



# ORANGE COUNTY FIRE AUTHORITY AGENDA

## Human Resources Committee Meeting

Tuesday, February 4, 2020

12:00 Noon

### Orange County Fire Authority Regional Fire Operations and Training Center

1 Fire Authority Road

Room AE117

Irvine, California 92602

Rob Johnson, Chair

Vince Rossini, Vice Chair

Noel Hatch   Gene Hernandez   Ed Sachs   Dave Shawver   Michelle Steggell

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 Human Resources Committee after the posting of this agenda are available for review at the Orange County Fire Authority Regional Fire Operations & Training Center, 1 Fire Authority Road, Irvine, CA 92602 or you may contact Sherry A.F. Wentz, Clerk of the Authority, at (714) 573-6040 Monday through Thursday, and every other Friday from 8 a.m. to 5 p.m. and available online at <http://www.ocfa.org>

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



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

## CALL TO ORDER

**PLEDGE OF ALLEGIANCE** by Director Noel Hatch

## ROLL CALL

## PUBLIC COMMENTS

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

**1. PRESENTATIONS**

**A. Behavioral Health Program Update**

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

Recommended Action:

Receive the oral presentation.

**B. Cancer Awareness Prevention Program Update**

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

Recommended Action:

Receive the oral presentation.

**2. MINUTES**

**A. Minutes from the November 5, 2019, Regular Human Resources Committee Meeting**

Submitted by: Sherry Wentz, Clerk of the Authority

Recommended Action:

Approve as submitted.

**3. CONSENT CALENDAR**

**A. Recruitment & Selection Unit Update**

Submitted by: Nina Collins, Assistant Chief/Director/Human Resources Department

Recommended Action:

Receive and file the report.

**4. DISCUSSION CALENDAR**

**A. Annual Workers' Compensation Program Update**

Presented by: Nina Collins, Assistant Chief/Director/Human Resources Department

Recommended Action:

Receive and file the report.

## **ELECTION OF HUMAN RESOURCES COMMITTEE CHAIR AND VICE CHAIR**

### **COMMENTS**

#### **HUMAN RESOURCES DIRECTOR'S COMMENTS**

#### **COMMITTEE MEMBER COMMENTS**

### **CLOSED SESSION**

#### **CS1. CONFERENCE WITH LEGAL COUNSEL–ANTICIPATED LITIGATION**

Authority: Government Code Section 54956.9(b) – Significant Exposure to Litigation  
(32 Cases)

### **CLOSED SESSION REPORT**

**ADJOURNMENT** – The next regular meeting of the Human Resources Committee will be May 5, 2020, at 12 noon.

### **AFFIDAVIT OF POSTING**

I hereby certify under penalty of perjury under the laws of the State of California, that the foregoing Agenda was posted in the lobby, front gate public display case, and website of the Orange County Fire Authority, Regional Fire Training and Operations Center, 1 Fire Authority Road, Irvine, CA, not less than 72 hours prior to the meeting. Dated this 30<sup>th</sup> day of January 2020.

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

### **UPCOMING MEETINGS:**

Budget and Finance Committee Special Meeting	Tuesday, February 11*, 2020, 12:00 noon
Executive Committee Meeting	Thursday, February 27, 2020, 5:30 p.m.
Board of Directors Meeting	Thursday, February 27, 2020, 6:00 p.m.

\*Special Meeting date, due to Veteran's Day Holiday

# **Behavioral Health Program Update**

Human Resources Committee  
February 4, 2020



# Behavioral Health Program

## Historical Program (Pre-2018)

- Employee Assistance Program
- Critical Incident Stress Management (CISM)/Peer Support Team
  - 15 employees serving both roles
- Chaplains Program
- Benevolent Association
- Academy Training
  - 30 minutes (CISM and Chaplains Program)

## Current Program

- Behavioral health and wellness services – The Counseling Team International
- Peer Support Team
  - 45 team members
- CISM Team
  - 18 team member
  - Updated CISM SOP
  - CISM Duty Chief designated on each shift
  - Chief Officer training complete
- Chaplains Program
- Benevolent Association

# Behavioral Health Program

## Historical Program (Pre-2018)

- Employee Assistance Program
- Critical Incident Stress Management (CISM)/Peer Support Team
  - 15 employees serving both roles
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- Benevolent Association
- Academy Training
  - 30 minutes (CISM and Chaplains Program)

## Current Program

- Training/Awareness
  - Firefighter Academy (4 hours)
  - Chief Officer Academy (2 hours)
  - Captains Academy (2 hours)
  - Dispatcher Academy (2 hours)
  - Suicide prevention & awareness training for all personnel in 2019
- Behavioral health screening included in WEFIT exams
  - Coordination between Hoag Executive Health and behavioral health resources



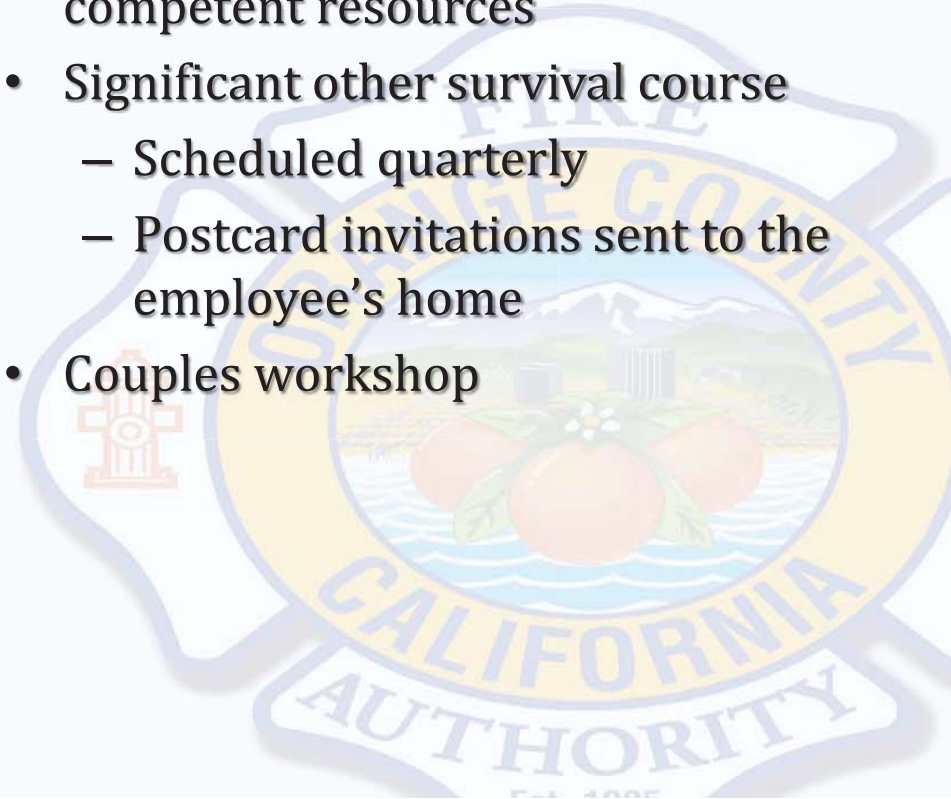
# Behavioral Health Program

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- Employee Assistance Program
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  - 30 minutes (CISM and Chaplains Program)

## Current Program

- Network of vetted culturally competent resources
- Significant other survival course
  - Scheduled quarterly
  - Postcard invitations sent to the employee's home
- Couples workshop



# Behavioral Health Program

## Historical Program (Pre-2018)

- Employee Assistance Program
- Critical Incident Stress Management (CISM)/Peer Support Team
  - 15 employees serving both roles
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  - 30 minutes (CISM and Chaplains Program)

## Current Program

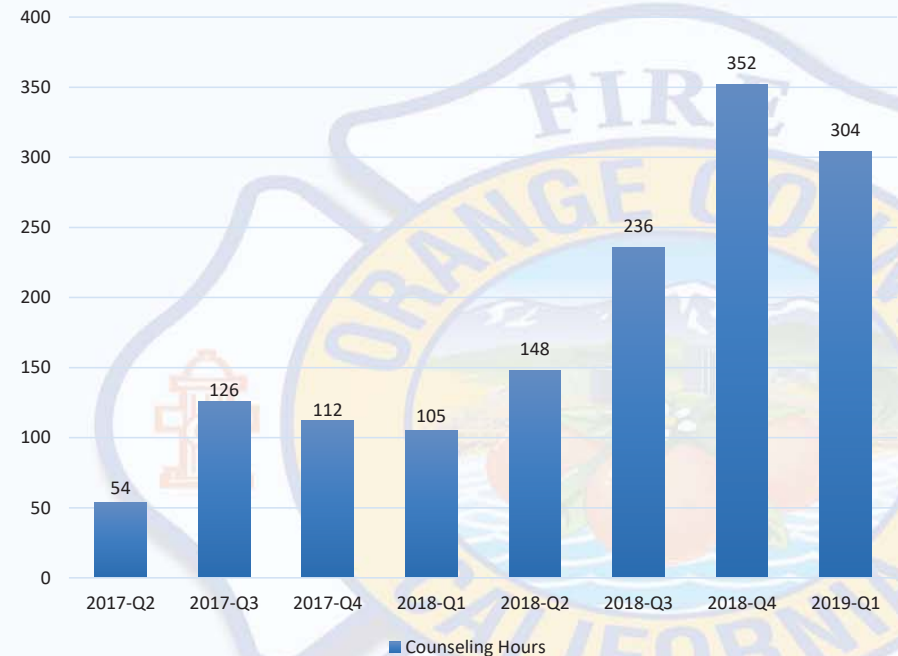
- OCFA health and wellness app
  - Get Help Now
  - Firefighter wellness toolkit
  - Self-assessments
  - Therapist finder
  - Occupational clinic finder
  - Peer support team members
  - Chaplains
  - Cancer awareness
  - WEFIT
  - Guided meditations & sleep sounds



# Leading Indicators of Cultural Change

- Increased utilization of behavior health and wellness services:
  - Counseling
  - Peer support team
  - Vetted resources
- Feedback

The Counseling Team International Statistics  
Two-Year Rolling Period



# Behavioral Health Program - Future

- Vet clinicians in our workers' compensation program medical provider network for cultural competence and approach
- Organize peer support team into specialty areas
- Utilize peer support team members to support employees on workers' compensation
- Increase retiree awareness of the services available
- Continue the branding of this program under the WEFIT Program



# **Behavioral Health Program**

**Questions?**



# **MINUTES ORANGE COUNTY FIRE AUTHORITY**

**Human Resources Committee Meeting  
Tuesday, November 5, 2019  
12:00 Noon**

**Regional Fire Operations and Training Center  
Room AE117  
1 Fire Authority Road  
Irvine, CA 92602**

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## **CALL TO ORDER**

A regular meeting of the Human Resources Committee was called to order on November 5, 2019, at 12:00 p.m. by Chair Johnson.

## **PLEDGE OF ALLEGIANCE**

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

## **ROLL CALL**

**Present:** Rob Johnson, Cypress  
David Shawver, Stanton  
Gene Hernandez, Yorba Linda  
Noel Hatch, Laguna Woods  
Michele Steggell, La Palma

**Absent:** Ed Sachs, Mission Viejo  
Vince Rossini, Villa Park

## **Also present were:**

Fire Chief Brian Fennessy  
Assistant Chief Randy Black  
Assistant Chief Jim Ruane  
Assistant Chief/Director Nina Collins  
Clerk of the Authority Sherry Wentz

Deputy Chief Lori Zeller  
Assistant Chief Robert Cortez  
Assistant Chief Lori Smith  
Director of Communications Colleen Windsor  
Legal Counsel Barbara Raileanu

## **PUBLIC COMMENTS (F: 12.02D3)**

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

### **1. PRESENTATIONS**

No Items.

### **2. MINUTES**

#### **A. Minutes from the September 17, 2019, Special Human Resources Committee Meeting (F: 12.02D2)**

On motion of Director Hernandez and second by Director Shawver, the Human Resources Committee voted by those present to approve the Minutes of the September 17, 2019, Special Human Resources Committee meeting as submitted. Director Hatch was absent for the vote.

Director Hatch arrived at this point (12:03 p.m.)

### **3. CONSENT CALENDAR**

No Items.

### **4. DISCUSSION CALENDAR**

#### **A. Organizational Development Project Update (F: 17.16)**

Fire Chief Brian Fennessy provided an overview and update on the Organizational Development Project.

On motion Director Hernandez and second by Director Shawver, the Human Resources Committee voted unanimously by those present to receive and file the report.

#### **B. Third Quarter Recruitment and Selection Unit Update (F: 12.02D6)**

Assistant Chief Nina Collins provided an overview on the Recruitment and Selection Unit Update.

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



## **COMMITTEE MEMBER COMMENTS (F: 12.02D4)**

Director Shawver thanked the crew from Fire Station 46 (Stanton) that responded to a medical emergency with respect and without disruption during an ongoing church service.

Chair Johnson thanked staff for their reports.

## **CLOSED SESSION (F: 12.02D5)**

### **CS1. CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION**

Authority: Government code section 54956.9(b) – Significant Exposure to Litigation (31 cases)

General Counsel Barbara Raileanu reported the Human Resources Committee would be convening to Closed Session to consider the matter on Agenda identified as CS1, Conference with Legal Counsel-Anticipated Litigation.

Chair Johnson recessed the meeting to Closed Session at 12:45 p.m.

Chair Johnson reconvened the meeting from Closed Session at 1:03 p.m., with all members present.

## **CLOSED SESSION REPORT (F: 12.02D5)**

Legal Counsel Barbara Raileanu stated there were no reportable actions.

**ADJOURNMENT** – Chair Johnson adjourned the meeting at 1:04 p.m. The next regular meeting of the Human Resources Committee will be February 5, 2020, at 12:00 noon.

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



## Orange County Fire Authority **AGENDA STAFF REPORT**

**Human Resources Committee Meeting  
February 4, 2020**

**Agenda Item No. 3A  
Consent Calendar**

### **Recruitment & Selection Unit Update**

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

Nina S. Collins, Assistant Chief/Director [ninacollins@ocfa.org](mailto:ninacollins@ocfa.org) 714.573.6353  
Human Resources Department

Tia Grasso, Human Resources Manager [tiagrasso@ocfa.org](mailto:tiagrasso@ocfa.org) 714.573.6835

#### **Summary**

This routine agenda item is submitted to the Human Resources (HR) Committee to provide a final 2019 update, as well as a current report on the Recruitment & Selection Unit's activities.

#### **Prior Board/Committee Action(s)**

Not Applicable.

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

Receive and file the report.

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

Not Applicable.

#### **Fiscal Impact**

Not Applicable.

#### **Background**

The Recruitment & Selection Unit of Orange County Fire Authority's (OCFA) Human Resources Department works diligently to fill OCFA's vacancies with highly qualified and diverse candidates. This staff report provides a summary of the Recruitment & Selection Unit's efforts in 2019, the current and pending recruitment and selection processes, and an update on the 2<sup>nd</sup> Annual Girls Empowerment Camp.

#### **2019 Recruitment Overview**

For the year ending December 31, 2019, Recruitment & Selection conducted ninety-eight promotional, safety, and non-safety recruitments. Staff received and reviewed 12,103 applications, invited 5,643 candidates to written examinations, 2,911 to oral interviews, 2,318 to performance examinations, and 354 candidates were hired or promoted.

Currently, OCFA has three safety promotional recruitments (Fire Battalion Chief Academy 26, Fire Apparatus Engineer Academy 31, and Fire Captain Academy 28), two safety recruitments (Firefighter Trainee Academy 50/51 and Hand Crew Firefighter), two internal safety recruitments, fourteen non-safety recruitments and two volunteer recruitments at different phases in selection process. There are three safety recruitment processes (Firefighter Trainee, Chief Pilot, and Fire Pilot) scheduled to open before the end of January 2020 along with seven non-safety recruitments

that are pending finalization of the recruitment and selection process prior to opening. Additional information regarding OCFA's current and pending recruitments may be referenced on the detailed Recruitment and Selection Unit Update (Attachment 1).

### ***Outreach & Recruitment Team***

For the last six months the team has participated in outreach events that include, military job fairs, college job fairs, college sports program fairs, and junior college fire academies. We continue to work on a website that guides prospective candidates through each part of our testing process and gives them resources to be successful. We have also secured "join OCFA" as a web address and on all social media platforms. The additional outreach targeting potential candidates at different ages and levels of preparation, assists us with creating a pipeline of interested potential candidates.

Following the success of the inaugural Girls Empowerment Camp (GEC) in June 2019, OCFA will host its 2<sup>nd</sup> Annual GEC on March 7-8, 2020. This year we will be hosting 100 campers ages 14-18.

Public marketing of the event on our social media platforms and website began the week of January 13, 2020. Registration for the free event will open on February 1, 2020. This year's GEC promotional flyer is attached for your reference (Attachment 2).

### **Attachment(s)**

1. Detailed Recruitment and Selection Unit Update, January 2020
2. 2<sup>nd</sup> Annual Girls Empowerment Camp Flyer

**Agenda Staff Report Attachment  
Recruitment and Selection Unit Update  
January 2020**

**Safety Recruitments:**

The recruitments listed below are open and promotional safety assignments.

**Fire Apparatus Engineer – Academy 31**

- Academy 31 scheduled for 1/6 – 02/27/2020
- 20 candidates are currently participating in Academy 31

**Fire Battalion Chief – Academy 26**

- Academy 26 scheduled for 01/06 – 02/06/2020
- 12 candidates are currently participating in Academy 31
- Chiefs oral interview are scheduled for 02/10/2020

**Fire Captain – Academy 28**

- 52 candidates participating in written exam scheduled for 1/16/2020
- Oral interviews scheduled 2/10 – 2/13/2020
- Academy 28 scheduled for 3/16 – 4/23/2020

**Firefighter Trainee – Academy 50**

- Academy 50 begins 2/3/2020
- Academy 50 graduation 5/21/2020

**Firefighter Trainee – Academy 51**

- Academy 51 begins 8/14/2020
- Academy 51 graduation 12/03/2020

**Hand Crew Firefighter**

- 36 candidates are participating in Chief's Interviews scheduled for 01/15/2020 and 01/17/2020

**Internal Staff Special Assignments**

The posting listed below are non-promotional, special assignment opportunities.

**Academy 50 Instructor**

- 8 candidates selected and scheduled to start 01/03/2020

**Peer Fitness Coordinator**

- 22 candidates participating in oral interviews scheduled for 01/09 – 01/17/2020

**Non-Safety Recruitments**

In addition to the safety and special assignment recruitments listed above, there are currently eighteen (18) non-safety recruitments at various stages of the recruitment process.

