



ORANGE COUNTY FIRE AUTHORITY AGENDA

Budget and Finance Committee Regular Meeting

Wednesday, January 12, 2022

12:00 Noon

Regional Fire Operations and Training Center

Board Room

1 Fire Authority Road

Irvine, California 92602

Committee Members

Joe Muller, Chair • Tri Ta, Vice-Chair

Ed Sachs • Shelley Hasselbrink • Gene Hernandez

Mark Tettemer • John O'Neill • Anthony Kuo • Troy Bourne

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 Committee members 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 the 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>



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 and identify the need and the requested modification or accommodation. Please notify us as soon as is feasible, however 48 hours prior to the meeting is appreciated to enable the Authority to make reasonable arrangements to assure accessibility to the meeting.

NOTICE REGARDING PUBLIC PARTICIPATION DURING COVID-19 EMERGENCY

The public is permitted to convene in person for this public meeting or view and comment as follows:

- To watch the meeting online, please go to website at www.OCFA.org
- To submit an e-comment, please email to PublicComments@ocfa.org. Your comments will be forwarded electronically and immediately to the members of the Committee.
- To comment Live via Zoom, please [click here for instructions](#).

You may comment on items on the agenda or within the subject jurisdiction of the Committee.

CALL TO ORDER - Chair Muller

PLEDGE OF ALLEGIANCE - Director Hasselbrink

ROLL CALL - Clerk of the Authority

PUBLIC COMMENTS

Please refer to instructions on how to submit a public comment during COVID-19 Emergency on Page 1 of this Agenda.

RECESS TO CLOSED SESSION

The Brown Act permits legislative bodies to discuss certain matters without members of the public present. The Committee find, based on advice from the General Counsel, that discussion in open session of the following matter will prejudice the position of the Authority on item listed below:

CSI. THREAT TO PUBLIC SERVICES OR FACILITIES pursuant to Section 54957(a)

Consultation with Orange County Intelligence Assessment Center (OCIAAC) and presented by Albert Martinez, Director, OCIAAC, Orange County Sheriff's Department

RECONVENE TO OPEN SESSION**CLOSED SESSION REPORT** by General Counsel**1. PRESENTATION**

No items.

2. CONSENT CALENDAR

All matters on the consent calendar are considered routine and are to be approved with one motion unless a director or a member of the public requests separate action on a specific item.

A. Minutes for the Budget and Finance Committee Meetings

Submitted by: Maria Huizar, Clerk of the Authority

The record will reflect that any Director not in attendance at the meeting of the Minutes will be registered as an abstention, unless otherwise indicated.

Recommended Actions:

1. Approve the Minutes for the November 10, 2021, Regular Meeting as submitted.
2. Approve the Minutes for the November 18, 2021, Concurrent Joint Special Meeting as submitted.
3. Approve the Minutes for the December 16, 2021, Concurrent Joint Special Meeting as submitted.

B. Monthly Investment Reports

Submitted by: Robert Cortez, Assistant Chief/Business Services Department, Tricia Jakubiak, Treasurer and James Slobojan, Assistant Treasurer

Recommended Action:

Review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of January 27, 2022, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

C. FY 2021/2022 Mid-Year Financial Report

Submitted by: Robert Cortez, Assistant Chief/Business Services Department, Tricia Jakubiak, Treasurer and Stuart Lam, Budget Manager

Recommended Action:

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors take the following action:

1. Direct staff to return to the Board of Directors on March 24, 2022, for approval of the budget adjustments discussed herein for the FY 2021/22 budget.

D. Annual Grant Priorities for 2022

Submitted by: Robert Cortez, Assistant Chief/Business Services Department and Jay Barkman, Legislative Analyst

Recommended Action:

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors approve OCFA's Annual Grant Priorities for 2022.

E. 2020 Urban Areas Security Initiative Grant Program Agreement to Transfer Property or Funds

Submitted by: Phil Johnson, Assistant Chief/Operations Department and Shane Sherwood, Division Chief

Recommended Action:

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of January 27, 2022, with Budget and Finance Committee's recommendations that the Board of Directors approve the Fiscal Year 2020 Urban Areas Security Initiative Grant Program Agreement and authorize the Fire Chief to execute it and any necessary attachments and agreement(s) to accept and administer the UASI Grant.

3. DISCUSSION CALENDAR**A. 2021 Long Term Liability Study & Accelerated Pension Payment Plan**

Submitted by: Robert Cortez, Assistant Chief/Business Services Department and Tricia Jakubiak, Treasurer/Treasury & Financial Planning

Recommended Actions:

Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Receive and file the report.
2. Direct staff to adjust the FY 2021/22 General Fund budget to increase expenditures and operating transfers out by a combined value of \$4,590,935, the amount identified as the unencumbered fund balance in the FY 2020/21 financial audit, and to allocate 50% or \$2,295,467.50 of the funding to replenish the contingency reserve to 10% of expenditures as required by the OCFA's Financial Stability Policy, and \$2,295,467.50 to the Structural Fire Fund Entitlement Fund as required under the 2010 First Amendment to the Amended Joint Powers Agreement. The specific technical budget adjustment to carry-out this action will be included in the March mid-year budget adjustment agenda item for final approval by the Board.

B. Award of RFP# RO2480a Physical Security/ Security Management Services and Approval of Corresponding Budget Adjustments

Submitted by: Jim Ruane, Assistant Chief/Logistics Department and Patrick Bauer, Property Manager/Logistics Department

Staff recommends Option 1 as stated below.

Recommended Actions:

Review the proposed agenda item and direct staff to place one of the following three options on the agenda for the Board of Directors meeting on January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors approve:

1. Select an option:

Option 1 - Approve and authorize the Purchasing Manager to execute the proposed Security Services Agreement (Attachment 1) for Armed Physical Security and Security Management services with the Orange County Sheriff's Department for a three-year initial term plus two optional one-year renewals in an amount not to exceed \$1,116,556 annually (\$5,582,780 5-year aggregate).

Option 2 – Direct staff to enter into two Security Services Agreements for a blend of Armed and Unarmed Physical Security and Security Management Services in a form approved by legal counsel for a three-year initial term plus two optional one-year renewals as follows: Orange County Sheriff's Department (\$622,220 annually) and Allied Universal Security Services (\$191,420 annually). The combined amount for the two firms is not to exceed \$813,640 annually (\$4,068,200 5-year aggregate).

Option 3 - Direct staff to enter into a Security Services Agreement for Unarmed Physical Security and Security Management services in a form approved by legal counsel with Allied Universal Security Services for a three-year initial term plus two optional one-year renewals in an amount not to exceed \$518,180 annually (\$2,590,900 5-year aggregate).

2. Direct staff to make the recommend budget adjustment, as noted in the fiscal impact section of this report, depending on the option selected.
3. Direct the Purchasing Manager to extend the existing contract with Allied Universal as needed to allow transitioning to the new contract for Physical Security Services.

C. OCFA Aviation Unit Fleet Plan Analysis & Proposed Process for Developing Recommendations Related to Aircraft Replacement

Submitted by: Brian Fennessy, Fire Chief and Vince Carpino, Division Chief/Special Operations

Recommended Actions:

1. Receive and file the Conklin & de Decker Aviation Unit Fleet Plan Analysis.
2. Direct staff to draft a vetting process that could be utilized to educate and inform our policy-makers on needs, options, costs, financing solutions, and ultimately to develop recommendations pertaining to disposition of obsolete aircraft and acquisition of replacement aircraft.
3. Direct staff to return to the Budget and Finance Committee at its February 2022 meeting to further develop a proposed review structure that can ultimately be recommended to the Board of Directors for input and approval, prior to proceeding with deliberations.

REPORTS

No items.

COMMITTEE MEMBER COMMENTS

ADJOURNMENT – The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, February 9, 2022, at 12:00 noon.

AFFIDAVIT OF POSTING

I hereby certify under penalty of perjury and as required by the State of California, Government Code § 54954.2(a), that the foregoing Agenda was posted in the lobby and front gate public display case of the Orange County Fire Authority, Regional Fire Operations and Training Center, 1 Fire Authority Road, Irvine, CA, not less than 72 hours prior to the meeting.

Maria D. Huizar, CMC
Clerk of the Authority

FUTURE B&FC AGENDA ITEMS – THREE-MONTH OUTLOOK:

- Election of Chair & Vice Chair
- Monthly Investment Report
- 2nd Quarter Financial Newsletter
- 2nd Quarterly Purchasing Report
- Mid-Year Budget Adjustments
- Aviation Unit Fleet Plan Analysis & Aircraft Replacement
- Annual Auditor Communications

- | |
|---|
| • Fiscal Year 2020/21 Backfill/Overtime and Calendar Year 2021 Total Earnings/Compensation Report |
|---|

UPCOMING MEETINGS:

Concurrent Joint Special Meeting of the

Board of Directors and all Committees

Executive Committee

Board of Directors

Human Resources Committee

Budget & Finance Committee

Thursday, January 13, 2022, 6 p.m.

Thursday, January 27, 2022, 5:30 p.m.

Thursday, January 27, 2022, 6:00 p.m.

Tuesday, February 1, 2022, 12 noon

Wednesday, February 9, 2022, 12 noon

MINUTES ORANGE COUNTY FIRE AUTHORITY

**Budget and Finance Committee Regular Meeting
Wednesday, November 10, 2021
12:00 Noon**

**Regional Fire Operations and Training Center
Board Room
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 November 10, 2021, at 12:01 p.m. by Vice Chair Ta.

PLEDGE OF ALLEGIANCE

Vice Chair Ta led the assembly in the Pledge of Allegiance to our Flag.

ROLL CALL

Present: Tri Ta, Westminster, Vice Chair*
Gene Hernandez, Yorba Linda*
Anthony Kuo, Irvine*
John O'Neill, Garden Grove*
Ed Sachs, Mission Viejo*
Mark Tettemer, Lake Forest*

Absent: Troy Bourne, San Juan Capistrano
Shelley Hasselbrink, Los Alamitos
Joe Muller, Dana Point, Chair

Staff present were:

Fire Chief Brian Fennessy
Assistant Chief Phil Johnson
Assistant Chief Randy Black
Assistant Chief Stephanie Holloman
Clerk of the Authority Maria Huizar

Assistant Chief Robert Cortez
Deputy Chief Kenny Dossey
Assistant Chief Lori Smith
Ex-Officio Member Jennifer Cervantez
General Counsel David Kendig

**Committee Members participating via teleconferencing.*

PUBLIC COMMENTS

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

1. PRESENTATION

No items.

2. CONSENT CALENDAR

On motion of Director Hernandez and second by Director Sachs, and following a roll call vote, declared passed Agenda Items 2A-2D 5-0 (Directors Bourne, Hasselbrink, Kuo, and Muller absent).

A. Minutes for the October 13, 2021, Regular Budget and Finance Committee Meeting FILE (12.02B2)

Action: Approve as submitted.

B. Monthly Investment Reports (FILE 11.10D2)

Action: Review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of November 18, 2021, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the reports.

C. First Quarter Purchasing Report (FILE 11.10H1)

Action: Review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of, November 18, 2021, with the Budget and Finance Committee's recommendation that the Board of Directors receive and file the report.

D. First Quarter Financial Newsletter (FILE 15.07)

Action: Review the proposed agenda item and direct staff to place the item on the agenda for the Executive Committee meeting of November 18, 2021, with the Budget and Finance Committee's recommendation that the Executive Committee receive and file the report.

E. Awarded Grant OCFA Fuels Reduction Equipment (FILE 16.02E)

Director Tettemer pulled this item for separate consideration.

On motion of Director Tettemer and second by Director O'Neill, and following a roll call vote, declared passed 5-0 (Directors Bourne, Hasselbrink, Kuo, and Muller absent), to: review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of November 18, 2021, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Approve a Budget Adjustment to the FY 2021/22 General Fund (121) budget to increase revenue and expenditures by \$228,429 for the grant program award.
2. Approve and authorize the Board Chair and/or Fire Chief and/or their designee to execute all documents necessary to effectuate the grant award.

3. DISCUSSION CALENDAR

A. Audited Financial Reports for the Fiscal Year Ended June 30, 2021 (FILE 15.06)

Finance Manager Julie Nemes introduced LSL Managing Partner Bryan Gruber, and CPA Ryan Domino, who provided an overview of the audit reporting of the Audited Financial Reports for the Fiscal Year Ended June 30, 2021.

On motion of Director Sachs and second by Director O'Neill, and following a roll call vote, declared passed 5-0 (Directors Bourne, Hasselbrink, Kuo, and Muller absent), to review the proposed agenda item and direct staff to place the item on the agenda for the Board of Directors meeting of November 18, 2021, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Receive and approve the reports.
2. Review the calculations used to determine the fund balance amounts assigned to the capital improvement program and workers' compensation and confirm the calculations' consistency with the OCFA's Assigned Fund Balance Policy.

Director O'Neill left the meeting at 1:04 p.m. Quorum of the Committee lost.

General Counsel Kendig indicated that the Committee could receive the presentation for Agenda Item 3B, but not take any action unless quorum provided.

B. Organizational Service Level Assessment Update (FILE 17.16)

Assistant Chief Robert Cortez presented the Organizational Service Level Assessment Update and introduced Citygate Associates Principal Stewart Gary who provided an overview both of the Business Services Department Service Level Assessment, and Community Risk Reduction Service Level Assessment. Additionally, in attendance were Citygate consultants Sam Mazza, and Andrew Green.

Director Kuo joined the meeting at 1:09 p.m. and quorum regained.

On motion of Director Tettemer, and second by Director Sachs, and following a roll call vote, declared passed 4-0 (Director Kuo abstained, Directors Bourne, Hasselbrink, Muller, and O'Neill absent), to review the proposed agenda items and direct staff to place the items

on the agenda for the Board of Directors meeting of November 18, 2021, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Receive and file the Citygate Organizational Service Level Assessment (SLA) update for Field Deployment, Emergency Medical Services, Emergency Command Center, Fleet Services, and Executive Leadership/Human Resources.
2. Receive and file the Citygate Organizational Service Level Assessment (SLA) results presentation and final reports for the Business Services Department and the Community Risk Reduction Department.

C. Award of RFP# RO2480a Physical Security/ Security Management Services
(FILE 19.07B2)

Staff pulled this item to be heard at the next Budget and Finance Committee meeting in 2022.

D. OCFA Aviation Unit Fleet Plan Analysis & Proposed Process for Developing Recommendations Related to Aircraft Replacement (FILE 18.9)

Fire Chief Brian Fennessy presented the OCFA Aviation Unit Fleet Plan Analysis & Proposed Process for Developing Recommendations Related to Aircraft Replacement.

Director Tettemer left the meeting at 1:15 p.m. Quorum of the Committee lost.

General Counsel Kendig noted that without a quorum, the Committee members could continue to discuss the item, but not take any action.

Committee Members provided input to develop a review structure for discussion on this item at a future date.

REPORTS

No Items.

COMMITTEE MEMBER COMMENTS

The Committee Members offered no comments.

ADJOURNMENT – Vice Chair Ta adjourned the meeting at 1:15 p.m. The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, January 12, 2022, at 12:00 noon.

Maria D. Huizar, CMC
Clerk of the Authority

MINUTES ORANGE COUNTY FIRE AUTHORITY

**Budget and Finance Committee
Concurrent Joint Special Meeting
Thursday, November 18, 2021
7:21 p.m.**

**Regional Fire Operations and Training Center
Board Room
1 Fire Authority Road
Irvine, CA 92602**

CALL TO ORDER

A Concurrent Joint Special Meeting of the Orange County Fire Authority Board of Directors, Executive Committee, Budget and Finance Committee, and the Human Resources Committee was called to order on November 18, 2021, at 7:21 p.m. by Board of Directors Chair Shawver.

ROLL CALL

Present: Joe Muller, Dana Point, Chair*
Tri Ta, Westminster, Vice Chair*
Gene Hernandez, Yorba Linda*
Shelley Hasselbrink, Los Alamitos*
Anthony Kuo, Irvine*
John O'Neill, Garden Grove*
Mark Tettemer, Lake Forest*

Absent: Troy Bourne, San Juan Capistrano
Ed Sachs, Mission Viejo

Staff present were:

Fire Chief Brian Fennessy
Assistant Chief Phil Johnson
Assistant Chief Randy Black
Assistant Chief Jim Ruane
Assistant Chief Stephanie Holloman
General Counsel David Kendig

Deputy Chief Lori Zeller
Deputy Chief Kenny Dossey
Assistant Chief Lori Smith
Assistant Chief Robert Cortez
Clerk of the Authority Maria Huizar

**Committee Members participating via teleconferencing.*

1. PRESENTATION

None.

2. CONSENT CALENDAR

None.

3. DISCUSSION CALENDAR

A. Findings Required by AB 361 for the Continued Use of Teleconferencing for Meetings of the Budget and Finance Committee (FILE 11.03)

General Counsel David Kendig presented the Findings Required by AB 361 for the Continued Use of Teleconferencing for Meetings of the Budget and Finance Committee.

On motion of Director Kuo and second by Director Muller, and following a roll call vote, declared passed 6-1 (Director Tetteimer opposed, Director Bourne and Director Sachs absent) to make the following findings by majority vote of the Committee:

- a. A state of emergency has been proclaimed by California's Governor due to the COVID-19 pandemic and continues in effect; and
- b. The Committee has reconsidered the circumstances of the state of emergency; and
- c. State and local officials continue to recommend measures to promote social distancing to slow the spread of COVID-19.

REPORTS

No Items.

COMMITTEE MEMBER COMMENTS

None.

ADJOURNMENT – Chair Shawver adjourned the Concurrent Joint Special Meeting at 7:34 p.m. The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, January 12, 2022, at 12:00 noon.

Maria D. Huizar, CMC
Clerk of the Authority

MINUTES ORANGE COUNTY FIRE AUTHORITY

**Budget and Finance Committee
Concurrent Joint Special Meeting
Thursday, December 16, 2021
6:00 p.m.**

**Regional Fire Operations and Training Center
Board Room
1 Fire Authority Road
Irvine, CA 92602**

CALL TO ORDER

A Concurrent Joint Special Meeting of the Orange County Fire Authority Board of Directors, Executive Committee, Budget and Finance Committee, and the Human Resources Committee was called to order on December 16, 2021, at 6:02 p.m. by Board of Directors Chair Shawver.

ROLL CALL

Present: Tri Ta, Westminster, Vice Chair*
Troy Bourne, San Juan Capistrano*
Gene Hernandez, Yorba Linda*
Anthony Kuo, Irvine*
Ed Sachs, Mission Viejo*

Absent: Shelley Hasselbrink, Los Alamitos
Joe Mueller, Dana Point
John O'Neill, Garden Grove
Mark Tettermer, Lake Forest

Staff present were:

Fire Chief Brian Fennessy
Assistant Chief Robert Cortez
Clerk of the Authority Maria Huizar
General Counsel David Kendig

1. PRESENTATION

None.

2. CONSENT CALENDAR

None.

**Committee Members participating via teleconferencing.*

3. DISCUSSION CALENDAR

A. Findings Required by AB 361 for the Continued Use of Teleconferencing for Meetings of the Budget and Finance Committee (FILE 11.03)

General Counsel David Kendig presented the Findings Required by AB 361 for the Continued Use of Teleconferencing for Meetings of the Budget and Finance Committee.

On motion of Director Hernandez and second by Director Kuo, and following a roll call vote, declared passed 5-0 (Directors Hasselbrink, Muller, O'Neill, and Tetteimer absent) to make the following findings by majority vote of the Committee:

- a. A state of emergency has been proclaimed by California's Governor due to the COVID-19 pandemic and continues in effect; and
- b. The Committee has reconsidered the circumstances of the state of emergency; and
- c. State and local officials continue to recommend measures to promote social distancing to slow the spread of COVID-19.

REPORTS

No Items.

COMMITTEE MEMBER COMMENTS

None.

ADJOURNMENT – Chair Shawver adjourned the Concurrent Joint Special Meeting at 6:18 p.m. The next regular meeting of the Budget and Finance Committee is scheduled for Wednesday, January 12, 2022, at 12:00 noon.

Maria D. Huizar, CMC
Clerk of the Authority



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 2B
Consent Calendar

Monthly Investment Reports

Contact(s) for Further Information

Robert Cortez, Assistant Chief
Business Services Department

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Tricia Jakubiak, Treasurer
Treasury & Financial Planning

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714.573.6301

James Slobojan, Assistant Treasurer
Treasury & Financial Planning

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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 January 27, 2022, 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

Since the Committee did not meet in December, attached are the final monthly investment reports for the months ending October 31 and November 30, 2021. A preliminary investment report as of December 17, 2021, is also provided as the most complete report that was available at the time this agenda item was prepared.

Attachment(s)

Final Investment Report – October 2021/Preliminary Report – November 2021

Final Investment Report – November 2021/Preliminary Report – December 2021

Orange County Fire Authority Monthly Investment Report



Final Report – October 2021

Preliminary Report – November 2021



Monthly Investment Report Table of Contents

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Orange County Fire Authority

Final Investment Report

October 31, 2021



EXECUTIVE SUMMARY

Portfolio Activity & Earnings

During the month of October 2021, the size of the portfolio decreased by approximately \$39.8 million to \$111.7 million. Receipts for the month totaled \$8.9 million with noteworthy items of cash contract payments totaling \$5.9 million, County of Orange apportionment payments totaling \$925,000, various grant reimbursement payments and other charges for current services totaling \$2 million. Total October cash outflows amounted to approximately \$48.5 million. Significant disbursements for the month included three biweekly payrolls (instead of the typical two) and related benefits totaling approximately \$39.6 million. The portfolio's balance is expected to increase in November with the receipt of the property tax apportionment.

In October, the portfolio's yield to maturity (365-day equivalent) moved upward by 7 basis points to 0.48%. The effective rate of return increased by 3 basis points to 0.41% for the month, and the average maturity of the portfolio increased by 8 days to 34 days to maturity.

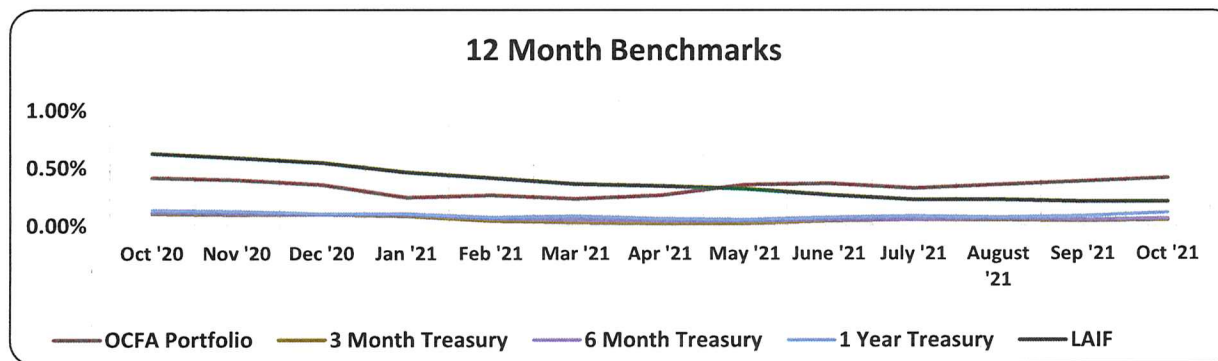
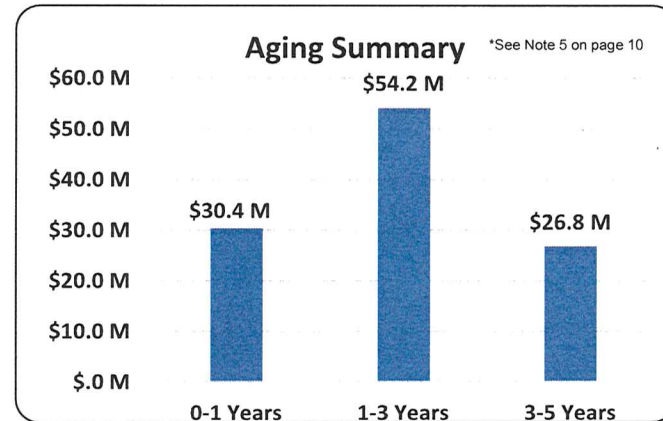
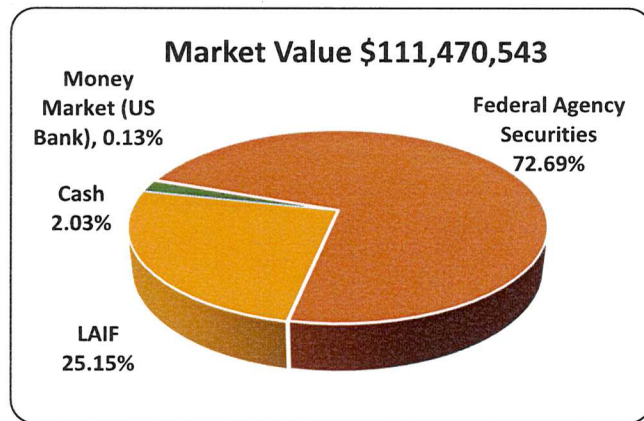
Economic News

In October 2021, the non-farm payroll employment rose by 531,000, the number of unemployed persons continued to trend down to 7.4 million and the unemployment rate declined by 0.2 percentage points to 4.6 percent. These measures remain above pre-pandemic levels from February 2020 when 5.7 million were unemployed and the unemployment rate was 3.5 percent. Consumer confidence did rebound in October after three straight declines, with the index rising to 113.8, up from 109.8 in September as anxiety about the Covid-19 Delta variant appears to have subsided. In October, retail sales rose 1.7% from the previous month and increased 16.3% from October 2020.

Producer prices (the prices companies pay for goods & services) increased 0.6% in October, and final demand prices rose 8.6% for the 12 months ended in October. Consumer prices increased in October with the CPI rising 0.9% from September and 6.2% over the last 12 months, representing the largest increase since December 1990. Core inflation (excluding food & energy) increased 4.6%, the fastest gain since August 1991. The economy continues its delicate balance as household debt passed \$15 trillion in the third quarter. Rising prices pushed up debt balances for housing and autos with the median home price up 19.9% for the quarter to \$404,700. Student loans increased slightly as students returned to school. Credit card balances bumped upward, reversing a pandemic-era trend of consumers paying down revolving debt. Minutes of the November Federal Reserve meeting indicate the tapering of asset purchases will begin in November. On a monthly basis there will be a \$10 billion reduction in the purchase of Treasuries and \$5 billion less in mortgage-backed securities. The Fed chairman stated that he expects conditions pushing inflation to last well into next year. Meanwhile, the House passed a nearly \$1 trillion infrastructure bill, now awaiting the President's signature.



OCFA'S PORTFOLIO IS EXCEEDING BOTH THE LAIF AND TREASURY BENCHMARKS AS OF OCTOBER 31, 2021



**BENCHMARK COMPARISON AS OF OCTOBER 31, 2021**

3 Month T-Bill: 0.05%

1 Year T-Bill: 0.11%

6 Month T-Bill: 0.06%

LAIF: 0.203%

OCFA Portfolio: 0.41%

PORTFOLIO SIZE, YIELD, & DURATION

	<u>Current Month</u>	<u>Prior Month</u>	<u>Prior Year</u>
<i>Book Value</i>	\$111,700,346	\$151,523,141	\$109,720,511
<i>Yield to Maturity (365 day)</i>	0.48%	0.41%	0.48%
<i>Effective Rate of Return</i>	0.41%	0.38%	0.41%
<i>Days to Maturity</i>	34	26	7



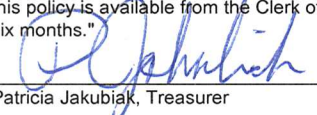
ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Summary
October 31, 2021

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

	See Note 1 on page 10	See Note 2 on page 10						
Investments	Par Value	Market Value	Book Value	% of Portfolio	Term	Days to Mat./Call	YTM/Call 360 Equiv.	YTM/Call 365 Equiv.
Money Mkt Mutual Funds/Cash	148,729.65	148,729.65	148,729.65	0.14	1	1	0.010	0.010
Federal Agency Coupon Securities	81,450,000.00	81,027,156.05	81,452,443.10	74.29	1,318	46	0.567	0.575
Local Agency Investment Funds	28,036,116.47	28,032,574.42	28,036,116.47	25.57	1	1	0.200	0.203
Investments	109,634,846.12	109,208,460.12	109,637,289.22	100.00%	980	34	0.472	0.479
Cash								
Passbook/Checking (not included in yield calculations)	2,262,082.99	2,262,082.99	2,262,082.99		1	1	0.000	0.000
Total Cash and Investments	111,896,929.11	111,470,543.11	111,899,372.21		980	34	0.472	0.479

Total Earnings	October 31	Month Ending	Fiscal Year To Date
Current Year		43,744.60	194,665.01
Average Daily Balance		126,865,829.26	156,835,350.32
Effective Rate of Return		0.41%	0.37%

"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, 2021. 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."

 11/5/21
 Patricia Jakubiak, Treasurer

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above)	\$ 111,899,372.21
GASB 31 Adjustment to Books (See Note 3 on page 10)	\$ (199,026.23)
Total	\$ 111,700,345.98

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Investments
October 31, 2021

See Note 1 on page 10

See Note 2 on page 10

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365	Days to Mat./Call	Maturity Date
Money Mkt Mutual Funds/Cash											
SYS1042	1042	First American Treasury Oblig		09/22/2021	148,729.65	148,729.65	148,729.65	0.010	0.010	1	
SYS528	528	Federated Treasury Obligations		07/01/2021	0.00	0.00	0.00	0.010	0.010	1	
Subtotal and Average			6,296,807.98		148,729.65	148,729.65	148,729.65		0.010	1	
Federal Agency Coupon Securities											
3133EMLE0	1020	Federal Farm Credit Bank (Continuous Call)		12/23/2020	14,000,000.00	13,954,780.00	14,000,000.00	0.190	0.190	0	09/22/2023
3133EMWH1	1030	Federal Farm Credit Bank (Callable 4/21/2022)		04/22/2021	3,000,000.00	2,976,600.00	3,002,443.10	0.710	0.710	171	04/21/2025
3133EMXS6	1032	Federal Farm Credit Bank (Continuous Call)		04/28/2021	12,000,000.00	11,930,760.00	12,000,000.00	0.720	0.720	0	04/28/2025
3130ALNY6	1025	Fed Home Loan Bank (Callable 12/31/2021)		03/30/2021	8,000,000.00	7,964,880.00	8,000,000.00	0.550	0.550	60	09/30/2024
3130ALTJ3	1029	Fed Home Loan Bank (Callable 1/8/2022)		04/22/2021	9,435,000.00	9,396,127.80	9,435,000.00	0.375	0.375	68	04/08/2024
3130ALVR2	1031	Fed Home Loan Bank (Callable 1/23/2022)		04/23/2021	11,015,000.00	10,954,968.25	11,015,000.00	0.520	0.520	83	10/23/2024
3130AM6P2	1034	Fed Home Loan Bank (Callable 1/29/2022)		04/29/2021	12,000,000.00	11,910,960.00	12,000,000.00	1.000	1.000	89	04/29/2026
3130AM6H0	1035	Fed Home Loan Bank (Callable 5/11/2022)		05/11/2021	12,000,000.00	11,938,080.00	12,000,000.00	0.550	0.641	10	10/11/2024
Subtotal and Average			81,452,470.53		81,450,000.00	81,027,156.05	81,452,443.10		0.575	46	
Federal Agency Disc. -Amortizing											
Subtotal and Average			6,580,615.92								
Local Agency Investment Funds											
SYS336	336	Local Agency Invstmt Fund			28,036,116.47	28,032,574.42	28,036,116.47	0.203	0.203	1	
Subtotal and Average			32,535,934.84		28,036,116.47	28,032,574.42	28,036,116.47		0.203	1	
Total and Average			126,865,829.26		109,634,846.12	109,208,460.12	109,637,289.22		0.479	34	

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Cash
October 31, 2021

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365	Days to Mat./Call
Money Mkt Mutual Funds/Cash										
SYS10033	10033	Revolving Fund		07/01/2021	20,000.00	20,000.00	20,000.00		0.000	1
SYS4	4	Union Bank		07/01/2021	2,242,082.99	2,242,082.99	2,242,082.99		0.000	1
		Average Balance	0.00							1
Total Cash and Investments			126,865,829.26		111,896,929.11	111,470,543.11	111,899,372.21		0.479	34

Orange County Fire Authority
In Service of Others!



ORANGE COUNTY FIRE AUTHORITY
Aging Report
By Maturity Date
As of November 1, 2021

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

See Note 5 on page 10

				Maturity Par Value	Percent of Portfolio	Current Book Value	Current Market Value
Aging Interval: 0 days	(11/01/2021 - 11/01/2021)	5 Maturities	0 Payments	30,446,929.11	27.31%	30,446,929.11	30,443,387.06
Aging Interval: 1 - 30 days	(11/02/2021 - 12/01/2021)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 31 - 60 days	(12/02/2021 - 12/31/2021)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 61 - 90 days	(01/01/2022 - 01/30/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 91 - 120 days	(01/31/2022 - 03/01/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 121 - 365 days	(03/02/2022 - 11/01/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 366 - 1095 days	(11/02/2022 - 10/31/2024)	5 Maturities	0 Payments	54,450,000.00	48.63%	54,450,000.00	54,208,836.05
Aging Interval: 1096 days and after	(11/01/2024 -)	3 Maturities	0 Payments	27,000,000.00	24.06%	27,002,443.10	26,818,320.00
Total for		13 Investments	0 Payments		100.00	111,899,372.21	111,470,543.11



NOTES TO PORTFOLIO MANAGEMENT REPORT

- Note 1: Market value of the LAIF investment is calculated using a fair value factor provided by LAIF. The U.S. Bank Corporate Trust and Custody 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, 2021 includes an increase of \$6,222.75 to the LAIF investment and a decrease of (\$205,248.98) 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.
- Note 5: Section 15.3.1 of the Investment Policy requires at least 50% of the portfolio to be invested to a period of one year or less. Due to several large expenditures in October, funds were withdrawn from LAIF resulting in the portfolio dropping below the 50% threshold. The diversification requirement is anticipated to be resolved in December, 2021 with the receipt of our property tax apportionment and the investment of these funds into LAIF.



Local Agency Investment Fund (LAIF)

As of October 31, 2021, OCFA has \$28,036,116 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 September 30, 2021 is .999873661. When applied to OCFA's LAIF investment, the fair value is \$28,032,574 or \$3,542 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 October 31, 2021 is included on the following page.



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



Orange County Fire Authority

Preliminary Investment Report

November 19, 2021



ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Summary
November 19, 2021

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

	Par Value	See Note 1 on page 19 Market Value	See Note 2 on page 19 Book Value	% of Portfolio	Term	Days to Mat./Call	YTM/Call 360 Equiv.	YTM/Call 365 Equiv.
Investments								
Money Mkt Mutual Funds/Cash	181,730.07	181,730.07	181,730.07	0.16	1	1	0.010	0.010
Federal Agency Coupon Securities	81,450,000.00	80,780,723.05	81,452,405.97	69.81	1,318	347	0.553	0.561
Local Agency Investment Funds	35,036,116.47	35,031,690.04	35,036,116.47	30.03	1	1	0.200	0.203
Investments	116,667,846.54	115,994,143.16	116,670,252.51	100.00%	921	242	0.446	0.453

Cash								
Passbook/Checking (not included in yield calculations)	5,632,968.07	5,632,968.07	5,632,968.07		1	1	0.000	0.000
Total Cash and Investments	122,300,814.61	121,627,111.23	122,303,220.58		921	242	0.446	0.453

Total Earnings	November 19 Month Ending	Fiscal Year To Date
Current Year	27,293.89	221,958.90
Average Daily Balance	118,368,907.81	151,688,431.95
Effective Rate of Return	0.44%	0.38%

"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, 2021. A copy of this policy is available from the Clerk of the Authority. Sufficient investment liquidity and anticipated revenues are available to meet budgeted expenditure requirements for the next thirty days and the next six months."

Patricia Jakubiak, Treasurer

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above)	\$ 122,303,220.58
GASB 31 Adjustment to Books (See Note 3 on page 19)	\$ (199,026.23)
Total	\$ 122,104,194.35

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Investments
November 19, 2021

See Note 1 on page 19

See Note 2 on page 19

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365	Days to Mat./Call	Maturity Date
Money Mkt Mutual Funds/Cash											
SYS1042	1042	First American Treasury Oblig		09/22/2021	181,730.07	181,730.07	181,730.07	0.010	0.010	1	
SYS528	528	Federated Treasury Obligations		07/01/2021	0.00	0.00	0.00	0.010	0.010	1	
Subtotal and Average			6,511,946.73		181,730.07	181,730.07	181,730.07		0.010	1	
Federal Agency Coupon Securities											
3133EMLE0	1020	Federal Farm Credit Bank (Continuous Call)		12/23/2020	14,000,000.00	13,948,340.00	14,000,000.00	0.190	0.190	671	09/22/2023
3133EMWH1	1030	Federal Farm Credit Bank (Callable 4/21/2022)		04/22/2021	3,000,000.00	2,965,260.00	3,002,405.97	0.710	0.710	152	04/21/2025
3133EMXS6	1032	Federal Farm Credit Bank (Continuous Call)		04/28/2021	12,000,000.00	11,863,800.00	12,000,000.00	0.720	0.720	1,255	04/28/2025
3130ALNY6	1025	Fed Home Loan Bank (Callable 12/31/2021)		03/30/2021	8,000,000.00	7,931,680.00	8,000,000.00	0.550	0.550	41	09/30/2024
3130ALTJ3	1029	Fed Home Loan Bank (Callable 1/8/2022)		04/22/2021	9,435,000.00	9,387,825.00	9,435,000.00	0.375	0.375	49	04/08/2024
3130ALVR2	1031	Fed Home Loan Bank (Callable 1/23/2022)		04/23/2021	11,015,000.00	10,903,418.05	11,015,000.00	0.520	0.520	64	10/23/2024
3130AM6P2	1034	Fed Home Loan Bank (Callable 1/29/2022)		04/29/2021	12,000,000.00	11,890,680.00	12,000,000.00	1.000	1.000	70	04/29/2026
3130AM6H0	1035	Fed Home Loan Bank (Callable 5/11/2022)		05/11/2021	12,000,000.00	11,889,720.00	12,000,000.00	0.550	0.550	83	10/11/2024
Subtotal and Average			81,452,423.56		81,450,000.00	80,780,723.05	81,452,405.97		0.561	347	
Local Agency Investment Funds											
SYS336	336	Local Agency Invstmt Fund			35,036,116.47	35,031,690.04	35,036,116.47	0.203	0.203	1	
Subtotal and Average			30,404,537.52		35,036,116.47	35,031,690.04	35,036,116.47		0.203	1	
Total and Average			118,368,907.81		116,667,846.54	115,994,143.16	116,670,252.51		0.453	242	

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Cash
November 19, 2021

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365 Mat./Call	Days to Mat./Call
Money Mkt Mutual Funds/Cash										
SYS10033	10033	Revolving Fund		07/01/2021	20,000.00	20,000.00	20,000.00		0.000	1
SYS4	4	Union Bank		07/01/2021	5,612,968.07	5,612,968.07	5,612,968.07		0.000	1
		Average Balance	0.00							1
		Total Cash and Investments	118,368,907.81		122,300,814.61	121,627,111.23	122,303,220.58		0.453	242

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ORANGE COUNTY FIRE AUTHORITY
Aging Report
By Maturity Date
As of November 22, 2021

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

See Note 5 on page 19

				Maturity Par Value	Percent of Portfolio	Current Book Value	Current Market Value
Aging Interval: 0 days	(11/22/2021 - 11/22/2021)	5 Maturities	0 Payments	41,134,557.66	33.74%	41,134,557.66	41,130,131.23
Aging Interval: 1 - 30 days	(11/23/2021 - 12/22/2021)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 31 - 60 days	(12/23/2021 - 01/21/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 61 - 90 days	(01/22/2022 - 02/20/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 91 - 120 days	(02/21/2022 - 03/22/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 121 - 365 days	(03/23/2022 - 11/22/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval: 366 - 1095 days	(11/23/2022 - 11/21/2024)	5 Maturities	0 Payments	54,450,000.00	44.34%	54,450,000.00	54,060,983.05
Aging Interval: 1096 days and after	(11/22/2024 -)	3 Maturities	0 Payments	27,000,000.00	21.92%	27,002,402.06	26,719,740.00
Total for		13 Investments	0 Payments		100.00	122,586,959.72	121,910,854.28



NOTES TO PORTFOLIO MANAGEMENT REPORT

- Note 1: Market value of the LAIF investment is calculated using a fair value factor provided by LAIF. The U.S. Bank Corporate Trust and Custody 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, 2021 includes an increase of \$6,222.75 to the LAIF investment and a decrease of (\$205,248.98) 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.
- Note 5: Section 15.3.1 of the Investment Policy requires at least 50% of the portfolio to be invested to a period of one year or less. Due to several large expenditures in October and November, funds were withdrawn from LAIF resulting in the portfolio dropping below the 50% threshold. The diversification requirement is anticipated to be resolved in December, 2021 with the receipt of our property tax apportionment funds and the investment of these funds into LAIF.

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 institutions 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 \$75 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 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.

ECONOMIC TERMS

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

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

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

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

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

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

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

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

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

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

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

Orange County Fire Authority Monthly Investment Report



Final Report – November 2021

Preliminary Report – December 2021



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Orange County Fire Authority

Final Investment Report

November 30, 2021



EXECUTIVE SUMMARY

Portfolio Activity & Earnings

During the month of November 2021, the size of the portfolio increased by approximately \$19.8 million to \$131.5 million. Receipts for the month totaled \$59 million with noteworthy items of County of Orange apportionment payments totaling \$50.7 million, cash contract payments totaling \$5.9 million, various grant reimbursement payments and other charges for current services totaling \$2.4 million. Total November cash outflows amounted to approximately \$39.7 million. Significant disbursements for the month included two biweekly payrolls and related benefits totaling approximately \$32.1 million. The portfolio's balance is expected to increase in December with the receipt of the property tax apportionment.

In November, the portfolio's yield to maturity (365-day equivalent) moved downward by 4 basis points to 0.44%. The effective rate of return increased by 2 basis points to 0.43% for the month, and the average maturity of the portfolio decreased by one day to 33 days to maturity.

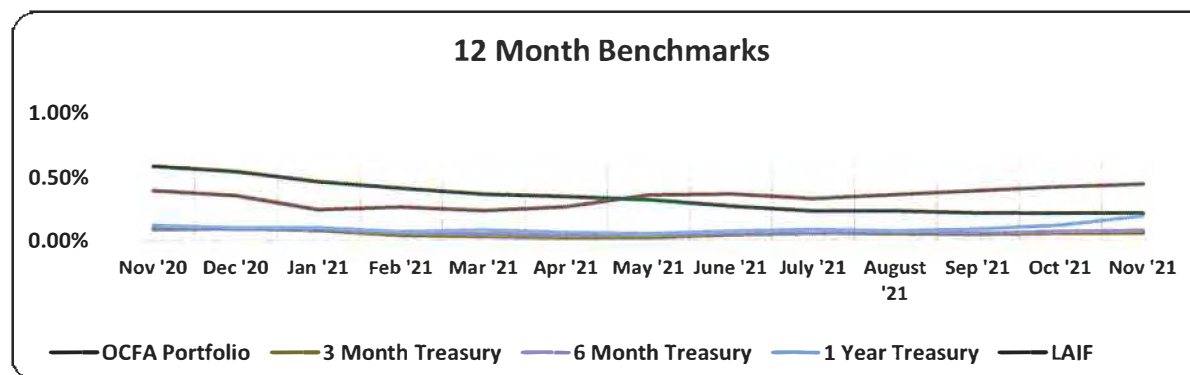
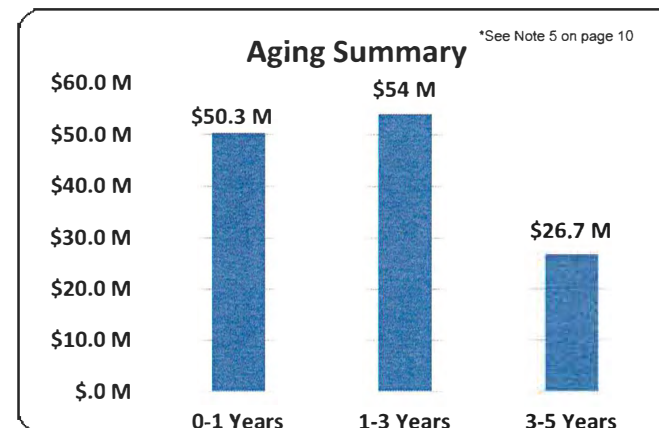
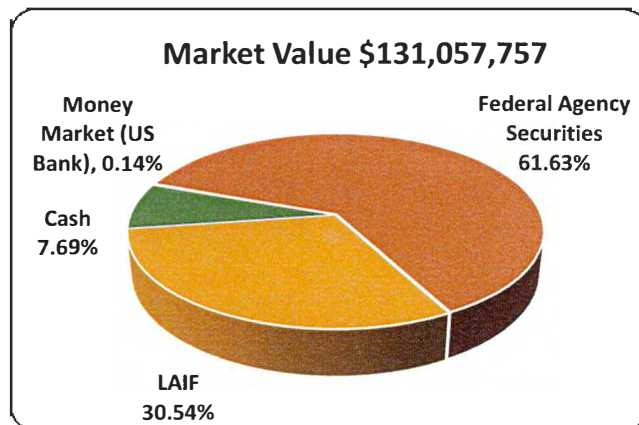
Economic News

In November 2021, the unemployment rate fell by 0.4% to 4.2%. Total non-farm payroll employment rose by 210,000 and the number of unemployed persons fell by 542,000 to 6.9 million. U.S. Consumer confidence dropped to a nine-month low in November amid worries about the rising cost of living and pandemic fatigue, however expectations of strong economic growth this quarter remain unchanged. In November, retail sales rose modestly by 0.3% from the previous month and increased 18.2% from November 2020.

Producer prices (the prices companies pay for goods and services) increased 0.8% in November, and final demand prices rose 9.6% for the 12 months ended in November. Consumer prices increased 0.8% in November and 6.8% over the last 12 months, representing the largest 12 month increase since June 1982. Core inflation (excluding food and energy) increased 0.5% for the month and 4.9% from a year ago. The December 15th Federal Reserve meeting released a statement that a majority of FOMC members expect at least three rate increases in 2022. This is up from the September forecast where half of the FOMC members saw at least one rate increase. The Fed also raised its inflation expectation for 2022 and 2023 and noted that supply chain disruptions have been larger and lasted longer than expected, and that price gains will likely continue into next year.



OCFA'S PORTFOLIO IS EXCEEDING BOTH THE LAIF AND TREASURY BENCHMARKS AS OF NOVEMBER 30, 2021



**BENCHMARK COMPARISON AS OF NOVEMBER 30, 2021**

3 Month T-Bill: 0.05%

1 Year T-Bill: 0.18%

6 Month T-Bill: 0.07%

LAIF: 0.203%

OCFA Portfolio: 0.43%

PORTFOLIO SIZE, YIELD, & DURATION

	<u>Current Month</u>	<u>Prior Month</u>	<u>Prior Year</u>
Book Value	131,549,837	\$111,700,346	\$128,829,246
Yield to Maturity (365 day)	0.44%	0.48%	0.38%
Effective Rate of Return	0.43%	0.41%	0.39%
Days to Maturity	33	34	14



ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Summary
November 30, 2021

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

	See Note 1 on page 10	See Note 2 on page 10						
Investments	Par Value	Market Value	Book Value	% of Portfolio	Term	Days to Mat./Call	YTM/Call 360 Equiv.	YTM/Call 365 Equiv.
Money Mkt Mutual Funds/Cash	181,438.40	181,438.40	181,438.40	0.15	1	1	0.010	0.010
Federal Agency Coupon Securities	81,450,000.00	80,766,336.75	81,452,384.47	66.95	1,318	49	0.553	0.561
Local Agency Investment Funds	40,036,116.47	40,031,058.35	40,036,116.47	32.91	1	1	0.200	0.203
Investments	121,667,554.87	120,978,833.50	121,669,939.34	100.00%	883	33	0.436	0.442
Cash								
Passbook/Checking (not included in yield calculations)	10,078,924.42	10,078,924.42	10,078,924.42		1	1	0.000	0.000
Total Cash and Investments	131,746,479.29	131,057,757.92	131,748,863.76		883	33	0.436	0.442

Total Earnings	November 30 Month Ending	Fiscal Year To Date
Current Year	43,573.69	238,238.70
Average Daily Balance	123,048,137.43	150,210,406.62
Effective Rate of Return	0.43%	0.38%

"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, 2021. A copy of this policy is available from the Clerk of the Authority. Sufficient investment liquidity and anticipated revenues are available to meet budgeted expenditure requirements for the next thirty days and the next six months."

Patricia Jakuplak, Treasurer

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above)	\$ 131,748,863.76
GASB 31 Adjustment to Books (See Note 3 on page 10)	\$ (199,026.23)
Total	\$ 131,549,837.53

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Investments
November 30, 2021

See Note 1 on page 10

See Note 2 on page 10

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365	Days to Mat./Call	Maturity Date
Money Mkt Mutual Funds/Cash											
SYS1042	1042	First American Treasury Oblig		09/22/2021	181,438.40	181,438.40	181,438.40	0.010	0.010	1	
SYS528	528	Federated Treasury Obligations		07/01/2021	0.00	0.00	0.00	0.010	0.010	1	
Subtotal and Average			8,326,274.82		181,438.40	181,438.40	181,438.40		0.010	1	
Federal Agency Coupon Securities											
3133EMLE0	1020	Federal Farm Credit Bank (Continuous Call)		12/23/2020	14,000,000.00	13,945,960.00	14,000,000.00	0.190	0.190	31	09/22/2023
3133EMWH1	1030	Federal Farm Credit Bank (Callable 4/21/2022)		04/22/2021	3,000,000.00	2,956,410.00	3,002,384.47	0.710	0.710	141	04/21/2025
3133EMXS6	1032	Federal Farm Credit Bank (Continuous Call)		04/28/2021	12,000,000.00	11,863,680.00	12,000,000.00	0.720	0.720	31	04/28/2025
3130ALNY6	1025	Fed Home Loan Bank (Callable 12/31/2021)		03/30/2021	8,000,000.00	7,931,040.00	8,000,000.00	0.550	0.550	30	09/30/2024
3130ALTJ3	1029	Fed Home Loan Bank (Callable 1/8/2022)		04/22/2021	9,435,000.00	9,385,749.30	9,435,000.00	0.375	0.375	38	04/08/2024
3130ALVR2	1031	Fed Home Loan Bank (Callable 1/23/2022)		04/23/2021	11,015,000.00	10,902,977.45	11,015,000.00	0.520	0.520	53	10/23/2024
3130AM6P2	1034	Fed Home Loan Bank (Callable 1/29/2022)		04/29/2021	12,000,000.00	11,891,880.00	12,000,000.00	1.000	1.000	59	04/29/2026
3130AM6H0	1035	Fed Home Loan Bank (Callable 5/11/2022)		05/11/2021	12,000,000.00	11,888,640.00	12,000,000.00	0.550	0.550	72	10/11/2024
Subtotal and Average			81,452,412.81		81,450,000.00	80,766,336.75	81,452,384.47		0.561	49	
Local Agency Investment Funds											
SYS336	336	Local Agency Invstmt Fund			40,036,116.47	40,031,058.35	40,036,116.47	0.203	0.203	1	
Subtotal and Average			33,269,449.80		40,036,116.47	40,031,058.35	40,036,116.47		0.203	1	
Total and Average			123,048,137.43		121,667,554.87	120,978,833.50	121,669,939.34		0.442	33	

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Cash
November 30, 2021

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/C 365	Days to Mat./Call
Money Mkt Mutual Funds/Cash										
SYS10033	10033	Revolving Fund		07/01/2021	20,000.00	20,000.00	20,000.00		0.000	1
SYS4	4	Union Bank		07/01/2021	10,058,924.42	10,058,924.42	10,058,924.42		0.000	1
		Average Balance	0.00							1
Total Cash and Investments			123,048,137.43		131,746,479.29	131,057,757.92	131,748,863.76		0.442	33

Orange County Fire Authority
In Service of Others!



ORANGE COUNTY FIRE AUTHORITY
Aging Report
By Maturity Date
As of December 1, 2021

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

See Note 5 on page 10

					Maturity Par Value	Percent of Portfolio	Current Book Value	Current Market Value
Aging Interval:	0 days	(12/01/2021 - 12/01/2021)	5 Maturities	0 Payments	50,296,479.29	38.37%	50,296,479.29	50,291,421.17
Aging Interval:	1 - 30 days	(12/02/2021 - 12/31/2021)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	31 - 60 days	(01/01/2022 - 01/30/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	61 - 90 days	(01/31/2022 - 03/01/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	91 - 120 days	(03/02/2022 - 03/31/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	121 - 365 days	(04/01/2022 - 12/01/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	366 - 1095 days	(12/02/2022 - 11/30/2024)	5 Maturities	0 Payments	54,450,000.00	41.24%	54,450,000.00	54,054,366.75
Aging Interval:	1096 days and after	(12/01/2024 -)	3 Maturities	0 Payments	27,000,000.00	20.38%	27,002,384.47	26,711,970.00
Total for			13 Investments	0 Payments		100.00	131,748,863.76	131,057,757.92



NOTES TO PORTFOLIO MANAGEMENT REPORT

- Note 1: Market value of the LAIF investment is calculated using a fair value factor provided by LAIF. The U.S. Bank Corporate Trust and Custody 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, 2021 includes an increase of \$6,222.75 to the LAIF investment and a decrease of (\$205,248.98) 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.
- Note 5: Section 15.3.1 of the Investment Policy requires at least 50% of the portfolio to be invested to a period of one year or less. Due to several large expenditures in October and November, funds were withdrawn from LAIF resulting in the portfolio dropping below the 50% threshold. The diversification requirement reached 51.23% and was resolved on December 23, 2021 with the receipt of property tax apportionments and the investment of these funds in LAIF.



Local Agency Investment Fund (LAIF)

As of November 30, 2021, OCFA has \$40,036,116 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 September 30, 2021 is .999873661. When applied to OCFA's LAIF investment, the fair value is \$40,031,058 or \$5,058 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 November 30, 2021 is included on the following page.



Fair Value Including Accrued Interest	\$	178,393,793,774.51
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Orange County Fire Authority

Preliminary Investment Report

December 17, 2021



ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Summary
December 17, 2021

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

See Note 1 on page 19

See Note 2 on page 19

Investments	Par Value	Market Value	Book Value	% of Portfolio	Term	Days to Mat./Call	YTM/Call 360 Equiv.	YTM/Call 365 Equiv.
Money Mkt Mutual Funds/Cash	189,216.45	189,216.45	189,216.45	0.16	1	1	0.010	0.010
Federal Agency Coupon Securities	81,450,000.00	80,703,282.90	81,452,351.24	68.63	1,318	32	0.553	0.561
Local Agency Investment Funds	37,036,116.47	37,031,437.36	37,036,116.47	31.21	1	1	0.200	0.203
Investments	118,675,332.92	117,923,936.71	118,677,684.16	100.00%	905	22	0.442	0.448
Cash								
Passbook/Checking (not included in yield calculations)	5,279,914.96	5,279,914.96	5,279,914.96		1	1	0.000	0.000
Total Cash and Investments	123,955,247.88	123,203,851.67	123,957,599.12		905	22	0.442	0.448

Total Earnings	December 17	Month Ending	Fiscal Year To Date
Current Year		25,198.08	263,436.78
Average Daily Balance		128,174,350.11	148,006,800.96
Effective Rate of Return		0.42%	0.38%

"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, 2021. A copy of this policy is available from the Clerk of the Authority. Sufficient investment liquidity and anticipated revenues are available to meet budgeted expenditure requirements for the next thirty days and the next six months."

Patricia Jakubiak, Treasurer

Cash and Investments with GASB 31 Adjustment:

Book Value of Cash & Investments before GASB 31 (Above)	\$ 123,957,599.12
GASB 31 Adjustment to Books (See Note 3 on page 19)	\$ (199,026.23)
Total	\$ 123,758,572.89

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Investments
December 17, 2021

See Note 1 on page 19

See Note 2 on page 19

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365 Mat./Call	Days to Maturity	Maturity Date
Money Mkt Mutual Funds/Cash											
SYS1042	1042	First American Treasury Oblig		09/22/2021	189,216.45	189,216.45	189,216.45	0.010	0.010	1	
SYS528	528	Federated Treasury Obligations		07/01/2021	0.00	0.00	0.00	0.010	0.010	1	
Subtotal and Average			8,097,631.47		189,216.45	189,216.45	189,216.45		0.010	1	
Federal Agency Coupon Securities											
3133EMLE0	1020	Federal Farm Credit Bank (Continuous Call)		12/23/2020	14,000,000.00	13,933,780.00	14,000,000.00	0.190	0.190	14	09/22/2023
3133EMWH1	1030	Federal Farm Credit Bank (Callable 4/21/2022)		04/22/2021	3,000,000.00	2,953,890.00	3,002,351.24	0.710	0.710	124	04/21/2025
3133EMXS6	1032	Federal Farm Credit Bank (Continuous Call)		04/28/2021	12,000,000.00	11,855,520.00	12,000,000.00	0.720	0.720	14	04/28/2025
3130ALNY6	1025	Fed Home Loan Bank (Callable 12/31/2021)		03/30/2021	8,000,000.00	7,922,400.00	8,000,000.00	0.550	0.550	13	09/30/2024
3130ALTJ3	1029	Fed Home Loan Bank (Callable 1/8/2022)		04/22/2021	9,435,000.00	9,375,182.10	9,435,000.00	0.375	0.375	21	04/08/2024
3130ALVR2	1031	Fed Home Loan Bank (Callable 1/23/2022)		04/23/2021	11,015,000.00	10,890,750.80	11,015,000.00	0.520	0.520	36	10/23/2024
3130AM6P2	1034	Fed Home Loan Bank (Callable 1/29/2022)		04/29/2021	12,000,000.00	11,895,480.00	12,000,000.00	1.000	1.000	42	04/29/2026
3130AM6H0	1035	Fed Home Loan Bank (Callable 5/11/2022)		05/11/2021	12,000,000.00	11,876,280.00	12,000,000.00	0.550	0.550	55	10/11/2024
Subtotal and Average			81,452,366.88		81,450,000.00	80,703,282.90	81,452,351.24		0.561	32	
Local Agency Investment Funds											
SYS336	336	Local Agency Invstmt Fund			37,036,116.47	37,031,437.36	37,036,116.47	0.203	0.203	1	
Subtotal and Average			38,624,351.76		37,036,116.47	37,031,437.36	37,036,116.47		0.203	1	
Total and Average			128,174,350.11		118,675,332.92	117,923,936.71	118,677,684.16		0.448	22	

ORANGE COUNTY FIRE AUTHORITY
Portfolio Management
Portfolio Details - Cash
December 17, 2021

CUSIP	Investment #	Issuer	Average Balance	Purchase Date	Par Value	Market Value	Book Value	Stated Rate	YTM/Call 365	Days to Mat./Call
Money Mkt Mutual Funds/Cash										
SYS10033	10033	Revolving Fund		07/01/2021	20,000.00	20,000.00	20,000.00		0.000	1
SYS4	4	Union Bank		07/01/2021	5,259,914.96	5,259,914.96	5,259,914.96		0.000	1
		Average Balance	0.00							1
		Total Cash and Investments	128,174,350.11		123,955,247.88	123,203,851.67	123,957,599.12		0.448	22

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ORANGE COUNTY FIRE AUTHORITY
Aging Report
By Maturity Date
As of December 20, 2021

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

See Note 5 on page 19

					Maturity Par Value	Percent of Portfolio	Current Book Value	Current Market Value
Aging Interval:	0 days	(12/20/2021 - 12/20/2021)	5 Maturities	0 Payments	42,505,247.88	34.50%	42,505,247.88	42,500,568.77
Aging Interval:	1 - 30 days	(12/21/2021 - 01/19/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	31 - 60 days	(01/20/2022 - 02/18/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	61 - 90 days	(02/19/2022 - 03/20/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	91 - 120 days	(03/21/2022 - 04/19/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	121 - 365 days	(04/20/2022 - 12/20/2022)	0 Maturities	0 Payments	0.00	0.00%	0.00	0.00
Aging Interval:	366 - 1095 days	(12/21/2022 - 12/19/2024)	5 Maturities	0 Payments	54,450,000.00	43.83%	54,450,000.00	53,998,392.90
Aging Interval:	1096 days and after	(12/20/2024 -)	3 Maturities	0 Payments	27,000,000.00	21.68%	27,002,347.33	26,704,890.00
Total for			13 Investments	0 Payments		100.00	123,957,595.21	123,203,851.67



NOTES TO PORTFOLIO MANAGEMENT REPORT

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- 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, 2021 includes an increase of \$6,222.75 to the LAIF investment and a decrease of (\$205,248.98) 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.
- Note 5: Section 15.3.1 of the Investment Policy requires at least 50% of the portfolio to be invested to a period of one year or less. Due to several large expenditures in October, November, and December, funds were withdrawn from LAIF resulting in the portfolio dropping below the 50% threshold. The diversification requirement reached 51.23% and was resolved on December 23, 2021 with the receipt of property tax apportionments and the investment of these funds in LAIF.

