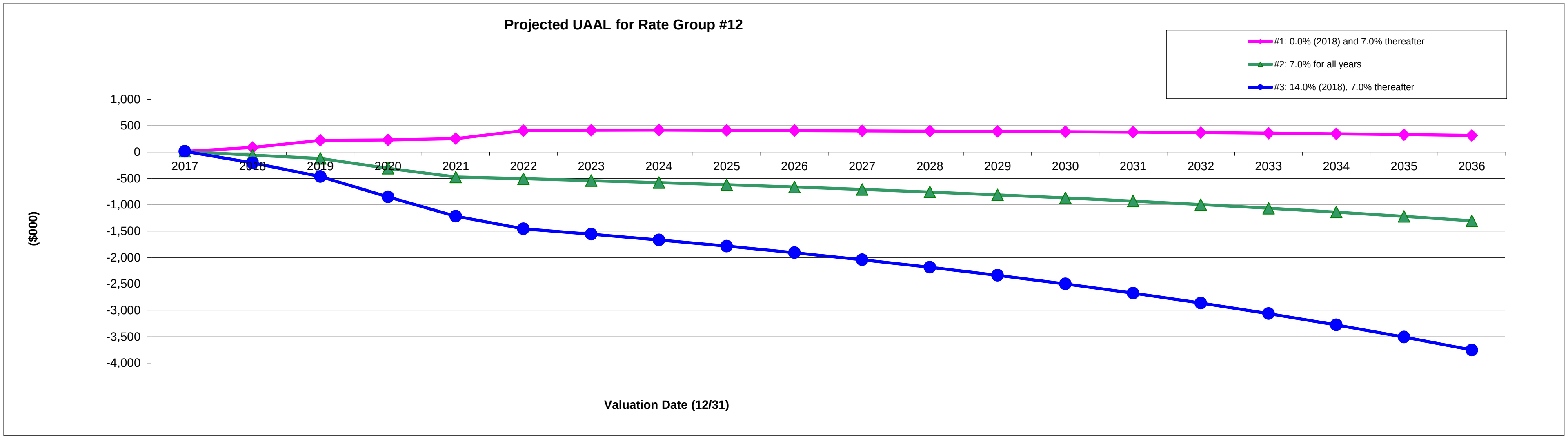
Attachment J
Projected UAAL and Funded Ratio for Rate Group #11
Plans M and N, future service, and U (Cemetery)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	281	426	576	595	620	768	769	763	748	731	711	689	664	636	605	570	529	484	433	376
#2: 7.0% for all years	281	286	246	77	-77	-97	-107	-115	-123	-132	-141	-151	-161	-172	-184	-197	-211	-226	-242	-259
#3: 14.0% (2018), 7.0% thereafter	281	146	-83	-441	-777	-986	-1,055	-1,128	-1,207	-1,292	-1,382	-1,479	-1,583	-1,694	-1,812	-1,939	-2,075	-2,220	-2,375	-2,542

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	97.2%	96.0%	95.0%	95.2%	95.4%	94.7%	95.1%	95.5%	95.9%	96.3%	96.6%	97.0%	97.3%	97.6%	97.8%	98.1%	98.4%	98.6%	98.8%	99.1%
#2: 7.0% for all years	97.2%	97.3%	97.9%	99.4%	100.6%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%	100.7%
#3: 14.0% (2018), 7.0% thereafter	97.2%	98.6%	100.7%	103.5%	105.7%	106.8%	106.7%	106.7%	106.6%	106.6%	106.5%	106.5%	106.5%	106.5%	106.4%	106.4%	106.4%	106.4%	106.4%	106.4%

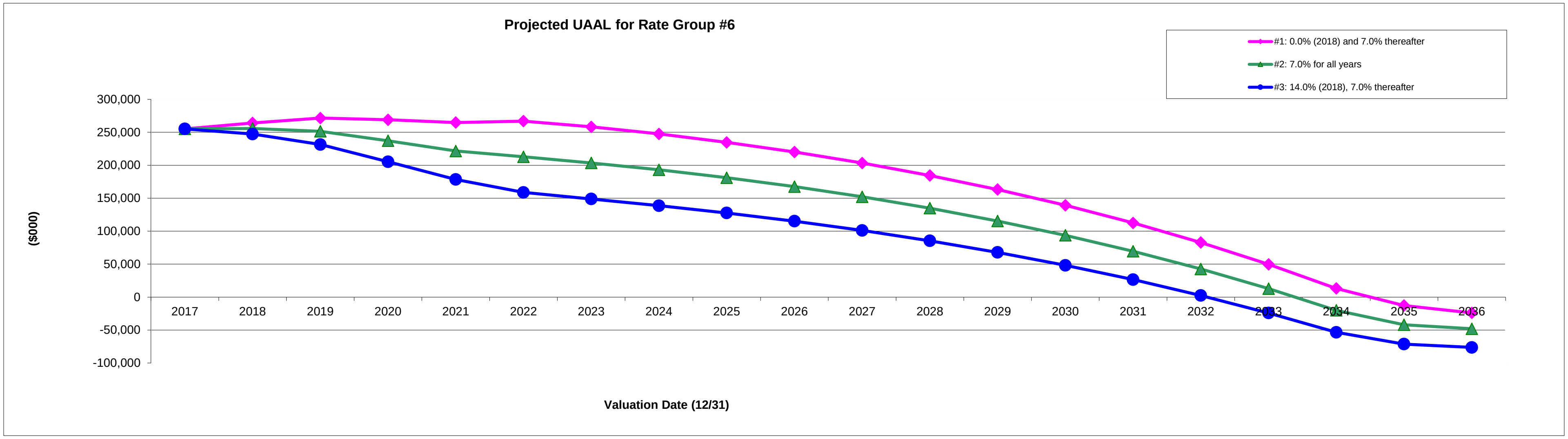
Attachment K
Projected UAAL and Funded Ratio for Rate Group #12
Plans G, H and U (Law Library)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	13	87	222	230	254	406	414	416	412	407	402	396	391	384	377	368	358	345	331	314
#2: 7.0% for all years	13	-59	-120	-308	-472	-506	-541	-579	-619	-663	-709	-759	-812	-869	-929	-995	-1,064	-1,139	-1,218	-1,304
#3: 14.0% (2018), 7.0% thereafter	13	-205	-463	-849	-1,216	-1,455	-1,557	-1,666	-1,782	-1,907	-2,041	-2,184	-2,336	-2,500	-2,675	-2,862	-3,063	-3,277	-3,506	-3,752

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	99.9%	99.2%	98.1%	98.1%	98.1%	97.1%	97.2%	97.4%	97.5%	97.7%	97.9%	98.0%	98.1%	98.3%	98.4%	98.5%	98.6%	98.8%	98.9%	99.0%
#2: 7.0% for all years	99.9%	100.5%	101.0%	102.5%	103.6%	103.6%	103.6%	103.7%	103.7%	103.7%	103.8%	103.8%	103.8%	103.9%	103.9%	104.0%	104.0%	104.1%	104.2%	104.2%
#3: 14.0% (2018), 7.0% thereafter	99.9%	101.9%	104.0%	106.9%	109.3%	110.4%	110.5%	110.6%	110.6%	110.7%	110.8%	111.0%	111.1%	111.2%	111.3%	111.5%	111.6%	111.8%	112.0%	112.2%

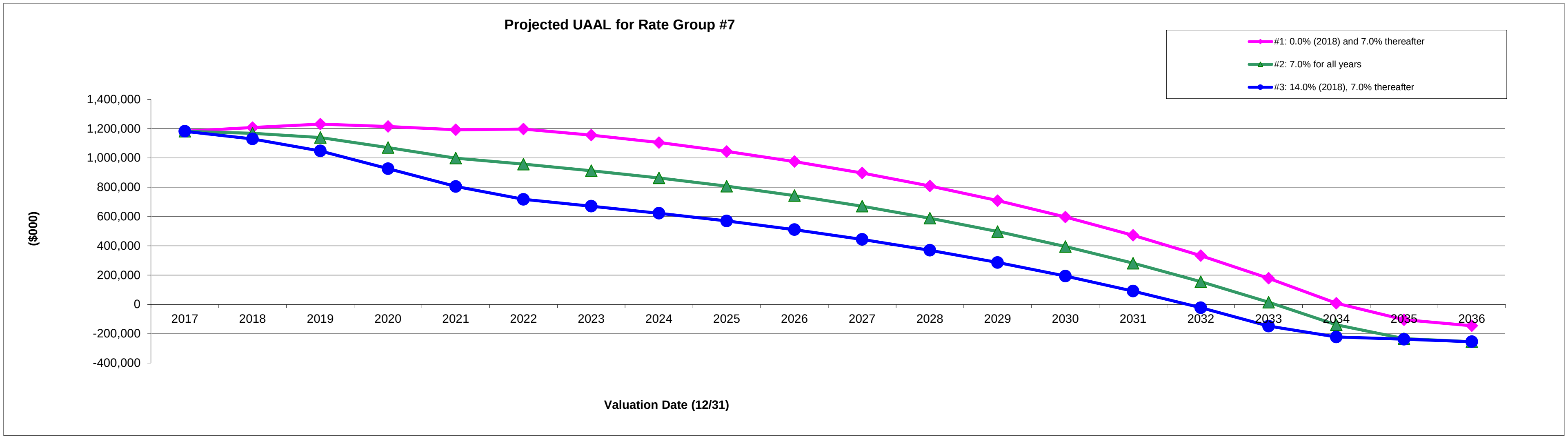
Attachment L
Projected UAAL and Funded Ratio for Rate Group #6
Plans E, F and V (Probation)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	255,122	264,200	271,590	269,005	264,820	266,937	258,221	247,530	234,729	220,061	203,364	184,460	163,160	139,267	112,564	82,817	49,771	13,221	-12,777	-23,924
#2: 7.0% for all years	255,122	255,780	251,524	237,160	221,569	212,815	203,457	193,057	181,137	167,565	152,198	134,884	115,454	93,730	69,527	42,635	12,834	-20,047	-41,921	-48,021
#3: 14.0% (2018), 7.0% thereafter	255,122	247,361	231,465	205,341	178,379	158,818	148,823	138,716	127,675	115,190	101,143	85,405	67,827	48,259	26,535	2,480	-24,096	-53,334	-71,257	-76,245

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	69.2%	70.3%	71.5%	73.7%	75.8%	77.2%	79.4%	81.5%	83.6%	85.6%	87.5%	89.4%	91.2%	92.9%	94.6%	96.3%	97.9%	99.5%	100.5%	100.8%
#2: 7.0% for all years	69.2%	71.3%	73.6%	76.8%	79.8%	81.9%	83.8%	85.6%	87.3%	89.0%	90.7%	92.2%	93.8%	95.2%	96.7%	98.1%	99.5%	100.8%	101.6%	101.7%
#3: 14.0% (2018), 7.0% thereafter	69.2%	72.2%	75.8%	79.9%	83.7%	86.5%	88.1%	89.7%	91.1%	92.5%	93.8%	95.1%	96.3%	97.5%	98.7%	99.9%	101.0%	102.1%	102.7%	102.7%

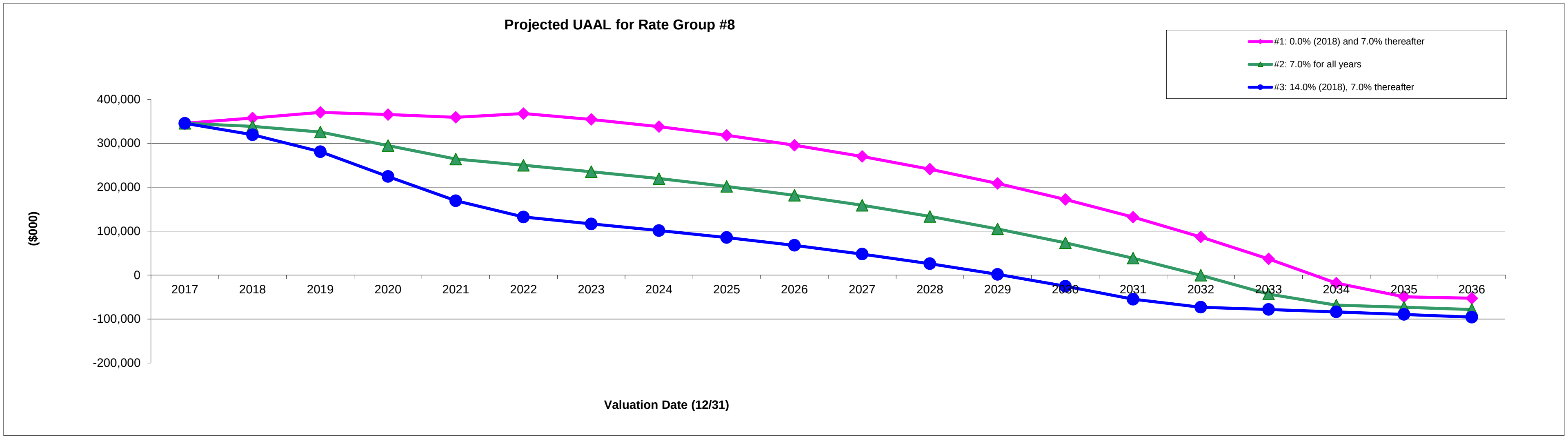
Attachment M
Projected UAAL and Funded Ratio for Rate Group #7
Plans E, F, Q, R and V (Law Enforcement)



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	1,181,694	1,207,118	1,230,831	1,214,616	1,192,463	1,197,389	1,155,685	1,104,951	1,044,568	975,512	897,052	808,380	708,613	596,817	471,987	333,043	178,842	8,486	-104,249	-145,308
#2: 7.0% for all years	1,181,694	1,168,304	1,139,276	1,070,677	998,786	957,335	912,950	863,602	807,165	743,010	670,475	588,849	497,365	395,201	281,471	155,222	15,432	-138,652	-233,075	-254,350
#3: 14.0% (2018), 7.0% thereafter	1,181,694	1,129,489	1,047,729	926,787	805,233	717,521	670,502	622,530	570,013	510,743	444,135	369,571	286,388	193,875	91,245	-22,325	-147,705	-221,954	-237,491	-254,116

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	69.3%	70.3%	71.3%	73.2%	75.0%	76.1%	78.1%	80.1%	82.1%	84.0%	86.0%	88.0%	89.9%	91.9%	93.9%	95.8%	97.9%	99.9%	101.2%	101.5%
#2: 7.0% for all years	69.3%	71.3%	73.4%	76.3%	79.0%	80.9%	82.7%	84.4%	86.1%	87.8%	89.5%	91.2%	92.9%	94.6%	96.3%	98.1%	99.8%	101.6%	102.6%	102.7%
#3: 14.0% (2018), 7.0% thereafter	69.3%	72.2%	75.6%	79.5%	83.1%	85.7%	87.3%	88.8%	90.2%	91.6%	93.1%	94.5%	95.9%	97.4%	98.8%	100.3%	101.8%	102.5%	102.6%	102.7%

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



UAAL ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
#1: 0.0% (2018) and 7.0% thereafter	345,410	357,408	370,379	365,324	359,033	367,556	354,343	337,944	318,169	295,606	270,015	241,137	208,695	172,388	131,895	86,879	36,960	-18,132	-49,105	-52,542
#2: 7.0% for all years	345,410	338,438	325,578	294,838	264,145	249,903	235,384	219,670	201,826	181,653	158,963	133,542	105,163	73,581	38,533	-265	-43,117	-68,242	-73,019	-78,130
#3: 14.0% (2018), 7.0% thereafter	345,410	319,468	280,783	224,381	169,314	132,341	116,515	101,468	85,545	67,768	47,982	26,023	1,704	-25,158	-54,766	-72,976	-78,085	-83,550	-89,399	-95,657

Funded Ratio																				
#1: 0.0% (2018) and 7.0% thereafter	79.0%	79.7%	80.2%	81.6%	83.0%	83.6%	85.1%	86.6%	88.1%	89.5%	90.9%	92.3%	93.7%	95.1%	96.4%	97.8%	99.1%	100.4%	101.1%	101.1%
#2: 7.0% for all years	79.0%	80.7%	82.6%	85.2%	87.5%	88.9%	90.1%	91.3%	92.4%	93.6%	94.7%	95.8%	96.8%	97.9%	99.0%	100.0%	101.1%	101.6%	101.6%	101.7%
#3: 14.0% (2018), 7.0% thereafter	79.0%	81.8%	85.0%	88.7%	92.0%	94.1%	95.1%	96.0%	96.8%	97.6%	98.4%	99.2%	99.9%	100.7%	101.5%	101.9%	101.9%	102.0%	102.0%	102.0%

Attachment O
Projected Employer Rates by Plans within each Rate Group
Scenario 1: 0.0% for 2018 and 7.0% thereafter