**Administrative Assistant, Extra Help – Communications**

- Candidate scheduled to start 01/21/2020

Administrative Assistant, Extra Help – Emergency Medical Services

- Oral Interviews scheduled for 01/29/2020

Education Supervisor

- Oral interviews scheduled for 01/22/2020

Facilities Maintenance Coordinator

- 2 candidates selected and scheduled to start 01/13/2020

Fire Communication Dispatcher

- 4 candidates selected from previous recruitment and scheduled to start 01/31/2020

Fire Communications Dispatcher

- Oral interviews scheduled for 01/13 – 01/17/2020
- Selection interviews scheduled for 02/4 – 02/05/2020

Fire Prevention Trainee

- Oral interviews scheduled for 01/15 – 01/16/2020
- Selection interviews scheduled for 01/29/2020

Human Resources Analyst I/II

- Two candidates selected and scheduled to start 02/03/2020

Management Analyst

- Oral interview scheduled for 01/14/2020 and 01/16/2020
- Selection interviews scheduled for 01/23/2020

Payroll/Accounts Payable Manager (CPS)

- Candidate selected and scheduled to start 02/03/2020

Purchasing Manager

- Recruitment closes on 02/14/2020

Senior Account Support Specialist

- Candidate selected and scheduled to start 01/27/2020

Senior Fire Apparatus Technician

- Candidate selected and scheduled to start 01/13/2020

Service Center Technician II

- 5 candidates selected, start dates pending completion of onboarding process

**Volunteer Recruitments**

The following recruitments are OCFA volunteer staffed positions.



Reserve Firefighter

- SROs complete interviews 1/6/ - 1/30/2020
- Selected candidates to start “Task Book” (academy) 4/18/2020

Chaplain

- Recruitment opens 01/18/2020

**Pending Recruitments**

The following recruitments are pending hiring manager approval of recruitment and selection process

- Chief Fire Pilot
- Communications Installer
- Deputy Fire Marshal
- EMS Nurse
- EMS Nurse Educator Supervisor
- Fire Apparatus Technician
- Fire Communication Dispatcher Supervisor
- Fire Pilot
- Firefighter Trainee
- IT Analyst

# Orange County Fire Authority

## **GIRLS EMPOWERMENT CAMP**

**Saturday, March 7 &  
Sunday, March 8, 2020**  
**8 am - 5 pm both days**  
*Lunch included*

**1 Fire Authority Road  
Irvine, CA 92602**



**This event is FREE!**  
**All kids ages 14-18 are welcome!**

**Register at:**  
**[ocfa-gec.eventbrite.com](https://ocfa-gec.eventbrite.com)**



Orange County Fire Authority  
**AGENDA STAFF REPORT**

Human Resources Committee Meeting  
February 4, 2020

Agenda Item No. 4A  
Discussion Calendar

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**Annual Workers' Compensation Program Update**

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**Contact(s) for Further Information**

Nina Collins, Assistant Chief/Director  
Human Resources Department

[ninacollins@ocfa.org](mailto:ninacollins@ocfa.org)

714.573.6353

Jonathan Wilby, Risk Manager

[jonathanwilby@ocfa.org](mailto:jonathanwilby@ocfa.org)

714.573.6832

**Summary**

This annual agenda item provides an update on the self-insured Workers' Compensation Program and the performance of CorVel Corporation, the third-party administrator, since June 1, 2014.

**Prior Board/Committee Action**

Not Applicable.

**RECOMMENDED ACTION(S)**

Receive and file the report.

**Impact to Cities/County**

Not Applicable.

**Fiscal Impact**

Not Applicable.

**Background**

The Orange County Fire Authority (OCFA) was approved by the Division of Industrial Relations Self-Insurance Plans in 2002, to have a self-insured Workers' Compensation Program, which is administered through a Third-Party Administrator (TPA). Since June 1, 2014, the TPA for the OCFA self-insured Workers' Compensation Program has been CorVel Corporation.

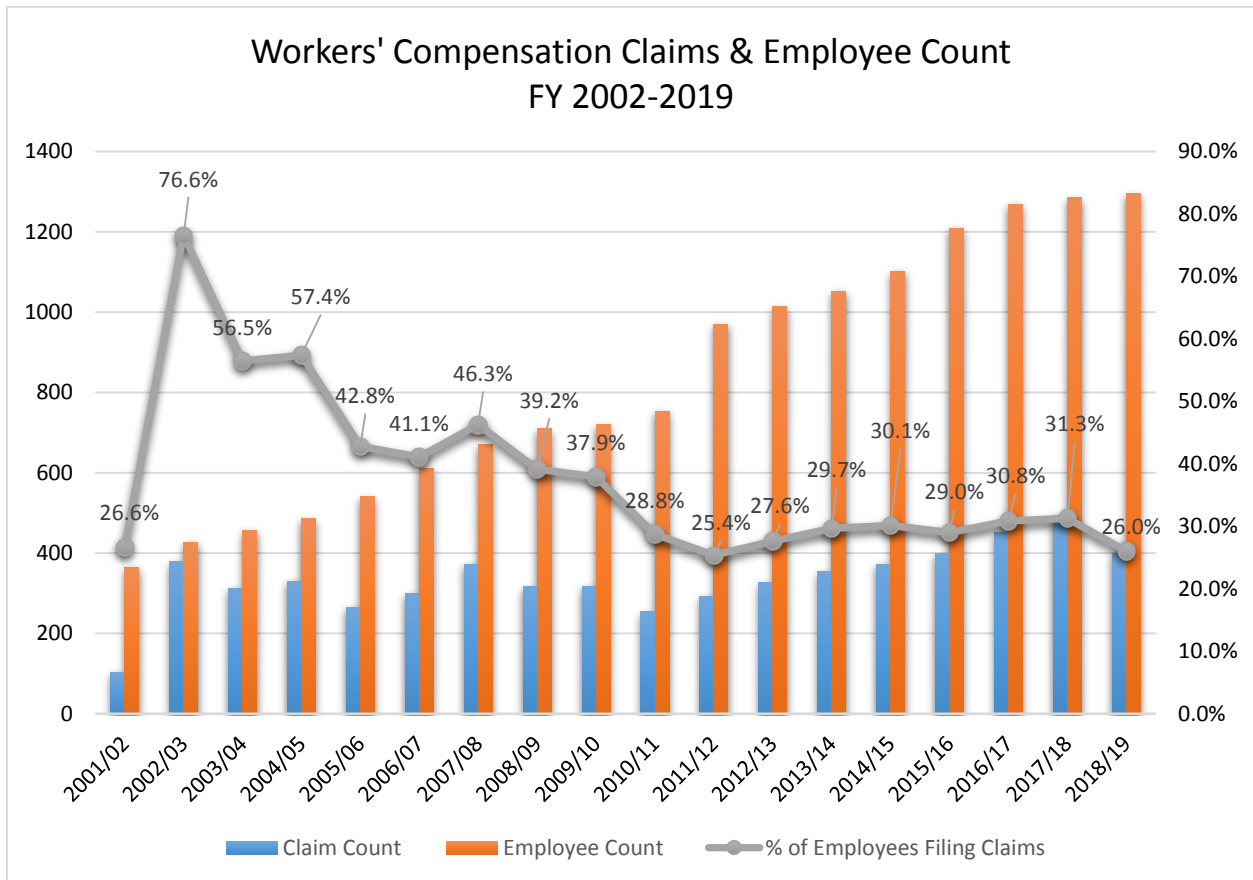
***Budgeting for Self-Insurance Fund***

An independent actuary is used twice a year to project future workers' compensation costs and to update the amount of funding required to self-insure the OCFA Workers' Compensation Program. The projection of costs and necessary funding are determined following an analysis of claims data dating back to the beginning of the self-insured program. Claims data includes case reserves set by the TPA, historical loss experience, and industry trends. The OCFA currently has 975 open claims dating back to the inception of the self-insured Workers' Compensation Program.



Claim Category	2017	2018	2019	Percent Change
Death	6	6	6	0.0%
Indemnity	641	535	537	0.4%
Maintenance	169	342	397	16.1%
Medical Only	50	59	35	-40.7%
<b>Total</b>	<b>866</b>	<b>942</b>	<b>975</b>	<b>3.5%</b>

Over the past year, the OCFA averages approximately 30 claims a month or 361 claims during the year (not including first aid injuries). This represents a 19.2% decrease from the previous fiscal year.



It's important to note that the 361 claims in 2019 represent all claims that were filed. Thirty-nine of these claims were denied where the OCFA expects to have no liability. There were 229 indemnity claims resulting in days away from work, 131 medical-only claims that have a life expectancy of 30- to 90-days, and 1 death claim. To date, 131 of the 361 claims resulted in claims cost less than \$5,000 per claim.

See the attached extended background that provides additional comprehensive details and explanations of the programmatic enhancements and savings.

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

Actuarial Analysis with data valued as of December 31, 2018

## **Background**

### ***Analysis of Actuary Projections Based on Claims Data as of June 30, 2019***

The OCFA policy is to fund the Workers' Compensation Program at the 50% confidence level for estimated outstanding losses which includes case reserves, the development on known claims and incurred but not reported claims (IBNR), allocated and unallocated expenses. The actuarial projection for long-term liabilities at the 50% confidence level as of June 30, 2019, is \$86,616,986 as identified in the December 31, 2018, actuary report.

The actuary has projected the liabilities to be incurred in FY 2019/20 to be \$19,330,976, which represents the reserve value of all claims with dates of loss during each period, capped at the OCFA's self-insured retention level of \$2.0M. This report is used as a guide to establishing appropriate loss reserves estimates on the self-insurance program.

The actuary noted the increase in projected ultimate losses is attributed to increases in payroll, open claims count, and claim severity.

### ***Workers' Compensation Program Overview***

Risk Management conducted a major overhaul of the self-insured Workers' Compensation Program in 2014. We continue to evaluate and monitor the program for services that will provide benefits that will "cure and relieve the effects of the injury" while improving program results. The current program features include an Alternative Dispute Resolution Program, occupational clinics, medical provider network, utilization review, nurse advocacy, and Pharmacy Benefits Management Program.

The OCFA currently has 975 open workers' compensation claims being administered by the third-party administrator (TPA), ranging from indemnity (loss time), medical only, and future medical cases. There has been a 3.5% increase in total open claims from 942 to 975 during this reporting period, which impacts our long-term liabilities.

<b>Open Claims</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>Percent Change</b>
Death	6	6	6	0.0%
Indemnity	641	535	537	0.4%
Medical Only	50	59	35	-40.7%
Maintenance	169	342	397	16.1%
<b>Grand Total</b>	<b>866</b>	<b>942</b>	<b>975</b>	<b>3.5%</b>

**Table 1: Summary of Open Claims**

### ***Medical Provider Network (MPN)***

The OCFA implemented an MPN on July 1, 2014, which has provided employees with access to physicians that specialize in workers' compensation care and a 24/7 nurse advocacy program. OCFA employees have experienced reduced delays in medical treatment and faster return to work due to the doctors' familiarity with the regulatory requirements. The OCFA experienced several claims that had a significant fiscal impact on our program in FY 2018/19 that included major hospitalizations, surgeries (including heart transplant), cancer, and deaths. The OCFA was able to reap significant savings off the cost of medical services by utilizing facilities that were within the MPN. This results in a reduction in the OCFA's financial liability.



### ***Occupational Clinics***

The OCFA started utilizing occupational clinics on July 1, 2014, which allowed employees to have 24/7 access to a physician within close proximity to all eighty-six fire stations and the Regional Fire Operations and Training Center. Risk Management continues to monitor the occupational clinics through the use of employee satisfaction surveys and site visits to ensure they are meeting established OCFA protocols, expectations, and performance standards. The table below summarizes MPN and occupational clinic usage and savings for the fiscal year.

<b>Occupational Clinic Usage</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Total Claims Reported	434	447	361
Total Claims using Occupational Clinics	277	303	217
Clinic Usage %	68.7%	67.8%	74.0%
Satisfaction Rating for Occupational Clinics	98.6%	98.1%	98.6%
Total MPN Usage %	76.8%	78.6%	75.4%
Total Bills Received*	13,574	14,043	15,042
Total Bills in MPN	\$10,421	\$11,037	\$11,658
<b>MPN Savings</b>	<b>\$7,248,775</b>	<b>\$7,149,274</b>	<b>\$5,588,069</b>

**Table 2: MPN and Occupational Clinic Usage and Savings**

*\*Does not include med-legal, DME, or Rx bills*

### ***Pharmacy Benefits Program (PBM)***

The PBM was designed to reduce the cost of medication and medical supplies by providing generics wherever possible and ensuring pharmacists in the program comply with Labor Code §4600.2 and Senate Bill (SB) 1160, which became effective January 1, 2018. SB 1160 assists with over-prescribing medication and opioid drugs by requiring new procedures for reviewing determinations regarding the medical necessity of medication prescribed pursuant to drug formulary adopted by the Administrative Director. The pharmacy “first fill” card instituted as part of the program has prevented prescription delays and out-of-pocket expenses to the employee and increased savings above the official medical fee schedule. The table below summarizes the PBM program usage and savings.

<b>Pharmacy Benefits Program Usage</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Total Prescriptions Dispensed	2,307	2,347	2,438
Prescriptions Dispensed through PBM	1,942	2,074	2,270
CorVel PBM Usage %	84.2%	88.4%	93.1%
Prescription Charges	\$730,140	\$796,413	\$846,299
Total Paid	\$338,883	\$493,178	\$516,275
<b>Pharmacy Savings</b>	<b>\$391,257</b>	<b>\$303,235</b>	<b>\$330,023</b>

**Table 3: PBM Program Usage and Savings**

### ***Alternative Dispute Resolution Program (ADR)***

The ADR program is a collaborative effort between the Orange County Professional Firefighters Association, Local 3631, and Executive Management, which was designed to expedite the delivery of workers' compensation benefits by eliminating the delay process of the traditional workers' compensation system when disputes arise. The program was approved by the Department of Industrial Relations and became effective on October 1, 2014. The OCFA has experienced fewer delays, less litigation, faster medical treatment, and earlier resolution of disputes than in the traditional workers' compensation system, since the implementation of this program. OCFA's litigation rate remains below industry standards.

<b>ADR Tracking</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Total Claims Count	461	475	361
Count of Claims Eligible for ADR	422	427	339
Number of Claims that Entered into ADR	60	55	46
Percentage of Litigated Claims	7.2%	5.8%	8.9%
Average # of days until ADR Resolution	78	70	67

**Table 4: ADR vs. Traditional Workers' Compensation System Comparison**

### ***Enhanced Transitional Return to Work Program***

The enhancements in the transitional return to work program, which were implemented on August 1, 2015, include improved coordination and communications with departments and risk management, matching return to work assignments with the skills of the injured worker, establishing a central job bank of return to work assignments, and formal notification of restrictions between the supervisor and injured worker. These enhancements have allowed Risk Management to expedite the return to work process and return more employees to a light-duty assignment which has reduced disability, enhanced the employee's sense of value, expanded job skills, improved retention and productivity, and maximized statutory workers' compensation benefits. The chart below summarizes the enhanced transitional return to work program for the fiscal year.

<b>Transitional Return to Work Program</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Employees Returned to Light Duty	48	55	33
Returned to Light Duty Within 4 Business Days	44	54	31
Percent of Employees Returned to Light Duty Within 4 Business Days	78.6%	85.7%	77.5%
Number of Assignments Filled with One or More Employees	13	20	13
Average Days on Light Duty	60	30	40
<b>Total Employees Eligible to Return to Light Duties</b>	<b>56</b>	<b>63</b>	<b>40</b>

**Table 5: Transitional Return to Work Program Summary**

### ***Claims Settlement Committee***

At its January 24, 2019, meeting, the Board of Directors disbanded the Claims Settlement Committee and established a policy delegating workers' compensation claims settlement authority up to \$250,000 to the Fire Chief or his/her designee and settlement authority above \$250,000 to the full Board of Directors. The chart below summarizes the number of claims settlements that were approved during FY 2018/19.

<b>Settlement Approvals</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Fire Chief or Designee (Compromise and Release Settlements)		5	10
Fire Chief or Designee (Stipulation and Award Settlements)	59	68	151
Claims Settlement Committee (Compromise and Release Settlements)	19	8	3
Claims Settlement Committee (Stipulation and Award Settlements)	15	15	0
Board of Directors	3	0	0
<b>Total Claim Settlements</b>	<b>79</b>	<b>96</b>	<b>164</b>

Table 6: Settlements Approved

### ***Summary and Conclusions***

Risk Management strives to ensure the services provided by our TPA remain compliant with the California workers' compensation laws and meet the needs of the OCFA employees. The frequency of claims decreased by 19.2% during the fiscal year, which impacted the costs and savings associated with the Workers' Compensation Program. The Workers' Compensation Program continues to result in enhanced medical care to the injured employee and significant financial savings to the OCFA.

	<b>2017</b>	<b>2018</b>	<b>2019</b>
TPA Administrative Fees	\$560,952	\$572,171	\$583,614
Bill Review Fee	\$647,782	\$1,198,337	\$708,176
Utilization Review Fees	\$165,605	\$160,116	\$202,440
Utilization Review Savings	(\$383,506)	(\$222,903)	(\$672,001)
PBM Savings	(\$455,913)	(\$303,235)	(\$330,023)
Bill Review Savings	(\$7,248,775)	(\$10,805,906)	(\$8,628,023)
<b>Total Costs/Savings</b>	<b>(\$8,088,194)</b>	<b>(\$11,332,044)</b>	<b>(\$9,630,047)</b>

Table 7: Overall Workers' Compensation Program Savings

Actuarial Study of the Workers Compensation Program  
of

**ORANGE COUNTY FIRE AUTHORITY**

Based on Claims Data Valued as of December 31, 2018  
("Valuation Date") to Estimate Loss Reserves as of  
June 30, 2019 ("Accounting Date") and Information  
Received through May 1, 2019 ("Review Date")

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Report Date: May 2, 2019

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## **I. BACKGROUND AND OBJECTIVES**

### **A. Background**

The Orange County Fire Authority (the “Authority” or “OCFA”) is a joint powers authority consisting of 23 partner cities and unincorporated areas in Orange County, California. The Authority was formed in March, 1995, and provides fire, emergency medical, search and rescue, fire prevention, and hazardous materials response services from 71 fire stations throughout Orange County. The population served includes over 1.3 million residents in over 551 square mile area of Orange County.

On March 1, 2002, the Board of Directors adopted a self-insurance workers compensation program. The self-insured retentions (“SIR”) have been \$600,000 per occurrence prior to January 1, 2004. Since January 1, 2004, the SIR has been \$2,000,000 per occurrence.