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 institutions 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 \$75 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 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.

ECONOMIC TERMS

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

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

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

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

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

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

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

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

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

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

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



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 2C
Consent Calendar

FY 2021/2022 Mid-Year Financial Report

Contact(s) for Further Information

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Tricia Jakubiak, Treasurer	triciajakubiak@ocfa.org	714.573.6301
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Summary

This item is submitted to provide a mid-year financial update on the FY 2021/22 budget in accordance with the OCFA's Fiscal Health Plan and to preview expected budget adjustments for approval in March.

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 January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors take the following action:

1. Direct staff to return to the Board of Directors on March 24, 2022, for approval of the budget adjustments discussed herein for the FY 2021/22 budget.

Impact to Cities/County

Annual increase assumptions for cash contract cities range from 1.00% to 1.50% for FY 2022/23 and 0.5% to 1.00% for FY 2023/24 based on the Five-Year Financial Forecast.

Fiscal Impact

Financial impact has been presented in the attached report.

Background

The OCFA's Fiscal Health Plan calls for a comprehensive system to monitor OCFA's fiscal performance. This includes a review and comparison of forecasted revenues and expenditures against actual revenues and expenditures, as well as a mid-year budget review. The attached report reviews the current year budget, highlights any potential financial challenges to the OCFA, and previews anticipated FY 2022/23 budget issues, to the extent they are known at this time.

FY 2021/22 Programming Changes

Significant changes have occurred since the budget was adopted in June 2021, including increases to budgeted beginning fund balance, increase in property tax revenue, increases in both revenue and expenditures related to assistance-by-hire emergency responses, as well as all approved adjustments to-date such as Carryover and new grant funds. These changes are detailed in the attached Mid-Year Financial Report.

Attachment(s)

Mid-year Financial Report

Exhibit 1 – 2021 Trend Analysis -- Forecast to Actual Comparison

Exhibit 2 – Updated Five-Year Financial Forecast

Exhibit 3 – Five-Year Financial Forecast Assumptions



In May 2020, the Board of Directors approved the updated Financial Stability Budget Policy. Together with the Fiscal Health Plan, these documents describe the Authority's strong fiscal policies, a comprehensive system for monitoring OCFA's fiscal performance, and a framework to assure timely and appropriate response to adverse fiscal circumstances. Included in the Fiscal Health Plan is the requirement for a mid-year financial report, which is presented below.

ECONOMIC OUTLOOK

Property tax is OCFA's largest source of revenue; therefore, this section focuses on economic factors impacting property values. With a tight housing market and low interest rates, residential real estate assessed values have continued to increase through the pandemic. The December 2021 Chapman Economic and Business Review forecast estimates the median price of single family homes to appreciate 0.8% in 2022, down from 20.5% in 2021. Chapman is also projecting a 4.1% decline in residential permit activity from 7,400 residential permits in 2021 to 7,100 in 2022. Chapman foresees the Federal Reserve tightening monetary policy in 2022 resulting in mortgage rates rising from 3.0% to 3.9% by the end of 2022. This is the primary driver of the lower home price appreciation rate and reduced permit activity projections.

CURRENT FISCAL YEAR FINANCES

The following are estimated changes to the budget that are needed since the adoption of the FY 2021/22 budget in June 2021. Overall, the proposed changes in the General Fund result in an estimated total revenue increase of approximately \$16.2 million and an estimated total expenditure increase of \$20.6 million. *Approximately \$14.2 million of the expenditure increases are related to emergency incidents that are offset by corresponding revenue increases or are items that are cost neutral.* Expenditures not offset by revenue increases are primarily due to higher services and supplies expenditures that were not known at the time of budget adoption including increased insurance premiums, fuel costs and repair and maintenance expenditures.

FY 2021/22 Estimated Revenue Adjustments - \$16.2 million

Property Taxes: Based on secured tax billings provided by the Auditor/Controller, preliminary projections indicate an approximate \$2.0 million increase over budget. **\$2,011,789**

Assistance by Hire (ABH)/Emergency Incident: ABH is the term used when OCFA responds to requests for assistance to incidents outside our area of responsibility, on a reimbursement basis. Current year activity is \$11.9 million greater than budget due to various in-county and out-of-county responses, upstaffing for surge capacity, and responding to the COVID-19 pandemic. Staff will be monitoring this source of revenue for additional reimbursements. An expenditure adjustment is also proposed to the overtime/backfill category to cover the costs associated with providing the ABH services. **\$11,880,759**

Grant/Other Reimbursements: This category represents reimbursements for Grants or other programs where expenditures are reimbursed once incurred. The \$247K adjustment is for supplemental funding for the 2020 US&R Grant, US&R mobilization exercise, OCSD SONGS reimbursement for radiation equipment, CA Fire Foundation fire education props grant, and John Wayne Airport reimbursement for crash truck tire replacement. **\$247,399**



OCFPA Retiree Medical Trust Payment: OCFA's audit firm Lance, Soll & Lunghard issued a final report on the OCFPA Medical Benefit Trust for the period January 1, 2020 through December 31, 2020 showing a \$1,954,775 excess fund balance credit due to the OCFA. Per the terms of the OCFA/OCFPA Health Plan Agreement, OCFA will remit these funds to the OCFA Retiree Medical Trust held at OCERS. **\$1,954,775**

Miscellaneous: This category of revenue adjustments includes updates to cash contract city maintenance charges and interest earnings. **\$113,551**

FY 2021/22 Estimated Expenditure Adjustments - \$20.6 million

Assistance by Hire/Emergency Incident Costs: As mentioned under Revenue for ABH, an adjustment is needed for out-of-county responses, primarily in the overtime/backfill category, but also for response-related supplies. This category also comprises the expenditures for upstaffing for surge capacity, US&R activation, and COVID-19 expenditures. Staff will be monitoring these categories closely as the fiscal year progresses. **\$11,900,048⁽¹⁾**

Personnel Expenditures: This adjustment includes expenditures to reclassify the cost for a limited term Construction Manager from the CIP to the General Fund. This cost was already approved in the FY 2021/22 budget; therefore, this is only an accounting change to better classify the expenditure. The remaining portion of this adjustment covers increased paramedic training costs and increased firefighter academy and training expenditures. **\$531,572**

Supplies/Equipment/Professional Services: This category includes one-time adjustments for services and supplies which were unknown or for which costs have increased since budget development. Adjustments include increased insurance premiums (\$1.2M); fuel increases (\$1.0M); fire academy costs (\$865K); increased vehicle repair and maintenance (\$891K); major overhaul for Helicopter 2 (\$700K); fire station maintenance and repair and appliance replacement (\$600K); increased utility costs (\$545K); 800MHz radio and station alerting contracts (\$166K); Microsoft software licenses (\$120K); staffing system programming services (\$114K); behavioral health and wellness counseling (\$110K); medical equipment (\$80K); Irvine Arson Abatement Officer (\$50K); EMS quality control system upgrades (\$25K); and Air Ops Drone Program training (\$9K). **\$6,500,830**

Grant/Other Reimbursable Programs: These expenditure items include supplemental funding for the 2020 US&R Grant, US&R mobilization exercise, OCSD SONGS reimbursement for radiation equipment, and CA Fire Foundation fire education props grant, John Wayne Airport reimbursement for crash truck tire replacement, insurance reimbursement for collision repairs², and a budget transfer of US&R grant funds from Fund 121 to Fund 133 for a utility vehicle. **\$249,231⁽¹⁾**

¹ Expenditure increase is wholly or partially cost neutral, offset by a corresponding revenue source or dedicated fund balance.

² Offset by insurance reimbursement revenue recognized in FY 2020/21.



OCPFA Retiree Medical Trust Payment: OCFA's audit firm Lance, Soll & Lunghard issued a final report on the OCPFA Medical Benefit Trust for the period January 1, 2020 through December 31, 2020 showing a \$1,954,775 excess fund balance credit due to the OCFA. Per the terms of the OCFA/OCPPA Health Plan Agreement, OCFA will remit these funds to the OCFA Retiree Medical Trust held at OCERS. **\$1,954,775⁽¹⁾**

Settlement Agreement Snowball Plan Payment: The Irvine Settlement Agreement requires a Snowball Plan Payment of \$500K to paydown unfunded liabilities each year in which our pension liability is less than 85% funded. OCFA received notification that we are over 85% funded after the FY 2021/22 Adopted Budget was prepared. Per the Settlement Agreement, since we have reached the 85% funding target, the \$500K budgeted as a Snowball Plan Payment should now be transferred to the 115 Trust. **(\$500,000)**

¹ Expenditure increase is wholly or partially cost neutral, offset by a corresponding revenue source or dedicated fund balance.

FY 2021/22 CIP and Other Fund Adjustments

- **Fund 12110 – General Fund CIP:** A decrease in expenditures in the amount of \$2,932,007 is needed for deferral of expenditures for the enterprise phone and public address system upgrade (\$500,000), station bathroom inclusive facilities (\$1,000,000), and Fire Station 41 improvement (\$1,255,128) projects to future years. In addition, a decrease of \$176,879 is required to move budgeted funds from the CIP to the General Fund for the Limited Term Construction Manager position overseeing various CIP projects. This is purely an accounting change from one fund to another with no impact on overall expenses.
- **Fund 123 – Fire Stations and Facilities:** A decrease in expenditures in the amount of \$2,500,530 is needed for deferral of the RFOTC training grounds and expansion upgrade (\$2,500,000) and Fire Station 10 replacement (\$530) projects to future years.
- **Fund 124 – Communications & Information Systems:** A decrease in expenditures in the amount of \$2,000,000 is needed for deferral of the OCFA enterprise audio visual upgrades (\$500,000) and EMS enterprise system development projects (\$1,500,000) to future years.
- **Fund 133 – Fire Apparatus:** An increase in revenue of \$152,892 and an increase in expenditures of \$160,537 is required for a grant funded fire education trailer. Expenditures are higher than revenue since a condition of the Grant requires OCFA to contribute 5% or \$7,645 of the amount. This grant will be presented to the Board for acceptance prior to or concurrent with the final mid-year adjustment recommendations in March. An additional net expenditure increase of \$70,509 is required for the following: net increase in emergency vehicle expenditures (\$2,197,331), net decrease in support vehicle expenditures (\$2,482,000), expenditure increase of \$325,178 to fund two light service trucks due to a FY 2020/21 purchase order being closed in error which should have been carried over to FY 2021/22; and \$30,000 increase for budget transfer from Fund 121 to Fund 133 to fund a US&R utility vehicle using grant funds.
- **Fund 139 – Settlement Agreement:** An increase in expenditures in the amount of \$25,000 is needed to accommodate Trustee and PARS fees for administering the 115 Trust.



- **Fund 171 – Structural Fire Fund Entitlement Fund:** In accordance with the Amended JPA, increase the expenditure budget by \$2,295,468 from FY 2020/21 unencumbered fund balance. Allocation of these funds will enable Structural Fire Fund (SFF) member cities to use their allocated fund balance for fire service enhancements. Any remaining funds not used in FY 2021/22 will be rebudgeted in the next fiscal year.
- **Interest Earnings:** Interest earning revenues for each of the CIP and Other Funds have been increased except Fund 124 and Fund 171 which had a slight decrease based on the latest projections. The net interest earnings adjustment is a \$73,104 increase.

FY 2021/22 Fund Balance Transfer Adjustments

- **Unencumbered Fund Balance:** The FY 2020/21 year-end audit identified unencumbered fund balance in the amount of \$4,590,935. This fund balance increase resulted primarily from additional revenue received in the fiscal year, as well as salary savings and S&S savings in the General Fund. Staff recommends allocating the unencumbered fund balance as follows:
 - Allocate 50% or \$2,295,468 to the Structural Fire Fund Entitlement Fund (Fund 171) for fire service enhancements, in accordance with the First Amendment to the Amended Joint Powers Agreement (Amended JPA). Per the Amended JPA, 50% of any unencumbered funds as determined by the annual audited financial statements shall be allocated to Fund 171 at every ten year interval beginning with FY 2010/11.
 - Allocate remaining 50% to remain in the General Fund to replenish the contingency reserve to 10% of expenditures, pursuant to the OCFA's Financial Stability Budget Policy.
- **CIP to Fund 121 Transfers:** The Financial Stability Policy requires a reconciliation of the 10% contingency reserve at mid-year. In order to maintain the 10% General Fund contingency reserve of \$43,923,725, a fund balance transfer of \$6,174,473 is required from the CIP to the General Fund (\$2,000,000 from Fund 12110, \$3,000,000 from Fund 123, and \$1,174,473 from Fund 124).
- **Irvine Settlement Agreement:** A fund balance transfer from Fund 121 to Fund 139 is needed to make a \$500,000 payment to the 115 Trust now that the pension liability is over 85% funded as required in the Irvine Settlement Agreement.

FUTURE FISCAL YEAR FINANCES

Significant factors that are anticipated to influence the FY 2022/23 budget development include:

- **Prepayment of OCERS Contributions** – Staff will conduct an analysis of OCFA's cash flow position; we expect to prepay half of the employer contributions to take advantage of an approximately 5.8% discount. This discount has fluctuated in recent years, from 7.25% to 5.8%, to 4.5%, and now back to 5.8%. The prepayment discount amounts to significant savings. In the current FY 2020/21 OCFA saved an estimated \$2.3M by prepaying a portion of its OCERS contributions.
- **Property Taxes** - Since property tax is the largest source of income for the General Fund at about 63%, we have contracted with Harris and Associates to update our property tax projections. Updated preliminary information for our FY 2022/23 budget will be available in February 2022; therefore, in the interim we are continuing to use Harris & Associates' prior projection for FYs 2022/23 through 2025/26 of the Five-Year Financial Forecast.



- **Retirement Rates** - The Orange County Employees Retirement System (OCERS) Board has adopted retirement rates for FY 2022/23. Compared to rates used in the prior Five-Year Cashflow Forecast, employer rates for general employees have decreased by 1.09% and rates for the safety employees decreased by 7.09% after removing the impact of the additional pension liability contributions OCFA has made to OCERS. Consistent with Board direction, we continue to pay the original rates, capturing those savings and increasing payments directly to our unfunded liability.
- **Workers' Compensation** – The current forecast is based on the workers' compensation actuarial study dated December 2020. Since that time, workers' compensation costs have been trending higher with increased COVID-19 related claims. We have contracted with Rivelle Consulting to update the actuarial study to be completed in January 2022 which may impact the workers' compensation cost projections in the five-year forecast.

PENDING ISSUES

- **CIP Project Budget Funding/Timing** – The next five-year Capital Improvement Program budgets are in the process of being developed. As we build the CIP, staff is working on options to align the updated five-year CIP schedule with available funding that is primarily derived from transfers from the General Fund.

MONITORING FINANCIAL HEALTH

Financial Forecast

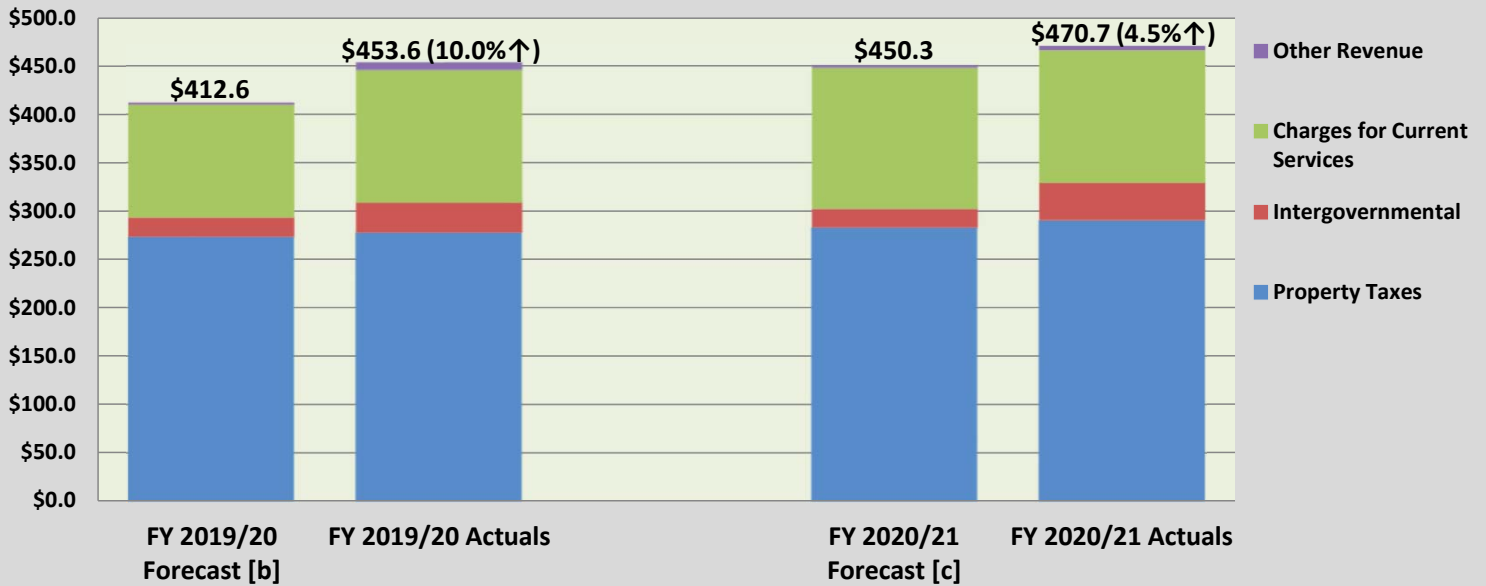
The Fiscal Health Plan directs staff to monitor our financial indicators through frequent updates to the Authority's Five-Year Financial Forecast, measuring revenues, expenditures, debt, and committed and uncommitted fund balance. These categories are forecasted using all available information, Board actions, and economic conditions (Exhibits 2 and 3).

A trend report has been developed comparing the differences between the forecasted data and actual financial results and is attached to this review as Exhibit 1.

2021 Trend Analysis: Summary of 2-Year Forecast vs. Adjusted Actuals

Comparison of 2019/20 Forecast to 2019/20 Actuals
and
Comparison of 2020/21 Forecast to 2020/21 Actuals

Revenue Comparison [a] (\$ in Millions)

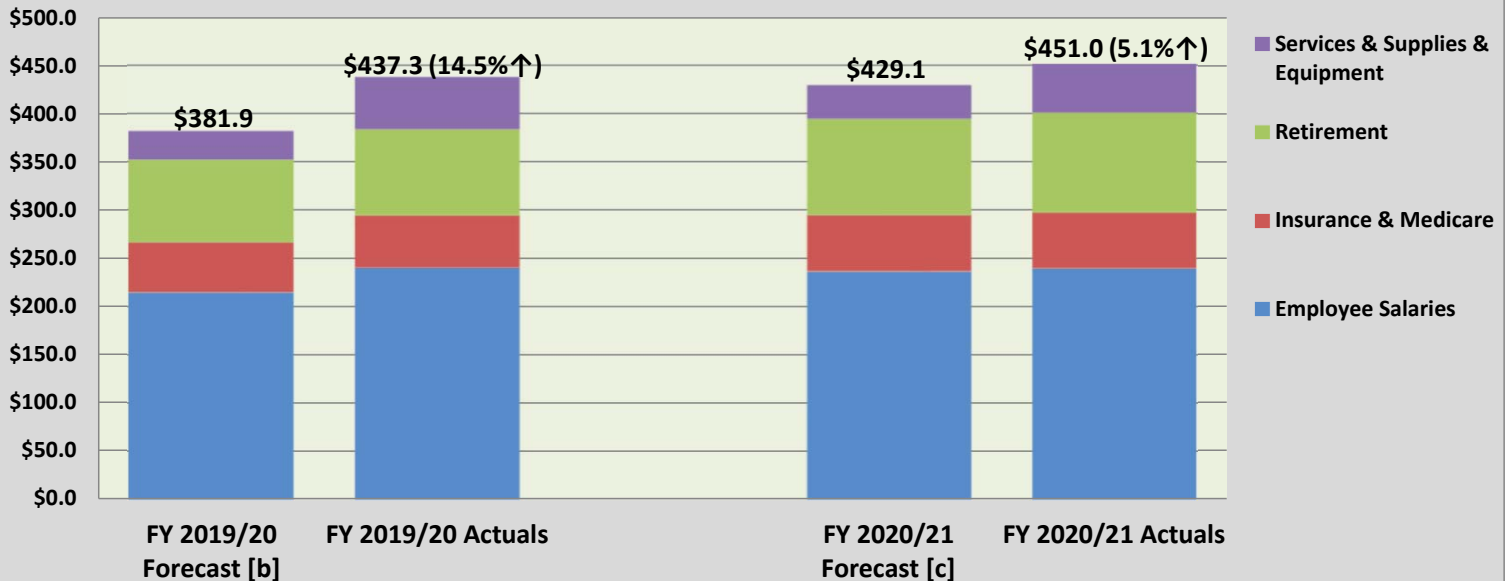


[a] Actual revenue adjusted for one-time sources not forecasted such as assistance by hire revenue, grant revenue, and one-time revenue associated with RDA dissolutions.

[b] As Presented in the FY2018/19 Adopted Budget.

[c] As Presented in the FY2019/20 Adopted Budget - Scenario 1.

Expenditure Comparison [d] (\$ in Millions)



[d] Actual expenditures adjusted for one-time items not forecasted such as grant expenditures.

Scenario 1 - 0% Salary Increase After MOU Expirations		PROJECTED FY 2021/22	PROJECTED FY 2022/23	PROJECTED FY 2023/24	PROJECTED FY 2024/25	PROJECTED FY 2025/26
A.	BEGINNING FUND BALANCE - All Funds Combined	223,338,519	194,387,140	208,332,088	224,723,020	226,880,522
GENERAL FUND Revenue & Expenditures						
	Property Taxes	298,984,024	307,247,487	317,808,164	328,274,476	339,788,854
	State Reimbursements	8,011,778	8,011,778	8,011,778	8,011,778	8,011,778
	Federal Reimbursements	100,000	100,000	100,000	100,000	100,000
	One-Time Grant/ABH/RDA	47,105,456	-	-	-	-
	Community Redevelopment Agency Pass-thru	18,409,646	19,712,561	18,586,494	23,780,739	28,352,876
	Cash Contracts	133,345,035	135,231,806	136,625,836	137,612,138	139,227,194
	Community Risk Reduction Fees	6,021,323	6,021,323	6,021,323	6,021,323	6,021,323
	ALS Supplies & Transport Reimbursement	4,547,600	4,547,600	4,547,600	4,547,600	4,547,600
	Interest Earnings	182,340	133,278	257,704	264,097	270,446
	Other Revenue	3,155,972	1,201,197	1,201,197	1,201,197	1,201,197
	General Fund Revenue	519,863,174	482,207,030	493,160,096	509,813,347	527,521,268
	New Positions for New Stations	-	3,549,990	6,150,099	6,215,183	9,034,936
	Service Enhancement	-	800,944	1,852,613	2,904,282	2,904,282
	Employee Salaries	240,760,601	241,264,092	241,264,092	241,264,092	241,264,092
	Retirement - Regular Annual Payments	95,657,088	86,348,510	82,098,101	80,129,654	75,687,614
	Accelerated Pension / Retiree Medical Paydown	14,279,280	17,787,217	20,772,547	21,814,115	29,242,631
	Workers' Compensation (Transfer to Fund 190)	25,096,683	29,030,889	30,616,381	32,355,798	33,326,472
	Other Insurance	36,793,438	39,026,322	41,402,251	43,931,518	46,546,044
	Medicare	3,477,787	3,488,419	3,488,419	3,488,419	3,488,419
	One-Time Grant/ABH Expenditures	15,494,401	-	-	-	-
	Salaries & Employee Benefits	431,559,278	421,296,382	427,644,504	432,103,062	441,494,491
	Services & Supplies/Equipment	41,159,699	33,188,281	33,214,181	33,279,313	33,284,378
	Irvine Settlement Agreement (Transfer to Fund 139)	2,668,000	2,668,000	2,668,000	2,668,000	2,668,000
	New Station/Enhancements S&S Impacts	-	171,245	302,369	311,440	504,088
	One-Time Grant Expenditures	33,305,119	-	-	-	-
	General Fund Expenditures	508,692,096	457,323,908	463,829,054	468,361,815	477,950,957
B.	Incremental Increase in GF 10% Contingency	2,563,553	193,050	246,815	243,952	216,063
	GENERAL FUND SURPLUS/(DEFICIT)	8,607,525	24,690,072	29,084,228	41,207,580	49,354,248
C.	Operating Transfer from Operating Contingency	-	-	-	-	-
	← Transfers to CIP Funds from General Fund Surplus	8,607,525	24,690,072	29,084,228	20,603,790	24,677,124
	One-Time Paydown of UAAL from General Fund Surplus	-	-	-	20,603,790	24,677,124
	CAPITAL IMPROVEMENT PROGRAM (CIP)					
	Interest Earnings	523,406	552,457	1,217,422	1,274,408	1,249,412
	Cash Contracts	1,652,957	1,737,012	1,789,123	1,842,798	1,898,082
	Developer Contributions	1,261,573	1,827,923	-	822,770	-
	← Operating Transfers into CIP from General Fund Surplus	8,607,525	24,690,072	29,084,228	20,603,790	24,677,124
	Total CIP Revenue	12,243,353	28,807,464	32,090,773	24,543,766	27,824,619
	Fund 12110 - General Fund CIP	10,166,729	4,651,000	7,475,500	10,106,000	6,781,500
	Fund 123 - Fire Stations and Facilities	17,818,265	500,000	3,100,000	7,900,000	23,512,231
	Fund 124 - Communications & Information Systems	4,466,515	3,800,000	1,250,000	1,450,000	500,000
	Fund 133 - Fire Apparatus	17,822,186	12,109,795	10,522,293	9,712,965	10,669,294
	Total CIP Expenses	50,273,695	21,060,795	22,347,793	29,168,965	41,463,025
D.	CIP SURPLUS/(DEFICIT) - Deposit to/withdraw from CIP reserve	(38,030,342)	7,746,669	9,742,980	(4,625,199)	(13,638,406)
	OTHER FUNDS					
	Fund 190 - WC Revenue - Transfer from GF	25,096,683	29,030,889	30,616,381	32,355,798	33,326,472
	Fund 190 - WC Cashflow Payments per Actuary	15,640,500	24,525,660	25,715,243	27,317,050	29,018,634
E.	Deposit to WC Cashflow Reserve	9,456,183	4,505,229	4,901,138	5,038,748	4,307,838
	Fund 139 - Irvine Settlement Revenue - Transfer from GF	2,668,000	2,668,000	2,668,000	2,668,000	2,668,000
	Fund 139 - Irvine Settlement Expenditures - Per Agreement	2,193,000	1,168,000	1,168,000	1,168,000	1,168,000
F.	Deposit to PARS - Pension Reserve [1]	475,000	1,500,000	1,500,000	1,500,000	1,500,000
G.	Fund 171 - SFFEF Expenditures	3,415,773	-	-	-	-
	ENDING FUND BALANCE (Note) - All Funds Combined	194,387,140	208,332,088	224,723,020	226,880,522	219,266,016
	Ending Balance by Fund					
	Operating Contingency (10% of Expenditures)	43,413,725	43,606,775	43,853,589	44,097,542	44,313,604
	Reserve for Cash Contract City Station Maintenance	510,000	510,000	510,000	510,000	510,000
	Structural Fire Fund Entitlement Fund (Fund 171)	2,810	2,810	2,810	2,810	2,810
	Irvine Settlement Agreement (Fund 139)	25,857,035	27,429,937	29,090,586	30,758,755	32,423,626
	CIP FUND BALANCE	5,051,819	12,357,951	21,130,142	15,488,713	854,009
	Workers' Compensation Cashflow Reserve (Fund 190)	119,551,751	124,424,615	130,135,893	136,022,702	141,161,967
	Total Fund Balances	194,387,140	208,332,088	224,723,020	226,880,522	219,266,016
Note:	Ending Fund Balance is calculated by adding rows A+B+C+D+E+F-G, and excludes row [a] since unencumbered fund balance is already included in the Beg. Fund Balance					

Forecast Assumptions – Mid-Year Revised

Basic Assumptions

The Adopted FY 2021/22 budget, and the Five-Year Capital Improvement Plan approved by the Board of Directors on June 24, 2021 form the basis for this financial forecast with the following adjustments:

- Updated total beginning fund balance from the FY 2020/21 audited financial statements.
- All approved budget adjustments that have occurred since the adoption of the budget.
- Proposed FY 2021/22 mid-year adjustments.

General Fund Revenues

- ***Secured Property Taxes*** – The Harris & Associates Final 2021 Report Typical Scenario provides the growth factors assumed for the forecast. The following are projections of current secured property tax growth:

FY 2021/22	3.70%
FY 2022/23	2.94%
FY 2023/24	3.65%
FY 2024/25	3.49%
FY 2025/26	3.71%

- ***Public Utility, Unsecured, Homeowners Property Tax Relief, and Supplemental Delinquent Taxes*** – All of these categories of property taxes are projected to remain constant during the forecast period.
- ***State Reimbursements*** – State reimbursements are expected to remain constant, pending more details from CAL FIRE.
- ***Federal Reimbursements*** – This revenue is projected to remain constant.
- ***One-Time Grant/ABH/RDA Proceeds*** – These are one-time only revenues that vary significantly from year to year and therefore are not forecasted beyond the current year. Board actions to date and proposed mid-year adjustments have increased the FY 2021/22 adopted budget by \$47.1M for one-time increases in grants and assistance by hire.
- ***Community Redevelopment Agency Pass-thru Revenue*** – Harris & Associates completed a Redevelopment Area Excess Revenue Analysis of pass-thru and residual revenues from the dissolution of the redevelopment agencies dated April 1, 2021. The forecast figures come from this report.
- ***Cash Contracts*** – The forecast calculations are based on the Joint Powers Agreement and subsequent amendments and year-over-year changes are estimated between 0.92% and 4.50% per year. In addition, this revenue category includes estimated John Wayne Airport contract proceeds with an annual 4% increase cap, which is projected to continue through the forecast period.

- **Community Risk Reduction Fees** – Community Risk Reduction Fees are projected to remain constant through the forecast period from FY 2022/23 through FY 2025/26, pending any changes approved by the Board.
- **ALS Supplies & Transport Reimbursements** – This revenue is estimated to remain flat, pending any changes approved by the Board. Staff is currently in the process of reviewing medical supplies reimbursement rates.
- **Interest Earnings** – Assumes an annual return of 0.25% for FY 2021/22 and FY 2022/23 and 0.5% thereafter.
- **Other Revenue** – This revenue source includes various items such as reimbursements for training and cost recovery for the firefighter handcrew and is projected to remain flat over the forecast period.

General Fund Expenditures

- **Salaries & Employee Benefits** – S&EB is composed of the following factors:
 - ✓ **New Positions for New Stations** – The forecast assumes that vehicles will be in service beginning 12/1/2022 for Station 67 and 7/1/2025 for Station 12.
 - ✓ **Employee Salaries** – Projected salaries reflect increases consistent with the approved labor group MOUs.
 - ✓ **Retirement** – Retirement costs reflect projected employer retirement rates, which are based on the OCERS provided rates for FY 2021/22. The projected employer rates in the outer years of the forecast are based on a study dated 7/9/2021 prepared by Segal Consulting and provided by OCERS. FY 2022/23 rates are approximately 7.29% lower for safety and 0.99% lower for non-safety compared to FY 2021/22 rates.

FY	Safety	General	Source
2021/22	53.50%	36.92%	FY 2021/22 based on OCERS provided rates. Outer years based on Segal Study dated 7/9/2021. Effective rates adjusted to remove impact of additional OCFA UAAL contributions
2022/23	46.21%	35.93%	
2023/24	43.81%	34.53%	
2024/25	42.71%	33.83%	
2025/26	40.21%	32.22%	

Note: employer rates shown in the table above do not include the portion of the employee rate that is paid by OCFA

In accordance with the Updated Snowball Strategy presented to the board in November 2015, the forecast includes the following projected UAAL paydowns:

- Contributing additional funds each year using projected savings that will be realized under new Public Employees' Pension Reform Act (PEPRA) of \$3.3M in FY 2021/22 and continuing in different amounts until payment is complete.
- Contributing an additional \$1M each year starting in FY 2016/17 and increasing by \$2M each year until it reaches \$15M and continuing at \$15M thereafter.
- Contributing \$1 million per year from surplus fund balance available in the Workers' Compensation Self-Insurance Fund from FY 2016/17 through FY 2020/21.

- Beginning in FY 2017/18 at mid-year, if CIP is sufficiently funded, allocate 50% of the General Fund surplus, if any, to UAAL with the remaining 50% used to fund CIP.
- ✓ **Workers' Compensation** – FY 2021/22 assumes a 50% confidence level for ongoing Workers' Compensation costs. The 50% confidence level is assumed throughout the forecast period. Workers' Compensation costs in the forecast period are based on projected payments in the Rivelle Consulting Services December 2020 Study.
- ✓ **Other Insurance** – Medical insurance rates for firefighters are assumed to increase by 5% for 2021 per the Health Plan Agreement dated 3/29/2017. For staff members, it is projected to grow by 10% annually. This category also includes \$135,000 for unemployment insurance in FY 2021/22.
- ✓ **Medicare** – Annual amounts are calculated at 1.45% of projected salaries.
- **One-Time Grant/ABH Expenditures** – These are one-time only expenditures that vary significantly from year to year and therefore are not forecasted beyond FY 2021/22.
- **Services and Supplies (S&S)** – S&S is held flat unless a new fire station is built, specific increases have been identified by section managers, or one-time grant proceeds have been received.

Net General Fund Revenue

This figure equals the General Fund Revenue minus the General Fund Expenditures.

Incremental Increase in General Fund 10% Contingency

This is the amount needed to add to the General Fund 10% Contingency each year to maintain this category of fund balance at the required policy level of 10% of General Fund expenditures (less one-time expenditures).

Transfer to Fund 139 from General Fund Surplus

This is the amount needed to pay for City of Irvine Settlement Agreement costs.

General Fund Surplus/(Deficit)

This figure is equal to the Net General Fund Revenue less the incremental increase in the General Fund 10% Contingency and the transfer out to Fund 139. In years when there is a surplus, unless an exception is triggered, 50% is transferred to the CIP funds and 50% is used to paydown the UAAL as outlined in the Financial Stability Budget Policy. In years when there is a deficit, the deficit amount must be drawn from the 10% Contingency, and once those are exhausted, from fund balance for CIP.

Capital Improvement Program/Other Funds Revenue

- **Interest Earnings** – Assumes an annual return of 0.25% for FY 2021/22 and FY 2022/23 and 0.5% thereafter.

- ***State/Federal Reimbursement*** – The forecast assumes no State/Federal reimbursement revenue in the forecast period.
- ***Cash Contracts*** – The forecast calculations are based on the Joint Powers Agreement and subsequent amendments.
- ***Developer Contributions*** – The forecast assumes we will receive developer contributions to fund fire stations and vehicles in FY 2021/22, 2022/23, and FY 2024/25.
- ***Workers' Compensation Transfer*** – These amounts equal the General Fund Workers' Compensation budget.
- ***Fund 139 Transfer*** – These amounts are transferred from the General Fund to pay for various expenditures required under the City of Irvine Settlement Agreement.
- ***Operating Transfer In*** – This figure equals the Operating Transfer Out from the General Fund.

Capital Improvement Program/Other Funds Expenditures

Expenditures for each CIP fund are based on the CIP Budget.

- ***Irvine Settlement (Fund 139)*** – Budgeted expenditures in Fund 139 are based on the City of Irvine Settlement Agreement.
- ***Structural Fire Fund Entitlement (Fund 171)*** – The forecast period assumes no Structural Fire Fund Entitlement expenditures beyond FY 2021/22.
- ***Self-Insurance Fund (Fund 190)*** – Self-Insurance Fund expenditures are based on projected payments in the Rivelle Consulting Services December 2020 Workers' Compensation Actuarial Study.

Fund Balances

- ***Operating Contingency*** – Reflects policy of 10% of the General Fund expenditures each year (less one-time expenditures and UAAL payments). General Fund deficits (if applicable) are deducted from this category of fund balance.

Assigned Fund Balances

- ***Irvine Settlement (Fund 139)*** – Funding is set aside for City of Irvine Settlement Agreement costs, including the 115 Trust.
- ***Self-Insurance Fund (Fund 190)*** – Funding is set aside for Workers' Compensation outstanding claims at the 50% confidence level per Board policy. The required amount is based on the actuarial report for Estimated Outstanding Losses as of the last full fiscal year prior to report issuance. The required funding levels are maintained by retaining funds in fund balance that reflect the difference between the workers' compensation transfer and Fund 190 expenditures.

- ***Capital Improvement Program*** – This fund balance includes funding for future capital replacements and is reduced annually by the cost of capital assets and increased in years when there are Operating Transfers into the CIP.



Orange County Fire Authority **AGENDA STAFF REPORT**

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 2D
Consent Calendar

Annual Grant Priorities for 2022

Contact(s) for Further Information

Robert Cortez, Assistant Chief Business Services Department	robertcortez@ocfa.org	714.573.6012
Jay Barkman, Legislative Analyst	jaybarkman@ocfa.org	714.573.6048

Summary

This annual agenda item is submitted to the Budget and Finance Committee for approval of OCFA's Annual Grant Priorities for 2022.

Prior Board/Committee Action

This is an annual and routine item presented to Budget and Finance Committee since 2012.

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 January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors approve OCFA's Annual Grant Priorities for 2022.

Impact to Cities/County

Successful grant applications for staffing and equipment will provide significant benefit to member cities and the county.

Fiscal Impact

If grant funds are awarded for staffing or equipment, these funds will help offset expenses.

Background

The Orange County Fire Authority (OCFA) applies for grant funding throughout the year based on needs identified throughout the organization. This staff report is provided to establish the 2022 Grant Priorities and update the Board on grant awards received in 2021. The grant priorities for 2022 were established in collaboration with Executive Management and staff to address upcoming funding needs and opportunities. These discussions assisted in identifying potential projects and corresponding grant programs to pursue in the coming calendar year.

In 2021, OCFA received over \$2.9 million in various grant awards including Self-Contained Breathing Apparatus (SCBAs), Fire Education Safety Trailer, equipment for wildfire mitigation projects, managing the Urban Search & Rescue Task Force-5, and for overall preparedness to prevent, prepare, respond, and recover from acts of terrorism.

On March 14, 2021 OCFA completed the 2017 FEMA *Staffing for Adequate Fire and Emergency Response* (SAFER) grant award of \$3.6 million. This grant funded a fourth firefighter position for Buena Park, Tustin, and San Clemente.

In 2019, OCFA received \$1,522,584 million from the Federal Emergency Management Agency (FEMA) under the Assistance for Firefighters Grant program to enable OCFA members and members from neighboring fire departments to be certified Fire Ground Survival (FGS) instructors under the International Association of Fire Fighters (IAFF). This grant was originally set to be completed by September of 2020. However, the COVID-19 pandemic forced the suspension of training activities and FEMA provided an extension until March 2022. OCFA has now completed the FGS program and is using excess funds for additional training classes approved by FEMA.

Attachment(s)

OCFA's Annual Grant Priorities for 2022



Orange County Fire Authority

Annual Grant Priorities

2022

Staffing for Adequate Fire and Emergency Response (SAFER)**\$3.6 million awarded**

The Federal Emergency Management Agency (FEMA) SAFER grant funds the hiring of “front-line” firefighters. In 2017, the OCFA requested and received funding for new firefighter positions, including the addition of a fourth firefighter on engines to enhance service delivery, improve efficiency, and enhance firefighter safety. The grant provides three years of funding with a federal and local cost share split of 75% federal and 25% local in the first two years, and 35% federal and 65% local in the third year. There is no requirement the positions be maintained after the three-year grant period ends; however, the OCFA and the impacted cash contract cities listed below in the 2017 award have agreed to maintain the positions after the grant.

Firefighter Staffing: OCFA’s 2017 grant award funded a fourth firefighter for a single unit in each of the member cities of Buena Park, San Clemente, Placentia, and Tustin. With the departure of Placentia, the fourth firefighter position was reallocated. Prior to award of the grant, each city had an engine staffed with three firefighters. Adding a fourth firefighter on these units improved service delivery and enhanced firefighter safety. The cost of each position is now being phased-in and will be fully paid for by Buena Park, San Clemente, and Tustin in FY 2024/25.

A new grant cycle is expected to open in 2022 and will be considered pending details on match requirements and evaluation of OCFA’s staffing needs.

Assistance to Firefighters Grant (AFG)**\$2.8 million awarded**

AFG funds the purchase of firefighting vehicles and safety equipment. Applications are accepted for tools, personal protective equipment (PPE), training, wellness and fitness, and station modifications. Departments can submit one application and an additional “regional application,” in partnership with one or more other fire departments.

FY2021 Application

The 2021 application closes January 21, 2022 and OCFA is applying for close to \$900,000 in total grant funds to purchase 300 sets of structure turnouts, 700 sets of wildland jackets/pants, and various PPE (gloves, packs, boots). If awarded, the grant will ensure OCFA personnel are equipped with structure turnouts that are regularly cleaned and maintained to reduce cancer exposure. Also, 100% of OCFA personnel will be equipped with the newest wildland PPE that protects from burns and reduces risk to heat exhaustion and stress.

FY2020 Application

OCFA applied and received award in September of 2021 for \$1,362,522 in federal funds to replace our aging Self-Contained Breathing Apparatus (SCBAs) to newer models with increased capacity and safety features. OCFA received a 2012 AFG award for close to \$1.4 million to replace SCBAs, and we have since grown to contract with the cities of Santa Ana and Garden Grove. SCBAs must be replaced at the same time to ensure interoperability and consistency in our operations. Therefore, this project will be a high priority during the next two years as the grant will provide

startup funding so that OCFA can complete this in a timely manner.

Fire Ground Survival Training: In September of 2019, OCFA received \$1,522,584 for 35 OCFA members and 25 members from neighboring fire departments to be certified Fire Ground Survival (FGS) instructors under the International Association of Fire Fighters (IAFF). According to the IAFF, “the purpose of the Fire Ground Survival program is to ensure that training for MAYDAY prevention and MAYDAY operations are consistent between all firefighters, company officers, and chief officers. Firefighters must be trained to perform potentially life-saving actions if they become lost, disoriented, or injured.”

This grant was originally set to be completed by September of 2020. However, the COVID-19 pandemic forced the suspension of training activities and FEMA provided an extension until March 2022. OCFA has now completed the FGS program and is using excess funds for additional training classes approved by FEMA.

<u>Fire Prevention and Safety</u>	\$152,892 awarded
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Fire Prevention and Safety (FP&S) Grants are part of AFG and support projects that enhance the safety of the public and firefighters from fire and related hazards. The primary goal is to reduce injury and prevent death among high-risk populations.

OCFA submitted and received an award in September of 2021 for \$152,892 in federal funds to purchase a Fire Safety Education Trailer. OCFA staff are currently developing specifications to solicit competitive proposals. The trailer will include kitchen and bedroom modules including special effects that allow for simulation to instruct the public on what to do in the event of an earthquake or kitchen fire.

In 2022, a new grant cycle will open and OCFA will consider projects that support existing fire prevention education activities such as smoke alarm installations, or community based defensible space activities.

<u>Crews and Heavy Fire Equipment / Air Operations</u>	\$228,429 awarded
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CAL FIRE’s Fire Prevention Grants Program provides funding for fire prevention projects and activities in and near fire threatened communities that focus on increasing the protection of people, structures, and communities. Funded activities include hazardous fuels reduction, wildfire prevention planning, and wildfire prevention education with an emphasis on improving public health and safety while reducing greenhouse gas emissions.

OCFA submitted and received an award in October of 2021, for \$228,429 in state funds to purchase specialized heavy equipment and tools for use by the Crews and Heavy Fire Equipment Section ([Link to OCFA Board Item](#)). This grant will assist Orange County by providing crews with improved means to complete projects quickly and efficiently thereby reducing the potential for wildfire within the State Responsibility Area (SRA). These projects will reduce the fuel load countywide and ensure proper maintenance of access roads. These projects include road repair for increasing emergency responses on wildland fires and remote medical aids, the installation of culverts, tree removal, stump grinding, chipping all in one, including the removal of disease-

infested trees.

In 2022, OCFA's Crews and Heavy Fire Equipment Section plans to apply to CAL FIRE to purchase a new water tender. Staff is researching costs, but there is no match requirement under this grant. As a contract county, OCFA also provides initial review on behalf of CAL FIRE of those applications submitted within Orange County by other local agencies or qualified non-profit groups. Staff is working with our member agency cities to develop projects and ensure they are viewed competitively with other regional requests.

Finally, the Air Operations Section is seeking funding for helicopter refilling tank systems. These are high-capacity water storage containers that can be mobile or in fixed locations in remote areas where there are no options for OCFA helicopters to pull water and refill. These projects may involve working with local water districts, or private landowners to support placement. Staff is researching locations and communities at risk to identify partnerships and options for funding.



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 2E
Consent Calendar

2020 Urban Areas Security Initiative Grant Program
Agreement to Transfer Property or Funds

Contact(s) for Further Information

Phil Johnson, Assistant Chief
Operations Department

philjohnson@ocfa.org

714.573.6014

Shane Sherwood, Division Chief

shanesherwood@ocfa.org

949.236.0987

Summary

This item is submitted for approval of FY 2020 Urban Areas Security Initiative (UASI) Grant Program award and for authorization for the Fire Chief to execute the necessary Agreement(s). The Grant resources will be utilized to enhance the OCFA's ability to prevent, prepare for, respond to, and recover from, domestic and international terrorism incidents.

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 January 27, 2022, with Budget and Finance Committee's recommendations that the Board of Directors approve the Fiscal Year 2020 Urban Areas Security Initiative Grant Program Agreement and authorize the Fire Chief to execute it and any necessary attachments and agreement(s) to accept and administer the UASI Grant.

Impact to Cities/County

Not Applicable.

Fiscal Impact

Not applicable, due to OCFA not directly receiving any funds from this grant year.

Background

On November 13, 2003, the United States Department of Homeland Security established the UASI Grant Program through the Federal Office of Domestic Preparedness. The grant only allowed two cities in Orange County, Anaheim and Santa Ana, to apply for funds through the UASI.

To ensure these funding sources did not undermine the process already in place, all principal parties involved formed a collaborative regional effort to facilitate the needs for the entire operational area. This ensured the funds were utilized to provide for the region and not one particular jurisdiction. Beginning in FY 2006, the two UASI cities combined to form a single entity and have divided the County into two geographic regions. The City of Santa Ana is responsible for the southwest portion of the County and the City of Anaheim is responsible for the northeast

portion. Utilizing the Strategic Initiatives developed by the Urban Area Working Group, priorities were established for equipment, training, and planning.

On November 10, 2021, OCFA was notified it would be eligible for specific reimbursements/transfer of property as part of the FY 2020 UASI Grant Program. Grant funds are designated for use to reimburse costs related to training, including participant tuition, instructor participation, course delivery, and hosting. This grant agreement also allows the UASI administrator to transfer equipment to the OCFA.

Attachment(s)

FY20 Urban Areas Security Initiative Grant Program Agreement

AGREEMENT

SUB-RECIPIENT: ORANGE COUNTY FIRE AUTHORITY

City Contract Number _____

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EXHIBITS

Exhibit A	CalOES FY2020 Grant Assurances
Exhibit B	Certification Regarding Debarment, Suspension and Other Responsibility Matters
Exhibit C	Certification Regarding Lobbying

Agreement Number: _____

AGREEMENT FOR TRANSFER OR PURCHASE OF EQUIPMENT/SERVICES OR FOR
REIMBURSEMENT OF TRAINING COSTS
FOR FY2020 URBAN AREAS SECURITY INITIATIVE (UASI)

BETWEEN
THE CITY OF ANAHEIM
AND ORANGE COUNTY FIRE AUTHORITY

THIS AGREEMENT is made and entered into this ____ day of _____, 20____, by and between the CITY OF ANAHEIM, a municipal corporation (the "CITY"), and ORANGE COUNTY FIRE AUTHORITY (the "SUB-RECIPIENT" or "Contractor").

W I T N E S S E T H

WHEREAS, CITY, acting through the Anaheim Police Department in its capacity as a Core City for the Anaheim/Santa Ana Urban Area under the FY2020 Urban Areas Security Initiative, has applied for, received and accepted a grant entitled "FY 2020 Urban Areas Security Initiative" from the federal Department Of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), through the State of California Governor's Office of Emergency Services (CalOES), to enhance countywide emergency preparedness (the "grant"), as set forth in the grant guidelines and assurances that are incorporated to this Agreement by reference and located at:

"U.S. Department of Homeland Security "Fiscal Year 2020 Homeland Security Grant Program (HSGP) Notice of Funding Opportunity (NOFO)"
https://www.fema.gov/sites/default/files/2020-08/fema_homeland-security-grant-program-nofo_fy-2020.pdf

California Office of Emergency Services "FY2020 Homeland Security Grant Program: California Supplement to Federal Program Guidance and Application Kit"
<https://www.caloes.ca.gov/GrantsManagementSite/Documents/FY%202020%20HSGP%20State%20Supplement.pdf>

Copies of the grant guidelines shall be retained in the Anaheim/Santa Ana Grant Office.

WHEREAS, this financial assistance is administered by the CITY OF ANAHEIM ("CITY") and is overseen by the California Governor's Office of Emergency Services ("CalOES"); and

WHEREAS, this financial assistance is being provided to address the unique equipment, training, planning, and exercise needs of large urban areas, and to assist them in building an enhanced and sustainable capacity to prevent, respond to, and recover from threats or acts of terrorism; and

WHEREAS, the Anaheim/Santa Ana Urban Area ("ASAUA") consists of 34 cities in Orange County, including the City of Anaheim and the City of Santa Ana, the County of Orange, Santa Ana Unified School District Police, California State University, Fullerton, University of California, Irvine, Municipal Water District of Orange County, and the Orange County Fire Authority; and

WHEREAS, the Office of Grants Management ("OGM") awarded a FY2020 UASI Grant of \$5,056,750 ("Grant Funds") to the CITY OF ANAHEIM, as a Core City, for use in the ASAUA; and

WHEREAS, the CITY has designated the Chief of Police, or his designee and the Anaheim Police Department, Emergency Management Director ("UASI Grant Office") to provide for terrorism prevention and emergency preparedness; and

WHEREAS, the UASI Grant Office now wishes to distribute FY2020 UASI Grant Funds throughout the ASAUA, as further detailed in this Agreement ("Agreement") to ORANGE COUNTY FIRE AUTHORITY ("SUB-RECIPIENT") and others;

WHEREAS, the CITY and SUB-RECIPIENT are desirous of executing this Agreement as authorized by the City Council and the Chief of Police which authorizes the CITY to prepare and execute the Agreement.

NOW, THEREFORE, IT IS MUTUALLY AGREED AS FOLLOWS:

I
INTRODUCTION

§101. Parties to the Agreement

The parties to this Agreement are:

- A. The CITY, a municipal corporation, having its principal office at 425 South Harbor Boulevard, Anaheim, CA 92805; and
- B. ORANGE COUNTY FIRE AUTHORITY, a municipal corporation, One Fire Authority Road, Irvine, CA 92602

§102. Representatives of the Parties and Service of Notices

- A. The representatives of the respective parties who are authorized to administer this Agreement and to whom formal notices, demands and communications shall be given are as follows:

- 1. The representative of the City of Anaheim shall be, unless otherwise stated in the Agreement:

Richard LaRochelle, Lieutenant
Anaheim Police Department
425 South Harbor Boulevard
Anaheim, CA. 92805
Phone: (714) 765-3833
Fax: (714) 765-1616
rlarochelle@anaheim.net

- 2. The representative of ORANGE COUNTY FIRE AUTHORITY shall be:

Name: Brian Fennessy

Title: Fire Chief

Sub Recipient Name: _____

Sub Recipient Address: 1 Fire Authority Rd.

City Irvine State: CA Zip: 92602

Phone: (714) 573-6000

E-mail: brian.fennessy@ocfa.org

- B. Formal notices, demands and communications to be given hereunder by either party shall be made in writing and may be effected by personal delivery or by registered or certified mail, postage prepaid, return receipt requested and shall be deemed communicated as of the date of mailing.

- C. If the name of the person designated to receive the notices, demands or communications or the address of such person is changed, written notice shall be given, in accord with this section, within five (5) business days of said change.

§103. Independent Party

SUB-RECIPIENT is acting hereunder as an independent party, and not as an agent or employee of the CITY OF ANAHEIM. No employee of SUB-RECIPIENT is, or shall be an employee of the CITY OF ANAHEIM by virtue of this Agreement, and SUB-RECIPIENT shall so inform each employee organization and each employee who is hired or retained under this Agreement. SUB-RECIPIENT shall not represent or otherwise hold out itself or any of its directors, officers, partners, employees, or agents to be an agent or employee of the CITY OF ANAHEIM.

§104. Conditions Precedent to Execution of This Agreement

SUB-RECIPIENT shall provide copies of the following documents to the CITY OF ANAHEIM, unless otherwise exempted.

- A. Grant Assurances in accordance with section 413C of this Agreement attached hereto as Exhibit A and made part hereof.
- B. Certifications Regarding Ineligibility, Suspension and Debarment as required by Executive Order 12549 in accordance with Section 413A12 of this Agreement and attached hereto as Exhibit B and made a part hereof.
- C. Certifications and Disclosures Regarding Lobbying in accordance with Section 413A4 of this Agreement and attached hereto as Exhibit C and made a part hereof. SUB-RECIPIENT shall also file a Disclosure Form at the end of each calendar quarter in which there occurs any event requiring disclosure or which materially affects the accuracy of the information contained in any Disclosure Form previously filed by SUB-RECIPIENT.

II TERM AND SERVICES TO BE PROVIDED

§201. Time of Performance

The term of this Agreement shall commence on 8/31/2021 and end on 3/31/2023 or upon the final disbursement of all of the Grant Amount (as defined in Section 301) and any additional period of time as is required to complete any necessary close out activities. Said term is subject to the provisions herein.

§202. Use of Grant Funds

- A. CITY may, a) transfer to SUB-RECIPIENT, equipment or services purchased with grant funds and in accordance with grant guidelines set forth above; or, b) reimburse SUB-RECIPIENT for purchase of authorized equipment, exercises, services or training upon receiving prior written approval from CITY or its designee and in accordance with grant guidelines and in full compliance with all of the SUB-RECIPIENT'S purchasing and bidding procedures. SUB-RECIPIENT shall specify the equipment, services, exercises and training to be purchased using the Application for Project Funding. A paper copy of this document will be provided to SUB-RECIPIENT by CITY. In addition, a compact disc with a copy of the document will be provided to SUB-RECIPIENT by CITY. If additional copies of the document are needed, SUB-RECIPIENT may contact the Anaheim Grant Coordinator and it will be provided.
- B. SUB-RECIPIENT shall provide any reports requested by the CITY regarding the performance of the Agreement. Reports shall be in the form requested by the CITY, and shall be provided in a timely manner.
- C. SUB-RECIPIENT shall provide the CITY a copy of its most current procurement guidelines and follow its own procurement requirements as long as they meet the minimum federal requirements. Federal procurement requirements for the FY2020 UASI Grant can be found at 2 Code of Federal Regulations (CFR) Part 200 "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards."
- D. The Authorized Equipment List (AEL) is a list of the allowable equipment which may be purchased pursuant to this Agreement and is located at <https://www.fema.gov/authorized-equipment-list>, and incorporated to this Agreement by reference. A copy of the AEL shall be retained in the Anaheim/Santa Ana Grant Office. Unless otherwise stated in program guidance any equipment acquired pursuant to this Agreement shall meet all mandatory regulations and/or DHS-adopted standards to be eligible for purchase using grant funds.

Any equipment acquired or obtained with Grant Funds:

1. Shall be made available under the California Disaster and Civil Defense Master Mutual Aid Agreement in consultation with representatives of the various fire, emergency medical, hazardous materials response services, and law enforcement agencies within the jurisdiction of the applicant;
2. Shall be consistent with needs as identified in the National Priorities and Core Capabilities, the State Homeland Security Strategy and the Anaheim/Santa Ana Urban Area and Orange County Operational Area Homeland Security Grants Strategy, the Threat Hazard Identification and Risk Assessment (THIRA), the State Preparedness Report; and deployed in conformance with those plans;
3. Shall be made available pursuant to applicable terms of the California Disaster and Civil Defense Master Mutual Aid Agreement and deployed with personnel trained in the use of such equipment in a manner consistent with the California Law Enforcement Mutual Aid Plan or the California Fire Services and Rescue Mutual Aid Plan;
4. Shall be subject to the requirements of Title 2 CFR Part 200.313 and 200.314. For the purposes of this subsection, "Equipment" is defined as nonexpendable property that is not consumed or does not lose its identity by being incorporated into another item of equipment, which costs \$5,000 or more per unit, or is expected to have a useful life of one (1) year or more.
5. Shall be used by SUB-RECIPIENT in the program or project for which it was acquired as long as needed, whether or not the project or program continues to be supported by Federal funds. When no longer useful for the original program or project, the Equipment may be used in other activities currently or previously supported by a Federal agency.
6. Shall be made available for use on other projects or programs currently or previously supported by the Federal Government, providing such use will not interfere with the work on the projects or program for which it was originally acquired. First preference for other use shall be given to other programs or projects supported by the awarding agency.
7. Shall be recorded on a ledger. The record shall include: (a) description of the item of Equipment, (b) serial number or other identification number, (c) the source of funding for the property (including FAIN); (d) who holds the title, (e) date of acquisition; (f) the per unit acquisition cost of the Equipment, (g) percentage of federal participation in the project costs for the Federal award under which the property was acquired, (h) location, and (i) use and

condition of Equipment, and (j) ultimate disposition data including the date of disposal and sale price of the property. Records must be retained pursuant to 2 CFR Part 200.313.