	Valuation Date (12/31)																			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General																				
RG #1 - Plans A and B	18.6%	20.0%	21.4%	21.4%	21.5%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	21.9%	10.7%	12.2%	10.7%	10.7%
RG #1 - Plan U	17.8%	19.2%	20.6%	20.6%	20.7%	21.2%	21.2%	21.2%	21.2%	21.2%	21.2%	21.2%	21.2%	21.2%	21.2%	21.1%	9.9%	11.4%	9.9%	9.9%
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	18.3%	19.6%	21.0%	21.0%	21.1%	21.5%	21.5%	21.5%	21.5%	21.5%	21.4%	21.4%	21.4%	21.4%	21.4%	21.3%	10.1%	11.6%	10.1%	10.1%
RG #2 - Plans I and J (non-Children and Families Comm.)	37.1%	37.7%	40.9%	40.9%	41.0%	41.8%	41.8%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%	41.6%	14.7%	14.4%	14.4%	14.4%
RG #2 - Plans I and J (Children and Families Comm.)	15.4%	17.1%	18.9%	19.0%	19.1%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	19.8%	17.3%	14.4%	14.4%	14.4%
RG #2 - Plans O and P	28.9%	29.5%	32.7%	32.8%	32.9%	33.6%	33.6%	33.6%	33.6%	33.6%	33.5%	33.5%	33.5%	33.5%	33.5%	33.4%	6.6%	6.2%	6.2%	6.2%
RG #2 - Plan S	34.2%	34.8%	38.0%	38.1%	38.2%	38.9%	38.9%	38.9%	38.9%	38.9%	38.8%	38.8%	38.8%	38.8%	38.8%	38.7%	11.9%	11.5%	11.5%	11.5%
RG #2 - Plan T	29.8%	30.4%	33.6%	33.7%	33.8%	34.5%	34.5%	34.5%	34.5%	34.5%	34.4%	34.4%	34.4%	34.4%	34.4%	34.3%	7.5%	7.1%	7.1%	7.1%
RG #2 - Plan U (non-Children and Families Comm.)	31.5%	32.0%	35.3%	35.3%	35.4%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.0%	9.1%	8.8%	8.8%	8.8%
RG #2 - Plan U (Children and Families Comm.)	9.8%	11.5%	13.3%	13.4%	13.5%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.2%	14.1%	11.6%	8.8%	8.8%	8.8%
RG #2 - Plan W	31.2%	31.8%	35.0%	35.1%	35.2%	35.9%	35.9%	35.9%	35.9%	35.9%	35.9%	35.9%	35.9%	35.9%	35.9%	35.7%	8.9%	8.6%	8.6%	8.6%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	35.3%	36.8%	38.6%	38.3%	38.2%	38.6%	38.4%	38.1%	37.9%	37.7%	37.4%	37.2%	37.0%	36.8%	36.6%	36.3%	9.3%	8.8%	8.6%	8.4%
RG #3 - Plans G and H	13.3%	13.3%	13.5%	13.4%	13.6%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
RG #3 - Plan B	11.3%	11.3%	11.4%	11.4%	11.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
RG #3 - Plan U	10.4%	10.4%	10.6%	10.5%	10.7%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%	11.6%
RG #3 - Plans B, G, H and U (OCSD)	12.5%	12.3%	12.4%	12.2%	12.2%	13.0%	12.9%	12.8%	12.7%	12.6%	12.5%	12.4%	12.3%	12.3%	12.2%	12.1%	12.1%	12.0%	12.0%	11.9%
RG #5 - Plans A and B	28.0%	29.7%	31.7%	31.8%	31.9%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.5%	32.4%	13.2%	14.5%	12.1%	12.1%
RG #5 - Plan U	27.3%	28.9%	30.9%	31.0%	31.1%	31.8%	31.8%	31.8%	31.7%	31.7%	31.7%	31.7%	31.7%	31.7%	31.7%	31.6%	12.5%	13.7%	11.3%	11.3%
RG #5 - Plans A, B and U (OCTA)	28.0%	29.6%	31.5%	31.5%	31.6%	32.2%	32.2%	32.1%	32.1%	32.1%	32.0%	32.0%	32.0%	31.9%	31.9%	31.8%	12.6%	13.8%	11.4%	11.4%
RG #9 - Plans M and N	26.0%	26.9%	28.1%	28.1%	28.2%	28.7%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.5%	14.8%	14.5%	14.5%	14.5%
RG #9 - Plan U	22.5%	23.5%	24.6%	24.6%	24.7%	25.2%	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	25.1%	11.3%	11.0%	11.0%	11.0%
RG #9 - Plans M, N and U (TCA)	24.5%	25.3%	26.3%	26.2%	26.1%	26.5%	26.3%	26.2%	26.0%	25.9%	25.8%	25.8%	25.7%	25.6%	25.6%	25.4%	11.6%	11.3%	11.3%	11.2%
RG #10 - Plans I and J	30.5%	31.9%	33.6%	33.7%	33.8%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.4%	34.3%	14.7%	14.7%	14.7%	14.7%
RG #10 - Plans M and N	29.2%	30.6%	32.4%	32.4%	32.5%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.1%	33.0%	13.5%	13.5%	13.5%	13.5%
RG #10 - Plan U	26.1%	27.6%	29.3%	29.4%	29.4%	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%	10.4%
RG #10 - Plans I, J, M, N and U (OCFA)	29.0%	30.3%	31.8%	31.8%	31.7%	32.2%	32.1%	31.9%	31.8%	31.7%	31.5%	31.4%	31.3%	31.2%	31.0%	30.8%	11.2%	11.1%	11.0%	10.9%
RG #11 - Plans M and N, future service	12.5%	13.4%	14.6%	14.6%	14.6%	15.2%	15.2%	15.2%	15.1%	15.0%	15.0%	14.9%	14.9%	14.9%	14.9%	14.9%	14.9%	14.9%	14.8%	14.7%
RG #11 - Plan U	12.5%	13.5%	14.6%	14.6%	14.7%	15.3%	15.2%	15.2%	15.1%	15.1%	15.0%	15.0%	15.0%	15.0%	15.0%	14.9%	14.9%	14.9%	14.9%	14.8%
RG #11 - Plans M and N, future service, and U (Cemetery)	12.5%	13.4%	14.6%	14.6%	14.6%	15.2%	15.2%	15.2%	15.1%	15.1%	15.0%	15.0%	15.0%	15.0%	15.0%	14.9%	14.9%	14.9%	14.9%	14.8%
RG #12 - Plans G and H, future service	14.1%	14.7%	15.6%	15.5%	15.6%	16.5%	16.4%	16.3%	16.2%	16.2%	16.1%	16.1%	16.1%	16.1%	16.1%	16.1%	16.0%	16.0%	16.0%	16.0%
RG #12 - Plan U	9.3%	9.9%	10.8%	10.8%	10.9%	11.7%	11.7%	11.6%	11.5%	11.4%	11.4%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%
RG #12 - Plans G and H, future service, and U (Law Library)	13.9%	13.6%	14.0%	13.6%	13.3%	13.9%	13.6%	13.3%	13.0%	12.8%	12.6%	12.4%	12.2%	12.2%	12.1%	11.9%	11.8%	11.8%	11.7%	11.6%
Safety																				
RG #6 - Plans E and F	52.5%	55.4%	58.7%	58.9%	59.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	59.8%	34.7%	30.1%	23.7%	23.7%
RG #6 - Plan V	45.4%	48.3%	51.6%	51.8%	51.9%	53.0%	53.0%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.8%	27.7%	23.0%	16.6%	16.6%
RG #6 - Plans E, F and V (Probation)	52.3%	55.1%	58.2%	58.2%	58.2%	59.0%	58.8%	58.6%	58.3%	58.1%	57.8%	57.4%	57.1%	56.7%	56.3%	55.8%	30.2%	25.1%	18.4%	18.0%
RG #7 - Plans E and F	64.0%	67.0%	70.2%	70.3%	70.5%	71.7%	71.7%	71.7%	71.7%	71.7%	71.6%	71.6%	71.6%	71.6%	71.6%	71.4%	35.8%	33.1%	26.7%	26.7%
RG #7 - Plans Q and R	61.0%	64.0%	67.2%	67.3%	67.5%	68.7%	68.7%	68.7%	68.7%	68.7%	68.6%	68.6%	68.6%	68.6%	68.6%	68.4%	32.8%	30.1%	23.7%	23.7%
RG #7 - Plan V	56.6%	59.6%	62.8%	62.9%	63.1%	64.3%	64.3%	64.3%	64.3%	64.3%	64.2%	64.2%	64.2%	64.2%	64.2%	64.0%	28.4%	25.7%	19.3%	19.3%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.4%	65.0%	67.9%	67.7%	67.5%	68.4%	68.1%	67.8%	67.5%	67.3%	67.0%	66.8%	66.5%	66.3%	66.1%	65.7%	29.9%	27.1%	20.5%	20.3%
RG #8 - Plans E and F	48.0%	50.2%	52.5%	52.6%	52.8%	53.9%	53.8%	53.8%	53.8%	53.8%	53.8%	53.8%	53.8%	53.8%	53.8%	53.7%	27.2%	27.2%	27.2%	27.2%
RG #8 - Plans Q and R	42.8%	45.0%	47.3%	47.3%	47.5%	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%	48.5%	48.5%	48.5%	48.4%	22.0%	22.0%	22.0%	22.0%
RG #8 - Plan V	36.2%	38.4%	40.7%	40.8%	41.0%	42.1%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	41.9%	15.4%	15.4%	15.4%	15.4%
RG #8 - Plans E, F, Q, R and V (OCFA)	46.2%	47.9%	49.8%	49.4%	49.1%	49.8%	49.1%	48.5%	48.1%	47.7%	47.2%	46.9%	46.4%	46.0%	45.6%	45.1%	18.3%	17.9%	17.6%	17.2%

Rates shown above have not been adjusted for employers with future service only benefit enhancement in Rate Group #2 (including Local Agency Formation Commission and Orange County Employees Retirement System but excluding Children and Families Commission).

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: 7.0% for all years

	Valuation Date (12/31)																			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General																				
RG #1 - Plans A and B	18.6%	19.5%	20.3%	19.7%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%	19.3%	19.2%	10.7%	10.7%	10.7%	10.7%
RG #1 - Plan U	17.8%	18.7%	19.5%	18.9%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.4%	9.9%	9.9%	9.9%	9.9%
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	18.3%	19.1%	19.9%	19.3%	18.9%	18.8%	18.8%	18.8%	18.8%	18.8%	18.7%	18.7%	18.7%	18.7%	18.7%	18.6%	10.1%	10.1%	10.1%	10.1%
RG #2 - Plans I and J (non-Children and Families Comm.)	37.1%	36.9%	39.1%	38.3%	37.6%	37.6%	37.6%	37.6%	37.6%	37.6%	37.6%	37.6%	37.6%	37.6%	37.6%	37.4%	14.4%	14.4%	14.4%	14.4%
RG #2 - Plans I and J (Children and Families Comm.)	15.4%	16.3%	17.2%	16.4%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.7%	15.6%	15.6%	15.6%	14.4%	14.4%	14.4%	14.4%
RG #2 - Plans O and P	28.9%	28.7%	31.0%	30.2%	29.5%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.4%	29.3%	6.2%	6.2%	6.2%	6.2%
RG #2 - Plan S	34.2%	34.0%	36.3%	35.5%	34.8%	34.7%	34.7%	34.7%	34.7%	34.7%	34.7%	34.7%	34.7%	34.7%	34.7%	34.6%	11.5%	11.5%	11.5%	11.5%
RG #2 - Plan T	29.8%	29.6%	31.9%	31.1%	30.4%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.3%	30.2%	7.1%	7.1%	7.1%	7.1%
RG #2 - Plan U (non-Children and Families Comm.)	31.5%	31.3%	33.5%	32.7%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	31.8%	8.8%	8.8%	8.8%	8.8%
RG #2 - Plan U (Children and Families Comm.)	9.8%	10.7%	11.6%	10.8%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%	10.0%	10.0%	10.0%	10.0%	10.0%	8.8%	8.8%	8.8%	8.8%
RG #2 - Plan W	31.2%	31.1%	33.3%	32.5%	31.8%	31.8%	31.8%	31.8%	31.8%	31.8%	31.8%	31.8%	31.7%	31.7%	31.7%	31.6%	8.6%	8.6%	8.6%	8.6%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	35.3%	36.0%	36.8%	35.7%	34.8%	34.5%	34.2%	34.0%	33.7%	33.5%	33.3%	33.1%	32.8%	32.6%	32.4%	32.1%	8.9%	8.8%	8.6%	8.4%
RG #3 - Plans G and H	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
RG #3 - Plan B	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%
RG #3 - Plan U	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
RG #3 - Plans B, G, H and U (OCSD)	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%	11.0%	10.9%	10.9%	10.8%	10.8%	10.7%
RG #5 - Plans A and B	28.0%	29.0%	30.0%	29.3%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.5%	12.1%	12.1%	12.1%	12.1%
RG #5 - Plan U	27.3%	28.2%	29.3%	28.5%	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	27.8%	27.7%	11.3%	11.3%	11.3%	11.3%
RG #5 - Plans A, B and U (OCTA)	28.0%	28.9%	29.9%	29.0%	28.3%	28.3%	28.2%	28.2%	28.2%	28.1%	28.1%	28.1%	28.0%	28.0%	28.0%	27.9%	11.5%	11.5%	11.4%	11.4%
RG #9 - Plans M and N	26.0%	26.5%	27.0%	26.4%	25.9%	25.9%	25.9%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	25.9%	14.5%	14.5%	14.5%	14.5%
RG #9 - Plan U	22.5%	23.0%	23.5%	22.9%	22.4%	22.4%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	22.4%	11.0%	11.0%	11.0%	11.0%
RG #9 - Plans M, N and U (TCA)	24.5%	24.8%	25.2%	24.5%	23.9%	23.8%	23.6%	23.5%	23.4%	23.3%	23.2%	23.2%	23.1%	23.0%	22.9%	22.8%	11.3%	11.3%	11.3%	11.2%
RG #10 - Plans I and J	30.5%	31.2%	32.0%	31.2%	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	30.5%	14.7%	14.7%	14.7%	14.7%	14.7%
RG #10 - Plans M and N	29.2%	29.9%	30.7%	29.9%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	13.5%	13.5%	13.5%	13.5%	13.5%
RG #10 - Plan U	26.1%	26.9%	27.7%	26.9%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	10.4%	10.4%	10.4%	10.4%	10.4%
RG #10 - Plans I, J, M, N and U (OCFA)	29.0%	29.5%	30.2%	29.3%	28.4%	28.3%	28.1%	28.0%	27.9%	27.7%	27.6%	27.5%	27.3%	27.2%	27.1%	11.3%	11.2%	11.1%	11.0%	10.9%
RG #11 - Plans M and N, future service	12.5%	12.8%	13.1%	12.4%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #11 - Plan U	12.5%	12.8%	13.1%	12.4%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #11 - Plans M and N, future service, and U (Cemetery)	12.5%	12.8%	13.1%	12.4%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #12 - Plans G and H, future service	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%
RG #12 - Plan U	9.3%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%
RG #12 - Plans G and H, future service, and U (Law Library)	13.9%	13.1%	12.6%	12.2%	11.8%	11.5%	11.3%	11.1%	10.9%	10.7%	10.6%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%
Safety																				
RG #6 - Plans E and F	52.5%	54.4%	56.4%	55.4%	54.4%	54.4%	54.4%	54.4%	54.4%	54.3%	54.3%	54.3%	54.3%	54.3%	54.3%	54.2%	29.1%	23.7%	23.7%	23.7%
RG #6 - Plan V	45.4%	47.3%	49.4%	48.3%	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%	47.3%	47.2%	47.2%	47.2%	47.1%	22.0%	16.6%	16.6%	16.6%
RG #6 - Plans E, F and V (Probation)	52.3%	54.1%	56.0%	54.7%	53.6%	53.4%	53.2%	52.9%	52.7%	52.4%	52.1%	51.8%	51.4%	51.0%	50.6%	50.1%	24.5%	18.7%	18.4%	18.0%
RG #7 - Plans E and F	64.0%	65.8%	67.4%	66.1%	64.9%	64.9%	64.9%	64.9%	64.9%	64.9%	64.8%	64.8%	64.8%	64.8%	64.8%	64.6%	29.0%	26.7%	26.7%	26.7%
RG #7 - Plans Q and R	61.0%	62.8%	64.4%	63.1%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.8%	61.8%	61.8%	61.8%	61.8%	61.6%	26.0%	23.7%	23.7%	23.7%
RG #7 - Plan V	56.6%	58.4%	60.0%	58.7%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.4%	57.4%	57.4%	57.4%	57.4%	57.2%	21.6%	19.3%	19.3%	19.3%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.4%	63.8%	65.1%	63.4%	61.9%	61.6%	61.3%	61.0%	60.7%	60.5%	60.2%	60.0%	59.7%	59.5%	59.3%	58.9%	23.1%	20.6%	20.5%	20.3%
RG #8 - Plans E and F	48.0%	49.1%	49.9%	48.7%	47.6%	47.6%	47.6%	47.6%	47.6%	47.6%	47.6%	47.6%	47.6%	47.6%	47.6%	27.2%	27.2%	27.2%	27.2%	27.2%
RG #8 - Plans Q and R	42.8%	43.8%	44.7%	43.4%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	22.0%	22.0%	22.0%	22.0%	22.0%
RG #8 - Plan V	36.2%	37.3%	38.1%	36.9%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.4%	15.4%	15.4%	15.4%	15.4%
RG #8 - Plans E, F, Q, R and V (OCFA)	46.2%	46.8%	47.2%	45.5%	44.0%	43.6%	42.8%	42.3%	41.8%	41.4%	41.0%	40.6%	40.2%	39.8%	39.4%	18.7%	18.3%	17.9%	17.6%	17.2%

Rates shown above have not been adjusted for employers with future service only benefit enhancement in Rate Group #2 (including Local Agency Formation Commission and Orange County Employees Retirement System but excluding Children and Families Commission).

Attachment O
Projected Employer Rates by Plans within each Rate Group
Scenario 3: 14.0% for 2018 and 7.0% thereafter

	Valuation Date (12/31)																			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
General																				
RG #1 - Plans A and B	18.6%	19.0%	19.1%	18.0%	17.1%	16.6%	16.6%	16.6%	16.6%	16.6%	16.6%	16.6%	16.6%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%	10.7%
RG #1 - Plan U	17.8%	18.2%	18.3%	17.2%	16.3%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%
RG #1 - Plans A, B and U (non-OCTA, non-OCSD)	18.3%	18.6%	18.7%	17.6%	16.6%	16.1%	16.1%	16.1%	16.1%	16.1%	16.0%	16.0%	16.0%	10.2%	10.2%	10.1%	10.1%	10.1%	10.1%	10.1%
RG #2 - Plans I and J (non-Children and Families Comm.)	37.1%	36.1%	37.4%	35.7%	34.2%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.5%	33.4%	33.4%	33.4%	14.4%	14.4%	14.4%	14.4%	14.4%
RG #2 - Plans I and J (Children and Families Comm.)	15.4%	15.5%	15.5%	14.2%	14.2%	14.3%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%	14.4%
RG #2 - Plans O and P	28.9%	27.9%	29.2%	27.5%	26.0%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	6.2%	6.2%	6.2%	6.2%	6.2%
RG #2 - Plan S	34.2%	33.2%	34.5%	32.8%	31.3%	30.6%	30.6%	30.6%	30.6%	30.6%	30.6%	30.6%	30.6%	30.6%	30.6%	11.5%	11.5%	11.5%	11.5%	11.5%
RG #2 - Plan T	29.8%	28.8%	30.1%	28.4%	26.9%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	26.2%	7.1%	7.1%	7.1%	7.1%	7.1%
RG #2 - Plan U (non-Children and Families Comm.)	31.5%	30.5%	31.8%	30.1%	28.6%	27.9%	27.9%	27.9%	27.9%	27.9%	27.8%	27.8%	27.8%	27.8%	27.8%	8.8%	8.8%	8.8%	8.8%	8.8%
RG #2 - Plan U (Children and Families Comm.)	9.8%	9.9%	9.9%	8.6%	8.6%	8.7%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%	8.8%
RG #2 - Plan W	31.2%	30.3%	31.6%	29.9%	28.4%	27.7%	27.7%	27.6%	27.6%	27.6%	27.6%	27.6%	27.6%	27.6%	27.6%	8.6%	8.6%	8.6%	8.6%	8.6%
RG #2 - Plans I, J, O, P, S, T, U and W (County et al.)	35.3%	35.3%	35.1%	33.1%	31.4%	30.4%	30.1%	29.9%	29.6%	29.4%	29.1%	28.9%	28.7%	28.5%	28.3%	9.1%	8.9%	8.8%	8.6%	8.4%
RG #3 - Plans G and H	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
RG #3 - Plan B	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%
RG #3 - Plan U	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
RG #3 - Plans B, G, H and U (OCSD)	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%	11.0%	10.9%	10.9%	10.8%	10.8%	10.7%
RG #5 - Plans A and B	28.0%	28.2%	28.4%	26.8%	25.4%	24.7%	24.7%	24.7%	24.7%	24.7%	24.6%	24.6%	24.6%	24.6%	12.1%	12.1%	12.1%	12.1%	12.1%	12.1%
RG #5 - Plan U	27.3%	27.5%	27.6%	26.0%	24.6%	23.9%	23.9%	23.9%	23.9%	23.9%	23.9%	23.9%	23.9%	23.9%	11.3%	11.3%	11.3%	11.3%	11.3%	11.3%
RG #5 - Plans A, B and U (OCTA)	28.0%	28.1%	28.2%	26.5%	25.1%	24.4%	24.3%	24.3%	24.2%	24.2%	24.2%	24.1%	24.1%	24.1%	11.5%	11.5%	11.5%	11.5%	11.4%	11.4%
RG #9 - Plans M and N	26.0%	26.0%	25.8%	24.7%	23.7%	23.1%	23.1%	23.1%	23.1%	23.2%	23.2%	23.2%	23.2%	23.2%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
RG #9 - Plan U	22.5%	22.5%	22.4%	21.2%	20.2%	19.6%	19.6%	19.6%	19.6%	19.7%	19.7%	19.7%	19.7%	19.7%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
RG #9 - Plans M, N and U (TCA)	24.5%	24.3%	24.1%	22.8%	21.6%	21.0%	20.8%	20.7%	20.6%	20.5%	20.4%	20.3%	20.3%	20.2%	11.5%	11.4%	11.3%	11.3%	11.3%	11.2%
RG #10 - Plans I and J	30.5%	30.5%	30.3%	28.7%	27.3%	26.6%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	26.5%	14.7%	14.7%	14.7%	14.7%	14.7%	14.7%	14.7%
RG #10 - Plans M and N	29.2%	29.2%	29.1%	27.4%	26.0%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	25.3%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%
RG #10 - Plan U	26.1%	26.1%	26.0%	24.4%	22.9%	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%	10.4%
RG #10 - Plans I, J, M, N and U (OCFA)	29.0%	28.8%	28.5%	26.8%	25.2%	24.3%	24.2%	24.0%	23.9%	23.8%	23.6%	23.5%	23.4%	11.5%	11.4%	11.3%	11.2%	11.1%	11.0%	10.9%
RG #11 - Plans M and N, future service	12.5%	12.1%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #11 - Plan U	12.5%	12.2%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #11 - Plans M and N, future service, and U (Cemetery)	12.5%	12.1%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
RG #12 - Plans G and H, future service	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%	14.1%
RG #12 - Plan U	9.3%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%	9.4%
RG #12 - Plans G and H, future service, and U (Law Library)	13.9%	13.1%	12.6%	12.2%	11.8%	11.5%	11.3%	11.1%	10.9%	10.7%	10.6%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%	9.8%	9.8%	9.7%
Safety																				
RG #6 - Plans E and F	52.5%	53.4%	54.2%	51.9%	49.8%	48.7%	48.7%	48.7%	48.7%	48.7%	48.7%	48.7%	48.7%	48.7%	48.7%	48.6%	23.7%	23.7%	23.7%	23.7%
RG #6 - Plan V	45.4%	46.3%	47.1%	44.8%	42.7%	41.7%	41.7%	41.6%	41.6%	41.6%	41.6%	41.6%	41.6%	41.6%	41.6%	41.5%	16.6%	16.6%	16.6%	16.6%
RG #6 - Plans E, F and V (Probation)	52.3%	53.1%	53.7%	51.3%	49.0%	47.7%	47.5%	47.3%	47.0%	46.7%	46.5%	46.1%	45.8%	45.4%	45.0%	44.5%	19.2%	18.7%	18.4%	18.0%
RG #7 - Plans E and F	64.0%	64.5%	64.6%	61.8%	59.3%	58.1%	58.1%	58.1%	58.1%	58.1%	58.0%	58.0%	58.0%	58.0%	58.0%	26.7%	26.7%	26.7%	26.7%	26.7%
RG #7 - Plans Q and R	61.0%	61.5%	61.6%	58.8%	56.3%	55.1%	55.1%	55.1%	55.1%	55.1%	55.0%	55.0%	55.0%	55.0%	55.0%	23.7%	23.7%	23.7%	23.7%	23.7%
RG #7 - Plan V	56.6%	57.1%	57.2%	54.4%	51.9%	50.7%	50.7%	50.7%	50.7%	50.7%	50.6%	50.6%	50.6%	50.6%	50.6%	19.3%	19.3%	19.3%	19.3%	19.3%
RG #7 - Plans E, F, Q, R and V (Law Enforcement)	62.4%	62.5%	62.3%	59.1%	56.3%	54.8%	54.5%	54.2%	53.9%	53.7%	53.4%	53.2%	52.9%	52.7%	52.5%	21.0%	20.8%	20.6%	20.5%	20.3%
RG #8 - Plans E and F	48.0%	47.9%	47.4%	44.8%	42.5%	41.4%	41.3%	41.3%	41.3%	41.3%	41.3%	41.3%	41.3%	27.2%	27.2%	27.2%	27.2%	27.2%	27.2%	27.2%
RG #8 - Plans Q and R	42.8%	42.7%	42.1%	39.5%	37.2%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	36.1%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
RG #8 - Plan V	36.2%	36.1%	35.6%	33.0%	30.7%	29.6%	29.5%	29.5%	29.5%	29.5%	29.5%	29.5%	29.5%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%
RG #8 - Plans E, F, Q, R and V (OCFA)	46.2%	45.6%	44.6%	41.6%	38.9%	37.3%	36.6%	36.0%	35.6%	35.2%	34.8%	34.4%	34.0%	19.5%	19.1%	18.7%	18.3%	17.9%	17.6%	17.2%