OCFA has purchased excess insurance attaching at the SIR. The current excess insurer is California State Association of Counties, Excess Insurance Authority (“CSAC-EIA”).

Through June 1, 2014, York Claims Service, Inc. (“York”) was the third party administrator handling the Authority’s claims. Effective June 1, 2014, claims are handled by CorVel Corporation (“CorVel”).

On April 20, 2012, OCFA entered into an agreement with the City of Santa Ana to assume its fire department workers’ compensation exposures. These exposures are included in this report.

#### **Purpose and Context of the Report**

This report has been prepared to guide the Authority in establishing appropriate loss reserve estimates on the self-insurance program described above. Therefore, the report should be treated as a confidential, internal document belonging to the Authority. Authorized recipients of the report are counseled to protect the confidentiality of the report.

The report should not be used for any other purpose other than those stated above. Moreover, the findings and conclusions contained in this report should be interpreted within the context of the specified purpose.

The findings and recommendations contained in this report are based on claims and financial data as of the valuation date. It is also based on any other pertinent information provided to us through the review date. (Both the valuation date and review date are specified on the cover of this report.) We are not aware of any information subsequent to these dates that would have a material impact on our analysis, findings or recommendations.

## B. Objectives

The specific objective of this study is to:

1. **Estimate the Outstanding Losses as of June 30, 2019.** Estimate the outstanding losses (including allocated loss adjustment expenses [ALAE]) and Unallocated Loss Adjustment Expenses as of June 30, 2019.

The estimated outstanding losses are the accrual cost of unpaid claims valued as of the accounting date. The estimated outstanding losses include case reserves, the development on known claims and incurred but not reported (IBNR) claims. ALAE are the direct expenses for settling specific claims. ULAE are the expenses for claims administration. The amounts reflect the specific and annual aggregate limits maintained by OCFA.

2. **Project Ultimate Limited Losses for the Periods Effective July 1, 2018-19 through July 1, 2022-23.** Project the ultimate limited losses including ALAE and ULAE for claims with dates of loss during the next three upcoming periods.

The projected ultimate limited losses are the ultimate settlement value of all claims with dates of loss during each period, but capped at the Authority's SIR.

3. **Project Losses Paid for the Next Five Fiscal Years.** Project the losses paid (including allocated loss adjustment expenses ALAE and ULAE for claims disbursements made during 2018/19 through 2022/23.

4. **Affirm Government Accounting Standards Board Statement Number 10 ("GASB 10").**

Issue a statement affirming that the work performed and the conclusions contained in this report are consistent with GASB 10.

## II. Conclusions

We have reached the following conclusions:

1. **Estimate the Outstanding Losses as of June 30, 2019.**

We estimate the outstanding losses as of June 30, 2019 to be as shown in Table II-1.

**Table II-1**  
**Estimated Outstanding Losses (including ALAE) and ULAE**  
**As of June 30, 2019**

Confidence Level (1)	Estimated Outstanding Losses (2)	Present Value of Estimated Outstanding Losses (3)
(A) Expected (i.e., 50%)	\$90,592,339	\$86,616,986
(B) 60%	\$94,216,033	\$90,081,665
(C) 70%	\$100,557,496	\$96,144,854
(D) 80%	\$108,710,807	<b>\$103,940,383</b>
(E) 90%	\$117,770,041	\$112,602,082
(F) ULAE	\$6,341,464	<b>\$6,063,189</b>

Note: (A) is extracted from Appendix C, Exhibit WC-12, page 1, columns (9) and (11).  
(B) through (E) are based on (A) and confidence level factors derived from a loss distribution with a Coefficient of Variation of 0.20 and actuarial judgment.  
(F) = (A) x 0.07 based previous analyses and actuarial judgment.

The estimated outstanding losses reflect the insurance limits maintained by OCFA. The amounts in column (2) above are undiscounted. The amounts in column (3) are discounted based on a 1% interest rate on earnings assumption.

Row (F), column (3) shows the discounted ULAE provision. Both provisions should be recognized on the Authority's financial statements.

The estimated ULAE in Table II-1, row (F) is the total dollar amount required to handle all claims that have occurred on or before June 30, 2019 to their final settlement.

### Current Liabilities vs. Long-Term Liabilities

Current liabilities are the amount of estimated outstanding losses that OCFA is expected to pay off during the next fiscal year. Long-term liabilities are the remaining estimated outstanding losses (i.e., the portion of estimated outstanding losses that will be paid off in fiscal years beyond the upcoming fiscal year.)

The forecast of current liabilities for the estimated outstanding losses as of June 30, 2019 total approximately \$14.6 million (cf. Exhibit WC-12, page 2, column (8), excluding the projected payments for claim period 2019/20). The estimate of long-term liabilities is the difference between the amounts shown in Table II-1 and the forecast of current liabilities.

2. **Project the Ultimate Limited Losses (including ALAE) and ULAE for 2018/19 through 2022/23.**

We project the ultimate limited losses (including ALAE) and ULAE for claims with dates of loss in 2018/19 through 2022/23 to be as shown in Table II-2A through Table II-2E, respectively.

**Table II-2A**  
**Projected Ultimate Limited Losses (including ALAE) and ULAE**  
**July 1, 2018-19**

Confidence Level (1)	Projected Ultimate Limited Losses (2)	Present Value of Ultimate Limited Losses (3)
(A) Expected (i.e., 50%)	\$20,573,946	\$19,330,976
(B) 60%	\$21,602,643	\$20,297,525
(C) 70%	\$23,454,298	\$22,037,313
(D) 80%	<b>\$25,923,172</b>	\$24,357,030
(E) 90%	\$29,832,222	\$28,029,915
(F) ULAE	\$1,440,176	\$1,353,168

Note: (A) is extracted from Appendix C, Exhibit WC-9, columns (9) and (12).

(A) is based on projected payroll of approximately \$185,518,000.

(B) through (E) are based on a (A) and confidence level factors derived from a loss distribution with a Coefficient of Variation of 0.25 and actuarial judgment.

(F) = 7.0% of (A), which is based on historical TPA fees, other similar programs with which we are familiar and actuarial judgment.

The projected ultimate limited losses reflect OCFA's SIR of \$2,000,000 per occurrence. The ULAE funding recommendation reflects the ultimate third party administration fees to handle those claims that occur during 2018/19. We emphasize the third party administration fees to be paid during the period will exceed this amount because the third party administrator will be handling claims that occurred in prior periods. However, the fees associated with handling these prior claims during the period have been accounted for in our estimated outstanding ULAE from Table II-1, row (F).

We project the ultimate limited losses (including ALAE) and ULAE for 2019/20 to be as shown in Table II-2B

**Table II-2B**  
**Projected Ultimate Limited Losses (including ALAE) and ULAE**  
**July 1, 2019-20**

Confidence Level (1)	Projected Ultimate Limited Losses (2)	Present Value of Ultimate Limited Losses (3)
(A) Expected (i.e., 50%)	\$21,093,346	\$19,831,827
(B) 60%	\$22,148,013	\$20,823,418
(C) 70%	\$24,046,414	\$22,608,283
(D) 80%	\$26,577,616	\$24,988,102
(E) 90%	\$30,585,352	\$28,756,149
(F) ULAE	\$1,476,534	\$1,388,228

Note: (A) is extracted from Appendix C, Exhibit WC-9, columns (9) and (12).  
 (A) is based on projected payroll of approximately \$185,518,000.  
 (B) through (E) are based on a (A) and confidence level factors derived from a loss distribution with a Coefficient of Variation of 0.25 and actuarial judgment.  
 (F) = 7.0% of (A), which is based on historical TPA fees, other similar programs with which we are familiar and actuarial judgment.

The projected ultimate limited losses (including ALAE) assume OCFA will retain the first \$2,000,000 per occurrence in 2019/20. The projected ultimate ULAE for 2019/20 assumes OCFA will contract with a third party administrator subject to similar terms and conditions that are in effect with the current contract.

We project the ultimate limited losses (including ALAE) and ULAE for 2020/21 to be as shown in Table II-2C.

**Table II-2C**  
**Projected Ultimate Limited Losses (including ALAE) and ULAE**  
**July 1, 2020-21**

Confidence Level (1)	Projected Ultimate Limited Losses (2)	Present Value of Ultimate Limited Losses (3)
(A) Expected (i.e., 50%)	\$21,612,796	\$20,314,173
(B) 60%	\$22,693,436	\$21,329,882
(C) 70%	\$24,638,587	\$23,158,157
(D) 80%	\$27,232,123	\$25,595,858
(E) 90%	\$31,338,554	\$29,455,551
(F) ULAE	\$1,512,896	\$1,421,992

Note: (A) is extracted from Appendix C, Exhibit WC-9, columns (9) and (12).  
 (A) is based on projected payroll of approximately \$185,518,000.  
 (B) through (E) are based on a (A) and confidence level factors derived from a loss distribution with a Coefficient of Variation of 0.25 and actuarial judgment.  
 (F) = 7.0% of (A), which is based on historical TPA fees, other similar programs with which we are familiar and actuarial judgment.

The projected ultimate limited losses (including ALAE) assume OCFA will retain the first \$2,000,000 per occurrence in 2020/21. The projected ultimate ULAE for 2020/21 assumes OCFA will contract with a third party administrator subject to similar terms and conditions that are in effect with the current contract.



We project the ultimate limited losses (including ALAE) and ULAE for 2021/22 to be as shown in Table II-2D.

**Table II-2D**  
**Projected Ultimate Limited Losses (including ALAE) and ULAE**  
**July 1, 2021-22**

Confidence Level (1)	Projected Ultimate Limited Losses (2)	Present Value of Ultimate Limited Losses (3)
(A) Expected (i.e., 50%)	\$22,150,796	\$20,815,070
(B) 60%	\$23,258,336	\$21,855,824
(C) 70%	\$25,251,907	\$23,729,180
(D) 80%	\$27,910,003	\$26,226,988
(E) 90%	\$32,118,654	\$30,181,852
(F) ULAE	\$1,550,556	\$1,457,055

Note: (A) is extracted from Appendix C, Exhibit WC-9, columns (9) and (12).  
 (A) is based on projected payroll of approximately \$185,518,000.  
 (B) through (E) are based on a (A) and confidence level factors derived from a loss distribution with a Coefficient of Variation of 0.25 and actuarial judgment.  
 (F) = 7.0% of (A), which is based on historical TPA fees, other similar programs with which we are familiar and actuarial judgment.

The projected ultimate limited losses (including ALAE) assume OCFA will retain the first \$2,000,000 per occurrence in 2021/22. The projected ultimate ULAE for 2021/22 assumes OCFA will contract with a third party administrator subject to similar terms and conditions that are in effect with the current contract.

We project the ultimate limited losses (including ALAE) and ULAE for 2022/23 to be as shown in Table II-2E.

**Table II-2E**  
**Projected Ultimate Limited Losses (including ALAE) and ULAE**  
**July 1, 2022-23**

Confidence Level (1)	Projected Ultimate Limited Losses (2)	Present Value of Ultimate Limited Losses (3)
(A) Expected (i.e., 50%)	\$22,707,349	\$21,353,071
(B) 60%	\$23,842,716	\$22,420,725
(C) 70%	\$25,886,378	\$24,342,501
(D) 80%	\$28,611,260	\$26,904,869
(E) 90%	\$32,925,656	\$30,961,953
(F) ULAE	\$1,589,514	\$1,494,715

Note: (A) is extracted from Appendix C, Exhibit WC-9, columns (9) and (12).  
 (A) is based on projected payroll of approximately \$185,518,000.  
 (B) through (E) are based on a (A) and confidence level factors derived from a loss distribution with a Coefficient of Variation of 0.25 and actuarial judgment.  
 (F) = 7.0% of (A), which is based on historical TPA fees, other similar programs with which we are familiar and actuarial judgment.

The projected ultimate limited losses (including ALAE) assume OCFA will retain the first \$2,000,000 per occurrence in 2022/23. The projected ultimate ULAE for 2022/23 assumes OCFA will contract with a third party administrator subject to similar terms and conditions that are in effect with the current contract.

3. **Project the Losses (including ALAE) and ULAE to be Paid in 2018/19 through 2022/23.**

We project the losses (including ALAE) and ULAE to be paid in 2018/19 through 2022/23 to be as shown in Table II-3.

**Table II-3**  
**Projected Losses (including ALAE) and ULAE To Be Paid in**  
**2018/19 through 2022/23**

Fiscal Period (1)	Projected Losses (including ALAE) Paid (2)	Projected ULAE Paid (3)
(A) July 1, 2018-19	\$15,216,559	\$1,065,159
(B) July 1, 2019-20	\$16,599,417	\$1,161,959
(C) July 1, 2020-21	\$17,473,568	\$1,223,150
(D) July 1, 2021-22	\$18,146,045	\$1,270,223
(E) July 1, 2022-23	\$18,878,786	\$1,321,515

Note: (2) is extracted from Appendix C, Exhibit WC-12, pages 1 through 5, column (8).  
(3) = (2) x 7%. The percentage is selected based on the ratio of historical payments.

4. **Affirm GASB 10.**

We affirm that the conclusions shown above in the tables were derived using appropriate actuarial methods and assumptions. Therefore, our conclusions are consistent with GASB 10. The actuarial methods and assumptions we used to derive these conclusions are documented in the exhibits shown in Appendix C of this report.

We encourage the independent auditor to contact us with any questions to ensure our report is interpreted correctly, and is incorporated appropriately into the independent financial audit of OCFA.

### ***Discussion of Data Reliance***

Responsible staff members of CorVel, York and OCFA provided us with loss data and payroll data. The loss data we received was contained in Excel files. The different files contained claims data valued as of different accounting dates (from June 30, 2009 and successive June 30<sup>th</sup> and December 31<sup>st</sup> valuations.) We compiled the data in these files and compared the results. We found all files to be internally consistent.

In addition, we compared the compiled data with the data shown in previous actuarial report prepared by us last year. Our data compilation proved consistent with the summarized data shown in the previous actuarial report.

### ***Comparisons with Previous Report***

Our previous report (based on claims data valued as of June 30, 2018), showed estimated the outstanding losses as of June 30, 2018 to total approximately \$84.4 million (undiscounted, expected confidence level). The current report shows estimated outstanding losses (as of December 31, 2018) to be approximately \$88.6 million (undiscounted, expected confidence level.); the referenced amounts may be found in Exhibit WC-10 of this report. In the previous report, we projected ultimate losses for 2017/18 and prior to total \$192.3 million. In the current report, we project ultimate losses for 2017/18 and prior to total \$193.1 million.

**Appendix A**

**CONDITIONS AND LIMITATIONS**

## **CONDITIONS AND LIMITATIONS**

It is important to understand the conditions and limitations listed below. Each chapter and section is an integral part of the whole study. If there are questions, please contact RCS for clarification.

- **Data Quality.** We relied upon data provided by the organization shown on the transmittal page or its designated agents. The data was used without verification or audit, other than checks for reasonableness. Unless otherwise stated, we assumed the data to be correct and complete.
- **Economic Environment.** Unless otherwise stated, we assumed the current economic conditions will continue in the foreseeable future.
- **Insurance Coverage.** Unless otherwise stated, we assumed no insurance coverage changes (including coverage provided by the organization to others) subsequent to the date this study was prepared. This includes coverage language, self-insured retention, limitations and similar issues.
- **Insurance Solvency.** Unless otherwise stated, we assumed all insurance purchased by the organization is from solvent sources payable in accordance with terms of the coverage document.
- **Interest Rate.** The exhibits specify the annual interest rate(s) used. The interest rate(s) used were specified by the organization shown on the transmittal page or its designated agents. We express no opinion regarding the appropriateness of the interest rate(s) used in this report.
- **Methodology.** In this study, different actuarial methods were applied. In some instances, the methods yield significantly disparate results. The estimates, projections and recommendations in this study reflect our judgments as to the best method or combination of methods that are most reliable and reflective of the exposure to loss.
- **Reproduction.** This study may only be reproduced in its entirety. We caution third parties to not distribute this report to any party without the express written consent of RCS and the parties, who engaged RCS to prepare this report, because the report contains privileged information and unauthorized distribution of the report might be a violation of local laws. In particular, we direct the reader to the California Code of Regulations, Title 8, Section 15405, and recommend seeking legal advice before disseminating any information contained in this report to any party. Moreover, ASOP 21, Section 3, Paragraph 4, states, “An audit or examination may give rise to the exchange of confidential information. Any information received by the reviewing actuary should be considered confidential, except as to the auditor or examiner, unless otherwise indicated by the entity. The reviewing actuary should take appropriate steps to preserve the confidentiality of such information.”
- **Risk and Variability.** Insurance is an inherently risky enterprise. Actual losses may vary significantly from our estimates, projections and recommendations. They may emerge higher or lower.

- **Statutory and Judicial Changes.** Legislatures and judiciaries may change statutes that govern indemnification. This includes benefit levels for workers compensation, immunities and limitations for liability, and other similar issues. Unless otherwise stated, we assumed no statutory changes subsequent to the date this study was prepared.
- **Supplemental Data.** In addition to the data provided by the organization, we supplemented our analysis with data from similar organizations and insurance industry statistics, as we deemed appropriate.
- **Usage.** This study has been prepared for the usage of the organization shown on the transmittal page. It was not prepared for and may not be appropriate for use by other organizations. Other organizations should obtain counsel from RCS prior to use of this study.
- **Assets.** We have not examined the assets underlying the corresponding losses and ALAE under review. We form no opinion as to the validity or value of these assets. Throughout our analysis, we assume the reserves are backed by valid assets, which have suitably scheduled maturities or adequate liquidity to meet cash flow requirements.
- **Mass Tort and Terrorism.** Unless specifically stated, our analysis does not reflect any provision for risk exposure from mass torts or terrorism, because these risk exposures were outside the scope of our work.
- **Intended Use Disclosure (per ASOP 43).** We understand the intended use of the estimated outstanding losses is for internal management reporting and external financial reporting purposes. Because the internal management reporting is consistent with external financial reporting, we are unaware of conflicts (actual or otherwise) that might arise from this dual usage.
- **Constraints Disclosure (per ASOP 43).** We worked with the most readily available data provided by OCFA and its claims administrator(s). The data appeared to be of excellent quality. We were provided ample time to perform the work; therefore, we have no constraints regarding deadlines. In addition, the OCFA and its claims administrator(s) cooperated fully with our requests for information.
- **Scope of Unpaid Claim Estimate Disclosure #1 – Type of Estimate (per ASOP 43).** Throughout the report, we calculated an “actuarial central estimate” of the loss reserve. We have also included a range of reasonable estimates of the loss reserves expressed in the form of confidence levels. We emphasize that the range of reasonable estimates is not a range of all possible outcomes; rather, it is our estimate of likely outcomes of the actuarial central estimate. Although unlikely, losses may emerge outside our range of reasonable estimates.
- **Scope of Unpaid Claim Estimate Disclosure #2 – Purpose of Estimate (per ASOP 43).** We believe the range of reasonably possible outcomes around the actuarial central estimate is an appropriate guide to management for internal and external financial reporting purposes.
- **Scope of Unpaid Claim Estimate Disclosure #3 – Discounting (per ASOP 43).** We calculated our range of reasonably possible outcomes around the actuarial central estimates at full-value (i.e., undiscounted). We calculated estimates at present value (i.e., discounted to reflect the time value of money).