8. All equipment obtained under this Agreement shall have an ASUA identification decal affixed to it, and, when practical, shall be affixed where it is readily visible.
 9. A physical inventory of the Equipment shall be taken and the results reconciled with the Equipment records at least once every two years. Inventory shall also be taken prior to any UASI, State or Federal monitor visits.
 10. SUB-RECIPIENT shall exercise due care to preserve and safeguard equipment acquired with grant funds from damage or destruction and shall provide regular maintenance and such repairs for said equipment as necessary, in order to keep said equipment continually in good working order. Such maintenance and servicing shall be the sole responsibility of SUB-RECIPIENT, who shall assume full responsibility for maintenance and repair of the equipment throughout the life of said equipment.
 11. SUB-RECIPIENT shall identify a Point-of-Contact (POC) to be responsible for all Equipment prior to the receipt of the item(s). POC will serve as the custodian of the Equipment. SUB-RECIPIENT shall notify the CITY of any change in the POC and assume the responsibility of advising the new custodian of all UASI grant program guidelines and requirements.
 12. SUB-RECIPIENT shall contact the ASUA Grant Office prior to initiating the disposition process. Disposal of equipment shall be conducted pursuant to 2 CFR Part 200.313. The ASUA will contact the awarding agency for disposition instructions, if necessary, prior to any action being taken.
- E. Any training paid pursuant to this Agreement shall conform to the guidelines as listed in FY2020 Homeland Security Grant Program, as set forth above. All training expenses must be pre-authorized by CalOES at <https://www.caloes.ca.gov/CaliforniaSpecializedTrainingInstituteSite/Documents/HSG%20Funds%20Tracking%20Number%20Request%20Form.pdf>. A catalogue of Grantor approved and sponsored training courses is available at <https://cdp.dhs.gov/>.
- F. Any exercise paid pursuant to this Agreement shall conform to the guidelines as listed in FY2020 Homeland Security Grant Program, as set forth above. Detailed Homeland Security Exercise and Evaluation Program Guidance is available at <https://www.fema.gov/media-library/assets/documents/32326>.
- G. Any planning paid pursuant to this Agreement shall conform to the guidelines

as listed in FY2020 Homeland Security Grant Program, as set forth above.

- H. Any organizational activities paid pursuant to this Agreement shall conform to the guidelines as listed in FY2020 Homeland Security Grant Program, as set forth above.

III PAYMENT

§301. Payment of Grant Funds and Method of Payment

- A. CITY may, a) transfer to SUB-RECIPIENT, equipment or services purchased with grant funds; or, b) reimburse SUB-RECIPIENT for the purchase of authorized equipment, exercises, services or training upon receiving prior written approval from CITY or its designee and in accordance with grant guidelines and in full compliance with all of the SUB-RECIPIENT'S purchasing and bidding procedures. SUB-RECIPIENT shall specify the equipment, exercises, services or training to be purchased using the Application for Project Funding. A copy of this document will be provided to SUB-RECIPIENT by CITY. If additional copies of the document are needed, SUB-RECIPIENT may contact the Anaheim Grant Coordinator and it will be provided. Funds may be used for planning, exercises, organizational and training activities, and the purchase of equipment as described in Section 202 above.
- B. SUB-RECIPIENT shall provide invoices to the CITY requesting payment and all supporting documentation. Each reimbursement request shall be accompanied by the Reimbursement Request for Grant Expenditures detailing the expenditures made by SUB-RECIPIENT as authorized by Section 202 above. Each reimbursement request shall be submitted to the Anaheim UASI Grant Office. For equipment for which SUB-RECIPIENT is requesting reimbursement, all appropriate back-up documentation must be attached to the reimbursement form, including invoices, proof of payment, packing slips, and Equipment Reimbursement Worksheet. For training reimbursements, SUB-RECIPIENT must include a copy of any certificates issued or a copy of the class roster verifying training attendees, proof that a CalOES tracking number has been assigned to the course, timesheets and payroll registers for all training attendees, receipts for travel expenses related to the training, and Training Reimbursement Worksheet. For regional project reimbursements, SUB-RECIPIENT must include approval from the lead agency for all submitted invoices.
- C. Payment of final invoice shall be withheld by the CITY until the SUB-RECIPIENT has turned in all supporting documentation and completed the requirements of this Agreement.
- D. It is understood that the CITY makes no commitment to fund this Agreement beyond the terms set forth herein.
- E. Funding for all periods of this Agreement is subject to the continuing availability to the CITY of federal funds for this program. The Agreement may be terminated immediately upon written notice to SUB-RECIPIENT of a loss or reduction of federal grant funds.

IV STANDARD PROVISIONS

§401. Construction of Provisions and Titles Herein

All titles or subtitles appearing herein have been inserted for convenience and shall not be deemed to affect the meaning or construction of any of the terms or provisions hereof. The language of this Agreement shall be construed according to its fair meaning and not strictly for or against either party. The word "Sub-recipient" herein and in any amendments hereto includes the party or parties identified in this Agreement. The singular shall include the plural. If there is more than one Sub-recipient as identified herein, unless expressly stated otherwise, their obligations and liabilities hereunder shall be joint and several. Use of the feminine, masculine, or neuter genders shall be deemed to include the genders not used.

§402. Applicable Law, Interpretation and Enforcement

Each party's performance hereunder shall comply with all applicable laws of the United States of America, the State of California, and the CITY. This Agreement shall be enforced and interpreted under the laws of the State of California and the CITY.

If any part, term or provision of this Agreement shall be held void, illegal, unenforceable, or in conflict with any law of a federal, state or local government having jurisdiction over this Agreement, the validity of the remaining portions of provisions shall not be affected thereby.

§403. Integrated Agreement

This Agreement sets forth all of the rights and duties of the parties with respect to the subject matter hereof, and replaces any and all previous agreements or understandings, whether written or oral, relating thereto. This Agreement may be amended only by a written instrument executed by both parties hereto.

§404. Excusable Delays

In the event that performance on the part of any party hereto shall be delayed or suspended as a result of circumstances beyond the reasonable control and without the fault and negligence of said party, none of the parties shall incur any liability to the other parties as a result of such delay or suspension. Circumstances deemed to be beyond the control of the parties hereunder shall include, but not be limited to, acts of God or of the public enemy; insurrection; acts of the Federal Government or any unit of State or Local Government in either sovereign or contractual capacity; fires; floods; epidemics; quarantine

restrictions; strikes, freight embargoes or delays in transportation; to the extent that they are not caused by the party's willful or negligent acts or omissions and to the extent that they are beyond the party's reasonable control.

§405. Breach

Except for excusable delays, if any party fails to perform, in whole or in part, any promise, covenant, or agreement set forth herein, or should any representation made by it be untrue, any aggrieved party may avail itself of all rights and remedies, at law or equity, in the courts of law. Said rights and remedies are cumulative of those provided for herein except that in no event shall any party recover more than once, suffer a penalty or forfeiture, or be unjustly compensated.

§406. Prohibition Against Assignment or Delegation

SUB-RECIPIENT may not, unless it has first obtained the written permission of the CITY:

- A. Assign or otherwise alienate any of its rights hereunder, including the right to payment; or
- B. Delegate, subcontract, or otherwise transfer any of its duties hereunder.

§407. Permits

SUB-RECIPIENT and its officers, agents and employees shall obtain and maintain all permits and licenses necessary for SUB-RECIPIENT performance hereunder and shall pay any fees required therefore. SUB-RECIPIENT further certifies to immediately notify the CITY of any suspension, termination, lapses, non-renewals or restrictions of licenses, certificates, or other documents.

§408. Bonds

SUB-RECIPIENT must purchase a performance bond for any equipment item over \$250,000 or any vehicle (including aircraft or watercraft) financed with homeland security funds. SUB-RECIPIENT must provide a copy of performance bond to CITY no later than the time of reimbursement.

§409. Indemnification

To the fullest extent of the law, SUB-RECIPIENT agrees to indemnify, defend, and hold harmless the City of Anaheim, its officers, agents, employees, representatives and designated volunteers from and against any and all claims, demands, defense costs, or liability of any kind or nature arising out of or resulting from, or any way connected with SUB-RECIPIENT'S acts, errors or omissions in the performance of SUB-RECIPIENT'S services or use of grant funds under the terms of this Agreement.

§410. Conflict of Interest

- A. SUB-RECIPIENT covenants that none of its directors, officers, employees, or agents shall participate in selecting, or administering any subcontract supported (in whole or in part) by Federal funds where such person is a director, officer, employee or agent of the subcontractor; or where the selection of subcontractors is or has the appearance of being motivated by a desire for personal gain for themselves or others such as family business, etc.; or where such person knows or should have known that:
1. A member of such person's immediate family, or domestic partner or organization has a financial interest in the subcontract;
 2. The subcontractor is someone with whom such person has or is negotiating any prospective employment; or
 3. The participation of such person would be prohibited by the California Political Reform Act, California Government Code §87100 et seq. if such person were a public officer, because such person would have a "financial or other interest" in the subcontract.
- B. Definitions:
1. The term "immediate family" includes but is not limited to domestic partner and/or those persons related by blood or marriage, such as husband, wife, father, mother, brother, sister, son, daughter, father in law, mother in law, brother in law, sister in law, son in law, daughter in law.
 2. The term "financial or other interest" includes but is not limited to:
 - a. Any direct or indirect financial interest in the specific contract, including a commission or fee, a share of the proceeds, prospect of a promotion or of future employment, a profit, or any other form of financial reward.
 - b. Any of the following interests in the subcontractor ownership: partnership interest or other beneficial interest of five percent or more; ownership of five percent or more of the stock; employment in a managerial capacity; or membership on the board of directors or governing body.
- C. The SUB-RECIPIENT further covenants that no officer, director, employee, or agent shall solicit or accept gratuities, favors, anything of monetary value from any actual or potential subcontractor, supplier, a party to a sub agreement, (or persons who are otherwise in a position to benefit from the actions of any officer, employee, or agent).
- D. The SUB-RECIPIENT shall not subcontract with a former director, officer, or employee within a one year period following the termination of the relationship

between said person and the Contractor.

- E. Prior to obtaining the CITY'S approval of any subcontract, the SUB-RECIPIENT shall disclose to the CITY any relationship, financial or otherwise, direct or indirect, of the SUB-RECIPIENT or any of its officers, directors or employees or their immediate family with the proposed subcontractor and its officers, directors or employees.
- F. For further clarification of the meaning of any of the terms used herein, the parties agree that references shall be made to the guidelines, rules, and laws of the SUB-RECIPIENT, State of California, and Federal regulations regarding conflict of interest.
- G. The SUB-RECIPIENT warrants that it has not paid or given and will not pay or give to any third person any money or other consideration for obtaining this Agreement.
- H. The SUB-RECIPIENT covenants that no member, officer or employee of SUB-RECIPIENT shall have interest, direct or indirect, in any contract or subcontract or the proceeds thereof for work to be performed in connection with this project during his/her tenure as such employee, member or officer or for one year thereafter.
- I. The SUB-RECIPIENT shall incorporate the foregoing subsections of this Section into every agreement that it enters into in connection with this project and shall substitute the term "subcontractor" for the term "SUB-RECIPIENT" and "sub subcontractor" for "Subcontractor".

§411. Restriction on Disclosures

Any reports, analysis, studies, drawings, information, or data generated as a result of this Agreement are to be governed by the California Public Records Act (California Government Code Sec. 6250, et seq.).

§412. Statutes and Regulations Applicable To All Grant Contracts

A. Compliance With Grant Assurances

To obtain the Grant Funds, the Grantor required an authorized representative of the CITY to sign certain promises regarding the way the Grant Funds would be spent ("Grant Assurances"), attached hereto as Exhibit A. By signing these Grant Assurances, the CITY became liable to the Grantor for any funds that are used in violation of the grant requirements. SUB-RECIPIENT shall be liable to the Grantor for any funds the Grantor determines SUB-RECIPIENT used in violation of these Grant Assurances. SUB-RECIPIENT shall indemnify and hold harmless the CITY for any sums the Grantor determines SUB-RECIPIENT used in violation of the Grant Assurances.

- B. SUB-RECIPIENT shall comply with all applicable requirements of state, federal, county and SUB-RECIPIENT laws, executive orders, regulations, program and

administrative requirements, policies and any other requirements governing this Agreement. SUB-RECIPIENT shall comply with state and federal laws and regulations pertaining to labor, wages, hours, and other conditions of employment. SUB-RECIPIENT shall comply with new, amended, or revised laws, regulations, and/or procedures that apply to the performance of this Agreement. These requirements include, but are not limited to:

1. Office of Management and Budget (OMB) Circulars

SUB-RECIPIENT shall comply with 2 Code of Federal Regulations (CFR) Part 200 (Uniform Administrative, Cost Principles, and Audit Requirements for Federal Awards).

2. Single Audit Act

If Federal funds are used in the performance of this Agreement, SUB-RECIPIENT shall adhere to the rules and regulations of the Single Audit Act, 31 USC Sec. 7501 et seq.; Title 2 Code of Federal Regulations, Part 200, Subpart F Audit Requirements; and any administrative regulation or field memos implementing the Act. When reporting under on the FY2020 UASI Grant Program under the Single Audit Act, SUB-RECIPIENT shall use Catalog of Federal Domestic Assistance (CFDA) Program Number 97.067 "Homeland Security Grant Program"; Grant Identification Number 2020-0095; and identify the City of Anaheim as the Pass-Through.

3. Records Maintenance

Records, in their original form, shall be maintained in accordance with requirements prescribed by the CITY with respect to all matters covered on file for all documents specified in this Agreement. Original forms are to be maintained on file for all documents specified in this Agreement. Such records shall be retained for a period of three (3) years after the CITY receives notification of grant closeout from CalOES, and after final disposition of all pending matters. "Pending matters" include, but are not limited to, an audit, litigation or other actions involving records. The CITY may, at its discretion, take possession of, retain and audit said records. Records, in their original form pertaining to matters covered by this Agreement, shall at all times be retained within the County of Orange unless authorization to remove them is granted in writing by the CITY.

4. Subcontracts and Procurement

SUB-RECIPIENT shall comply with the federal and SUB-RECIPIENT standards in the award of any subcontracts. For purposes of this Agreement, subcontracts shall include but not be limited to purchase agreements, rental or lease agreements, third party agreements, consultant service contracts and

construction subcontracts.

SUB-RECIPIENT shall ensure that the terms of this Agreement with the CITY are incorporated into all Subcontractor Agreements. The SUB-RECIPIENT shall submit all Subcontractor Agreements to the CITY for review prior to the release of any funds to the subcontractor. The SUB-RECIPIENT shall withhold funds to any subcontractor agency that fails to comply with the terms and conditions of this Agreement and their respective Subcontractor Agreement.

5. Civil Rights

SUB-RECIPIENT shall comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681- 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) The Age Discrimination act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation act of 1970 (P.L. 91-616) as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §3601, et seq.), as amended, relating to non-discrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; (j) the requirements of any other nondiscrimination statute(s) which may apply to the application; and (k) P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

6. Telecommunications (2 CFR 200.216)

SUBRECIPIENT will comply with FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds on Covered Telecommunication Equipment or Services (Interim), which prohibits grant recipients and subrecipients from obligating or expending loan or grant funds to procure or obtain, extend or renew a contract to procure or obtain, or to enter into a contract (or

extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

C. Statutes and Regulations Applicable To This Particular Grant

SUB-RECIPIENT shall comply with all applicable requirements of state and federal laws, executive orders, regulations, program and administrative requirements, policies and any other requirements governing this particular grant program. SUB-RECIPIENT shall comply with new, amended, or revised laws, regulations, and/or procedures that apply to the performance of this Agreement. These requirements include, but are not limited to:

1. Title 2 Code of Federal Regulations (CFR) Part 200; EO 12372; Department of Justice (DOJ) Office of Judicial Programs (OJP) Office of the Comptroller, U.S. Department of Homeland Security, Preparedness Directorate Financial Management Guide; U.S. Department of Homeland Security, Office of Grants and Training, FY 2020 Homeland Security Grant Program –Notice of Funding Opportunity; ODP WMD Training Course Catalogue; and DOJ Office for Civil Rights.

Standardized Emergency Management System (SEMS) requirements as stated in the California Emergency Services Act, Government Code Chapter 7 of Division 1 of Title 2, § 8607.1(e) and CCR Title 19, §§ 2445-2448.

Provisions of 44 CFR applicable to grants and cooperative agreements, including Part 18, Administrative Review Procedures; Part 20, Criminal Justice Information Systems; Part 22, Confidentiality of Identifiable Research and Statistical Information; Part 23, Criminal Intelligence Systems Operating Policies; Part 30, Intergovernmental Review of Department of Justice Programs and Activities; Part 35, Nondiscrimination on the Basis of Disability in State and Local Government Services; Part 38, Equal Treatment of Faith-based Organizations; Part 42, Nondiscrimination/Equal employment Opportunities Policies and Procedures; Part 61, Procedures for Implementing the National Environmental Policy Act; Part 63, Floodplain Management and Wetland Protection Procedures; Part 64, Floodplain Management and Wetland Protection Procedures; Federal laws or regulations applicable to federal Assistance Programs; Part 69, New Restrictions on Lobbying; Part 70, Uniform Administrative Requirements for Grants and Cooperative Agreements (including sub-awards) with Institutions of Higher Learning, Hospitals and other Non-Profit Organizations; and Part 83, Government- Wide Requirements for a Drug Free Workplace (grants).

2. Travel Expenses

SUB-RECIPIENT as provided herein may be compensated for SUB-RECIPIENT'S reasonable travel expenses incurred in the performance of this Agreement, to include travel and per diem, unless otherwise expressed. Travel including in-State and out-of-State travel shall not be reimbursed without prior written authorization from the UASI Grant Office.

SUB-RECIPIENT'S travel and per diem reimbursement costs shall be reimbursed based on the SUB-RECIPIENT'S travel policies and procedures. If SUB-RECIPIENT does not have established travel policies and procedures, SUB-RECIPIENT'S reimbursement rates shall not exceed the amounts established under 5 U.S.C 5701-11, ("Travel and Subsistence Expenses; Mileage Allowances"), or by the Administrator of General Services, or by the President (or his or her designee) pursuant to any provisions of such subchapter must apply to travel under federal awards (48 CFR 31.205-46(a)).

3. Noncompliance

SUB-RECIPIENT understands that failure to comply with any of the above assurances may result in suspension, termination or reduction of grant funds, and repayment by SUB-RECIPIENT to CITY of any unlawful expenditures.

§413. Federal, State and Local Taxes

Federal, State and local taxes shall be the responsibility of SUB-RECIPIENT as an independent party and not as a CITY employee.

§414. Inventions, Patents and Copyrights

A. Reporting Procedure for Inventions

If any project produces any invention or discovery (Invention) patentable or otherwise under title 35 of the U.S. Code, including, without limitation, processes and business methods made in the course of work under this Agreement, the SUB-RECIPIENT shall report the fact and disclose the Invention promptly and fully to the CITY. The CITY shall report the fact and disclose the Invention to the Grantor. Unless there is a prior agreement between the CITY and the Grantor, the Grantor shall determine whether to seek protection on the Invention. The Grantor shall determine how the rights in the Invention, including rights under any patent issued thereon, will be allocated and administered in order to protect the public interest consistent with the policy ("Policy") embodied in the Federal Acquisition Regulations System, which is based on Ch. 18 of title 35 U.S.C. Sections 200, et seq. (Pub. L. 95-517, Pub. L. 98-620, 37 CFR part 401); Presidential Memorandum

on Government Patent Policy to the Heads of the Executive Departments and Agencies, dated 2/18/1983); and Executive Order 12591, 4/10/87, 52 FR 13414, 3 CFR, 1987 Comp., p. 220 (as amended by Executive Order 12618, 12/22/87, 52 FR 48661, 3 CFR, 1987 Comp., p. 262). SUB-RECIPIENT hereby agrees to be bound by the Policy, and will contractually require its personnel to be bound by the Policy.

B. Rights to Use Inventions

CITY shall have an unencumbered right, and a non-exclusive, irrevocable, royalty- free license, to use, manufacture, improve upon, and allow others to do so for all government purposes, any Invention developed under this Agreement.

C. Copyright Policy

1. Unless otherwise provided by the terms of the Grantor or of this Agreement, when copyrightable material ("Material") is developed under this Agreement, the author or the CITY, at the CITY'S discretion, may copyright the Material. If the CITY declines to copyright the Material, the CITY shall have an unencumbered right, and a non-exclusive, irrevocable, royalty- free license, to use, manufacture, improve upon, and allow others to do so for all government purposes, any Material developed under this Agreement.
2. The Grantor shall have an unencumbered right, and a non-exclusive, irrevocable, royalty-free license, to use, manufacture, improve upon, and allow others to do so for all government purposes, any Material developed under this Agreement or any Copyright purchased under this Agreement.
3. SUB-RECIPIENT shall comply with all applicable requirements in the Code of Federal Regulations related to copyrights and copyright policy.

D. Rights to Data

The Grantor and the CITY shall have unlimited rights or copyright license to any data first produced or delivered under this Agreement. "Unlimited rights" means the right to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform and display publicly, or permit others to do so; as required by 48 CFR 27.401. Where the data are not first produced under this Agreement or are published copyrighted data with the notice of 17 U.S.C. Section 401 or 402, the Grantor acquires the data under a copyright license as set forth in 48 CFR 27.404(f)(2) instead of unlimited rights. (48 CFR 27.404(a)).

E. Obligations Binding on Subcontractors

SUB-RECIPIENT shall require all subcontractors to comply with the obligations of this section by incorporating the terms of this section into all subcontracts.

§415. Minority, Women, And Other Business Enterprise Outreach Program

It is the policy of the CITY to provide minority business enterprises (MBEs), women business enterprises (WBEs) and all other business enterprises an equal opportunity to participate in the performance of all SUB-RECIPIENT contracts, including procurement, construction and personal services. This policy applies to all Contractors and Sub-Contractors.

V
DEFAULTS, SUSPENSION, TERMINATION, AND AMENDMENTS

§501. Defaults

Should SUB-RECIPIENT fail for any reason to comply with the contractual obligations of this Agreement within the time specified by this Agreement, the CITY reserves the right to terminate the Agreement, reserving all rights under state and federal law.

§502. Amendments

Any change in the terms of this Agreement, including changes in the services to be performed by SUB-RECIPIENT and any increase or decrease in the amount of compensation which are agreed to by the CITY and SUB-RECIPIENT shall be incorporated into this Agreement by a written amendment properly executed and signed by the person authorized to bind the parties thereto.

SUB-RECIPIENT agrees to comply with all future CITY directives, or any rules, amendments or requirements promulgated by the CITY affecting this Agreement.

VI
ENTIRE AGREEMENT

§601. Complete Agreement

This Agreement contains the full and complete Agreement between the two parties. Neither verbal agreement nor conversation with any officer or employee of either party shall affect or modify any of the terms and conditions of this Agreement.

§602. Number of Pages and Attachments

This Agreement is executed in three (3) duplicate originals, each of which is deemed to be an original. This Agreement includes twenty-two (22) pages and three (3) Exhibits which constitute the entire understanding and agreement of the parties.

IN WITNESS WHEREOF, the City and ORANGE COUNTY FIRE AUTHORITY have caused this Agreement to be executed by their duly authorized representatives on the date first set forth above.

ATTEST:

CITY OF ANAHEIM, a municipal Corporation
of the State of California

By: _____
Theresa Bass
Clerk of the Council

By: _____
Jorge Cisneros
Chief of Police

SUB-RECIPIENT
ORANGE COUNTY FIRE AUTHORITY
DUNS No. 62-2375124

APPROVED AS TO FORM:

By: _____

By: _____
Kristin Pelletier
Sr. Asst. City Attorney

Printed Name Brian Fennessy

Title Fire Chief

APPROVED AS TO FORM

By: _____

Printed Name David Kadik

Title GENERAL COUNSEL

EXHIBIT A

California Governor's Office of Emergency Services FY2020 Grant Assurances (All HSGP Applicants)

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) Federal Preparedness Grants Manual;
- (d) California Supplement to the NOFO; and
- (e) 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/>.

State and federal grant award requirements are set forth below. The Applicant hereby agrees to comply with the following:

1. Proof of Authority

The Applicant will obtain proof of authority 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;
- (d) Applicant is authorized by the city council, governing board, or authorized body to apply for federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-federal share of project cost, if any) to ensure proper planning, management and completion of the project described in this application; and
- (e) Official executing this agreement is authorized by the Applicant.

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

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2. Period of Performance

The period of performance is specified in the Award. The Applicant is only authorized to perform allowable activities approved under the award, within the period of performance.

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. § 200.213 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 principals, 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

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- 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 state and federal statutes relating to non-discrimination, including:

- (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 (42 U.S.C. §§ 12101- 12213), which prohibits discrimination on the basis of disability and requires buildings and structures be accessible to those with disabilities and access and functional needs;
- (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 dd—2), 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;

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- (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) California's Fair Employment and Housing Act (FEHA) (California Government Code §§12940, 12945, 12945.2), as applicable. 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, 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;
- (m) Any other nondiscrimination provisions in the specific statute(s) under which application for federal assistance is being made; and
- (n) The requirements of any other nondiscrimination statute(s) that may apply to this application.

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, including:

- (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);

Initials _____

- (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 the Applicant's 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 subrecipient, recipient, or subrecipient 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.

Initials _____

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; (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
- (d) 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
- (e) 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

Initials _____

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 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 (HSGP) –
PROGRAM SPECIFIC ASSURANCES / CERTIFICATIONS**

21. 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.

22. 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.

23. 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.

24. 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.

Initials _____

25. 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.

26. 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.

27. 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.

28. 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.

29. Hotel and Motel Fire Safety Act of 1990

In accordance with Section 6 of the Hotel and Motel Fire Safety Act of 1990, all Applicants 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.

30. Non-supplanting Requirement

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.

31. 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.

32. 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.

Initials _____

33. 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.

34. 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.

35. 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.

36. 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.

Initials _____

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 2020, Version 10.1, 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 to enter into this agreement for and on behalf of the Applicant.

Subrecipient: _____

Signature of Authorized Agent: _____

Printed Name of Authorized Agent: _____

Title: _____

Date: _____

Initials _____

EXHIBIT B

CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under the applicable CFR covering New Restrictions on Government-wide Debarment and Suspension (Nonprocurement). The certification shall be treated as a material representation of fact upon which reliance will be placed when the Agency determines to award the covered transaction or cooperative agreement.

As required by Executive Order 12549, Debarment and Suspension, and implemented under the applicable CFR, for prospective participants in covered transactions, as defined in the applicable CFR

A. The applicant certifies that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, 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 government entity (Federal State or local) with commission of any of these offenses enumerated in paragraph (1) (b) of this certification; and
- (d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State or local) terminated for cause or default; and

B. 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.


Authorized Agent Signature

Brian Fennessy
Printed or Typed Name

Fire Chief
Title

Address: 1 Fire Authority Rd.

Irvine, CA

92602

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this document, the prospective recipient of Federal assistance funds is providing the certification as set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective recipient of Federal assistance funds knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective recipient of Federal assistance funds shall provide immediate written notice to the person to whom this agreement is entered, if at any time the prospective recipient of Federal assistance funds learns that its certification was erroneous, when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549.
5. The prospective recipient of Federal assistance funds agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective recipient of Federal assistance funds further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties Excluded from Procurement or Non Procurement Programs.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under Paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

EXHIBIT C

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. 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.
2. 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.
3. 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.
4. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Subrecipient, as identified below, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Subrecipient understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

AGREEMENT NUMBER: _____

CONTRACTOR/BORROWER/AGENCY

Brian Fennessy
NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE

11-17-2021



FY20 UASI Grant Program Transfer Agreement Checklist

Enclosed are three (3) FY2020 UASI Grant Program Transfer Agreements.

The signatory for each city or agency must be specifically authorized by their City Council or Board to execute the agreement. **Please submit a copy of the City Council/Board approved document granting the individual authority to execute the agreement to the UASI office with the signed agreements.**

The transfer agreement requires signatures from the authorized representative on the following pages:

- ☐ **Transfer Agreement – Authorized Representative (pg. 22)**
- ☐ **Transfer Agreement – Legal Counsel (p.22)**
- ☐ **Exhibit A: FY2020 Grant Assurances – Authorized Representative; please note the initials required on each page of the Grant Assurances (p. 23-32)**
- ☐ **Exhibit B: Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Authorized Representative (p.33)**
- ☐ **Exhibit C: Certification Regarding Lobbying – Authorized Representative (p.35)**

****Please fill out the requested agency information on page 3 of the agreement (§102).**

In addition to the agreements, your city or agency will also need to submit the following documents:

- ☐ ASUA Sub-Recipient Grants Assessment
- ☐ City/Agency's Procurement Policy
- ☐ City/Agency's Travel Policy
- ☐ City/Agency's Equipment Control and Disposition Policy
- ☐ Copy of 2019/2020 Single Audit Report (if expend over \$750,000 in federal assistance)
- ☐ City Council/Board Approval Document (as mentioned above)

Please mail three (3) original copies of the agreement and the required documents to the following address:

Kerrstyn Vega, UASI Grant Coordinator
Anaheim Police Department
Budget & Finance
425 S. Harbor Blvd.
Anaheim, CA 92805



ANAHEIM/SANTA ANA UASI GRANT PROGRAM

SUB-RECIPIENT GRANTS MANAGEMENT ASSESSMENT

Grant/Year:	FY2020 UASI Grant Program
Sub-Recipient:	
DUNS #:	

Per 2 CFR Part 200.331, the Anaheim/Santa Ana UASI is required to evaluate the risk of non-compliance with federal statutes, regulations, and grant terms and conditions posed by each sub-recipient of federal grant funding. The purpose of this assessment is to determine and provide an appropriate level of technical assistance, training, and grant oversight to sub-recipients of the ASAUA grant program.

The following are questions related to your organization's experience in the management of grant awards. This questionnaire must be completed and returned with the UASI Sub-Recipient Transfer Agreement and pre-award documentation.

For purposes of completing the questionnaire, grant manager is the individual who has the primary responsibility for day-to-day administration of the grant, bookkeeper/accounting staff means the individual who has the responsibility for reviewing and determining expenditures to be charged to the grant award, and organization refers to the sub-recipient (city/governmental agency) applying or entering into the award.

Assessment Factors	Response
1) How many years of experience does your current grant manager have managing grants? <i>(Response: less than 3 years, between 3-5 years, or greater than 5 years)</i>	
2) How many years of experience does your current bookkeeper/accounting staff have managing grants? <i>(Response: less than 3 years, between 3-5 years, or greater than 5 years)</i>	
3) How many grants does your organization currently receive? <i>(Response: 1-3 grants, 3-10 grants, or more than 10 grants)</i>	
4) What is the approximate total dollar amount of all grants your organization receives?	
5) Are individual staff members assigned to work on multiple grants? <i>(Response: Yes/No)</i>	
6) Do you use timesheets to track the time staff spend working on specific activities/projects? <i>(Response: Yes, No, or Not Applicable)</i>	
7) How often does your organization have a financial audit? <i>(Response: Annually, Periodically, or Never)</i>	
8) Has your organization received any audit findings in the last three years? <i>(Response: Yes/No)</i>	
9) Do you have a written plan on how you charge costs to grants? <i>(Response: Yes/No)</i>	
10) Do you have written procurement policies? <i>(Response: Yes/No)</i>	
11) Do you get multiple quotes or bids when buying items or services? <i>(Response: Always, Sometimes, or Never)</i>	
12) How many years do you maintain receipts, deposits, cancelled checks, invoices, etc.? <i>(Response: less than 3 years, between 3-5 years, or greater than 5 years)</i>	
13) Do you have procedures to monitor grant funds pass through to other entities? <i>(Response: Yes, No, or Not Applicable)</i>	

Certification: <i>This is to certify that, to the best of our knowledge and belief, the data furnished above is accurate, complete and current.</i>	
Signature (Authorized Agent):	Date:
Print Name:	Print Title:

Entities Covered by the FY2020 Anaheim/Santa Ana UASI Grant Program

The Anaheim / Santa Ana Urban Area, located in Southern California, has a population of 3.1 million and encompasses all 34 cities within Orange County covering an area of approximately 800 square miles.

Anaheim	La Habra	Placentia
Aliso Viejo	La Palma	Rancho Santa Margarita
Brea	Laguna Beach	San Clemente
Buena Park	Laguna Hills	San Juan Capistrano
Calif. State University, Fullerton	Laguna Niguel	Santa Ana
Costa Mesa	Laguna Woods	Santa Ana Unified School District
Cypress	Lake Forest	Seal Beach
Dana Point	Los Alamitos	Stanton
Fountain Valley	Mission Viejo	Tustin
Fullerton	Newport Beach	University of California, Irvine
Garden Grove	Orange	Villa Park
Huntington Beach	Orange County	Westminster
Irvine	Orange County Fire Authority	Yorba Linda
Juaneño Band of Mission Indians		Municipal Water District of Orange County

Anaheim/Santa Ana UASI Current UAWG Voting Membership

Region	Discipline	Member	Email
Northern Region	Law	Captain Brad Butts	mbutts@placentia.org
	Fire	Captain Nick Colonelli	NColonelli@anaheim.net
	Emergency Management	Dr. Jannine Wilmoth	JWilmoth@anaheim.net
Southern Region	Law	Lieutenant Charles Walters	clwalters@ocsd.org
	Fire	Division Chief Shane Sherwood	shanesherwood@ocfa.org
	Emergency Management	Michelle Anderson	MANDERSON@ocsd.org
Central Region	Law	Manuel Arzate	marzate@tustinca.org
	Fire	Deputy Chief Doug Yates	dyates@cityoforange.org
	Emergency Management	Stephen Rhyner	srhyner@santa-ana.org
Western Region	Law	Lieutenant Bo Svendsbo	gsvendsbo@HBPD.org
	Fire	Battalion Chief Eric McCoy	emccoy@surfcity-hb.org
	Emergency Management	Brevyn Mettler, CEM	brevyn.mettler@surfcity-hb.org
Harbor Region	Law	Captain Jeff Calvert	jcalvert@lagunabeachcity.net
	Fire	Battalion Chief Tim Vasin	tim.vasin@costamesaca.gov
	Emergency Management	Katie Eing	keing@nbpd.org

Group	Discipline	Member	Email
	Health	Vacant	
Citizen Corps Council	Emergency Management	Sarah Limones	SLimones@ocsd.org
	Communications	Will Bogdan	WBogdan@ocsheriff.gov
MMRS	Fire	Battalion Chief Jim Henery	jameshenery@ocfa.org
OCIAC	Fusion Center	Alberto Martinez	albemart@ociac.ca.gov
	Education Institutions	Kris Kutting, Orange Coast College, kcutting@occ.cccd.edu	
	Individuals with Disabilities, Access, and Functional Needs	Vacant	
	Chief Information Officer/Chief Information Security Officer	Linda Le	linda.le@ceoit.ocgov.com



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 3A
Discussion Calendar

**2021 Long Term Liability Study
& Accelerated Pension Payment Plan**

Contact(s) for Further Information

Robert Cortez, Assistant Chief
Business Services Department

robertcortez@ocfa.org

714.573.6012

Tricia Jakubiak, Treasurer
Treasury & Financial Planning

triciajakubiak@ocfa.org

714.573.6301

Summary

This annual agenda item is submitted to provide information on the Orange County Fire Authority's (OCFA) total long term liabilities and strategies for mitigating and/or funding the liabilities.

Prior Board/Committee Action

As this is an annual report, the last presentation to the Board of Directors was at its January 28, 2021 meeting.

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 January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors:

1. Receive and file the report.
2. Direct staff to adjust the FY 2021/22 General Fund budget to increase expenditures and operating transfers out by a combined value of \$4,590,935, the amount identified as the unencumbered fund balance in the FY 2020/21 financial audit, and to allocate 50% or \$2,295,467.50 of the funding to replenish the contingency reserve to 10% of expenditures as required by the OCFA's Financial Stability Policy, and \$2,295,467.50 to the Structural Fire Fund Entitlement Fund as required under the 2010 First Amendment to the Amended Joint Powers Agreement. The specific technical budget adjustment to carry-out this action will be included in the March mid-year budget adjustment agenda item for final approval by the Board.

Impact to Cities/County

Strategic planning to reduce liabilities where possible and provide early funding for those liabilities which cannot be reduced, will assist OCFA in sustaining frontline emergency services for our member agencies and the citizens we serve.

Fiscal Impact

During the past eight years, the OCFA Board of Directors' support of the Accelerated Pension Payment Plan has enabled OCFA to make accelerated payments totaling \$124.3 million, resulting in interest savings of \$46.8 million on behalf of the Orange County citizens and taxpayers who fund our services.

Background

In order to determine an agency's financial stability, one must look at all of its long-term obligations or liabilities, not just pensions. The Liability Study (Attachment 1) examines all of OCFA's long-term liabilities, with primary focus on the pension liability and retiree medical liability.

Accelerated Pension Payment Plan

During FY 2020/21, OCFA made additional payments towards its Unfunded Actuarially Accrued Liability (UAAL) totaling \$15.8 million to the Orange County Employees' Retirement System (OCERS). To evaluate progress associated with the accelerated funding of OCFA's pension liability, OCFA requested OCERS' actuary, Segal Consulting, to update the following:

- How much OCFA saved in interest annually since 2013 by making additional payments towards its UAAL?
- When would OCFA achieve 85% funding and 100% funding if it continued to make additional UAAL payments under its Snowball Plan?

The actuary reported back that OCFA has saved \$46.8 million in interest by making additional payments towards its UAAL and has achieved 87.7% funding as of December 31, 2020, and will achieve 100% funding by December 31, 2025, assuming all other actuarial inputs are held constant.

Irvine Settlement Agreement

As part of the Irvine Settlement Agreement, OCFA agreed to establish a 115 Trust and to make annual deposits of \$2 million, dedicated solely for future application to OCFA's pension liability. On May 23, 2019, the OCFA Board approved establishing the 115 Trust with the Public Agency Retirement Services (PARS), and the initial deposit of \$2 million was made on July 1, 2019. OCFA is to continue to make annual deposits of \$2 million in July of each year. However, if OCFA has not funded 85% of its pension liability as determined by OCERS by June 30, 2021, then the required 115 Trust payment will be reduced to \$1,500,000 per fiscal year until OCFA achieves the targeted 85% funding level and the \$500,000 reduction will instead be contributed to OCERS as an additional employer pension contribution. Since OCFA's pension plan is currently 87.7% funded, for FY 2021/22 the full \$2 million will be deposited into the PARS 115 Trust to reduce the pension liability.

A hypothetical allocation of OCFA's pension liability by member city can be found in Attachment 3, and the allocation of the PARS 115 trust assets by member city can be found in Attachment 4.

The OCFA has already taken many steps to reduce some of its long-term liabilities and accelerate funding of other liabilities. Staff is committed to continue seeking additional ways to mitigate liability impacts, fund the accrued liabilities, and ensure the long-term viability of the organization.

Attachment(s)

1. 2021 Long Term Liability Study
2. Updated Snowball Strategy
3. Hypothetical Allocation of Pension Liability Per City
4. Allocation of PARS 115 Trust Assets by City

ORANGE COUNTY FIRE AUTHORITY



2021 LIABILITY STUDY

OCFA'S LONG TERM LIABILITIES

JANUARY 2022

OCFA'S LONG TERM LIABILITY STUDY

I. OBJECTIVE

One of the key components of fiscal responsibility is prudent management of long-term liabilities. The objective of this annual study is to provide an accurate assessment of the OCFA's **total** long-term obligations and to continuously identify strategies to reduce and/or fund the liabilities.

II. BACKGROUND

OCFA's long term liabilities include:

- A. Defined Benefit Pension Plan
- B. Defined Benefit and Defined Contribution Retiree Medical Plans
- C. Workers Compensation Claims
- D. Accrued Compensated Absences (accumulated sick and vacation payouts)
- E. Leases (new this year)

The liabilities above, and strategic funding for each, remain a focus for OCFA as discussed in more detail below.

A. DEFINED BENEFIT PENSION PLAN

In a *defined benefit plan*, employees receive *specific benefits* upon retirement, based on a pre-established formula. For example, a pension plan may provide retirees an annual retirement income which is determined in accordance with an agreed-upon formula, such as a predetermined percentage of annual earnings multiplied by the number of years of service.

The OCFA participates in the Orange County Employees' Retirement System (OCERS), a cost sharing multiple-employer, defined benefit pension plan. All OCFA regular, full-time, and part-time employees become members of OCERS upon employment, and the OCFA makes periodic contributions to OCERS as part of the funding process. The contributions submitted to OCERS are divided into employer and employee contributions. The combination of these contributions and investment income from OCERS' investments are structured to fund the employees' retirement benefits by the time the employees retire.

The OCFA's employees are distributed into two employee categories for purposes of retirement benefits, identified as Safety members and General members. Both the Safety and General categories include three tiers of retirement benefit formulas each, depending on date of hire:

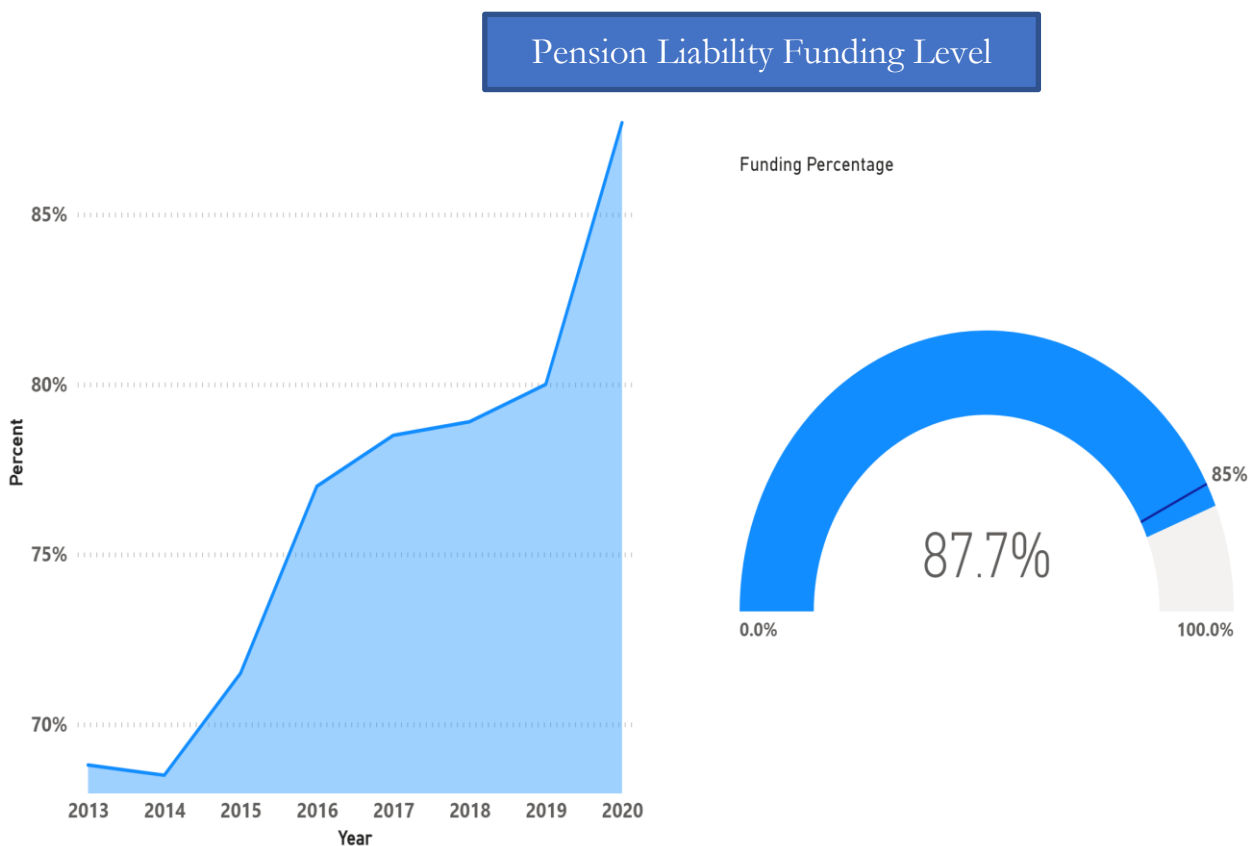
	Hired Prior to July 1, 2012	Hired Between July 1, 2012 – Dec. 31, 2012	Hired on or after Jan. 1, 2013 (w/out reciprocity)
Safety	3% @ 50	3% @ 55	2.7% @ 57

	Hired Prior to July 1, 2011	Hired Between July 1, 2011 – Dec. 31, 2012	Hired on or after Jan. 1, 2013 (w/out reciprocity)
General	2.7% @ 55	2% @ 55	2.5% @ 67

OCFA Retirement Costs, Liabilities and Funding

OCFA's annual retirement costs (mandatory costs plus voluntary accelerated payments) represent approximately \$96 million or 21% of the Authority's FY 2021/22 General Fund budget. Each year, the Authority receives its retirement rates from OCERS. The total retirement rate has two components: the Normal Cost Component plus the current year's cost for the Unfunded Actuarial Accrued Liability (UAAL). The Normal Cost Component is the cost to pay for the current year's value of retirement benefits as earned. The UAAL Component is the accrued liability for past services which were not funded by prior contributions and investments.

The UAAL is determined by the actuary and is the difference between the present value of accrued liabilities and the value of assets as of a specific date. This amount changes over time as a result of changes in accrued benefits, pay levels, rates of return on investments, changes in actuarial assumptions, and changes in the demographics of the employee base.



Based on the December 31, 2020, valuation by OCERS, the Authority's total UAAL was \$275.6 million with \$241.4 million or 88% attributed to Safety members and \$34.2 million or 12% attributed to General members. As shown above, OCFA's pension plan is 87.7% funded. The OCFA reduces its UAAL over time as part of the annual required pension contribution to OCERS as shown below:

General Members (2.7% @ 55, 2.0% @ 55, and 2.5% @ 67 combined)

<u>Employer Rate *</u>	<u>2020 Valuation</u> (FY 22/23 rates)	<u>2019 Valuation</u> (FY 21/22 rates)
Normal Cost	12.90%	12.34%
<u>UAAL</u>	<u>11.49%</u>	<u>14.06%</u>
Total	24.39%	26.40%

Safety Members (3.0% at 50, 3% @ 55 and 2.7% @ 57 combined)

<u>Employer Rate *</u>	<u>2020 Valuation</u> (FY 22/23 rates)	<u>2019 Valuation</u> (FY 21/22 rates)
Normal Cost	24.29%	24.33%
<u>UAAL</u>	<u>16.36%</u>	<u>23.79%</u>
Total	40.65%	48.12%

* Totals do not include *Employee Rates*, which vary based on age of entry and retirement formula. *Employee Rates* range from 5.26% - 12.16% for General and 9.08% - 14.19% for Safety. Rates are also after adjustment for additional UAAL contributions made from 2014 to 2021.

Two events have the greatest impact on plan funding: (1) plan changes, namely benefit formula changes and (2) differing actual experience requiring a modification in assumptions to reflect reality such as life expectancy. Other assumptions that impact the funding and UAAL include:

1. The assumed rate of return
2. The rate of increase in salaries
3. Member mortality
4. The age at which members choose to retire
5. How many members become disabled
6. How many members terminate their service earlier than anticipated

The assumed rate of return, also known as the discount rate, is a critical issue impacting OCFA's UAAL. The higher the discount rate, the lower the present value of pension assets needed to meet future pension obligations. A lower discount rate increases the current unfunded pension liabilities.

In 2013, the OCERS Board voted to lower the interest rate assumption from 7.75% to 7.25% which increased OCFA's annual retirement costs by \$7.5 million. This increase was phased in over a two-year period starting in FY 2014/15.

In October 2017, the OCERS Board voted to lower the interest rate assumption again from 7.25% to 7.0%. It also voted to update the mortality tables based on generational mortality. The updated mortality tables indicate that people are living longer which means they will collect a pension longer resulting in an increase in retirement costs. These new assumption changes increased OCFA's retirement contribution rates by 3.73% of pay or approximately \$5 million per year beginning in July 2019.

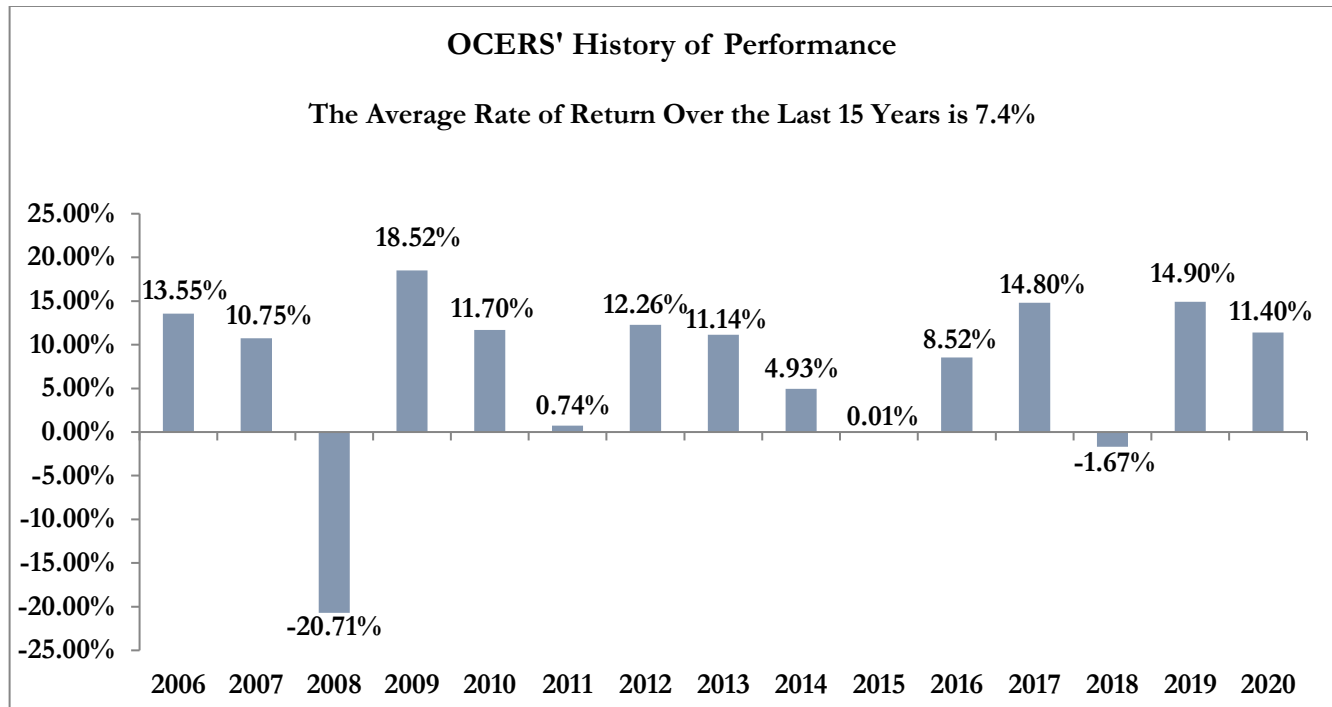
In 2018, OCERS investment return was negative 1.67% and less than its assumed rate of return of 7.0%. This resulted in an increase to OCFA's UAAL from \$400.6 million in 2017 to \$426.7 million in 2018.

In 2019, OCERS investment return was 14.4%. However, despite exceeding its 7.0% assumed rate of return and additional payments made by OCFA towards its UAAL, OCFA's UAAL did increase by \$8.0 million from \$426.7 million to \$434.7 million. Most of the UAAL increase was attributed to prior years' investment losses and higher actual versus expected retiree cost of living adjustment (COLA). In addition, actual

experience for mortality, rate of retirement, turnover, and disability came in higher than the actuary projected resulting in an actuarial loss.

In 2020, OCERS exceeded its 7% assumed rate of return and earned 11.4%. OCERS' strong market performance, along with changes to its long-term actuarial assumptions and additional payments OCFA has made towards its unfunded pension liability, significantly decreased OCFA's UAAL. The UAAL decreased by \$159.1 million from \$434.7 million in 2019 to \$275.6 million in 2020.

The following chart shows a history of OCERS' investment performance over the past fifteen years. Although there have been years in which OCERS exceeded its assumed rate of return, the years in which OCERS incurred significant losses, such as the 21% loss in 2008, have a dramatic negative impact. OCERS' average return for the 15 years reflected below is 7.4%, which is slightly above its assumed rate of return of 7.0%.



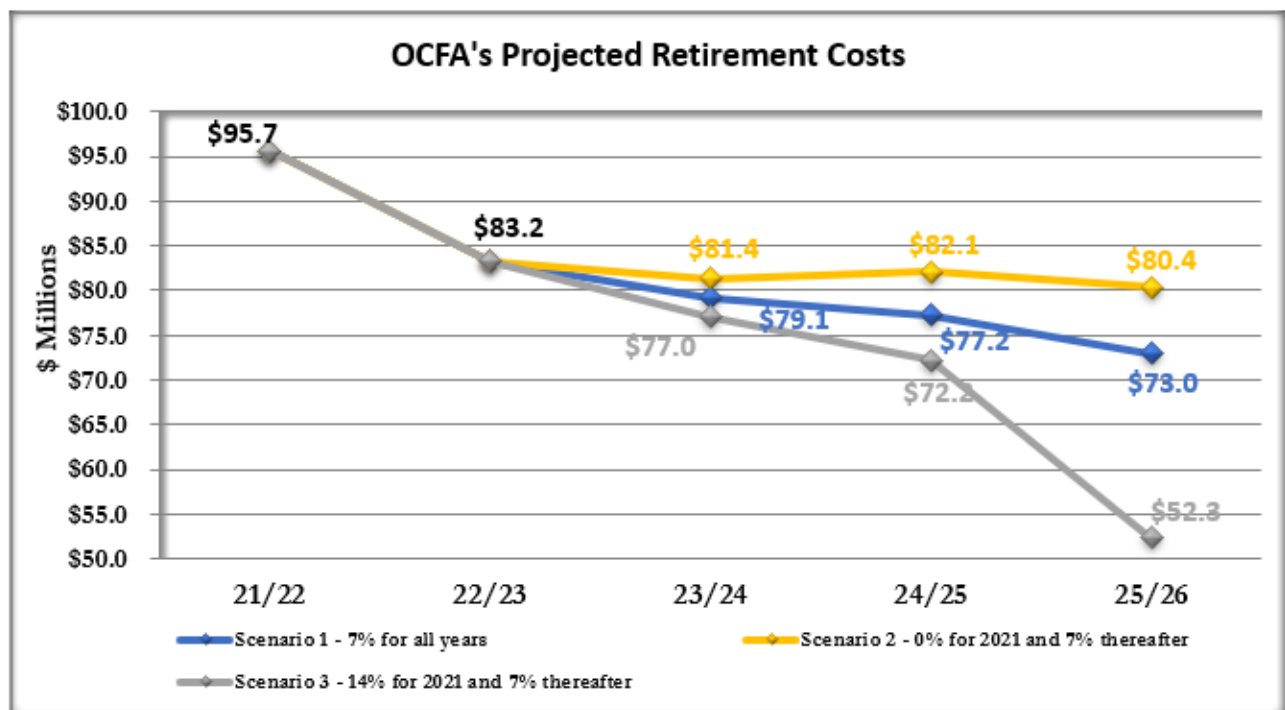
OCERS' investment return also impacts the funding level of the entire system, as demonstrated in the following chart. After the 21% loss in 2008, OCERS UAAL increased, and its funding level began to drop. The funding level started to improve in 2013 when OCERS rate of return exceeded the assumed rate of return. The funding level continued to improve in 2020.

OCERS' Schedule of Funding Progress
(Dollars in Thousands)

Actuarial Valuation Date December 31	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (b)	Total UAAL (b-a=c)	Funded Ratio (a/b)
2001	\$4,586,844	\$4,843,899	\$257,055	94.69%
2002	4,695,675	5,673,754	978,079	82.76%
2003	4,790,099	6,099,433	1,309,334	78.53%
2004	5,245,821	7,403,972	2,158,151	70.85%
2005	5,786,617	8,089,627	2,303,010	71.53%

2006	6,466,085	8,765,045	2,298,960	73.77%
2007	7,288,900	9,838,686	2,549,786	74.08%
2008	7,748,380	10,860,715	3,112,335	71.34%
2009	8,154,687	11,858,578	3,703,891	68.77%
2010	8,672,592	12,425,873	3,753,281	69.79%
2011	9,064,355	13,522,978	4,458,623	67.03%
2012	9,469,208	15,144,888	5,675,680	62.52%
2013	10,417,125	15,785,042	5,367,917	65.99%
2014	11,449,911	16,413,124	4,963,213	69.76%
2015	12,228,009	17,050,357	4,822,348	71.72%
2016	13,102,978	17,933,461	4,830,483	73.06%
2017	14,197,125	19,635,427	5,438,302	72.30%
2018	14,994,420	20,703,349	5,708,929	72.43%
2019	16,036,869	21,916,730	5,879,861	73.17%
2020	17,525,117	22,904,975	5,379,858	76.51%

The chart below provides three OCERS rate of return scenarios. Scenario 1 assumes OCERS will earn its assumed rate of return of 7.0% in 2021 and future years. Scenario 2 assumes that OCERS will not earn its assumed rate of return, and instead will earn 0.0% in 2021 and 7.0% in future years. Scenario 1 contrasts with Scenario 2 and demonstrates the significant increase to retirement contribution rates when OCERS does not earn its assumed rate of return. Scenario 3 assumes a 14% return in 2021 and a 7% return in future years. Note here that the opposite impact occurs, with a significant decrease to retirement contribution rates when OCERS significantly exceeds its assumed rate of return. This data is presented to demonstrate the potential impacts that can (and do) occur from time to time when the system earns less (or more) than assumed. OCERS' year-to-date 2021 preliminary return as of November is 13.6%. It has an assumed rate of 7.0% and is on a calendar year basis.



OCFA has taken steps to increase employee contributions, reduce benefits by establishing new tiers, and accelerate the paydown of the UAAL with the long-term goal to ensure adequate pension funding. However, other factors (such as OCERS' investment performance) are beyond the OCFA's control, yet these factors have a significant impact on determining retirement rates and ensuring adequate funding.

Accelerated Pension UAAL Payment Plan

In September 2013, the OCFA Board of Directors approved an Accelerated Pension UAAL Payment Plan. The accelerated plan has the following benefits:

- Results in OCFA's pension liability being paid off sooner
- Earlier and larger contributions into the pension system result in greater investment income earned
- Greater investment income earned results in less money paid by the employer over the long term

OCFA's accelerated payment plan originally involved three components including (1) use of year-end fund balance available, (2) contributing additional funds each year using savings achieved under PEPRA or other annual actuarial gains, and (3) contributing an additional \$1 million per year in budgeted funds, with the annual budget allocation building to \$5 million per year by year five.

The number of employees who fall under PEPRA continues to increase as shown in the table below. Over time, this will lower OCFA's retirement costs since PEPRA employees receive a less costly benefit.

	General		Safety		Total	
PEPRA	180	12.10%	422	28.36%	602	40.46%
Legacy	141	9.47%	745	50.07%	886	59.54%
Total	321	21.57%	1,167	78.43%	1,488	100%

In FY15/16, the plan was modified to include the following:

- Contributing an additional \$1 million each year starting in 2016/17 and increasing by \$2 million each year until it reaches \$15 million and continuing at \$15 million thereafter
- Contributing \$1 million per year from surplus fund balance available in the Workers' Compensation Self Insurance Fund starting in 2016/17 for five years

In FY16/17, the plan was modified again to include the following:

- Contributing \$7,633,021 in FY 2017/18 from General Fund surplus and continuing in different amounts until OCFA's funding goal is achieved
- Reduced the accelerated funding goal from 100% to 85% for OCFA's pension liability with the added policy to redirect expedited payment dollars to OCFA's retiree medical liability after achieving the 85% target for the pension liability.