Rates shown above have not been adjusted for employers with future service only benefit enhancement in Rate Group #2 (including Local Agency Formation Commission and Orange County Employees Retirement System but excluding Children and Families Commission).

Orange County Fire Authority

AGENDA STAFF REPORT

Budget and Finance Committee Meeting **Agenda Item No. 3B**
October 10, 2018 **Consent Calendar**

Acceptance of Funds from the 2017 Homeland Security Grant Program for an Administrative Fire Captain Assigned to the Orange County Intelligence Assessment Center

Contact(s) for Further Information

Dave Anderson, Deputy Chief Emergency Operations Bureau	daveanderson@ocfa.org	714.573.6006
Jeff Hoey, Battalion Chief Emergency Planning and Coordination	jeffhoey@ocfa.org	714.573.6056

Summary

This item is submitted for the approval and authorization for the Fire Chief to execute any necessary agreements to accept the FY 2017 Homeland Security Grant Program award for an Administrative Fire Captain assigned to the Orange County Intelligence Assessment Center (OCIAC). This is the 11th year in funding this position utilizing these grant funds.

Prior Board/Committee Action

Not Applicable.

RECOMMENDED ACTION(S)

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Approve and authorize the Fire Chief to execute any necessary agreement(s) to accept and administer the FY 2017 Homeland Security Grant Program.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget to increase revenues and expenditures by $160,000.

Impact to Cities/County

Not Applicable.

Fiscal Impact

The FY 2018/19 General Fund revenues and expenditures will be increased by $160,000.

Background

The FY 2017 Homeland Security Grant Program (HSGP) plays a significant role in the implementation of the National Preparedness System by supporting the building, sustainment, and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient Nation. Delivering core capabilities requires the combined effort of the whole community, rather than the exclusive effort of any single organization or level of government. The FY 2017 HSGP's allowable costs support efforts to build and sustain core capabilities across the prevention, protection, mitigation, response, and recovery mission areas.

On August 3, 2018, OCFA was notified it was awarded $160,000 as part of the FY 2017 HSGP related to funding of one OCFA Fire Captain at the OCIAC as a fire agency representative working in conjunction with law enforcement to combat and educate against terrorist's threats or acts to the citizens of Orange County. Although the funding is a "FY 2017" grant, it is intended to support the Fire Captain position for the OCFA's FY 2018/19 fiscal year.

Attachment(s)

1. FY 2017 Homeland Security Grant Program Agreement (Agreement on file in the Clerk of the Authority's office)
2. Award Letter of $160,000

Attachment 1

AGREEMENT TO TRANSFER PROPERTY OR FUNDS

FOR 2017 HOMELAND SECURITY GRANT PROGRAM PURPOSES

THIS AGREEMENT is entered into this ______ day of __________________ 20__, which date is enumerated for purposes of reference only, by and between the COUNTY OF ORANGE, a political subdivision of the State of California, hereinafter referred to as "COUNTY", and ____, a (municipal corporation/special district/not-for-profit corporation), hereinafter referred to as "SUBGRANTEE."

WHEREAS, COUNTY, acting through its Sheriff-Coroner Department in its capacity as the lead agency for the Orange County Operational Area, has applied for, received and accepted a grant from the State of California, acting through its California Office of Emergency Services, to enhance county-wide emergency preparedness, hereinafter referred to as "the grant", as set forth in the grant documents that are attached hereto as Attachments A (FY 17 CA Supplement to the Federal Notice of Funding Opportunity), B (FY 17 Homeland Security Grant Program Notice of Funding Opportunity), and C (FY 17 Homeland Security Grant Assurances) and incorporated herein by reference.

WHEREAS, the terms of the grant require that COUNTY use certain grant funds to purchase equipment, technology or services that will be transferred to SUBGRANTEE to be used for grant purposes.

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

1. COUNTY shall transfer to SUBGRANTEE the equipment, technology or services as specified in Attachment D hereto, which is incorporated herein by reference. If the grant requires COUNTY to transfer to SUBGRANTEE equipment, technology or services that COUNTY has not yet acquired, COUNTY shall transfer said equipment, technology or services to SUBGRANTEE as soon after acquisition by COUNTY as is reasonably practicable.

2. If COUNTY transfers grant funds to SUBGRANTEE, SUBGRANTEE shall use said grant funds only to acquire equipment, technology or services as set forth in Attachment B hereto and/or to perform such other grant functions, if any, for which Attachments A, B and C permit SUBGRANTEE to

expend grant funds. SUBGRANTEE shall provide COUNTY with a budget breakdown signed by the authorized agent.

3. Throughout its useful life, SUBGRANTEE shall use any equipment, technology or services acquired with grant funds only for those purposes permitted under the terms of the grant, and shall make it available for mutual aid response.

4. SUBGRANTEE shall exercise due care to preserve and safeguard equipment acquired with grant funds from damage or destruction and shall provide regular maintenance and repairs for said equipment as are necessary, in order to keep said equipment in continually good working order. Such maintenance and servicing shall be the sole responsibility of the SUBGRANTEE, who shall pay for material and labor costs for any maintenance and repair of the said equipment throughout the life of the said equipment.

5. SUBGRANTEE shall assume all continuation costs of said equipment, technologies and/or services to include but not limited to upgrades, licenses and renewals of said equipment, technologies and/or services.

6. If equipment acquired with grant funds becomes obsolete or unusable, SUBGRANTEE shall notify COUNTY of such condition. SUBGRANTEE shall transfer or dispose of grant-funded equipment only in accordance with the instructions of COUNTY.

7. SUBGRANTEE agrees to indemnify, defend and save harmless COUNTY and their elected and appointed officials, officers, agents and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, laborers, and any other person, firm or corporation furnishing or supplying work services, materials or supplies in connection with SUBGRANTEE's use of grant-funded equipment, technology or services and SUBGRANTEE's performance of this Agreement, including Attachments A, B and C hereto, and from any and all claims and losses accruing or resulting to any person, firm, or corporation who may be injured or damaged by SUBGRANTEE in SUBGRANTEE's use of grant-funded equipment, technology or services and SUBGRANTEE's performance of this Agreement, including Attachments A, B and C hereto.

8. By executing this Agreement, SUBGRANTEE agrees to comply with and be fully bound by all applicable provisions of Attachments A, B and C hereto. SUBGRANTEE shall notify COUNTY

immediately upon discovery that it has not abided or no longer will abide by any applicable provision of Attachments A, B and C hereto.

9. SUBGRANTEE and COUNTY shall be subject to examination and audit by the State Auditor General with respect to this Agreement for a period of three years after final payment hereunder.

10. No alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by duly authorized representatives of the parties hereto, and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.

11. SUBGRANTEE may not assign this Agreement in whole or in part without the express written consent of COUNTY.

12. For a period of three years after final payment hereunder or until all claims related to this Agreement are finally settled, whichever is later, SUBGRANTEE shall preserve and maintain all documents, papers and records relevant to the work performed or property or equipment acquired in accordance with this Agreement, including Attachments A, B and C hereto. For the same time period, SUBGRANTEE shall make said documents, papers and records available to COUNTY and the agency from which COUNTY received grant funds or their duly authorized representative(s), for examination, copying, or mechanical reproduction on or off the premises of SUBGRANTEE, upon request during usual working hours.

13. SUBGRANTEE shall provide to COUNTY all records and information requested by COUNTY for inclusion in quarterly reports and such other reports or records as COUNTY may be required to provide to the agency from which COUNTY received grant funds or other persons or agencies.

14. COUNTY may terminate this Agreement and be relieved of the payment of any consideration to SUBGRANTEE if a) SUBGRANTEE fails to perform any of the covenants contained in this Agreement, including Attachments A, B and C hereto, at the time and in the manner herein provided, or b) COUNTY loses funding under the grant. In the event of termination, COUNTY may proceed with the work in any manner deemed proper by COUNTY.

15. SUBGRANTEE and its agents and employees shall act in an independent capacity in the performance of this Agreement, including Attachments A, B and C hereto, and shall not be considered officers, agents or employees of COUNTY or of the agency from which COUNTY received grant funds.

IN WITNESS WHEREOF, the parties have executed this Agreement in the County of Orange, State of California.

DATED: ____________________, 2017

COUNTY OF ORANGE, a political subdivision of the State of California

By ________________________________
Sheriff-Coroner
"COUNTY"

APPROVED AS TO FORM:

COUNTY COUNSEL

By Wendy Phillips
Wendy Phillips, Deputy County Counsel

DATED: 11/14, 2017

DATED: ____________________

SUBGRANTEE

By: ____________________________

Dated: ____________________________

ATTEST:

By________________________________
City Clerk

DATED: ______________

Standard Assurances
For All Cal OES Federal Grant Programs

As the duly authorized representative of the Applicant, I hereby certify that the Applicant has the legal authority to apply for federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay any non-federal share of project cost) to ensure proper planning, management and completion of the project described in this application, within prescribed timelines.

I further acknowledge that the Applicant is responsible for reviewing and adhering to all requirements within the:

(a) Applicable Federal Regulations (see below);
(b) Federal Program Notice of Funding Opportunity (NOFO);
(c) California Supplement to the NOFO; and
(d) Federal and State Grant Program Guidelines.

Federal Regulations
Government cost principles, uniform administrative requirements and audit requirements for federal grant programs are set forth in Title 2, Part 200 of the Code of Federal Regulations (C.F.R.).Updates are issued by the Office of Management and Budget (OMB) and can be found at http://www.whitehouse.gov/omb/.

Significant state and federal grant award requirements (some of which appear in the documents listed above) are set forth below. The Applicant hereby agrees to comply with the following:

1. Proof of Authority

The Applicant will obtain written authorization from the city council, governing board or authorized body in support of this project. This written authorization must specify that the Applicant and the city council, governing board, or authorized body agree:

(a) To provide all matching funds required for the grant project and that any cash match will be appropriated as required.
(b) Any liability arising out of the performance of this agreement shall be the responsibility of the Applicant and the city council, governing board or authorized body.
(c) Grant funds shall not be used to supplant expenditures controlled by the city council, governing board or authorized body; and
(d) The official executing this agreement is, in fact, authorized to do so.

This Proof of Authority must be maintained on file and readily available upon request.

2. **Period of Performance**
   The Applicant will initiate work after approval of the award and complete all work within the period of performance specified in the grant.

3. **Lobbying and Political Activities**
   As required by Section 1352, Title 31 of the United States Code (U.S.C.), for persons entering into a contract, grant, loan or cooperative agreement from an agency or requests or receives from an agency a commitment providing for the United States to insure or guarantee a loan, the Applicant certifies that:

   (a) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
   (b) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.
   (c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

   The Applicant will also comply with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and §§7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with federal funds.

   Finally, the Applicant agrees that federal funds will not be used, directly or indirectly, to support the enactment, repeal, modification or adoption of any law, regulation or policy without the express written approval from the California Governor's Office of Emergency Services (Cal OES) or the federal awarding agency.

4. **Debarment and Suspension**
   As required by Executive Orders 12549 and 12689, and 2 C.F.R. §200.212 and codified in 2 C.F.R. Part 180, Debarment and Suspension, the Applicant will provide protection against waste, fraud, and abuse by debarring or suspending those persons deemed irresponsible in their dealings with the federal government. The Applicant certifies that it and its principal, subgantees, recipients or subrecipients:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;
(b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in paragraph (2)(b) of this certification; and
(d) Have not within a three-year period preceding this application had one or more public transaction (federal, state, or local) terminated for cause or default.

Where the Applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

5. Non-Discrimination and Equal Employment Opportunity

The Applicant will comply with all federal statutes relating to non-discrimination. These include, but are not limited to, the following:

(a) Title VI of the Civil Rights Act of 1964 (Public Law (P.L.) 88-352 and 42 U.S.C. §2000d et. seq.) which prohibits discrimination on the basis of race, color, or national origin and requires that recipients of federal financial assistance take reasonable steps to provide meaningful access to persons with limited English proficiency (LEP) to their programs and services;
(b) Title IX of the Education Amendments of 1972, (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex in any federally funded educational program or activity;
(c) Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. §794), which prohibits discrimination against those with disabilities or access and functional needs;
(d) Americans with Disabilities Act (ADA) of 1990, which prohibits discrimination on the basis of disability and requires buildings and structures be accessible to those with disabilities and access and functional needs (42 U.S.C. §§ 12101-12213.);
(e) Age Discrimination Act of 1975, (42 U.S.C. §§ 6101-6107), which prohibits discrimination on the basis of age;
(f) Public Health Service Act of 1912 (42 U.S.C. §§ 290), relating to confidentiality of patient records regarding substance abuse treatment;
(g) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §3601 et seq.), relating to nondiscrimination in the sale, rental or financing of housing as implemented by the Department of Housing and Urban Development at 24 C.F.R. Part 100. The prohibition on disability discrimination includes the requirement that new multifamily housing with four or more dwelling units—i.e., the public and common use areas and individual apartment units

(all units in buildings with elevators and ground-floor units in buildings without elevators)—be designed and constructed with certain accessible features (See 24 C.F.R. § 100.201); ;

(h) Executive Order 11246, which prohibits federal contractors and federally assisted construction contractors and subcontractors, who do over $10,000 in Government business in one year from discriminating in employment decisions on the basis of race, color, religion, sex, sexual orientation, gender identification, or national origin;

(i) Executive Order 11375, which bans discrimination on the basis of race, color, religion, sex, sexual orientation, gender identification, or national origin in hiring and employment in both the United States federal workforce and on the part of government contractors;

(j) California Public Contract Code §10295.3, which prohibits discrimination based on domestic partnerships and those in same sex marriages;

(k) DHS policy to ensure the equal treatment of faith-based organizations, under which all applicants and recipients must comply with equal treatment policies and requirements contained in 6 C.F.R. Part 19;

(l) Any other nondiscrimination provisions in the specific statute(s) under which application for federal assistance is being made; and

(m) The requirements of any other nondiscrimination statute(s) which may apply to the application.

In addition to the items listed in (a) through (m), the Applicant will comply with California's Fair Employment and Housing Act (FEHA). FEHA prohibits harassment and discrimination in employment because of ancestry, familial status, race, color, religious creed (including religious dress and grooming practices), sex (which includes pregnancy, childbirth, breastfeeding and medical conditions related to pregnancy, childbirth, or breastfeeding), gender, gender identity, gender expression, sexual orientation, marital status, national origin, ancestry, mental and physical disability, genetic information, medical condition, age, pregnancy, denial of medical and family care leave, or pregnancy disability leave (California Government Code §§ 12940, 12945, 12945.2), military and veteran status, and/or retaliation for protesting illegal discrimination related to one of these categories, or for reporting patient abuse in tax supported institutions.

6. Drug-Free Workplace

As required by the Drug-Free Workplace Act of 1988 (41 U.S.C. §701 et seq.), the Applicant certifies that it will maintain a drug-free workplace and a drug-free awareness program as outlined in the Act.

7. Environmental Standards

The Applicant will comply with state and federal environmental standards, which may be prescribed pursuant to the following, as applicable:

(a) California Environmental Quality Act (CEQA) (California Public Resources Code §§ 21000-21177), to include coordination with the city or county planning agency;

(b) CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, §§ 15000-15387);

(c) Federal Clean Water Act (CWA) (33 U.S.C. § 1251 et seq.), which establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters;
(d) Federal Clean Air Act of 1955 (42 U.S.C. § 7401) which regulates air emissions from stationary and mobile sources;
(e) Institution of environmental quality control measures under the National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190); the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA; and Executive Order 12898 which focuses on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities;
(f) Evaluation of flood hazards in floodplains in accordance with Executive Order 11988;
(g) Executive Order 11514 which sets forth national environmental standards;
(h) Executive Order 11738 instituted to assure that each federal agency empowered to enter into contracts for the procurement of goods, materials, or services and each federal agency empowered to extend federal assistance by way of grant, loan, or contract shall undertake such procurement and assistance activities in a manner that will result in effective enforcement of the Clean Air Act and the Federal Water Pollution Control Act Executive Order 11990 which requires preservation of wetlands;
(i) The Safe Drinking Water Act of 1974, (P.L. 93-523);
(j) The Endangered Species Act of 1973, (P.L. 93-205);
(k) Assurance of project consistency with the approved state management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.);
(l) Conformity of Federal Actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.);
(m) Wild and Scenic Rivers Act of 1968 (16 U.S.C. § 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

The Applicant shall not be: 1) in violation of any order or resolution promulgated by the State Air Resources Board or an air pollution district; 2) subject to a cease and desist order pursuant to § 13301 of the California Water Code for violation of waste discharge requirements or discharge prohibitions; or 3) determined to be in violation of federal law relating to air or water pollution.