- **Gross or Net of Specified Recoverables Disclosure (per ASOP 43).** Because the OCFA purchases reinsurance and/or participates in insurance pools, all amounts in this report should be understood to be net of recoverables unless specifically identified to the contrary.
- **Collectability Risk Disclosure (per ASOP 43).** Except as otherwise noted in our report, our discussions with the OCFA did not reveal any collectability risk as of the date of this report.
- **Unpaid Claim Adjustment Expense Disclosure (per ASOP 43).** A provision for ULAE is included in the amounts shown in this report. Amounts for ALAE have been included.
- **Type of Claims Covered in the Analysis Disclosure (per ASOP 43).** The background section of this report describes the type of claims covered in the analysis. In addition, the text in the conclusion section specifies any modifications to the description contained in the background section.
- **Review Date Disclosure (per ASOP 43).** Our “review date” (i.e., cut-off date for including information into our analysis) is the date shown on the cover of the report or the date of the transmittal letter.
- **Acknowledgement of Qualification (per ASOP 41).** The opining actuary(ies) that have prepared this report meet the requisite qualification standards as enacted in the “Qualification Standards” effective January 1, 2008.

**Appendix B**

**GLOSSARY OF ACTUARIAL TERMS**

## **GLOSSARY OF ACTUARIAL TERMS**

### **Actuarial Methods (Most Common)**

A major objective of an actuarial study is to statistically project ultimate losses. The following actuarial methods are the most common:

- Developed Paid Losses
- Developed Reported Incurred Losses
- Developed Case Reserves
- Frequency Times Severity Analysis
- Loss Rate Analysis

The following describes each method:

1. **Developed Paid Losses.** Paid losses represent the amounts actually paid to claimants (less excess insurance recoveries). As time goes on, loss payments continue until all claims are closed and there are no remaining payments expected. At this time, the ultimate losses for the claim period are known. This common process is called “paid loss development.”

Paid loss development is an extrapolation of actual dollars paid. It does not depend on case reserve estimates. A potential shortcoming of utilizing this method is that only a small fraction of total payments have been made for the most recent claim periods. Extrapolating ultimate losses based on small amounts of actual payments may be speculative. A second potential shortcoming is that payment patterns can change over time.

2. **Developed Reported Incurred Losses.** Reported incurred losses are paid losses plus case reserves. In most programs, total reported incurred losses underestimate the ultimate losses. Over time, as more information about a body of claims becomes known, they are adjusted either up or down until they are closed. Though many individual claims settle for less than what was estimated, these decreases are generally more than offset by increases in the cost of other claims for which new information has emerged.

The net effect is that total estimated costs are often revised upward over time. This normal process is called “reported incurred loss development.” Actuaries typically review the development patterns of the recent past to make projections of the expected future loss development and, therefore, estimations of ultimate losses.

3. **Developed Case Reserves.** The developed case reserves method is a hybrid of the paid loss development and reported incurred loss development methods. It relies on the historical adequacy of case reserves to predict ultimate losses.

4. **Frequency Times Severity Analysis.** The frequency times severity analysis is an actuarial method that uses a preliminary projection of ultimate losses to project claims severity. The claims severity times the number of claims is a predictor of ultimate losses. The focus of the frequency times severity analysis is that ultimate losses each period are dependent on the number of claims.
5. **Loss Rate Analysis.** The loss rate analysis is based on the historical loss rates per exposure unit (such as payroll, vehicles or property value). The loss rates (projected ultimate losses divided by exposure units) are trended to reflect the effect of claim cost inflation and retention changes. The trended loss rates represent the rates that one would see if all of the claims had been handled in the claim cost environment that will be present in the upcoming period. The trended loss rate times the projected exposure units is a predictor of losses.
6. **Bornhuetter-Ferguson Method (B-F).** The B-F method is an actuarial method that weights a preliminary projection of ultimate losses with projections of ultimate losses determined by other actuarial methods (usually the developed paid losses and developed reported incurred losses methods). For less mature claim periods, the B-F method leans more heavily to the preliminary projection. It gradually converges to the projections of ultimate losses determined by the other actuarial methods as the claim periods mature.

### **Actuary**

A specialist trained in mathematics, statistics, and finance who is responsible for rate, reserve, and dividend calculations and other statistical studies.

### **Allocated Loss Adjustment Expenses**

Allocated loss adjustment expenses (ALAE) are the direct expenses to settle specific claims. These expenses are primarily legal expenses.

Accounting standards require that ALAE be included in financial statements and that they be calculated by actuarial methods.

### **American Academy of Actuaries**

A society concerned with the development of education in the field of actuarial science and with the enhancement of standards in the actuarial field. Members may use the designation MAAA (Member, American Academy of Actuaries).

## **Benefits**

The financial reimbursement and other services provided insureds by insurers under the terms of an insurance contract. An example would be the benefits listed under a life or health insurance policy or benefits as prescribed by a workers compensation law.

## **Casualty Actuarial Society**

A professional society for actuaries in areas of property and casualty insurance work. This society grants the designation of Associate of the Casualty Actuarial Society (ACAS) and Fellow of the Casualty Actuarial Society (FCAS).

## **Claim**

Demand by an individual or entity to recover for a loss.

## **Claims Made**

A policy written on this basis covers only those claims that are made during the policy period. Coverage for prior acts is provided back to what is known as the retroactive date, which is the effective date of the original claims made policy with the same insurer.

## **Composite Rate**

A single rate with a single basis of premium (e.g., payroll or sales). For this single rate the insured is covered for a variety of hazards, such as premises and operations, completed operations, products liability, and automobile. Its primary value is to compute premium simply.

## **Confidence Level**

A confidence level is the statistical certainty that an actuary believes funding will be sufficient. For example, an 80% confidence level means that the actuary believes funding will be sufficient in eight years out of ten.

Confidence levels are determined based on mathematical models. Coverages that are low frequency and high severity (such as excess liability) are subject to greater risk than coverages that are high frequency and low severity (such as automobile physical damage). Therefore, they need a greater margin to attain a given confidence level.

Expected corresponds to approximately a 55% confidence level. Amounts above expected are prudent, but should be considered equity (not a liability).

### **Coverage**

The scope of the protection provided under a contract of insurance.

### **Credibility**

Credibility is the belief that the sample data is an accurate reflection of the larger population. Credibility is highest when the sample data is large and the standard deviation (discussed later) of the larger population is low.

### **Dates**

There are at least three milestone dates in a claim. They are the date of injury or accident, the date of report and the date of closure. It is best if each of these dates is recorded. Some organizations may also keep the date a claim becomes a lawsuit, as opposed to a demand. RCS recommends this additional level of detail, especially if the data is to be used for litigation management.

### **Deductible**

The portion of an insured loss to be borne by the insured before he is entitled to recovery from the insurer. Deductibles may be expressed as a dollar amount, percentage or waiting period.

### **Disability**

A condition that curtails a person's ability to carry on his normal pursuits. A disability may be partial or total, and temporary or permanent.

### **Dividend (Policyholder)**

The return of part of the premium paid for a policy issued on a participating basis by either a mutual or a stock insurer.

### **Estimated Outstanding Losses**

Estimated outstanding losses are the cost of claims that have occurred but have not yet been paid. They typically include indemnification and allocated loss adjustment expenses (ALAE), but not unallocated loss adjustment expenses (ULAE).

Estimated outstanding losses are calculated as projected ultimate losses less paid losses. Alternatively, they are the sum of case reserves and incurred but not reported (IBNR) claims.

### **Estimated Outstanding Losses (continued)**

Estimated outstanding losses are usually the largest single item listed as a liability on the balance sheet of an insurer's financial statement. Accounting standards require they be calculated by actuarial methods. Other common names for estimated outstanding losses are outstanding claims liabilities and unpaid claims.

The uncertainty inherent in the estimation of required provision for unpaid losses or loss adjustment expenses implies that a range of reserves can be actuarially sound. The true value of the liability for losses or loss adjustment expenses at any accounting date can be known only when all attendant claims have been settled.

The most appropriate reserve within a range of actuarially sound estimates depends on both the relative likelihood of estimates within the range and the financial reporting context in which the reserve will be presented.

### **Experience Rating**

A method of adjusting the premium for a risk based on past loss experience for that risk compared to loss experience for an average risk.

### **Exposure Data**

Exposure data refers to the activities of the organization. For example, payroll is the most common exposure measure for workers compensation. RCS suggests collecting exposure data with the following characteristics:

- **Readily Available.** The exposure data should be easily obtained. It is best if it is a byproduct of other activities, although this is not always possible. If getting data is arduous, it may discourage collection.
- **Vary With Losses.** The exposure data should correlate directly with losses. The ideal situation is where exposure and expected losses move in tandem. The exposure base needs to be fitting to the coverage. For example, the number of employees may vary with property losses (more employees = more office space = more losses), but property value is a clearly superior exposure base for property losses.

### **Generally Accepted Accounting Principles (GAAP)**

These principles are intended to produce financial results (in the insurance industry) consistent with those of other industries and to assure consistency in financial reporting.



### **Incurred But Not Reported**

IBNR is really comprised of two distinct items. These are the development of known case reserves (incurred but not enough reported [IBNER] and incurred but not yet reported [IBNYR]).

IBNER are the actuary's estimate of the inadequacy of case reserves. Most claims settle at amounts close to what is set by the claims administrator. Some claims close favorably and some emerge as more expensive. On balance, case reserves tend to be too low (especially for recent years). IBNER is the actuary's estimate of the amount total case reserves will rise upon closure.

IBNYR refers to those claims that have occurred, but have not yet been reported. A classic example is medical malpractice claim reported several years after the medical procedure was performed.

### **Insurance Services Office (ISO)**

An organization of the property and casualty insurance business designed to gather statistics, promulgate rates, and develop policy forms.

### **Investment Income**

The return received by entities from their investment portfolios, including interest, dividends and realized capital gains on stocks. Realized capital gains means the profit realized on assets that have actually been sold for more their purchase price.

### **Limited**

Most programs purchase excess insurance for catastrophic claims. For example, they may purchase coverage for claims above a \$500,000 per occurrence self-insured retention. Limited refers to an estimate or projection being limited to the self-insured retention. In contrast, unlimited refers to a loss projection that is not limited to the self-insured retention.

Other common names for limited are net of excess insurance or capped losses.

### **Loss Development**

The difference between the amount of losses initially estimated by the insurer and the amount reported in an evaluation on a later date. Loss development is typically measured for paid losses, reported incurred losses and claim counts.

### **Manual Rates**

Usually, the published rate for some unit of insurance. An example is in the workers compensation manual, where the rates shown apply to each \$100 of the payroll of the insured, \$100 being the "unit."

### **National Council on Compensation Insurance (NCCI)**

An association of workers compensation insurance companies whose main functions are collecting statistics and calculating rates, establishing policy wording, developing experience and retrospective rating plans, and serving as the filing organization for member companies.

### **Net**

Many pooling programs assign deductibles to members. For example, each member may have a \$5,000 per claim deductible. "Net" refers to a loss estimate or projection that excludes amounts below member deductibles.

### **Occurrence**

An event that results in an insured loss. In some lines of insurance, such as general liability, it is distinguished from accident in that the loss does not have to be sudden and fortuitous and can result from continuous or repeated exposure that results in bodily injury or property damage neither expected nor intended by the insured.

### **Pool**

An organization of entities through which particular types of risks are written with the premiums, losses, and expenses shared in agreed amounts among the members belonging to the organization.

### **Premium**

The price of insurance protection for a specified risk for a specified period of time.

### **Present Value**

The amount of money that future amounts receivable are currently worth. For example, a Life Insurance policy may provide for payments to be made monthly for ten years. The present value of that money would be less than the total amount of the regular periodic payments for 10 years because of the amount of interest that a present lump sum could earn during the term than the payments otherwise would have been made.

### **Probability**

The probability is the likelihood of an event. It is a measure of how likely a value or event is to occur. It can be measured from data by calculating the number of occurrences of the value or event divided by the total number of occurrences. This calculation can be converted to a percentage. For example, tossing a coin has a 50% probability of heads or tails.

### **Projected Losses Paid**

Projected losses paid are the projected claims disbursements in a period, regardless of when the claim occurred. They typically include indemnification and ALAE, but not unallocated loss adjustment expenses (ULAE).

“Projected losses paid” is a cash-flow analysis that can be used in making investment decisions.

### **Projected Ultimate Losses**

Projected ultimate losses are the accrual value of claims. They are the total amount that is expected to be paid in a particular claim period after all claims are closed. Projected ultimate losses are the total loss costs for a particular period. They typically include indemnification and ALAE, but not ULAE.

Other common names for projected ultimate losses are expected losses, ultimate losses and total losses.

### **Range of Reasonable Estimates**

According to actuarial statements of principles and standards of practice, a range of reasonable estimates of the provision for unpaid claims can be actuarially sound.

Due to the uncertainty inherent in estimating the provision for unpaid claims, the range of reasonable estimates is a narrower range than the range of all possible outcomes or the range of all likely outcomes.

### **Rate**

The cost of a given unit of insurance. For example, in life insurance, it is the price of \$1,000 of the face amount. In property insurance, it is the rate per \$100 of value to be insured. The premium is the rate multiplied by the number of units of insurance purchased.

### **Retrospective Rating**

A method for which the final premium is not determined until the end of the coverage period, and is based on the insured's own loss experience for that same period. It is usually subject to a maximum and minimum premium. A plan of this type can be used in various types of insurance, especially workers compensation and liability, and is usually elected by only very large insureds.

### **Salvage**

Property taken over by an entity to reduce its loss. Automobile physical damage losses can be reduced by the sale of recovered vehicles.

### **Schedule Rating**

The application of debits or credits within established ranges for various characteristics of a risk according to an established schedule of items. Under liability and automobile insurance, the schedule rating plan allows credits and debits for various good or bad features of a particular commercial risk. An example in automobile schedule rating would be allowing credits for driver training classes or fleet maintenance programs.

### **Self-Insurance Retention (SIR)**

That portion of a risk or potential loss assumed by an insured. It is often in the form of a per occurrence deductible.

### **Society of Actuaries (SOA)**

A professional society for actuaries in areas of pensions, and life and health insurance work. The SOA grants the designation Associate of the Society of Actuaries (ASA) and Fellow of the Society of Actuaries (FSA).

### **Standard Premium**

Most often used in connection with retrospective rating for Workers Compensation and General Liability Insurance, it is the premium of which the basic premium is a percentage and is developed by applying the regular rates to an insured's payroll.

### **State Fund**

A fund set up by a state government to finance a mandatory insurance system, such as Workers Compensation or non-occupational disability benefits. Such a fund may be monopolistic, i.e., purchasers of the type of insurance required must place it in the state fund; or it may be competitive, i.e., an alternative to private insurance if the purchaser desires to use it.

### **Statutory Accounting Principles (SAP)**

Those principles required by statute that must be followed by an insurance company or other similar entity when submitting its financial statement to the state insurance department. Such principles differ from (GAAP) in some important respects. For one thing SAP requires that expenses must be recorded immediately and cannot be deferred to track with premiums as they are earned and taken into revenue.

### **Unallocated Loss Adjustment Expenses**

Unallocated loss adjustment expenses (ULAE) are the indirect expenses to settle claims. These expenses are primarily administration and claims handling expenses.

Accounting standards require that ULAE be included in financial statements and that they be calculated by actuarial methods.

## **EXHIBITS**

### **Appendix C**

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-1

Data Valued as of December 31, 2018

Claim Period (1)	Specific Self-Insured Retention (2)	Months of Development 12/31/18 (3)	Reported Claims 12/31/18 (4)	Open Claims 12/31/18 (5)	Limited Paid Losses 12/31/18 (6)	Limited Case Reserves 12/31/18 (7)	Limited Reported Incurred Losses 12/31/18 (8)
1996/97	N/A	270.0	0	0	\$0	\$0	\$0
1997/98	N/A	258.0	0	0	0	0	0
1998/99	N/A	246.0	0	0	0	0	0
1999/00	N/A	234.0	0	0	0	0	0
2000/01	N/A	222.0	0	0	0	0	0
2001/02	600,000	210.0	132	4	2,137,890	175,799	2,313,689
2002/03	600,000	198.0	406	17	6,876,639	952,589	7,829,228
2003/04	2,000,000	186.0	321	8	4,362,352	382,330	4,744,682
2004/05	2,000,000	174.0	337	14	5,187,174	837,800	6,024,974
2005/06	2,000,000	162.0	395	17	6,454,087	1,316,609	7,770,697
2006/07	2,000,000	150.0	422	15	7,974,771	795,548	8,770,319
2007/08	2,000,000	138.0	475	20	7,614,290	1,705,233	9,319,522
2008/09	2,000,000	126.0	458	18	7,092,642	738,789	7,831,432
2009/10	2,000,000	114.0	469	18	8,224,645	1,771,596	9,996,241
2010/11	2,000,000	102.0	392	27	7,851,884	1,836,580	9,688,465
2011/12	2,000,000	90.0	472	37	7,936,523	2,285,218	10,221,741
2012/13	2,000,000	78.0	483	56	8,005,684	2,028,144	10,033,828
2013/14	2,000,000	66.0	528	62	7,221,828	3,654,070	10,875,898
2014/15	2,000,000	54.0	383	79	7,352,047	2,796,554	10,148,601
2015/16	2,000,000	42.0	397	97	7,236,582	4,448,050	11,684,632
2016/17	2,000,000	30.0	453	142	6,987,900	5,713,469	12,701,370
2017/18	2,000,000	18.0	470	196	5,670,714	7,684,163	13,354,877
2018/19	2,000,000	6.0	176	105	666,157	2,592,917	3,259,074
Total			7,169	932	\$114,853,810 #	\$41,715,459 #	\$156,569,269 #

# - Data is for medical, indemnity and expenses excluding 4850 benefits.

(6), (7) and (8) are net of specific excess reinsurance, but gross of aggregate reinsurance.

Data was provided by Corvel.