To date, OCFA has made the following additional payments towards its UAAL:

FY 13/14 \$ 5.5 million

FY 14/15	21.3 million
FY 15/16	15.4 million
FY 16/17	13.5 million
FY 17/18	19.9 million
FY 18/19	19.2 million
FY 19/20	13.7 million
<u>FY 20/21</u>	<u>15.8 million</u>
Total	\$124.3 million

The outcomes from the accelerated payment plan implementation in FY 2013/14 through FY 2020/21 along with OCFA's anticipated future year accelerated payments were submitted to OCERS' actuary to determine:

1. How much OCFA saved in interest annually since 2013 by making additional payments towards its UAAL?
2. When would OCFA achieve 85% funding and 100% funding if it continued to make additional UAAL payments under its Snowball Plan?

The actuary reported back that OCFA has saved \$46.8 million in interest by making additional payments towards its UAAL. The noted \$46.8 million in interest savings has accumulated, as shown below, in correlation with our accelerated payments:

CY 2014	\$ 1,012,937
CY 2015	2,084,402
CY 2016	3,295,068
CY 2017	4,322,897
CY 2018	6,059,497
CY 2019	7,839,455
CY 2020	9,855,226
<u>CY 2021</u>	<u>12,330,862</u>
Total	\$46,800,344

OCFA is 87.7% funded as of December 31, 2020 and is expected to achieve 100% funding by December 31, 2025, assuming all other actuarial inputs are held constant.

All of the above strategies will reduce the OCFA's existing UAAL more rapidly, and effectively shorten the weighted-average amortization period. Shortening the amortization period will have many benefits to OCFA. Although it causes our employer contributions to rise during the expedited payment period, it results in our liability being paid off sooner. Earlier payments of contributions will result in greater investment income earned and less money paid from the employer over the long-term.

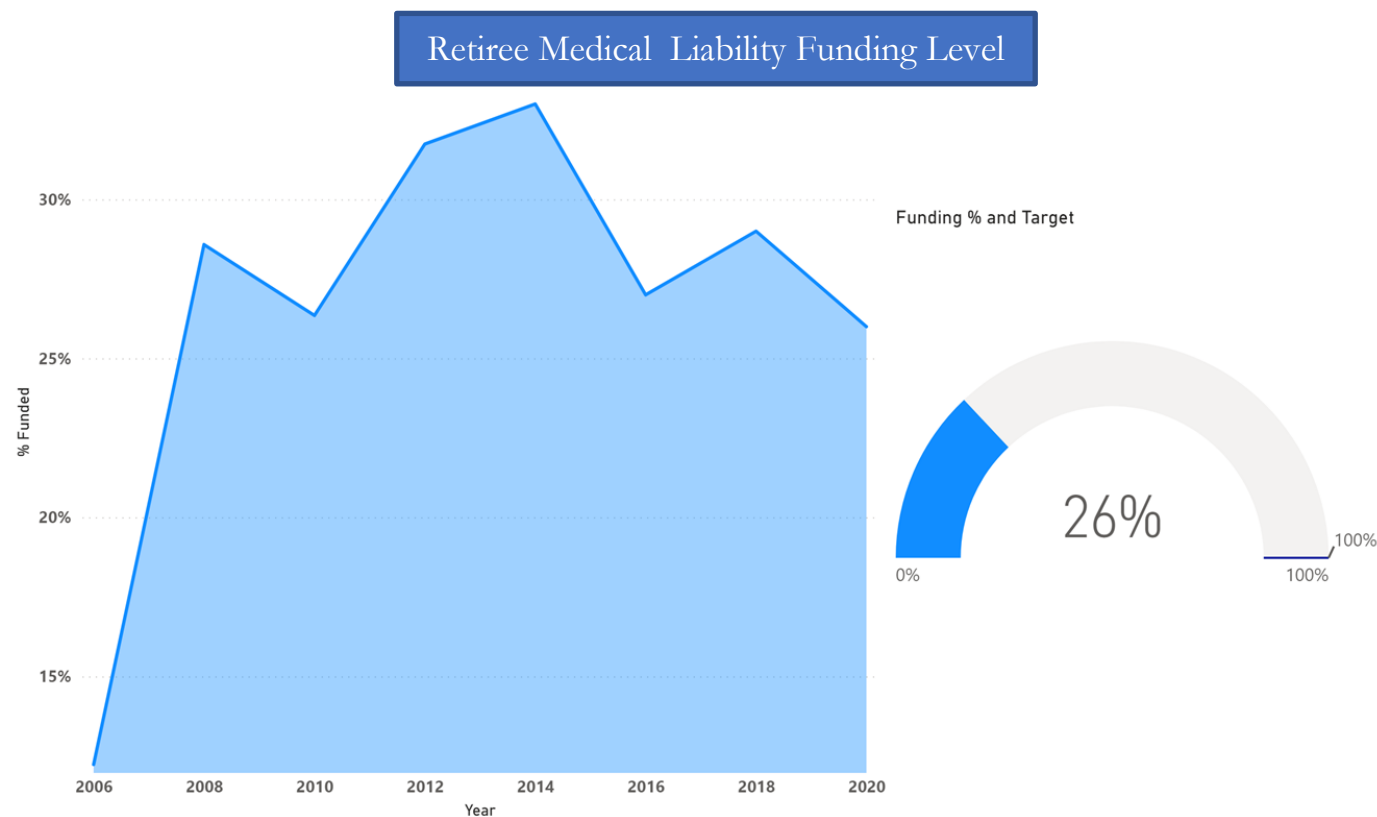
B. DEFINED *BENEFIT* RETIREE MEDICAL PLAN

In addition to the OCFA's retirement plan administered by OCERS, the OCFA provides a post-employment medical retirement plan (Retiree Medical Plan) for certain employees. Employees hired prior to January 1, 2007, are in a *defined benefit plan* that provides a monthly grant toward the cost of retirees' health insurance coverage based on years of service. The Plan's assets are held in an irrevocable trust for the exclusive benefit

of Plan participants and are invested by OCERS. As such, if OCERS does not earn its assumed rate of return of 7.0%, the UAAL increases. Current active employees hired prior to January 1, 2007, are required to contribute 4% of their gross pay toward the Retiree Medical Plan.

Based on a Funding Adequacy Analysis prepared by Nyhart, a third-party actuary, as of June 30, 2020, the OCFA’s Unfunded Actuarial Accrued Liability (UAAL) for the Retiree Medical defined benefit plan is \$106.5 million and it is 26% funded. The UAAL continues to increase because there are no new entrants into the Plan to contribute to the funding, each year additional employees retire and begin collecting the grant, the medical grant increases each year based on the 5% maximum, and occasionally changes are made to the underlying assumptions such as the investment return and mortality tables.

Under the Government Accounting Standards Board (GASB) Statement No. 45, OCFA was required to have an actuarial valuation performed on its Retiree Medical Plan every two years. Even though GASB 45 has now been replaced by GASB 74 and 75, OCFA will continue its practice of updating the funding analysis every two years with the next update taking place in 2022.



Note: Does not include implicit subsidy and uses OCERS assumed rate of return of 7.75% in 2012, 7.25% up to 2016, and 7.00% thereafter.

The benefit provided under the OCFA's Retiree Medical Plan is a negotiated benefit included in the various Memorandums of Understanding and the Personnel & Salary Resolution for employees hired prior to January 1, 2007.

The OCFA has previously approached funding issues and plan sustainability issues relating to this Plan collaboratively with its labor groups in order to identify options for improving the funding status. Similar to previous approaches, following receipt of the 2012 Actuarial Study for this Plan, management met with representatives of all three labor groups to review the findings. In 2013, we gathered ideas from labor for options that may be considered in the future to improve the funding status of the Plan and had the actuary perform a special actuarial study to evaluate the various options and associated impacts on plan funding. The results of the special study were shared with each of the labor groups.

On November 17, 2016, the OCFA Board directed staff to continue the Accelerated Pension Payment Plan as indicated in the Updated Snowball Strategy, with a modification to alter the funding target from 100% to 85% and redirect expedited payment dollars to Retiree Medical after achieving the 85% target.

- As of December 31, 2020, OCFA's pension liability became 87.7% funded; therefore, snowball payments effective in the FY 2021/22 Adopted Budget (and in years moving forward) are now being directed to the Retiree Medical Liability.
- Projected snowball payments for FY 2021/22 and moving forward (see Attachment 2), when applied to the current \$106.5 million UAAL for Retiree Medical, demonstrate that this liability may achieve 100% funding by approximately 2025 or 2026.

In addition to the snowball strategy funding for Retiree Medical, in April 2017, the OCFA Board approved a renewed Health Plan Agreement with the Orange County Professional Firefighters Association from January 1, 2017 to December 31, 2021. One of the related provisions is as follows:

... to continue return of "excess fund balance" to OCFA with returned funds to be allocated to OCFA's Retiree Medical Trust Fund.

2016 Firefighter Medical Trust Review: An excess fund balance in the amount of \$2,275,829 was credited to OCFA and used as a payment to the Retiree Medical Trust per the Firefighter Medical Agreement. The payment was approved by the Board as part of the FY 2017/18 Mid-Year Budget Adjustments.

2020 Firefighter Medical Trust Review: An excess fund balance in the amount of \$1,954,775 will be credited to OCFA and used as a payment to the Retiree Medical Trust per the Firefighter Medical Agreement. The payment will be submitted to the Board as part of the FY 2021/22 Mid-Year Budget Adjustments.

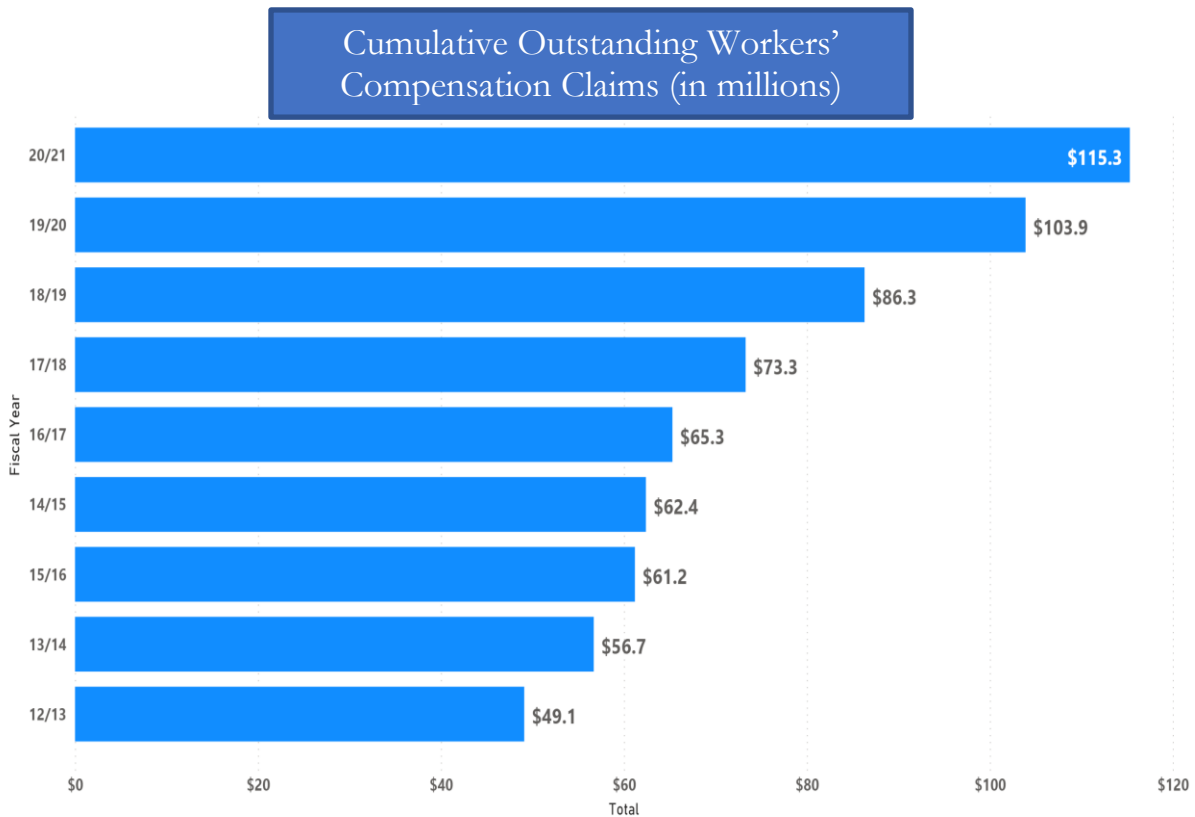
Management and labor will continue to meet on this topic as needed.

B. DEFINED *CONTRIBUTION* RETIREE MEDICAL PLAN

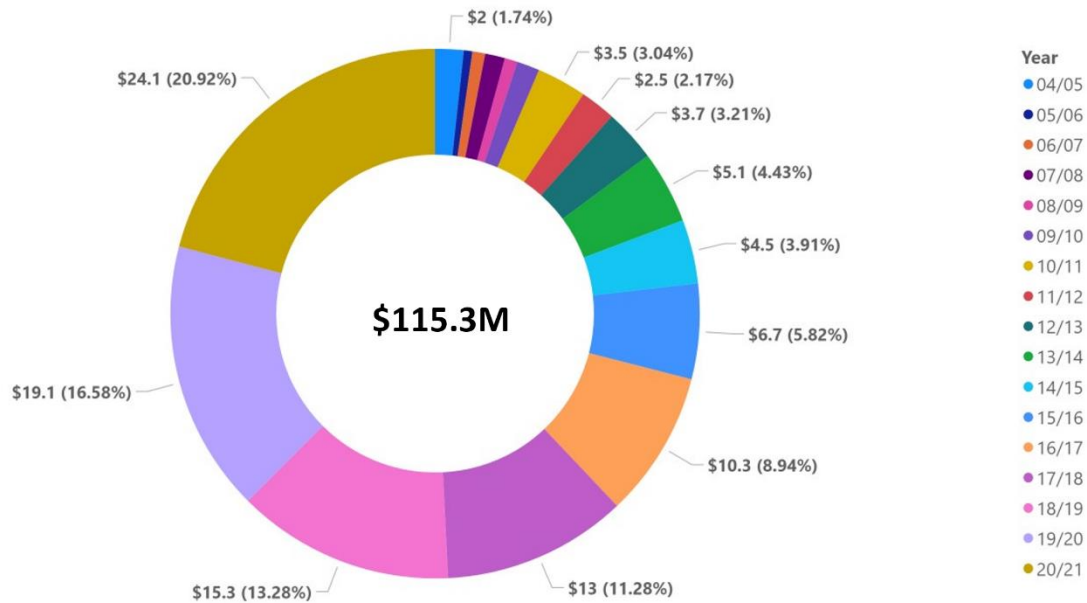
For employees hired on or after January 1, 2007, the OCFA created a *defined contribution plan* that is administered by Further. The Plan provides for the reimbursement of medical, dental, and other healthcare expenses of retirees. Employees are required to contribute 4% of their gross pay. Account assets are invested as directed by the participant and all contributions, investment income, realized gains and losses are credited to the individual's account. Under this plan structure, there is no UAAL.

C. WORKERS' COMPENSATION CLAIMS

In March 2002, OCFA implemented a workers' compensation self-insurance program. A separate fund called Fund 190: Self Insurance was established in May 2003 to track funding and expenditures for workers' compensation claims liability. The funding sources include revenue from the General Fund and interest earnings. The Fiscal Year 2021-22 Budget includes \$113.0 million set-aside in reserves to pay this liability as the various medical claims and bills become due. The December 2021 Actuarial report is currently in process and expected to be completed in early January. Staff will be recommending for Board approval any necessary budget adjustments at mid-year to fully fund the Workers Compensation Fund.



Cumulative Outstanding Workers' Compensation Claims by Year (in millions)



The outstanding liability reflected in the above charts reflect the fact that although the entire future cost of claims is recorded in the year of injury, the actual payment of that claim does not occur immediately. The cash flow payments for many workers' compensation cases occur slowly over time; therefore, it is a natural occurrence that the unpaid liability for a self-insured system will grow as the unpaid liabilities build upon each other over the years. Continued increases can also be driven by other forces, such as increased medical costs, increased claim activity, legislative changes, and case law.

The workers' compensation liability reflects the present value of estimated outstanding losses at the 50% confidence level. A confidence level is the statistical certainty that an actuary believes funding will be sufficient. For example, a 50% confidence level means that the actuary believes funding will be sufficient (i.e., greater-than or equal to actual costs incurred) in five out of ten years. OCFA's Board-adopted workers' compensation funding policy sets the funding at the 50% confidence level.

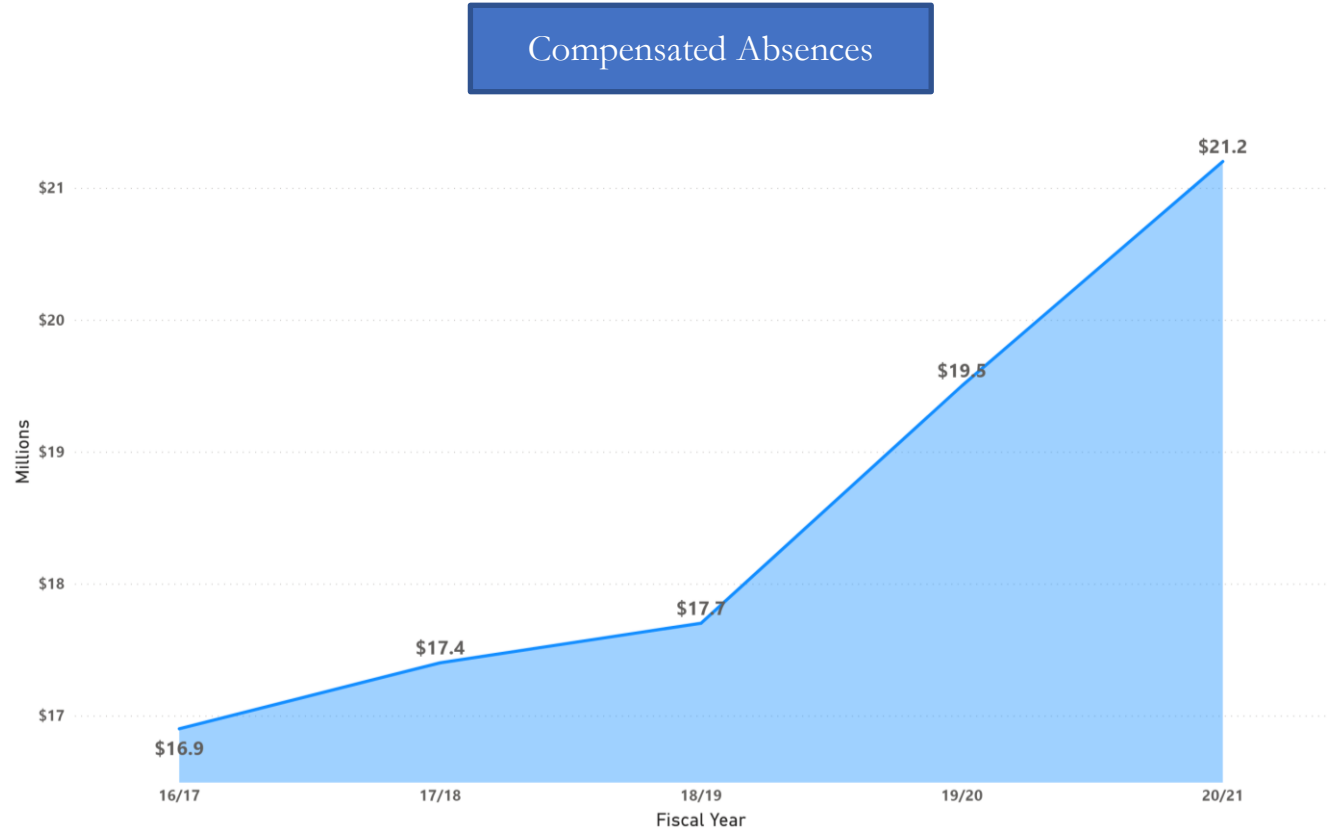
The main factors which are increasing the workers' compensation liability include increased medical costs, an increase in the frequency and severity of claims, COVID-19 cases, a growing number of mental health cases, and an aging workforce which contributes to a longer recovery time and higher permanent disability benefits. Additional factors include workers' compensation reform that increased the statute of limitation for cancer from five to ten years, injury presumption for safety personnel, and increases to the workforce including April 2012 with the addition of the City of Santa Ana and August 2019 with the addition of the City of Garden Grove. Both cities reimburse OCFA for injuries that initially occurred on or before they joined OCFA.

D. ACCRUED COMPENSATED ABSENCES

Compensated absences are commonly described as paid time off made available to employees in connection with sick and vacation time. If employees do not use all of such compensated absences, a liability is accrued for the unused portion. The OCFA's policy allows employees to accumulate earned but unused sick and vacation pay benefits.

OCFA’s labor agreements allow employees to cash out sick and vacation time throughout their career with the exception of the Local 3631 Firefighter unit, which can only cash out vacation time. However, the majority of sick and vacation payouts occur at the time an employee retires.

The OCFA has budgeted \$6.8 million for sick and vacation payouts in FY 2021/22 based on historical trends and expected retirements. OCFA’s total liability for compensated absences as of June 30, 2021, is \$21.2 million. This liability has continued to grow in the last two years as employees have taken less sick and vacation time during the pandemic, and as MOU salary increases cause the value of accrued leave to increase.



E. CAPITAL LEASES

During FY 2020/21, OCFA implemented Government Accounting Standards Board (GASB) Statement No. 87 which requires all leases to be reported as capital leases and eliminates the classification of an operating lease unless the lease is a short-term lease, defined as 12 months or less. Contracts for these leases must appear on the balance sheet as a liability. OCFA's long-term lease liabilities total \$5.1 million and are listed in the table below.

	<i>\$ Amount</i>
Land Lease	\$ 4,679,622
Helicopter Training Tower	238,888
Copier	174,672
Utility Trucks	55,204
Total	\$ 5,148,386

Prior to the capital leases listed above, in December 2008, the OCFA entered into a ten-year Lease Purchase Agreement to purchase two helicopters and related equipment for a purchase price of \$21.5 million. The final payment was made in December 2018.

III. SUMMARY

OCFA's total long term, unfunded liabilities as of June 30, 2021,* are as follows:

	<i>\$ Amount in Millions</i>	<i>% of Total</i>
Defined Benefit Pension Plan *	\$ 275.6	67.5%
Defined Benefit Retiree Medical Plan	106.5	26.1
Accrued Compensated Absences	21.2	5.2
Capital Leases	5.1	1.2
Total	\$408.4	100.0%

*Note: the valuation date for the pension plan is December 31, 2020, instead of June 30, 2020, consistent with OCERS' calendar year basis for financial reporting. Workers' Compensation will be fully funded at mid-year and therefore not reflected as an unfunded liability.

IV. ACTIONS TAKEN

OCFA has taken several additional steps to manage its long-term obligations:

1. As of December 31, 2020, OCFA's pension liability is 87.7% funded. Based on Board policy to achieve 85% funding, future snowball payments will now be directed to the Retiree Medical Liability
2. As part of the 2019 Irvine Settlement Agreement, OCFA agreed to establish a 115 Trust and to make annual deposits of \$2 million, dedicated solely for future application to OCFA's pension liability. After the initial \$2 million payment in July 2019, if OCFA's pension is less than 85% funded, the annual deposit is reduced to \$1.5 million and \$500,000 is directed towards the UAAL paydown.
3. In 2017, OCFA negotiated a five year Health Plan Agreement with the firefighter labor group which contained a provision to return excess fund balance and allocate those funds to the Retiree Medical Trust Fund.
4. In FY 2015/16 and again in FY 2016/17, OCFA modified its Accelerated Pension Paydown Plan to include additional sources of funding.
5. During 2015 and 2016, OCFA completed negotiations with all four labor groups resulting in increased employee contributions towards retirement.
6. On June 26, 2014, the Board approved an Alternative Dispute Resolution process for disputed workers' compensation cases, also known as a Carve-Out program. The State has approved the program and it was implemented on October 1, 2014.
7. On September 26, 2013, the Board approved a strategy to accelerate the pay down of OCFA's pension liability. Under this Plan, the actuary, the Segal Company, estimates this liability will be paid by December 2025. To date, OCFA has made an additional \$124.3 million in payments to OCERS to lower its UAAL.
8. Completed a special actuarial study relating to the OCFA's Retiree Medical Defined Benefit Plan to evaluate options for potential plan amendments which could improve plan funding, subject to future negotiation with OCFA's labor groups. The results of the study were shared with the labor groups.
9. Evaluated the financial feasibility of paying off the outstanding lease financing obligations associated with the OCFA's helicopters, as part of the 2014/15 budget development process.
10. Directed staff to evaluate options for mitigating the budget and liability impacts of payouts for accumulated sick and vacation balances, subject to future negotiation with OCFA's labor groups.
11. Used a trigger formula during down economic cycles to connect pay raises for all OCFA employees to OCFA's financial health.
12. Implemented lower retirement formulas for all labor groups.
13. Refinanced the helicopter lease to lower the interest rate. Last payment made in December 2018.
14. Implemented annual prepayment of retirement contributions to achieve a discount.
15. Provided a study to the Board of Directors regarding the feasibility of Pension Obligation Bonds.
16. Provided a study to the Board of Directors regarding the feasibility of changing automatic Cost of Living Allowance (COLA) increases for pensions; transmitted a copy of the report to the County Board of Supervisors and OCERS Board of Retirement, for their consideration of potential cost-containment actions relating to Pension COLAs under the authority granted by the '37 Act.

V. RECOMMENDATIONS

Recommended actions pending approval of this staff report include:

1. Receive and file the report.
2. Direct staff to adjust the FY 2021/22 General Fund budget to increase expenditures and operating transfers out by a combined value of \$4,590,935, the amount identified as the unencumbered fund balance in the FY 2020/21 financial audit, and to allocate 50% or \$2,295,467.50 of the funding to

the General Fund to replenish the contingency reserve to 10% of expenditures as required by the OCFA's Financial Stability Policy, and \$2,295,467.50 to the Structural Fire Fund Entitlement Fund as required under the 2010 First Amendment to the Amended Joint Powers Agreement. The specific technical budget adjustment to carry-out this action will be included in the March mid-year budget adjustment agenda item for final approval by the Board.

VI. CONCLUSION

In order to strategically fund long-term liabilities, OCFA must continue to strategically balance present-day needs with future commitments. The goal is for OCFA's budget over the long-term to fund all of its long-term liabilities

Exhibit A

OCFA Member Retirement Contributions

Safety Members' Retirement

Firefighter Safety members:

Effective September 2016, 2017, 2018, and 2019, employees paid an additional 3.50%, 3.49%, 2.00%, and 0.54% in employee retirement contributions, respectively, increasing their employee contributions depending on age of entry. Thereafter, these employees will pay any subsequent increases in the employee retirement contributions. Employee rates from the most recent actuarial valuation are footnoted on Page 3. Employees hired on or after January 1, 2013, when PEPRA was enacted will continue to be subject to PEPRA requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

Chief Officer Safety members:

Effective July 2016, 2017, 2018, and 2019, employees paid an additional 3.50%, 3.49%, 3.30%, and 0.93% in employee retirement contributions, respectively, increasing the employee contributions depending upon their age of entry. Thereafter, these employees will pay any subsequent increases in the employee retirement contributions. Employee rates from the most recent actuarial valuation are footnoted on Page 3. Employees hired on or after January 1, 2013, when PEPRA was enacted will continue to be subject to PEPRA requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

General Members' Retirement

OCEA members:

Effective March 2015, 2016 and 2017, employees hired prior to January 1, 2013, paid an additional 2%, 2.5% and 3% in employee retirement contributions, respectively, increasing the employee contributions depending upon their age of entry. Thereafter, these employees will pay any subsequent increases in the cost for employee retirement contributions. Employee rates from the most recent actuarial valuation are footnoted on Page 3. Employees hired after PEPRAs was enacted will continue to be subject to PEPRAs requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

Administrative Management members:

Effective July 2015, January 2016, and January 2017, employees hired prior to January 1, 2013, paid an additional 4%, 2%, and 2.25% in employee retirement contributions, respectively, increasing the employee retirement contributions depending upon their age of entry. Thereafter, these employees will pay any subsequent increases in the cost for employee retirement contributions. Employee rates from the most recent actuarial valuation are footnoted on Page 3. Employees hired after PEPRAs was enacted will continue to be subject to PEPRAs requirements of 50% of normal cost for employee retirement contributions, which vary based on age of entry.

Executive Management:

Some members of Executive Management fall under Safety and others fall under General member categories. Regardless, all Executive Management employees who are not subject to the provisions of PEPRAs were paying 9% in employee retirement contributions prior to March 2015. Effective March 2015, they began phased-in increases to their contribution rate with a 2% increase in employee contributions in year one, a 2.5% increase in year two and payment of full member contributions in year three, which vary based on age of entry.

Orange County Fire Authority
Expedited Payment of UAAL
Snowball Effect of Multiple Strategies

Updated October 7, 2021

Attachment 2

			Estimated Annual UAAL Payments from Various Strategies / Sources							
Years From Start of Plan	Remaining Years to Completion	Fiscal Year	Unencumbered Fund Balance Available	Annual Savings from PEPRA Reductions to Retirement Contribution Rates	Budget Increase of \$1M, grows by \$2M/year to \$15M	Budget Increase of \$1M/year Funded by Excess W/C Reserves	50% of General Fund Surplus	Irvine Settlement Agreement	Annual Snowball Amount	Cumulative Expedited UAAL Payment
			Part A	Part B	Part C	Part D	Part E	Part F		
1		13/14	3,000,000	2,500,000	-	-	870,041		5,500,000	5,500,000
2		14/15	21,290,238	-	-	-			21,290,238	26,790,238
3		15/16	12,609,380	2,802,122	-	-			15,411,502	42,201,740
4		16/17	9,814,477	1,653,114	1,000,000	1,000,000			13,467,591	55,669,331
5		17/18	13,174,516	1,886,420	3,000,000	1,000,000			19,930,977	75,600,308
6		18/19	10,000,000	3,167,397	5,000,000	1,000,000			19,167,397	94,767,705
7		19/20	4,030,172	1,648,658	7,000,000	1,000,000			13,678,830	108,446,535
8		20/21	3,000,000	2,368,859	9,000,000	1,000,000			500,000	15,868,859
9	1	21/22	3,000,000	3,279,280	11,000,000				17,279,280	141,594,674
10	2	22/23	3,000,000	4,787,217	13,000,000				20,787,217	162,381,891
11	3	23/24	3,000,000	5,772,547	15,000,000				23,772,547	186,154,438
12	4	24/25	3,000,000	6,814,115	15,000,000				24,814,115	210,968,553
13	5	25/26	3,000,000	14,242,631	15,000,000				32,242,631	243,211,184
14	6	26/27	3,000,000	19,647,456	15,000,000				37,647,456	280,858,640
15	7	27/28	3,000,000	20,807,106	15,000,000				38,807,106	319,665,746
16	8	28/29	3,000,000	26,075,871	15,000,000				44,075,871	363,741,617
17	9	29/30	3,000,000	26,858,147	15,000,000				44,858,147	408,599,764
			103,918,783	144,310,940	154,000,000	5,000,000	870,041	500,000	408,599,764	

Orange County Fire Authority
Hypothetical Distribution of Liabilities by Member Agency
As of June 30, 2021

Attachment 3

Member Agency	# of EEs	2020 Incidents	% of Total EEs	Proportional Share		Total
				Pension UAAL	Retiree Medical	
County Unincorporated (SFF) Station 8, 15, 18, 25, 33, 40, 58, 56	89		10.99%	30,287,579	11,703,204	41,990,783
Aliso Viejo (SFF) Station 57	16		1.98%	5,444,958	2,103,947	7,548,905
Buena Park (CCC) Stations 61, 62, 63	51		6.30%	17,355,804	6,706,330	24,062,134
Cypress (SFF) Station 17	25		3.09%	8,507,747	3,287,417	11,795,164
Dana Point (SFF) Stations 29, 30	30		3.70%	10,209,296	3,944,900	14,154,196
Irvine (SFF) Stations 4, 6, 20, 26, 27, 28, 36, 38, 47, 51, 55	173		21.36%	58,873,609	22,748,924	81,622,533
Laguna Hills (SFF)* Station 22 (serving both LGH & LGW)	41	3,122	1.95%	5,385,133	2,080,830	7,465,964
Laguna Woods (SFF)* Station 22 (serving both LGH & LGW)		4,967	3.11%	8,567,571	3,310,533	11,878,105
Laguna Niguel (SFF) Stations 5, 39, 49	33		4.07%	11,230,226	4,339,390	15,569,616
Lake Forest (SFF) Stations 19, 42, 54	29		3.58%	9,868,986	3,813,404	13,682,390
La Palma (SFF) Station 13	8		0.99%	2,722,479	1,051,973	3,774,452
Los Alamitos (SFF) Station 2	10		1.23%	3,403,099	1,314,967	4,718,065
Mission Viejo (SFF) Stations 9, 24, 31	58		7.16%	19,737,973	7,626,807	27,364,780
Rancho Santa Margarita (SFF) Station 45	27		3.33%	9,188,367	3,550,410	12,738,777
San Clemente (CCC) Stations 50, 59, 60	33		4.07%	11,230,226	4,339,390	15,569,616
San Juan Capistrano (SFF)	16		1.98%	5,444,958	2,103,947	7,548,905

Orange County Fire Authority
Hypothetical Distribution of Liabilities by Member Agency
As of June 30, 2021

Attachment 3

Member Agency	# of EEs	2020 Incidents	% of Total EEs	Proportional Share		Total
				Pension UAAL	Retiree Medical	
Station 7					-	
Seal Beach (CCC) Stations 44, 48	21		2.59%	7,146,507	2,761,430	9,907,938
					-	
Stanton (CCC) Station 46	17		2.10%	5,785,268	2,235,443	8,020,711
					-	
Tustin (CCC) Stations 21, 37, 43	39		4.81%	13,272,085	5,128,370	18,400,455
					-	
Villa Park (SFF) Station 23	14		1.73%	4,764,338	1,840,953	6,605,292
					-	
Westminster (CCC) Stations 64, 65, 66	36		4.44%	12,251,156	4,733,880	16,985,036
					-	
Yorba Linda (SFF) Stations 10, 32, 53	44		5.43%	14,973,635	5,785,854	20,759,488
					-	
Totals	810		100.00%	275,651,000	106,512,305	382,163,305

Note: Santa Ana and Garden Grove are excluded since the UAAL being paid down originated prior to their joining OCFA.

* Laguna Hills and Laguna Woods use a different methodology in calculating proportional share.

Allocation of 115 Trust - Fund 139

Attachment 4

Agency	FY 2019/20	FY 2020/21	FY 2021/22	Total
Aliso Viejo	\$ 33,313	\$ 25,075	\$ 25,707	\$ 84,095
Cypress	-	-	-	-
Dana Point	222,223	183,564	183,452	589,239
Irvine	1,143,817	938,075	1,098,374	3,180,266
La Palma	-	-	-	-
Laguna Hills	-	-	42,232	42,232
Laguna Niguel	93,236	81,334	89,472	264,042
Laguna Woods	-	-	-	-
Lake Forest	62,767	54,812	-	117,579
Los Alamitos	-	-	-	-
Mission Viejo	-	-	-	-
Rancho Santa Margarita	27,625	22,504	2,003	52,132
San Juan Capistrano	-	-	-	-
Villa Park	13,406	9,805	12,019	35,230
Yorba Linda	-	-	-	-
Unincorporated	434,898	292,224	216,002	943,124
Total	\$ 2,031,285	\$ 1,607,393	\$ 1,669,261	\$ 5,307,939

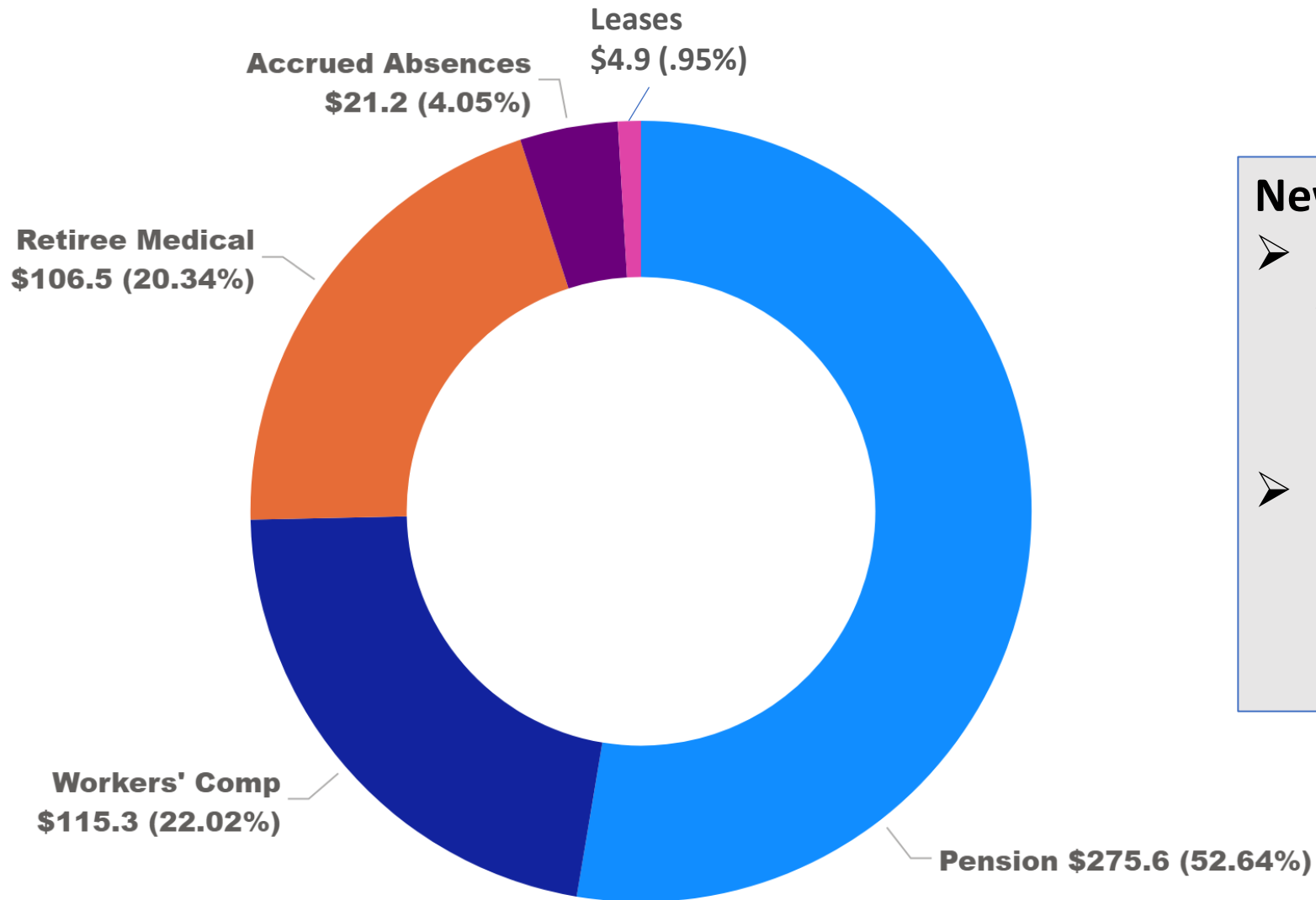


2021 Long-Term Liability Study



Budget & Finance Committee
January 12, 2022

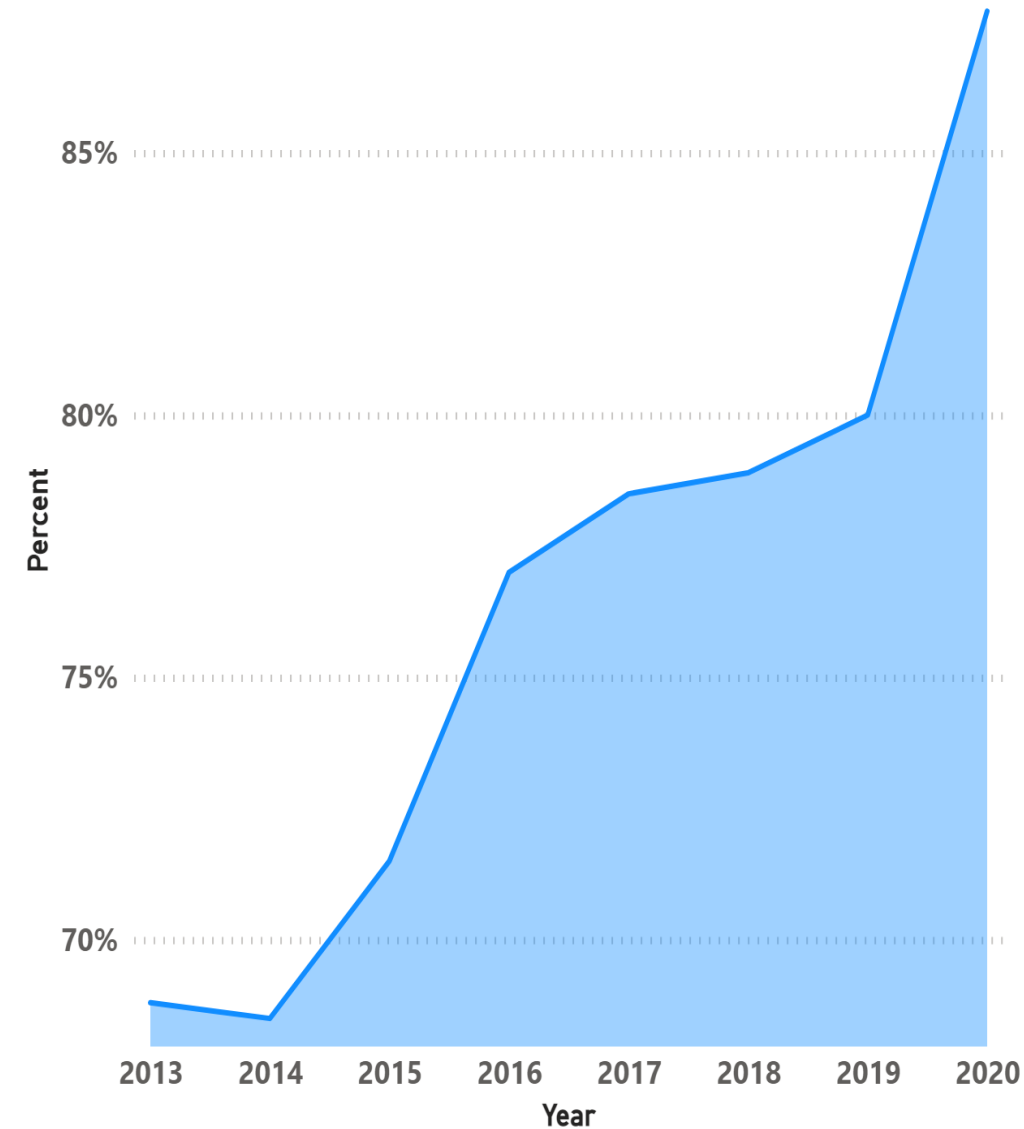
OCFA'S Long Term Liabilities (Total \$523.5 M)



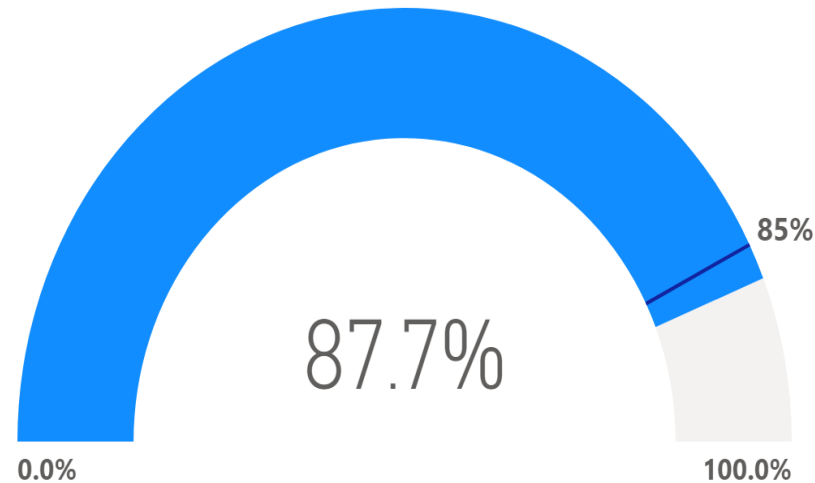
New this year -

- GASB 87 now requires Leases to be capitalized and recorded on the Balance Sheet.
- Lease category includes helicopter training tower, copiers, Fullerton Airport land lease and utility trucks.

Pension Liability Funding Level



Funding Percentage



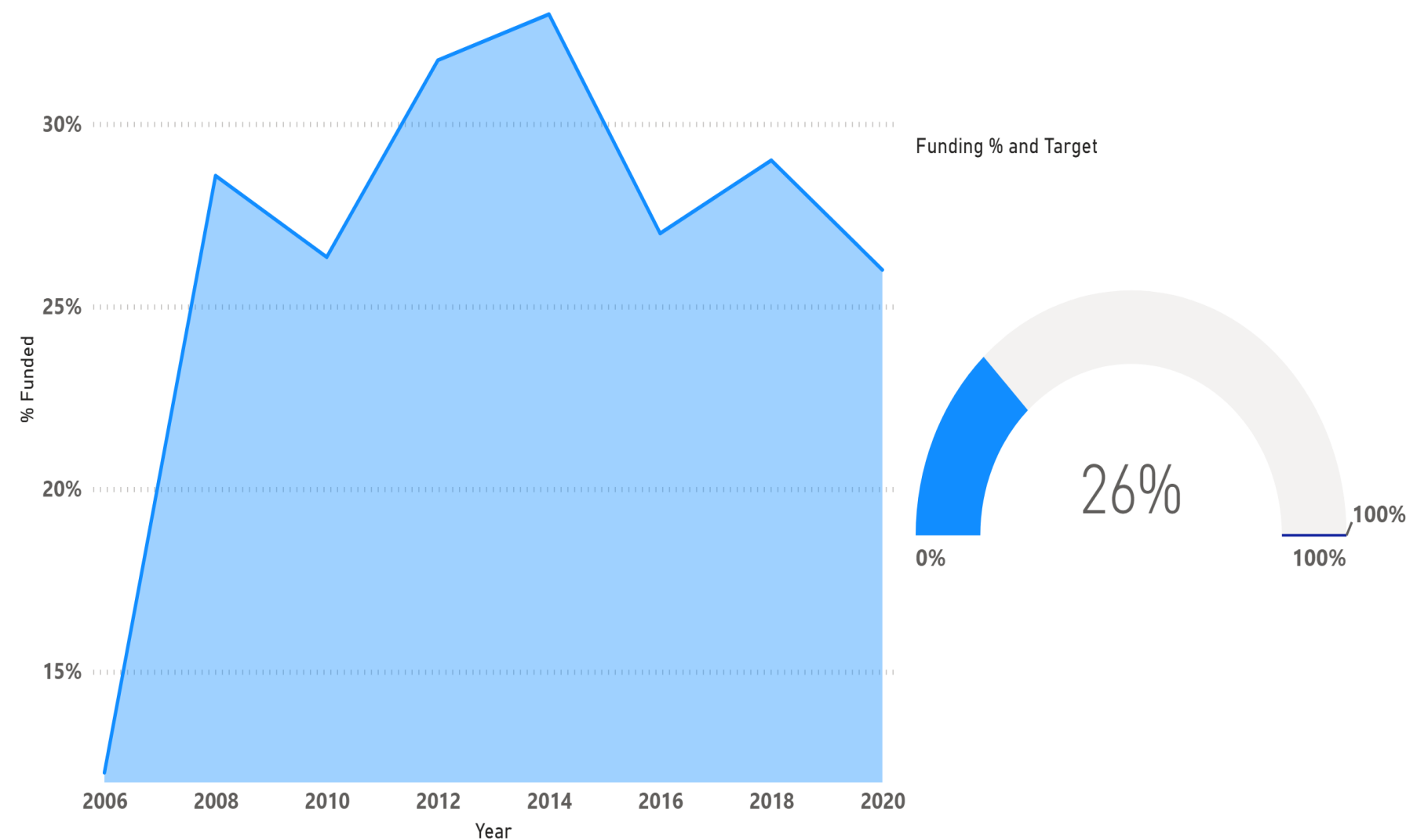
Board Directive -

- Make additional annual payments to achieve 85% funding level

Results Thus Far -

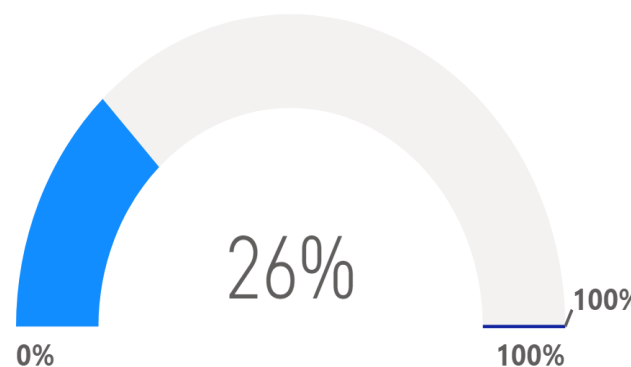
- Exceeded 85% target in 2021
- \$124.3M in additional payments
- Saved \$46.8M in interest

Retiree Medical Liability Funding Level

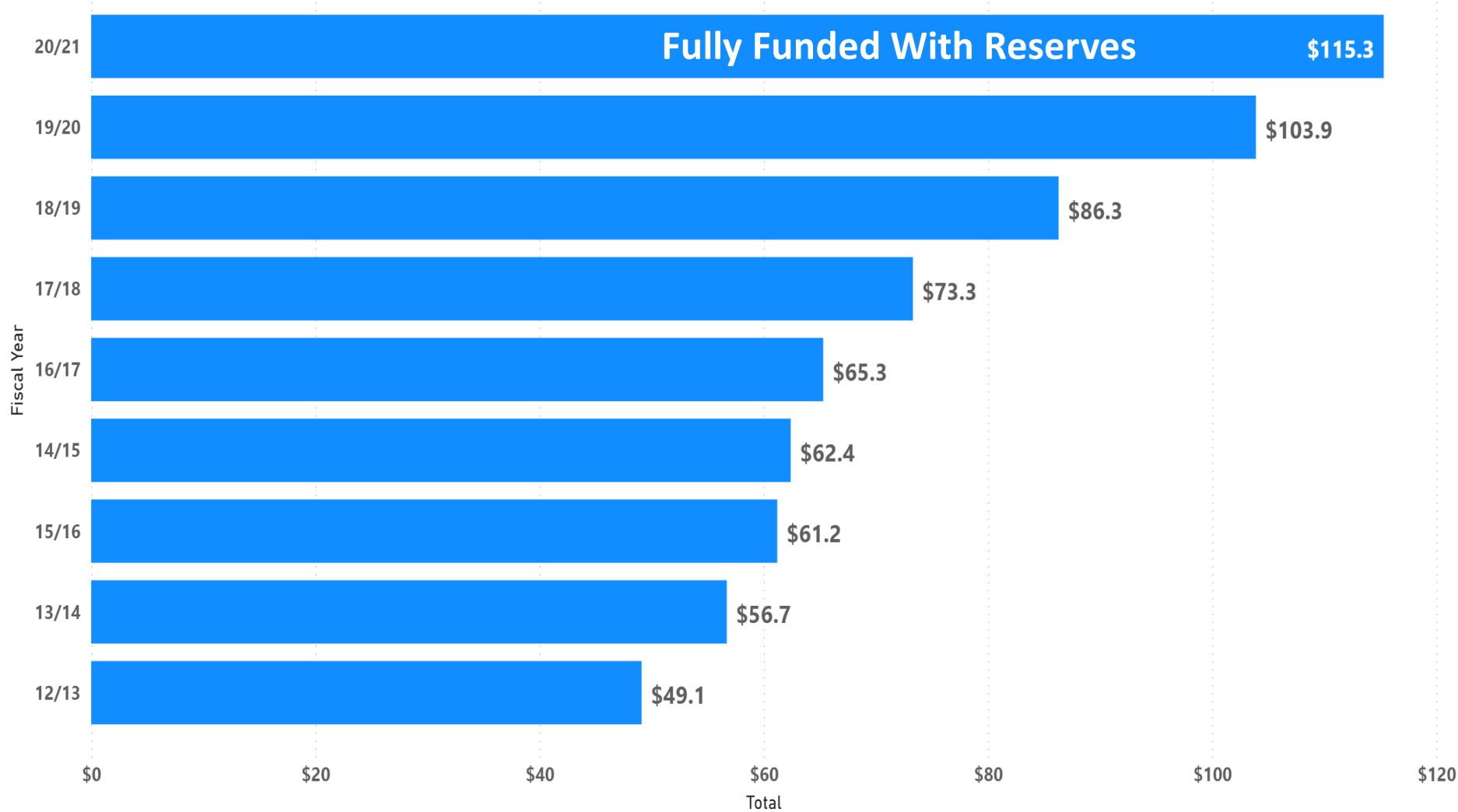


Board Directive -

- Once pension liability reaches 85% funded level, additional annual payments will go to the retiree medical liability



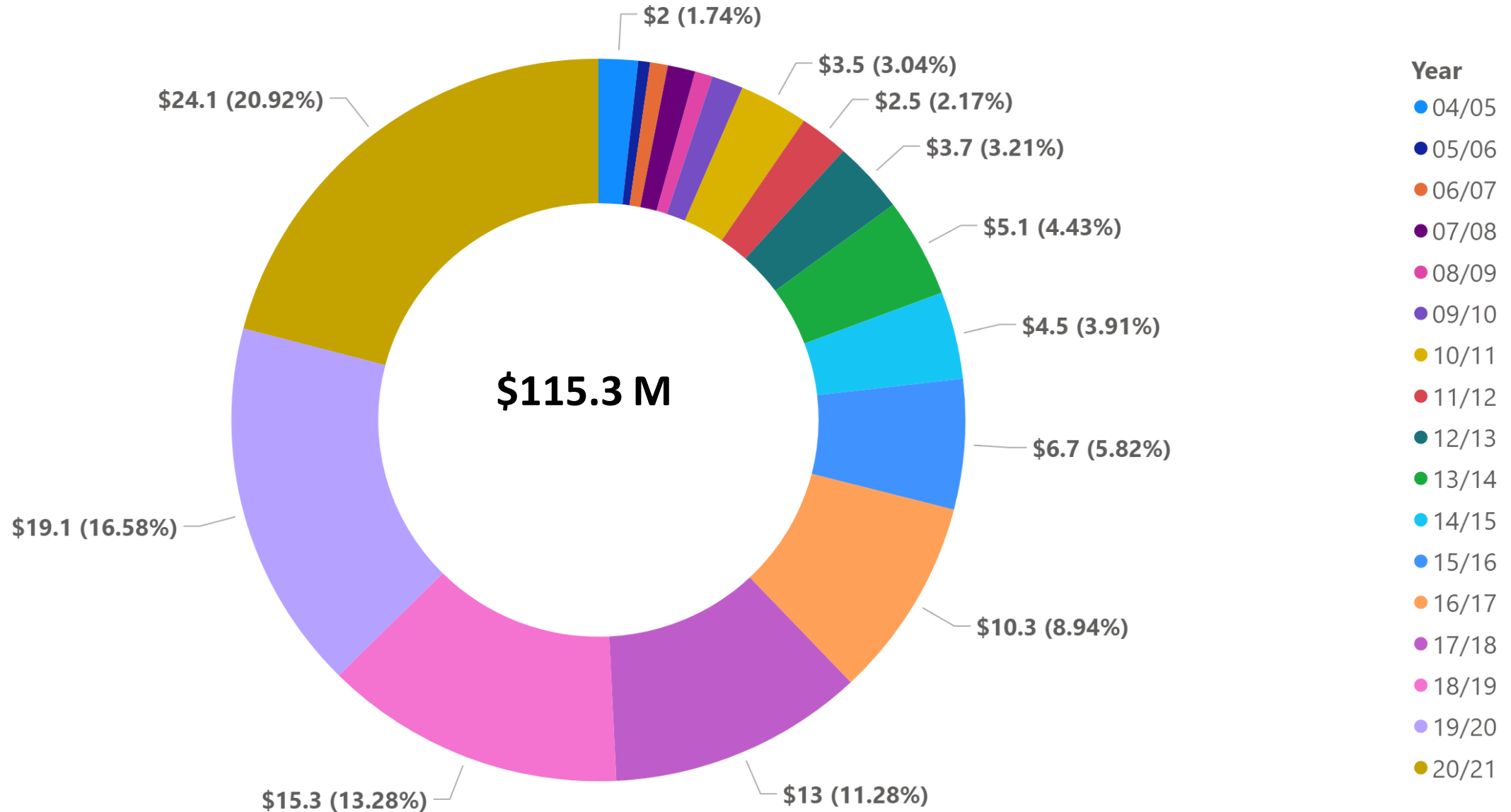
Cumulative Outstanding Workers' Compensation Claims (in millions)



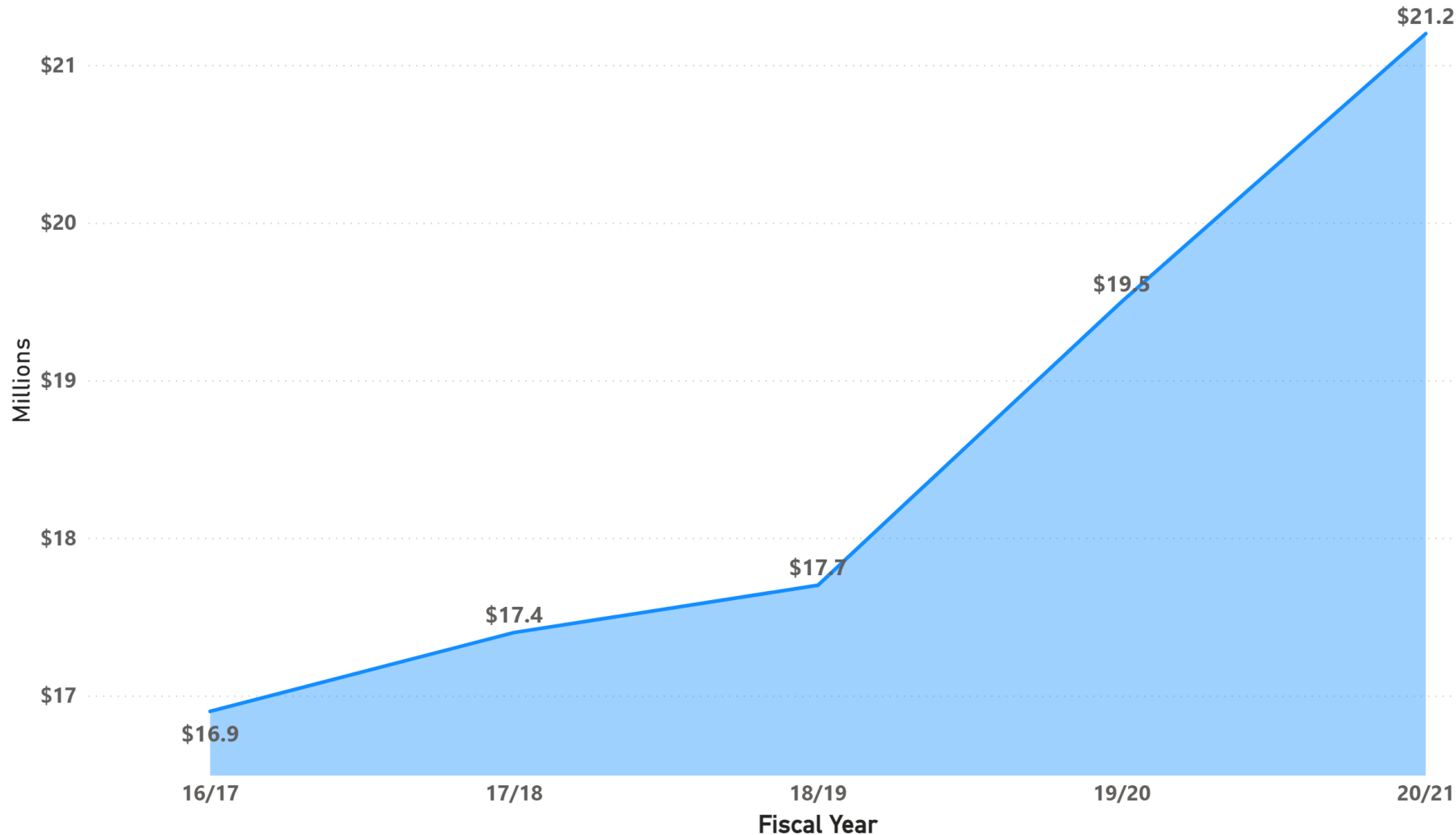
Driving Factors -

- Increase in the number of employees
- Aging workforce
- Increase in the number and frequency of claims
- Covid cases
- Growing mental health cases
- Increase in medical costs

Cumulative Outstanding Workers' Compensation Claims by Year (in millions)



Compensated Absences (in millions)



Driving Factors -

- Employees have taken less sick and vacation time during the pandemic
- MOU salary increases have caused the value of accrued leave to increase

Total Unfunded Liabilities (in millions)

	\$ Amount in Millions	% of Total
Defined Benefit Pension Plan *	\$ 275.6	67.5%
Defined Benefit Retiree Medical Plan	106.5	26.1
Accrued Compensated Absences	21.2	5.2
Capital Leases	5.1	1.2
Total	\$408.4	100.0%

- Total liabilities have decreased by \$153M since last year
- Workers' Compensation will require a Mid-Year Budget Adjustment to bring it to 100% funding level

Recommended Actions

- Receive and file the report.
- Adjust the FY 2021/22 General Fund Budget to increase expenditures and operating transfers out by a combined value of \$4,590,935, the amount identified as the unencumbered fund balance in the FY 2020/21 financial audit, and to allocate 50% or \$2,295,467.50 of the funding to the General Fund to replenish the contingency reserve to 10% of expenditures as required by the OCFA's Financial Stability Policy, and \$2,295,467.50 to the Structural Fire Fund Entitlement Fund as required under the 2010 First Amendment to the Amended JPA.