8. Audits

For subrecipients expending $750,000 or more in federal grant funds annually, the Applicant will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and Title 2 of the Code of Federal Regulations, Part 200, Subpart F Audit Requirements.

9. Access to Records

In accordance with 2 C.F.R. §200.336, the Applicant will give the awarding agency, the Comptroller General of the United States and, if appropriate, the state, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award.

The Applicant will require any subrecipients, contractors, successors, transferees and assignees to acknowledge and agree to comply with this provision.

10. Conflict of Interest

The Applicant will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

11. Financial Management

False Claims for Payment The Applicant will comply with 31 U.S.C §§ 3729-3733 which sets forth that no recipient shall submit a false claim for payment, reimbursement or advance.

12. Reporting - Accountability

The Applicant agrees to comply with applicable provisions of the Federal Funding Accountability and Transparency Act (FFATA) (P.L. 109-282), specifically (a) the reporting of subawards obligating $25,000 or more in federal funds and (b) executive compensation data for first-tier subawards. This includes the provisions of FFATA, which includes requirements for executive compensation, and also requirements implementing the Act for the non-federal entity at 2 C.F.R. Part 25 Financial Assistance Use of Universal Identifier and Central Contractor Registration and 2 C.F.R. Part 170 Reporting Subaward and Executive Compensation Information.

13. Whistleblower Protections

The Applicant also must comply with statutory requirements for whistleblower protections at 10 U.S.C. § 2409, 41 U.S.C. § 4712, and 10 U.S.C. § 2324, 41 U.S.C. § 4304 and § 4310.

14. Human Trafficking

The Applicant will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act of 2000, as amended (22 U.S.C. § 7104) which prohibits grant award recipients or a subrecipient from: (1) engaging in trafficking in persons during the period of time that the award is in effect: (2) procuring a commercial sex act during the period of time that the award is in effect: or (3) using forced labor in the performance of the award or subawards under the award.

15. Labor Standards

The Applicant will comply with the following federal labor standards:

(a) The Davis-Bacon Act (40 U.S.C. §§ 276a to 276a-7), as applicable, and the Copeland Act (40 U.S.C. § 3145 and 18 U.S.C. § 874) and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-333), regarding labor standards for federally-assisted construction contracts or subcontracts; and

(b) The Federal Fair Labor Standards Act (29 U.S.C. § 201 et al.) as they apply to employees of institutes of higher learning (IHE), hospitals and other non-profit organizations.

16. Worker's Compensation

The Applicant must comply with provisions which require every employer to be insured to protect workers who may be injured on the job at all times during the performance of the work of this

Agreement, as per the workers compensation laws set forth in California Labor Code §§ 3700 et seq.

17. Property-Related

If applicable to the type of project funded by this federal award, the Applicant will:

(a) Comply with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of federal participation in purchase;
(b) Comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires subrecipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more;
(c) Assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. § 470), Executive Order 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. § 469a-1 et seq.); and
(d) Comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. § 4831 and 24 CFR Part 35) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

18. Certifications Applicable Only to Federally-Funded Construction Projects

For all construction projects, the Applicant will:

(a) Not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with federal assistance funds to assure nondiscrimination during the useful life of the project;
(b) Comply with the requirements of the awarding agency with regard to the drafting, review and approval of construction plans and specifications; and
(c) Provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.

19. Use of Cellular Device While Driving is Prohibited

Applicants are required to comply with California Vehicle Code sections 23123 and 23123.5. These laws prohibit driving a motor vehicle while using an electronic wireless communications device to write, send, or read a text-based communication. Drivers are also prohibited from the use of a wireless telephone without hands-free listening and talking, unless to make an emergency call to 911, law enforcement, or similar services.

20. California Public Records Act and Freedom of Information Act

The Applicant acknowledges that all information submitted in the course of applying for funding under this program, or provided in the course of an entity's grant management activities that are under Federal control, is subject to the Freedom of Information Act (FOIA), 5 U.S.C. § 552, and the California Public Records Act, California Government Code section 6250 et seq. The Applicant should consider these laws and consult its own State and local laws and regulations regarding the release of information when reporting sensitive matters in the grant application, needs assessment, and strategic planning process.

HOMELAND SECURITY GRANT PROGRAM - PROGRAM SPECIFIC ASSURANCES / CERTIFICATIONS

21. Reporting Accusations and Findings of Discrimination

If during the past three years the recipient has been accused of discrimination on any basis the recipient must provide a list of all such proceedings, pending or completed, including outcome and copies of settlement agreements to the DHS Financial Assistance Office and the DHS Office for Civil Rights and Civil Liberties (CRCL) by e-mail at crcl@hq.dhs.gov or by mail at U.S. Department of Homeland Security Office for Civil Rights and Civil Liberties, Building 410, Mail Stop #0190, Washington, D.C. 20528.

If the courts or administrative agencies make a finding of discrimination on grounds of race, color, national origin (including LEP), sex, age, disability, religion, or familial status against the recipient, or the recipients settle a case or matter alleging such discrimination, recipients must forward a copy of the complaint and findings to the DHS Financial Assistance Office and the CRCL by e-mail or mail at the addresses listed above.

The United States has the right to seek judicial enforcement of these obligations.

22. Acknowledgment of Federal Funding from DHS

All recipients must acknowledge their use of federal funding when issuing statements, press releases, requests for proposals, bid invitations, and other documents describing projects or programs funded in whole or in part with federal funds.

23. Activities Conducted Abroad

All recipients must ensure that project activities carried on outside the United States are coordinated as necessary with appropriate government authorities and that appropriate licenses, permits, or approvals are obtained.

24. Best Practices for Collection and Use of Personally Identifiable Information (PII)

DHS defines personally identifiable information (PII) as any information that permits the identity of an individual to be directly or indirectly inferred, including any information that is linked or linkable to that individual. All recipients who collect PII are required to have a publically-available privacy policy that describes standards on the usage and maintenance of PII they collect. Recipients may also find the DHS Privacy Impact Assessments: Privacy Guidance and Privacy template a useful resource respectively.

25. Copyright

All recipients must affix the applicable copyright notices of 17 U.S.C. §§ 401 or 402 and an acknowledgement of U.S. Government sponsorship (including the award number) to any work first produced under federal financial assistance awards.

26. Duplication of Benefits

Any cost allocable to a particular federal financial assistance award provided for in 2 C.F.R. Part 200, Subpart E may not be charged to other federal financial assistance awards to overcome fund deficiencies, to avoid restrictions imposed by federal statutes, regulations, or federal financial assistance award terms and conditions, or for other reasons. However, these prohibitions would not preclude recipients from shifting costs that are allowable under two or more awards in accordance with existing federal statutes, regulations, or the federal financial assistance award terms and conditions.

27. Energy Policy and Conservation Act

All recipients must comply with the requirements of 42 U.S.C. § 6201 which contain policies relating to energy efficiency that are defined in the state energy conservation plan issued in compliance with this Act.

28. Federal Debt Status

All recipients are required to be non-delinquent in their repayment of any federal debt. Examples of relevant debt include delinquent payroll and other taxes, audit disallowances, and benefit overpayments. See OMB Circular A-129.

29. Fly America Act of 1974

All recipients must comply with Preference for U.S. Flag Air Carriers: (air carriers holding certificates under 49 U.S.C. § 41102) for international air transportation of people and property to the extent that such service is available, in accordance with the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. § 40118) and the interpretative guidelines issued by the Comptroller General of the United States in the March 31, 1981, amendment to Comptroller General Decision B-138942

30. Hotel and Motel Fire Safety Act of 1990

In accordance with Section 6 of the Hotel and Motel Fire Safety Act of 1990, all recipients must ensure that all conference, meeting, convention, or training space funded in whole or in part with federal funds complies with the fire prevention and control guidelines of the Federal Fire Prevention and Control Act of 1974, as amended, 15 U.S.C. § 2225a.

31. Non-supplanting Requirements

All recipients who receive federal financial assistance awards made under programs that prohibit supplanting by law must ensure that federal funds do not replace (supplant) funds that have been budgeted for the same purpose through non-federal sources.

32. Patents and Intellectual Property Rights

Unless otherwise provided by law, recipients are subject to the Bayh-Dole Act, Pub. L. No. 96-517, as amended, and codified in 35 U.S.C. § 200 et seq. All recipients are subject to the specific requirements governing the development, reporting, and disposition of rights to inventions and patents resulting from financial assistance awards located at 37 C.F.R. Part 401 and the standard patent rights clause located at 37 C.F.R. § 401.14.

33. SAFECOM

All recipients who receive federal financial assistance awards made under programs that provide emergency communication equipment and its related activities must comply with the SAFECOM Guidance for Emergency Communication Grants, including provisions on technical standards that ensure and enhance interoperable communications.

34. Terrorist Financing

All recipients must comply with Executive Order 13224 and U.S. law that prohibit transactions with, and the provisions of resources and support to, individuals and organizations associated with terrorism. Recipients are legally responsible to ensure compliance with the Order and laws.

35. Reporting of Matters Related to Recipient Integrity and Performance

If the total value of the recipient's currently active grants, cooperative agreements, and procurement contracts from all federal assistance offices exceeds $10,000,000 for any period of time during the period of performance of this federal financial assistance award, you must comply with the requirements set forth in the government-wide Award Term and Condition for Recipient Integrity and Performance Matters located at 2 C.F.R. Part 200, Appendix XII, the full text of which is incorporated here by reference in the award terms and conditions.

36. USA Patriot Act of 2001

All recipients must comply with requirements of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act (USA PATRIOT Act), which amends 18 U.S.C. §§ 175–175c.

37. Use of DHS Seal, Logo, and Flags

All recipients must obtain permission from their DHS Financial Assistance Office, prior to using the DHS seal(s), logos, crests or reproductions of flags or likenesses of DHS agency officials, including use of the United States Coast Guard seal, logo, crests or reproductions of flags or likenesses of Coast Guard officials.

IMPORTANT

The purpose of the assurance is to obtain federal and state financial assistance, including any and all federal and state grants, loans, reimbursement, contracts, etc. The Applicant recognizes and agrees that state financial assistance will be extended based on the representations made in this assurance. This assurance is binding on the Applicant, its successors, transferees, assignees, etc. Failure to comply with any of the above assurances may result in suspension, termination, or reduction of grant funds.

All appropriate documentation, as outlined above, must be maintained on file by the Applicant and available for Cal OES or public scrutiny upon request. Failure to comply with these requirements may result in suspension of payments under the grant or termination of the grant or both and the subrecipient may be ineligible for award of any future grants if the Cal OES determines that any of the following has occurred: (1) the recipient has made false certification, or (2) violates the certification by failing to carry out the requirements as noted above.

All of the language contained within this document must be included in the award documents for all subawards at all tiers. All recipients are bound by the Department of Homeland Security Standard Terms and Conditions 2017, Version 7.0, hereby incorporated by reference, which can be found at: https://www.dhs.gov/publication/fy15-dhs-standard-terms-and-conditions.

The undersigned represents that he/she is authorized by the Applicant to enter into this agreement for and on behalf of the said Applicant.

Applicant: ____

Signature of Authorized Agent: ____

Printed Name of Authorized Agent: ____

Title: ____________________________________ Date: __________________________

2017 Homeland Security Grant Program

Project Approval Notification

August 03, 2018

Battalion Chief Jeff Hoey
1 Fire Authority
Irvine, CA 92602

This letter serves to inform you that your project request has been approved by the Homeland Security Grant Program (HSGP). Below is some important information related to the project approval.

- Requesting Jurisdiction: Orange County Fire Authority
- Project Request: OCIAC - Planning
- Project Allocation: $160,000
- Awarding Agency: Cal-OES / Department of Homeland Security
- Award Name: Homeland Security Grant Program
- Federal Grant Number: 2017-00083
- Recipient Performance: September 1, 2017 to May 31, 2020
- Sub-recipient Performance: September 1, 2017 to March 31, 2020
- CFDA: 97.067
- DUNS: 11-195-0874
- Cal-OES ID: 059-00000

An in depth review process of the application was necessary prior to approval. This process is required due to stringent HSGP guidelines that must be adhered to. Following the review process, your project was found to be a viable concept based on investment justifications, regional benefit, and degree of applicability to the over arching Homeland Security Grant goals and objectives.

It is critical that you become familiar with the 2017 Homeland Security Grant Program Guidance and the 2017 Homeland Security Grant Program California Supplemental Guidance. It is also imperative you contact the Homeland Security Grant Unit before funding any part of the project that may be questionable in regards to procurement guidelines and or Authorized Equipment List allowability. In order to eliminate reimbursement issues, we will seek reimbursement approval from the State on behalf of your agency or jurisdiction.

If you have any questions regarding this notification or the review process, feel free to contact me or Luis Ramirez at 714-647-1871 or luramirez@ocsd.org.

Respectfully,

LT Sean Howell

Lieutenant Sean Howell
Homeland Security Division
Orange County Sheriff's Department
sahowell@ocsd.org
714-647-7018

Orange County Fire Authority

AGENDA STAFF REPORT

Budget and Finance Committee Meeting | **Agenda Item No. 3C**
October 10, 2018 | **Consent Calendar**

Acceptance of 2018 Department of Homeland Security/Federal Emergency Management Agency's Urban Search & Rescue Readiness Cooperative Agreement Funding

Contact(s) for Further Information

Dave Anderson, Deputy Chief — daveanderson@ocfa.org — 714.573.6006
Emergency Operations Bureau

Jeff Hoey, Battalion Chief — jeffhoey@ocfa.org — 949.573.6056
US&R Program Manager

Summary

This annual item is submitted for approval and acceptance of the 2018 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)

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Approve and adopt the proposed Resolution to accept the Department of Homeland Security/Federal Emergency Management Agency's Grant Readiness Cooperative Agreement funding.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget increasing revenues and expenditures by $1,204,990.

Impact to Cities/County

Not Applicable.

Fiscal Impact

The FY 2018/19 General Fund revenues and expenditures will be increased by $1,204,990.

Background

California Task Force Five (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 responses to attacks from weapons of mass destruction/ terrorist attacks.

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 $1,147,990 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, a $57,000 allocation 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	363,105	
• Training (including travel expenses)	228,535	
• Equipment/Cache (acquisition, modifications)	173,740	
• Storage and Maintenance	382,610	
Subtotal		$1,147,990
Additional funding components provided to CA TF-5 only:		
• Administration - National Logistics Functional Group Leader	12,000	
• Administration - Two National Incident Support Team Leaders	12,000	
• Administration – National Deputy Operations Leader	4,000	
• Administration – National Incident Support Team Advisory Operations Representative	4,000	
• Administration – Sponsoring Agency Chief West Division Representative	10,000	
• Administration - National Incident Support Team Representative	15,000	
Subtotal		$57,000
Total Grant Funding Awarded to CA TF-5		**$1,204,990**

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 September 1, 2018, through August 31, 2021.

Attachment(s)

Proposed Resolution for Acceptance of FEMA US&R Cooperative Agreement

RESOLUTION NO. 2018-XX

A RESOLUTION OF THE ORANGE COUNTY FIRE AUTHORITY ACCEPTING THE FEDERAL EMERGENCY MANAGEMENT AGENCY (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 FEMA's National US&R Response System; and

WHEREAS, OCFA entered into a tri-party agreement with FEMA and the California Governor's Office of Emergency Services, who provides oversight and additional support for the program; and

WHEREAS, currently Orange County US&R Task Force 5 maintains a response capability including apparatus and equipment supply inventory worth approximately $8 million; and

WHEREAS, Orange County US&R 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 $1,204,990 which is available for use beginning September 1, 2018, through August 31, 2021, for preparedness issues related to the Urban Search and Rescue Program.

NOW, THEREFORE, 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 25th day of October 2018.

ED SACHS, CHAIR
Board of Directors

ATTEST:

SHERRY A. F. WENTZ, CMC
Clerk of the Authority

Orange County Fire Authority

AGENDA STAFF REPORT

Budget and Finance Committee Meeting | **Agenda Item No. 4A**
October 10, 2018 | **Discussion Calendar**

Monthly Investment Reports

Contact(s) for Further Information

Tricia Jakubiak, Treasurer Treasury & Financial Planning	triciajakubiak@ocfa.org	714.573.6301
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)

Review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of October 25, 2018, 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, 2018. A preliminary investment report as of September 21, 2018, 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 2018/Preliminary Report – September 2018

Attachment

Orange County Fire Authority Monthly Investment Report

Final Report – August 2018

Preliminary Report – September 2018

Monthly Investment Report
Table of Contents

Orange County Fire Authority

Final Investment Report

August 31, 2018

EXECUTIVE SUMMARY

Portfolio Activity & Earnings

During the month of August 2018, the size of the portfolio decreased significantly by $28.0 million to $140.5 million; this declining trend in the portfolio balance is typical during this time of year. Significant receipts for the month included a cash contract payment, an apportionment of property taxes and charges for current services totaling $4.2 million. Significant disbursements for the month included two biweekly payrolls which were approximately $12.1 million each with related benefits and a payment of $5.3 million for fire apparatus. Total August cash outflows amounted to approximately $33.2 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) rose by 2 basis points to 1.84%. The effective rate of return increased by 4 basis points to 1.84% for the month and by 2 basis points to 1.82% for the fiscal year to date. The average maturity of the portfolio shortened by 6 days to 63 days to maturity.

Economic News

The U.S. economy continued to strengthen in August 2018, albeit with mixed economic activity. Employment conditions stayed strong and were better than expected. There was a total of 201,000 new jobs created in August, a higher number than forecasted, and the unemployment rate remained unchanged at a low rate of 3.9%. Consumer confidence remained high. However, retail sales came in weaker than expected in August. Both manufacturing and non-manufacturing sectors increased activity for the month. The CPI (Consumer Price Index) rose by 0.2% in August, slightly less than expected, keeping inflation low. Industrial production continued to climb for a third straight month. Overall home sales activity improved slightly in August, despite rising prices and mortgage rates. On September 26, 2018, at the second day of the its scheduled meeting, the Federal Open Market Committee met and voted, as expected, to raise the federal funds rate by a quarter percentage point to a new target range of 2.00% - 2.25%. The Committee also maintained its positive outlook on the economy.