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 1)

Summary of Percent Losses Paid, Losses Reported and Claims Reported

Months of Development (1)	Percent Losses Paid (2)	Percent Losses Reported (3)	Percent Claims Reported (4)	Months of Development (5)	Percent Losses Paid (6)	Percent Losses Reported (7)	Percent Claims Reported (8)
360.0	100.0%	100.0%	100.0%	360.0	100.0%	100.0%	100.0%
348.0	100.0%	100.0%	100.0%	348.0	100.0%	100.0%	100.0%
336.0	100.0%	100.0%	100.0%	336.0	100.0%	100.0%	100.0%
324.0	100.0%	100.0%	100.0%	324.0	100.0%	100.0%	100.0%
312.0	99.9%	100.0%	100.0%	312.0	99.9%	100.0%	100.0%
300.0	99.9%	100.0%	100.0%	300.0	99.9%	100.0%	100.0%
288.0	99.9%	100.0%	100.0%	288.0	99.9%	100.0%	100.0%
276.0	99.8%	100.0%	100.0%	276.0	99.8%	100.0%	100.0%
264.0	99.7%	100.0%	100.0%	264.0	99.7%	100.0%	100.0%
252.0	99.6%	100.0%	100.0%	252.0	99.6%	100.0%	100.0%
240.0	99.4%	100.0%	100.0%	240.0	99.4%	100.0%	100.0%
228.0	99.2%	100.0%	100.0%	228.0	99.2%	100.0%	100.0%
216.0	98.8%	100.0%	100.0%	216.0	98.8%	100.0%	100.0%
204.0	98.4%	100.0%	100.0%	204.0	98.4%	100.0%	100.0%
192.0	97.6%	99.9%	100.0%	192.0	97.6%	99.9%	100.0%
180.0	96.6%	99.6%	100.0%	180.0	96.6%	99.6%	100.0%
168.0	95.2%	97.6%	100.0%	168.0	95.2%	97.6%	100.0%
156.0	93.5%	96.2%	100.0%	156.0	93.5%	96.2%	100.0%
144.0	91.5%	94.4%	100.0%	144.0	91.5%	94.4%	100.0%
132.0	85.6%	91.2%	100.0%	132.0	85.6%	91.2%	100.0%
120.0	81.5%	90.3%	100.0%	120.0	81.5%	90.3%	100.0%
108.0	74.9%	84.9%	100.0%	108.0	74.9%	84.9%	100.0%
96.0	69.8%	80.2%	100.0%	96.0	69.8%	80.2%	100.0%
84.0	65.2%	78.9%	100.0%	84.0	65.2%	78.9%	100.0%
72.0	60.4%	77.3%	100.0%	72.0	60.4%	77.3%	100.0%
60.0	50.0%	75.0%	99.6%	60.0	50.0%	75.0%	99.6%
48.0	41.1%	73.3%	99.3%	48.0	41.1%	73.3%	99.3%
36.0	31.1%	67.7%	98.9%	36.0	31.1%	67.7%	98.9%
24.0	22.1%	58.0%	97.9%	24.0	22.1%	58.0%	97.9%
12.0	9.7%	36.7%	91.6%	12.0	9.7%	36.7%	91.6%



ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 2)

Summary of Percent Losses Paid, Losses Reported and Claims Reported

Months of Development (9)	Percent Losses Paid (10)	Percent Losses Reported (11)	Percent Claims Reported (12)	Months of Development (13)	Percent Losses Paid (14)	Percent Losses Reported (15)	Percent Claims Reported (16)
360.0	100.0%	100.0%	100.0%	354.0	100.0%	100.0%	100.0%
348.0	100.0%	100.0%	100.0%	342.0	100.0%	100.0%	100.0%
336.0	100.0%	100.0%	100.0%	330.0	100.0%	100.0%	100.0%
324.0	100.0%	100.0%	100.0%	318.0	99.9%	100.0%	100.0%
312.0	99.9%	100.0%	100.0%	306.0	99.9%	100.0%	100.0%
300.0	99.9%	100.0%	100.0%	294.0	99.9%	100.0%	100.0%
288.0	99.9%	100.0%	100.0%	282.0	99.8%	100.0%	100.0%
276.0	99.8%	100.0%	100.0%	270.0	99.8%	100.0%	100.0%
264.0	99.7%	100.0%	100.0%	258.0	99.7%	100.0%	100.0%
252.0	99.6%	100.0%	100.0%	246.0	99.5%	100.0%	100.0%
240.0	99.4%	100.0%	100.0%	234.0	99.3%	100.0%	100.0%
228.0	99.2%	100.0%	100.0%	222.0	99.0%	100.0%	100.0%
216.0	98.8%	100.0%	100.0%	210.0	98.6%	100.0%	100.0%
204.0	98.4%	100.0%	100.0%	198.0	98.0%	100.0%	100.0%
192.0	97.6%	99.9%	100.0%	186.0	97.1%	99.8%	100.0%
180.0	96.6%	99.6%	100.0%	174.0	95.9%	98.6%	100.0%
168.0	95.2%	97.6%	100.0%	162.0	94.4%	96.9%	100.0%
156.0	93.5%	96.2%	100.0%	150.0	92.5%	95.3%	100.0%
144.0	91.5%	94.4%	100.0%	138.0	88.6%	92.8%	100.0%
132.0	85.6%	91.2%	100.0%	126.0	83.6%	90.8%	100.0%
120.0	81.5%	90.3%	100.0%	114.0	78.2%	87.6%	100.0%
108.0	74.9%	84.9%	100.0%	102.0	72.4%	82.6%	100.0%
96.0	69.8%	80.2%	100.0%	90.0	67.5%	79.6%	100.0%
84.0	65.2%	78.9%	100.0%	78.0	62.8%	78.1%	100.0%
72.0	60.4%	77.3%	100.0%	66.0	55.2%	76.2%	99.8%
60.0	50.0%	75.0%	99.6%	54.0	45.6%	74.2%	99.5%
48.0	41.1%	73.3%	99.3%	42.0	36.1%	70.5%	99.1%
36.0	31.1%	67.7%	98.9%	30.0	26.6%	62.9%	98.4%
24.0	22.1%	58.0%	97.9%	18.0	15.9%	47.4%	94.8%
12.0	9.7%	36.7%	91.6%	6.0	4.9%	18.4%	45.8%

(2) is from Exhibit WC-2 (page 4).

(3) is from Exhibit WC-2 (page 6).

(4) is from Exhibit WC-2 (page 8).

(6), (7), (8), (10), (11), (12), (14), (15) and (16) are interpolated, based on (2), (3) and (4)

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 3)

Historical Limited Paid Losses and Limited Paid Loss Development

I. Historical Limited Paid Losses (\$000)

Claim Period	12	24	Months of Development:																	
			36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
1995/96																				
1996/97																				
1997/98																				
1998/99																				
1999/00																				
2000/01																				
2001/02				993	1,278	1,396	1,588	1,654	1,720	1,769	1,814	1,859	1,886	1,972	2,015	2,039	2,108			
2002/03			3,116	3,917	4,512	4,973	5,368	5,705	5,940	6,117	6,229	6,308	6,534	6,636	6,709	6,850				
2003/04		1,296	1,626	2,092	2,412	2,691	2,910	3,077	3,291	3,629	3,699	3,807	3,858	4,029	4,226					
2004/05	602	1,759	2,368	2,842	3,172	3,548	3,924	4,139	4,278	4,501	4,600	4,807	4,892	5,140						
2005/06	693	1,518	2,000	2,252	2,730	2,936	3,406	3,527	3,736	3,849	4,181	4,732	6,124							
2006/07	587	1,812	2,591	3,546	4,043	4,759	5,059	5,376	5,692	6,359	6,627	7,843								
2007/08	779	1,798	2,502	3,006	3,796	4,434	4,828	5,106	5,571	6,111	7,570									
2008/09	468	1,706	2,465	3,259	3,837	4,519	4,903	5,347	5,698	7,121										
2009/10	591	2,196	3,473	4,077	4,841	5,578	5,877	6,052	8,087											
2010/11	1,032	2,191	3,301	4,008	4,620	5,198	5,539	7,636												
2011/12	603	1,891	2,433	2,924	3,480	4,550	7,677													
2012/13	696	1,846	3,429	4,845	6,156	7,996														
2013/14	580	2,268	3,457	4,725	7,330															
2014/15	1,411	3,662	4,898	6,780																
2015/16	2,193	4,683	6,600																	
2016/17	2,409	5,378																		
2017/18	3,421																			

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 4)

Historical Limited Paid Losses and Limited Paid Loss Development

II. Limited Paid Loss Development

Claim Period	12-24	24-36	Months of Development:		60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252
			36-48	48-60																
1995/96																				
1996/97																				
1997/98																				
1998/99																				
1999/00																				
2000/01																				
2001/02				1.286	1.092	1.137	1.042	1.040	1.028	1.025	1.025	1.014	1.046	1.021	1.012	1.034				
2002/03			1.257	1.152	1.102	1.079	1.063	1.041	1.030	1.018	1.013	1.036	1.015	1.011	1.021					
2003/04		1.255	1.287	1.153	1.116	1.081	1.057	1.070	1.103	1.019	1.029	1.014	1.044	1.049						
2004/05	2.924	1.346	1.201	1.116	1.118	1.106	1.055	1.034	1.052	1.022	1.045	1.018	1.051							
2005/06	2.189	1.318	1.126	1.212	1.076	1.160	1.035	1.059	1.030	1.086	1.132	1.294								
2006/07	3.089	1.430	1.369	1.140	1.177	1.063	1.063	1.059	1.117	1.042	1.184									
2007/08	2.308	1.392	1.201	1.263	1.168	1.089	1.058	1.091	1.097	1.239										
2008/09	3.645	1.444	1.322	1.178	1.178	1.085	1.090	1.066	1.250											
2009/10	3.714	1.581	1.174	1.187	1.152	1.054	1.030	1.336												
2010/11	2.123	1.507	1.214	1.153	1.125	1.066	1.378													
2011/12	3.134	1.286	1.202	1.190	1.125	1.066														
2012/13	2.653	1.857	1.413	1.271	1.299															
2013/14	3.909	1.525	1.367	1.551																
2014/15	2.595	1.338	1.384																	
2015/16	2.135	1.409																		
2016/17	2.232																			
2017/18																				
Average																				
All	2.819	1.437	1.270	1.219	1.159	1.146	1.087	1.088	1.088	1.065	1.071	1.075	1.039	1.027	1.016	1.034				
Wtd 3	2.282	1.409	1.387	1.358	1.245	1.246	1.166	1.173	1.155	1.126	1.128	1.114	1.034	1.025						
Last 3	2.321	1.424	1.388	1.337	1.244	1.269	1.166	1.164	1.155	1.122	1.120	1.108	1.037	1.027						
Last 5	2.493	1.424	1.322	1.216	1.210	1.080	1.070	1.072	1.089	1.050	1.069	1.023								
x-hi,low																				
Industry																				
Previous	2.282	1.409	1.322	1.216	1.210	1.080	1.070	1.072	1.089	1.050	1.069	1.023	1.018	1.050						
Selected																				
Cumulative	10.349	4.535	3.218	2.435	2.002	1.655	1.533	1.432	1.336	1.227	1.168	1.093	1.069	1.050						
Percent	9.7%	22.1%	31.1%	41.1%	50.0%	60.4%	65.2%	69.8%	74.9%	81.5%	85.6%	91.5%	93.5%	95.2%						

Amounts exclude 4850 benefits.

Amounts are limited (net of excess insurance).

Data was provided by Corvel.

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 5)

Historical Limited Reported Incurred Losses and Limited Reported Incurred Loss Development

I. Historical Limited Reported Incurred Losses (\$000)

Claim Period	12	24	Months of Development:		60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
			36	48																
1995/96																				
1996/97																				
1997/98																				
1998/99																				
1999/00																				
2000/01																				
2001/02				1,448	1,788	1,934	2,106	2,137	2,167	2,192	2,209	2,285	2,265	2,564	2,499	2,324	2,345			
2002/03			4,905	5,365	5,890	6,332	6,603	6,937	6,934	7,153	7,529	7,677	7,446	7,520	7,599	7,859				
2003/04		2,384	2,734	2,911	3,200	3,705	3,885	4,108	4,496	4,717	4,778	5,079	4,807	4,664	4,703					
2004/05	1,834	2,996	3,816	4,286	4,400	4,692	4,785	4,833	5,284	5,632	5,369	5,481	6,114	5,891						
2005/06	2,580	3,557	3,849	3,753	4,398	4,394	4,413	4,390	4,759	5,105	5,309	5,666	7,731							
2006/07	2,308	4,080	4,795	5,616	6,358	7,868	7,721	7,673	7,842	8,099	7,986	8,747								
2007/08	3,156	4,009	5,340	5,881	6,773	7,529	7,130	6,584	7,417	7,755	9,373									
2008/09	2,725	3,801	4,523	6,535	6,573	6,387	6,330	6,620	6,809	8,033										
2009/10	3,105	5,763	7,798	8,153	8,067	8,112	7,442	8,092	9,959											
2010/11	3,607	6,753	7,314	7,593	7,730	7,861	7,877	9,630												
2011/12	3,253	5,931	6,182	6,367	6,245	6,681	10,000													
2012/13	3,376	5,604	6,775	8,299	8,810	10,117														
2013/14	4,625	6,487	6,919	7,432	9,988															
2014/15	4,020	7,034	8,744	9,929																
2015/16	6,025	9,083	10,707																	
2016/17	7,530	11,643																		
2017/18	9,377																			

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 6)

Historical Limited Reported Incurred Losses and Limited Reported Incurred Loss Development

II. Limited Reported Incurred Loss Development

Claim Period	12-24	24-36	Months of Development:		60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252
			36-48	48-60																
1995/96																				
1996/97																				
1997/98																				
1998/99																				
1999/00																				
2000/01																				
2001/02				1.235	1.081	1.089	1.015	1.014	1.011	1.008	1.034	0.991	1.132	0.975	0.930	1.009				
2002/03			1.094	1.098	1.075	1.043	1.051	1.000	1.031	1.053	1.020	0.970	1.010	1.011	1.034					
2003/04		1.147	1.065	1.099	1.158	1.049	1.057	1.095	1.049	1.013	1.063	0.947	1.008							
2004/05	1.634	1.274	1.123	1.027	1.067	1.020	1.010	1.093	1.066	0.953	1.021	1.116	0.964							
2005/06	1.378	1.082	0.975	1.172	0.999	1.004	0.995	1.084	1.073	1.040	1.067	1.364								
2006/07	1.768	1.175	1.171	1.132	1.237	0.981	0.994	1.022	1.033	0.986	1.095									
2007/08	1.270	1.332	1.101	1.152	1.112	0.947	0.923	1.127	1.045	1.209										
2008/09	1.395	1.190	1.445	1.006	0.972	0.991	1.046	1.029	1.180											
2009/10	1.856	1.353	1.046	0.989	1.006	0.917	1.087	1.231												
2010/11	1.872	1.083	1.038	1.018	1.017	1.002	1.223													
2011/12	1.823	1.042	1.030	0.981	1.070	1.497														
2012/13	1.660	1.209	1.225	1.062	1.148															
2013/14	1.402	1.067	1.074	1.344																
2014/15	1.750	1.243	1.135																	
2015/16	1.508	1.179																		
2016/17	1.546																			
2017/18																				
Average																				
All	1.605	1.183	1.117	1.101	1.078	1.049	1.040	1.077	1.061	1.037	1.050	1.078	1.019	0.998	0.982	1.009				
Wtd 3	1.580	1.167	1.144	1.133	1.082	1.118	1.124	1.136	1.082	1.082	1.066	1.150	0.984	1.004						
Last 3	1.601	1.163	1.145	1.129	1.078	1.139	1.119	1.129	1.086	1.078	1.061	1.142	0.981	0.998						
Last 5	1.571	1.151	1.083	1.023	1.031	0.980	1.042	1.080	1.061	1.013	1.050	1.026								
x-hi,low																				
Industry																				
Previous	1.580	1.167	1.083	1.023	1.031	1.021	1.016	1.059	1.063	1.010	1.036	1.018	1.014	1.025						
Selected	1.580	1.167	1.083	1.023	1.031	1.021	1.016	1.059	1.063	1.010	1.036	1.018	1.014	1.025						
Cumulative	2.723	1.724	1.478	1.365	1.334	1.294	1.267	1.247	1.178	1.108	1.097	1.059	1.040	1.025						
Percent	36.7%	58.0%	67.7%	73.3%	75.0%	77.3%	78.9%	80.2%	84.9%	90.3%	91.2%	94.4%	96.2%	97.6%						

Amounts exclude 4850 benefits.

Amounts are limited (net of excess insurance).

Data was provided by Corvel.

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 7)

Historical Reported Claims and Reported Claim Development

I. Historical Reported Claims

Claim Period	12	24	Months of Development:		36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
1995/96																						
1996/97																						
1997/98																						
1998/99																						
1999/00																						
2000/01																						
2001/02					130		130	132	132	132	132	132	132	132	132	132	132	132	132	132		
2002/03				400	401		405	406	406	406	406	406	406	406	406	406	406	406	406	406		
2003/04				318	320		320	321	322	322	322	321	321	321	320	320	320	320	320	406		
2004/05	283	314		331	334		334	336	336	336	337	337	337	337	337	337	337	337	337			
2005/06	347	381		386	389		390	391	391	391	393	393	393	395	395							
2006/07	373	412		415	417		419	420	420	421	422	422	422	422								
2007/08	445	470		472	474		475	476	475	475	475	475	475	475								
2008/09	431	448		452	451		454	457	458	459	459	459										
2009/10	433	460		465	466		467	467	468	468	469											
2010/11	365	388		389	389		389	391	391	392												
2011/12	435	464		470	471		471	471	471													
2012/13	443	479		481	482		482	483														
2013/14	487	517		523	526		529															
2014/15	348	375		379	382																	
2015/16	402	391		396																		
2016/17	417	449																				
2017/18	447																					

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 8)

Historical Reported Claims and Reported Claim Development

II. Reported Claim Development

Claim Period	12-24	24-36	Months of Development:		60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252
			36-48	48-60																
1995/96																				
1996/97																				
1997/98																				
1998/99																				
1999/00																				
2000/01																				
2001/02				1.000	1.015	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			1.000	
2002/03			1.003	1.010	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
2003/04		1.013	1.006	1.000	1.003	1.003	1.000	1.000	0.997	1.000	1.000	0.997	1.000	1.000						
2004/05	1.148	1.018	1.009	1.000	1.006	1.000	1.000	1.003	1.000	1.000	1.000	1.000	1.000	1.000						
2005/06	1.098	1.013	1.008	1.003	1.003	1.000	1.000	1.005	1.000	1.000	1.005	1.000								
2006/07	1.105	1.007	1.005	1.005	1.002	1.000	1.002	1.002	1.000	1.000	1.000	1.000								
2007/08	1.056	1.004	1.004	1.002	1.002	0.998	1.000	1.000	1.000	1.000										
2008/09	1.039	1.009	0.998	1.007	1.007	1.002	1.002	1.000	1.000											
2009/10	1.062	1.011	1.002	1.002	1.000	1.002	1.000	1.002												
2010/11	1.063	1.003	1.000	1.000	1.005	1.000	1.003													
2011/12	1.067	1.013	1.002	1.000	1.000	1.000														
2012/13	1.081	1.004	1.002	1.000	1.002															
2013/14	1.062	1.012	1.006	1.006																
2014/15	1.078	1.011	1.008																	
2015/16	0.973	1.013																		
2016/17	1.077																			
2017/18																				
Average																				
All	1.070	1.010	1.004	1.003	1.004	1.000	1.001	1.001	1.000	1.000	1.001	0.999	1.000	1.000	1.000	1.000				
Wtd 3	1.041	1.012	1.005	1.002	1.002	1.001	1.002	1.001	1.000	1.000	1.002	0.999	1.000	1.000						
Last 3	1.042	1.012	1.005	1.002	1.002	1.001	1.002	1.001	1.000	1.000	1.002	0.999	1.000	1.000						
Last 5	1.072	1.012	1.003	1.001	1.002	1.001	1.002	1.002	1.000	1.000	1.000	1.000								
x-hi,low																				
Similar																				
Previous	1.070	1.010	1.004	1.003	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
Selected																				
Cumulative	1.070	1.010	1.004	1.003	1.004	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
Percent	91.6%	97.9%	98.9%	99.3%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%						

Data was provided by Corvel.



ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-2 (page 9)

Historical Ratio of Limited Paid Losses and Limited Reported Incurred Losses

I. Ratio of Limited Paid Losses to Limited Reported Incurred Losses

Claim Period	12	24	Months of Development:		60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
			36	48																
1995/96																				
1996/97																				
1997/98																				
1998/99																				
1999/00																				
2000/01																				
2001/02				68.6%	71.4%	72.2%	75.4%	77.4%	79.3%	80.7%	82.1%	81.4%	83.3%	76.9%	80.6%	87.7%	89.9%			
2002/03			63.5%	73.0%	76.6%	78.5%	81.3%	82.2%	85.7%	85.5%	82.7%	82.2%	87.8%	88.2%	88.3%	87.2%				
2003/04		54.4%	59.5%	71.9%	75.4%	72.6%	74.9%	74.9%	73.2%	76.9%	77.4%	75.0%	80.3%	86.4%	89.9%					
2004/05	32.8%	58.7%	62.0%	66.3%	72.1%	75.6%	82.0%	85.6%	81.0%	79.9%	85.7%	87.7%	80.0%	87.2%						
2005/06	26.9%	42.7%	52.0%	60.0%	62.1%	66.8%	77.2%	80.3%	78.5%	75.4%	78.8%	83.5%	79.2%							
2006/07	25.4%	44.4%	54.0%	63.1%	63.6%	60.5%	65.5%	70.1%	72.6%	78.5%	83.0%	89.7%								
2007/08	24.7%	44.8%	46.9%	51.1%	56.1%	58.9%	67.7%	77.6%	75.1%	78.8%	80.8%									
2008/09	17.2%	44.9%	54.5%	49.9%	58.4%	70.8%	77.5%	80.8%	83.7%	88.7%										
2009/10	19.0%	38.1%	44.5%	50.0%	60.0%	68.8%	79.0%	74.8%	81.2%											
2010/11	28.6%	32.4%	45.1%	52.8%	59.8%	66.1%	70.3%	79.3%												
2011/12	18.6%	31.9%	39.4%	45.9%	55.7%	68.1%	76.8%													
2012/13	20.6%	32.9%	50.6%	58.4%	69.9%	79.0%														
2013/14	12.5%	35.0%	50.0%	63.6%	73.4%															
2014/15	35.1%	52.1%	56.0%	68.3%																
2015/16	36.4%	51.6%	61.6%																	
2016/17	32.0%	46.2%																		
2017/18	36.5%																			
Average																				
All	26.2%	43.6%	52.8%	60.2%	65.7%	69.8%	75.2%	78.3%	78.9%	80.6%	81.5%	83.2%	82.1%	84.7%	86.3%	87.4%	89.9%			
Last 3	35.0%	49.9%	55.9%	63.4%	66.3%	71.1%	75.4%	78.3%	80.0%	82.0%	80.8%	87.0%	79.8%	87.3%	86.3%					
Last 5	34.5%	44.2%	48.6%	58.2%	63.2%	69.2%	74.8%	77.2%	78.3%	79.1%	80.8%	84.5%	81.2%							
X-Hi,Low																				
Implicit	26.4%	38.1%	45.9%	56.1%	66.7%	78.1%	82.6%	87.0%	88.2%	90.3%	93.9%	96.9%	97.2%	97.5%						

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-3 (page 1)

Developed Limited Paid Losses and Limited Reported Incurred Losses

I. Developed Limited Paid Losses

Claim Period (1)	Months of Development 12/31/18 (2)	Limited Paid Losses 12/31/18 (3)	Percent Losses Paid (4)	Developed Limited Paid Losses (3)/(4) (5)
1996/97	270	\$0	99.8%	\$0
1997/98	258	0	99.7%	0
1998/99	246	0	99.5%	0
1999/00	234	0	99.3%	0
2000/01	222	0	99.0%	0
2001/02	210	2,137,890	98.6%	2,168,233
2002/03	198	6,876,639	98.0%	7,016,922
2003/04	186	4,362,352	97.1%	4,490,603
2004/05	174	5,187,174	95.9%	5,407,813
2005/06	162	6,454,087	94.4%	6,840,580
2006/07	150	7,974,771	92.5%	8,621,374
2007/08	138	7,614,290	88.6%	8,598,859
2008/09	126	7,092,642	83.6%	8,489,099
2009/10	114	8,224,645	78.2%	10,517,449
2010/11	102	7,851,884	72.4%	10,852,639
2011/12	90	7,936,523	67.5%	10,794,848
2012/13	78	8,005,684	62.8%	11,563,192
2013/14	66	7,221,828	55.2%	13,083,021
2014/15	54	7,352,047	45.6%	16,140,609
2015/16	42	7,236,582	36.1%	20,045,933
2016/17	30	6,987,900	26.6%	26,270,302
2017/18	18	5,670,714	15.9%	35,664,868

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-3 (page 2)

Developed Limited Paid Losses and Limited Reported Incurred Losses

II. Developed Limited Reported Incurred Losses

Claim Period (1)	Months of Development 12/31/18 (2)	Limited Reported Incurred Losses 12/31/18 (3)	Percent Losses Reported (4)	Developed Limited Reported Incurred Losses (3)/(4) (5)
1996/97	270	\$0	100.0%	\$0
1997/98	258	0	100.0%	0
1998/99	246	0	100.0%	0
1999/00	234	0	100.0%	0
2000/01	222	0	100.0%	0
2001/02	210	2,313,689	100.0%	2,313,797
2002/03	198	7,829,228	100.0%	7,831,660
2003/04	186	4,744,682	99.8%	4,754,524
2004/05	174	6,024,974	98.6%	6,109,282
2005/06	162	7,770,697	96.9%	8,019,295
2006/07	150	8,770,319	95.3%	9,202,853
2007/08	138	9,319,522	92.8%	10,042,589
2008/09	126	7,831,432	90.8%	8,629,677
2009/10	114	9,996,241	87.6%	11,411,234
2010/11	102	9,688,465	82.6%	11,736,480
2011/12	90	10,221,741	79.6%	12,335,312
2012/13	78	10,033,828	78.1%	12,286,592
2013/14	66	10,875,898	76.2%	14,282,203
2014/15	54	10,148,601	74.2%	13,686,582
2015/16	42	11,684,632	70.5%	16,573,946
2016/17	30	12,701,370	62.9%	20,209,021
2017/18	18	13,354,877	47.4%	28,204,597

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-3 (page 3)

Developed Limited Paid Losses and Limited Reported Incurred Losses

Footnotes:

Sections I and II, (3) are from Exhibit WC-1.

Sections I and II, (4) are from Exhibit WC-2.

The claim(s) indicated by a "\*" have been limited in development

(a) through (g) was provided by Corvel.

Claim Number (a)	Date of Loss (b)	Claim Period (c)	Specific Self-Insured Retention (d)	Limited Paid Losses 12/31/18 (e)	Limited Case Reserves 12/31/18 (f)	Limited Reported Incurred Losses 12/31/18 (g)
	11/9/12	2012/13	\$2,000,000	\$2,000,000 *	\$0	\$2,000,000 *
	8/12/11	2011/12	2,000,000	2,000,000 *	0	2,000,000 *

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-4

Developed Limited Case Reserves

Claim Period (1)	Months of Development 12/31/18 (2)	Percent Losses Paid (3)	Percent Losses Reported (4)	Percent Losses Reserved 12/31/18 ((4)-(3))/ (100.0%-(3)) (5)	Limited Paid Losses 12/31/18 (6)	Limited Case Reserves 12/31/18 (7)	Developed Limited Case Reserves (6)+(7)/(5) (8)
1996/97	270	99.8%	100.0%	100.0%	\$0	\$0	\$0
1997/98	258	99.7%	100.0%	100.0%	0	0	0
1998/99	246	99.5%	100.0%	100.0%	0	0	0
1999/00	234	99.3%	100.0%	100.0%	0	0	0
2000/01	222	99.0%	100.0%	99.9%	0	0	0
2001/02	210	98.6%	100.0%	99.7%	2,137,890	175,799	2,314,276
2002/03	198	98.0%	100.0%	98.4%	6,876,639	952,589	7,844,257
2003/04	186	97.1%	99.8%	92.8%	4,362,352	382,330	4,774,558
2004/05	174	95.9%	98.6%	66.2%	5,187,174	837,800	6,453,183
2005/06	162	94.4%	96.9%	45.1%	6,454,087	1,316,609	9,371,281
2006/07	150	92.5%	95.3%	37.3%	7,974,771	795,548	10,105,703
2007/08	138	88.6%	92.8%	37.1%	7,614,290	1,705,233	12,208,387
2008/09	126	83.6%	90.8%	43.8%	7,092,642	738,789	8,780,571
2009/10	114	78.2%	87.6%	43.1%	8,224,645	1,771,596	12,333,240
2010/11	102	72.4%	82.6%	36.9%	7,851,884	1,836,580	12,830,457
2011/12	90	67.5%	79.6%	37.1%	7,936,523	2,285,218	14,099,975
2012/13	78	62.8%	78.1%	41.1%	8,005,684	2,028,144	12,936,858
2013/14	66	55.2%	76.2%	46.8%	7,221,828	3,654,070	15,035,782
2014/15	54	45.6%	74.2%	52.5%	7,352,047	2,796,554	12,676,255
2015/16	42	36.1%	70.5%	53.8%	7,236,582	4,448,050	15,499,094
2016/17	30	26.6%	62.9%	49.4%	6,987,900	5,713,469	18,556,691
2017/18	18	15.9%	47.4%	37.4%	5,670,714	7,684,163	26,218,824

(3) and (4) are from Exhibit WC-2.

(6) and (7) are from Exhibit WC-1.

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-5 (page 1)

Preliminary Projected Ultimate Limited Losses to 2017/18

Claim Period (1)	Developed Limited Paid Losses (2)	Developed Limited Reported Incurred Losses (3)	Developed Limited Case Reserves (4)	Preliminary Projected Ultimate Limited Losses (5)
1996/97	\$0	\$0	\$0	\$0
1997/98	0	0	0	0
1998/99	0	0	0	0
1999/00	0	0	0	0
2000/01	0	0	0	0
2001/02	2,168,233	2,313,797	2,314,276	2,331,269
2002/03	7,016,922	7,831,660	7,844,257	7,924,487
2003/04	4,490,603	4,754,524	4,774,558	4,782,915
2004/05	5,407,813	6,109,282	6,453,183	6,108,754
2005/06	6,840,580	8,019,295	9,371,281	8,324,346
2006/07	8,621,374	9,202,853	10,105,703	9,447,697
2007/08	8,598,859	10,042,589	12,208,387	10,620,162
2008/09	8,489,099	8,629,677	8,780,571	8,661,919
2009/10	10,517,449	11,411,234	12,333,240	11,601,279
2010/11	10,852,639	11,736,480	12,830,457	11,997,303
2011/12	10,794,848	12,335,312	14,099,975	12,733,085
2012/13	11,563,192	12,286,592	12,936,858	12,402,018
2013/14	13,083,021	14,282,203	15,035,782	14,343,798
2014/15	16,140,609	13,686,582	12,676,255	13,773,257
2015/16	20,045,933	16,573,946	15,499,094	16,838,403
2016/17	26,270,302	20,209,021	18,556,691	20,760,345
2017/18	35,664,868	28,204,597	26,218,824	27,211,711

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-5 (page 2)

Preliminary Projected Ultimate Limited Losses to 2017/18

Footnotes:

(2) and (3) are from Exhibit WC-3.

(4) is from Exhibit WC-4.

(5) is based on (2) to (4), weighted as follows:

Subject to a minimum of Exhibit WC-1, (8) and minimum 10% of case reserves as IBNR, unless all claims are closed

Claim Period	Developed Limited Paid Losses	Developed Limited Reported Incurred Losses	Developed Limited Case Reserves
to 2003/04	20.0%	40.0%	40.0%
2004/05	20.0%	40.0%	40.0%
2005/06	20.0%	40.0%	40.0%
2006/07	20.0%	40.0%	40.0%
2007/08	20.0%	40.0%	40.0%
2008/09	20.0%	40.0%	40.0%
2009/10	20.0%	40.0%	40.0%
2010/11	20.0%	40.0%	40.0%
2011/12	20.0%	40.0%	40.0%
2012/13	20.0%	40.0%	40.0%
2013/14	20.0%	40.0%	40.0%
2014/15	20.0%	40.0%	40.0%
2015/16	20.0%	40.0%	40.0%
2016/17	20.0%	40.0%	40.0%
2017/18	0.0%	50.0%	50.0%

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-6

Bornhuetter - Ferguson Analysis

I. A-priori Loss Rate

Claim Period (1)	Preliminary Projected Ultimate Limited Losses (2)	Payroll (000) (3)	Limited Loss Rate per \$100 of Payroll (2)/(3)/10 (4)	Loss Rate Trend (2018/19 = 1.000) (5)	Trended Limited Loss Rate per \$100 of Payroll (4)X(5) (6)	Projected A-priori Loss Rate per \$100 of Payroll (7)/(5) (8)
2013/14	\$14,343,798	\$157,740	\$9.09	1.131	\$10.29	\$10.16
2014/15	13,773,257	157,740	8.73	1.104	9.64	10.42
2015/16	16,838,403	174,138	9.67	1.077	10.41	10.68
2016/17	20,760,345	180,114	11.53	1.051	12.11	10.94
2017/18	27,211,711	185,518	14.67	1.025	15.03	11.22

(7) Projected 2018/19 a-priori loss rate per \$100 of Payroll \$11.50

II. Bornhuetter - Ferguson Analysis Based on Limited Paid Losses:

Claim Period (1)	Limited Paid Losses 12/31/18 (2)	Percent Losses Paid (3)	Projected A-priori Loss Rate per \$100 of Payroll (4)	Payroll (000) (5)	B-F Unpaid Losses (100.0%-(3)) X(4)X(5)X10 (6)	B-F Ultimate Limited Paid Losses (2)+(6) (7)
2013/14	\$7,221,828	55.2%	\$10.16	\$157,740	\$7,180,858	\$14,402,685
2014/15	7,352,047	45.6%	10.42	157,740	8,945,799	16,297,847
2015/16	7,236,582	36.1%	10.68	174,138	11,879,520	19,116,101
2016/17	6,987,900	26.6%	10.94	180,114	14,466,781	21,454,681
2017/18	5,670,714	15.9%	11.22	185,518	17,499,794	23,170,508

III. Bornhuetter - Ferguson Analysis Based on Limited Reported Incurred Losses:

Claim Period (1)	Limited Reported Incurred Losses 12/31/18 (2)	Percent Losses Reported (3)	Projected A-priori Loss Rate per \$100 of Payroll (4)	Payroll (000) (5)	B-F Unreported Losses (100.0%-(3)) X(4)X(5)X10 (6)	B-F Ultimate Limited Reported Losses (2)+(6) (7)
2013/14	\$10,875,898	76.2%	\$10.16	\$157,740	\$3,822,845	\$14,698,743
2014/15	10,148,601	74.2%	10.42	157,740	4,246,996	14,395,597
2015/16	11,684,632	70.5%	10.68	174,138	5,484,285	17,168,917
2016/17	12,701,370	62.9%	10.94	180,114	7,322,083	20,023,453
2017/18	13,354,877	47.4%	11.22	185,518	10,955,579	24,310,455

Section I, (2) is from Exhibit WC-5.

Section I, (3), Section II, (5) and Section III, (5) were provided by OCFA

Section I, (5) is based on a 2.5% trend.

Section I, (7) is based on Section I, (6) and the following weights

Claim Period	Weight
2013/14	20.0%
2014/15	20.0%
2015/16	20.0%
2016/17	20.0%
2017/18	20.0%
Prior	0.0%

where the prior loss rate = \$10.94  
which was extracted from the previous report)

Sections II and III, (2) are from Exhibit WC-1

Sections II and III, (3) are from Exhibit WC-2

Sections II and III, (4) are from Section I, (8)



ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-7

Frequency Times Severity Analysis

I. Projected Ultimate Claims

Claim Period (1)	Months of Development 12/31/18 (2)	Reported Claims 12/31/18 (3)	Percent Claims Reported (4)	Projected Ultimate Claims (3)/(4) (5)
2013/14	66	528	99.8%	529
2014/15	54	383	99.5%	385
2015/16	42	397	99.1%	401
2016/17	30	453	98.4%	460
2017/18	18	470	94.8%	496

II. Frequency Times Severity

Claim Period (1)	Preliminary Projected Ultimate Limited Losses (2)	Projected Ultimate Claims (3)	Average Severity (2)/(3) (4)	Severity Trend (2018/19 = 1.000) (5)	Trended Average Claim Severity (4)X(5) (6)	De-Trended Projected 2018/19 Average Claim Severity (7)/(5) (8)	Frequency Times Severity (3)X(8) (9)
2013/14	\$14,343,798	529	\$27,115	1.312	\$35,564	\$36,237	\$19,169,523
2014/15	13,773,257	385	35,775	1.242	44,445	38,258	14,729,142
2015/16	16,838,403	401	41,991	1.177	49,413	40,390	16,196,538
2016/17	20,760,345	460	45,131	1.115	50,304	42,642	19,615,380
2017/18	27,211,711	496	54,862	1.056	57,921	45,019	22,329,637
(7) Projected 2018/19 average claim severity					\$47,529		

Section I, (3) is from Exhibit WC-1.