The specific technical budget adjustment to carry-out this action will be included in the March mid-year budget adjustment agenda item for final approval by the Board



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 3B
Discussion Calendar

**Award of RFP# RO2480a Physical Security/ Security Management Services
and Approval of Corresponding Budget Adjustments**

Contact(s) for Further Information

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Logistics Department

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714.573.6421

Summary

This agenda item is submitted for approval to award a Security Services Agreement for Armed Physical Security and Security Management Services to the Orange County Sheriff's Department (OCSD) in the amount of \$1,116,556 annually, the top ranked armed security services provider as a result of RFP RO2480a.

Prior Board/Committee Action

Not Applicable.

RECOMMENDED ACTIONS:

Review the proposed agenda item and direct staff to place one of the following three options on the agenda for the Board of Directors meeting on January 27, 2022, with the Budget and Finance Committee's recommendation that the Board of Directors approve:

1. Select an option:

Option 1 - Approve and authorize the Purchasing Manager to execute the proposed Security Services Agreement (Attachment 1) for Armed Physical Security and Security Management services with the Orange County Sheriff's Department for a three-year initial term plus two optional one-year renewals in an amount not to exceed \$1,116,556 annually (\$5,582,780 5-year aggregate).

Option 2 - Direct staff to enter into two Security Services Agreements for a blend of Armed and Unarmed Physical Security and Security Management Services in a form approved by legal counsel for a three-year initial term plus two optional one-year renewals as follows: Orange County Sheriff's Department (\$622,220 annually) and Allied Universal Security Services (\$191,420 annually). The combined amount for the two firms is not to exceed \$813,640 annually (\$4,068,200 5-year aggregate).

Option 3 - Direct staff to enter into a Security Services Agreement for Unarmed Physical Security and Security Management services in a form approved by legal counsel with Allied Universal Security Services for a three-year initial term plus two optional one-year renewals in an amount not to exceed \$518,180 annually (\$2,590,900 5-year aggregate).

2. Direct staff to make the recommend budget adjustment, as noted in the fiscal impact section of this report, depending on the option selected.

3. Direct the Purchasing Manager to extend the existing contract with Allied Universal as needed to allow transitioning to the new contract for Physical Security Services.

Staff recommends Option 1 as stated above.

Impact to Cities/County

Not Applicable.

Fiscal Impact

Based on an April 1, 2022 implementation, the FY 2021/22 General Fund budget and associated expenditures will be increased based on the option selected, as follows.

Option 1:	\$237,517
Option 2:	\$161,788
Option 3:	\$87,923

Background

Physical security at the Regional Fire Operations and Training Center (RFOTC) includes access control and alarm systems, and the posting of unarmed contract security guard personnel on a 24/7/365 basis. Currently, one security post provides around-the-clock coverage, with a second post during RFOTC business hours.

Coinciding with the expiration of the existing agreement for physical security services, staff is in the process of implementing recommendations from the Physical Security Assessment report issued by an OCFA staff security advisory panel in June 2020. The panel's report considered a Threat and Vulnerability Assessment of the RFOTC campus prepared by Security Strategies International, and an initial Physical Security Assessment completed in 1994 by the Orange County Intelligence Assessment Center (OCIAAC). In November 2021, the OCIAAC completed an updated security assessment and set of recommendations that further support the Advisory panel's findings, including adding a security management function together with security guard services. To address the assessment recommendations and identified vulnerabilities, the solicitation for a replacement security services contract included security management services, and alternative proposals for providing unarmed and/or armed guards.

To further address security vulnerabilities at the RFOTC, a separate solicitation for replacement and upgrade of the facility's access control system (door badge readers, perimeter entry cameras, etc.) will be submitted for consideration of award of bid by the Executive Committee in the first quarter of 2022.

Solicitation Process

On March 22, 2021, staff issued RFP RO2480a for Physical Security and Security Management Services at RFOTC. A non-mandatory pre-proposal meeting was held on March 31, 2021, and representatives from 16 companies attended. Final proposals were due April 23, 2021, and 17 proposals were received. Staff conducted a review of responsiveness and determined that 14 of the 17 offerors provided responsive proposals.

An evaluation team consisting of two Logistics Division staff and one Risk Management Division staff evaluated the proposals based on the criteria and point structure as defined in the RFP: Method of Approach (20 pts), Qualifications and Experience (25 pts), Personnel Selection, Training and Retention Plan (30 pts), and Proposed Cost (25 points). Upon completion of the evaluation of the proposals, the OCSD emerged as the top-ranked proposer providing security management and armed security services with no option for unarmed services. The top-ranked proposer for unarmed security services (number two rank overall) was Allied Universal Security Services (AUSS), the firm which provides the existing services at the Regional Fire Operations and Training Center.

Recommendation

A summary of the contract options is provided in the following table.

Summary of Contract Options

<i>Option</i>	<i>Contract Arrangement</i>	<i>Cost (annual)</i>
<i>1</i> Armed Physical Security Services	<i>Orange County Sheriff Security Services Bureau:</i> <ul style="list-style-type: none">• One armed guard posted 24/7/365• Second armed guard posted during RFOTC business hours• Guard services for special events/as-needed coverage• Security Management Services provided as needed by the Bureau Commander	\$1,116,556
<i>2</i> Armed Physical Security Services during business hours; Unarmed all other hours	<i>Orange County Sheriff Security Services Bureau:</i> <ul style="list-style-type: none">• Two armed guards posted during RFOTC business hours• Security Management Services provided as needed by the Bureau Commander <i>Allied Universal Security Services:</i> <ul style="list-style-type: none">• One unarmed guard posted during all RFOTC non-business hours• Guard services for special events/as-needed coverage	\$813,640
<i>3</i> Unarmed Physical Security Services	<i>Allied Universal Security Services:</i> <ul style="list-style-type: none">• One unarmed guard posted 24/7/365• Second unarmed guard posted during RFOTC business hours• Security Management Services provided by an assigned professional security manager• Guard services for special events/as-needed coverage	\$518,180

Option 1: Armed Physical Security Services

Annual Pricing: \$1,116,556 annually (\$5,582,780 5-year aggregate)

Based on the proposals received and interviews conducted with the two top ranking firms, the evaluation team concluded that transitioning to armed security personnel as offered by the Security Bureau of the Orange County Sheriff, in combination with physical security management services to be performed by the Bureau Commander, would best meet the physical security needs at RFOTC. The OCSD Security Bureau was established for the purpose of providing security services and security management for numerous County facilities, as well as public agency affiliated private facilities, using personnel trained expressly for this purpose. Security management services would be provided by the OCSD Security Bureau Commander, consisting of an initial assessment and recommendations for all aspects of physical security and protocols at RFOTC, implementation of recommendations by the OCIAC, and ongoing review of protocol compliance and incident reports. Therefore, the Bureau's mission, depth of resources, and specially trained and qualified personnel closely align with the security needs at RFOTC. The OCSD Security Bureau will act as initial responder to incidents occurring at RFOTC up to the point when City of Irvine police arrive.

While staff believes it to be in the best interest of OCFA to utilize professional security management services and to transition to full-time armed guards, doing so would result in an increase to expenditures, thus staff has prepared two alternative approaches:

Option 2: Hybrid Armed/Unarmed Physical Security Services

Annual Pricing: \$813,640 annually (\$4,068,200 5-year aggregate)

This option provides for armed security services during standard business hours, and unarmed security services in the evenings and on weekends/holidays. Because the OCSD Security Bureau provides only armed security services, a dual award would be required, whereby Allied Universal Security Services would provide the unarmed security services. This contract structure offers a lower cost alternative to around-the-clock armed services while enabling the posting of armed personnel when most needed, and while using the proposer deemed most qualified to provide armed personnel. As stated above, security management services would be provided by the OCSD Security Bureau Commander, to include an initial assessment and recommendations for all aspects of physical security and protocols at RFOTC, implementation of recommendations by the OCIAC, and ongoing review of protocol compliance and incident reports.

To enable OCSD and AUSS to independently manage their respective personnel, post coverage would overlap only to the extent to facilitate the business hours to non-business hours transition. Depending on the time of the incident, the OCSD Security Bureau or AUSS will act as initial responder to incidents occurring at RFOTC up to the point when City of Irvine police arrive.

Option 3: Unarmed Physical Security Services

Annual Pricing: \$518,180 annually (\$2,590,900 5-year aggregate)

This option provides for full-time unarmed security services similar to the current model being provided, enhanced by posting security services personnel with law enforcement qualifications, and the assignment of a full-time contract physical security manager. Combined, the services would consist of one law enforcement qualified guard (unarmed) posted 7/24/365, and a second qualified guard posted during RFOTC business hours.

Allied Universal Security Services was deemed the best qualified proposer offering unarmed security services personnel and demonstrated having the experience and expertise necessary to provide professional physical security management services. The management services would consist of AUSS providing one full-time equivalent security management professional that meets all of the qualifications and certifications as specified in the Request for Proposals, to be responsible for performing an initial assessment and recommendations for all aspects of physical security and protocols at RFOTC, implementation of applicable recommendations by the OCIAC, and ongoing review of protocol compliance and incident reports.

Attachment

Proposed Security Services Agreement with OCSD

**SECURITY SERVICES AGREEMENT
BETWEEN THE ORANGE COUNTY FIRE AUTHORITY
AND THE COUNTY OF ORANGE**

THIS AGREEMENT FOR SECURITY SERVICES ("Agreement") is made and entered into this ____ day of _____, 2021 by and between the Orange County Fire Authority, a public agency, hereinafter referred to as "OCFA", and the County of Orange, a political subdivision of the State of California, hereinafter referred to as "COUNTY". OCFA and COUNTY are sometimes individually referred to herein as a "Party" and collectively as the "Parties".

RECITALS

WHEREAS, OCFA requires the services of a qualified entity to provide security Guard and Security Management Services, hereinafter referred to as "Project"; and

WHEREAS, the Orange County Sheriff's Department, hereinafter referred to as "SHERIFF," has submitted to OCFA a proposal dated April 22, 2021, incorporated herein by this reference ("Proposal"); and

WHEREAS, based on its experience and reputation, SHERIFF is qualified to provide the necessary services for the Project and desires to provide such services; and

WHEREAS, OCFA desires to retain the services of SHERIFF for the Project.

NOW, THEREFORE, in consideration of the promises and mutual agreements contained herein, OCFA agrees to contract with COUNTY and COUNTY agrees to provide professional services as follows:

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1 **1. SECURITY SERVICES**

2 **1.1 Scope of Services**

3 In compliance with all terms and conditions of this Agreement, SHERIFF shall
4 provide those services specified in the Scope of Services, attached hereto as Exhibit "A",
5 which includes by reference and by addendum: (1) SHERIFF's Proposal, and (2) any
6 amendments, addendums, change orders, or modifications mutually agreed upon by the
7 parties hereto ("Services" or "Work"). SHERIFF warrants that all Services shall be
8 performed in a competent, professional and satisfactory manner in accordance with all
9 standards prevalent in the same profession in the State of California. SHERIFF represents
10 and warrants that it and all employees, subconsultants and subcontractors providing any
11 Services pursuant to this Agreement shall have a sufficient skill and experience to perform
12 the Services. All Services shall be completed to the reasonable satisfaction of the OCFA. In
13 the event of any inconsistency between the terms contained in the Scope of Services, and/or
14 the terms set forth in the main body of this Agreement, the terms set forth in the main body of
15 this Agreement and then the Scope of Services shall govern, in that order.

16 **1.2 Compliance with Law**

17 All Services rendered hereunder shall be provided in accordance with all laws,
18 ordinances, resolutions, statutes, rules, and regulations of OCFA and any federal, state or
19 local governmental agency of competent jurisdiction.

20 **1.3 Licenses and Permits**

21 SHERIFF shall obtain at its sole cost and expense such licenses, permits and
22 approvals as may be required by law for the performance of the Services required by this
23 Agreement.

24 **1.4 Familiarity with Work**

25 By executing this Agreement, SHERIFF warrants that SHERIFF (a) has
26 thoroughly investigated and considered the Work to be performed, (b) has investigated the
27 site of the Work and become fully acquainted with the conditions there existing, (c) has
28 carefully considered how the Work should be performed, and (d) fully understands the

1 facilities, difficulties and restrictions attending performance of the Work under this
2 Agreement. Should the SHERIFF discover any latent or unknown conditions materially
3 differing from those inherent in the Work or as represented by OCFA, SHERIFF shall
4 immediately inform OCFA of such fact and shall not proceed with any Work except at
5 SHERIFF's risk until written instructions are received from the Contract Officer.

6 **1.5 Additional Services**

7 If SHERIFF agrees, SHERIFF will perform services in addition to those
8 specified in the Scope of Services when requested to do so in writing by the OCFA
9 Purchasing Manager, provided that SHERIFF shall not be required to perform any additional
10 services without compensation. Any additional compensation not exceeding fifteen percent
11 (15%) of the agreement amount annually must be approved in writing by the OCFA
12 Purchasing Manager. Any greater increase must be approved in writing by the Executive
13 Committee of the OCFA Board of Directors.

14 **2. TIME FOR COMPLETION**

15 The time for completion of the Services to be performed by SHERIFF is an essential
16 condition of this Agreement. SHERIFF shall perform regularly and diligently the work of this
17 Agreement according to the schedules set forth in SHERIFF's proposal. SHERIFF shall not
18 be accountable for delays in the progress of its work caused by any condition beyond its
19 control and without the fault or negligence of SHERIFF. Delays shall not entitle SHERIFF to
20 any additional compensation regardless of the party responsible for the delay.

21 **3. COMPENSATION OF SHERIFF**

22 **3.1 Compensation of SHERIFF**

23 For the Services rendered pursuant to this Agreement, SHERIFF shall be
24 compensated

25 and reimbursed, in accordance with the pricing set forth in the Pricing Sheet, attached
26 hereto as Exhibit "B," in an amount not to exceed One Million, One Hundred Sixteen
27 Thousand, Five Hundred Fifty-Six (\$1,116,556) Dollars.

1 **3.2 Method of Payment**

2 In any month in which SHERIFF wishes to receive payment, SHERIFF shall no
3 later than the first working day of such month, submit to OCFA in the form approved by
4 OCFA's Director of Finance, an invoice for Services rendered prior to the date of the invoice.
5 OCFA shall pay SHERIFF for all expenses stated thereon which are approved by OCFA
6 consistent with this Agreement, within thirty (30) days of receipt of SHERIFF's invoice.

7 **3.3 Changes**

8 In the event any change or changes in the work is requested by OCFA and
9 agreed to by SHERIFF, the parties hereto shall execute an addendum to this Agreement,
10 setting forth with particularity all terms of such addendum, including, but not limited to, any
11 additional fees. Addenda may be entered into to provide for additional services not included
12 in this Agreement or not customarily furnished in accordance with generally accepted
13 practice in SHERIFF's profession.

14 **3.4 Appropriations**

15 This Agreement is subject to and contingent upon funds being appropriated
16 therefore by the OCFA Board of Directors for each fiscal year covered by the Agreement. If
17 such appropriations are not made, this Agreement shall automatically terminate without
18 penalty to OCFA.

19 **4. PERFORMANCE SCHEDULE**

20 **4.1 Time of Essence**

21 Time is of the essence in the performance of this Agreement.

22 **4.2 Schedule of Performance**

23 All Services rendered pursuant to this Agreement shall be performed within the
24 time periods prescribed in SHERIFF's Proposal, attached hereto as Exhibit "A". The
25 extension of any time period specified in Exhibit "A" must be approved in writing by the
26 Contract Officer.

1 **4.3 Force Majeure**

2 The time for performance of Services to be rendered pursuant to this
3 Agreement may be extended because of any delays due to unforeseeable causes beyond
4 the control and without the fault or negligence of SHERIFF, including, but not restricted to,
5 acts of God or of a public enemy, acts of the government, fires, earthquakes, floods,
6 epidemic, quarantine restrictions, riots, strikes, freight embargoes, and unusually severe
7 weather if SHERIFF shall within ten (10) days of the commencement of such condition notify
8 the Contract Officer who shall thereupon ascertain the facts and the extent of any necessary
9 delay, and extend the time for performing the Services for the period of the enforced delay
10 when and if in the Contract Officer's judgment such delay is justified, and the Contract
11 Officer's determination shall be final and conclusive upon the parties to this Agreement.

12 **4.4 Term**

13 This agreement shall continue in full force and effect for three years (initial
14 term) unless earlier terminated in accordance with Sections 8.5 or 8.6 of this Agreement. The
15 contract may be renewed up to two (2) additional one-year terms upon mutual written
16 agreement between OCFA and COUNTY.

17 **5. COORDINATION OF WORK**

18 **5.1 Representative of SHERIFF**

19 The following principal of SHERIFF is hereby designated as being the principal
20 and representative of SHERIFF authorized to act in its behalf with respect to the work
21 specified herein and make all decisions in connection therewith: Sheriff's Department
22 Captain approved by the Sheriff or his designee.

23 It is expressly understood that the experience, knowledge, capability and
24 reputation of the foregoing principal is a substantial inducement for OCFA to enter into this
25 Agreement. Therefore, the foregoing principal shall be responsible during the term of this
26 Agreement for directing all activities of SHERIFF and devoting sufficient time to personally
27 supervise the Services hereunder. The foregoing principal may be changed to another
28 qualified Captain by SHERIFF without the express written approval of OCFA.

1 **5.2 Contract Officer**

2 The Contract Officer shall be Patrick Bauer, Property Manager, unless
3 otherwise designated in writing by OCFA. It shall be SHERIFF's responsibility to keep the
4 Contract Officer fully informed of the progress of the performance of the Services and
5 SHERIFF shall refer any decisions that must be made by OCFA to the Contract Officer.
6 Unless otherwise specified herein, any approval of OCFA required hereunder shall mean the
7 approval of the Contract Officer.

8 **5.3 Prohibition Against Subcontracting or Assignment**

9 **5.3.1 No Subcontracting Without Prior Approval.** The experience,
10 knowledge, capability and reputation of SHERIFF, its principals and employees, and the
11 SHERIFF Representative were a substantial inducement for OCFA to enter into this
12 Agreement. Therefore, COUNTY shall not contract with any other entity to perform in whole
13 or in part the Services required hereunder without the express written approval of OCFA.

14 **5.3.2 Provisions in the Event Subcontractor(s) Are Authorized.** If
15 COUNTY is authorized to subcontract any part of the Services as provided in Section 5.3.1,
16 COUNTY shall be responsible to OCFA for the acts and omissions of its subcontractor(s) and
17 subconsultant(s) in the same manner as it is for persons directly employed. For purposes of
18 this Agreement, all persons engaged in the performance of Services will be considered
19 employees of COUNTY. OCFA will deal directly with and will make all payments to
20 SHERIFF. Nothing contained in this Agreement shall create any contractual relationships
21 between any subcontractor and OCFA. COUNTY shall ensure that all subcontractor
22 insurance requirements set forth in Section 6 below (including its subsections) are complied
23 with prior to commencement of Services by each subcontractor.

24 **5.3.2.1 Withholding Payment for Non-Authorized Subcontractors.**
25 OCFA shall have the right to withhold payment from SHERIFF for Services performed by any
26 subcontractor or subconsultant performing Services but not authorized in writing by OCFA, or
27 regarding which the insurance or other requirements under this Agreement have not been
28 satisfied.

1 **5.3.3 Assignments.** Neither this Agreement nor any interest herein may be
2 assigned, transferred, conveyed, hypothecated, or encumbered voluntarily or by operation of
3 law, whether for the benefit of creditors or otherwise, without the prior written approval of
4 OCFA. In the event of any unapproved transfer, including any bankruptcy proceeding, this
5 Agreement shall be void. No approved transfer shall release COUNTY or any surety of
6 COUNTY from any liability hereunder without the express written consent of OCFA.

7 **5.4 Independent Contractor**

8 **5.4.1** The legal relationship between the Parties is that of an independent
9 contractor, and nothing herein shall be deemed to make Contractor, or any of its personnel,
10 an OCFA employee. During the performance of this Agreement, SHERIFF and its officers,
11 employees, and agents shall act in an independent capacity and shall not act as OCFA
12 officers or employees. SHERIFF will determine the means, methods and details of
13 performing the Services subject to the requirements of this Agreement. The personnel
14 performing the Services under this Agreement on behalf of SHERIFF shall at all times be
15 under SHERIFF's exclusive direction and control. Neither OCFA nor any of its officials,
16 officers, employees, agents or volunteers shall have control over the conduct of SHERIFF or
17 any of its officers, employees, or agents, except as set forth in this Agreement. SHERIFF, its
18 officers, employees or agents, shall not maintain a permanent office or fixed business
19 location at OCFA's offices. OCFA shall have no voice in the selection, discharge,
20 supervision, or control of SHERIFF's officers, employees, representatives or agents or in
21 fixing their number, compensation, or hours of service. SHERIFF shall pay all wages,
22 salaries, and other amounts due its employees in connection with the performance of
23 Services under this Agreement and shall be responsible for all reports and obligations
24 respecting them, including but not limited to social security income tax withholding,
25 unemployment compensation, workers' compensation, and other similar matters. OCFA
26 shall not in any way or for any purpose be deemed to be a partner of SHERIFF in its
27 business or otherwise a joint venturer or a member of any joint enterprise with SHERIFF.

1 **5.4.2** SHERIFF shall not incur or have the power to incur any debt, obligation,
2 or liability against OCFA, or bind OCFA in any manner.

3 **5.4.3** No OCFA benefits shall be available to SHERIFF, its officers,
4 employees, or agents, in connection with the performance of any Work or Services under this
5 Agreement. Except for the cost of services paid to SHERIFF as provided for in this
6 Agreement, OCFA shall not pay salaries, wages, or other compensation to SHERIFF for the
7 performance of any Work or Services under this Agreement.

8 **5.5 Employee Retirement System Eligibility Indemnification**

9 **5.5.1** In the event that SHERIFF or any employee, agent, or subcontractor of
10 SHERIFF providing any Work or Services under this Agreement claims or is determined by a
11 court of competent jurisdiction to be eligible for enrollment in an employee retirement system
12 as an employee of the OCFA, SHERIFF shall indemnify, defend, and hold harmless OCFA
13 against: (1) all such claim(s) and determination(s); (2) for the payment of any employee
14 and/or employer contributions for employee retirement system benefits on behalf of
15 SHERIFF or its employees, agents or subcontractors; and (3) the payment of any penalties
16 and interest on such contributions which would otherwise be the responsibility of the OCFA.

17 **5.5.2** Notwithstanding any other agency, state or federal policy, rule,
18 regulation, law or ordinance to the contrary, Contractor and any of its employees, agents,
19 and subcontractors providing any Work or Services under this Agreement shall not qualify for
20 or become entitled to, and hereby agree to waive any claims to, any compensation, benefit,
21 or any incident of employment by OCFA, including but not limited to eligibility to enroll in
22 PERS as an employee of OCFA and entitlement to any contribution to be paid by OCFA for
23 employer contribution and/or employee contributions for PERS benefits.

24 **6. INSURANCE AND INDEMNIFICATION**

25 **6.1 Compliance with Insurance Requirements.** COUNTY is self-insured and
26 shall obtain, maintain, and keep in full force and effect during the term of this Agreement, at
27 its sole cost and expense, all insurance required under this section.

1 **6.2 Types of Insurance Required.** Without limiting the indemnity provisions set
2 forth in this Agreement, COUNTY shall obtain and maintain in full force and effect during the
3 term of this Agreement, including any extension thereof, the following policies of insurance:

4 **6.2.2 Commercial General Liability Insurance.** COUNTY shall maintain, in
5 full force and effect throughout the term of this Agreement, a Program of Self-Insurance
6 covering CGL on an “occurrence” basis, including property damage, bodily injury and
7 personal & advertising injury with limits no less than million dollars (\$5,000,000.00) per
8 occurrence and five million dollars (\$5,000,000.00) aggregate. If a general aggregate limit
9 applies, the general aggregate limit shall be no less than five million dollars (\$5,000,000.00).
10 Coverage for products and completed operations is required with limits no less than five
11 million dollars (\$5,000,000.00) aggregate. COUNTY shall maintain CGL insurance with per-
12 claim, aggregate and products and operations completed limits no lower than the minimum
13 CGL coverage limits set forth above.

14 **6.2.3 Automobile Liability Insurance.** COUNTY shall maintain, in full force
15 and effect throughout the term of this Agreement, Automobile liability insurance with limits of
16 at least one million dollars (\$1,000,000.00) combined limit for each occurrence covering
17 bodily injury and property damage. The policy shall specifically include coverage for owned,
18 non-owned, leased, and hired automobiles.

19 **6.2.4 Workers’ Compensation Insurance.** COUNTY shall obtain and
20 maintain, in full force and effect throughout the term of this Agreement, a Program of Self-
21 Insurance for Workers’ Compensation with limits no less than one million dollars
22 (\$1,000,000.00), and in compliance with all other statutory requirements applicable in the
23 State of California. COUNTY hereby waives on its own behalf, all rights of subrogation
24 against the OCFA, its board members, officials, officers, employees, agents and volunteers.

25 **6.2.4.1** If subconsultants or subcontractors are used, COUNTY shall
26 require each of its subconsultants and subcontractors, if any, to waive all rights of
27 subrogation, and to obtain endorsements from the subconsultants'/subcontractors' workers'
28

1 compensation insurers waiving all rights of subrogation, against the OCFA, its board
2 members, officials, officers, employees, agents and volunteers.

3 **6.2.4.2** COUNTY and each of its subconsultants and subcontractors
4 shall also maintain, in full force and effect throughout the term of this Agreement,
5 Employer's Liability Insurance with limits of at least one million dollars (\$1,000,000.00)
6 per injury or illness.

7 **6.3 Specific Insurance Provisions**

8 **6.3.1.1 Additional Insured:** The OCFA, its board members, officials,
9 officers, employees, agents and volunteers, shall be named as an Indemnified Party
10 on the County's Certificate of Self-Insurance.

11 **6.3.1.2 Primary, Non-Contributing.** County's Program of Self-
12 Insurance shall be primary and any other insurance, deductible, or self-insurance maintained
13 by the OCFA, its board members, officials, officers, employees, agents or volunteers, shall
14 not contribute with the primary self-insurance.

15 **6.4 Waiver of Subrogation.** COUNTY hereby agrees to waive its own right of
16 subrogation against the OCFA, its officials, officers, employees, agents and volunteers.

17 **6.4.1 Waivers of Subrogation: Subconsultants and Subcontractors.** If
18 OCFA approves the use of subconsultants or subcontractors for the performance of any
19 portion of the Services, then COUNTY shall obtain from each subconsultant and
20 subcontractor, and make available to OCFA upon request, written express waivers by each
21 subconsultant and subcontractor of the right of subrogation against the OCFA, its officials,
22 officers, employees, agents and volunteers, and policy endorsements of each of its
23 subconsultants' and subcontractors' insurance policies waiving any rights of subrogation
24 against the OCFA, its officials, officers, employees, agents and volunteers insurer. All such
25 waivers and endorsements shall be obtained prior to commencement of any Services by
26 each subconsultant or subcontractor.

1 **6.5 Evidence of Coverage.** Concurrently with the execution of the Agreement,
2 COUNTY shall deliver a Certificate of Self-Insurance as evidence of the insurance required
3 to be maintained by COUNTY by this Section 6.

4 **6.6 Requirements Not Limiting.** No representation is made that the minimum
5 insurance requirements of this Agreement are sufficient to cover the obligations of COUNTY
6 under this Agreement. Nothing in this section shall be construed as limiting in any way the
7 indemnification provision contained in this Agreement.

8 **6.7 Enforcement of Agreement (Non-Estoppel).** COUNTY acknowledges and
9 agrees that actual or alleged failure on the part of the OCFA to inform COUNTY of any non-
10 compliance with any of the insurance requirements set forth in this Agreement imposes no
11 additional obligation on the OCFA nor does it waive any rights hereunder.

12 **6.7.1 Delivery of Evidence of Subcontractor Insurance.** Upon request of
13 OCFA, COUNTY shall deliver to OCFA all certificates of insurance required from
14 subcontractors and subconsultants. (Note: COUNTY's duty to obtain all required insurance
15 for subcontractors and subconsultants required under this Agreement applies whether or not
16 OCFA requests delivery of evidence of such coverage.)

17 **6.8 Other Insurance Requirements.** The following terms and conditions shall
18 apply to the insurance policies required of COUNTY and its subconsultants and
19 subcontractors, if any, pursuant to this Agreement:

20 **6.8.1** It is COUNTY's obligation to ensure timely compliance with all
21 insurance submittal requirements as provided herein and COUNTY agrees to reimburse
22 OCFA for any losses resulting from its failure, or its subconsultants' or subcontractors' failure,
23 to timely comply with the requirements of this Agreement.

24 **6.8.2** COUNTY agrees to ensure that subconsultants and subcontractors, if
25 any, and any other parties involved with the Project who are brought onto or involved in the
26 Project by SHERIFF, provide the same minimum insurance coverage required of COUNTY.
27 COUNTY agrees to monitor and review all such coverage and assumes all responsibility for
28 ensuring that such coverage is provided in conformity with the requirements of this section.

COUNTY agrees that upon request, all agreements with, and evidence of insurance from, subconsultants and subcontractors and others engaged in performing any Services will be submitted to the OCFA for review.

6.8.3 COUNTY agrees to provide immediate written notice to OCFA of any claim, demand or loss arising out of the Services performed under this Agreement and for any other claim, demand or loss which may reduce the insurance available to an amount less than required by this Agreement.

6.12 Indemnification.

6.12.1 COUNTY, its officers, agents, employees, subcontractors and independent contractors shall not be deemed to have assumed any liability for the negligence or any other act or omission of OCFA or any of its officers, agents, employees, subcontractors or independent contractors, or for any dangerous or defective condition of any work or property of OCFA. OCFA shall indemnify and hold harmless COUNTY and its elected and appointed officials, officers, agents, employees, subcontractors and independent contractors from any claim, demand or liability whatsoever based or asserted upon the condition of any work or property of OCFA, or upon any act or omission of OCFA, its elected and appointed officials, officers, agents, employees, subcontractors or independent contractors, related to this Agreement, for property damage, bodily injury or death or any other element of damage of any kind or nature, and OCFA shall defend, at its expense including attorney fees, and with counsel approved in writing by COUNTY, COUNTY and its elected and appointed officials, officers, agents, employees, subcontractors and independent contractors in any legal action or claim of any kind related to this Agreement based or asserted upon such condition of work or property, or alleged acts or omissions.

6.12.2 OCFA, its officers, agents, employees, subcontractors and independent contractors shall not be deemed to have assumed any liability for the negligence or any other act or omission of COUNTY or any of its officers, agents, employees, subcontractors or independent contractors, or for any dangerous or defective condition of any work or property of COUNTY. COUNTY shall indemnify and hold harmless OCFA and its

1 elected and appointed officials, officers, agents, employees, subcontractors and independent
2 contractors from any claim, demand or liability whatsoever based or asserted upon the
3 condition of any work or property of COUNTY, or upon any act or omission of COUNTY, its
4 elected and appointed officials, officers, agents, employees, subcontractors or independent
5 contractors, related to this Agreement, for property damage, bodily injury or death or any
6 other element of damage of any kind or nature, and COUNTY shall defend, at its expense
7 including attorney fees, and with counsel approved in writing by OCFA, OCFA and its elected
8 and appointed officials, officers, agents, employees, subcontractors and independent
9 contractors in any legal action or claim of any kind related to this Agreement based or
10 asserted upon such condition of work or property, or alleged acts or omissions.

11 **6.12.3** If judgment is entered against OCFA and COUNTY by a court of
12 competent jurisdiction because of the concurrent active negligence of either party related to
13 this Agreement, OCFA and COUNTY agree that liability will be apportioned as determined by
14 the court. Neither party shall request a jury apportionment.

15 **7. RECORDS AND REPORTS**

16 **7.1 Reports**

17 SHERIFF shall periodically prepare and submit to the Contract Officer such
18 reports concerning the performance of the Services required by this Agreement as the
19 Contract Officer shall require.

20 **7.2 Records**

21 SHERIFF shall keep such books and records as shall be necessary to properly
22 perform the Services required by this Agreement and enable the Contract Officer to evaluate
23 the performance of such Services. Except as provided in Section 7.5, the Contract Officer
24 shall have full and free access to such books and records at all reasonable times, including
25 the right to inspect, copy, audit and make records and transcripts from such records.

26 **7.3 Ownership of Documents**

27 All drawings, specifications, reports, records, documents and other materials
28 prepared by SHERIFF in the performance of this Agreement shall be the property of OCFA

1 and shall be delivered to OCFA upon request of the Contract Officer or upon the termination
2 of this Agreement, and SHERIFF shall have no claim for further employment or additional
3 compensation as a result of the exercise by OCFA of its full rights or ownership of the
4 documents and materials hereunder. SHERIFF may retain copies of such documents for its
5 own use. SHERIFF shall have an unrestricted right to use the concepts embodied therein.

6 **8. ENFORCEMENT OF AGREEMENT**

7 **8.1 California Law**

8 This Agreement shall be construed and interpreted both as to validity and to
9 performance of the parties in accordance with the laws of the State of California. Legal
10 actions concerning any dispute, claim or matter arising out of or in relation to this Agreement
11 shall be instituted in the Superior Court of the County of Orange, State of California, or any
12 other appropriate court in such county, and COUNTY covenants and agrees to submit to the
13 personal jurisdiction of such court in the event of such action.

14 **8.2 Waiver**

15 No delay or omission in the exercise of any right or remedy of a non-defaulting
16 party on any default shall impair such right or remedy or be construed as a waiver. No
17 consent or approval of OCFA shall be deemed to waive or render unnecessary OCFA's
18 consent to or approval of any subsequent act of COUNTY. Any waiver by either party of any
19 default must be in writing and shall not be a waiver of any other default concerning the same
20 or any other provision of this Agreement.

21 **8.3 Rights and Remedies are Cumulative**

22 Except with respect to rights and remedies expressly declared to be exclusive
23 in this Agreement, the rights and remedies of the parties are cumulative and the exercise by
24 either party of one or more of such rights or remedies shall not preclude the exercise by it, at
25 the same or different times, of any other rights or remedies for the same default or any other
26 default by the other party.

27 **8.4 Legal Action**

1 In addition to any other rights or remedies, either party may take legal action, in
2 law or in equity, to cure, correct or remedy any default, to recover damages for any default, to
3 compel specific performance of this Agreement, to obtain injunctive relief, a declaratory
4 judgment, or any other remedy consistent with the purposes of this Agreement.

5 **8.5 Termination Prior to Expiration of Term**

6 OCFA reserves the right to terminate this Agreement at any time, with or
7 without cause, upon ninety (90) days written notice to SHERIFF, except that where
8 termination is due to the fault of the SHERIFF and constitutes an immediate danger to health,
9 safety and general welfare, the period of notice shall be such shorter time as may be
10 appropriate. Upon receipt of the notice of termination, SHERIFF shall immediately cease all
11 Services hereunder except such as may be specifically approved by the Contract Officer.
12 SHERIFF shall be entitled to compensation for all Services rendered prior to receipt of the
13 notice of termination and for any Services authorized by the Contract Officer thereafter.

14 SHERIFF may terminate this Agreement, with or without cause, upon ninety
15 (90) days written notice to OCFA.

16 **8.6 Termination for Default of SHERIFF**

17 If termination is due to the failure of SHERIFF to fulfill its obligations under this
18 Agreement, OCFA may take over the work and perform the same to completion by contract
19 or otherwise, and SHERIFF shall be liable to the extent that the total cost for completion of
20 the Services required hereunder exceeds the compensation herein stipulated, provided that
21 OCFA shall use reasonable efforts to mitigate damages, and OCFA may withhold any
22 payments to SHERIFF for the purpose of set-off or partial payment of the amounts owed to
23 OCFA.

24 **8.7 Each Party Responsible for Own Attorneys' Fees**

25 If either party commences an action against the other party arising out of or in
26 connection with this Agreement or its subject matter, each party will be responsible for their
27 own legal fees and costs associated with any litigation that may occur.

28 **9. OCFA OFFICERS AND EMPLOYEES; NON-DISCRIMINATION**

1 **9.1 Non-Liability of OCFA Officers and Employees**

2 No officer or employee of OCFA shall be personally liable to SHERIFF, or any
3 successor-in-interest, in the event of any default or breach by OCFA or for any amount which
4 may become due to SHERIFF or its successor, or for breach of any obligation of the terms of
5 this Agreement.

6 **9.2 Covenant Against Discrimination**

7 SHERIFF covenants that, by and for itself, its assigns, and all persons claiming
8 under or through them, that there shall be no discrimination or segregation in the
9 performance of or in connection with this Agreement regarding any person or group of
10 persons on account of race, color, creed, religion, sex, marital status, national origin, or
11 ancestry. SHERIFF shall take affirmative action to insure that applicants and employees are
12 treated without regard to their race, color, creed, religion, sex, marital status, national origin,
13 or ancestry.

14 //

15 **10. MISCELLANEOUS PROVISIONS**

16 **10.1 Notice**

17 Any notice, demand, request, consent, approval, or communication either party
18 desires or is required to give to the other party or any other person shall be in writing and
19 either served personally or sent by pre-paid, first-class mail to the address set forth below.
20 Either party may change its address by notifying the other party of the change of address in
21 writing. Notice shall be deemed communicated forty-eight (48) hours from the time of mailing
22 if mailed as provided in this Section.

23
24 Orange County Fire Authority
25 Attention: Sara Kennedy
26 1 Fire Authority Road
27 Irvine, CA 92602

WITH COPY TO:
 David E. Kendig, General Counsel
 Woodruff, Spradlin & Smart
 555 Anton Blvd. Suite 1200
 Costa Mesa, CA 92626

To SHERIFF:

Orange County Sheriff's Department

Attention: Contract Representative

550 N. Flower St.

Santa Ana, CA 92703

10.2 Integrated Agreement

This Agreement contains all of the agreements of the parties and cannot be amended or modified except by written agreement.

10.3 Amendment

This Agreement may be amended at any time by the mutual consent of the parties by an instrument in writing.

10.4 Severability

In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement, which shall be interpreted to carry out the intent of the parties hereunder.

10.5 Authority

The persons executing this Agreement on behalf of the parties hereto warrant that they are duly authorized to execute this Agreement on behalf of said parties and that by so executing this Agreement the parties hereto are formally bound to the provisions of this Agreement.

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3 **IN WITNESS WHEREOF**, the parties have executed this Agreement as of the
4 dates stated below.

5 **ORANGE COUNTY FIRE AUHORITY**

6 BY: _____

7 Sara Kennedy, CPPB
8 Purchasing Manager

9 DATE: _____

10 **APPROVED AS TO FORM:**

11 **ATTEST:**

12 BY: _____

13 David E. Kendig
14 General Counsel

15 Maria D. Huizar
16 Clerk of the Board

17 DATE: _____

18 DATE: _____

19 **"ORANGE COUNTY SHERIFF'S DEPARTMENT**

20 BY: _____

21 Don Barnes
22 Sheriff-Coroner

23 DATE: _____

24 **COUNTY OF ORANGE:**

25 BY: _____

26 Chairman of the Board of Supervisors
27 County of Orange, California

28 SIGNED AND CERTIFIED THAT A COPY OF THIS AGREEMENT HAS BEEN DELIVERED
TO THE CHAIR OF THE BOARD PER G.C. Sec. 25103, Reso 79-1535

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Attest:

Robin Stieler, Clerk of the Board
County of Orange, California

APPROVED AS TO FORM:
Office of the County Counsel
County of Orange, California

BY: _____
Deputy

DATED: _____



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
January 12, 2022

Agenda Item No. 3C
Discussion Calendar

**OCFA Aviation Unit Fleet Plan Analysis & Proposed Process
for Developing Recommendations Related to Aircraft Replacement**

Contact(s) for Further Information

Brian Fennessy, Fire Chief	brianfennessy@ocfa.org	714.573.6010
Vincent Carpino, Division Chief Special Operations	vincentcarpino@ocfa.org	949.274.6692

Summary

This agenda item is submitted to the Budget & Finance Committee to seek input regarding a vetting process that could be utilized to educate and inform our policy-makers on needs, options, costs, financing solutions, and ultimately to develop recommendations on the disposition of Federal Excess Property Program (FEPP) helicopters and associated new aircraft acquisitions.

Prior Board/Committee Action(s)

At the July 22, 2021 meeting of the Board of Directors, a presentation was provided by Division Chief/Special Operations, Vince Carpino, as an update on OCFA Air Operations. The Board was informed that staff would return at a later date to initiate more dialogue and to begin to explore next steps related to replacement of OCFA's Air Assets.

At the November 10, 2021 meeting of the Budget and Finance Committee, discussion was initiated about the attached agenda item; however, quorum was lost prior to completing any action.

RECOMMENDED ACTION(S)

1. Receive and file the Conklin & de Decker Aviation Unit Fleet Plan Analysis.
2. Direct staff to draft a vetting process that could be utilized to educate and inform our policy-makers on needs, options, costs, financing solutions, and ultimately to develop recommendations pertaining to disposition of obsolete aircraft and acquisition of replacement aircraft.
3. Direct staff to return to the Budget and Finance Committee at its February 2022 meeting to further develop a proposed review structure that can ultimately be recommended to the Board of Directors for input and approval, prior to proceeding with deliberations.

Impact to Cities/County

Not Applicable.

Fiscal Impact

The fiscal impact will be further developed as part of a future air assets review process.

Background

At the November 10, 2021 meeting of the Budget and Finance Committee, discussion was initiated about the attached agenda item; however, quorum was lost prior to completing any action. Prior to losing quorum, feedback provided by Committee members regarding future information needs and future vetting process included:

- Breakdown of helicopter call types by month within OCFA service area
- Assessment of necessity and improved outcomes from having a helicopter
- Assess OCFA & OCSD helicopter programs overlap and operational relationship
- How many aircraft we require and to do what function?
- How does the growth of county population factor into the needs of the agency?
- Was Air Operations unable to perform any missions due to insufficient capacity?

The above feedback was captured as initial topics for consideration as the Committee continues this dialogue at the January 12, 2022 meeting.

To restate the ultimate objectives with this agenda item, staff is seeking guidance from the Budget and Finance Committee regarding a vetting process that could be utilized to educate and inform our policy-makers on needs, options, costs, financing solutions, and ultimately to develop recommendations pertaining to disposition of obsolete aircraft and acquisition of replacement aircraft. Staff will be ready to take input from the Committee at this January 12, 2022 meeting, and then develop a written “Air Assets Review Plan” for further refinement by the Committee in February 2022. Alternatively, the Budget and Finance Committee can use this January 2022 meeting to begin its thought process, and wait until the February 2022 meeting to provide its feedback to staff. In either approach, staff will return during future Committee meetings for ongoing dialogue as to the recommended review process.

Attachment(s)

1. November 10, 2021, Budget and Finance Committee Staff Report titled “OCFA Aviation Unit Fleet Plan Analysis & Proposed Process for Developing Recommendations Related to Aircraft Replacement”
2. Orange County Fire Authority Aviation Unit Fleet Analysis Plan



Orange County Fire Authority
AGENDA STAFF REPORT

Budget and Finance Committee Meeting
November 10, 2021

Agenda Item No. 3D
Discussion Calendar

**OCFA Aviation Unit Fleet Plan Analysis & Proposed Process for Developing
Recommendations Related to Aircraft Replacement**

Contact(s) for Further Information

Brian Fennessy, Fire Chief	brianfennessy@ocfa.org	714.573.6010
Vincent Carpino, Division Chief Special Operations	vincentcarpino@ocfa.org	949.274.6692

Summary

This agenda item is submitted to the Budget & Finance Committee to seek input regarding a vetting process that could be utilized to educate and inform our policy-makers on needs, options, costs, financing solutions, and ultimately to develop recommendations on the disposition of Federal Excess Property Program (FEPP) helicopters and associated new aircraft acquisitions.

Prior Board/Committee Action(s)

At the July 22, 2021, meeting of the Board of Directors, a presentation was provided by Division Chief/Special Operations, Vince Carpino, as an update on OCFA Air Operations. The Board was informed that staff would return at a later date to initiate more dialogue and to begin to explore next steps related to replacement of OCFA's Air Assets.

RECOMMENDED ACTION(S)

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3. Direct staff to return to the Budget and Finance Committee at its January 2022 meeting to further develop a proposed review structure that can ultimately be recommended to the Board of Directors for input and approval, prior to proceeding with deliberations.

Impact to Cities/County

Not Applicable.

Fiscal Impact

The fiscal impact will be further developed as part of a future air assets review process.

Background

The Orange County Fire Authority (OCFA) Air Operations Section began operations in wake of the devastating 1993 Laguna Fire. Orange County had no dedicated firefighting aircraft at that time. When the fire started in Laguna Canyon on a hot and dry day in October of 1993, strong Santa Ana Winds rapidly accelerated the spread. The first firefighting aircraft didn't arrive for two hours and by then the out-of-control fire had grown to 3,000 acres. A total of 441 structures were ultimately destroyed, and insured losses exceeded \$435 million.

The Orange County Fire Department (OCFD) obtained two 1967 Federal Excess Property UH-1H “Hueys” from CAL FIRE and converted them to firefighting “Super Hueys” through a performance enhancement program. They were placed into front line service in 1995. Hoist rescue was added to the multi-mission capabilities of the Section in 1999 which enabled aerial extraction of victims from swift water and the back country.

In 2008, OCFA made a major leap forward as a modern helicopter program when the fleet was upgraded with two twin engine Bell 412 EP’s. The move to dual engine aircraft added a tremendous safety margin to the multi-mission program. The addition of night vision goggle technology allowed OCFA to be one of a few agencies to provide night-time water dropping and rescue. The helicopters have commercial certificates from the FAA and do not have the same operation restrictions as the UH-1H Super Hueys.

The UH-1H helicopters were manufactured in 1967. Once retired, the Department of Defense released former Army helicopters through the Federal Excess Personal Property (FEPP) program to the U.S. Forest Service. The Forest Service distributed the helicopters to states with the intention of being used for wildland firefighting. The helicopters operate as restricted category, due to their military background, which means they can only perform special purpose operations. In 2020, the fifty-three-year-old FEPP Super Hueys were grounded due to costly major maintenance needs required by Department of Defense. Currently, OCFA provides daily staffing and maintenance of the two Bell 412 EP’s.

Mission

The OCFA provides a variety of services to 23 Orange County cities and the unincorporated areas of Orange County. The primary missions for the OCFA aviation unit include firefighting and rescue. The aviation unit averages 1,250 operations per year and has flown an average of 530 hours annually beginning in 2016. The aviation unit flew just over 600 hours in 2020.

In addition to firefighting, the aviation unit uses its aircraft to do fire mapping, transport wildland crews, transport patients, and insert and extract equipment. When performing rescue missions with a 250-foot hoist cable, the unit can do various procedures including short-haul air rescue on land or water, swift-water rescue, patient transfer on litter, and large animal rescues. Other capabilities involve night vision goggle operations, infrared detection, and disaster assessment.

Of the four aircraft, the aviation unit staffs two of them 365 days each year. One of the two aircraft is staffed for 24 hours and is prepared for the firefighting and rescue missions. The crew consists of a pilot, fire captain/crew chief, and a paramedic. The second helicopter is a fire response helicopter and is available for 10 hours each day. The helicopter is staffed with a pilot and fire captain/crew chief. The third and fourth helicopters (UH-1H Super Huey) had been used for back-up and initial pilot training before being grounded in 2020.

Aviation Unit Fleet Plan Analysis

The Orange County Fire Authority contracted with Conklin & de Decker to perform a thorough assessment of the current helicopter fleet to make more informed decisions on future purchase, operation, maintenance, and disposition of aircraft by providing objective and impartial information. Conklin & de Decker was identified to provide these services to OCFA based on the firm’s background of producing detailed analysis for several other Southern California public safety agencies in advance of their purchasing new aircraft. The total cost of services performed for OCFA was \$20,921.68. In June of 2021, Conklin & de Decker Associates Inc. delivered the Orange County Fire Authority Aviation Unit Fleet Plan Analysis.

Conklin & de Decker created a potential fleet replacement plan for OCFA and its aviation department. First, they produced a ten-year benchmark estimate based upon retention of the current fleet. Next, they considered changes to the fleet by incorporating new aircraft for consideration. OCFA needs a multi-mission aircraft that is capable of increased water drop capacity to support its firefighting mission. Therefore, the analysis incorporated the possibility of helicopter type changes.

Multi-Mission Aircraft Recommendation

With fire season now considered “year-round” and wildfires showing increased resistance to control, approaches that were once successful in the urban interface are now proving to be less reliable. In response to these changes in fire behavior, larger retardant dropping fixed-wing firefighting aircraft such as the DC-10 and 747, have been developed and shown to be highly useful during recent fire seasons. The same evolution that has taken place in recent years with fixed wing firefighting aircraft has been occurring with multi-mission firefighting helicopters.

The Sikorsky S-70i has become the industry standard helicopter of choice for aerial firefighting and multi-mission helicopter operations. For example, fire agencies in California such as CAL FIRE, Los Angeles County, San Diego City, Ventura County & Santa Barbara County have upgraded their aircraft fleet to adapt to the changes in the Southern California wildland fire environment.

Given that the largest threat to life and property today are wildland fires, the need to replace the two legacy UH-1H Super Huey helicopters with two larger, faster, and significantly safer S70i multi-mission aircraft represents a significant improvement over OCFA’s current aircraft fleet capabilities. For example, a commonly accepted premise when fighting fires is that more water delivered per drop improves the odds of extinguishing or controlling a fire more quickly. Current OCFA helicopters drop an average of 350-375 gallons per drop which is significantly less effective than other multi-mission helicopters currently used today in the fire service that drop an average of 800-1,000 gallons.

Fire & Rescue multi-mission aviation operations are inherently hazardous. Mitigating mission and aircrew risk is a practice integrated into the fabric of OCFA air operations. The operation of multi-engine Sikorsky S70i helicopters represent a margin of aircrew and public safety that no other multi-mission aircraft in the industry currently provides. The primary safety improvements for the S-70i are more powerful engines, T700 GE 701D, airframe safety enhancements and a modern avionics glass cockpit.

Improved multi-mission operations are a key decision factor when considering aircraft replacement. However, nothing is more important than ensuring the inflight safety of OCFA aircrews and the public below. The S70i is manufactured with aircraft performance dependability and safety features that are a significant improvement in aircrew safety.

Conclusion

Based on the Conklin & de Decker Aviation Unit Fleet Plan Analysis, staff understands that implementation of the recommendations (if desired, after thorough review) would require substantial investment, with long-term implications for OCFA services. There is no indication that the types of missions OCFA aircraft perform today will change in the foreseeable future. However, there is a need to improve safety and effectiveness when fighting today’s larger and faster spreading wildland fires.

Staff is seeking guidance from the Budget and Finance Committee regarding a vetting process that could be utilized to educate and inform our policy-makers on needs, options, costs, financing solutions, and ultimately to develop recommendations pertaining to disposition of obsolete aircraft and acquisition of replacement aircraft. Staff will be ready to take input from the Committee at this November 2021 meeting, and then develop a written “Air Assets Review Plan” for further refinement by the Committee in January 2022. Alternatively, the Budget and Finance Committee can use this initial November 2021 meeting to begin its thought process and wait until the January 2022 meeting to provide its initial feedback to staff. In either approach, staff will return during future Committee meetings for ongoing dialog as to the recommended review process.

Attachment(s)

Orange County Fire Authority Aviation Unit Fleet Analysis Plan

Orange County Fire Authority Aviation Unit Fleet Plan Analysis

Prepared for

Orange County Fire Authority

May 19, 2021



Prepared by

Conklin & de Decker Associates, Inc.
A JSSI Company

Introduction

The Orange County Fire Authority (OCFA) seeks the assistance of Conklin & de Decker with a thorough assessment of the Authority's current helicopter fleet to make more informed decisions on the purchase, operation, maintenance, and disposition of aircraft by providing objective and impartial information. More specifically, the Exhibit requested that Conklin & de Decker focus on the following areas to accomplish the intent of the Overview.

- Based on the OCFA's historical usage, identify the preliminary specifications of the helicopter(s) required. Preliminary specifications could include such items as aircraft weight range, size, number of engines, and useful load.
- Estimate the cost of the acquisition and operation of helicopter alternatives. The operating cost estimates will include maintenance options and fuel costs, and other operating or overhead costs.
- Establish a defined framework for an OCFA helicopter replacement plan including the anticipated useful life of the equipment, as well as a comparison of phasing of aircraft purchases versus purchasing all replacement aircraft all at once.
- Thoroughly research the resale value of the current fleet and explore the primary and secondary markets for helicopters to determine the feasibility of replacement within specified timeframes, such as lead times in acquiring helicopters and expected duration in selling the current fleet.
- Provide a comprehensive summary of
 - Maintenance requirements based on usage parameters such as flight hours, calendar times, or flight cycles. Compare/contrast to current maintenance schedules deployed by the OCFA.
 - Present preliminary analysis and findings to OCFA staff and receive feedback.
 - Prepare a Fleet Plan Analysis report for all involved parties with input from OCFA staff.

To address the specific areas, Conklin & de Decker created five sections, with each section containing the following categories.

- A restatement of the OCFA's original issue, concern, or question.
- Conklin & de Decker's proposed approach.
- A summary of the analysis and research.
- Conklin & de Decker's analysis explaining the process and research to support the summary.

Listed below are the sections with the respective page numbering.

- Section 1 – Fleet Review
Pages: 1-1 thru 1-26
- Section 2 – Life Cycle Cost Projections
Pages: 2-1 thru 2-24
- Section 3 – Resale Value and Lead Time
Pages: 3-1 thru 3-3
- Section 4 – Fleet Replacement Plan
Pages: 4-1 thru 4-9
- Section 5 – Other
Pages: 5-1 thru 5-7

Executive Summary

The Orange County Fire Authority contacted Conklin & de Decker seeking assistance with a thorough assessment of the current helicopter fleet to make more informed decisions on the purchase, operation, maintenance, and disposition of aircraft by providing objective and impartial information.

Orange County Fire Authority has four helicopters that perform primarily fire and rescue operations and a variety of services to the unincorporated area of the county as well as 23 cities in the county. The following summarizes the results to Conklin & de Decker's analysis and research.

Orange County Fire Authority (OCFA)

➤ Section 1, Fleet Review:

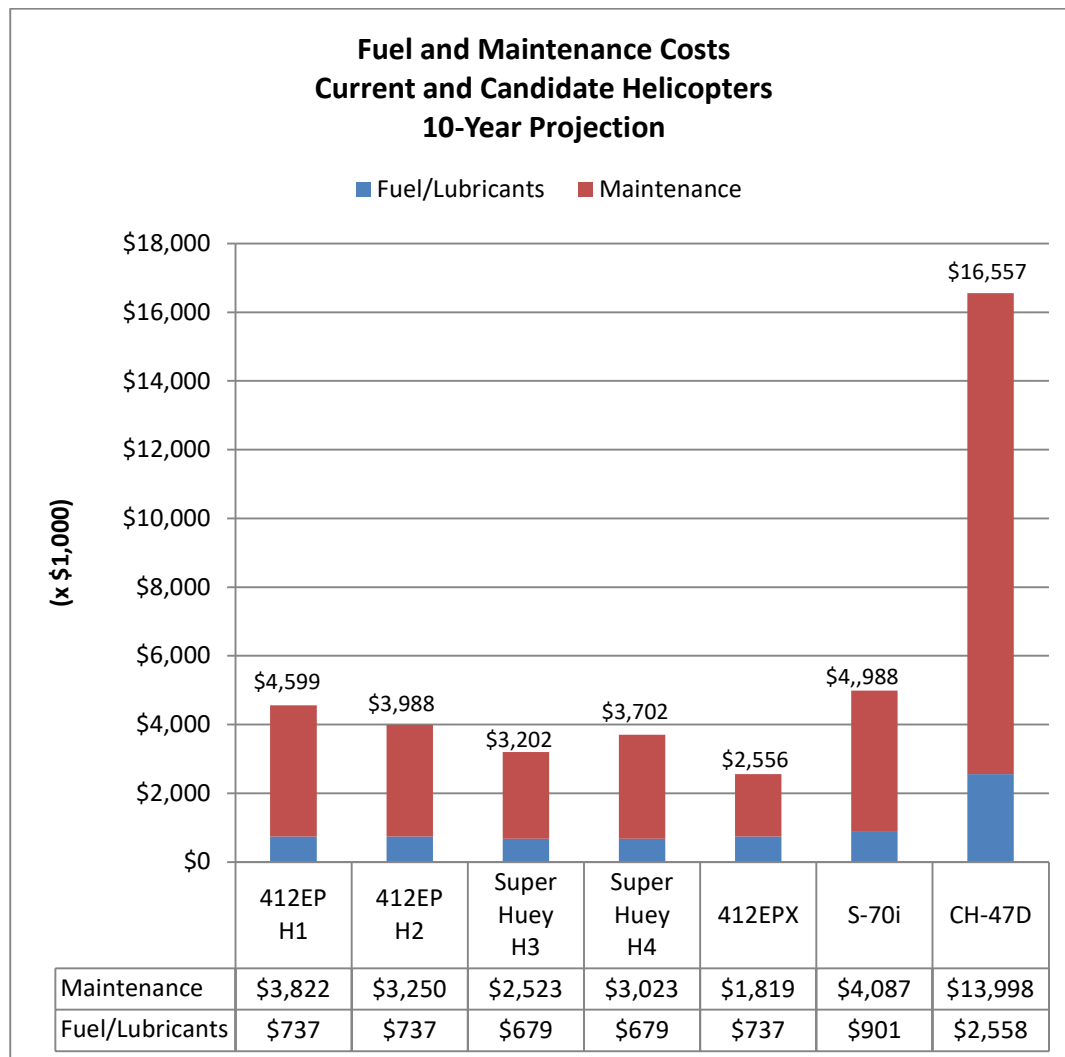
- OCFA initial request. Identify the helicopter specifications and performance requirements based on OCFA current and future missions.
- OCFA does not see its primary missions changing; however, based on the risk to the communities the OCFA serves and the current and expected annual increase in wildland fires, which occur and spread more rapidly than experienced in the past, the Fire Chief and Emergency Operations Bureau leadership believe it needs to increase its water delivery capabilities during the firefighting mission. The current fleet of helicopters have the capacity to deliver up to 350 to 375 gallons per drop. A more acceptable volume would be in the range of Type I helicopters, which would begin around 700 or more gallons.
- OCFA selected two helicopter types that have the capacity to deliver more water per drop, while also providing more cabin volume and seating than the current fleet. Those aircraft were the Sikorsky S-70i and Coulson-Unical CU-47D.
- OCFA also requested information on the newest version of the Bell 412 series, the Bell/Subaru 412EPX, due to its improved performance.
- Table 1 provides information about the selected performance and specifications for the current fleet and the candidate helicopters.