BENCHMARK COMPARISON AS OF AUGUST 31, 2018

3 Month T-Bill:	*2.07%*	*1 Year T-Bill:*	*2.45%*
6 Month T-Bill:	*2.24%*	*LAIF:*	*2.00%*

OCFA Portfolio: 1.84%

PORTFOLIO SIZE, YIELD, & DURATION

	Current Month	Prior Month	Prior Year
Book Value-	*$140,483,274*	*$168,533,407*	*$145,096,004*
Yield to Maturity (365 day)	*1.84%*	*1.82%*	*1.04%*
Effective Rate of Return	*1.84%*	*1.80%*	*1.02%*
Days to Maturity	*63*	*69*	*93*

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Summary
August 31, 2018

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

Investments	Par Value	Market Value (See Note 1 on page 9)	Book Value (See Note 2 on page 9)	% of Portfolio	Term	Days to Maturity	YTM/C 360 Equiv.	YTM/C 365 Equiv.
Money Mkt Mutual Funds/Cash	2,900,000.00	2,900,000.00	2,900,000.00	2.06	1	1	1.470	1.490
Federal Agency Coupon Securities	26,000,000.00	25,814,600.00	26,000,000.00	18.49	962	252	1.283	1.301
Federal Agency Disc. -Amortizing	5,000,000.00	4,991,200.00	4,990,933.33	3.55	113	34	1.958	1.986
Treasury Coupon Securities	18,000,000.00	17,967,510.00	17,968,751.66	12.78	203	68	1.958	1.985
Treasury Discounts -Amortizing	30,000,000.00	29,958,800.00	29,955,156.56	21.30	140	28	1.901	1.928
Local Agency Investment Funds	58,808,617.18	58,698,460.94	58,808,617.18	41.82	1	1	1.971	1.998
Investments	**140,708,617.18**	**140,330,570.94**	**140,623,458.73**	**100.00%**	**238**	**63**	**1.816**	**1.842**
Cash								
Passbook/Checking (not included in yield calculations)	228,308.99	228,308.99	228,308.99		1	1	0.000	0.000
Total Cash and Investments	**140,936,926.17**	**140,558,879.93**	**140,851,767.72**		**238**	**63**	**1.816**	**1.842**

Total Earnings	August 31 Month Ending	Fiscal Year To Date
Current Year	240,816.73	512,984.50
Average Daily Balance	**154,438,540.88**	**166,022,756.10**
Effective Rate of Return	**1.84%**	**1.82%**

"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, 2018. 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."

Jane [signature] for 9/7/18

Patricia Jakubiak, Treasurer

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above)	*$*	*140,851,767.72*
GASB 31 Adjustment to Books (See Note 3 on page 9)	*$*	*(368,493.66)*
Total	*$*	*140,483,274.06*

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Investments
August 31, 2018

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value (See Note 1 on page 9)	Book Value (See Note 2 on page 9)	Stated Rate	YTM/C 365	Days to Maturity	Maturity Date
Money Mkt Mutual Funds/Cash											
SYS528	528	Federated Treasury Obligations			2,900,000.00	2,900,000.00	2,900,000.00	1.490	1.490	1	
		Subtotal and Average	**4,979,647.20**		**2,900,000.00**	**2,900,000.00**	**2,900,000.00**		**1.490**	**1**	
Federal Agency Coupon Securities											
3133EFJP3	869	Federal Farm Credit Bank (Callable Anytime)		10/15/2015	10,000,000.00	9,987,800.00	10,000,000.00	1.100	1.054	44	10/15/2018
3133EGPD1	921	Federal Farm Credit Bank (Callable Anytime)		04/20/2017	7,000,000.00	6,918,870.00	7,000,000.00	1.180	1.375	334	08/01/2019
3134GBHT2	922	Fed Home Loan Mtg Corp		04/25/2017	9,000,000.00	8,907,930.00	9,000,000.00	1.625	1.518	419	10/25/2019
		Subtotal and Average	**26,000,000.00**		**26,000,000.00**	**25,814,600.00**	**26,000,000.00**		**1.301**	**252**	
Federal Agency Disc. -Amortizing											
313385J49	948	Fed Home Loan Bank		06/14/2018	5,000,000.00	4,991,200.00	4,990,933.33	1.920	1.986	34	10/05/2018
		Subtotal and Average	**8,694,502.42**		**5,000,000.00**	**4,991,200.00**	**4,990,933.33**		**1.986**	**34**	
Treasury Coupon Securities											
912828T83	943	Treasury Note		04/19/2018	9,000,000.00	8,982,000.00	8,982,402.76	0.750	1.960	60	10/31/2018
912828M64	944	Treasury Note		04/19/2018	9,000,000.00	8,985,510.00	8,986,348.90	1.250	2.010	75	11/15/2018
		Subtotal and Average	**17,961,622.12**		**18,000,000.00**	**17,967,510.00**	**17,968,751.66**		**1.985**	**68**	
Treasury Discounts -Amortizing											
912796PZ6	941	US Treasury Bill		04/19/2018	9,000,000.00	8,992,350.00	8,991,165.00	1.860	1.901	19	09/20/2018
912796QD4	942	US Treasury Bill		04/19/2018	9,000,000.00	8,978,220.00	8,977,381.25	1.925	1.971	47	10/18/2018
912796PY9	947	US Treasury Bill		05/31/2018	5,000,000.00	4,999,500.00	4,998,699.31	1.873	1.909	5	09/06/2018
912796QB8	949	US Treasury Bill		06/28/2018	7,000,000.00	6,988,730.00	6,987,911.00	1.884	1.920	33	10/04/2018
		Subtotal and Average	**35,090,926.15**		**30,000,000.00**	**29,958,800.00**	**29,955,156.56**		**1.928**	**28**	
Local Agency Investment Funds											
SYS336	336	Local Agency Invstmt Fund			58,808,617.18	58,698,460.94	58,808,617.18	1.998	1.998	1	
		Subtotal and Average	**61,711,842.99**		**58,808,617.18**	**58,698,460.94**	**58,808,617.18**		**1.998**	**1**	
		Total and Average	**154,438,540.88**		**140,708,617.18**	**140,330,570.94**	**140,623,458.73**		**1.842**	**63**	

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Cash
August 31, 2018

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/C 365	Days to Maturity
Money Mkt Mutual Funds/Cash										
SYS10033	10033	Revolving Fund		07/01/2018	20,000.00	20,000.00	20,000.00		0.000	1
SYS4	4	Union Bank		07/01/2018	208,308.99	208,308.99	208,308.99		0.000	1
		Average Balance	**0.00**							**1**
	Total Cash and Investments		**154,438,540.88**		**140,936,926.17**	**140,558,879.93**	**140,851,767.72**		**1.842**	**63**

"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, 2018

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	(09/01/2018 - 09/01/2018)	4 Maturities	0 Payments	61,936,926.17	43.97%	61,936,926.17	61,826,769.93
Aging Interval: 1 - 30 days	(09/02/2018 - 10/01/2018)	2 Maturities	0 Payments	14,000,000.00	9.93%	13,989,864.31	13,991,850.00
Aging Interval: 31 - 60 days	(10/02/2018 - 10/31/2018)	5 Maturities	0 Payments	40,000,000.00	28.36%	39,938,628.34	39,927,950.00
Aging Interval: 61 - 91 days	(11/01/2018 - 12/01/2018)	1 Maturities	0 Payments	9,000,000.00	6.38%	8,986,348.90	8,985,510.00
Aging Interval: 92 - 121 days	(12/02/2018 - 12/31/2018)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 122 - 152 days	(01/01/2019 - 01/31/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 153 - 183 days	(02/01/2019 - 03/03/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 184 - 274 days	(03/04/2019 - 06/02/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 275 - 365 days	(06/03/2019 - 09/01/2019)	1 Maturities	0 Payments	7,000,000.00	4.97%	7,000,000.00	6,918,870.00
Aging Interval: 366 - 1095 days	(09/02/2019 - 08/31/2021)	1 Maturities	0 Payments	9,000,000.00	6.39%	9,000,000.00	8,907,930.00
Aging Interval: 1096 days and after	(09/01/2021 -)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
	Total for	14 Investments	0 Payments		100.00	140,851,767.72	140,558,879.93

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, 2018 includes a decrease of ($121,754) to the LAIF investment and a decrease of ($246,740) 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, 2018, OCFA has $58,808,617 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, 2018 is 0.998126869. When applied to OCFA's LAIF investment, the fair value is $58,698,461 or ($110,156) 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, 2018 is included on the following page.

State of California
Pooled Money Investment Account
Market Valuation
8/31/2018

Description	Carrying Cost Plus Accrued Interest Purch.	Fair Value	Accrued Interest
United States Treasury:			
Bills	$ 15,099,143,565.80	$ 15,208,236,500.00	NA
Notes	$ 26,195,546,734.26	$ 26,097,480,500.00	$ 78,563,718.50
Federal Agency:			
SBA	$ 801,520,958.11	$ 792,949,536.29	$ 1,342,410.73
MBS-REMICs	$ 27,973,200.72	$ 28,428,494.53	$ 130,799.11
Debentures	$ 2,123,061,311.81	$ 2,111,477,900.00	$ 8,475,333.30
Debentures FR	$ -	$ -	$ -
Debentures CL	$ 200,000,000.00	$ 197,354,500.00	$ 1,765,041.50
Discount Notes	$ 11,644,058,236.25	$ 11,699,831,750.00	NA
Supranational Debentures	$ 488,975,507.19	$ 486,749,600.00	$ 2,613,085.00
Supranational Debentures FR	$ 100,375,183.89	$ 100,705,947.25	$ 334,988.79
CDs and YCDs FR	$ 525,000,000.00	$ 525,000,000.00	$ 2,334,934.23
Bank Notes	$ 900,000,000.00	$ 899,706,335.11	$ 6,100,500.00
CDs and YCDs	$ 15,800,000,000.00	$ 15,796,930,853.09	$ 76,924,138.92
Commercial Paper	$ 6,442,581,249.91	$ 6,467,631,933.29	NA
Corporate:			
Bonds FR	$ -	$ -	$ -
Bonds	$ -	$ -	$ -
Repurchase Agreements	$ -	$ -	$ -
Reverse Repurchase	$ -	$ -	$ -
Time Deposits	$ 5,058,240,000.00	$ 5,058,240,000.00	NA
AB 55 & GF Loans	$ 790,994,000.00	$ 790,994,000.00	NA
TOTAL	$ 86,197,469,947.94	$ 86,261,717,849.56	$ 178,584,950.08

Fair Value Including Accrued Interest $ 86,440,302,799.64

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 21, 2018

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Summary
September 21, 2018

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

Investments	Par Value	Market Value (See Note 1 on page 18)	Book Value (See Note 2 on page 18)	% of Portfolio	Term	Days to Maturity	YTM/C 360 Equiv.	YTM/C 365 Equiv.
Money Mkt Mutual Funds/Cash	9,163,900.53	9,163,900.53	9,163,900.53	6.79	1	1	1.470	1.490
Federal Agency Coupon Securities	26,000,000.00	25,808,970.00	26,000,000.00	19.27	962	231	1.283	1.301
Federal Agency Disc. -Amortizing	5,000,000.00	4,996,750.00	4,996,533.33	3.70	113	13	1.958	1.986
Treasury Coupon Securities	18,000,000.00	17,977,320.00	17,978,733.00	13.32	203	47	1.958	1.985
Treasury Discounts -Amortizing	16,000,000.00	15,984,230.00	15,983,091.50	11.85	145	20	1.922	1.949
Local Agency Investment Funds	60,808,617.18	60,694,714.67	60,808,617.18	45.07	1	1	1.971	1.998
Investments	**134,972,517.71**	**134,625,885.20**	**134,930,875.54**	**100.00%**	**234**	**54**	**1.796**	**1.821**
Cash								
Passbook/Checking (not included in yield calculations)	432,376.89	432,376.89	432,376.89		1	1	0.000	0.000
Total Cash and Investments	**135,404,894.60**	**135,058,262.09**	**135,363,252.43**		**234**	**54**	**1.796**	**1.821**

Total Earnings	September 21 Month Ending	Fiscal Year To Date
Current Year	144,376.73	657,361.23
Average Daily Balance	**139,167,115.91**	**159,227,955.57**
Effective Rate of Return	**1.80%**	**1.82%**

"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, 2018. 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."

Jacob for 9/28/18

Patricia Jakubiak, Treasurer

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above)	$	135,363,252.43
GASB 31 Adjustment to Books (See Note 3 on page 18)	$	(368,493.66)
Total	$	134,994,758.77

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Investments
September 21, 2018

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value (See Note 1 on page 18)	Book Value (See Note 2 on page 18)	Stated Rate	YTM/C 365	Days to Maturity	Maturity Date
Money Mkt Mutual Funds/Cash											
SYS528	528	Federated Treasury Obligations			9,163,900.53	9,163,900.53	9,163,900.53	1.490	1.490	1	
		Subtotal and Average	**7,419,946.72**		**9,163,900.53**	**9,163,900.53**	**9,163,900.53**		**1.490**	**1**	
Federal Agency Coupon Securities											
3133EFJP3	869	Federal Farm Credit Bank(Callable Anytime)		10/15/2015	10,000,000.00	9,993,400.00	10,000,000.00	1.100	1.054	23	10/15/2018
3133EGPD1	921	Federal Farm Credit Bank (Callable Anytime)		04/20/2017	7,000,000.00	6,918,170.00	7,000,000.00	1.180	1.375	313	08/01/2019
3134GBHT2	922	Fed Home Loan Mtg Corp		04/25/2017	9,000,000.00	8,897,400.00	9,000,000.00	1.625	1.518	398	10/25/2019
		Subtotal and Average	**26,000,000.00**		**26,000,000.00**	**25,808,970.00**	**26,000,000.00**		**1.301**	**231**	
Federal Agency Disc. -Amortizing											
313385J49	948	Fed Home Loan Bank		06/14/2018	5,000,000.00	4,996,750.00	4,996,533.33	1.920	1.986	13	10/05/2018
		Subtotal and Average	**4,993,866.67**		**5,000,000.00**	**4,996,750.00**	**4,996,533.33**		**1.986**	**13**	
Treasury Coupon Securities											
912828T83	943	Treasury Note		04/19/2018	9,000,000.00	8,988,210.00	8,988,561.79	0.750	1.960	39	10/31/2018
912828M64	944	Treasury Note		04/19/2018	9,000,000.00	8,989,110.00	8,990,171.21	1.250	2.010	54	11/15/2018
		Subtotal and Average	**17,973,979.98**		**18,000,000.00**	**17,977,320.00**	**17,978,733.00**		**1.985**	**47**	
Treasury Discounts -Amortizing											
912796QD4	942	US Treasury Bill		04/19/2018	9,000,000.00	8,987,940.00	8,987,487.50	1.925	1.971	26	10/18/2018
912796QB8	949	US Treasury Bill		06/28/2018	7,000,000.00	6,996,290.00	6,995,604.00	1.884	1.920	12	10/04/2018
		Subtotal and Average	**25,304,038.70**		**16,000,000.00**	**15,984,230.00**	**15,983,091.50**		**1.949**	**20**	
Local Agency Investment Funds											
SYS336	336	Local Agency Invstmt Fund			60,808,617.18	60,694,714.67	60,808,617.18	1.998	1.998	1	
		Subtotal and Average	**57,475,283.85**		**60,808,617.18**	**60,694,714.67**	**60,808,617.18**		**1.998**	**1**	
		Total and Average	**139,167,115.91**		**134,972,517.71**	**134,625,885.20**	**134,930,875.54**		**1.821**	**54**	

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Cash
September 21, 2018

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/C 365	Days to Maturity
Money Mkt Mutual Funds/Cash										
SYS10033	10033	Revolving Fund		07/01/2018	20,000.00	20,000.00	20,000.00		0.000	1
SYS4	4	Union Bank		07/01/2018	412,376.89	412,376.89	412,376.89		0.000	1
		Average Balance	**0.00**							**1**
	Total Cash and Investments		**139,167,115.91**		**135,404,894.60**	**135,058,262.09**	**135,363,252.43**		**1.821**	**54**

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ORANGE COUNTY FIRE AUTHORITY
Aging Report
By Maturity Date
As of September 22, 2018

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	(09/22/2018 - 09/22/2018)	4 Maturities	0 Payments	70,404,894.60	52.01%	70,404,894.60	70,290,992.09
Aging Interval:	1 - 30 days	(09/23/2018 - 10/22/2018)	4 Maturities	0 Payments	31,000,000.00	22.89%	30,979,624.83	30,974,380.00
Aging Interval:	31 - 60 days	(10/23/2018 - 11/21/2018)	2 Maturities	0 Payments	18,000,000.00	13.28%	17,978,733.00	17,977,320.00
Aging Interval:	61 - 91 days	(11/22/2018 - 12/22/2018)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	92 - 121 days	(12/23/2018 - 01/21/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	122 - 152 days	(01/22/2019 - 02/21/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	153 - 183 days	(02/22/2019 - 03/24/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	184 - 274 days	(03/25/2019 - 06/23/2019)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	275 - 365 days	(06/24/2019 - 09/22/2019)	1 Maturities	0 Payments	7,000,000.00	5.17%	7,000,000.00	6,918,170.00
Aging Interval:	366 - 1095 days	(09/23/2019 - 09/21/2021)	1 Maturities	0 Payments	9,000,000.00	6.65%	9,000,000.00	8,897,400.00
Aging Interval:	1096 days and after	(09/22/2021 -)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
		Total for	12 Investments	0 Payments		100.00	135,363,252.43	135,058,262.09

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, 2018 includes a decrease of ($121,754) to the LAIF investment and a decrease of ($246,740) 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 interest-rate 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.

<u>ECONOMIC TERMS</u>

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 — **Agenda Item No. 4B**
October 10, 2018 — **Discussion Calendar**

Acceptance of 2017 CAL FIRE Fire Prevention Grant for Remote Wildfire Cameras and Meteorological Sensors

Contact(s) for Further Information

Dave Anderson, Deputy Chief Emergency Operations Bureau	daveanderson@ocfa.org	714.573.6006
Brian Norton, Division Chief	briannorton@ocfa.org	714.573.6761

Summary

This agenda item seeks acceptance of a 2017 CAL FIRE Fire Prevention Grant in the amount of $90,000 to purchase remote wildfire cameras and sensors for installation on peaks and high points throughout Orange County.

Prior Board/Committee Action

Not Applicable.

RECOMMENDED ACTION(S)

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Accept the 2017 CAL FIRE Fire Prevention Grant for Remote Wildfire Cameras and Meteorological Sensors.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget increasing revenues and expenditures by $90,000.

Impact to Cities/County

Not Applicable.

Fiscal Impact

The FY 2018/19 General Fund revenues and expenditures will be increased by $90,000.

Background

Following is information taken from CAL FIRE's website for the Fire Prevention Grants Program:

California's 2017-2018 budget allocated up to $195 million to CAL FIRE's Forest Health and Fire Prevention Programs. Together, these programs improve resiliency of forested and forest-adjacent communities and upper watershed forests while achieving climate goals. Through the California Climate Investments (CCI) Fire Prevention Grant Program, CAL FIRE aims to reduce the risk of wildland fires to habitable structures and communities, while maximizing carbon sequestration in healthy wildland habitat and minimizing the uncontrolled release of emissions emitted by wildfires.

CAL FIRE's Fire Prevention Grants Program provides funding for local projects and activities that address the risk of wildfire and reduce wildfire potential to forested and forest adjacent communities. Funded activities include: hazardous fuel reduction, fire planning, and fire prevention education with an emphasis on improving public health and safety while reducing greenhouse gas emissions.

Eligible grantees may be State Agencies, Native American Tribes, local government within or adjacent to State Responsibility Area including, fire districts, community services districts, water districts, and special districts, or certified local conservation corps, Fire Safe Councils, or other nonprofit organizations organized under Section 501(c)(3) of the federal Internal Revenue Code.

The three qualifying projects and activities include those related to hazardous fuel reduction and removal of dead, dying, or diseased trees, fire prevention planning, and fire prevention education.

OCFA Remote Wildfire Cameras and Meteorological Sensors

The grant application was submitted by OCFA staff to purchase additional remote wildfire cameras and sensors that will be installed throughout Orange County. The remote wildfire cameras will help to protect the 3.1 million residents within the county, while benefitting nearly 11,576 habitable structures within the State Responsibility Area, and another 130,220 structures within the Very High Local Responsibility Area - Wildland Urban Interface Areas (Attachment 1). The cameras will be strategically placed throughout the county (Attachment 2) to provide visibility and detection of wildfires, while the meteorological sensors will provide up to date site specific weather information that will provide incident commanders the information needed to make informed fire management decisions.