Section I, (4) is from Exhibit WC-2.

Section II, (2) is from Exhibit WC-5.

Section II, (3) is from Section I, (5).

Section II, (5) is based on a 5.6% trend

Section II, (7) is based on (6) and the following weights

Claim Period	Weight
2013/14	20.0%
2014/15	20.0%
2015/16	20.0%
2016/17	20.0%
2017/18	20.0%

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-8 (page 1)

Projected Ultimate Limited Losses to 2017/18

Claim Period (1)	Developed Limited Paid Losses (2)	Developed Limited Reported Incurred Losses (3)	Developed Limited Case Reserves (4)	B-F Paid Method Ultimate Losses (5)	B-F Reported Method Ultimate Losses (6)	Frequency Times Severity (7)	Projected Ultimate Limited Losses (8)
1996/97	\$0	\$0	\$0				\$0
1997/98	0	0	0				0
1998/99	0	0	0				0
1999/00	0	0	0				0
2000/01	0	0	0				0
2001/02	2,168,233	2,313,797	2,314,276				2,331,269
2002/03	7,016,922	7,831,660	7,844,257				7,924,487
2003/04	4,490,603	4,754,524	4,774,558				4,782,915
2004/05	5,407,813	6,109,282	6,453,183				6,108,754
2005/06	6,840,580	8,019,295	9,371,281				7,902,358
2006/07	8,621,374	9,202,853	10,105,703				9,150,831
2007/08	8,598,859	10,042,589	12,208,387				9,898,257
2008/09	8,489,099	8,629,677	8,780,571				8,603,624
2009/10	10,517,449	11,411,234	12,333,240				11,238,121
2010/11	10,852,639	11,736,480	12,830,457				11,601,739
2011/12	10,794,848	12,335,312	14,099,975				12,072,059
2012/13	11,563,192	12,286,592	12,936,858				12,127,285
2013/14	13,083,021	14,282,203	15,035,782	14,402,685	14,698,743	19,169,523	13,953,246
2014/15	16,140,609	13,686,582	12,676,255	16,297,847	14,395,597	14,729,142	14,119,692
2015/16	20,045,933	16,573,946	15,499,094	19,116,101	17,168,917	16,196,538	16,489,721
2016/17	26,270,302	20,209,021	18,556,691	21,454,681	20,023,453	19,615,380	19,971,845
2017/18	35,664,868	28,204,597	26,218,824	23,170,508	24,310,455	22,329,637	24,846,804

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-8 (page 2)

Projected Ultimate Limited Losses to 2017/18

Footnotes:

(2) and (3) are from Exhibit WC-3.

(4) is from Exhibit WC-4.

(5) and (6) are from Exhibit WC-6.

(7) is from Exhibit WC-7.

(8) is based on (2) to (7), weighted as follows:

Subject to a minimum of Exhibit WC-1, (8) and minimum 10% of case reserves as IBNR, unless all claims are closed

Claim Period	Developed Limited Paid Losses	Developed Limited Reported Incurred Losses	Developed Limited Case Reserves	B-F Paid Method Ultimate Losses	B-F Reported Method Ultimate Losses	Frequency Times Severity
to 2003/04	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2004/05	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2005/06	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2006/07	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2007/08	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2008/09	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2009/10	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2010/11	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2011/12	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2012/13	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2013/14	40.0%	40.0%	20.0%	0.0%	0.0%	0.0%
2014/15	30.0%	40.0%	30.0%	0.0%	0.0%	0.0%
2015/16	0.0%	30.0%	30.0%	10.0%	10.0%	20.0%
2016/17	0.0%	20.0%	20.0%	20.0%	20.0%	20.0%
2017/18	0.0%	20.0%	20.0%	20.0%	20.0%	20.0%

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-9

Projected Ultimate Limited Losses for 2018/19 and Subsequent

Claim Period (1)	Projected Ultimate Limited Losses (2)	Payroll (000) (3)	Limited Loss Rate per \$100 of Payroll (2)/(3)/10 (4)	Loss Rate Trend (2018/19 = 1.000) (5)	Trended Limited Loss Rate per \$100 of Payroll (4)X(5) (6)
2013/14	\$13,953,246	\$157,740	\$8.85	1.131	\$10.01
2014/15	14,119,692	157,740	8.95	1.104	9.88
2015/16	16,489,721	174,138	9.47	1.077	10.20
2016/17	19,971,845	180,114	11.09	1.051	11.65
2017/18	24,846,804	185,518	13.39	1.025	13.73
Total	\$89,381,309	\$855,249	\$10.45		\$11.09

Claim Period (1)	Projected Limited Loss Rate per \$100 of Payroll (7)	Projected Payroll (000) (8)	Projected Ultimate Limited Losses (7)X(8)X10 (9)	Present Value Factor (10)	Present Value of Projected Limited Loss Rate per \$100 of Payroll (7)X(10) (11)	Present Value of Projected Ultimate Limited Losses (8)X(11)X10 (12)
2018/19	\$11.09	\$185,518	\$20,573,946	0.94	\$10.42	\$19,330,976
2019/20	11.37	185,518	21,093,346	0.94	10.69	19,831,827
2020/21	11.65	185,518	21,612,796	0.94	10.95	20,314,173
2021/22	11.94	185,518	22,150,796	0.94	11.22	20,815,070
2022/23	12.24	185,518	22,707,349	0.94	11.51	21,353,071

(2) is from Exhibit WC-8.

(3) was provided by OCFA.

(5) is based on a 2.5% trend.

(7) for 2018/19 is based on (6) and the following weights

Claim Period	Weights
2013/14	20.0%
2014/15	20.0%
2015/16	20.0%
2016/17	20.0%
2017/18	20.0%
Prior	0.0%

where the prior loss rate = \$10.94

(7) for 2019/20 and subsequent are based on 2018/19 plus a 2.5% trend

(8) to 2022/23 was provided by OCFA. Other claim periods are based on a 3% trend

(10) is based on a 1% interest rate and the payout pattern in Exhibit WC-2

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-10

Estimated Outstanding Losses as of December 31, 2018

Claim Period (1)	Limited Paid Losses 12/31/18 (2)	Limited Case Reserves 12/31/18 (3)	Limited Reported Incurred Losses 12/31/18 (4)	Projected Ultimate Limited Losses (5)	Estimated Outstanding Losses 12/31/18 (5)-(2) (6)	Estimated IBNR 12/31/18 (6)-(3) (7)
1996/97	\$0	\$0	\$0	\$0	\$0	\$0
1997/98	0	0	0	0	0	0
1998/99	0	0	0	0	0	0
1999/00	0	0	0	0	0	0
2000/01	0	0	0	0	0	0
2001/02	2,137,890	175,799	2,313,689	2,331,269	193,379	17,580
2002/03	6,876,639	952,589	7,829,228	7,924,487	1,047,848	95,259
2003/04	4,362,352	382,330	4,744,682	4,782,915	420,563	38,233
2004/05	5,187,174	837,800	6,024,974	6,108,754	921,580	83,780
2005/06	6,454,087	1,316,609	7,770,697	7,902,358	1,448,270	131,661
2006/07	7,974,771	795,548	8,770,319	9,150,831	1,176,060	380,512
2007/08	7,614,290	1,705,233	9,319,522	9,898,257	2,283,967	578,734
2008/09	7,092,642	738,789	7,831,432	8,603,624	1,510,982	772,193
2009/10	8,224,645	1,771,596	9,996,241	11,238,121	3,013,476	1,241,880
2010/11	7,851,884	1,836,580	9,688,465	11,601,739	3,749,855	1,913,275
2011/12	7,936,523	2,285,218	10,221,741	12,072,059	4,135,537	1,850,319
2012/13	8,005,684	2,028,144	10,033,828	12,127,285	4,121,601	2,093,457
2013/14	7,221,828	3,654,070	10,875,898	13,953,246	6,731,418	3,077,348
2014/15	7,352,047	2,796,554	10,148,601	14,119,692	6,767,645	3,971,091
2015/16	7,236,582	4,448,050	11,684,632	16,489,721	9,253,140	4,805,090
2016/17	6,987,900	5,713,469	12,701,370	19,971,845	12,983,945	7,270,476
2017/18	5,670,714	7,684,163	13,354,877	24,846,804	19,176,090	11,491,927
2018/19	666,157	2,592,917	3,259,074	10,286,973	9,620,816	7,027,899
Total	\$114,853,810	\$41,715,459	\$156,569,269	\$203,409,982	\$88,556,172	\$46,840,714
Amounts at 06/30/18	\$107,888,057	\$38,145,444	\$146,033,501	\$192,259,756	\$84,371,700	\$46,226,256

The amounts above reflect aggregate reinsurance.

(2), (3) and (4) are from Exhibit WC-1.

(5) to 2017/18 is from Exhibit WC-8. The amount for 2018/19 is from Exhibit WC-9. (50% of the period).

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-11

Present Value of Estimated Outstanding Losses as of December 31, 2018

Claim Period (1)	Estimated Outstanding Losses 12/31/18 (2)	Present Value Factor (3)	Present Value of Estimated Outstanding Losses 12/31/18 (2)X(3) (4)	Anticipated Future Investment Income (2)-(4) (5)
1996/97	\$0	0.98	\$0	\$0
1997/98	0	0.98	0	0
1998/99	0	0.98	0	0
1999/00	0	0.98	0	0
2000/01	0	0.98	0	0
2001/02	193,379	0.97	188,351	5,028
2002/03	1,047,848	0.97	1,020,604	27,244
2003/04	420,563	0.97	409,208	11,355
2004/05	921,580	0.97	896,697	24,883
2005/06	1,448,270	0.97	1,409,167	39,103
2006/07	1,176,060	0.97	1,143,130	32,930
2007/08	2,283,967	0.97	2,215,448	68,519
2008/09	1,510,982	0.98	1,473,207	37,775
2009/10	3,013,476	0.97	2,929,099	84,377
2010/11	3,749,855	0.97	3,641,109	108,746
2011/12	4,135,537	0.97	3,999,064	136,473
2012/13	4,121,601	0.96	3,964,980	156,621
2013/14	6,731,418	0.96	6,448,698	282,720
2014/15	6,767,645	0.96	6,483,404	284,241
2015/16	9,253,140	0.96	8,846,002	407,138
2016/17	12,983,945	0.95	12,373,700	610,245
2017/18	19,176,090	0.95	18,217,286	958,804
2018/19	9,620,816	0.95	9,120,534	500,282
Total	\$88,556,172		\$84,779,688	\$3,776,484

(2) is from Exhibit WC-10.

(3) is based on a 1% interest rate and the payout pattern in Exhibit WC-2

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-12 (page 1)

Projected Losses Paid January 1, 2019 to June 30, 2023

I. Projected Losses Paid January 1, 2019 to June 30, 2019

Claim Period (1)	Months of Development 12/31/18 (2)	Percent Losses Paid (3)	Months of Development 6/30/19 (4)	Percent Losses Paid (5)	Percent Outstanding Losses Paid 1/1/19 to 6/30/19 ((5)-(3))/ (100.0%-(3)) (6)	Estimated Outstanding Losses 12/31/18 (7)	Projected Losses Paid (6)X(7) (8)	Estimated Outstanding Losses 6/30/19 (7)-(8) (9)	Present Value Factor (10)	Present Value of Estimated Outstanding Losses 6/30/19 (9)X(10) (11)
1996/97	270.0	99.8%	276.0	99.8%	17.6%	\$0	\$0	\$0	0.98	\$0
1997/98	258.0	99.7%	264.0	99.7%	17.6%	0	0	0	0.98	0
1998/99	246.0	99.5%	252.0	99.6%	17.6%	0	0	0	0.98	0
1999/00	234.0	99.3%	240.0	99.4%	17.6%	0	0	0	0.98	0
2000/01	222.0	99.0%	228.0	99.2%	17.6%	0	0	0	0.98	0
2001/02	210.0	98.6%	216.0	98.8%	17.6%	193,379	34,126	159,253	0.97	155,112
2002/03	198.0	98.0%	204.0	98.4%	17.6%	1,047,848	184,914	862,934	0.97	840,498
2003/04	186.0	97.1%	192.0	97.6%	17.6%	420,563	74,217	346,346	0.97	336,995
2004/05	174.0	95.9%	180.0	96.6%	17.6%	921,580	162,632	758,948	0.97	738,456
2005/06	162.0	94.4%	168.0	95.2%	15.0%	1,448,270	217,881	1,230,389	0.97	1,197,168
2006/07	150.0	92.5%	156.0	93.5%	13.3%	1,176,060	156,808	1,019,252	0.97	990,713
2007/08	138.0	88.6%	144.0	91.5%	25.8%	2,283,967	588,446	1,695,521	0.97	1,644,655
2008/09	126.0	83.6%	132.0	85.6%	12.5%	1,510,982	188,299	1,322,683	0.98	1,289,616
2009/10	114.0	78.2%	120.0	81.5%	15.1%	3,013,476	456,168	2,557,308	0.97	2,485,703
2010/11	102.0	72.4%	108.0	74.9%	9.2%	3,749,855	345,827	3,404,028	0.97	3,305,311
2011/12	90.0	67.5%	96.0	69.8%	7.1%	4,135,537	292,669	3,842,868	0.97	3,716,053
2012/13	78.0	62.8%	84.0	65.2%	6.5%	4,121,601	265,910	3,855,691	0.96	3,709,175
2013/14	66.0	55.2%	72.0	60.4%	11.6%	6,731,418	781,325	5,950,093	0.96	5,700,189
2014/15	54.0	45.6%	60.0	50.0%	8.2%	6,767,645	553,095	6,214,550	0.96	5,953,539
2015/16	42.0	36.1%	48.0	41.1%	7.8%	9,253,140	724,033	8,529,107	0.96	8,153,826
2016/17	30.0	26.6%	36.0	31.1%	6.1%	12,983,945	796,018	12,187,927	0.95	11,615,094
2017/18	18.0	15.9%	24.0	22.1%	7.4%	19,176,090	1,413,695	17,762,395	0.95	16,874,275
2018/19	6.0	4.9%	12.0	9.7%	5.1%	19,907,789	1,014,743	18,893,046	0.95	17,910,608
Total						\$98,843,145	\$8,250,806	\$90,592,339		\$86,616,986
Amounts paid from 7/1/18 to 12/31/18							6,965,753			
Projected loss paid from 7/1/17 to 6/30/18							15,216,559			

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-12 (page 2)

Projected Losses Paid January 1, 2019 to June 30, 2020

II. Projected Losses Paid July 1, 2019 to June 30, 2020

Claim Period (1)	Months of Development 6/30/19 (2)	Percent Losses Paid (3)	Months of Development 6/30/20 (4)	Percent Losses Paid (5)	Percent Outstanding Losses Paid 7/1/19 to 6/30/20 ((5)-(3))/ (100.0%-(3)) (6)	Estimated Outstanding Losses 6/30/19 (7)	Projected Losses Paid (6)X(7) (8)	Estimated Outstanding Losses 6/30/20 (7)-(8) (9)	Present Value Factor (10)	Present Value of Estimated Outstanding Losses 6/30/20 (9)X(10) (11)
1996/97	276.0	99.8%	288.0	99.9%	30.0%	\$0	\$0	\$0	0.98	\$0
1997/98	264.0	99.7%	276.0	99.8%	30.0%	0	0	0	0.98	0
1998/99	252.0	99.6%	264.0	99.7%	30.0%	0	0	0	0.98	0
1999/00	240.0	99.4%	252.0	99.6%	30.0%	0	0	0	0.98	0
2000/01	228.0	99.2%	240.0	99.4%	30.0%	0	0	0	0.98	0
2001/02	216.0	98.8%	228.0	99.2%	30.0%	159,253	47,776	111,477	0.98	108,690
2002/03	204.0	98.4%	216.0	98.8%	30.0%	862,934	258,880	604,054	0.97	588,349
2003/04	192.0	97.6%	204.0	98.4%	30.0%	346,346	103,904	242,442	0.97	236,139
2004/05	180.0	96.6%	192.0	97.6%	30.0%	758,948	227,684	531,264	0.97	516,920
2005/06	168.0	95.2%	180.0	96.6%	30.0%	1,230,389	369,117	861,272	0.97	838,018
2006/07	156.0	93.5%	168.0	95.2%	26.2%	1,019,252	266,574	752,678	0.97	732,356
2007/08	144.0	91.5%	156.0	93.5%	23.5%	1,695,521	398,946	1,296,575	0.97	1,260,271
2008/09	132.0	85.6%	144.0	91.5%	41.0%	1,322,683	541,933	780,750	0.97	757,328
2009/10	120.0	81.5%	132.0	85.6%	22.2%	2,557,308	566,755	1,990,553	0.98	1,940,789
2010/11	108.0	74.9%	120.0	81.5%	26.3%	3,404,028	895,083	2,508,945	0.97	2,438,695
2011/12	96.0	69.8%	108.0	74.9%	16.9%	3,842,868	648,961	3,193,907	0.97	3,101,284
2012/13	84.0	65.2%	96.0	69.8%	13.2%	3,855,691	509,660	3,346,031	0.97	3,235,612
2013/14	72.0	60.4%	84.0	65.2%	12.1%	5,950,093	721,223	5,228,870	0.96	5,030,173
2014/15	60.0	50.0%	72.0	60.4%	20.8%	6,214,550	1,292,626	4,921,924	0.96	4,715,203
2015/16	48.0	41.1%	60.0	50.0%	15.1%	8,529,107	1,288,778	7,240,329	0.96	6,936,235
2016/17	36.0	31.1%	48.0	41.1%	14.5%	12,187,927	1,768,930	10,418,997	0.96	9,960,561
2017/18	24.0	22.1%	36.0	31.1%	11.6%	17,762,395	2,052,138	15,710,257	0.95	14,971,875
2018/19	12.0	9.7%	24.0	22.1%	13.7%	18,893,046	2,594,394	16,298,652	0.95	15,483,719
2019/20	0.0	0.0%	12.0	9.7%	9.7%	21,093,346	2,046,055	19,047,291	0.95	18,056,832
Total						\$111,685,685	\$16,599,417	\$95,086,268		\$90,909,049



ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-12 (page 3)