Table 1					
Current and Candidate Helicopters					
Firefighting Mission					
Airframe Manufacturer /Type	Bell / Super Huey	Bell / 412EP	Subaru/Bell 412EPX	Sikorsky S-70i	Coulson CH-47D
Engine Manufacturer /Type	Honeywell / T53-L-703	Pratt & Whitney / PT6T-3D	Pratt & Whitney / PT6T-9	General Electric / T700 GE 701D	Honeywell / T5-GA-L714A
Useful Load (lbs.)					
Maximum Take-Off Gross Weight (Internal)	10,500	11,900	12,200	22,000	50,000
Maximum Take-Off Gross Weight (External)	11,200	11,900	13,000	23,500	50,000
Mission Configured - Fire	6,700	8,300	8,300	14,200	26,500
Flight Crew (Firefighting)	450	450	450	650	650
Useful Load Available for Mission	4,050	3,150	4,250	8,650	22,850
Fuel (lbs.) 1.5-Hour Mission w/ 20 Min. Reserve	1,275	1,385	1,385	1,986	4,966
Remaining Useful Load	2,775	1,765	2,865	6,664	17,884
Mission Endurance (Hours)	2.0	2.9	2.9	2.9	2.6
Hover Capabilities (Altitude)					
In-Ground Effect (ISA, Sea Level)	6,800	6,200	11,100	10,270	7,750
Out-of-Ground-Effect (ISA, Sea Level)	10,800 lbs.	11,890 lbs.	8,000	6,200	6,100
In-Ground Effect (ISA +20 C, Sea Level)	6,800	6,200	8,200	7,400	5,250
Out-of-Ground-Effect (ISA +20 C, Sea Level)	10,800 lbs.	11,890 lbs.	4,000	4,400	3,900
Helicopter Speed (kts)					
Cruise Speed - Max (knots)	106	125	130	145	157
Cruise Speed - Long Range (knots)	106	122	124	128	130
Calculated Speed (knots)	90	106	110	122-140	131-157
Water Drop Capabilities (gallons)					
Water Tank Size (gallons)	350	375	375	1,000	3,000
1.5-Hour Mission+ 20-Min Fuel Reserve	332	211	343	797	2,498
End of Mission (20-minute reserve)	457	347	478	992	2,985
Cabin					
Volume (cubic feet)	208	208	208	396	1,629
Crew/Passengers	2/14	2/14	2/14	2/12	2/>30
Pricing/Value					
Basic Price (x1M)	N/A	N/A	\$11.5	\$17.0	\$16.5
Firefighting Completion (x 1M)	N/A	N/A	\$14-\$15	\$20-\$23	\$5.8*
Resale Value	\$1.6-\$2.0	\$3.5-\$4.3	N/A	N/A	N/A

➤ Section 2, Life Cycle Cost Projection:

- OCFA initial request. Estimate the cost of the acquisition and operation of helicopter alternatives. The operating cost estimates will include maintenance options and fuel costs, and other operating or overhead costs.
- We estimated the maintenance and fuel costs over a ten-year period for each of the current helicopter fleet and for the selected replacement candidate helicopters. While the chart highlights the increase in costs for the candidate helicopters, it does not represent the significant increase in water dropping capacity.
- It is important to mention the effect that a helicopter's age can have on the maintenance costs in a life cycle. Three of the helicopter types, UH-1H Super Huey, Bell 412EP, and CH-47D, have been in operation for many years. The 412EPX and S-70i are considered newer helicopters. Due to their age and the number of flight hours, older aircraft will have higher maintenance costs as they encounter significant maintenance events. Based on the assumption of 200 flight hours per year per helicopter, the 412EP helicopters will encounter several of these maintenance events, which drives up the total costs during the next ten-year period. The new helicopters will not encounter the significant events in their first ten years based upon the 200 hours per year and therefore their cost may be similar to or less than the older helicopters.
- Chart 1 summarizes the estimated fuel and maintenance costs over the next ten-year period. Each of the OCFA helicopters are summarized individually, while the candidate helicopters are based on helicopters that are new in the life cycle.

Chart 1



- To acquire helicopters with Type 1 capability, the costs to operate them will also increase. Chart 1 highlights the increase. While the increase in maintenance and fuel cost may seem excessive, the increase in performance must also be considered. Comparing the Bell 412EP to the Sikorsky S-70i illustrates the increase in water delivered during the typical mission scenario. The S-70i will carry 256 percent more water per tank load. The CU-47D water drop capability is ten times the 412EP. The 412EPX also increases the water dropped by 58 percent when compared to the 412EP.
- The time remaining for significant scheduled maintenance items and events influence an aircraft's value during its life cycle. Table 2 reflects that effect for the current (10 years) and candidate helicopters (20 years) and highlights the years that OCFA may want to consider when selling a particular helicopter. The years marked with yellow represent periods in the life cycle when the remaining lives of significant scheduled maintenance have a positive effect on value when compared to an assumption of 50 percent

remaining life. The single red block for each helicopter represents the lowest value. The letters in the yellow blocks identify the years with the highest estimated values. "A" identifies the highest value. Yellow blocks without letters represent estimated aircraft values that are less than the third/fifth highest years ("C" or "E"). The white blocks are the years when the helicopter's value is below the average baseline.

Table 2																				
OCFA Helicopters - Annual Summary of Adjusted Values																				
Registration Number	Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
N141FA H1		A		C				B			X	X	X	X	X	X	X	X	X	X
N241FA H2	A	B					C				X	X	X	X	X	X	X	X	X	X
N441FA H3	C								A	B	X	X	X	X	X	X	X	X	X	X
N541FA H4	C					B				A	X	X	X	X	X	X	X	X	X	X
Candidate Helicopters - Annual Summary of Adjusted Values																				
412EPX	A	B											C	D	E					
S-70i	A	B	C	D	E															
CU-47D	Not Available																			

➤ Section 3, Resale Value and Lead Time:

- OCFA initial request. Research the resale value of the current fleet and lead time for the new helicopters.
- Table 3 summarizes the resale values for the current fleet and the lead time for the candidate helicopters.

Table 3					
Resale, Acquisition Cost, and Lead Time					
Helicopter Type	Resale Value (x 1 million)	Disposition Time	Acquisition Cost (x 1 million)	Basic Aircraft Delivery	Completion Estimate
UH-1H Super Huey	N/A	Immediate	N/A	N/A	N/A
412EP	\$3.5 - \$4.3	Year or more	N/A	N/A	N/A
412EPX	N/A	N/A	\$14 - \$15	1-6 months	6 months
S-70i	N/A	N/A	\$20 - \$23	24 months	6-8 months
CH-47D	N/A	N/A	\$16.5	Jun-2021	Jun-2021

- Using two industry resources, Conklin & de Decker and HeliValue\$, the range of costs for a used Bell 412EP is \$3.50 to \$4.30 million. The UH-1H Super Hueys do not have a resale value. They were acquired through the Federal Excess Personal Property (FEPP) program, the opportunity for receiving resale value is eliminated. Technically, the

helicopters are still owned by the federal government with CAL FIRE serving as the conduit to OCFA.

- An industry source reemphasized that estimated helicopter values are only applicable if there are available buyers. As of the end of 2020, the lack of buyers at the current estimated values indicates the actual value is somewhere lower than the estimated values. Another resource, AMSTAT, estimated that 412 helicopters are staying on the market for a year or more.
- The CU-47D has the shortest lead time 3 months. The Bell 412EPX has a range of 7 to 12 months. The S-70i based on the standard lead time would be 24 months plus completion of 6-8 months. However, Sikorsky also has spec helicopters that could reduce the standard 24-month lead time significantly.

➤ **Section 4, Fleet Replacement Plan:**

- OCFA initial request. Suggest replacement plan for existing fleet. The suggested plan is one approach to consider, however the plan can vary based upon OCFA discussions and changes to our current assumptions.
- Retain the Current Fleet - Although retaining the current fleet is not likely, it serves as a benchmark when compared to the changes that may occur as suggested by the four steps. Based upon the life cycle cost assumptions stated in Section 2 Life Cycle Cost Projections, we projected the estimated fuel and maintenance costs for the next ten years for an unchanged fleet.
- Step 1: Retire the UH-1H helicopters. There are three primary reasons for retiring these helicopters, age (over 50 years), increased costs due to limited military spares and aging, and reduced availability. An additional factor to consider is the level of risk comparison between single-engine and dual-engine helicopters while hovering.
- Step 2: Acquire Bell 412EPX. If the OCFA desires to continue having two helicopters available for each day of the year, a third helicopter is required. Acquiring a 412EPX, also improves the amount of water dropped for firefighting when compared to the 412EP helicopters.
- Step 3: Acquire a Type I helicopter. The candidate helicopters will meet the OCFA objective to increase the amount of water delivered during the firefighting mission.
- Step 4: Consider acquiring a second Type I helicopter and if so, retire a 412EP. Significant scheduled maintenance events will affect a helicopter's availability. If delivering larger amounts of water is a priority, there will be times when OCFA will not have a Type I helicopter available to perform the mission. OCFA needs to determine the significance of this risk and if a second Type I helicopter is required for adequate coverage.
- If OCFA does acquire a second Type I helicopter, the opportunity exists to retire one of the 412EP helicopters.

Table 4 summarizes the various options to change the current fleet.

Table 4					
OCFA - Summary of Fleet Options					
Dollar amounts x 1 Million					
Option	Operating Cost	Disposition Amount	Purchase	Total	Management Service
Retain Current Fleet	\$15.5	Not Applicable	Not Applicable	\$15.5	Not Applicable
Steps 1 and 2: Retire UH-1Hs/Acquire 412EPX					
Two 412EP/One 412EPX	\$11.1	\$0.0	\$14.0-\$15.0	\$25.1-\$27.1	Not Applicable
Step 3: Acquire Type I Helicopter					
S-70i	\$7.0	Not Applicable	\$20.0-\$23.0	\$27.0-\$30.0	Not Applicable
CU-47D	\$16.6	Not Applicable	\$16.5	\$33.1	\$65.6
Step 4: Acquire second Type I Helicopter/ Retire one 412EP					
One 412EP/One 412EPX	\$5.8	(\$3.7-\$4.3)	Not Applicable	\$9.5-\$10.1	Not Applicable
S-70i	\$7.0	Not Applicable	\$20.0-\$23.0	\$27.0-\$30.0	Not Applicable
CU-47D	\$16.6	Not Applicable	\$16.5	\$33.1	\$65.6

➤ Section 5, Other Information:

- Guaranteed maintenance programs (GMP) provide certainty for the erratic and often hard-to-predict behavior of maintenance costs. Often overlooked but just as important, GMP will improve helicopter availability. A strong understanding of the many variables and factors that influence what a program potentially covers is important. Negotiate with the vendors for better value.
- The dimensions at OCFA maintenance hangar bay at Fullerton Municipal Airport and the S-70i dimensions could create some problems. OCFA needs to check the dimensions for the other hangar bays.

Table 5		
OCFA Hangar and S-70i Dimensions		
Measurement - Feet		
Description	S-70i	OCFA Hangar
Door Width	53.67	55.00
Length/Depth	64.80	63.83
Height	17.20	16.50
Door Height	---	17.42

Section 1 – Fleet Review

Orange County Fire Authority Original Request

Identify the helicopter specifications and performance requirements based on Orange County Fire Authority (OCFA) current and future missions.

Conklin & de Decker Approach

In interviews with the fire aviation unit personnel, there was no indication that its primary missions, firefighting and rescue, would be changing in future years. However, it was apparent OCFA was interested in increasing the amount of water that could be dropped during firefighting missions. Based on the request, the primary objective was to identify and then compare alternative helicopter types with the current fleet to determine if there might be better-suited helicopters to perform the firefighting mission. OCFA also requested information on the newest version of the Bell 412 series, the Bell/Subaru 412EPX, due to its improved performance. We determined that certain performance and specifications were important to evaluate the candidate helicopters. The parameters included:

- Useful Load
- Mission Endurance,
- Aircraft Speed,
- Hovering Capability,
- Water Drop Capacity,
- Cabin Volume and Seating
- Purchase Price
- Maintenance and Fuel Costs (Section 2 of the report)

We used the current helicopters to explain the importance of these parameters and to serve as a baseline when comparing to the candidate helicopters. The final step was to create a table that compares the current capabilities of the existing helicopters to the candidate helicopters.

Section 1 also provides a brief background about the OCFA aviation unit history and the current and candidate helicopters.

Summary

Table 1-1 provides a comparison of the current and candidate helicopters and the parameters we selected for performance, specifications, and costs.

Table 1-1					
Current and Candidate Helicopters					
Firefighting Mission					
Airframe Manufacturer /Type	Bell / Super Huey	Bell / 412EP	Subaru/Bell / 412EPX	Sikorsky / S-70i	Coulson CH-47D
Engine Manufacturer /Type	Honeywell / T53-L-703	Pratt & Whitney / PT6T-3D	Pratt & Whitney / PT6T-9	General Electric / T700 GE 701D	Honeywell / T5-GA-L714A
Useful Load (lbs.)					
Maximum Take-Off Gross Weight (Internal)	10,500	11,900	12,200	22,000	50,000
Maximum Take-Off Gross Weight (External)	11,200	11,900	13,000	23,500	50,000
Mission Configured - Fire	6,700	8,300	8,300	14,200	26,500
Flight Crew (Firefighting)	450	450	450	650	650
Useful Load Available for Mission	4,050	3,150	4,250	8,650	22,850
Fuel (lbs.) 1.5-Hour Mission w/ 20 Min. Reserve	1,275	1,385	1,385	1,986	4,966
Remaining Useful Load	2,775	1,765	2,865	6,664	17,884
Mission Endurance (Hours)	2.0	2.9	2.9	2.9	2.6
Hover Capabilities (Altitude)					
In-Ground Effect (ISA, Sea Level)	10,630	10,200	9,000	10,270	7,750
Out-of-Ground-Effect (ISA, Sea Level)	11,000 lbs.	5,200	6,000	6,200	6,100
In-Ground Effect (ISA +20 C, Sea Level)	6,800	6,200	5,600	7,400	5,250
Out-of-Ground-Effect (ISA +20 C, Sea Level)	10,800 lbs.	11,890 lbs.	1,500	4,400	3,900
Helicopter Speed (kts)					
Cruise Speed - Max (knots)	106	125	130	145	157
Cruise Speed - Long Range (knots)	106	122	124	128	130
Calculated Speed (knots)	90	106	110	122-140	131-157
Water Drop Capabilities (gallons)					
Water Tank Size (gallons)	350	375	375	1,000	3,000
1.5-Hour Mission+ 20-Min Fuel Reserve	332	211	343	797	2,498
End of Mission (20-minute reserve)	457	347	478	992	2,985
Cabin					
Volume (cubic feet)	208	208	208	396	1,629
Crew/Passengers	2/14	2/14	2/14	2/12	2/>30
Pricing/Value					
Basic Price (x1M)	N/A	N/A	\$11.5	\$17.0	\$16.5
Firefighting Completion (x 1M)	N/A	N/A	\$14-\$15	\$20-\$23	\$5.8*
Resale Value	\$1.6-\$2.0	\$3.5-\$4.3	N/A	N/A	N/A

Conklin & de Decker Analysis

Current Fleet

Background:

The OCFA aviation unit started flying in 1994 by contracting with Evergreen Helicopters for one year. Since then, the OCFA fleet has grown to four helicopters. The fleet consists of two types of medium Bell helicopters, two modified military UH-1H, referred to as Super Huey, and two 412EP helicopters.

Both of the OCFA type helicopters come from the same development lineage, a military helicopter designed for the US Army, the Bell UH-1 Iroquois. The stretched version of this model became the most popular version of the UH-1 series and had various designations based on performance improvements. The UH-1D was the first stretched version with its production beginning in 1961. The UH-1H, also known as the Huey, was produced for 20 years beginning in 1967. Over 3,500 were built.

The OCFA UH-1H helicopters are referred to as Super Hueys, which is due to a performance enhancement program. The program, conducted by San Joaquin Helicopters, replaced the original engine (T53-L-13) with a more robust Lycoming engine, the T53-L-703. Additional performance improvements included the conversion of the UH-1H tail boom, tail rotor, and main rotors to Bell 212 components. The tail rotor and intermediate gearboxes were also 212 components. The improvements were also available to the commercial Bell 205 helicopter, which was designated as the 205A-1++.

The single-engine turbine military helicopter served as the basis for Bell's commercial 204 and 205 series helicopters, which were also single-engine turbines. The lineage continued with the addition of two twin-engine commercial series, the Bell 212 and 412. The Bell 212 was the first to be produced in 1971. During its 27 years of production approximately 900 were built. Production ended in 1998.

The Bell 412 model is almost identical to the Bell 212. The primary difference between the models is the main rotor blades. The 412 has four main rotor blades versus the 212's two and the blades are made with composite material rather than aluminum, which extends the life-limit of the blades.

The Bell 412 cabin features two pilot seats up front. The passenger/cargo cabin has a flat floor, and two large sliding doors provide ready access to the cabin. When used for passenger transport, the 412 can seat up to 13 passengers. It is also certified for single-pilot Instrument Flight Rules (IFR) and Category A operations (i.e. operate with one engine inoperative).

Introduced in 1981, the Bell 412 has experienced several updates involving its fuel capacity, take-off weight, transmission capabilities, and fuel control system. The 412EP was introduced in 1994 and remained in production until 2013 when Bell introduced the 412EPI. The 412EPI has just been replaced

by the 412EPX, a joint effort between Bell and Subaru. Approximately 500 Bell 412 helicopters have been built since 1981.

Basic Fleet Information:

Table 1-2 offers more basic information about the current fleet of the OCFA.

The UH-1H helicopters were manufactured in 1967. Once retired, the Department of Defense released former Army helicopters through the Federal Excess Personal Property (FEPP) program to the U.S. Forest Service. The Forest Service distributed the helicopters to states with the intention of being used for wildland firefighting. OCFA procured three UH-1H helicopters from CAL FIRE. The helicopters operate as restricted category, due to their military background, which means they can only perform special purpose operations. Firefighting is one of those operations. Should OCFA want more information on restricted category, the following link will take you to a relevant resource.

[14 CFR § 91.313 - Restricted category civil aircraft: Operating limitations. | CFR | US Law | LII / Legal Information Institute \(cornell.edu\)](#)

The Bell 412EP helicopters were purchased in 2008 and began operations shortly thereafter. The helicopters have commercial certificates from the FAA and do not have the same operation restrictions as the UH-1H Super Hueys.

Table 1-2					
Basic Information - OCFA Helicopters					
Aircraft Type	OCFA Designation	Serial Number	Registration Number	Total Time (Flight Hours)	Average Flight Hours per Year 2016-2020
412EP	H1	36484	N141FA	2,329	244
412EP	H2	36487	N241FA	2,188	176
UH-1H	H3	5610	N441FA	6,811	42
UH-1H	H4	8529	N451FA	9,196	70

Notes:

- **Aircraft Type:** Manufacturer's designation for the model type.
- **Serial Number:** Unique identification for each aircraft as assigned by the manufacturer.
- **Registration Number:** Civil aircraft must be registered with the Federal Aviation Administration. The registration number is frequently referred to as the aircraft's N Number because all registered aircraft have a number starting with the letter N.
- **Total Time (Flight Hours):** The total airframe hours as reflected on January 29, 2021.
- **Average Flight Hours per Year (2016-2020):** The average annual flight hours during the most recent 5-year period. Data provided by the aviation unit.

Mission:

The OCFA provides a variety of services to the unincorporated area of the county as well as 23 cities in the county. The primary missions for the OCFA aviation unit include firefighting and rescue. The aviation unit averages 1,250 operations per year and has flown an average of 530 hours annually beginning in 2016. The aviation unit flew just over 600 hours in 2020.

In addition to firefighting, the aviation unit uses its aircraft to do fire mapping, transport wildland crews, transport patients, and insert and extract equipment. When performing rescue missions with a 250-foot hoist cable, the unit can do various procedures including short-haul air rescue on land or water, swift-water rescue, patient transfer on litter, and large animal rescues. Other capabilities involve night vision goggle operations, infrared detection, and disaster assessment.

Of the four aircraft, the aviation unit staffs two of them 365 days each year. One of the two aircraft is staffed for 24 hours and is prepared for the firefighting and rescue missions. The crew consists of a pilot, fire captain or crew chief, and one or two paramedics. The second helicopter is a fire response helicopter and is available for 10 hours each day. The helicopter is staffed with a pilot and fire captain or crew chief. The third and fourth helicopters are used for back-up and initial pilot training.

To perform its various missions, both of the OCFA helicopters are equipped with the following mission equipment (Table 1-3). Each type of helicopter has the same equipment. For example, each of the Bell 412EPs are identical. The same is true of the UH-1H Super Hueys. When comparing the two types of helicopters to each other, the mission equipment is very similar.

Table 1-3		
Mission Equipment		
412S OUTFITTED IDENTICAL	412EP	UH-1H Super Huey
CARGO HOOK ASSEMBLY	X	X
600LB GOODRICH RESCUE HOIST	X	X
SIMPLEX MODEL 304 FIRE ATTACK SYSTEM	X	
ISOLAIR ELIMINATOR II FIRE ATTACK SYSTEM		X
KAWAK AUX HYDRAULIC SYSTEM	X	
SPECTRO-LAB SX-5 SEARCHLIGHT W/ PILOT CYCLIC CONTROLS	X	X
NVG STEERABLE SEARCHLIGHT	X	
AERODYNAMIX NVG COCKPIT	X	X
KAWAK TECHNOLOGIES HYDRAULIC HOVER PUMP W/9FT SNORKEL	X	X
SKID TUBE CABLE GUARD	X	X
DART CABIN FLOOR PROTECTIVE KIT	X	X
NAT P.A. SPEAKERS	X	X
(2) TDFM-136NV FM	X	X
(2) TDFM-680NV 800MHZ	X	X
GPS 500W/GPS 530	X	X
SKYCONNECT FLIGHT TRACKER W/ SATCOM PHONE	X	X
FORWARD RECOGNITION LIGHTS		X
DART LED PULSE LIGHTS AND CARGO MIRRORS	X	
AVIDYNE TAS TRAFFIC AVOIDANCE SYSTEM	X	
AVALEX DVR AND DATA RECORDER	X	

Notes:

- An "x" indicates the item is present on the aircraft type.

The following images show the OCFA Bell UH-1H (Super Huey) and 412EP helicopters.



Bell UH-1H Super Huey



Bell 412EP

Flight Activity:

Chart 1-1 summarizes the flight activity for each helicopter during a five-year period beginning in 2016.

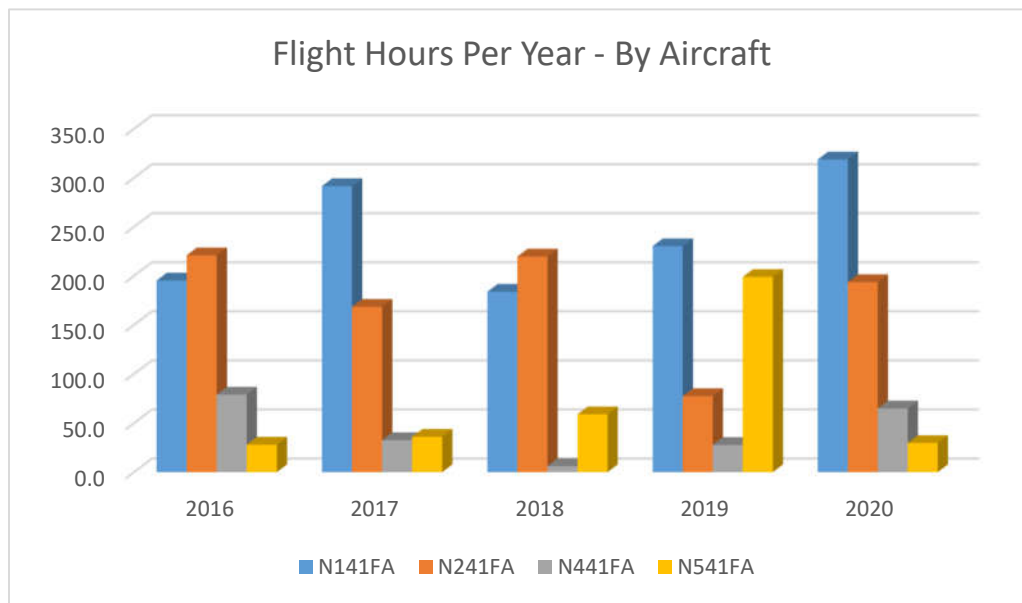
The OCFA aviation unit's fleet averaged 532 flight hours, or totaled 2,661 flight hours, during the five-year period beginning in 2016 through 2020. The hours for each year when compared to the overall average do not vary significantly. In three of the years, 2016, 2017, and 2019, the total flight hours are within nine hours of the average. Two of the years, 2018 and 2020, are approximately 12 percent from the overall average. In 2018, the aviation unit's fleet flew only 468 hours, while in 2020 the fleet flew 610 hours.

The Bell 412EP helicopters have flown the most hours during the five-year period. N141FA H1 flew a total of 1,219 hours during that period, which is the most hours when compared to the rest of the fleet. The average flight hours per year was 244. The flight hours for this helicopter varied more each year than the fleet totals. N141FA flew the fewest hours in 2018 at 184, while in 2020, it flew the most hours at 319 hours, which is a difference of 135 hours.

Bell 412EP N241FA, flew the second most hours in the fleet. During the five-year period, the helicopter flew 880 hours, which is 72 percent of N141FA. The range of flight hours during this period varied from 77 hours in 2019 to 221 hours in 2016, which is a difference of 144 hours.

The two UH-1H Super Hueys, N441FA and N541FA, combined to fly only 21 percent of the total hours flown by the fleet. Of the 561 hours flown during the five-year period by these helicopters, N441FA H3 flew 210 hours and N541FA H4 flew 351. The reason for having the fewer hours is the aviation unit uses these helicopters as back up to the Bell 412EPs when they are not available and for initial pilot training. Maintenance on the Bell 412EP is a common event that would remove a helicopter from an availability status.

Chart 1-1

**Notes:**

- **N141FA and N241FA are Bell 412EP helicopters.**
- **N441FA and N541Fa are the UH-1H Super Huey helicopters.**

Chart 1-2 summarizes the flight hour activity by the type of missions that are performed by the aviation unit's fleet.

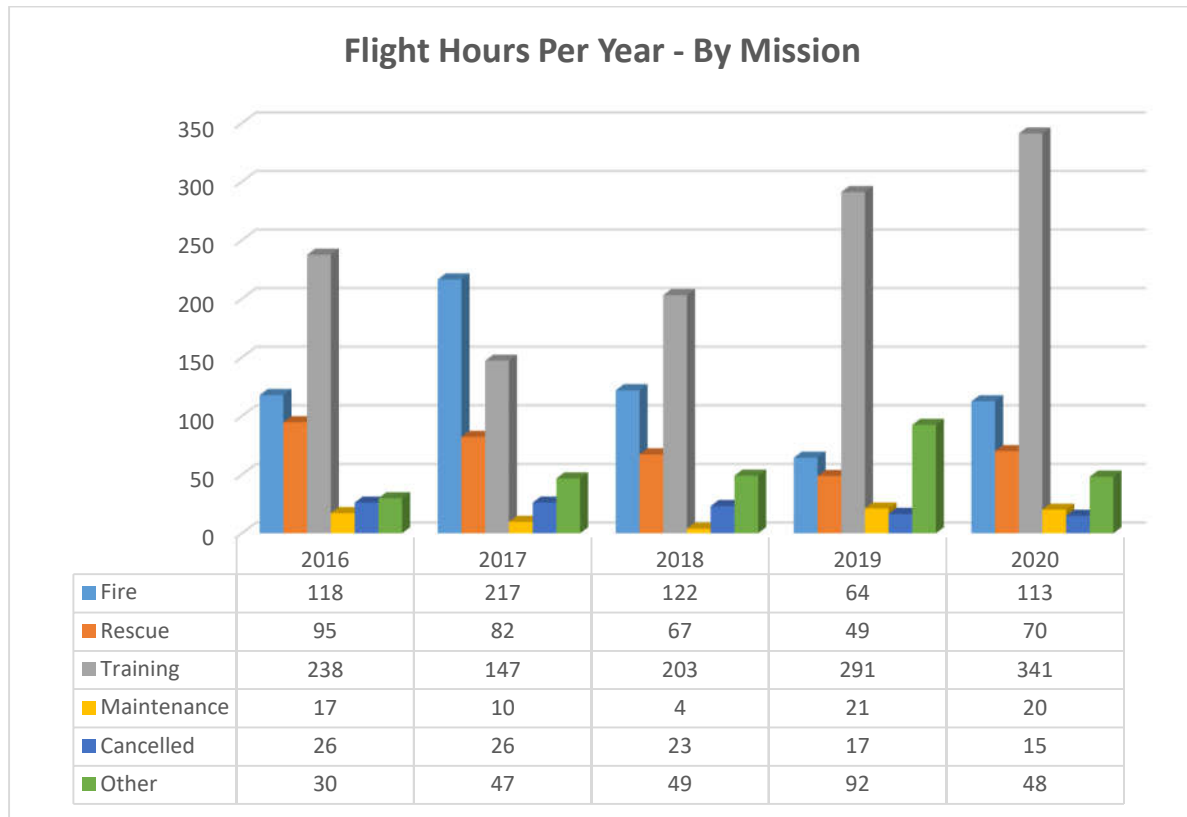
Training consumed 1,220 hours or 46 percent of the total flight hours during the five-year period. In 2019 and 2020, the flight hours increased to 291 and 341 hours respectively, which is almost 50 to 100 hours more than the five-year average of 244 flight hours.

Two factors contribute to the training mission being the highest number of flight hours. First, the primary missions, firefighting and rescue, are call-when-needed activities. These missions are not scheduled or necessarily predictable. Therefore, the number of flight hours in any given year are dependent on the frequency of the fires and rescue operations. Second, training supports, not only regulatory requirements, but also safety programs and the quality of performing firefighting and rescue missions.

The firefighting mission illustrates how much variation exists from year to year when the occurrence of fires is difficult to predict. Comparing 2016 to 2017, the flight hours increased by 84 percent, 2017 to 2018, flight hours decreased 44 percent, 2018 to 2019 decreased again by 48 percent, and 2019 to 2020 flight hours increased by 77 percent. For the five-year period, the total flight hours were 633 and an annual average of 127.

The flight hours associated with the Rescue missions are the third highest of the aviation unit's missions. Rescue flight hours totaled 363 during the five-year period. The annual average was 73 flight hours. The difference between the least annual flight hours of 49 in 2019 and the highest of 95 in 2016 was 46 hours.

Chart 1-2



Candidate Helicopters

OCFA does not foresee that its types of missions will change in the foreseeable future. However, OCFA does see the need to improve its effectiveness when fighting fires. For example, a commonly accepted premise when fighting fires is that more water delivered per drop improves the odds of extinguishing or controlling a fire more quickly. Los Angeles County Fire Department has supported this concept with its introduction of Type 1 helicopters almost 20 years ago. OCFA believes a helicopter that delivers at least an average of 600 to 800 gallons would be a significant improvement over the current fleet's capabilities.

The industry has categories for helicopter types and their relative water dropping capabilities. The National Wildfire Coordinating Group (NWCG) establishes the standards by which helicopters are to

operate when working with various agencies for fire suppression. One of NWCG's publications, Standards for Helicopter Operations, defines the categories as shown in Table 1-4.

Table 1-4			
Type Specifications for Helicopters			
Attributes	Type 1	Type 2	Type 3
Useful load at 59°F at sea level	5,000 pounds	2,500 pounds	1,200 pounds
Passenger seats	15 or more	9-14	4-8
Retardant or water carrying capability	700 gallons	300 gallons	100 gallons
Maximum gross takeoff/landing weight	12,501+ pounds	6,000-12,500 pounds	Up to 6,000 pounds

Based upon the four attributes mentioned in Table 1-4, the OCFA's UH-1H Super Huey and Bell 412EP are considered Type 2 helicopters. Subsequent information in this section will further illustrate the capabilities of the current helicopters.

Table 1-4 also outlines the requirements for helicopters to be classified as Type 1, which are significantly larger and capable of delivering greater amounts of water for the firefighting mission. A Type 1 helicopter would also increase the cabin volume, which would have a positive effect on OCFA's other primary mission, the rescue mission. A larger cabin would also allow OCFA to carry certain mission equipment and personnel.

We were asked to consider two helicopter types that can deliver more water per drop than currently happens with the current fleet and are considered Type I helicopters.

- Sikorsky S-70i
- Coulson-Unical CU-47D

In addition to the desire to improve the firefighting efficiency, OCFA also requested a review of its current Type 2 helicopters, which are used primarily for firefighting missions but also can perform the rescue mission. The request was primarily based on identifying an appropriate time to replace the current fleet based upon their age. OCFA requested that we review Bell's most recent version of the 412, which is the 412EPX.

Following is a general review of the candidate helicopters.

Sikorsky S-70i – Known as Sikorsky Manufacturing Corporation in 1925, the company expanded quickly, relocated to Stratford, Connecticut, and reorganized as the Sikorsky Aviation Company in 1929. It became part of the United Aircraft and Transport Corporation, which would be reorganized as the United Technologies Corporation (UTC) in 1975. Lockheed Martin, its current parent company, purchased Sikorsky in 2015.

Certificated as the S-70, the helicopter was first built for the US military. The UH-60 was designed in response to a US Army competition in the early 1970's for a replacement of the UH-1 "Huey". Sikorsky has built versions of this helicopter for every branch of the US Armed Forces, the US Coast Guard, and numerous foreign armed forces. To date well over 3,300 have been delivered.

The current non-US military designation is the S-70i. Los Angeles County Fire Department has historically operated the S-70A version, which is the equivalent to the UH-60L military designation but has also received the S-70i version recently. Other agencies that have recently acquired S-70i helicopters are the City of San Diego Fire, which purchased one in 2018, CAL FIRE received the first of twelve in 2019, Ventura County purchased three UH-60L helicopters, and Santa Barbara received a UH-60A in 2021. Additionally, the California Army National Guard also operate the UH-60 for water drop operations.

The primary improvements for the S-70i are more powerful engines, T700 GE 701D, and a modern avionics glass cockpit. The fuselage provides one large compartment with two seats for the flight crew and flexible seating for between 11 to 20 individuals. For the firefighting mission, the S-70i can carry a water tank with 1,000-gallon capacity. This places the S-70i, and UH-60 models, in the Type I category; a capability which has become the helicopter of choice for aerial firefighting.



Sikorsky S-70

Coulson-Unical CU-47D – The CH-47 has a long lineage that began in the 1957/58 timeframe when Vertol, a rotorcraft company, decided it would develop a twin-engine, tandem-rotor helicopter. At the same time, the US Army announced its intention to replace its piston twin-engine heavy-lift helicopter. The initial production aircraft, known as the HC-1B, was produced by Boeing Vertol in 1961. The CH-47 designation appeared in 1962 and is also referred to as the Chinook. The CH-47 was designed to, not only carry passengers, but also heavy cargo and equipment.

The US Army placed the CH-47D into service in 1982. Improvements to its predecessor, the CH-47C, included upgraded engines (Lycoming T55-L-712) for improved performance, composite rotor blades, a redesigned cockpit to reduce workload, improved and redundant electrical systems and avionics, and the adoption of an advanced flight control system. Production of the CH-47D ended in 2002. The CH-47 is one of the few aircraft designed and built in the 1960s that is still in production and serves as an essential tool for the US Army and other military organizations.

The Coulson-Unical CU-47D has an internal water tank capacity of 3,000 gallons and a maximum passenger load of 33 plus three crew members.

Boeing Vertol also produced a commercial version of the CH-47 series. Its designation is the Model 234 and was also produced by Boeing Vertol. However, in 1996, Columbia Helicopters acquired the type certificate and is recognized now as the Columbia Model 234.



Coulson-Unical CU-47D

Bell-Subaru 412EPX – This helicopter is the latest version of the 412 series. Japan's government, looking to replace its UH-1Js operated by the Japan Air Self-Defence Force, selected a joint Bell-Subaru bid to upgrade the model 412EPI. Japan received the first prototype of the EPX in February 2019 and Subaru assembled the first customer aircraft, which is destined for Japan's national police service.

Production of the 412EPI ceased in 2020 and building of the 412EPX helicopters is at the Bell facility in Mirabel, Canada. The partners continue to promote the 412EPX to the civilian market, following its certification of the prototype in July 2018. The Japan Civil Aviation Bureau approved certification in January 2020.

Improvements to the 412EPX focused on the transmission and rotor mast. Subaru's laser-peening processes enhanced main rotor gearbox performance, allowing it to withstand higher torque loads. The commercial version of the 412EPX have higher internal and external maximum gross weights, an increase in external payload, and an update to the BasiX Pro avionics suite. The twin engines are Pratt & Whitney Canada PT6-9, which have improved ship-horsepower compared to the 412EP.



Bell-Subaru 412EPX

Parameters/Specifications

The primary missions for the OCFA helicopters are firefighting and rescue. Secondary missions include various types of pre-fire planning, rescue operations, fire department assistance, and emergency assistance. To perform those missions, helicopters must have certain capabilities. For example, how much payload is available, what is the potential mission endurance, how fast can the helicopter fly, what is the passenger capacity, and how well does it perform in certain environmental conditions? In addition to performance and specifications, costs to acquire and operate the helicopter are important?

Based on prior discussions with OCFA personnel and the nature of the OCFA missions, with an emphasis on firefighting, we selected the following parameters to compare the current Bell UH-1H Super Huey and 412EP helicopters to the candidate helicopters.

- Useful Load
- Mission Endurance
- Speed
- Hover Capabilities
- Water Drop Capabilities

- Cabin Volume and Seating
- Purchase Price
- Maintenance and Fuel Costs (Discussed in Section 2, Life Cycle Costs)

The following information explains the importance of each of the parameters, while using the existing Bell UH-1H Super Huey and 412EP helicopters as a benchmark to further illustrate each parameter. Following the explanation of the parameters, Table 1-12 compares the existing fleet to the candidate helicopters.

Current Fleet

Useful Load –The amount of available weight an aircraft can carry for fuel, supplies/cargo, and personnel is a premium. Therefore, it is one of the more important factors in the selection process. A limited amount of useful load is one of the more common reasons for an operator to change aircraft as its mission and related equipment changes.

The useful load or payload of an aircraft is calculated using the maximum take-off weight minus the basic or empty weight.

The aircraft's maximum take-off gross weight (MTOGW) is just what the name implies, the maximum weight at which the aircraft can take-off. This weight is part of the regulatory certification process. Occasionally, maximum gross weight can exceed MTOGW while in flight performing its operations. For our purposes we will use MTOGW as our parameter.

With some helicopter types, there are two limits regarding MTOGW, internal and external. Internal weight refers to the weight within the helicopter structure. External MTOW refers to the weight of the helicopter with an external load. If there is a difference, the external weight is frequently a higher amount than the internal weight. Firefighting tanks are considered external weight because the tank is attached to substantial structural elements capable of handling higher loads than an aircraft's cabin floor.

Generally, there are two points of empty weight. The first point is the weight of the aircraft as delivered by the manufacturer (also known as a green or basic aircraft). The second point is what the aircraft weighs when ready to perform its mission.

A manufacturer's empty weight can vary based upon the items each manufacturer considers as part of the basic aircraft. An example will illustrate how the empty weight can vary. When a manufacturer completes an aircraft, the weight of the aircraft will include the obvious, airframe and engines and their related mounting structures. However, where manufacturers may differ involves items such as the basic interior, seating, other furnishings, and other basic systems (e.g. avionics). Referred to as the

manufacturer's empty weight, it does not include equipment installed by the operator to perform its missions.

The mission-ready weight is the most relevant to the operator. Subtracting this weight from the MTOGW lets the operator know what the payload is. Primarily, this would include the mission equipment, basic fluids for operation (e.g., oil), and equipment required for flight (e.g. enhanced avionics package). It would not include such weights as fuel, passengers, and crew equipment.

Table 1-5 illustrates the useful load for the OCFA helicopters. The internal and external MTOGWs for the Super Huey are 10,500 and 11,200 pounds, respectively. The 412EP MTOW for internal and external is 11,900 pounds. We used the external weights for each helicopter type because the relevant weight for the firefighting mission is external MTOGW.

Table 1-5		
Useful Load Calculation		
	Bell Helicopter	
	Super Huey	412EP
Maximum Take-Off Gross Weight (external)	11,200	11,900
Less: Mfr's Basic Weight + Mission Equipment	6,700	8,300
Mission-Ready Useful Load	4,500	3,600
Less: Flight Crew/Equipment	450	450
Available Useful Load	4,050	3,150

Notes:

- **Maximum Take-Off Gross Weight (external):** Source of weight was Conklin & de Decker's *Conklin & de Decker Report 21.1*.
- **Manufacturer's Basic Weight plus Mission Equipment:** The mission-ready weight of each helicopter was obtained from the OCFA aviation unit.
- **Mission-Ready Useful Load:** The payload that is available for fuel, crew, passengers, and cargo.
- **Flight Crew:** Used the average weight as provided by the OCFA aviation unit. The average assumed weight for each crew member was 200 pounds. For the firefighting mission, OCFA requires a pilot and crew chief and 50 pounds of additional equipment. For the rescue mission, OCFA requires a pilot, crew chief, and paramedic and the 50 pounds of equipment. We used the firefighting crew and equipment.
- **Available Useful Load:** The useful load available prior to considering the weight of fuel, passengers, and equipment/cargo.

Mission Endurance – An aircraft's mission endurance or the time the aircraft can fly without refueling is determined by two primary factors, the fuel capacity and the rate at which the aircraft burns fuel. The fuel capacity, like the maximum take-off gross weight, is a fixed amount and is measured in volume (e.g. gallons, liters) or weight (e.g. pounds, kilograms). Fuel consumption will vary based upon several factors including the aircraft's speed, weight, and environmental conditions (e.g. temperature, altitude, wind).

The amount of fuel carried for a mission, which is not always the capacity, will reduce the amount of Available Useful Load displayed in Table 1-5.

Table 1-6 displays the relevant information for the OCFA helicopters regarding fuel capacity, consumption, and mission length based on certain assumptions.

Table 1-6		
Mission Endurance		
	Bell Helicopter	
	Super Huey	412EP
Fuel Capacity (gal.)	211	330
Fuel Capacity (lbs.)	1,414	2,211
Average Fuel Burn (gal.)/ Hour	104	113
Average Fuel Burn (lbs.)/ Hour	697	757
Endurance (hrs.) (Full Fuel)	2.0	2.9
Remaining Useful Load with Full Fuel (lbs.)	2,636	939

Notes:

- **Fuel Capacity (gallons):** Obtained from Bell Helicopter's Technical Data brochure and the FAA's Type Certificate Data Sheet (TCDS).
- **Fuel Capacity (pounds):** Assumed weight per gallon 6.7 pounds. Multiplied gallons times 6.7 pounds.
- **Average Fuel Burn (gal.)/ Hour:** Super Huey based upon the average consumption by the OCFA helicopters. 412EP based upon *The Conklin & de Decker Report v21.1*.
- **Average Fuel Burn (lbs.)/ Hour:** Used the same assumption of 6.7 pounds per gallon.
- **Endurance (hrs.) (Full Fuel):** If the OCFA UH-1H Super Huey departed on a mission with a full load of fuel (211 gallons/1,414 pounds), it would be able to fly for an estimated 2.0 hours based upon the average fuel burn rate of 104 gallons per hour. Based on the same assumptions, the 412EP would be able to fly for 2.9 hours.

Based upon the available useful load in Table 1-5 and the full-fuel weight in Table 1-6, the UH-1H Super Huey helicopters would have 2,636 pounds of remaining payload (4,050 – 1,414) and the 412EP would have 939 pounds (3,150 – 2,211).

Speed – During the typical firefighting mission, speed of the helicopter is one of the important variables in determining the amount of water that can be delivered during a given period. Simply stated, a faster speed means more trips in a given amount of time, which leads to more water dropped on the fire.

Table 1-7 summarizes the relevant information for the OCFA helicopters regarding speed.

Table 1-7		
Speed		
	Bell Helicopter	
	Super Huey	412EP
Cruise Speed - Max (knots)	106	125
Cruise Speed - Long Range (knots)	106	122
Calculated Speed (knots)	90	106

Notes:

- **Cruise Speed - Max (knots):** Source was *The Conklin & de Decker Report 21.1*.
- **Cruise Speed - Long Range (knots):** Source was *The Conklin & de Decker Report 21.1*.
- **Calculated Speed (knots):** Represents a more likely speed utilized during the firefighting mission and is based on discussions with other firefighting organizations. This speed does not imply that the cruise speeds provided in the table would not be obtained as well in certain circumstances.

Hover Capabilities – Unlike fixed-wing aircraft, helicopters have a unique capability, hovering, which makes them invaluable in a variety of missions. Helicopters can hover because their rotating blades provide lift, which allows them to remain airborne without any forward flight. Fixed-wing aircraft must have a certain amount of forward movement for its wings to provide enough lift to keep the aircraft airborne.

When hovering, the helicopter requires a great deal of power since forward motion is not contributing to the lift effect. If the helicopter is hovering just several feet above the ground, it is said to be hovering in-ground-effect (HIGE). Due to the downwash of the blades reflecting off the ground, the helicopter is receiving a lifting effect. Helicopters that are hovering without the benefits of the ground effect are said to be hovering out-of-ground effect (HOGE). At a given set of factors, an aircraft can HIGE at a higher weight than HOGE.

Three primary factors will affect a helicopter's ability to hover – aircraft weight, altitude, and temperature. If any of the three factors increase, the blades' lift becomes less effective, which means the ability to hover is reduced. For example, as the altitude or temperature increase, the helicopter's ability to hover with a certain weight decline. Orange County's highest point is Santiago Peak at just less than 5,700 feet. Most of Orange County's population reside in two lower altitudes coastal valleys that lie in the basin, the Santa Ana Valley and the Saddleback Valley.

For the OCFA missions, the helicopters are required to hover frequently (e.g. filling water tanks, hoist rescues). For example, when a helicopter fills its water tank, the helicopter will HIGE above the water resource. Also, while performing hoist rescues, a helicopter is required to HOGE above the rescue area.

Table 1-8 illustrates the altitude limitations when the OCFA helicopters are required to hover at maximum gross weight at a standard temperature used in aviation. It is important to remember that as the helicopters reduce their weight due to fuel consumption, the ability to hover at higher altitudes is possible.

Table 1-8		
Hover Capabilities		
	Bell Helicopter	
	Super Huey	412EP
Maximum Take-Off Gross Weight (external)	11,200	11,900
Scenario 1: Assumptions	ISA, Sea Level, MGW	
Hover-in-ground-effect (HIGE) (feet)	10,630	10,200
Hover-out-of-ground-effect (HOGE) (feet)	11,000 lbs.	5,200
Scenario 2: Assumptions	ISA +20 C, Sea Level	
Hover-in-ground-effect (HIGE) (feet)	6,800	6,200
Hover-out-of-ground-effect (HOGE) (feet)	10,800 lbs.	11,890 lbs.

Notes:

- **Maximum Take-Off Gross Weight:** Source of weight was *The Conklin & de Decker Report 21.1*.
- **Scenario 1 Assumptions:** ISA stands for International Standard Atmosphere and serves as a common reference for temperature and pressure. At sea level the standard temperature is 15° Centigrade or 59° Fahrenheit. MGW is the Maximum Gross Weight.
 - **Hover-in-ground-effect (HIGE) (feet):** Obtained from the respective Technical Data brochures from Bell. Provides the altitude at which the helicopters can hover, while in ground effect, based upon the assumptions.
 - **Hover-out-of-ground-effect (HOGE) (feet):** Obtained from the respective Technical Data brochures from Bell. Provides the altitude at which the helicopters can hover, while out of ground effect, based upon the assumptions.
 - **UH-1H Super Huey:** The helicopter cannot hover OGE at the MGW of 11,200 pounds. It can hover OGE at sea level if the helicopter is 200 pounds less than the MGW.
 - **412EP:** The maximum altitude at which the helicopter can hover OGE based on the assumptions is 5,200 feet.
- **Scenario 2 Assumption:** Altitude remains at sea level, the temperature increases by 20° C to 35° C or 95° F, and the helicopter weight remains at MGW.
 - **Hover-in-ground-effect (HIGE) (feet):** Obtained from the respective Technical Data brochures from Bell. Based on Scenario2 assumptions, both helicopters can hover IGE, the Super Huey at 6,800 feet and the 412EP at 6,200 feet.
 - **Hover-out-of-ground-effect (HOGE) (feet):** Obtained from the respective Technical Data brochures from Bell.
 - **UH-1H Super Huey:** The helicopter cannot hover OGE at the MGW of 11,200 pounds. It can hover OGE if the helicopter is 400 pounds less than the MGW.

- **412EP: The helicopter cannot hover OGE at the MGW of 11,900 pounds. It can hover OGE if the helicopter is 110 pounds less than the MGW.**

Water Drop Capabilities – In addition to a helicopter’s speed, the quantity of water delivered per drop is another important variable in determining the amount of water that can be delivered during a given period. A helicopter’s tank or bucket size represents the maximum amount that a particular helicopter can deliver with each drop.

However, the tank capacity does not necessarily represent what the helicopter delivers. Available useful load or payload for all helicopter types is often a parameter that limits the actual amount of water delivered to something less than the tank’s capacity.

Table 1-9 illustrates this point. The UH-1H Super Huey has a 350-gallon water tank, while the 412EP’s tank is 375 gallons. However, when the available useful loads for both types are considered, the amount of water that can be carried is reduced. If the Super Huey carries a full load of fuel, the amount of water it can carry is 315 gallons. If the amount of fuel carried is for a 1.5-hour mission, a common OCFA firefighting mission duration before refueling, the amount of water carried is 332 gallons. The 412EP is affected similarly but with even less water capacity. Several factors will affect water drop amounts.

- Water drop amounts increase as a helicopter consumes fuel during the mission.
- The amount of water dropped declines as a helicopter performs in higher altitudes than sea level and temperatures higher than 15°C.
- The amount of water would decrease when 20-minute reserves are allocated to the amount of fuel required.

Table 1-9		
Water Drop Capabilities (gallons)		
	Bell Helicopter	
	Super Huey	412EP
Water Tank Size (gallons)	350	375
Water Drop Amounts		
With Full Fuel (gal.)	315	112
1.5 -Hour Mission+ 20-Min Fuel Reserve	332	211

Notes:

- **Water Tank Size:**
 - **UH-1H Super Huey: The water tank for the Super Huey is manufactured by Isolair Helicopter Systems. The water tank capacity is 350 gallons and a capacity of 27.2 gallons for chemicals. The empty tank weighs 416 pounds and the gross weight of the tank and 350 gallons of water is 3,342 pounds.**

- **412EP:** Water tank is manufactured by Simplex Aerospace, a provider of fire attack systems. The tank capacity is 375 gallons and capacity of 30 gallons for foam. The empty tank weighs 395 pounds. A tank with full water weighs 3,530 pounds.
- **Water Drop Amounts with Full Fuel:** Calculated using the useful load in Table 1-5 and added the weight of full fuel in Table 1-6. Also included is the weight of 450 lbs. for two crew members and equipment. The payload available for water is 315 gallons for the Super Huey and 112 gallons for the 412EP.
- **Water Drop Amounts, 1.5-Hour Mission + 20-Min Fuel Reserve:** Calculated using the useful load in Table 1-5 and added the weight of 1.5 hours of fuel in Table 1-6 plus 20-minutes of fuel reserve. Also included is the weight of 450 lbs. for two crew members and equipment. The available Super Huey payload for water is 332 gallons. The 412EP can carry 211 gallons.

Cabin Volume and Seating – Despite their difference as to when they were manufactured, the airframes are almost identical, which means the cabin dimensions and volume are the same. During the firefighting mission, OCFA uses two crew members, a pilot and crew chief. When transporting fire ground crews or equipment and personnel for other OCFA missions, the passenger cabin can seat up to 14, carry stretchers for rescued individuals, or be configured for the transport of equipment rather than passengers.

Table 1-10 displays the cabin volume and seating capacity for the OCFA helicopters.

Table 1-10		
Cabin Information		
	Bell Helicopter	
	Super Huey	412EP
Volume (cubic feet)	208	208
Crew/Passengers	2/14	2/14

Notes:

- **Volume:** Obtained from *The Conklin & de Decker Report 21.1*. The calculated volume considers the curvature of the airframe and any unusable space due to obstructions. Conklin's cabin volume will not equal the product of the dimensions provided by the manufacturer (length x width x height).
- **Seating (Crew/Passengers):** The crew number was obtained from discussions with OCFA personnel. The passenger seating was obtained from *The Conklin & de Decker Report 21.1*.

Purchase/Disposition Price – If the prior specifications and parameters are the only parameters analyzed in the acquisition process, then an important variable is missing, the acquisition or disposition amount. Analyzing purchase price introduces the concept of value, not only what an aircraft provides but also what it costs to obtain the asset. If an aircraft is at the end of their journey, then the remaining value becomes important. The disposition value can be affected by several factors including the age of the aircraft, status of the significant maintenance events and items, and conditions in the economy.

In the case of the current OCFA helicopters, the resale value is more important than the acquisition price. Table 1-11 provides the estimated range for the resale of the Super Huey and 412EP. Due to how the Super Huey helicopters were obtained, the Federal Excess Property Program, OCFA does not own the helicopters, therefore it will not receive any value when the helicopters are returned to CAL FIRE. Section 2 of this report covers the resale value in greater detail.

Table 1-11		
Purchase Price		
	Bell Helicopter	
	Super Huey	412EP
Basic Price (x1M)	N/A	N/A
Firefighting Completion (x 1M)	N/A	N/A
Resale Value	\$1.6-\$2.0	\$3.5-\$4.3

Notes:

- **Basic Price:** N/A represents Not Applicable.
- **Firefighting Completion Price:** N/A represents Not Applicable.
- **Resale Value:** Represents a range of potential value for the respective helicopter types.

Candidate Helicopters

Table 1-12 offers a comparison between the current OCFA helicopters (highlighted in grey) and the candidate helicopters. The comparisons are based on the parameters provided in this section for the current OCFA helicopters.

Useful Load/Payload - The MTOGWs highlight the significant difference between Type II and Type I helicopters. The current helicopters, UH-1H Super Huey and 412EP, are referred to as medium twin- or single-engine helicopters and in US firefighting terms are classified as Type II helicopters. Type II helicopters have a MTOGW of 6,000 to 12,500 pounds as summarized in Table 1-4. Helicopters classified as Type I weigh over 12,500 pounds, which is the classification for the S-70i and CU-47D helicopters. Generally, increased MTOGW translates to an increase in payload.

Mission Endurance – Each of the candidate helicopters has enough fuel to, at the least, perform a two-hour mission with 20 minutes of fuel reserve.

Hover Capabilities – Note: Each of the candidate helicopters can hover in and out of ground effect based on the given parameters. The Bell 412EPX has also improved its hovering performance when compared to the current 412EP. The altitudes for the CU-47D reflect the performance limitations for hovering, however, the helicopter has an additional structural limitation. The altitudes limits based on the structural limitations are 5,250 feet for ISA at sea level and 3,500 feet for ISA plus 20°C at sea level.

Helicopter Speed – The speed of the helicopter is an important factor in the formula as to how much a helicopter can drop during a certain period. Speed becomes more of a factor as the distance to the water source increases. Normally, there are different speeds when a helicopter is flying to the water source and back to the fire drop area. When flying to the water source, the helicopter is lighter, therefore can fly faster than when flying with a full water tank. The S-70i and CH-47D are cable of flying faster speeds than the current helicopters and the 412EPX.

Water Drop Capabilities - While the maximum take-off weight is important, it does not directly reflect a more important parameter as it relates to the firefighting mission, water drop capabilities. As Table 1-9 shows the current helicopters have a tank capacity of 350 to 375 gallons but deliver less than those amounts due to payload limitations when prepared for the typical firefighting mission (1.5 hours plus 20-minute fuel reserve).

The Type I candidate helicopters have significantly more capabilities. The tank capacity ranges from 1,000 gallons for the S-70i to 3,000 gallons for the CU-47D. The 412EPX, while still a Type II helicopter, also exceeds the current fleet's capacity due to its increased external gross weight of 1,100 pounds. Based on the assumptions, the 412EPX would have a potential water drop, 478 gallons, that is greater than the 375-gallon tank capacity.

Table 1-12 provides two data points for the amount of water that can be dropped, the start and end of a 90-minute mission with the 20-minute fuel reserve. Using the S-70i as an example, the helicopter is dropping about 25 percent more water than at the start of the mission. The range for the other candidate helicopters is 19 to 39 percent increases.

Cabin Volume - In addition to increased payload, the S-70i and CU-47D offer larger cabins, which translate into the potential to carry more passengers and equipment. The CU-47D's cabin volume is almost eight times larger than the current helicopters. The 412EPX remains the same as the current helicopters.

Pricing/Value - Obtaining the benefits that come with the candidate helicopters means an increase in costs, both to purchase and operate the helicopters. Table 1-12 offers an estimated purchase price of a basic-configured aircraft for the candidate helicopters. Also provided is an estimate for the cost to complete the respective candidate helicopters for the various missions, including firefighting. Both the basic and completion prices can vary based upon the specific requirements, the completion vendor, and contract negotiations.

The Resale Value information is relevant to the current helicopters operated by OCFA. These are the helicopters that have the possibility of being removed from the current fleet at some point. The factors that can affect a resale value include an aircraft's condition, age (e.g. years, flight hours), accuracy of tracking information, configuration, availability, and level of support (e.g. spares,

engineering). In the case of the Super Huey helicopters, asset ownership is an additional factor that will affect the resale value. OCFA will not receive compensation for returning the asset to CAL FIRE.