Matching funds have been provided by Southern California Edison in the amount of $100,000. In addition, the OCFA has contributed approximately $50,000 to install four cameras.

Attachment(s)

1. Grant Scope of Work
2. Project Map

California Department of Forestry and Fire Protection
(CAL FIRE) California Climate Investments
Fire Prevention Grants Program
Project Scope of Work

Project Name: Remote Wildfire Cameras and Meteorological Sensors

Project Tracking Number: 17-FP-ORC-2057

Project Description Summary: Please provide a paragraph summarizing proposed project including the location, habitable structures, acres treated, etc.

The proposed project: purchases remote wildfire sensing pan-tilt-zoom and stationary cameras (NIR and RGB) and associated meteorological sensors installed on peaks and high points throughout Orange County to assist in the detection of wildfires. The remote wildfire cameras will help to protect the 3.1 million residents within Orange County, while benefitting nearly 11,576 habitable structures within the SRA, and another 130,220 structures within the Very High LRA WUI areas. The cameras will be strategically placed throughout the County (See attached map 1) to provide visibility and detection of wildfires, while the meteorological sensors will provide up to date site specific weather information that will provide incident commanders the information needed to make informed fire management decisions.

A. Scope of Work

This item is broken into project specific criteria depending on the type of project being proposed: planning, education or hazardous fuel reduction. Please ***answer one section of questions*** that pertain to the primary activity type for your project.

Section 2: Planning Projects

1. Describe the geographic scope of the project, including the communities that will benefit, and an estimate of the number of structures within the project area.
2. Describe how the project will assess the risks to residents and structures in the WUI and prioritize projects to reduce this risk over time.
3. Does the proposed plan add or build upon previous wildfire prevention planning efforts in the general project area?
4. Identify a diverse group of key stakeholders, including local, state, and federal officials where appropriate, to collaborate with during the planning process. Discuss how the project proponent plans to engage with these targeted stakeholders.
5. Describe the pathways for community involvement that will be incorporated in the planning process.

Answer only 1 set of questions from above, depending on your project; Fuel Reduction, Planning or Education.

1. Geographic scope: The remote wildfire cameras would cover the entire SRA and SRA threat zone, or approximately 275,000 acres. This project will benefit approximately 20 of the 58 cities within Orange County and almost 1.5 million residents.
2. Risks to residents: The remote wildfire cameras will provide better coverage of the open spaces and WUI and will provide an improved fire response by identifying smoke earlier and identifying the location more precisely, thus making the communities safer from wildfire. The meteorological sensors will assist fire management planning by providing information on changing weather and predicting weather, including Red Flag Alerts.
3. Previous Planning: This project builds on earlier efforts to provide fire cameras within Orange County, as OCFA has been working for years to establish the camera sites, research the proper cameras, and work with stakeholders to collaborate on camera access and permissions. In March of 2018, OCFA installed 4 stationary cameras, 1 pan-tilt-zoom camera, and associated meteorological sensors on 1 site on Santiago Peak.
4. Stakeholders: OCFA created a working group, the County of Orange Area Safety Taskforce or COAST, of all the open space partners, which includes: Orange County Parks, State Parks, US Fish and Wildlife Service, Orange County Fire Agencies, Caltrans, Natural Communities Coalition, Irvine Ranch Conservancy, Starr Ranch Audubon, Southern California Edison, San Diego Gas and Electric, US Forest Service, Irvine Ranch Water District, CalFire, Transportation Corridor Authority, Orange County Transportation Authority, University of California Irvine, and Rancho Mission Viejo. The remote wildfire cameras are supported by the same COAST members and the cameras will be publicly available for viewing, thus allowing these stakeholders to survey their lands, as well as allow volunteers to remotely view their open spaces during Red Flag warnings and alerts.
5. Community Involvement: The remote wildfire cameras will engage communities in the planning process by identifying areas to place the cameras, providing the information to HOAs, community members, and a public interfacing website to view the remote wildfire cameras. In addition, partners such as HPWREN and WiFIRE will use the information from the cameras to better predict active wildfires using supercomputer processing. By building the remote wildfire camera network in Orange County, it will create a link between existing cameras in San Diego, with potential cameras in Los Angeles and Santa Barbara Counties up to the Sierra Nevada communities.

B. Relationship to Strategic Plans

Does the proposed project support the goals and objectives of the California Strategic Fire Plan, the local CAL FIRE Unit Fire Plan, a Community Wildfire Protection Plan (CWPP), County Fire Plan, or other long term planning document?

The proposed project is consistent with the California Strategic Fire Plan, and is identified in the Orange County-CAL FIRE Contract County Fire Plan, and the camera locations are located within designated Very High Fire Hazard Severity Zone as identified by the County of Orange and CAL FIRE. The project is identified in the County of Orange Community Wildfire Protection Plan, and is consistent with the Orange County Natural Communities Coalition of Orange County Fire Plan.

C. Degree of Risk

1. Discuss the location of the project in relation to areas of moderate, high, or very high fire hazard severity zone as identified by the latest Fire and Resource Assessment Program maps. Fire hazard severity zone maps by county can be accessed at: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.php
2. Describe the geographic proximity of the project to structures at risk to damage from wildfire in the WUI.

1.Hazard: The remote wildfire cameras will collect data and survey or view areas with over 90% very high SRA fire hazard severity zones. Adjacent areas to the SRA are also rated very high incorporated and unincorporated LRA.
2. Structures in WUI: The remote wildfire cameras will view thousands of acres of open spaces directly adjacent to thousands of homes within the WUI. This viewshed will help enhance detection of wildfires as well as monitoring of active incidents within the WUI to get updated and live information on fire behavior and spread to enhance evacuation of homes within the WUI.

D. Community Support

1. Does the project include any matching funds from other funding sources or any in-kind contributions that are expected to extend the impact of the proposed project?
2. Describe plans for external communications during the life of the project to keep the effected community informed about the goals, objectives and progress of the project. Activities such as planned press releases, project signage, community meetings, and field tours are encouraged.
3. Describe any plans to maintain the project after the grant period has ended.
4. Does the proposed project work with other organizations or agencies to address fire hazard reduction at the landscape level?

1. Matching: Southern California Edison (SCE) has already contributed $100k to install cameras and meteorological sensors in some areas of Orange County. The OCFA has also contributed administration, cameras and installation with over $50k invested. OCFA will continue to budget for ongoing maintenance and administration associated with the cameras.
2. External Communications: OCFA has already conducted a press day to announce the partnership with SCE to provide a remote wildfire camera on Santiago Peak, which resulted in newspaper, radio, and TV outreach to communities. The 4 existing stationary cameras, meteorological sensors, and pan-tilt-zoom camera have a website where the public can observe and monitor for wildfire activity. If OCFA receives this grant, more press releases and media days will be planned to provide this information to the public, as well as providing a link on the OCFA website to the camera.
3. Post-project maintenance: OCFA will maintain the remote wildfire cameras in perpetuity, in partnership with our open space and supporting partners, as the cameras provide a benefit to all. A portion of the OCFA budget will be made available for the maintenance and cleaning of the cameras and sensors once the grant period has ended.
4. Fire reduction on landscape scale: The very nature of the remote wildfire cameras address fire hazard reduction on a landscape level by working with a number of different partners. Some of the partners include our COAST organization: Orange County Parks, State Parks, US Fish and Wildlife Service, Orange County Fire Agencies, Caltrans, Natural Communities Coalition, Irvine Ranch Conservancy, Starr Ranch Audubon, Southern California Edison, San Diego Gas and Electric, US Forest Service, Irvine Ranch Water District, CalFire, Transportation Corridor Authority, Orange County Transportation Authority, University of California Irvine, and Rancho Mission Viejo. The cameras will address fire hazards across the landscape level by having the cameras monitor thousands of acres of open space, adjacent to the WUI, and by monitoring 275,000 acres within the SRA threat zone.

E. Project Implementation

1. Discuss the anticipated timeline for the project. Make sure to take seasonal restrictions into account.
2. Verify the expected timeframes to complete the project will fall under the March 15, 2022 deadline.
3. Describe the milestones that will be used to measure the progress of the project.
4. Describe measurable outcomes (i.e. project deliverables) that will be used to measure the project’s success.
5. If applicable, how will the requirements of the California Environmental Quality Act (CEQA) be met?

1.Timeline: Once the grant is received, remote wildfire cameras will be ordered and installed ASAP starting in the spring of 2019, due to winter seasonal limitations on some unpaved access roads.
2.Timeframes: OCFA, along with partners, purchased and installed 4 remote wildfire cameras on 1 location within a month. It is presumed that all cameras would be purchased at the same time, allowing two years for installation, although it would likely take less than one.
3.Milestones: Milestones for the remote wildfire cameras would be 1) the purchasing of the equipment, 2) installation of the cameras and sensors, 3) public awareness, media day, or press conference to announce the installation of the equipment, and 4) the linking of the cameras to the public website for the community to view.
4.Deliverables: Remote wildfire deliverables will be cameras and meteorological sensors installed on 6 towers across Orange County. Deliverables include a link on the OCFA website linking to the website where the public can monitor the view from the cameras.
5.CEQA: The CEQA process is not applicable for this project. The remote wildfire cameras will be placed on existing structures and require no environmental footprint.

F. Administration

1. Describe any previous experience the project proponent has with similar projects. Include a list of recent past projects the proponent has successfully completed if applicable. Project proponents having no previous experience with similar projects should discuss any past experiences that may help show a capacity to successfully complete the project being proposed. This may include partnering with a more experienced organization that can provide project support.
2. Identify who will be responsible for tracking project expenses and maintaining project records in a manner that allows for a full audit trail of any awarded grant funds.

1.Previous experience: The OCFA has been working for years to acquire tower space to install cameras, as well as work with partners to support the remote wildfire cameras. In May 2018, OCFA installed 4 cameras and associated meteorological sensors on 1 tower and that information is publicly accessible via the HPWREN website, http://hpwren.ucsd.edu/cameras/ . OCFA would like to use this grant opportunity to expand this camera system to grow the wildfire cameras throughout Orange County to provide better coverage and service to the residents that we protect and serve.

OCFA has significant experience in receiving, and carrying out, grants, and is also compliant with federal statutes and OMB regulations that require a single audit annually. In addition, OCFA has never been audited by a funding agency, other than routine agreement tracking. Examples of OCFA's most recent grant experience includes the following:

(1) 2009 - Assistance to Firefighters Grant (AFG) Regional Award for $337,400: OCFA acted as the host agency to administer this completed grant award for the purchase of VHF portable radios, repeaters and training that benefited several Orange County fire agencies, which resulted in better inter-fire agency communication.

(2) May 2011 - FEMA Fire Prevention & Safety Grant for $332,000 (Federal Share): Awarded for the purchase and installation of smoke alarms and cooking safety devices in high risk communities, the result of this completed grant was that several thousand smoke alarms and cooking safety devices were purchased and installed in high risk communities.

(3) 2011 - AFG Award for $1.4 million (Federal Share): Awarded to purchase new SCBA's, this completed grant has resulted in improved firefighter safety from the purchase of 400+ SCBA's.

(4) 2012 - AFG Award for $137,000 (Federal Share): Awarded for the purchase of thermal imaging cameras, this completed grant has improved operations for fire rescues in smoke-filled environments, as a result of using the thermal imaging cameras.

(5) 2013 - FEMA Legislative Pre-Disaster Mitigation Grant for $252,000 (Federal Share): Awarded for the installation of a new generator at OCFA's Air Operations Fire Station, once complete, this grant will improve reliability, and reduce the risk of a power failure at our Air Operations Fire Station caused by large disasters.

(6) 2013 - California Fire Safe Council Grants Clearinghouse for $200,000+: This grant is scheduled to close in early 2015, and to date, it has funded fuel reduction projects, wildfire education initiatives, including a large scale community evacuation drill, plus several Chipper Days events in the WUI community of Cowan Heights. Results include hazardous fuels reductions, restoration/replanting with native vegetation, a better informed and prepared public, and a better coordinated emergency response community.

2.Project Tracking: The OCFA Pre-Fire Management team will be responsible for project tracking and budgeting. This team is led by Battalion Chief Matthew Levesque, Wildland Resource Planner Dave Erickson and Administrative Assistant Kim Gomi. The PFM team will work internally with the Finance Dept to ensure that financial records are kept in a manner that allows for a full audit trail.

G. Budget

A detailed project budget should be provided in an Excel spreadsheet attached to this grant application. The space provided here is to allow for a narrative description to further explain the proposed budget.

1. Explain how the grant funds, if awarded, will be spent to support the goals and objectives of the project. If equipment grant funds are requested, explain how the equipment will be utilized and maintained beyond the life of the grant.
2. Are the costs for each proposed activity reasonable for the geographic area where they are to be performed? Identify any costs that are higher than usual and explain any special circumstances within the project that makes these increased costs necessary to achieve the goals and objectives of the project.
3. Is the total project cost appropriate for the size, scope, and anticipated benefit of the project?
4. Identify all Indirect Costs and describe why they are necessary for a successful project implementation. Administrative expenses to be paid by the Fire Prevention Grants must be less than 12% of the total grant request (excluding equipment).
5. Explain each object category in detail and how that would support meeting the grant objectives.

1.Maintenance of Equipment: OCFA will budget yearly for the maintenance and upkeep of the equipment, in coordination and association with our partner organizations such as COAST and SCE. The funds will be spent to purchase the equipment and installation, and OCFA will maintain the equipment in perpetuity.
2.Costs: The costs are commensurate with each item. The technology of the cameras and sensors has been developed for years, and the pricing of all of these items is far reduced from what it cost years ago due to years of research and development.
3.Cost benefit: The existing camera on Santiago Peak spotted a wildfire fire on June 5, 2018 with Orange County. This technology allowed the OCFA dispatch to more efficiently dispatch crews to a remote location, and monitor the development of the smoke to determine if additional resources needed to be ordered. This project will benefit over 1.5 million people and the budget has been proportioned to be the most efficient project. The benefit to the communities will be quicker response times and more notice if evacuations are needed. It is possible that an arson could also be caught on camera lighting a fire. This would give law enforcement more information to capture the culprit and reduce future ignitions.
4. Indirect Costs: Since this is a request for equipment, there are no indirect costs being requested.
5.Categories: Equipment- The grant would purchase remote stationary cameras, pan-tilt-zoom cameras, and meteorological sensors. The sensors would measure wind speed, direction, temperature, and relative humidity. The pant-tilt-zoom cameras are remotely controlled so that they can be turned onto an incident and zoom into it to get a closer look at the fire. Other Costs- The installation of the cameras and the equipment will be done by the partners of OCFA. The installation consists of mounting the cameras, sensors, remote wireless equipment (already purchased), and the labor to install all the equipment.

H. California Climate Investments

The space provided here is to allow for a narrative description to further explain how the project/activity will reduce Greenhouse Gas emissions.

1. How will the project/activity reduce Greenhouse Gas emissions?
2. Is the project located in a Low-Income or Disadvantaged Community? If not, does the project benefit those communities. Please explain.
3. What are the expected co-benefits of the project/activity (i.e. environmental, public health and safety, and climate resiliency)?
4. When are the Greenhouse Gas emissions and/or co-benefits expected to occur and how will they be maintained?

1)Greenhouse Gas reductions: By using the cameras to detect wildfires sooner, OCFA will be able to respond more efficiently, thus reducing the size and environmental impact of a wildfire, as well as reducing the Greenhouse Gas emissions emitted by the wildfire. Responding more effectively to wildfires detected by the remote cameras will reduce Greenhouse Gas emissions by allowing units to arrive sooner to a more exact location of a wildfire and being able to suppress the wildfire quicker, reducing the overall net loss in vegetation, which reduces the amount of volatile chemicals and gasses emitted into the atmosphere. Less resources will be spent trying to identify the location of a fire because the cameras will allow dispatchers to report an exact location to responding units. This will reduce the amount of Greenhouse Gasses emitted from tailpipes of responding engines, truck, helicopters, and heavy equipment.

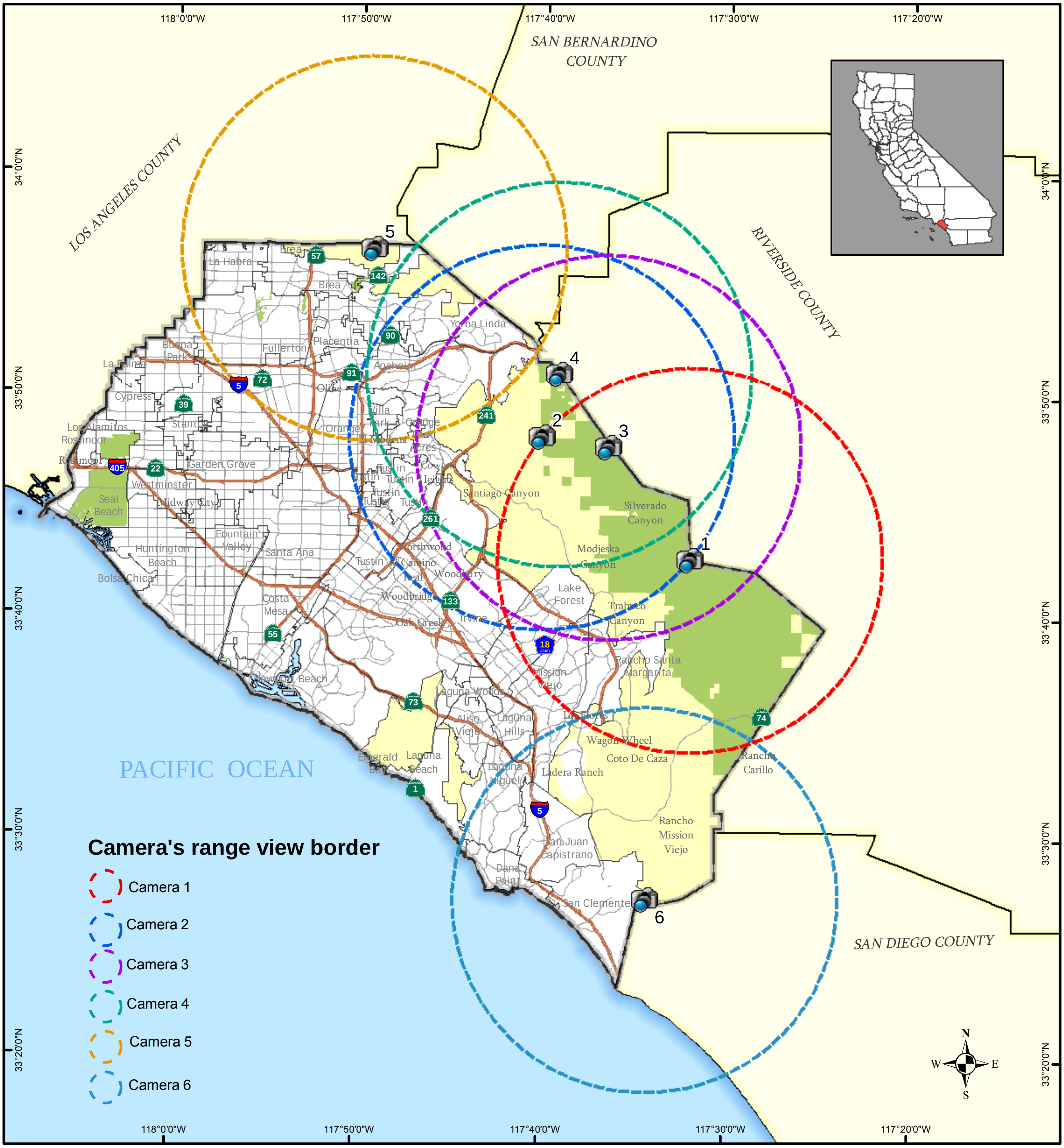
2)Disadvantaged Communities: Yes, this project benefits many of the disadvantaged communities within Orange County because the cameras will detect wildfires that threaten disadvantaged communities adjacent to open spaces. Many of the cameras will be located in open spaces adjacent to disadvantaged communities and will directly benefit these communities by keeping a 24 hour, 7 days per week watch for fire ignitions. This will help keep these communities safer from wildfire and promote a positive relationship between OCFA, our partners, and the communities that we serve.

3)Co-benefits: The expected co-benefits are: reduced environmental impacts from wildfire through earlier detection of ignitions, safer communities through wildfire watch outreach and education, and a reduction in the size of wildfires, which will allow plant communities to grow larger and healthier and sequester more carbon and emit more oxygen through photosynthesis. Detecting ignitions sooner will enhance emergency response, which will allow the OCFA and adjacent fire departments to contain fires sooner and with less acreage burned. Smaller fires will keep communities safer, residents healthier through reduced stress and smoke inhalation, while ongoing education and outreach will enhance community wildfire awareness.

4)Maintenance: Greenhouse Gas emissions and co-benefits will be realized upon the first detection of a wildfire using the remote cameras. They are expected to last the lifespan of the cameras, which can be decades.

Attachment 2

ORC - Remote Wildfire Sensors and Meteorological Sensors
Orange County Fire Authority – Project # 17-FP-ORC-2057



ORC - Remote Wildfire Sensors and Meteorological Sensors

Orange County Fire Authority – Project # 17-FP-ORC-2057

Protential Camera's Locations

Camera's range view border

0 2.5 5 10 15

Miles

FRA

LRA

SRA

City Boundary

OC Boundary

Date: 6/6/2018

Orange County Fire Authority

AGENDA STAFF REPORT

Budget and Finance Committee Meeting | **Agenda Item No. 4C**
October 10, 2018 | **Discussion Calendar**

Acceptance of 2017 CAL FIRE Fire Prevention Grant for Invasive Tree Pest Mitigation and Fuels Reduction

Contact(s) for Further Information

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Summary

This agenda item seeks acceptance of a 2017 CAL FIRE Fire Prevention Grant in the amount of $5,454,898 to address the escalating problem of invasive tree pests in Orange County.

Prior Board/Committee Action

Not Applicable.

RECOMMENDED ACTION(S)

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of October 25, 2018, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Accept the 2017 CAL FIRE Fire Prevention Grant for Invasive Tree Pest Mitigation and Fuels Reduction.
2. Approve a budget adjustment to the FY 2018/19 General Fund (121) budget increasing revenues and expenditures by $5,454,898.

Impact to Cities/County

Not Applicable.

Fiscal Impact

The FY 2018/19 General Fund revenues and expenditures will be increased by $5,454,898.

Background

Following is information taken from CAL FIRE's website for the Fire Prevention Grants Program:

California's 2017-2018 budget allocated up to $195 million to CAL FIRE's Forest Health and Fire Prevention Programs. Together, these programs improve resiliency of forested and forest-adjacent communities and upper watershed forests while achieving climate goals. Through the California Climate Investments (CCI) Fire Prevention Grant Program, CAL FIRE aims to reduce the risk of wildland fires to habitable structures and communities, while maximizing carbon sequestration in healthy wildland habitat and minimizing the uncontrolled release of emissions emitted by wildfires.

CAL FIRE's Fire Prevention Grants Program provides funding for local projects and activities that address the risk of wildfire and reduce wildfire potential to forested and forest adjacent communities. Funded activities include: hazardous fuel reduction, fire planning, and fire prevention education with an emphasis on improving public health and safety while reducing greenhouse gas emissions.

Eligible grantees may be State Agencies, Native American Tribes, local government within or adjacent to State Responsibility Area including, fire districts, community services districts, water districts, and special districts, or certified local conservation corps, Fire Safe Councils, or other nonprofit organizations organized under Section 501(c)(3) of the federal Internal Revenue Code.

The three qualifying projects and activities include those related to hazardous fuel reduction and removal of dead, dying, or diseased trees, fire prevention planning, and fire prevention education.

OCFA Tree Pest Mitigation and Fuels Reduction Grant

The grant application was submitted by OCFA staff to conduct aerial mapping, data analysis, ground surveys, tree removal, and restoration across 275 acres in Orange County. Each of these components is discussed in detail in the scope of work (Attachment 1) submitted to CAL FIRE. The grant specifically seeks to conduct pest mitigation across these 275 acres in four geographic clusters that are identified in the project map (Attachment 2).

According to OCFA's research, there are 141,796 habitable structures in the Wildland Urban Interface that will directly benefit. These residences are located within the areas of Aliso Viejo, Anaheim, Brea, Coto De Caza, Cowan Heights, Dana Point, Lake Forest, Irvine, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Mission Viejo, Modjeska, Newport Beach, Orange, Rancho Santa Margarita, San Clemente, San Juan Capistrano, Silverado, Trabuco Canyon, Trabuco Highlands, Villa Park, and Yorba Linda.

Attachment(s)

1. Grant Scope of Work
2. Project Map

California Department of Forestry and Fire Protection
(CAL FIRE) California Climate Investments
Fire Prevention Grants Program
Project Scope of Work

Project Name: ORC Invasive Tree Pest Mitigation and Fuels Reduction

Project Tracking Number: 17-FP-ORC-2058

Project Description Summary: Please provide a paragraph summarizing proposed project including the location, habitable structures, acres treated, etc.

Project Description Summary
This grant is designed as a multi-step comprehensive approach to address the escalating problem of Invasive Tree Pests in Orange County, which are causing increased fuel loads from dead/dying trees, and raising the wildfire/life-safety risks, as well as harming the environment due to increased GHG emissions from increased wildfire activity and tree loss.

Each component of this project could be a standalone grant application, but all elements are being presented together to more clearly illustrate the intent and scope of this project, and how it will be accomplished. Simply stated, the goals are to: (1) stop the spread of invasive tree pests, (2) reduce the existing fuel loads caused by the tree pests and limit the potential for future fuel loading from them, (3) reduce the related wildfire and life safety risks from the invasive tree pests, and (4) improve the environment by limiting GHG emissions linked to tree loss, and the increased frequency and intensity of the associated wildfires.

This project encompasses all Orange County SRA lands, plus the 0.5 mile SRA-Threat buffer zone, which equates to 275 acres. Specifically, it will benefit 141,796 habitable structures, including nearly 11,576 structures within the Very High SRA, and 141,796 structure within the SRA-Threat buffer zone (Very High LRA WUI). Note, some OCFA partner agencies have expressed interest in expanding the reach of this project beyond the SRA, so at their own expense, they will be invited to add on to the project as well.

Generally speaking, the process flow for this project is as follows:

(A) Aerial Mapping → (B) Data Analysis → (C) Ground Truth Surveys/Tree Tagging/Prioritization → (D) Tree Removal → (E) Disposal via Air Curtain Burner → (F) Restoration

Component Details:

(A) Aerial Mapping (1 flight per year for 3 years)
- Location: All Orange County SRA + SRA-Threat areas (.5 miles beyond SRA boundary)
- Rationale: Use NDVI technology to help locate/identify invasive tree pest infestations, fuel loads and overall vegetation heath

(B) Data Analysis & Predictive Model (data from 3 flights aerial mapping & 1 Predictive Model)
- Rationale: To help identify invasive tree pests infestations, probable habitats, fuel loads and develop a predictive model for detecting invasive tree pest infestations in Orange County

(C) Ground Truth Surveys/Tree Tagging/Prioritization
- Rationale: Confirmation of KSHB, PSHB, or GSOB infestations with trained personnel is required due to many look alike pests, and to evaluate/assign a removal rank based on removal criteria, plus geo-reference trees.

(D) Tree Removal (based on prioritized list)
- Rationale: To reduce the fuel load and invasive pest spread

(E) Biomass Disposal with Air Curtain Burner
- Location: Mobile Air Curtain Burner will be located at various removal sites.
- Rationale: Noting there are limited options to dispose of infested wood effectively and efficiently, CAL FIRE suggested that OCFA incinerate the infested wood using an Air Curtain Burner, which appears to be the most reliable, quick, cost effective and environmentally friendly method. Moreover, it can be used for many other projects, and large scale emergencies, etc.

(F) Restoration
- Location: Selected locations
- Rationale: to help restore infested areas and create a more resistive landscape using native plants not subject to invasive tree pest infestations

A. Scope of Work

This item is broken into project specific criteria depending on the type of project being proposed: planning, education or hazardous fuel reduction. Please ***answer one section of questions*** that pertain to the primary activity type for your project.

Section 1: Hazardous Fuel Reduction/Removal of Dead or Dying Tree Projects

1. Describe the geographic scope of the project, including an estimate of the number of habitable structures and the names of the general communities that will benefit.
2. Describe the goals, objectives, and expected outcomes of the project.
3. Provide a clear rational for how the proposed project will reduce the risks associated with wildfire to habitable structures in the WUI.
4. Identify any additional assets at risk to wildfire that will benefit from the proposed project. These may include, but are not limited to, domestic and municipal water supplies, power lines, communication facilities and community centers.
5. Is the scale of the project appropriate to achieve the stated goals, objectives and outcomes discussed in Item 2 above?
6. How will the project/activity utilize the left over woody biomass? Will the project/activity use a biomass facility to reduce greater greenhouse gas emissions?

Section 2: Planning Projects

1. Describe the geographic scope of the project, including the communities that will benefit, and an estimate of the number of structures within the project area.
2. Describe how the project will assess the risks to residents and structures in the WUI and prioritize projects to reduce this risk over time.
3. Does the proposed plan add or build upon previous wildfire prevention planning efforts in the general project area?
4. Identify a diverse group of key stakeholders, including local, state, and federal officials where appropriate, to collaborate with during the planning process. Discuss how the project proponent plans to engage with these targeted stakeholders.
5. Describe the pathways for community involvement that will be incorporated in the planning process.

Section 3: Education

1. Describe the specific message of the education program and how it relates to reducing the risk of wildfire to owners of structures in the WUI.
2. Describe the target audience of the education program and how information will be distributed to this audience.
3. Will the education program raise the awareness of homeowner responsibilities of living in a fire prone environment?
4. Identify specific actions being advocated in the education material that is expected to increase the preparedness of residents and structures in the WUI for wildfire.
5. Describe the expected outcome of the education in terms of increased or changed public awareness about wildfire.

Answer only 1 set of questions from above, depending on your project; Fuel Reduction, Planning or Education.

Scope of Work (Section 1) – Hazardous Fuel Reduction /Removal of Dead/Dying Trees

- A1-1 This project encompasses all Orange County SRA lands, plus the 0.5 mile SRA-Threat buffer zone, which equates to 275 acres that are basically in 4 geographic clusters, and border the four surrounding counties as well, all who have Invasive Tree Pest infestations. One cluster is in the inland northwest corner of the County, bordering both Los Angeles and San Bernardino Counties, the second is in the inland central part of the County, bordering Riverside County, the third is in the central coastal region, and the fourth is in South County, which borders both San Diego and Riverside Counties. An estimated 141,796 habitable structures in the SRA/WUI communities will directly benefit from this project including all that are on the Communities-At-Risk list, such as Aliso Viejo, Anaheim, Brea, Coto de Caza, Cowan Heights, Dana Point, El Toro (aka Lake Forest), MCAS El Toro, Irvine, Laguna Beach, Laguna Hills, Laguna Niguel, Laguna Woods, Mission Viejo, Modjeska, Newport Beach, Orange, Rancho Santa Margarita, San Clemente, San Juan Capistrano, Silverado, Trabuco Canyon, Trabuco Highlands, Villa Park and Yorba Linda.
- A.1-2 The project goals are to: (1) stop the spread of invasive tree pests, (2) reduce the existing fuel loads caused by the tree pests and limit the potential for future fuel loading from them, (3) reduce the related wildfire and life safety risks from the invasive tree pests, and (4) improve the environment by limiting GHG emissions linked to tree loss, and the increased frequency and intensity of the associated wildfires.
- A1-3. The wildfire risk to habitable structures, as well as critical infrastructure and habitat, will be reduced by: (1) significantly decreasing the fuel load created by the invasive tree pest infestations through the identification and removal of dead/dying trees and by (2) helping to reduce future threats by limiting the infestation spread.
- A1-4 Additional assets at risk from wildfire that will benefit from this project include utility, communication, military and law enforcement critical infrastructure, plus the water supply, wildlife, endangered species, habitat, eco-systems, major roads, and recreation facilities.
- A1-5 While the invasive tree pest problem is indiscriminate regarding wildland/open space vs. suburban/urban areas, in terms of scale, making a stand by targeting the SRA/WUI communities makes sense due those areas posing the greatest risk for catastrophic wildfires, plus there are ever increasing Invasive Tree Pest infestations there. Additionally, the project area borders the surrounding counties of Los Angeles, San Bernardino, Riverside and San Diego, all who have invasive tree pest issues, so it should help them by curtailing the spread as well. It’s important to note that since other more appropriate entities have failed to address this problem so far in a meaningful way, or at all, as it grows continually worse, OCFA at this point feels compelled to take action if no one else will. Consequently, OCFA will do what it can, and that means combatting the problem in the SRA/SRA-Threat areas. As mentioned, it’s anticipated that our partners will contribute towards extending the project reach beyond the SRA/SRA-Threat.
- A1-6 Both from the standpoint that there are few effective, let alone affordable, options to dispose of diseased wood that is key to limiting the spread, and from the perspective of limiting GHG emissions, at the suggestion of CAL FIRE, an integral component to this project includes purchasing an Air Curtain Burner that will provide a quick, effective, efficient and a more environmentally friendly solution for the disposal of infested wood/biomass, both now and in the future. In fact, OCFA has been in contact with the AQMD who is willing to help champion this purchase through their approval process.

B. Relationship to Strategic Plans

Does the proposed project support the goals and objectives of the California Strategic Fire Plan, the local CAL FIRE Unit Fire Plan, a Community Wildfire Protection Plan (CWPP), County Fire Plan, or other long term planning document?

(B) Relationship to Strategic Plan
The concern, risks, and especially the need for significant meaningful action regarding the worsening problem of Invasive Tree Pests in Orange County, and the related wildfire threat has been repeatedly called out in OCFA's Unit Strategic Fire Plan, as well as in the Orange County CWPP.

C. Degree of Risk

1. Discuss the location of the project in relation to areas of moderate, high, or very high fire hazard severity zone as identified by the latest Fire and Resource Assessment Program maps. Fire hazard severity zone maps by county can be accessed at: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps.php
2. Describe the geographic proximity of the project to structures at risk to damage from wildfire in the WUI.

(C) Degree of Risk
• C1. This project targets all Orange County SRA lands, plus the 0. 5 buffer zone considered to be an "SRA-threat", which includes slivers of FRA, LRA and other county's borders, including San Diego, Riverside, San Bernardino and Los Angeles Counties, all who have invasive tree pest issues as well. With very few exceptions, the majority of this project is in the Very High FHSZ, regardless of SRA, LRA or FRA, or other county borders.
• C2. Current Invasive Tree Pest infestations are both near structures, such as in densely populated areas like Anaheim Hills and Irvine, and are also in sparsely populated or open space areas as well. Regardless, virtually all 141,796 habitable structures, plus critical infrastructure, within the SRA/SRA-Threat project boundaries are at risk from wildfire. Consequently, the mapping and analysis part of this project will help determine more accurately: (A) where there are both known and unknown probable infestations, and more importantly, where there are heavy fuel loads, presumably created by the pests. Then, removal targets will be prioritized, and heavily weighted by their proximity and threat to habitable structures and critical infrastructure.

D. Community Support

1. Does the project include any matching funds from other funding sources or any in-kind contributions that are expected to extend the impact of the proposed project?
2. Describe plans for external communications during the life of the project to keep the effected community informed about the goals, objectives and progress of the project. Activities such as planned press releases, project signage, community meetings, and field tours are encouraged.
3. Describe any plans to maintain the project after the grant period has ended.
4. Does the proposed project work with other organizations or agencies to address fire hazard reduction at the landscape level?

(D) Community Support

• D1. The project includes both matching and in-kind contributions from members of both the County of Orange Safety Task Force organizations (COAST), as well as from the Emerging Tree Pests of Orange County Task Force (ETPOC), including, but not limited to, OC Parks, State Parks, USFS, UC Riverside, UC Irvine, Irvine Ranch Conservancy, Natural Communities Coalition (NCC), Rancho Mission Viejo, Starr Ranch, US Fish & Wildlife, CAL FIRE, and more. In fact, so far NCC has pledged an additional $24K towards increasing the mapping area beyond the SRA/SRA Threat. Additional support will come from OCFA, especially from its Crews and Equipment and Pre-Fire Management sections, as well as from Operations Support, Purchasing, Finance, GIS and Risk Management Departments.

• D2. External communications will continue to include media event days, informational handouts and signage, Social Media posts, continuing presentations at outreach events, and to FSC's, HOA's, cities, public and private organizations. Additionally, OCFA will continue to promote the Buy It Where You Burn It campaign, as well as the Ready, Set, Go! messaging whenever possible, including with our existing rotational signage in the canyon/SRA areas. Invasive Pest informational and training field trips to impacted areas will also continue.

• D3. This grant is designed to give Orange County the tools and processes needed to fight the invasive tree pest issue for the long haul. The intent is to: (1) to make a major large scale initial attack that will help reduce the existing fuel load and limit the tree pest spread, then (2) it will enable OCFA and its partner agencies to follow-up with more targeted smaller scale, and less costly executions. Referring to the proposed workflow below, project maintenance after the grant period is over is expected to go as follows:

Project Workflow

(A) Aerial Mapping → (B) Data Analysis → (C) Ground Truth Surveys/Tree Tagging/Prioritization → (D) Tree Removal → (E) Disposal via Air Curtain Burner → (F) Restoration

a. Aerial Mapping - Smaller scale aerial mapping will be done either by OCFA, who has a drone and NDVI camera and software to execute it, or it could be contracted out if needed.
b. Data Analysis - The analysis of aerial mapping could either be contracted out, or by that time, it's quite possible that enough would be learned, so that OCFA and/or its partner agencies may be able to interpret the mapping data in-house without additional costs.
c. Ground Truth/Confirmation & Prioritization – These functions could be conducted by partner agencies and student interns, similar to what is being done now, or it could be contracted out as well.
d. Tree Removal - This presumably would be contracted out. Occasionally, OCFA Crews and Equipment may be able to assist at no additional cost.
e. Disposal via Air Curtain Burner - OCFA will house, operate and maintain the Air Curtain Burner after the grant period, and will continue to use it for fuel reduction projects. Additionally, OCFA will make it available to other entities who need to use it, either on a good will basis, or as a paid project, depending on the circumstance.
f. Restoration - Because determining appropriate tree species for restoration is tricky at this time due to the unknown and ever changing information regarding which species are vulnerable to invasive tree pests, OCFA plan to contribute grant funds for cactus paddle propagation, which is a safe native alternative. After the grant period, additional restoration efforts will likely be funded by other partner agencies or with additional grants.

• D4. OCFA already does, and will continue to, work collaboratively with many partners on fire hazard reduction initiatives at the landscape level, both for this project, and for many others. The intent of this project is to focus on a large scale landscape, specifically Orange County's SRA/SRA-Threat areas. Moreover, it also impacts adjacent county's landscapes as outlined already. As also noted previously, our partnerships, which are primarily related to COAST and the ETPOC Task Force member organizations, include, but are not limited to, Orange County Parks, State Parks, US Fish and Wildlife Service, various Orange County Fire Agencies, Caltrans, Natural Communities Coalition, Irvine Ranch Conservancy, Starr Ranch Audubon, Southern California Edison, San Diego Gas and Electric, US Forest Service, Irvine Ranch Water District, CAL FIRE, Transportation Corridor Authority, Orange County Transportation Authority, several University of California campuses including Irvine, Riverside, and San Diego, Rancho Mission Viejo.