Table 1-12					
Current and Candidate Helicopters					
Firefighting Mission					
Airframe Manufacturer /Type	Bell / Super Huey	Bell / 412EP	Subaru/Bell / 412EPX	Sikorsky / S-70i	Coulson CH-47D
Engine Manufacturer /Type	Honeywell / T53-L-703	Pratt & Whitney / PT6T-3D	Pratt & Whitney / PT6T-9	General Electric / T700 GE 701D	Honeywell / T5-GA-L714A
Useful Load					
Maximum Take-Off Gross Weight (Internal)	10,500	11,900	12,200	22,000	50,000
Maximum Take-Off Gross Weight (External)	11,200	11,900	13,000	23,500	50,000
Mission Configured - Fire	6,700	8,300	8,300	14,200	26,500
Flight Crew (Firefighting)	450	450	450	650	650
Useful Load Available for Mission	4,050	3,150	4,250	8,650	22,850
Fuel (lbs.) 1.5-Hour Mission w/ 20 Min. Reserve	1,275	1,385	1,385	1,986	4,966
Remaining Useful Load	2,775	1,765	2,865	6,664	17,884
Mission Endurance	2.0	2.9	2.9	2.9	2.6
Hover Capabilities					
In-Ground Effect (ISA, Sea Level)	10,630	10,200	9,000	10,270	7,750
Out-of-Ground-Effect (ISA, Sea Level)	11,000 lbs.	5,200	6,000	6,200	6,100
In-Ground Effect (ISA +20 C, Sea Level)	6,800	6,200	5,600	7,400	5,250
Out-of-Ground-Effect (ISA +20 C, Sea Level)	10,800 lbs.	11,890 lbs.	1,500	4,400	3,900
Helicopter Speed					
Cruise Speed - Max (knots)	106	125	130	145	157
Cruise Speed - Long Range (knots)	106	122	124	128	130
Calculated Speed (knots)	90	106	110	122-140	131-157
Water Drop Capabilities (gallons)					
Water Tank Size (gallons)	350	375	375	1,000	3,000
1.5-Hour Mission+ 20-Min Fuel Reserve	332	211	343	797	2,498
End of Mission (20-minute reserve)	457	347	478	992	2,985
Cabin					
Volume (cubic feet)	208	208	208	396	1,629
Crew/Passengers	2/14	2/14	2/14	2/12	2/>30
Pricing/Value					
Basic Price (x1M)	N/A	N/A	\$11.5	\$17.0	\$16.5
Firefighting Completion (x 1M)	N/A	N/A	\$14-\$15	\$20-\$23	\$5.8*
Resale Value	\$1.6-\$2.0	\$3.5-\$4.3	N/A	N/A	N/A

Notes:

- **Useful Load:**
 - **Fuel Consumed (lbs.):** Based upon the typical firefighting mission duration of ninety minutes plus a 20-minute reserve.
- **Mission Endurance:** Based upon the assumptions the helicopter started with a full load of fuel.
- **Hover Capabilities:** There are two conditions for the hovering capability, ISA (15°C) at sea level and ISA +20° C at sea level. Both conditions are maximum gross weight.
- **Helicopter Speed:**
 - **Calculated Speed:** During the firefighting mission, the speed will vary when carrying a full load of water versus flying to pick-up water. The range of speed reflects the speed differences and was obtained from operators and the manufacturers. For example, the Sikorsky S-70i will have a speed of 140 to the water pick up and 120-130 with a full load.
- **Water Drop Capabilities:**
 - **Tank Size:** Based upon discussions with OCFA personnel for the tank capacity on the current fleet.
 - **1.5-Hour Mission:** The amount of water that could be carried at the start of a ninety-minute mission plus a twenty-minute fuel reserve. The water amount would increase with each drop as fuel was consumed.
 - **End of Mission (20-minute reserve):**
 - **Bell Super Huey:** If the water tank had the capacity, the helicopter, based on the conditions, would be able to drop 457 gallons. Obviously, the limit would be 350 gallons.
- **Cabin:**
 - **Crew/Passengers:** Seating in the passenger cabin is flexible in each helicopter type. The number for passengers represents the maximum seating capacity.
- **Pricing/Value:**
 - **Basic Price:** Applies only to the candidate helicopters. The current helicopters are not being purchased. The amounts represent an estimated price for the basic, non-mission-configured helicopter.
 - **CU-47D** - The \$16.5 million is the proposed purchase price for a mission-ready helicopter. We placed the completed value in this category due to the additional fees for management services (See Firefighting Completion).
 - **Firefighting Completion:** Represents the estimated basic price and completion costs for the candidate helicopters. The range of costs is dependent on the specific mission equipment that is requested by OCFA.
 - **CU-47D** - The \$5.8 million for the CU-47D does not represent the completion costs as provided for the 412EPX and S-70i. Those costs are part of the Basic Price. The \$5.8 million represents an annual cost provided by Coulson-Unical for a turnkey service to operate, maintain, and support the CU-47D.
 - **Resale Value:** This applies to the current OCFA helicopters. The range of resale values was obtained from Conklin & de Decker's, *The Conklin & de Decker Report v21.1*. The values shown for the Super Huey helicopters are representative of assets not in the Federal Excess Property Program.

Section 2 – Life Cycle Cost Projections

Orange County Fire Authority Original Request

Estimate the cost of the acquisition and operation of helicopter alternatives. The operating cost estimates will include maintenance options and fuel costs, and other operating or overhead costs.

Conklin & de Decker Approach

Conklin & de Decker used the concept of life cycle cost analysis to examine the current and candidate helicopters. In general, and as it relates to aircraft operators, a life cycle cost analysis has three main elements – acquisition, operating costs, and disposition of the aircraft. This section deals with the costs of operating aircraft with a primary focus on maintenance and fuel costs. Subsequent sections of this report deal with the acquisition and disposition of an aircraft.

More specifically, this section contains ten-year estimates, with a beginning point of January 2021, for the current and candidate helicopters. The estimates provide totals for maintenance and fuel costs, while also highlighting the annual and sometimes significant cost variations (“peaks” and “valleys”) associated with maintenance costs. The ultimate objective for summarizing the costs is to identify key potential times in the life cycle to dispose of a helicopter. Conklin & de Decker used its *Life Cycle Cost, 20.1* software version to calculate the respective projections.

This section of the report, like Section 1, consists of a summary of Conklin & de Decker’s analysis and the analysis. Life cycle cost projections are provided for the current fleet and candidate aircraft. The projections for each of the current aircraft include an overall summary table, an annual maintenance cost chart for ten years, a table highlighting the significant maintenance events in the respective years, and a residual value chart for the ten-year period. The projections for the S-70i candidate aircraft include the overall summary table, an annual maintenance cost chart, and the ten-year residual value chart. The CU-47D is presented differently due to the Colson-Unical proposal. There is the overall summary for ten years of operation and then explanations about maintenance cost behavior and the resale value of the helicopter.

Summary

Using Conklin & de Decker’s *Life Cycle Cost 20.1* software, we projected maintenance and fuel costs over a ten-year period for each of the current fire and rescue helicopters and for selected candidate helicopters should the OCFA decide to change to a different type of helicopter. The beginning point for the ten-year life cycle estimate was January 2021. Chart 2-1 summarizes the results to the analysis.

It is important to mention the effect that a helicopter's age can have on the maintenance costs in a life cycle. Three of the helicopter types, UH-1H Super Huey, Bell 412EP, and CU-47D, have been in operation for many years. The 412EPX and S-70i are new helicopters. Due to their age and the number of flight hours, older aircraft will have higher maintenance costs as they encounter significant maintenance events. Based on the assumption of 200 flight hours per year per helicopter, the 412EP helicopters will encounter several of these maintenance events, which drives up the total costs during the ten-year period. The new helicopters will not encounter the significant events in their first ten years based upon the 200 hours per year and therefore their cost may be similar to or less than the older helicopters. Good examples of that relationship are the 412EPX, which is less than the existing 412EP helicopters, and the S-70i, which is 8 to 25 percent depending upon the 412EP to which it is compared.

The current 412EP helicopters are similar in age and flight hours. Based on age, these helicopters are in their 13th year of operation for OCFA. Due to their similarity, the 412EP helicopters have estimated maintenance and fuel costs that is only a \$600,000 difference. In essence, each helicopter will encounter the same scheduled maintenance events during the next ten years.

The UH-1H Super Huey helicopters are 54-years old. Despite their lower estimated maintenance and fuel costs over the next ten years, when compared to the 412EP helicopters, their costs could exceed the estimates significantly due to their age. Generally, as helicopters age, unscheduled maintenance costs will increase in the airframe structure, electronic system, and avionics. An example of the aging factor is the most recent ten-year inspection on N441FA H3. The almost-\$500,000-inspection had several issues with the airframe structure. Also, the source of spares has changed in the last several years as military auctions of UH-1H parts have declined. Generally, parts acquired from the government as surplus are less expensive than purchasing from other sources.

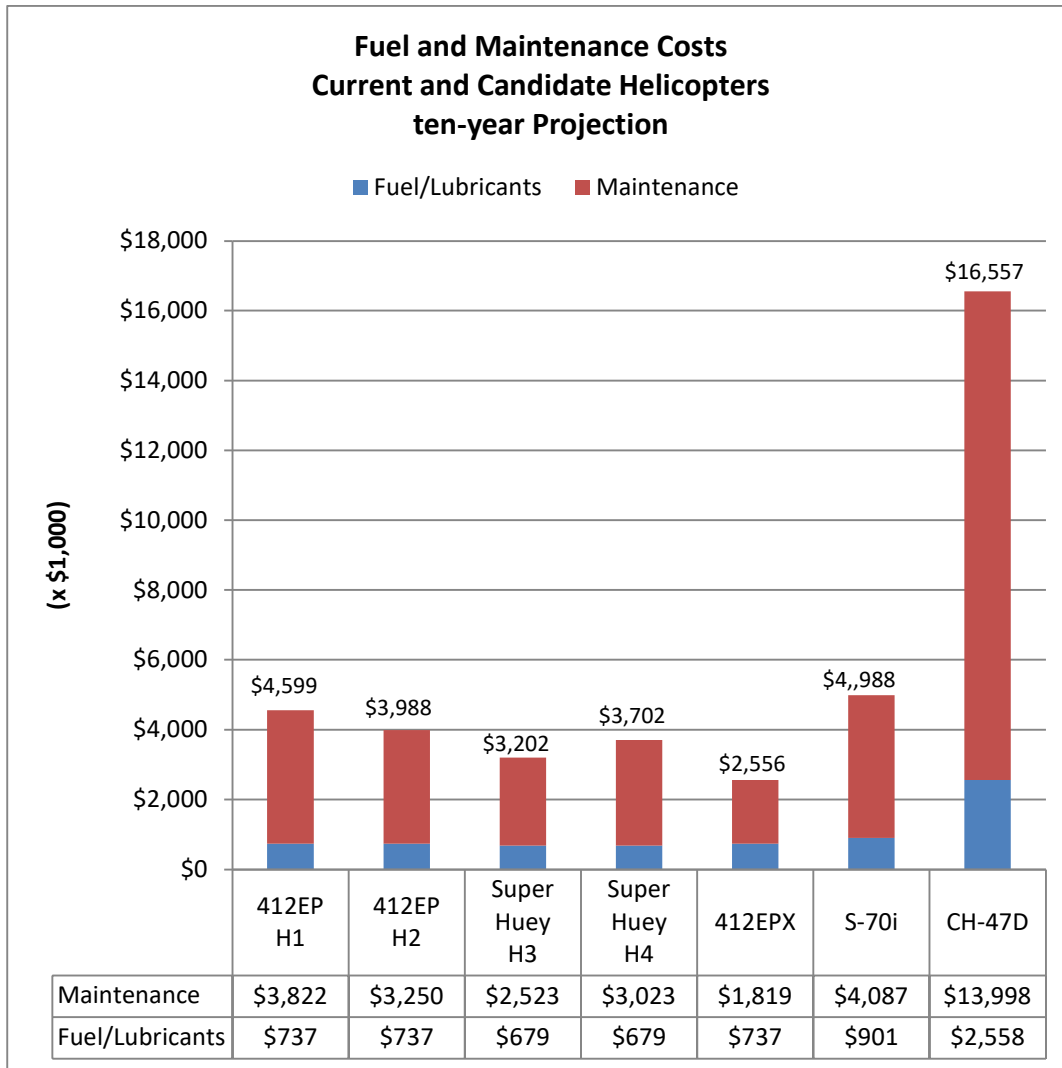
Due to OCFA's desire to improve its capabilities in primarily the firefighting mission, each of the candidate helicopters represent an increase in performance when compared to the current helicopters. The S-70i and CU-47D are Type I helicopters that can easily double the water drop capabilities of the current helicopters. The 412EPX has improved water drop performance even though it is in the same category as the current helicopters.

To acquire helicopters with that capability, the costs to operate them will also increase. Chart 2-1 highlights the increase. During a ten-year period, the candidate helicopters will increase fuel and maintenance costs anywhere from 25 percent, comparing the Bell 412EP to the Sikorsky S-70i, and 260 percent when the CU-47D is compared to the 412EP.

While the increase in maintenance and fuel cost may seem excessive, the increase in performance must also be considered. Using the Bell 412EP to the Sikorsky S-70i comparison, the increase in water delivered during the typical mission scenario, the S-70i will carry 256 percent more water per tank load (224 gallons for the 412EP versus 797 gallons for the Sikorsky S-70i). The CU-47D water drop capability

is ten times 412EP (2,498 gallons for the CU-47D). The 412EPX also increases the water dropped by 58 percent (355 gallons for the 412EPX).

Chart 2-1



While performance capabilities of the helicopters are important, so too is the value of the aircraft. Table 2-1 identifies the years when the helicopters have positive Adjusted Values, which represents when OCFA could expect to receive a higher amount when selling the asset than a helicopter around the Base Value. It is important to mention that the actual amount received in the sale of a used helicopter can differ from the adjusted values in this model due to current market activity. The model is highlighting the relationship between the Base and Adjusted Values.

For Table 2-1, we used a ten-year summary since the UH-1H Super Huey helicopters are quite old and the 412EP helicopters will be approximately 23 years old in another ten years. We extended the number of years for the candidate helicopters to 20 since they are new helicopters, and their resale

value would be more informative with a longer period. We did not have the appropriate information to generate a residual value for the CU-47D.

Table 2-1																				
OCFA Helicopters - Annual Summary of Adjusted Values																				
Registration Number	Year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
N141FA H1		A		C				B			X	X	X	X	X	X	X	X	X	X
N241FA H2	A	B					C				X	X	X	X	X	X	X	X	X	X
N441FA H3	C								A	B	X	X	X	X	X	X	X	X	X	X
N541FA H4	C					B				A	X	X	X	X	X	X	X	X	X	X
Candidate Helicopters - Annual Summary of Adjusted Values																				
412EPX	A	B											C	D	E					
S-70i	A	B	C	D	E															
CU-47D	Not Available																			

In Table 2-1, the years that are marked with yellow represent when the Adjusted Value is the same as or greater than the Base Value of the helicopter. The single red block for each helicopter represents the lowest value during the 10 and 20-year period. The letters in the yellow blocks identify the years with the highest Adjusted Values. "A" identifies the highest value and "C" is the third highest. The white blocks are the years when the Adjusted Value is below the Base Value.

Registration number N141FA H1 can serve as an example to explain the table. In years 1 through 5 and 8 and 9, the helicopter's adjusted value is higher than its base value, when all the significant scheduled maintenance events are assumed to have remaining lives of 50 percent. In years 6 and 7, the adjusted value is less than the base value because enough of the significant scheduled maintenance events have less than 50 percent remaining lives. Year 7 has the lowest adjusted value. Year 2 has the highest adjusted value.

Conklin & de Decker Analysis

Current Fleet

Life Cycle Assumptions: Life cycle cost estimates are based on several assumptions. Listed below are the assumptions that support the ten-year estimates for the current helicopters in the OCFA fleets as well as the candidate helicopters. Despite the grounding of the Super Huey helicopters in September 2020, we built an estimate for these helicopters should they become active again.

- Life Cycle Start Month – January 2021. The OCFA aviation unit provided the maintenance tracking information. The reports contain the remaining times for significant scheduled events such as major inspections, overhaul components, life-limited items, and engine restorations. Based on the start date, Year 1 covers from January through December 2021.

The total flight hours as of January 2021 were:

- 412EP N141FA H1: 2,329
 - 412EP N241FA H2: 2,188
 - Super Huey N441FA H3: 6,811
 - Super Huey N541FA H4: 9,196
- Program Length – 10 years.
- Hours per Year – OCFA requested that we use 200 flight hours per helicopter per year. In most recent years, the UH-1H Super Huey helicopters have been used primarily as back-up to the 412EP helicopters when they are not available. As a result, the Super Huey helicopters have not flown 200 hours annually.

Estimating the annual hours accurately is important as they have an important effect on the timing of certain significant maintenance events (e.g. 2,500-hour major inspection, engine overhauls, life-limited items).

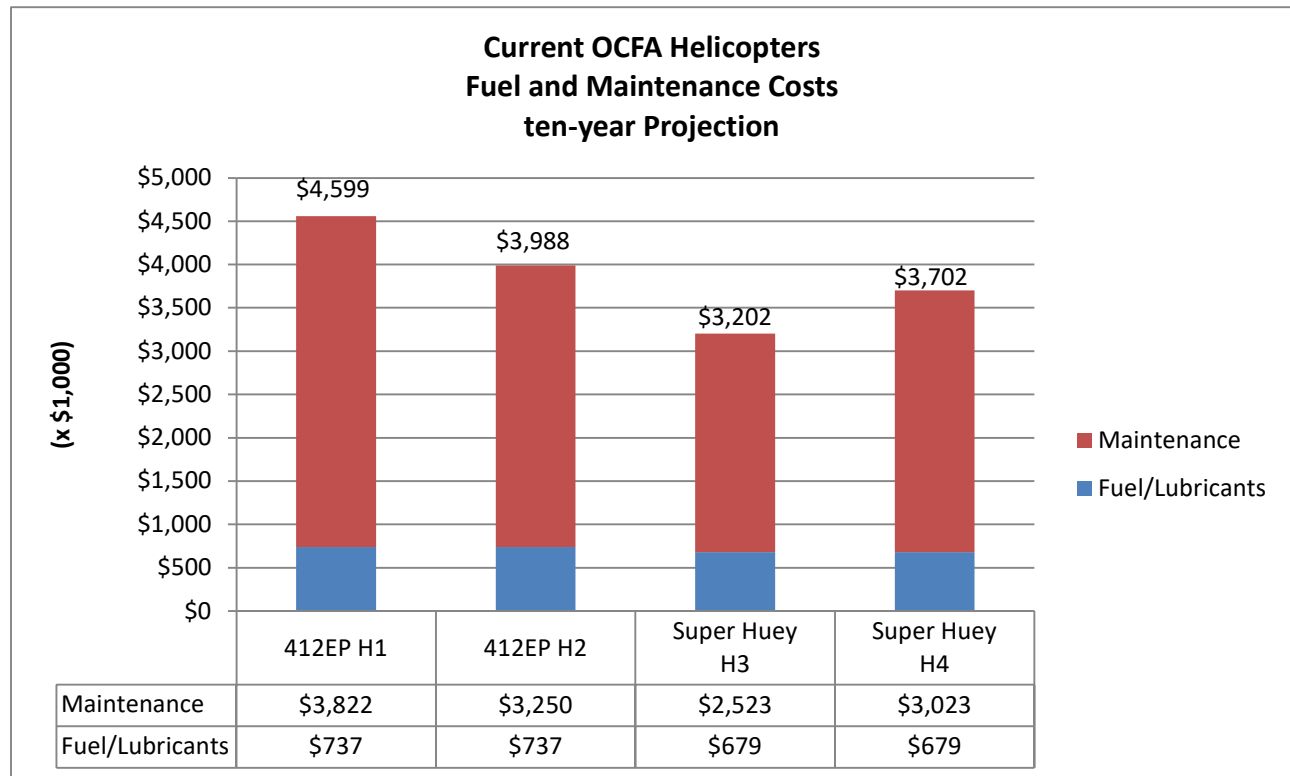
Despite the September 2020 grounding, we have included the UH-1H Super Huey helicopters. If the helicopter should resume flying, the timing of the scheduled events in the next ten years may occur at later dates than the estimates in the report, especially hourly items. Calendar scheduled maintenance (e.g. ten-year inspection) will occur as estimated.

- Fuel Cost – Assumed \$2.90 cost per gallon.
- Fuel Consumption – The average amount of fuel consumed in an hour is based upon the Conklin & de Decker *Life Cycle Cost 20.1* software. The assumed hourly fuel consumption for each of the helicopter types is:
- 412EP: 113 gallons.
 - Super Huey: 104 gallons.
- Labor – The labor costs associated with maintenance are based upon the estimated hours to work on the aircraft, also referred to as “hands-on-time”. Not included as “hands-on-time” would be activities such as time-off, meetings, hangar cleaning, and other activities that are not involved with maintaining the helicopter. We used a labor rate of \$106 per hour.
- Inflation Rates – The life cycle cost model uses two inflation factors. The first affects the increasing cost of parts in aviation and the second is more general and is applied to such categories as fuel and labor. The assumed annual inflation factors affecting parts is 2.7 percent and the general inflation rate is 1.95 percent.

Chart 2-2 summarizes the projected fuel and maintenance costs for each of the OCFA helicopters over a ten-year period. During the next ten years, the 412EP helicopters will have the most expenditures. N141FA H1 will consume almost \$4.6 million and N241FA H2 is \$600,000 less at \$4.0 million. If the Super Huey helicopters become active again, their estimated costs range from \$3.2 (N441FA H3) to \$3.7 million (N541FA H4). The primary cause for the \$500,000 difference is that N541FA H4 was just starting

its ten-year inspection when it was grounded. The ten-year inspection is a significant cost at almost \$500,000.

Chart 2-2



The following part of the report contains a combination of tables and charts summarizing the information generated by the life cycle cost software. The information provided for each helicopter consists of

- A summary table showing the maintenance and fuel costs for a ten-year estimate.
- A line chart showing the estimated annual maintenance costs for a ten-year period.
- A table highlighting the significant maintenance events occurring in specific years.
- A line chart displaying the estimated annual residual value based on the aircraft's age and status of significant maintenance events for a ten-year period.

We have provided an explanation for each chart and its significance for the OCFA helicopter serial number 36484, registration number N141FA H1. To avoid redundancy with the explanations, we did not repeat them for each helicopter. We provided only the tables and charts for the remaining Bell 412EP and both UH-1H Super Hueys. However, and for all helicopters, we have identified when OCFA might consider disposing of each helicopter based upon their respective estimated residual values. Our suggestion for disposition in this section of the report considers each helicopter individually and does not represent the fleet plan as there will be other factors that may affect the fleet plan.

Helicopter: Bell 412EP**Serial Number: 36484****Registration Number: N141FA H1**

Table 2-2 summarizes the estimated fuel and airframe and engine maintenance costs over a ten-year period. The estimate was based upon Conklin & de Decker's *Life Cycle Cost v20.1* software while using relevant OCFA department information (e.g. remaining lives on scheduled components and items). The ten-year estimated costs for this helicopter are almost \$4.6 million with 16 percent of the costs associated with fuel and lubricants, 60 percent with airframe maintenance, and 23 percent with engine restoral.

Table 2-2		
ten-year Projection - N141FA H1		
Fuel	\$716,006	16%
Lubricants	\$21,480	0%
Subtotal	\$737,487	16%
Airframe Maintenance		
Labor	\$495,990	11%
Parts	\$771,821	17%
Inspections	\$785,285	17%
Component Overhaul	\$686,454	15%
Life Limited Items	\$16,555	0%
Subtotal	\$2,756,106	60%
Engine Maintenance		
Engine Restoral	\$1,065,614	23%
Total	\$4,559,206	100%

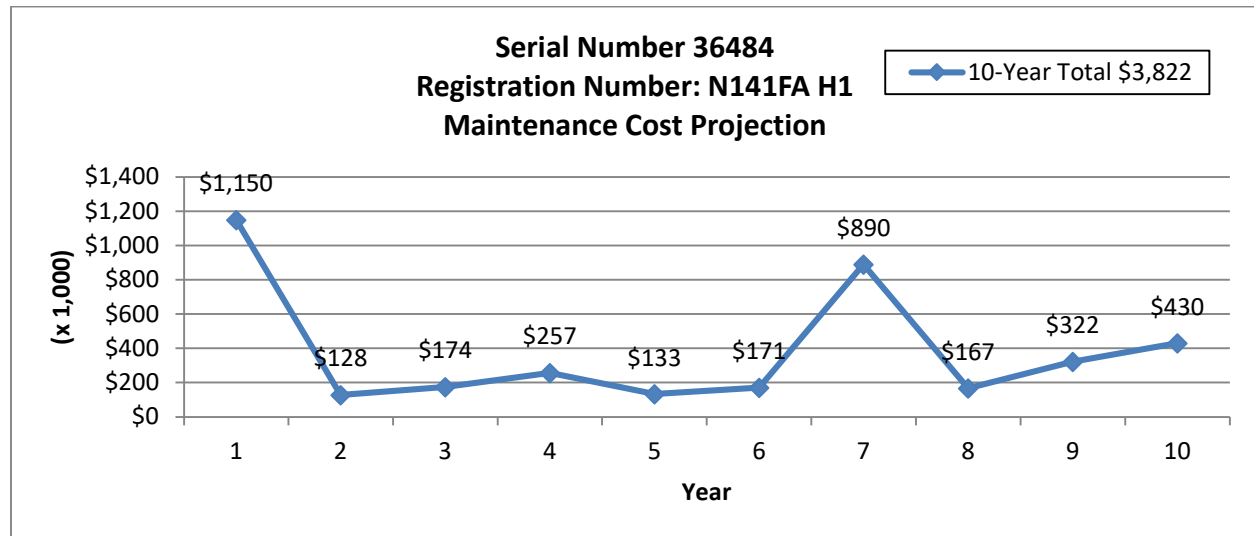
Chart 2-3 displays the estimated annual maintenance costs (fuel not included) during the ten-year period. The average annual cost is \$382,000.

Due to the nature of helicopter maintenance requirements certain significant costs will occur at scheduled intervals. For example, in the next 12 months, helicopter N141FA H1 will encounter its highest maintenance costs. Thirty percent of the ten-year \$3.822 million maintenance expense is related to scheduled maintenance for an engine hot section, main rotor hub and combining gearbox clutch inspections, and various component overhauls that occur at 2,500 hours. This helicopter in January 2021 had accumulated a total of 2,329 flight hours. (This detail is provided in Table 2-3.)

To use this helicopter as an example, selling the helicopter in Year 6 would not be the ideal time to dispose of the aircraft. Generally, upcoming significant maintenance due in Year 7 will subtract substantially from the resale value of the helicopter. Ideally, disposing of an aircraft should occur two or three years from significant maintenance events. Chart 2-4 illustrates this statement.

Also, it is important to remember one of the assumptions underlying the ten-year estimate; it is based on 200 flight hours per year. If the actual accumulation of flight hours differs from the projection, then the year in which the significant maintenance costs occur could change.

Chart 2-3



The information in Table 2-3 supplements Chart 2-3. The table highlights the more significant maintenance categories that are driving the costs in the peak years. For example, in Year 7 the N141FA H1 helicopter will need both of its engines overhauled. The overhauls are estimated to cost almost \$728,000, which is 82 percent of the maintenance costs for the year. Other years with significant scheduled maintenance are 1, 4, 7, 9, and 10.

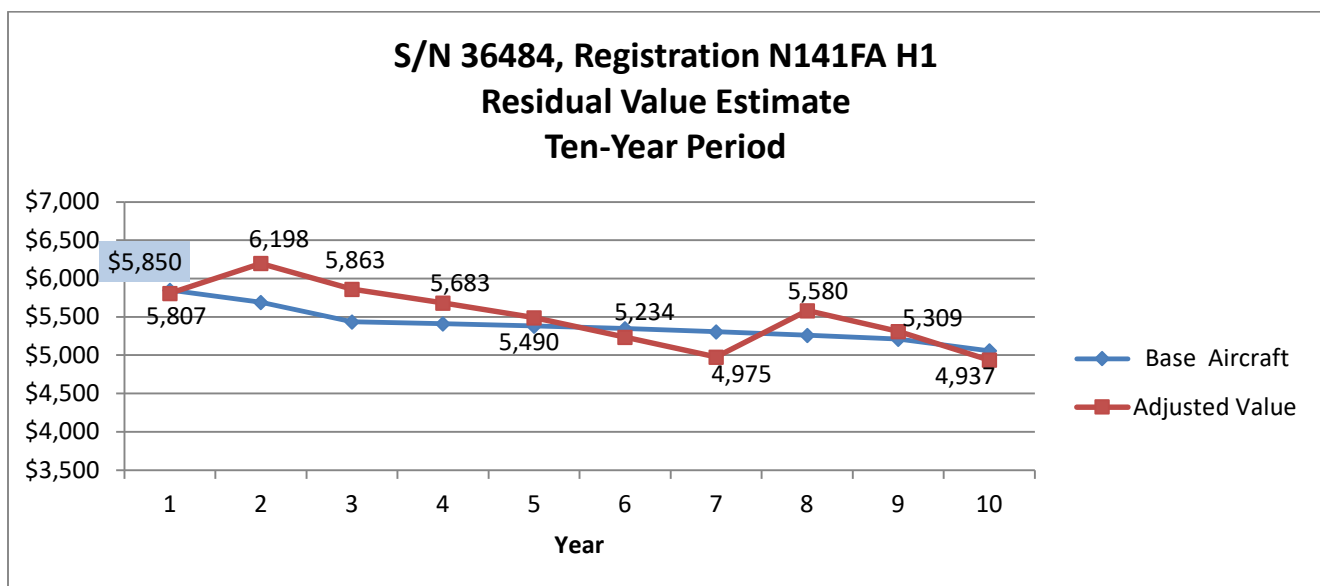
Table 2-3						
Summary of Annual Significant Scheduled Events – N141FA H1						
Year	Category	Significant Maintenance	Estimated Cost (x1,000)	Significant Maint. Subtotal (x1,000)	Annual Maint. Total (x1,000)	Significant Maint. / Annual Total (%)
1	Inspections	Main Rotor Hub, Combining G'box	\$417			
	Engine Inspection	Hot Section	\$206			
	Component Overhaul	Several Items	\$410	\$1,033	\$1,150	90%
4	Inspections	5000-Hr/ 5-Year	\$113	\$113	\$257	44%

7	Engine Restoration	Engines Overhauled	\$728	\$728	\$890	82%
9	Inspections	5000-Hr/5-Year	\$138	\$138	\$322	43%
10	Component Overhaul	Several Items	\$238	\$238	\$430	55%

Chart 2-4 offers another perspective for N141FA H1, the estimated residual value during the ten-year period. The chart shows two perspectives for the residual value. The first perspective (Base Aircraft, blue line) involves the steady declining value of the helicopter as it ages in years. In this life cycle cost estimate, N141FA H1 31147, manufactured in 2008, begins as a 12- to 13-year-old helicopter. At the end of the ten-year period, the 22- to 23-year-old helicopter will have an estimated market value of \$5.1 million. The average annual 1.5 percent rate of depreciation during the ten-year period is a general rate in the life cycle cost tool that applies to all 412EP helicopters with the same year of manufacture.

The second line (Adjusted Value, red line) in Chart 2-4 reflects the estimated residual value based upon the status of the helicopter's significant scheduled maintenance events (e.g. component overhauls, life-limited items, engine restoration, major inspections). Due to the high costs associated with these maintenance events such as a transmission overhaul, main rotor blade retirement, engine overhaul, and/or significant inspections, a helicopter's market value will be increased or decreased depending upon how much time remains before the occurrence of the event. And because the various maintenance events occur during different times in the helicopter's life cycle, the market value is affected differently by each significant maintenance event. For example, an engine overhaul that just occurred will add (betterment) to the helicopter's base market value, while a set of blades to be retired in the coming year will decrease the base market value (detriment).

Chart 2-4



If we combine the information in Chart 2-4, which reflects the estimated maintenance costs, with the maintenance details provided in Table 2-3, we will better understand why Years 2 and 8 in Chart 2-4 show a peak in values of \$6,198K and \$5,580 respectively. In Year 2, the helicopter will have had significant maintenance in a variety of areas and Year 7 is when engine overhauls occur.

Based on the relationship between the Base and Adjusted Value lines, the recommended period to dispose of N141FA H1 is between years 3 and 5. This is the period when the Adjusted Value is higher than the Base Aircraft line. During this period, the helicopter will be around 15 years old. Year 9 represents another opportunity.

A more complete explanation about the current market is provided in Section 3, Aircraft Acquisition and Timing. The Base Aircraft values displayed in Chart 2-4 are based upon long-term depreciation values and do not necessarily reflect current market values.

Helicopter: Bell 412EP

Serial Number: 36487

Registration Number: N241FA H2

Table 2-4		
ten-year Projection - N241FA H2		
Fuel	\$716,006	18%
Lubricants	\$21,480	1%
Subtotal	\$737,487	18%
Airframe Maintenance		
Labor	\$495,990	12%
Parts	\$771,821	19%
Inspections	\$758,712	19%
Component Overhaul	\$139,415	3%
Life Limited Items	\$17,387	0%
Subtotal	\$2,183,325	55%
Engine Maintenance		
Engine Restoral	\$1,066,931	27%
Total	\$3,987,743	100%

Chart 2-5

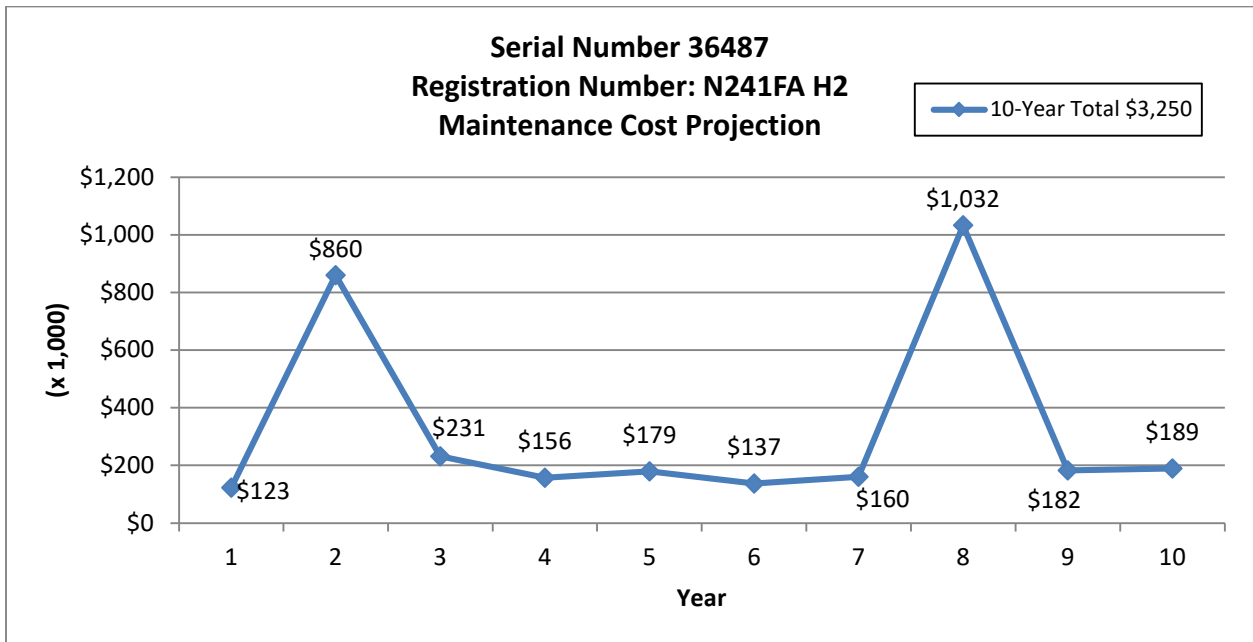
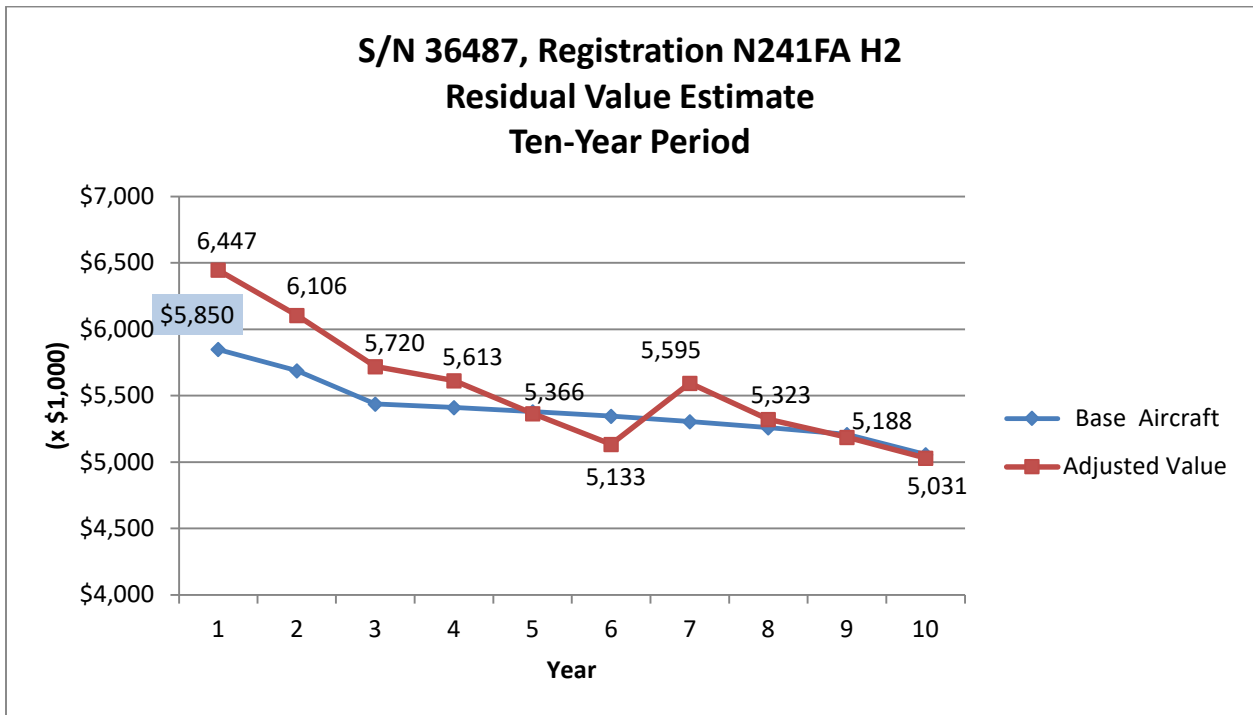


Table 2-5						
Summary of Annual Significant Scheduled Events – N807JS						
Year	Category	Significant Maintenance	Estimated Cost (x1,000)	Significant Maint. Subtotal (x1,000)	Annual Maint. Total (x1,000)	Significant Maint. / Annual Total (%)
2	Inspections	Main Rotor Hub, Combining G'box	\$443			
	Engine Restoration	Hot Section	\$264			
	Component Overhaul	Several Items	\$85	\$792	\$860	92%
3	Inspections	5000-Hr/5-Year	\$107	\$107	\$231	46%
8	Engine Restoration	C'Box Overhaul	\$757			
	Inspections	5000-Hr/5-Year	\$134	\$891	\$1,032	86%

The 412EP has a 5-year/5000-hour inspection. The flat rate is \$85,000, which covers the cost to perform the inspection tasks only. During the major inspection process, discrepancies are found. The costs associated with discrepancies can increase the cost of the inspection by significant

amounts. For example, a prior 412EP 5-year/5000-hour inspection of this nature cost OCFA more than \$400,000. In our life cycle cost program, we use the flat rate as the cost for this inspection. If we used the total costs to complete the inspection, the current level in year-three would be much higher.

Chart 2-6



The maintenance work performed in year 2 keeps the Adjusted Value in a positive position through Year 5. However, this changes with significant engine maintenance due in Year 8. Year 6 dips below the line because the engines do not have many flight hours prior to hitting the maintenance event.

Helicopter: Bell UH-1H Super Huey

Serial Number: 5610

Registration Number: N441FA H3

Table 2-6		
ten-year Projection - N441FA H3		
Fuel	\$658,979	21%
Lubricants	\$19,769	1%
Subtotal	\$678,749	21%
Airframe Maintenance		
Labor	\$221,147	7%
Parts	\$212,567	7%

Inspections	\$687,840	21%
Component Overhaul	\$276,668	9%
Life Limited Items	\$406,555	13%
Subtotal	\$1,804,777	56%
Engine Maintenance		
Engine Restoral	\$718,662	22%
Total	\$3,202,188	100%

Chart 2-7

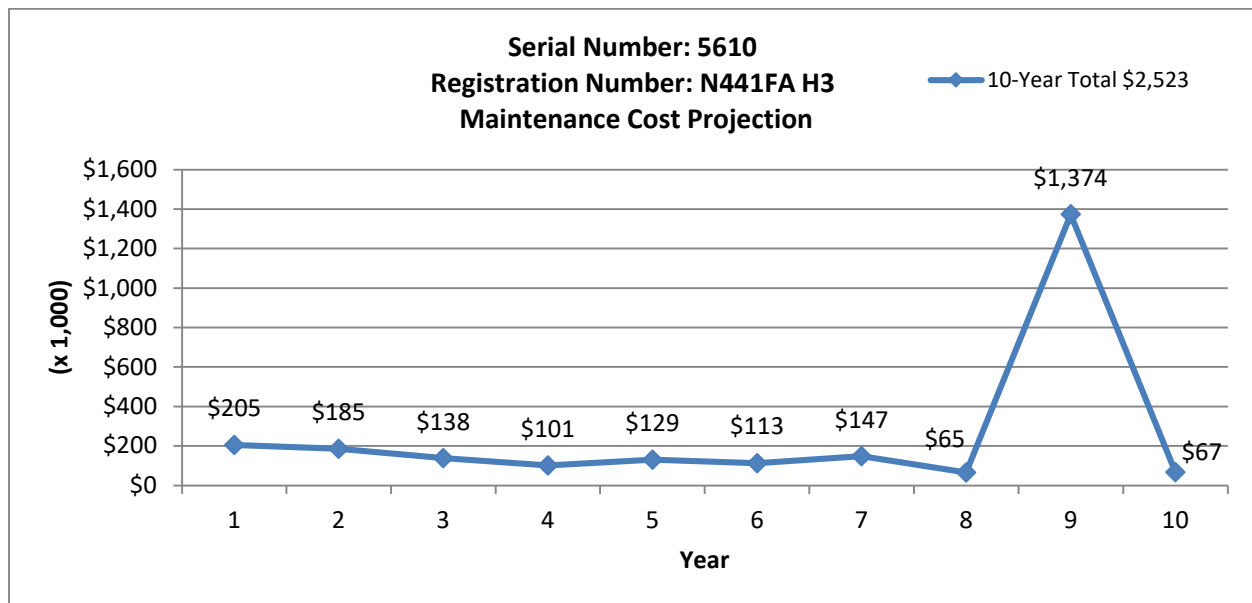
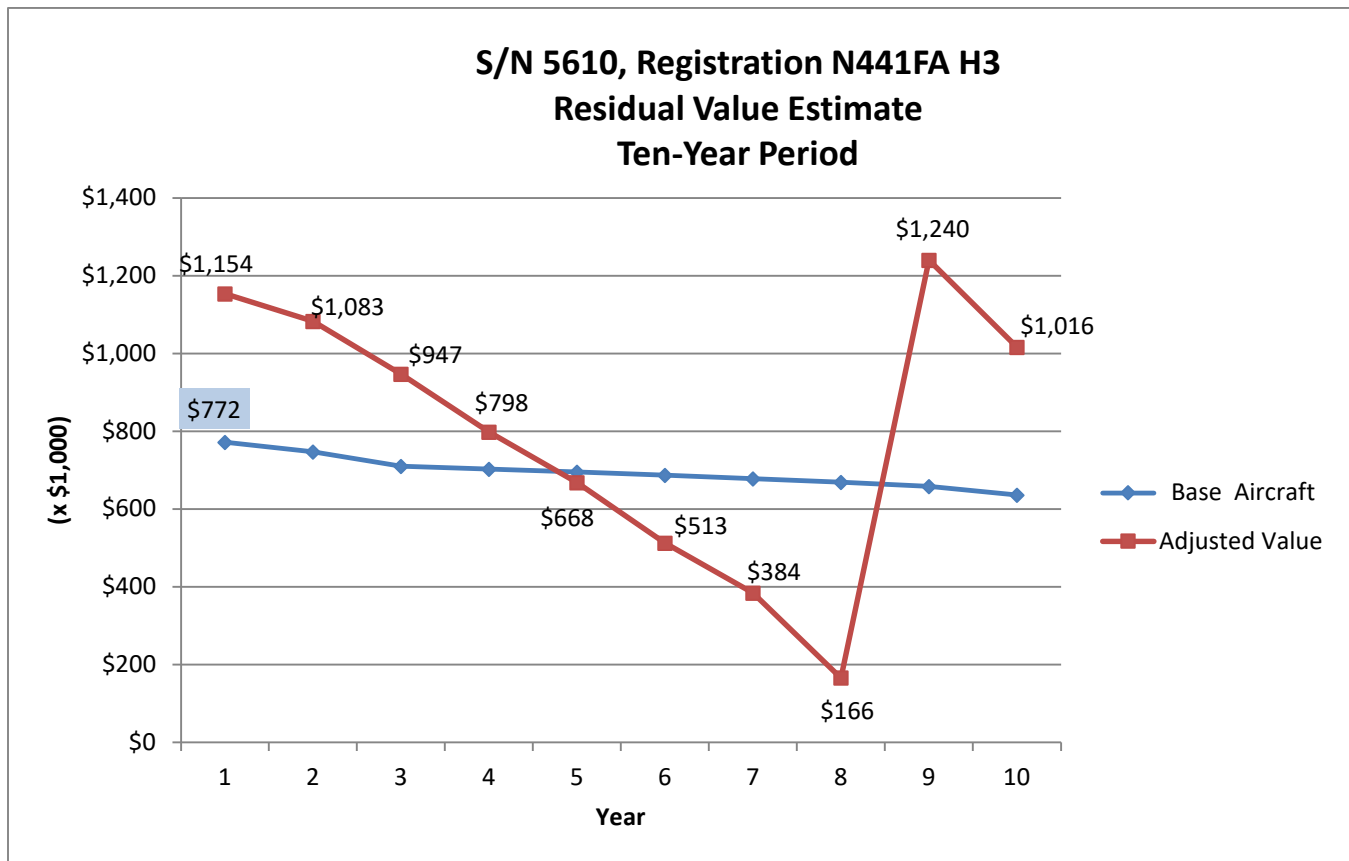


Table 2-7						
Summary of Annual Significant Scheduled Events – N800DM						
Year	Category	Significant Maintenance	Estimated Cost (x1,000)	Significant Maint. Subtotal (x1,000)	Annual Maint. Total (x1,000)	Significant Maint. / Annual Total (%)
9	Inspections	3000-Hr/ten-year	\$595			
	Engine Restoration	Engine Overhaul	\$621			
	Airframe Life Limited	Several Items	\$108	\$1,324	\$1,374	96%

Chart 2-8



Due to the recent completion of the ten-year inspection, the Adjusted Value remains above the Base Aircraft value through Year 4. The low value in Year 8 is due to the next ten-year inspection and engine overhaul that are due in Year 9. Both maintenance events are significant.

If this Super Huey was brought back into service, then years 1 through 4 would be the best time from a betterment/detriment perspective to dispose of the aircraft. However, there is an additional factor associated with the Super Huey helicopters. These aircraft were acquired through the Federal Excess Property Program by way of CalFire. Ownership remains with these entities. Therefore, a sale value is irrelevant.

Helicopter: Bell UH-1H Super Huey**Serial Number: 8529****Registration Number: N541FA H4**

Table 2-8		
ten-year Projection - N541FA H4		
Fuel	\$658,979	18%
Lubricants	\$19,769	1%
Subtotal	\$678,749	18%
Airframe Maintenance		
Labor	\$221,147	6%
Parts	\$212,567	6%
Inspections	\$1,144,473	31%
Component Overhaul	\$287,863	8%
Life Limited Items	\$465,054	13%
Subtotal	\$2,331,103	63%
Engine Maintenance		
Engine Restoral	\$691,807	19%
Total	\$3,701,659	100%

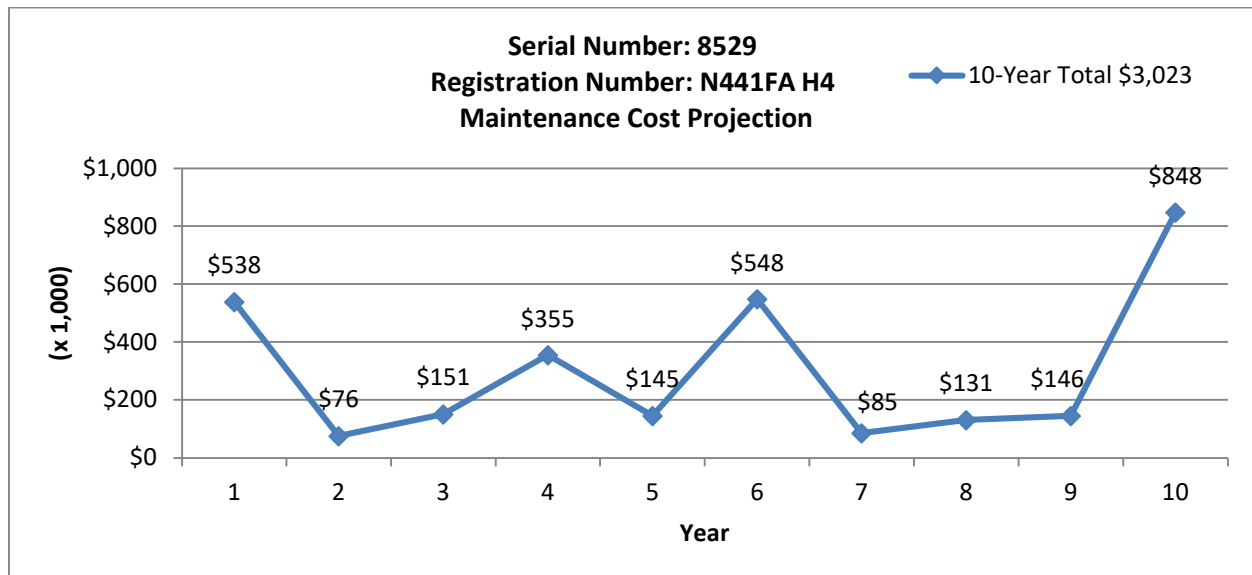
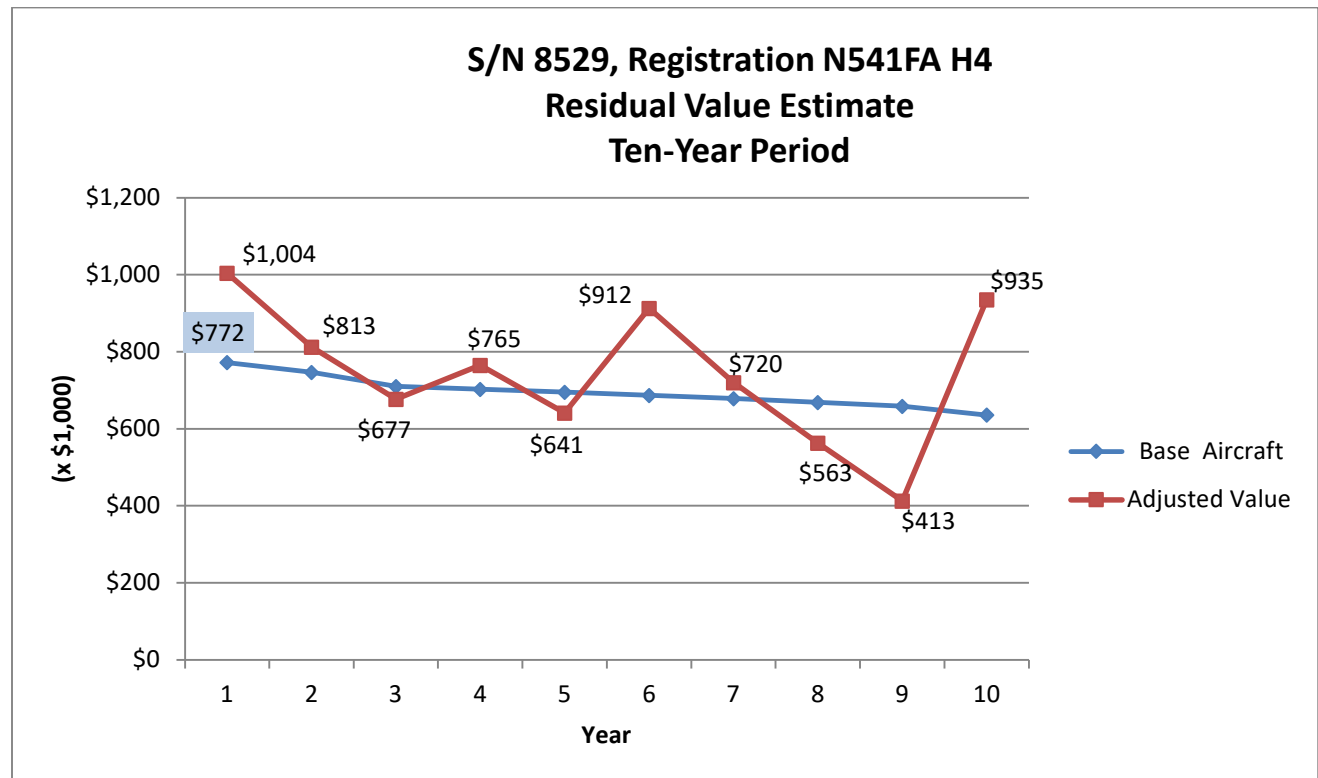
Chart 2-9

Table 2-9						
Summary of Annual Significant Scheduled Events – N800DM						
Year	Category	Significant Maintenance	Estimated Cost (x1,000)	Significant Maint. Subtotal (x1,000)	Annual Maint. Total (x1,000)	Significant Maint. / Annual Total (%)
1	Inspections	2500-Hr/ten-year	\$485	\$485	\$538	90%
4	Component Overhaul	Mast, Main Rotor Hub, Xmsn, T/R Hub	\$150			
	Airframe Life Limited	Several Items	\$142	\$292	\$355	82%
6	Engine Restoration	Overhaul	\$468	\$468	\$548	85%
10	Inspections	2,500-Hr/5-Year	\$573			
	Airframe Life Limited	Several Items	\$142	\$715	\$848	84%

Chart 2-10



This helicopter's ten-year inspection is currently due and had been sent to the vendor to perform the maintenance. The September 2020 grounding of the Super Huey helicopters stopped the inspection maintenance. As mentioned with N441FA H3, the program with which OCFA purchased the helicopters, Federal Excess Property Program, makes the proceeds from the disposition of this helicopter irrelevant.

Candidate Helicopters

The purpose of this section is to apply the same life cycle cost analysis that was applied to the OCFA current helicopters, which allows an apples-to-apples comparison between the varying types of helicopters. The candidate helicopters, Bell 412EPX, Sikorsky S-70i, and Coulson-Unical CU-47D, were introduced in Section 1, Fleet Review. For the candidate helicopters, we used the life cycle cost software and based it on the same assumptions as described on Pages 4-5. However, there are some assumptions that will differ and are identified with the respective helicopters.

- Hours per Year – As mentioned, OCFA requested an average of 200 annual flight hours per helicopter. We used the same assumption of 200 flight hours per year per helicopter.
- Fuel Cost – Assumed \$2.90 cost per gallon.
- Fuel Consumption – The rate of consumption for each candidate helicopter were the default values in the Life Cycle Cost software. The amount consumed per hour for the:
 - 412EPX: 113 gallons.
 - S-70i: 138 gallons.
 - CU-47D: 392 gallons: The consumption rate represents an average of the different missions the helicopter can perform.
- Labor – The labor costs associated with maintenance are based upon the estimated hours to work on the aircraft, also referred to as “hands-on-time”. Not included as “hands-on-time” would be activities such as time-off, meetings, hangar cleaning, and other activities that are not involved with maintaining the helicopter. We used a labor rate of \$106 per hour.

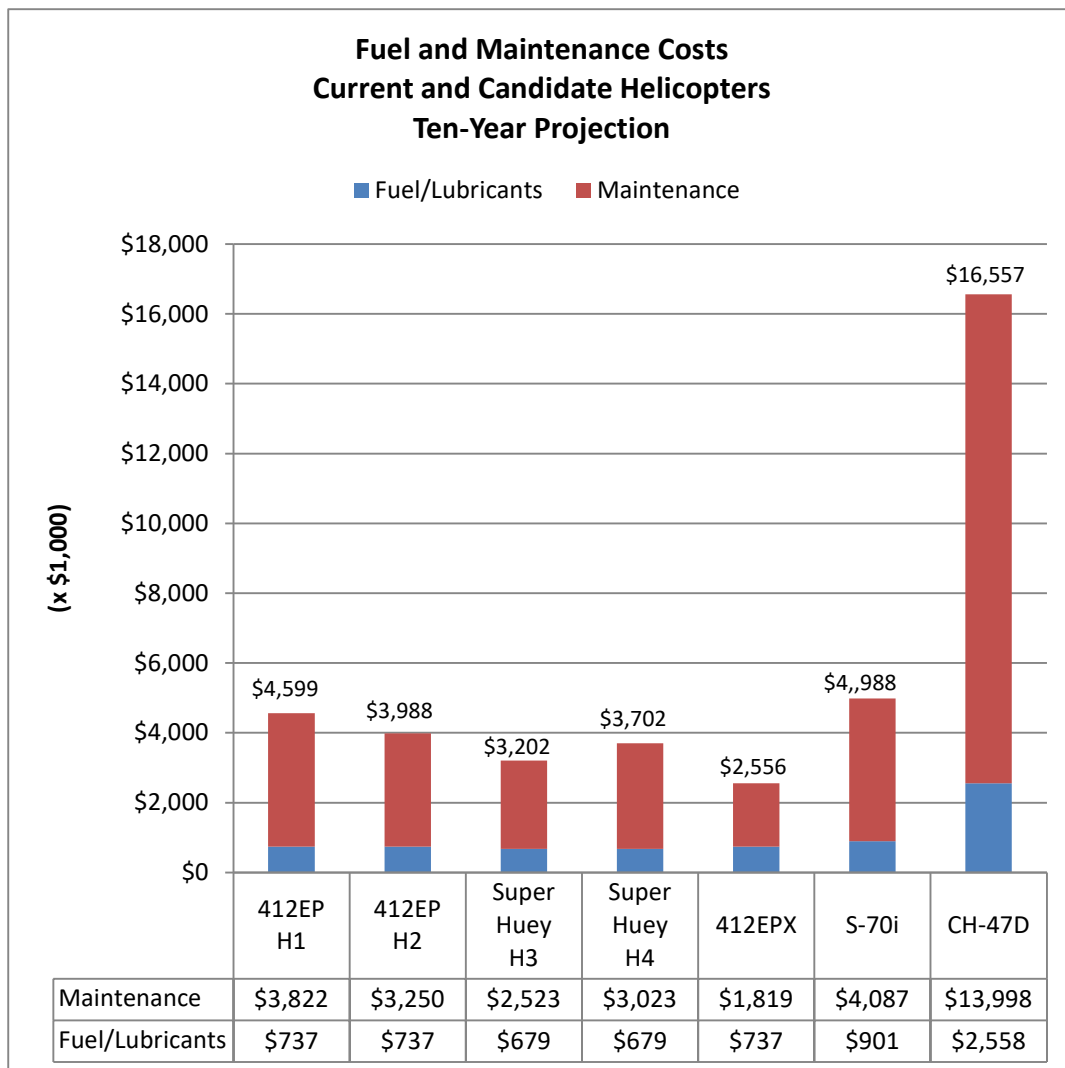
The information provided for each candidate helicopter is the same as the current OCFA helicopters except for one table, which identified the significant scheduled maintenance categories by year. The table and charts provided are:

- A summary table showing the maintenance and fuel costs for the ten-year estimate.
- A line chart showing the estimated annual maintenance costs for the ten-year period.
- A line chart displaying the estimated annual residual value based on the aircraft's age and status of significant maintenance events for the twenty-year period.