E. Project Implementation

1. Discuss the anticipated timeline for the project. Make sure to take seasonal restrictions into account.
2. Verify the expected timeframes to complete the project will fall under the March 15, 2022 deadline.
3. Describe the milestones that will be used to measure the progress of the project.
4. Describe measurable outcomes (i.e. project deliverables) that will be used to measure the project's success.
5. If applicable, how will the requirements of the California Environmental Quality Act (CEQA) be met?

E. Project Implementation - Timeline (Assuming grant is awarded)

E1. Referencing the process below, the expected timeline is as follows:

Aerial Mapping → Data Analysis → Ground Truth/Confirmation & Prioritization → Tree Removal (nesting season, CEQA, etc. permitting) → Disposal via Air Curtain Burner → Reforestation

- **Fall 2018**
  - Select/Purchase: Air Curtain Burner
  - Select: Data Analysis Contractor
  - Select: Aerial Mapping Contractor
  - Select: Tree Removal Contractor
  - Begin: CEQA Evaluation/Process

- **Spring 2019 (then repeated in Spring 2020 and 2021**):
  - Begin Mapping Flights - The NDVI mapping will begin in during an optimal tim,e which is in the Spring and will be repeated during the same period in 2020 and 2021. This flight pattern will help identify and track suspected Invasive Tree Pest infestations, and will also provide information and trends on the overall state of the vegetation as well.

- **Summer 2019 (then repeated in Spring 2020 and 2021):**
  - Mapping Analysis – Forecast to be completed within one month after any flight
  - Mobilization Planning (for Ground Truth Surveys/Tree Tagging/Prioritization)
  - Restoration - Conduct Ground Truth/Tree Tagging/Prioritization - Conduct surveys with Tree Tagging/Prioritization

- **Fall 2019 and Continuing Primarily Until Nesting Season (then repeated in Spring 2020 and 2021)**
  - Tree Removals - Will work around nesting season and other restrictions; removals may continue past nesting season pending surveys and approvals
  - Cactus paddle propagation and planting

E2. All work is targeted to be completed well in advance of the March 15, 2022 deadline. However, it is possible that small scale surgical treatments may occur for any newly detected tree pest infestations that require tree removals that could continue up until February 2022, of course noting avoidance of nesting season, and /or other restrictions.

E3. Key milestones include:
(A) Agreements/Contracts completed for: aerial mapping, data analysis, ground truth/tree tagging/prioritization and tree removal vendors
(B) Purchase/delivery of Air Curtain Burner
(C) Aerial mapping flights completed
(D) Data analysis completed
(E) Ground Truth Surveys, Tree Tagging and Prioritization completed for each of the 3 annual mapping flights
(F) Tree removals completed, including onsite Air Curtain Burner disposal of biomass waste for all 3 rounds
(G) Restoration planting completed for each of the 3 rounds (depending on cactus paddle availability)

E4. Anticipated measureable outcomes/project deliverables include:
- Reduced fuel loads
- Slowed rate of new tree pest infestations and no/or limited expansion of existing ones
- Less ignitions with lower intensity wildfires and less acres burned in treated areas, year over year

E5. Money was put in the budget to cover any CEQA requirements that might be needed. However, because this project is predominantly in SRA, and covered by other exemptions/documents, and since many other partner organizations, such as Orange County Parks, State Parks, etc. already have CEQA's and NEPA's on file, there is a good chance that a full blown CEQA is not needed.

F. Administration

1. Describe any previous experience the project proponent has with similar projects. Include a list of recent past projects the proponent has successfully completed if applicable. Project proponents having no previous experience with similar projects should discuss any past experiences that may help show a capacity to successfully complete the project being proposed. This may include partnering with a more experienced organization that can provide project support.
2. Identify who will be responsible for tracking project expenses and maintaining project records in a manner that allows for a full audit trail of any awarded grant funds.

F. Administration

F1. OCFA has significant experience in receiving, managing and completing grants, and is also compliant with federal statutes and OMB regulations that require a single audit annually. In addition, OCFA has never been audited by a funding agency, other than routine agreement tracking. Examples of OCFA's most recent grant experience includes the following:

(1) 2009 - Assistance to Firefighters Grant (AFG) Regional Award for $337,400: OCFA acted as the host agency to administer this completed grant award for the purchase of VHF portable radios, repeaters and training that benefited several Orange County fire agencies, which resulted in better inter-fire agency communication.
(2) May 2011 - FEMA Fire Prevention & Safety Grant for $332,000 (Federal Share): Awarded for the purchase and installation of smoke alarms and cooking safety devices in high risk communities, the result of this completed grant was that several thousand smoke alarms and cooking safety devices were purchased and installed in high risk communities.
(3) 2011 - AFG Award for $1.4 million (Federal Share): Awarded to purchase new SCBA's, this completed grant has resulted in improved firefighter safety from the purchase of 400+ SCBA's.
(4) 2012 - AFG Award for $137,000 (Federal Share): Awarded for the purchase of thermal imaging cameras, this completed grant has improved operations for fire rescues in smoke-filled environments, as a result of using the thermal imaging cameras.
(5) 2013 - FEMA Legislative Pre-Disaster Mitigation Grant for $252,000 (Federal Share): Awarded for the installation of a new generator at OCFA's Air Operations Fire Station, once complete, this grant will improve reliability, and reduce the risk of a power failure at our Air Operations Fire Station caused by large disasters.
(6) 2013 - California Fire Safe Council Grants Clearinghouse for $200,000+: This grant is scheduled to closed in early 2015, and to date, it has funded fuel reduction projects, wildfire education initiatives, including a large scale community evacuation drill, plus several Chipper Days events in the WUI community of Cowan Heights. Results include hazardous fuels reductions, restoration/replanting with native vegetation, a better informed and prepared public, and a better coordinated emergency response community.
(7) Since 2008 - California-Task Force 5 Grant/Co-Operative Agreement for 1 Million+ Annually: OCFA is the sponsoring agency for California-Task Force 5, one of the 28 National Urban Search & Rescue Teams sponsored by local agencies. The Grant/Co-Operative Agreement has existed since the 1990's and has been successfully managed by OCFA. The result of this ongoing program is highly trained local responders, who provide the Federal government response capability during large scale national disasters and terrorist attacks.
(8) 2015 CWPP - This grant was successfully completed, resulting in a County-Wide Fire Protection Plan dynamic document for Orange County, CA that houses a library of ranked project proposals aimed at reducing wildfire ignitions and limiting their impact/losses. A key benefit of this CWPP is that it enables Orange County greater access to funding sources for wildfire related projects and programs.
(9) 2015 - Emerald Bay Extended Fuel Modification/Cactus Paddle Project: OCFA helped secure, manage and complete a grant for Emerald Bay Service District that created a bigger buffer zone around the fire prone community of Emerald Bay in Laguna Beach by removing some invasive species and replanting with Optunia cactus paddles.
(10) 2015 - Canyon Area Roadside Emergency Access Grant: OCFA secured, managed and completed a grant designed to improve ingress/egress for emergency vehicles in the fire prone Orange County canyon areas where problematic roads and access issues are common. This grant involved vegetation removal/tree trimming on private property in designated areas.

F2. OCFA's Pre-Fire Management staff, including the BC, Wildland Resource Planner, and the Administrative Assistant, along OCFA's Finance staff, particularly Jim Ruane, Wenyea Wang and Penny Wu, will assist with this grant. All are well-versed with managing grant related paperwork, including project records and tracking expenses.

G. Budget

A detailed project budget should be provided in an Excel spreadsheet attached to this grant application. The space provided here is to allow for a narrative description to further explain the proposed budget.

1. Explain how the grant funds, if awarded, will be spent to support the goals and objectives of the project. If equipment grant funds are requested, explain how the equipment will be utilized and maintained beyond the life of the grant.

2. Are the costs for each proposed activity reasonable for the geographic area where they are to be performed? Identify any costs that are higher than usual and explain any special circumstances within the project that makes these increased costs necessary to achieve the goals and objectives of the project.
3. Is the total project cost appropriate for the size, scope, and anticipated benefit of the project?
4. Identify all Indirect Costs and describe why they are necessary for a successful project implementation. Administrative expenses to be paid by the Fire Prevention Grants must be less than 12% of the total grant request (excluding equipment).
5. Explain each object category in detail and how that would support meeting the grant objectives.

G. Budget

G1. The grant funds will be used as follows:

- Aerial Mapping (x3) + Data Analysis (x3) + Predictive Model Development (x1): ($1.2 million) - The vision is to do a series of 3 major aerial mapping flights, once per year for three years in order to monitor/evaluate the situation. Using the base information gathered from this project, OCFA plans to do smaller scale targeted mapping as needed with its own equipment. Grant funding will be used for mapping Orange County's SRA/SRA Threat areas. Our partner agencies have expressed interest in contributing towards expanding the geography of the aerial mapping, so they will be invited to do so at their own expense. In fact, Natural Communities Coalition has already committed funding for this. For reference, NDVI imagery uses the infrared and near infrared data to create an image that measures the chlorophyll levels of the vegetation and allows fire managers to see and measure the overall greenness or vigor of the vegetation. This imagery can be used in a number of different ways in pre-fire planning and management. For this project, the NDVI mapping will help to identify fuel moistures, areas with hazardous fuel loads, and in particular, help determine areas where tree stress, pests and dieback are likely occurring. Additionally, it will help provide information to model fire behavior and plan pre-fire projects to reduce fuel loads overall.

- Ground Truth Surveys/Tree Tagging/Prioritization ($133,333) - Following the results of the aerial mapping and analysis, using evaluation criteria developed by our partner experts at the UC's, OC Parks and others, specially trained surveyors that may include, but are not limited to partner experts, student interns, Master Gardeners, along with contracted surveyors, will evaluate suspect trees, geo-reference them with Lat-Lon information in OCFA's Wildland GIS Application and Cal Mapper, plus assign a priority rank for removal based on very specific criteria.

- Tree Removal ($4 million) - Based on current information alone, University of California experts estimate that approximately 4000 trees have severe enough infestations to warrant removal. Consequently, based on estimates of approximately $1000 per tree, a figure also confirmed by CAL FIRE, this equates to about $4 million dollars to remove the just severely infested trees we know about, and does not even count additional ones that could be discovered as a result of this project. As mentioned already, OCFA plans to prioritize tree removals for diseased trees that pose the greatest threat for wildfire, life-safety and spread-potential in the SRA/SRA-Threat areas.

- CEQA - $50,000 - While it may be possible that a CEQA is not needed for this project due to ones that already exist and areas of exemption, funds have been allocated in case it is.

- Air Curtain Burner ($100K allowed) - The allowable $100K equipment purchase will be used to purchase a mobile Air Curtain Burner. Noting there are limited options to dispose of infested wood effectively and efficiently, CAL FIRE suggested that OCFA incinerate the infested wood using an Air Curtain Burner. Overall, this reportedly is the most reliable, quick, cost effective and environmentally friendly method. Moreover, it can be used for many other projects, emergencies, etc. OCFA will house, operate and maintain the Air Curtain Burner after the grant period is over, and will continue to use it for other fuel reduction projects, and wherever it makes sense to do so. Additionally, OCFA will make it available to other entities who need to use it, either on a good will basis, or as a paid project, depending on the circumstance.

- Reforestation Contribution ($5K) - Because determining appropriate tree species for reforestation is tricky at this time due to the unknown and ever changing information regarding which species are vulnerable to invasive tree pests, OCFA will contribute funds for cactus paddle propagation, which is a safe native alternative.

G2. Are the costs outlined above appropriate for the geography for this project? Sadly, yes. This price tag is the result of long standing inaction by more appropriate entities that could have done something meaningful much sooner. The longer we stand by and watch, the price grows exponentially. OCFA has decided that if nobody else will address this issue, we will to the best of our ability, but it's going to be costly. The costs outlined above for each component are based on real world estimates and quotes, so we have to assume that they are appropriate, based on what is known at this time. Clearly, the most staggering figure is that for tree removal, but that's what the math says. Experts estimate 4000 severely diseased trees x $1000/tree removal = $4 million dollars, and that's just for this point in time in Orange County, but getting rid of these is a necessity to make a difference. Admittedly, the restoration contribution is probably insufficient, but we're trying to first focus on stopping the bleeding.

G3. For what OCFA is able to do geographically and jurisdictionally, the proposed costs are appropriate given our limited reach. The scope of the invasive tree pest problem extends far beyond SRA/SRA-Threat boundaries, and in a perfect world, we could conduct this project throughout Orange County. Consequently, OCFA is doing what's within our power, and will be asking partner agencies to piggy back onto our efforts to expand the geography of the project. Regardless, SRA/SRA-Threat is a key battleground for us to tackle since it's where the larger scale risks are in terms of wildfire, life safety and environmental risks.

G4. The primary indirect costs for this project are manpower hours both from OCFA and from our partner organizations. This will include a team effort of OCFA Pre-Fire Management staff to manage all the components, including the contracts, vendors, partners, scheduling, paperwork, CEQA's, etc. Additional OCFA staff from Finance (for grant paperwork/records and expense tracking/audit trail, etc.), Purchasing (Air Curtain Burner), Risk Management (Air Curtain Burner), Operations Support (tree removal, etc.) and especially Crews and Equipment (for Air Curtain Burner operation and maintenance) will also count towards indirect costs. Other indirect costs will be associated with the Air Curtain Burner, including fuel, transportation costs, peripheral tools and equipment needed, plus training and operational costs, insurance, etc.

G5. At this point, it should be evident why each object category/component outlined is critical for this project's success. This is costly, but doing anything less is probably not worth doing.

H. California Climate Investments

The space provided here is to allow for a narrative description to further explain how the project/activity will reduce Greenhouse Gas emissions.

1. How will the project/activity reduce Greenhouse Gas emissions?
2. Is the project located in a Low-Income or Disadvantaged Community? If not, does the project benefit those communities. Please explain.
3. What are the expected co-benefits of the project/activity (i.e. environmental, public health and safety, and climate resiliency)?
4. When are the Greenhouse Gas emissions and/or co-benefits expected to occur and how will they be maintained?

H. California Climate Investments

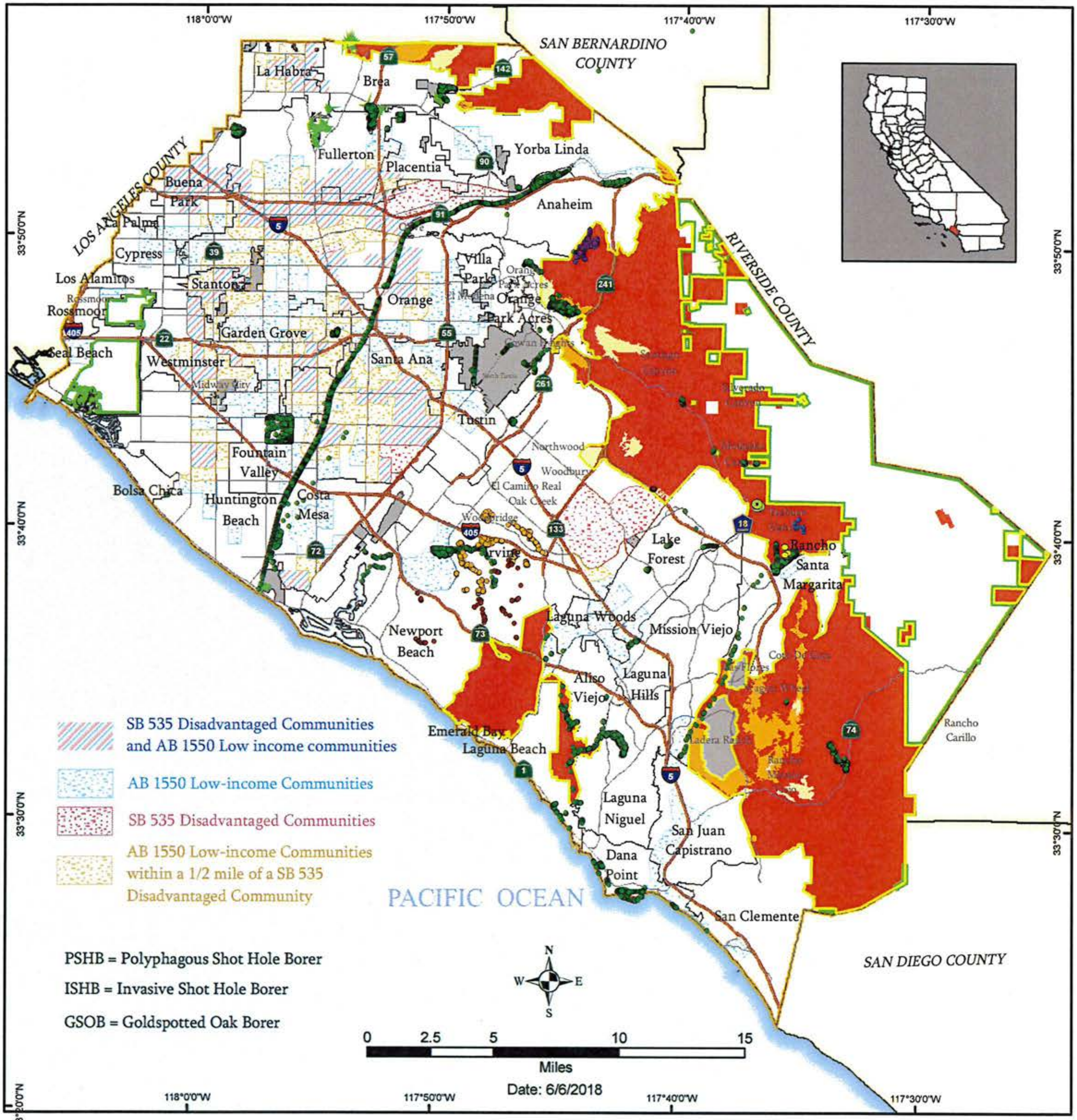
H1. This project will help reduce GHG emissions by: (1) helping to stem tree mortality from invasive tree pest infestations, (2) reducing emissions from more frequent and intense wildfires associated with the tree pests by decreasing fuel loads, and by (3) disposing of the infested trees/biomass in a more environmentally friendly manner.

H2. Judging by the provided map, there are 3 nearby/adjacent communities that may benefit from this project, including a sliver of Yorba Linda (AB1550 Low-Income Communities), a section of Lake Forest (SB 535 Disadvantaged Communities) and Laguna Woods (AB Low Income Communities).

H3. Co-benefits, as previously mentioned, include helping to prevent the spread of invasive tree pest which saves trees. This in turn allows for less GHG emissions, which helps the environment. Also, by reducing the current and potential future fuel loads, it decreases the related wildfire and life-safety risks, and will help improve the environment by limiting GHG emissions linked to more frequent and intense wildfires. Additionally, the Air Curtain Burner will help with the disposal problem for infested wood, by burning it onsite and eliminating the need to transport it to other locations, saving time, the risk of further infestation, and transportation and processing costs.

Attachment 2

ORC - Invasive Tree Pest Mitigation & Fuels Reduction
Orange County Fire Authority - Project # 17-FP-ORC-2058



ORC - Invasive Tree Pest Mitigation & Fuels Reduction
Orange County Fire Authority - Project # 17-FP-ORC-2058

- PolyphagousInfestedTrees
- GSOB - Weir Canyon
- PSHB - Irvine Ranch Conservancy
- ISHB - Ferber Preserve
- ISHB - O'Neill Preserve
- ISHB - OC Parks
- ISHB - Saddle Creek South
- Moderate
- High
- Very High
- FRA
- LRA - Incorporated
- Project Boundary SRA / SRA Threats
- LRA - Unincorporated
- OC Boundary