Because the table and charts convey the same type of information that was shown for the current helicopters, we did not restate the explanation and meaning as was provided with the 412EP N141FA H1.

Chart 2-11 summarizes the projected fuel and maintenance costs for the current and candidate helicopters over a ten-year period. The chart requires some comments that will provide a more complete picture of the comparisons.

Chart 2-11



New vs Used Aircraft – Each of the current helicopters have been operating for several years and in the case of the UH-1H Super Huey helicopters, more than several. Two of the candidate helicopters are new, the 412EPX and S-70i. Why is this important to understand? The 412EPX and S-70i are just starting their life cycle as it relates to maintenance. The current helicopters are in a different older segment of their life cycles and have encountered certain scheduled maintenance events that a new helicopter has not. Due to the difference in the life cycles, the current helicopters will more than likely cost more to maintain and not only due to scheduled maintenance, but also unscheduled maintenance associated with an aging helicopter.

Using the 412 helicopters as an example in Chart 2-11. The 412EP helicopters cost more to operate than the proposed 412EPX. After ten years, the 412EPX will have only flown 2,000 hours, based upon the 200-flight-hour-per-year assumption. The 412EPX will not have encountered most of the scheduled events that are measured by flight-hour activity. The difference is more than \$2 million.

Helicopter Types – Historically, OCFA has used Type II helicopters for firefighting. OCFA is now analyzing Type I helicopters, the S-70i and CU-47D. It is important to realize that with the ability to drop more water, maintenance cost will also increase due to the use of a larger helicopter. While costs, acquisition and operation, are certainly important, other measurements are important to bridge the difference between Type I and II helicopters.

Bell Flight **412EPX**

The EPX is very similar to the EPI, the predecessor to the EPX. The significant changes between the helicopters involved performance. The technology Subaru brought to the project improved the main gearboxes, which allowed an increase in mast torque, which led to an increase for internal and external maximum weights. However, what is not known as clear is the effects the performance changes will have on maintenance costs. While there will be a change, it will more than likely not be significant. Therefore, we chose to use a new EPI for the cost information in Table 2-10.

Table 2-10		
Ten-Year Projection - 412EPX		
Fuel	\$716,006	28%
Lubricants	\$21,480	1%
Subtotal	\$737,487	29%
Airframe Maintenance		
Labor	\$641,544	25%
Parts	\$690,813	27%
Inspections	\$463,398	18%
Component Overhaul	\$23,155	1%
Life Limited Items	\$0	0%
Subtotal	\$1,818,910	71%
Engine Maintenance		
Engine Restoral	\$0	0%
Total	\$2,556,396	100%

Chart 2-12

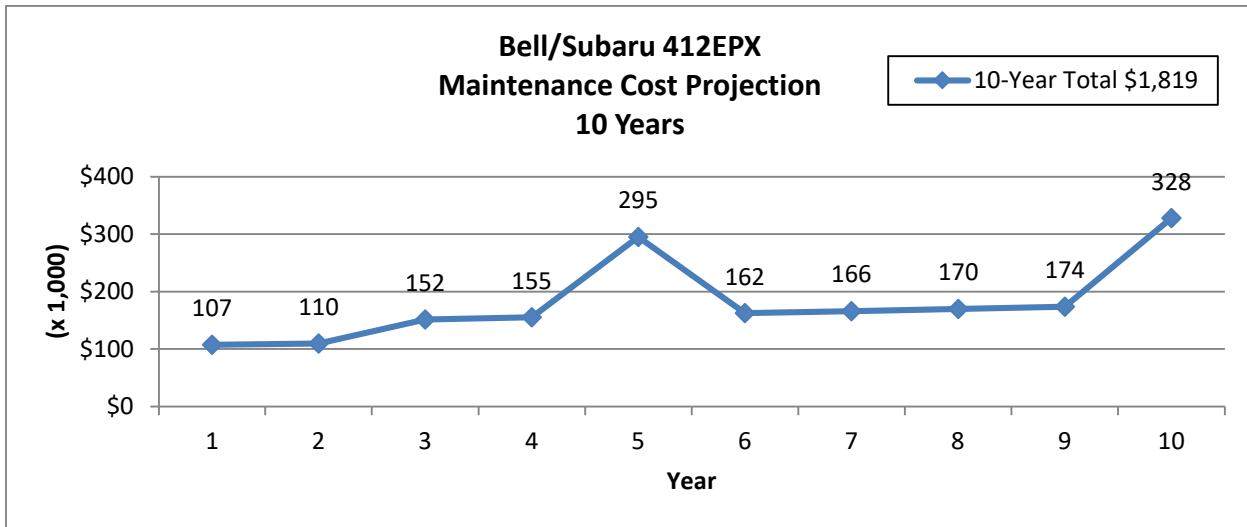
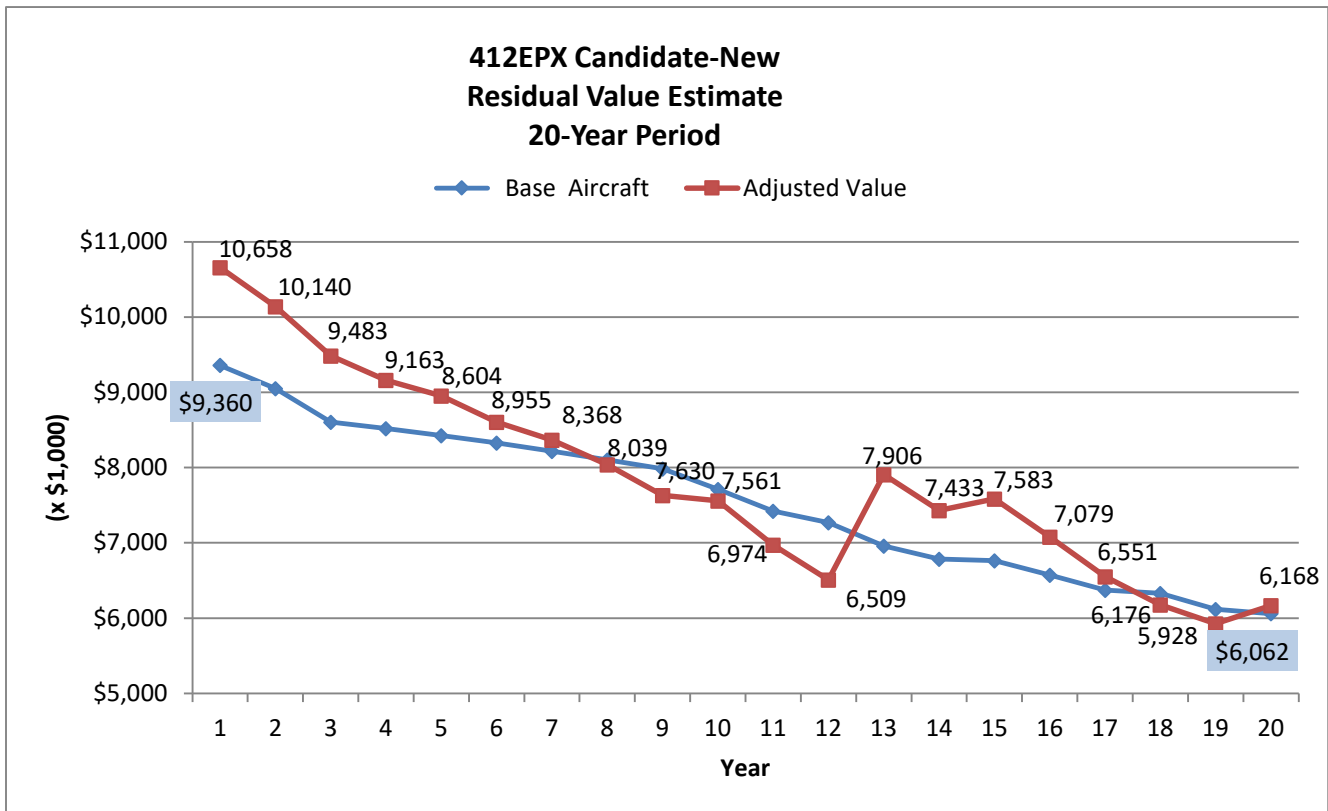


Chart 2-13



For the candidate helicopters, 412EPX and S-70i, we showed a 20-year projection for the residual value estimate. We did so because these helicopters are at the beginning of their life cycle and OCFA is likely to operate these helicopters longer than a ten-year period, which was for the current OCFA helicopters. The CU-47D residual value estimate is discussed with that helicopter's table and other information (see pages 23 and 24).

The residual value for the 412EPX is based upon an estimate for a helicopter without mission equipment, a basic configured helicopter. If we had used a mission-ready version of the 412EPX, the Base Aircraft Value would be higher as well as the Adjusted Value. During the 20 years of operation and based upon the annual flight hours of 200, years 8 through 12 and 18 through 20 are the periods when the Adjusted Value drops below the Base Aircraft values.

Sikorsky Helicopters

S-70i

Table 2-11		
Ten-Year Projection - S-70i		
Fuel	\$874,415	18%
Lubricants	\$26,232	1%
Subtotal	\$900,647	18%
Airframe Maintenance		
Labor	\$1,076,959	22%
Parts	\$1,585,206	32%
Inspections	\$700,999	14%
Component Overhaul	\$76,266	2%
Life Limited Items	\$1,500	0%
Subtotal	\$3,440,931	69%
Engine Maintenance		
Engine Restoral	\$646,548	13%
Total	\$4,988,126	100%

Chart 2-14

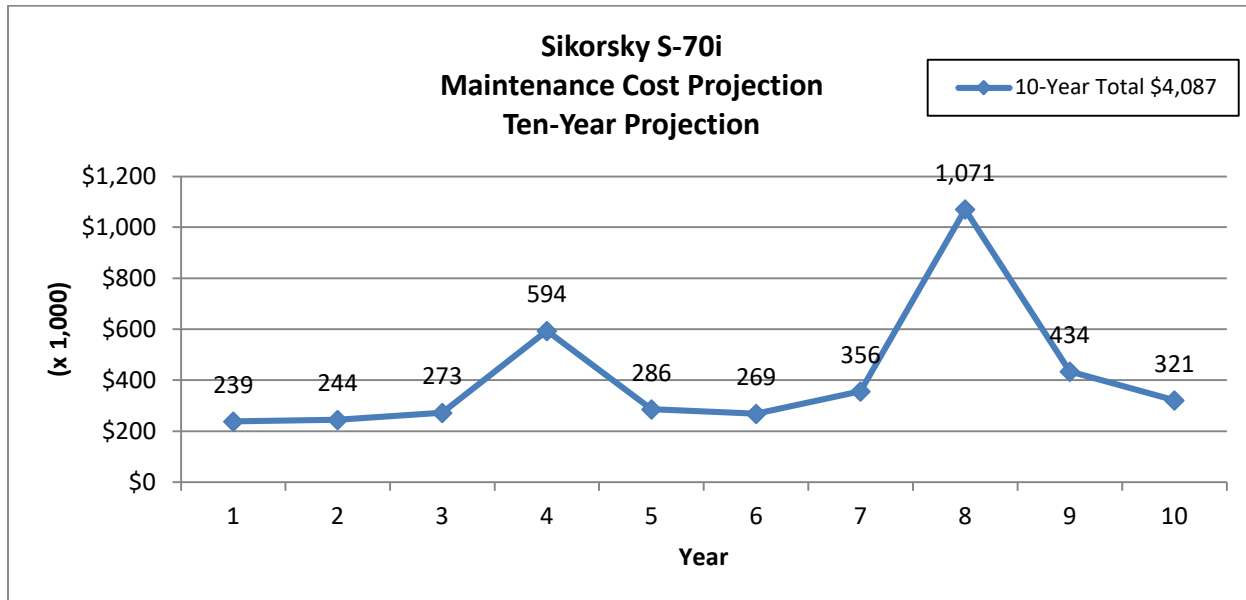
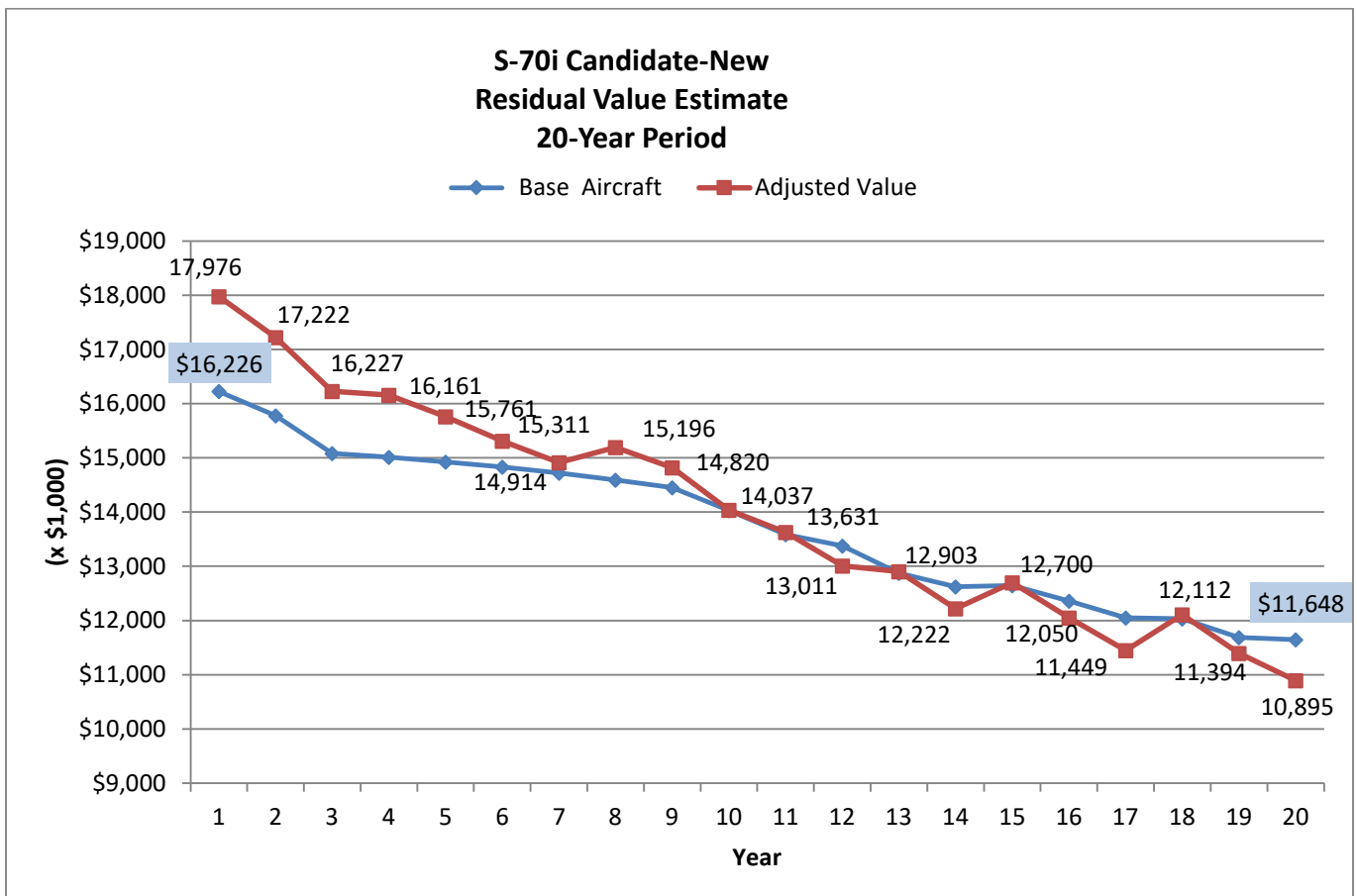


Chart 2-15



The Adjusted Value estimate for the S-70i follows the Basic Aircraft estimate throughout the 20-year period. The years when the Adjusted Value are more than the Base Aircraft value are not much higher than the Base Aircraft value. The exception to that are the early years, one through six, when the difference between the values is more significant. Also, when the Adjusted Value drops below the Base Aircraft, the difference is not significant, except for year 20 when there is an almost a \$1.0 million difference.

Coulson/Unical
CH-47D

The Coulson-Unical proposal to OCFA is different in scope than what Bell and Sikorsky are proposing, which causes the cost information to be presented differently. In short, Coulson-Unical is not only offering to sell the CU-47D helicopter, but the organization is also offering a “turnkey” solution for operating and maintaining the helicopter. Based on the different approach, we are not able to show the Maintenance Cost Projection and Residual Value Estimate charts. However, the following information should provide OCFA with information that will allow comparisons to the current and other candidate helicopters.

Table 2-12		
Ten-Year Projection - CU-47D		
Fuel	\$2,483,845	3%
Lubricants	\$74,515	0%
Subtotal	\$2,558,361	3%
Airframe Maintenance		
Hourly Maintenance Program	\$13,206,718	16%
Parts not Covered by Program	\$791,473	1%
Management Services	\$65,579,152	80%
Component Overhaul	N/A	---
Life Limited Items	N/A	---
Subtotal	\$79,577,343	97%
Engine Maintenance		
Engine Restoral	\$0	0%
Total	\$82,135,703	100%

Table 2-12 is similar to the prior tables for the current and candidate helicopters. The following information will explain the categories with an emphasis on the ones that are different.

- **Fuel and Lubricants** – The process to calculate the fuel and lubricants is the same as what was used for the other current and candidate helicopters. Fuel is calculated based on an

- average fuel consumption rate per hour times a fuel cost of \$2.90 per gallon. Lubricants (e.g. oil, hydraulic fluids) are calculated based upon the hourly fuel cost times three percent.
- Hourly Maintenance Program – For the current and candidate helicopters, we used Conklin & de Decker's *Life Cycle Cost v20.1* program to estimate the maintenance costs. Using the program, shows the behavior of the maintenance costs on an annual basis. An alternative to incurring maintenance expenses as they occur is an hourly maintenance program. Referred to with several terms (e.g. guaranteed maintenance program, power-by-the-hour), Coulson-Unical offered an hourly maintenance program.

The cost-per-hour offered was \$5,500. The systems that would be covered by the program would be major dynamic components, which includes main rotor blades, engines, transmissions, and drive shafts. The hourly cost would increase by four percent annually during the ten-year period.

- Parts not covered by Maintenance Program – The hourly maintenance program covers just the type of systems mentioned. The program will not cover parts and components such as small parts, rotatable components, oils, and instruments. These items will be paid for as incurred.

The cost per hour for these parts is estimated to be \$350 in the first year. We applied an annual inflation rate of 2.7 for subsequent years. This is the same inflation rate used in the *Life Cycle Cost v.20.1* program.

- Management Services – Coulson-Unical also proposed providing all services to operate the CU-47D helicopter. The management program would include:
- Personnel such as pilots, maintenance technicians, and mission crews.
 - Services to cover 24 hours a day, seven days a week.
 - Support employees for operational equipment such as fuel tank and support truck.

The annual cost for the operating services would be \$5.8 million. We applied an annual inflation rate of 2.7 percent for the management fees during the ten-year period.

The \$65.6 million for the ten-year period is included since part of the costs included relate to maintenance labor. However, other categories such as salaries for personnel other than maintenance, insurance, management charge, and ground support are also included in this amount.

- Component Overhaul, Life Limited Items and Engine Restoral – These categories of cost are not applicable based upon the hourly maintenance program and the estimates for the parts that are not covered by the program.

Section 3 – Resale Value and Lead Time

Orange County Fire Authority Original Request

Research the resale value of the current fleet and lead time for the new helicopters.

Conklin & de Decker Approach

Conklin & de Decker gathered information in the following areas to better understand the current market.

- New helicopter availability.
- Estimated completion time for mission-ready helicopters.
- Acquisition costs.
- Resale value for current OCFA helicopters.
- Market activity for used helicopters.

Due to the nature of the information of interest, the summary section will also serve as the Conklin & de Decker Analysis section.

Summary

Table 3-1 summarizes the requested information for the current and candidate helicopters. Additional explanations support the table information.

Table 3-1					
Resale, Acquisition Cost, and Lead Time					
Helicopter Type	Resale Value (x 1 million)	Disposition Time	Acquisition Cost (x 1 million)	Basic Aircraft Delivery	Completion Estimate
UH-1H Super Huey	N/A	Immediate	N/A	N/A	N/A
412EP	\$3.5 - \$4.3	Year or more	N/A	N/A	N/A
412EPX	N/A	N/A	\$14 - \$15	1-6 months	6 months
S-70i	N/A	N/A	\$20 - \$23	24 months	6-8 months
CH-47D	N/A	N/A	\$16.5	Jun-2021	Jun-2021

UH-1H Super Huey:

- Resale Value: There are two important elements that are relevant for both Super Hueys. The first is related to the resale value of the helicopters. Based on how the helicopters were obtained, through the Federal Excess Personal Property (FEPP) program, the opportunity for

receiving resale value is eliminated. Technically, the helicopters are still owned by the federal government with CAL FIRE serving as the conduit to OCFA.

- Disposition Time: The second important element, should OCFA decide to retire the Super Huey helicopters, is OCFA can remove them from its fleet quickly. CAL FIRE has reached out to OCFA indicating that other government agencies have expressed an interest in operating them.
- Acquisition Cost, Purchase Availability, Time to Complete: These items are not applicable to the Super Huey helicopters as these aircraft will be departing from the aviation unit.

Bell 412EP:

- Resale Value: Unlike the Super Hueys, the Bell 412EP helicopters do have resale values. There are several factors that can influence a helicopter's resale value. The most influential factors include the age of the helicopter, both in years and flight hours, status of the economy, time-remaining status on significant scheduled components and parts, available inventory in the market, and the presence of buyers. Several sources in the industry agree that the current resale market is a difficult market due to the factors already mentioned and a few more. The effect of these factors means that aircraft values will likely be lower than estimated and will take longer to sell.

Based on HeliValue's, *The Official Helicopter Blue Book*, the estimated resale value for OCFA's 412EP helicopters range from \$3.5 to \$4.3 million. HeliValue's estimates are based primarily on the time remaining for significant airframe and engine overhauled components, life-limited items, and major inspections. Simply stated, resale values decrease as remaining times on the assets decrease. As mentioned previously, other current factors will likely reduce the range of the resale values.

- Disposition Time: The length of time to sell a 412EP in the market as reported by AMSTAT, an industry research company, is a year or more. Manufacturers are another source for selling the helicopter when the used helicopter is part of the purchase of a new helicopter. Currently, and based on Section 2 of this report, OCFA has a current five-year period where the adjusted value of the helicopters is higher than the basic value.

Bell 412EPX:

- Acquisition Cost: The estimated purchase price to obtain a mission-ready helicopter can vary based upon the requirements of OCFA such as actual mission equipment, avionics, and the interior arrangement. The acquisition price can also be affected if there is competition as to which helicopters OCFA is considering. The purchase price for A 412EPX that meets OCFA's requirements will range from \$14.0 to \$15.0 million.
- Basic Aircraft Delivery: When is the next basic helicopter available for acquisition from the provider of the helicopter (e.g. manufacturer)? This timeline does not include the completion process. As of January 2021, Bell can deliver a 412EPX in one to six months.

- Completion Estimate: Once the acquisition of the basic aircraft has occurred, how long will it take to complete the helicopter for its intended missions? As of January 2021, Bell estimated the time to complete the helicopter was six months.

Sikorsky S-70i:

- Acquisition Cost: The estimated purchase price for a mission-ready S-70i is \$20.0 to \$23.0 million due to different installations of mission equipment and systems not on the basic-configured aircraft.
- Basic Aircraft Delivery: Sikorsky's standard lead time is 24 months. However, the manufacturer has flexibility as it also produces spec aircraft. As of January 2021, Sikorsky had two spec aircraft that would be ready for delivery before the end of 2021. Additional spec aircraft will be available in 2022. All of these aircraft would be delivered as a basic configured aircraft.
- Completion Estimate: Sikorsky uses United Rotorcraft to complete its S-70i helicopters. As of January 2021, the estimated completion period was six to eight months.

Coulson-Unical CU-47D:

- Acquisition Cost: The acquisition price for the CU-47D as a mission-ready helicopter is \$16.5 million.
- Basic Aircraft Delivery: OCFA is currently leasing a CU-47D from Coulson-Unical. The lease will end in June 2021. The same CU-47D will be available for acquisition on June 15, 2021.
- Completion Estimate: The completion date is the same as the basic aircraft delivery date.

Section 4 – Fleet Replacement Plan

Orange County Fire Authority Original Request

Suggest replacement plan for existing fleet.

Conklin & de Decker Approach

Conklin & de Decker created a fleet replacement plan for OCFA and its aviation department. First, we produced a ten-year benchmark estimate based upon retention of the current fleet. Next, we considered changes to the fleet by incorporating new aircraft. The emphasis of the aviation unit and OCFA was the firefighting mission and the desire to increase its water drop capacity. Therefore, its analysis incorporated the possibility of helicopter type changes.

The structure of this section is the same as prior sections and contains a summary of the analysis and the analysis by Conklin & de Decker.

Summary

Conklin & de Decker has outlined an approach that OCFA may want to consider as it updates its fleet of helicopters. Table 4-1 offers a summary of the steps that would update the OCFA fleet and address the primary objective of improving the volume of water dropped while fighting fires. In addition to providing the future costs of the existing fleet, should OCFA not make any changes, we have suggested four steps to consider.

- Retain the Current Fleet - Although retaining the current fleet is not likely, it serves as a benchmark when compared to the changes that may occur as suggested by the four steps. Based upon the life cycle cost assumptions stated in Section 2 Life Cycle Cost Projections, we projected the estimated fuel and maintenance costs for the next ten years for an unchanged fleet.
- Change the Current Fleet –
 - Step 1: Retire the UH-1H helicopters. There are three primary reasons for retiring these helicopters.
 - Age (over 50 years),
 - Increased costs due to limited military spares, and
 - Reduced availability.

An additional factor to consider is the level of risk between single-engine and dual-engine helicopters while hovering.

- Step 2: Acquire Bell 412EPX. If the OCFA desires to continue having two helicopters available for each day of the year, a third helicopter is required. Acquiring a 412EPX, also improves the amount of water dropped for firefighting when compared to the 412EP helicopters.
- Step 3: Acquire a Type I helicopter. The candidate helicopters will meet the OCFA objective to increase the amount of water delivered during the firefighting mission. Based on our research and comparing the two Type I helicopters,
 - An S-70i will cost less to operate, which is expected since the CU-47D can deliver more water to the fire.
 - The acquisition price for the CU-47D is less than the S-70i.
 - Delivery of a mission-ready helicopter ranges from 14 to 32 months for the S70i and June 2021 for the CU-47D. Section 3 of the report provides more information on the S-70i and the options that reduce the delivery range.
 - Coulson-Unical is offering a turnkey service to operate and support the CU-47D. The estimated price for over a ten-year period is \$65.6 million.
- Step 4: Consider acquiring a second Type I helicopter and if so, retire a 412EP.
 - Significant scheduled maintenance events will affect a helicopter's availability. If delivering larger amounts of water is a priority, there will be times when OCFA will not have a Type I helicopter available to perform the mission. OCFA needs to determine the significance of this risk and if a second Type I helicopter is required for adequate coverage.
 - If OCFA does acquire a second Type I helicopter, the opportunity exists to retire one of the 412EP helicopters.

Table 4-1 summarizes the steps slightly differently.

- If the current fleet is retained, then the only relevant costs are the operating costs. The amount shown represents the estimated maintenance and fuel costs during a ten-year period for the four helicopters.
- Steps 1 and 2 involve transactions rather than retaining the current fleet. The total for these steps is what the operating costs would be for two 412EP helicopters and one 412EPX during the same period. The estimated purchase price of the 412EPX is provided.
- Step 3 is the acquisition of a Type I helicopter. In addition to the ten-year period for operating costs, each candidate helicopter has the acquisition cost. Management services is unique to the CU-47D and represents the costs associated with operational and support services. The operational costs of the remaining 412EP and EPX helicopters are not included.
- Step 4 is the same as Step 3 except for the suggested retirement of one of the 412EP helicopters. In Step, 4 we included the operational costs of the two remaining 412 helicopters. The disposition amount relates to the 412EP that would be retired and is the range of resale amount.

Table 4-1					
OCFA - Summary of Fleet Options					
Dollar amounts x 1 Million					
Option	Operating Cost	Disposition Amount	Purchase	Total	Management Service
Retain Current Fleet	\$15.5	Not Applicable	Not Applicable	\$15.5	Not Applicable
Steps 1 and 2: Retire UH-1Hs/Acquire 412EPX					
Two 412EP/One 412EPX	\$11.1	\$0.0	\$14.0-\$15.0	\$25.1-\$27.1	Not Applicable
Step 3: Acquire Type I Helicopter					
S-70i	\$7.0	Not Applicable	\$20.0-\$23.0	\$27.0-\$30.0	Not Applicable
CU-47D	\$16.6	Not Applicable	\$16.5	\$33.1	\$65.6
Step 4: Acquire second Type I Helicopter/ Retire one 412EP					
One 412EP/One 412EPX	\$5.8	(\$3.5-\$4.3)	Not Applicable	\$9.5-\$10.1	Not Applicable
S-70i	\$7.0	Not Applicable	\$20.0-\$23.0	\$27.0-\$30.0	Not Applicable
CU-47D	\$16.6	Not Applicable	\$16.5	\$33.1	\$65.6

Conklin & de Decker Analysis

OCFA currently has four aircraft in its fleet, two UH-1H Super Huey and two 412EP helicopters. The variety of missions the department is equipped and trained to perform include wild land firefighting, which includes ground crew and supply transportation and water dropping capabilities; assistance during structure and wild land fires with command and control, and exposure protection; rescues that include vehicles, animals, and humans in a wide variety of settings such as water, rough terrain, and limited light.

The wide variety of missions requires that the current helicopters carry a variety of specialized equipment, including rescue hoist, fixed tank for dispensing fire retardant, Spectro-Lab searchlight, rescue harness, cargo hook, and paramedic equipment. In addition to the equipment, the helicopters carry personnel on certain missions, which also require additional cabin space and useful load.

The current OCFA fleet can perform its various missions. However, when it performs its primary mission of firefighting, the overall objective is to deliver more water over a given period of time. OCFA would like to move into a category of helicopter that will allow it to deliver more water per drop than it can

currently. While performing its rescue mission, it is important to use a helicopter that can perform the mission efficiently from a cost perspective.

The scope of the analysis limits our effort to summarizing the costs associated with adding a larger category helicopter to the OCFA, rather than justifying its need.

Retain Current Fleet

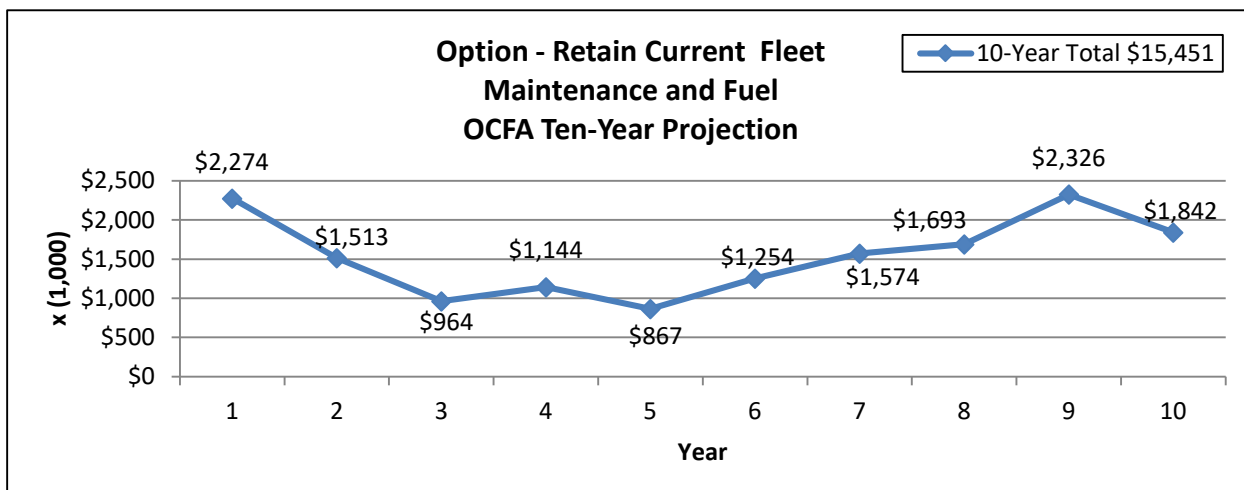
Although retaining the current fleet is not likely, due to the September 2020 grounding, it serves as a benchmark when compared to the other possible alternatives. Based upon the life cycle cost assumptions stated in Section 2 Life Cycle Cost Estimates (pages 4 and 5), we projected the estimated fuel and maintenance costs for the next ten years for the Super Huey and 412EP helicopters.

Key assumptions included the annual flight hours at 200 per helicopter, which is based on the projected hours for the current year, fuel rate per gallon of \$2.90, annual inflation between 1.95 and 2.7 percent, labor that includes technicians' hands-on time, and the remaining lives for the significant scheduled maintenance events and items for the respective helicopters.

Chart 4-1 combines the annual estimated fuel and maintenance costs for the four helicopters. For example, the fleet's cost in Year 1 is an estimated \$2.274 million. The helicopters contributing to high costs are H1 and H4, both are encountering significant inspections and other scheduled maintenance. Refer to Section 2 for the individual helicopter's maintenance events. The most expensive year for the current fleet is Year 9.

During the ten-year period, the total costs expended on fuel and maintenance would be \$15.5 million. Under this scenario, there would not be any acquisition costs for new helicopters or receipts for the retirement of the exiting helicopters.

Chart 4-1



Change the Current Fleet?

This section of the report is our recommendations as to how and when OCFA can update its fleet to accomplish two primary objectives.

- Improve its firefighting effectiveness by increasing the volume of water dropped and
- Continue its rescue missions.

Our recommendation is based upon our analysis in this report. However, we emphasize this is just a recommendation that OCFA can adjust.

- **Step 1:** Retire the UH-1H Super Hueys.
 - These helicopters are over 50 years old. While it is true that with the proper maintenance, helicopters have an infinite life, they do so with increasing costs, both labor and parts. Less obvious is the aging effect on a helicopter's availability for operations. The recent experience with N451FA H3 and its 10-year inspection illustrates these effects of an aging helicopter. The inspection cost over \$400,000, the length of time to complete the inspection was over a year (16 months), and when placed back into service, the helicopter was still not available for operations due to its questionable performance.
 - The availability of UH-1H spare parts directly from the military is no longer available. The federal logistic program that released military spares for this type of helicopter no longer has that inventory. While spares can be obtained from other sources in the industry, the pricing is higher. When the federal logistics program was active with these spares, OCFA paid a lower price because the transactions were directly with the military. What used to be full shelves in the aviation unit's inventory are now empty.
 - The UH-1H helicopters are single-engine, which raises a concern about safety. The issue of safety is not that single-engine helicopters experience engine failures more frequently than twin-engine helicopters. The issue is when and if an engine failure occurs in a single-engine helicopter, the situation involves more risk. For example, a helicopter will hover over water when it is filling up the water tank. If engine failure occurs during this phase of flight with a single-engine helicopter, then landing in the water is imminent. A helicopter with a second engine reduces this risk. Single-engine helicopters are still used broadly in the firefighting missions. The impediment from making the transition to a dual-engine helicopter is frequently the more expensive acquisition and operating costs.
 - Before disposing of the UH-1Hs, it is important to acknowledge that the UH-1H helicopters are used for pilot training. Referring to Chart 1-2 in Section 1 of the report, the highest amount of flight hours between the years of 2016 and 2020 were training

hours for pilots. Training consumed 46 percent of the total flight hours. Initial pilot training will now be performed by the 412 helicopters.

- **Step 2:** Acquire a Bell 412EPX.
- OCFA provides services 365 days in the year. Each day, there are two helicopters available for call. One is staffed to be available 24 hours a day for fire and rescue calls. The second helicopter is staffed for 10-hours a day, primarily for fire calls. Based on these requirements, both 412EP helicopters will be required to be available. Due to scheduled inspections (e.g. 5-year inspection) and unpredictable unscheduled maintenance, it is necessary to have a third helicopter to ensure the required availability.
 - The 412EPX can also contribute to a firefighting mission. Despite its Type II category, the 412EPX, due to Subaru and Bell efforts, can drop more water than the 412EP helicopters. At the start of a 1.5-hour mission with 20-minute reserves, the 412EPX can carry 62 percent, or 130 gallons, more than the 412EP.
 - Placing a 412EPX in service will take 7 to 12 months. Receiving the basic helicopter is an estimated 1 to 6 months, while the completion process is another 6 months.
 - Retain the existing 412EP helicopters. These helicopters are 12 years old. They are relatively young, in age and flight hours, but both will encounter 2,500-hour inspections as well as 2,500-hour components for overhaul and life limited items in the next two to three years. According to the residual value analysis in Section 2, years three through five and seven through nine are better periods of time to retire the helicopters if that is OCFA's desire.
 - Based on the historical annual flight hours for the aviation unit (500 to 600), three helicopters should provide adequate availability for OCFA to perform its missions. The addition of a Type I helicopter to the fleet would reduce the annual flight hours of the 412 helicopters, which could accelerate the retirement of one of the 412EP helicopters sooner than planned.

Steps 1 and 2 address the retirement of the two Super Huey helicopters and place the aviation unit in position to perform the missions that it has performed in the last several years by acquiring a 412EPX. Table 4-2 summarizes the costs associated with these steps.

Table 4-2				
Summary of Program costs (Ten-Year Period)				
Retire UH-1H Super Hueys, Purchase 412EPX				
Aircraft	Operating Cost	Disposition Amount	Purchase	Total
(x 1 Million)				
UH-1H	\$0	\$0	N/A	\$0
412EP	\$8.5	N/A	N/A	\$8.5
412EPX	\$2.6	N/A	\$14.0-\$15.0	\$16.6-\$17.6
Total	\$11.1	\$0	\$14.0-\$15.0	\$25.1-\$27.1

Notes:

- **Operating Cost:** Consists of fuel and maintenance. Based on Conklin & de Decker's Life Cycle Cost program and 200 flight hours per year per helicopter.
 - **Disposition Amount:** Retirement of UH-1H does not have resale value due to the FEPP program.
 - **Purchase:** Estimated range of completed helicopter.
- **Step 3:** Acquire Type I helicopter to meet increased water drop objective.
- OCFA has expressed its desire to increase the amount of water that its helicopters can drop to fight fires more effectively. To meet the intended increase, OCFA will have to move from a Type II to Type I helicopter. The two candidate helicopters that we analyzed, S-70i and CU-47D, have water tank capacities of 1,000 and 3,000 gallons, respectively.
 - The S-70i and its earlier version, the UH-60A have become the helicopter of choice for aerial firefighting. The acquisition price for a mission-ready S-70i helicopter can range from \$20 to \$23 million. The maintenance and fuel costs are provided in Table 4-3 and summarize two options. The standard availability to acquire is 24 months, but there are spec helicopters available that can reduce the period to 9 to 15 months. Completion is an additional 6 to 8 months. Its average water drop is estimated to be 890 gallons at sea level and ISA. This average amount will decline based on hotter temperatures and higher altitude.
 - Coulson-Unical offers a different approach to OCFA. While the purchase price is straightforward at \$16.5 million, the operational proposal is a turnkey operation. At an annual rate of \$5.8 million, Coulson-Unical will provide the pilots, technicians, and ground support. With inflation, the ten-year total cost is \$65.6 million. The ten-year fuel and maintenance costs are estimated to be \$16.6 million. The availability for purchase and operation is June 2021. The average water drop is estimated to be 2,740 gallons at sea level and ISA. This average amount will decline based on hotter temperatures and higher altitude.

Table 4-3 summarizes the additional cost that would be involved with acquiring one of the Type I helicopters.

Table 4-3					
Summary of Program Costs (Ten-Year Period)					
Purchase Type I Helicopter - S-70i or CU-47D					
	(x 1 Million)				
Aircraft	Operating Cost	Disposition Amount	Purchase	Total	Management Service
S-70i (w/o hrly. programs)	\$5.0	N/A	\$20.0-\$23.0	\$25.0-\$28.0	N/A
S-70i (with hrly. programs)	\$7.0	N/A	\$20.0-\$23.0	\$27.0-\$30.0	N/A
CU-47D	\$16.6	N/A	\$16.5	\$33.1	\$65.6

Notes:

- **Operating Costs:**
 - **S-70i:** \$5.0 million is based upon Conklin & de Decker *Life Cycle Cost* program over a 10-year period with 200 flight-hours per year. The costs include fuel and maintenance. The maintenance costs are based upon the estimated scheduled and unscheduled costs that would occur during the 10-year period. If OCFA chose to enroll in Sikorsky's Total Assurance Plan (TAP) and the GE program, the estimated cost during the ten-year period and assuming four percent increase each year is \$7.0 million. The first-year cost would be an estimated \$2,900 per flight hour.
 - **CU-47D:** Coulson-Unical provided a hybrid for its maintenance costs. The major dynamic components are covered by a flight hour program, whose first rate is \$5,500 with four percent annual increase. Items not covered by the program are the responsibility of OCFA. Both types of costs are represented in the Operating Cost category.
- **Total:**
 - We placed the Total column in its position, so we could have an apples-to-apples comparison regarding the maintenance and fuel costs, during the ten-year period, and the acquisition costs.
- **Management Services:**
 - **CU-47D:** Coulson-Unical offered turnkey operation, which is described in Section 2 of the report. Basically, they are offering to take care of the operation of the helicopter and the support material that is needed during firefighting missions. We placed this category of cost in the last column since it is a relevant but unique cost associated with the CU-47D.
- **Step 4:** Acquire second Type 1 helicopter for availability.
 - The primary desire of OCFA is to increase its water dropping capabilities while fighting fires. The Type I candidates certainly provide that increase. But as is the case with all helicopters, they require maintenance frequently due to scheduled and unscheduled events. Maintenance affects a helicopter and its availability for flight operations. By combining the primary objective regarding firefighting and the reality of frequent maintenance affecting availability, OCFA may want to consider having two Type I

helicopters. Two helicopters will reduce the risk of having a fire and not having a Type I helicopter available.

- If OCFA chose to have two Type I helicopters, the possibility exists that the 412 series of helicopters could be reduced to two helicopters. The Type I helicopters could assist when or if a 412 is not available to perform the daily on-call missions.
- We do not suggest making this move until the effects of Step 1 and 2 have been in place for a period. OCFA can make a more informed decision at that time.

Section 5 - Other Information

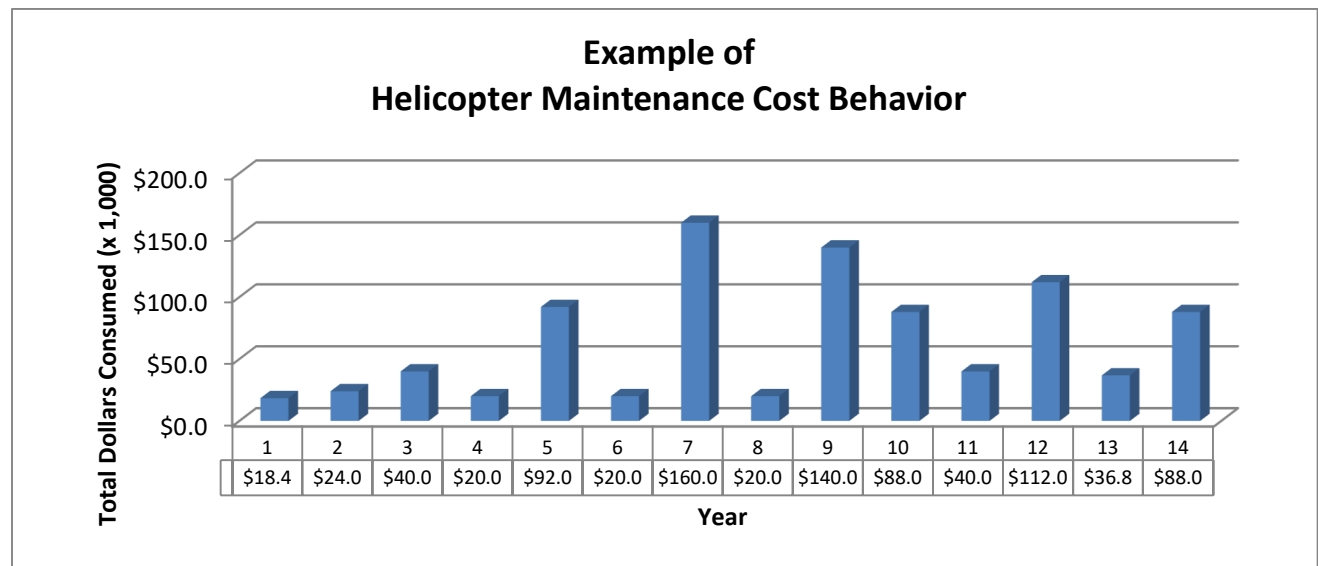
Section 5 contains information that fell outside of the scope of the Request for Proposal but caught our attention during our research and analysis.

Guaranteed Maintenance Programs

The term Guaranteed Maintenance Program (GMP) is a generic term to represent a concept that has become very popular in aviation in the last several years. Each entity that offers a program of this nature has their unique name. The most used trademarked name representing this concept was Rolls Royce's Power-by-the-Hour program (PBH). Another common reference is Pay-by-the-Hour. For clarity, we use GMP in this report to reference the concept.

What was the primary reason that pushed vendors to offer GMPs? The most obvious answer is their effect on the behavior of maintenance costs over a period of time. Chart 5-1 represents the maintenance costs of an actual helicopter whose costs we tracked over an extended period of time. The chart illustrates the erratic behavior of, mostly caused by scheduled events, maintenance costs. Using Year 7 as an example, how does an organization prepare for expenditures of this magnitude (\$160 K) when they have been experiencing significantly less costs in the prior years?

Chart 5-1



The more astute operators would estimate the costs of the future significant maintenance events and then set aside or reserve funds until the events occurred. The amount reserved would accumulate based on a calculated cost per hour for the future events. In essence, the operator would be reserving cash for future maintenance at a steady rate of hours flown.

For example, if the estimated cost to overhaul a main transmission gearbox was \$45,000 and its overhaul interval was 3,000 hours, the amount reserved for each hour flown would be \$15. If the assumptions, \$45,000 and 3,000 hours, turned out to be accurate, then the operator would have enough funds available to pay for the overhaul. Working through the exercise to build estimates for all of the scheduled maintenance as well as maintenance not scheduled (e.g. on-condition) would produce a total cost-per-hour to maintain the aircraft.

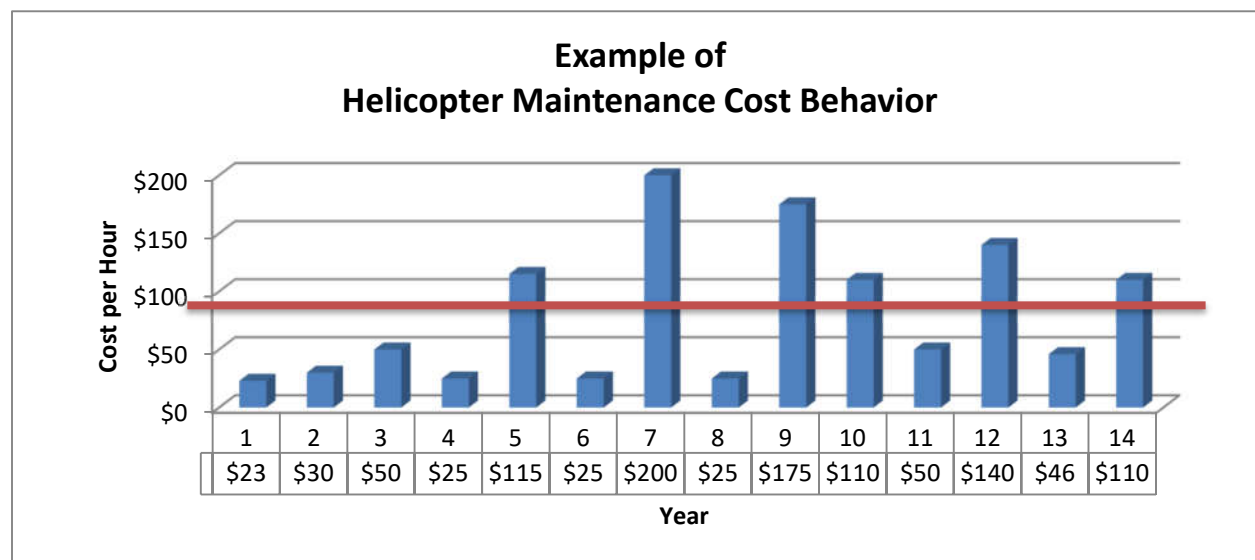
However, accurately estimating costs and avoiding premature component removals can be difficult and therefore risky from a cash flow perspective. If the transmission overhaul actually cost \$100,000 and occurred at 2,000 hours, the operator would not have enough funds to pay for the event. Multiplying the effects of missing estimates related to many of the overhaul components, life-limited items, and engine(s) could have a devastating effect on the organization's long-term viability. Compounding the issue of developing accurate estimates is the lack of reliable industry information regarding costs. An organization's experience is the best source but one that is not always available.

It is also tempting to spend a growing fund of cash for purposes other than future maintenance, especially when cash is tight for the organization. Additionally, reserving funds in a for-profit organization cannot be recognized as an expense until the maintenance event occurs; therefore, the hourly reserve is not tax deductible.

To answer the initial question more directly. What was the primary reason that pushed vendors to offer GMPs? GMPs offer predictability for maintenance costs, while shifting risk from the operator.

The variability of maintenance costs over time is eliminated. Chart 5-2 illustrates the smoothing effect (red line) a GMP would have for the helicopter in Chart 5-1. The operator, minus the effects of inflation, would pay a guaranteed rate for the duration of the contract, in this example \$80 per every hour flown.

Chart 5-2



As it relates to cost predictability, there are three other important benefits to consider.

- For governmental agencies, a GMP makes even more sense since few of them have budgeting mechanisms that efficiently handle the wide variation in maintenance costs from year-to-year. As a result, in low-cost years, there is a budget surplus that, more than likely, will be consumed on inventory. In high-cost years, the finance department may have to scramble to find the necessary funds. Regardless of the costs that are actually incurred each year, the effects of the typical maintenance costs are magnified if communication between operations and finance are poor.
- A GMP will serve as an insurance policy when premature maintenance events occur. If the main transmission requires an overhaul prior to the scheduled 3,000 hours, the GMP will cover the event. In essence, the risk has shifted from the operator to the entity that provides the GMP.
- A GMP offers even more certainty in a changing maintenance environment. Historically most of the drive train system, flight controls, hydraulics, and engines had scheduled maintenance intervals (i.e. main transmission example). However, continued product improvements have created trends to move these schedule maintenance intervals to maintenance based on the item's condition, also referred to as on-condition maintenance. By its nature, the predictability of this type of maintenance becomes more difficult, not only its timing but also the cost.

In addition to cost predictability, there is another significant attribute of GMPs that has become more prominent over the last several years. In fact, an aircraft's availability is viewed by for-profit operators as more important. An aircraft that is not available cannot generate revenue and revenue is what keeps the business running. However, the importance of availability is important for all types of operations if viewed from another perspective. If an aircraft is unavailable for extended periods of time, the organization is incurring additional costs that are more difficult to measure, costs that are not as obvious as maintenance costs.

For example, if an organization has one aircraft to perform its regular missions, there will be times due to maintenance that the aircraft will not be available. When it is not available for an extended period, the operation has several choices. It can

- Choose not to perform the mission, but if the mission is important, this is not a practical choice.
- Obtain temporarily (i.e. rent/lease) the use of another similar aircraft, which is not practiced much in our industry.
- Ask another organization to perform the mission, which is doable but not for a long period of time.
- Acquire another aircraft. This is not necessarily a bad solution, but it is expensive because of the acquisition costs for the second aircraft. Helicopters especially are an expensive asset.

Given the nature of aircraft and their maintenance, how does a GMP improve an aircraft's availability?

- **Consigned Inventory:** Often times the GMP provider will place inventory at the location of the operator. This is not normally part of the general contract, but if requested by the operator, certain key parts or components can be “stored” at the operator’s location. A replacement part that resides at the operator’s location will reduce the downtime due to maintenance, which in turns improves the availability rate.
- **Rotable Exchange or Rental Inventory:** The GMP provider will maintain a pool of rotable items. When requested, the provider will send the item to the operator to replace the existing item on the aircraft. In this scenario, the aircraft is unavailable only as long as it takes to remove and replace the item. In an exchange, the operator will operate the item until its replacement is required again. A rental will stay on the aircraft until the operator’s repaired item is ready for install. Using a rental doubles the unavailability rate since the remove/replace cycle is performed twice, once to install the rental and once to install the repaired part. Regardless, if it is an exchange or rental, the aircraft’s availability will improve significantly when compared to removing and waiting for the return of the same item. In many cases, the turnaround time for overhaul or repair can be several months.
- **Technical Service:** Initially, providers offered GMPs that covered basically the same thing, parts and repair costs for significant maintenance events and on-condition parts. As the programs have become more popular, operators have requested that GMPs be designed to meet their specific needs. As a result, providers now offer more variations in their GMPs and have expanded the scope of the coverage to include technical services. What technical services entails can vary by the program but could include technical engineering assistance, spare part priority, and even labor coverage. Each of these services has the potential to improve an aircraft’s availability by shortening the downtime due to maintenance.

What is important to evaluate when considering a GMP? Due to the recent ongoing expansion of offerings by the GMP providers and the fact that a GMP is very helpful in the marketing aspect of selling an aircraft, an operator should understand the many variables and factors that influence what a GMP potentially covers and what an operator will eventually pay to participate in a GMP. The following information highlights some of the more important factors to consider when deciding whether a GMP is appropriate for the organization.

- **Scope of Coverage:** As already mentioned, the range of offerings is broad. For example, within its HCare customer service programs, Airbus Helicopters offers several GMPs through its HSmart Material Management -- Repair by-the-Hour, Exchange by-the-Hour, Parts by-the-Hour, and Full by-the-Hour. In a more general view, operators should know if the GMP covers such things as unscheduled maintenance, labor, bulletins (mandatory or optional), troubleshooting, mission equipment, and shipping. Scope of coverage is also affected by whether the operator wants airframe only, engine only, or both airframe and engine coverage. Unless there is a special arrangement, the airframe and engine manufacturers offer separate programs.

- **Pricing:** Obviously, the scope of coverage will influence pricing, but there are three other important factors to consider. Due to the potential effect of the factors, it is very important for the operator to 1) understand what the pricing represents, and 2) negotiate with the provider for a rate that best represents the operator's situation.
 - First, what is the perspective of the provider when it offers a GMP contract? Is the hourly cost, which is the most common method for expressing the GMP pricing, based on a long-term or short-term perspective? Chart 5-2 illustrates this point. For the aircraft in the chart, we know after 14 years, the average cost per hour for maintenance was \$80 per hour. For simplicity, let us assume this represents a long-term perspective. From the same chart, we can also calculate that the actual cost experienced after five years was \$39 per hour. When the operator signs the contract will the GMP's hourly rate represent the short or long-term perspective? This becomes important when the perspective is short-term, and the operator plans to own the aircraft longer than the initial contract. How much will the hourly rate have to increase to "make-up" for the short-term rate that does not reserve for maintenance items and events that occur after five years?
 - The second factor to consider is how many annual flight hours will the operator accumulate during the period of aircraft ownership? For example, if the total flight hours were 200 annual hours over a ten-year period, the expected flight-hour rate should be lower than an operator accumulating 1,000 hours per year. The low-time operator would encounter fewer scheduled maintenance events in its 2,000 hours of ownership than 10,000 hours for the high-time operator. (A maintenance event that is based on calendar time has the potential to occur prior to the flight-hour limit.) If the provider's rate was the same regardless of flight activity, then the operator will want to pay special attention to the contract clauses at the time of sale.
 - A third factor to consider is the basis for pricing of parts when a GMP is not involved. Does the operator receive some level of discount pricing when purchasing spares or receiving services from the provider (e.g. government entity)? If so, does that basis also apply to the hourly rate of a GMP? Most GMP rates are based on list or "full" price.
- **Minimum Hour Requirement:** Is the GMP contract based upon a minimum number of annual flight hours? Because some maintenance events are based on calendar time (e.g. 12-year inspection), the GMP rate is based upon an assumption of minimum flight hours over a certain period of time. For example, if an aircraft has a ten-year inspection that is estimated to cost \$400,000, the measurement rate is time rather than activity. The GMP rate must reserve enough for the maintenance event causing the need for a certain level of flight hours in the ten-year period. For OCFA, this factor probably would become relevant.

- **Exiting the GMP:** What happens when an operator exits the program? Several factors may be relevant.
 - Is the contract transferable to the buyer? The GMP provider may not allow this to occur, which could affect the buyer's decision. If the contract does transfer, what portion of the accumulated reserve transfers back to the operator? Does the buyer have to pay a "buy-in" fee?
 - If the operator exits the contract, what happens to the accumulated reserve? Is there a penalty taken from the reserve for exiting or not renewing the contract? Most providers have a penalty.

- **Who offers GMP programs?** Historically, the manufacturers of their respective products offered these programs. Also, airframe manufacturers offer programs separately from engine manufacturers. As mentioned previously, GMPs' growing popularity are an important part of the marketing effort by the manufacturers, which means there can be flexibility in how the program is structured and what the program rate will be. Negotiations in both areas are important. Each of the manufacturers with candidate helicopters mentioned in Section 1 offer GMPs. The airframe manufacturers refer to their GMPs as:
 - Leonardo – Service Plans
 - Airbus Helicopters – Hcare, Smart and Easy
 - Bell Helicopter - Customer Advantage Plan (CAP)
 - Sikorsky – Total Assurance Plan (TAP) and Power Assurance Plan (PAP)

Jet Support Services, Inc., an independent provider of GMPs, has recently entered the helicopter market. Like the manufacturers, it offers many different types of coverage. Unlike the manufacturers, they will cover both the airframe and engines. JSSI will also set up independent trust accounts to retain the reserve funds.

Hangar Capacity

During our research, we wanted to check the dimensions of the OCFA's hangars at Fullerton Municipal Airport, since they are considering the Type I aircraft, which are significantly larger than the UH-1H Super Huey and 412EP helicopters. The aviation unit provided dimensions for the hangar bay where maintenance occurs, which is the facility's most restrictive space. The OCFA facility has two other hangar bays, for which we do not have the dimensions. We then checked the dimensions for the Type I helicopters.

In talking with Coulson-Unical, the CU-47D has been operating out of Los Alamitos airport and unless the base location changes, the hangar capacity is not relevant.

We obtained the S-70i helicopter dimensions from its information brochure for the helicopter. Table 5-1 Shows the dimensions for the OCFA hangar and the S-70i. This could be an issue, but the other two hangar bays' dimensions need to be checked.

Table 5-1		
OCFA Hangar and S-70i Dimensions		
Measurement - Feet		
Description	S-70i	OCFA Hangar
Door Width	53.67	55.00
Length/Depth	64.80	63.83
Height	17.20	16.50
Door Height	---	17.42