Projected Losses Paid January 1, 2019 to June 30, 2021

III. Projected Losses Paid July 1, 2020 to June 30, 2021

Claim Period (1)	Months of Development 6/30/20 (2)	Percent Losses Paid (3)	Months of Development 6/30/21 (4)	Percent Losses Paid (5)	Percent Outstanding Losses Paid 7/1/20 to 6/30/21 ((5)-(3))/ (100.0%-(3)) (6)	Estimated Outstanding Losses 6/30/20 (7)	Projected Losses Paid (6)X(7) (8)	Estimated Outstanding Losses 6/30/21 (7)-(8) (9)	Present Value Factor (10)	Present Value of Estimated Outstanding Losses 6/30/21 (9)X(10) (11)
1996/97	288.0	99.9%	300.0	99.9%	30.0%	\$0	\$0	\$0	0.98	\$0
1997/98	276.0	99.8%	288.0	99.9%	30.0%	0	0	0	0.98	0
1998/99	264.0	99.7%	276.0	99.8%	30.0%	0	0	0	0.98	0
1999/00	252.0	99.6%	264.0	99.7%	30.0%	0	0	0	0.98	0
2000/01	240.0	99.4%	252.0	99.6%	30.0%	0	0	0	0.98	0
2001/02	228.0	99.2%	240.0	99.4%	30.0%	111,477	33,443	78,034	0.98	76,083
2002/03	216.0	98.8%	228.0	99.2%	30.0%	604,054	181,216	422,838	0.98	412,267
2003/04	204.0	98.4%	216.0	98.8%	30.0%	242,442	72,733	169,709	0.97	165,297
2004/05	192.0	97.6%	204.0	98.4%	30.0%	531,264	159,379	371,885	0.97	362,216
2005/06	180.0	96.6%	192.0	97.6%	30.0%	861,272	258,382	602,890	0.97	586,612
2006/07	168.0	95.2%	180.0	96.6%	30.0%	752,678	225,803	526,875	0.97	512,649
2007/08	156.0	93.5%	168.0	95.2%	26.2%	1,296,575	339,104	957,471	0.97	931,619
2008/09	144.0	91.5%	156.0	93.5%	23.5%	780,750	183,706	597,044	0.97	580,327
2009/10	132.0	85.6%	144.0	91.5%	41.0%	1,990,553	815,574	1,174,979	0.97	1,139,730
2010/11	120.0	81.5%	132.0	85.6%	22.2%	2,508,945	556,036	1,952,909	0.98	1,904,086
2011/12	108.0	74.9%	120.0	81.5%	26.3%	3,193,907	839,832	2,354,075	0.97	2,288,161
2012/13	96.0	69.8%	108.0	74.9%	16.9%	3,346,031	565,058	2,780,973	0.97	2,700,325
2013/14	84.0	65.2%	96.0	69.8%	13.2%	5,228,870	691,172	4,537,698	0.97	4,387,954
2014/15	72.0	60.4%	84.0	65.2%	12.1%	4,921,924	596,597	4,325,327	0.96	4,160,965
2015/16	60.0	50.0%	72.0	60.4%	20.8%	7,240,329	1,505,988	5,734,341	0.96	5,493,499
2016/17	48.0	41.1%	60.0	50.0%	15.1%	10,418,997	1,574,348	8,844,649	0.96	8,473,174
2017/18	36.0	31.1%	48.0	41.1%	14.5%	15,710,257	2,280,153	13,430,104	0.96	12,839,179
2018/19	24.0	22.1%	36.0	31.1%	11.6%	16,298,652	1,883,028	14,415,624	0.95	13,738,090
2019/20	12.0	9.7%	24.0	22.1%	13.7%	19,047,291	2,615,575	16,431,716	0.95	15,610,130
2020/21	0.0	0.0%	12.0	9.7%	9.7%	21,612,796	2,096,441	19,516,355	0.95	18,501,505
Total						\$116,699,064	\$17,473,568	\$99,225,496		\$94,863,868

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-12 (page 4)

Projected Losses Paid January 1, 2019 to June 30, 2022

IV. Projected Losses Paid July 1, 2021 to June 30, 2022

Claim Period (1)	Months of Development 6/30/21 (2)	Percent Losses Paid (3)	Months of Development 6/30/22 (4)	Percent Losses Paid (5)	Percent Outstanding Losses Paid 7/1/21 to 6/30/22 ((5)-(3))/ (100.0%-(3)) (6)	Estimated Outstanding Losses 6/30/21 (7)	Projected Losses Paid (6)X(7) (8)	Estimated Outstanding Losses 6/30/22 (7)-(8) (9)	Present Value Factor (10)	Present Value of Estimated Outstanding Losses 6/30/22 (9)X(10) (11)
1996/97	300.0	99.9%	312.0	99.9%	30.0%	\$0	\$0	\$0	0.99	\$0
1997/98	288.0	99.9%	300.0	99.9%	30.0%	0	0	0	0.98	0
1998/99	276.0	99.8%	288.0	99.9%	30.0%	0	0	0	0.98	0
1999/00	264.0	99.7%	276.0	99.8%	30.0%	0	0	0	0.98	0
2000/01	252.0	99.6%	264.0	99.7%	30.0%	0	0	0	0.98	0
2001/02	240.0	99.4%	252.0	99.6%	30.0%	78,034	23,410	54,624	0.98	53,313
2002/03	228.0	99.2%	240.0	99.4%	30.0%	422,838	126,851	295,987	0.98	288,587
2003/04	216.0	98.8%	228.0	99.2%	30.0%	169,709	50,913	118,796	0.98	115,826
2004/05	204.0	98.4%	216.0	98.8%	30.0%	371,885	111,566	260,319	0.97	253,551
2005/06	192.0	97.6%	204.0	98.4%	30.0%	602,890	180,867	422,023	0.97	411,050
2006/07	180.0	96.6%	192.0	97.6%	30.0%	526,875	158,062	368,813	0.97	358,855
2007/08	168.0	95.2%	180.0	96.6%	30.0%	957,471	287,241	670,230	0.97	652,134
2008/09	156.0	93.5%	168.0	95.2%	26.2%	597,044	156,150	440,894	0.97	428,990
2009/10	144.0	91.5%	156.0	93.5%	23.5%	1,174,979	276,466	898,513	0.97	873,355
2010/11	132.0	85.6%	144.0	91.5%	41.0%	1,952,909	800,150	1,152,759	0.97	1,118,176
2011/12	120.0	81.5%	132.0	85.6%	22.2%	2,354,075	521,714	1,832,361	0.98	1,786,552
2012/13	108.0	74.9%	120.0	81.5%	26.3%	2,780,973	731,252	2,049,721	0.97	1,992,329
2013/14	96.0	69.8%	108.0	74.9%	16.9%	4,537,698	766,300	3,771,398	0.97	3,662,027
2014/15	84.0	65.2%	96.0	69.8%	13.2%	4,325,327	571,739	3,753,588	0.97	3,629,720
2015/16	72.0	60.4%	84.0	65.2%	12.1%	5,734,341	695,072	5,039,269	0.96	4,847,777
2016/17	60.0	50.0%	72.0	60.4%	20.8%	8,844,649	1,839,687	7,004,962	0.96	6,710,754
2017/18	48.0	41.1%	60.0	50.0%	15.1%	13,430,104	2,029,337	11,400,767	0.96	10,921,935
2018/19	36.0	31.1%	48.0	41.1%	14.5%	14,415,624	2,092,253	12,323,371	0.96	11,781,143
2019/20	24.0	22.1%	36.0	31.1%	11.6%	16,431,716	1,898,401	14,533,315	0.95	13,850,249
2020/21	12.0	9.7%	24.0	22.1%	13.7%	19,516,355	2,679,987	16,836,368	0.95	15,994,550
2021/22	0.0	0.0%	12.0	9.7%	9.7%	22,150,796	2,148,627	20,002,169	0.95	18,962,056
Total						\$121,376,292	\$18,146,045	\$103,230,247		\$98,692,929

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-12 (page 5)

Projected Losses Paid January 1, 2019 to June 30, 2023

V. Projected Losses Paid July 1, 2022 to June 30, 2023

Claim Period (1)	Months of Development 6/30/22 (2)	Percent Losses Paid (3)	Months of Development 6/30/23 (4)	Percent Losses Paid (5)	Percent Outstanding Losses Paid 7/1/22 to 6/30/23 ((5)-(3))/ (100.0%-(3)) (6)	Estimated Outstanding Losses 6/30/22 (7)	Projected Losses Paid (6)X(7) (8)	Estimated Outstanding Losses 6/30/23 (7)-(8) (9)	Present Value Factor (10)	Present Value of Estimated Outstanding Losses 6/30/23 (9)X(10) (11)
1996/97	312.0	99.9%	324.0	100.0%	30.0%	\$0	\$0	\$0	0.99	\$0
1997/98	300.0	99.9%	312.0	99.9%	30.0%	0	0	0	0.99	0
1998/99	288.0	99.9%	300.0	99.9%	30.0%	0	0	0	0.98	0
1999/00	276.0	99.8%	288.0	99.9%	30.0%	0	0	0	0.98	0
2000/01	264.0	99.7%	276.0	99.8%	30.0%	0	0	0	0.98	0
2001/02	252.0	99.6%	264.0	99.7%	30.0%	54,624	16,387	38,237	0.98	37,358
2002/03	240.0	99.4%	252.0	99.6%	30.0%	295,987	88,796	207,191	0.98	202,218
2003/04	228.0	99.2%	240.0	99.4%	30.0%	118,796	35,639	83,157	0.98	81,078
2004/05	216.0	98.8%	228.0	99.2%	30.0%	260,319	78,096	182,223	0.98	177,667
2005/06	204.0	98.4%	216.0	98.8%	30.0%	422,023	126,607	295,416	0.97	287,735
2006/07	192.0	97.6%	204.0	98.4%	30.0%	368,813	110,644	258,169	0.97	251,457
2007/08	180.0	96.6%	192.0	97.6%	30.0%	670,230	201,069	469,161	0.97	456,494
2008/09	168.0	95.2%	180.0	96.6%	30.0%	440,894	132,268	308,626	0.97	300,293
2009/10	156.0	93.5%	168.0	95.2%	26.2%	898,513	234,996	663,517	0.97	645,602
2010/11	144.0	91.5%	156.0	93.5%	23.5%	1,152,759	271,237	881,522	0.97	856,839
2011/12	132.0	85.6%	144.0	91.5%	41.0%	1,832,361	750,759	1,081,602	0.97	1,049,154
2012/13	120.0	81.5%	132.0	85.6%	22.2%	2,049,721	454,262	1,595,459	0.98	1,555,573
2013/14	108.0	74.9%	120.0	81.5%	26.3%	3,771,398	991,682	2,779,716	0.97	2,701,884
2014/15	96.0	69.8%	108.0	74.9%	16.9%	3,753,588	633,884	3,119,704	0.97	3,029,233
2015/16	84.0	65.2%	96.0	69.8%	13.2%	5,039,269	666,110	4,373,159	0.97	4,228,845
2016/17	72.0	60.4%	84.0	65.2%	12.1%	7,004,962	849,086	6,155,876	0.96	5,921,953
2017/18	60.0	50.0%	72.0	60.4%	20.8%	11,400,767	2,371,360	9,029,407	0.96	8,650,172
2018/19	48.0	41.1%	60.0	50.0%	15.1%	12,323,371	1,862,105	10,461,266	0.96	10,021,893
2019/20	36.0	31.1%	48.0	41.1%	14.5%	14,533,315	2,109,335	12,423,980	0.96	11,877,325
2020/21	24.0	22.1%	36.0	31.1%	11.6%	16,836,368	1,945,152	14,891,216	0.95	14,191,329
2021/22	12.0	9.7%	24.0	22.1%	13.7%	20,002,169	2,746,699	17,255,470	0.95	16,392,697
2022/23	0.0	0.0%	12.0	9.7%	9.7%	22,707,349	2,202,613	20,504,736	0.95	19,438,490
Total						\$125,937,596	\$18,878,786	\$107,058,810		\$102,355,289

ORANGE COUNTY FIRE AUTHORITY  
WORKERS' COMPENSATION - Expected Confidence Level

Exhibit WC-12 (page 6)

Projected Losses Paid January 1, 2019 to June 30, 2023

Footnotes:

Sections I, II, III, IV and V, (3) and (5) are from Exhibit WC-2.

Section I, (7) to 2017/18 is from Exhibit WC-10. The amount for 2018/19 is for the full period

Section II, (7) to 2018/19 is from Section I, (9). The amount for 2019/20 is from Exhibit WC-9.

Section III, (7) to 2019/20 is from Section II, (9). The amount for 2020/21 is from Exhibit WC-9.

Section IV, (7) to 2020/21 is from Section III, (9). The amount for 2021/22 is from Exhibit WC-9.

Section V, (7) to 2021/22 is from Section IV, (9). The amount for 2022/23 is from Exhibit WC-9.

Sections I, II, III, IV and V, (10) are based on a 1% interest rate and the payout pattern in Exhibit WC-2

# **Cancer Awareness & Prevention Program**

Human Resources Committee

February 4, 2020



# Cancer Awareness Prevention Program

## Historical Program (Pre-2018)

- Respiratory Protection Program
- Turnout Loaner Program

## Current Program

- Equipment
  - Second set of turnouts
  - Sunscreen dispensers
  - Decontamination wipes
  - Hood exchange program
  - Stations/vehicles exhaust extraction systems retrofitted to magnetic systems
  - Clean cab concept incorporated into new vehicle specifications

# Cancer Awareness Prevention Program

## Historical Program (Pre-2018)

- Respiratory Protection Program
- Turnout Loaner Program

## Current Program

- Policies & Procedures
  - Selection, care, and maintenance of protective ensembles for structural and proximity firefighting
  - Respiratory protection program
  - Fireground decontamination
  - Vehicle exhaust collection system
  - Skin cancer evaluation added to WEFIT medical examination



# Cancer Awareness Prevention Program

## Historical Program (Pre-2018)

- Respiratory Protection Program
- Turnout Loaner Program

## Current Program

- Training/Awareness
  - All Battalions
  - Chief Officers Academy, Captains Academy, Engineers Academy and Firefighter Academy
  - Vehicle exhaust extraction system use training video
  - Fireground decontamination training and videos
  - Multiple podcasts and video newsletter segments
  - Committees and/or conferences
  - Firefighters Attacking the Cancer Epidemic (FACE) team
  - Ice machine testing



# Cancer Awareness Prevention Program

## Historical Program (Pre-2018)

- Respiratory Protection Program
- Turnout Loaner Program

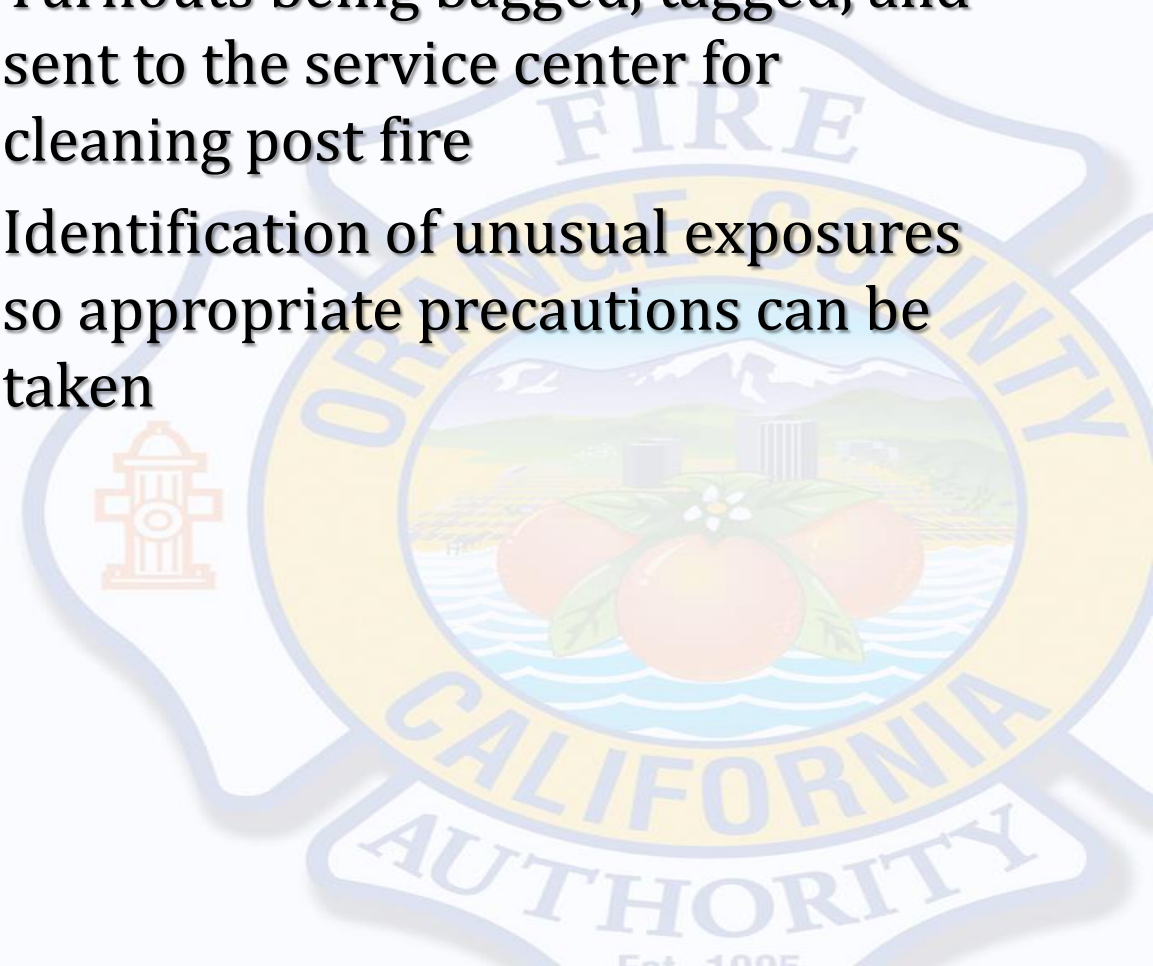
## Current Program

- Research Project Participation
  - Firefighter Cancer Cohort Study



# Leading Indicators of Cultural Change

- Personnel staying on air throughout overhaul
- Fireground decontamination being established more consistently
- Personnel using decontamination wipes after incidents/training
- Personnel exchanging flash hoods on-scene post fire
- Turnouts being bagged, tagged, and sent to the service center for cleaning post fire
- Identification of unusual exposures so appropriate precautions can be taken



# Cancer Awareness Prevention Program - Future

- Post-fire asbestos sampling procedure
- Particulate blocking flash hood evaluation
- Station design
- Research projects
- **Sustainability**



# **Cancer Awareness Prevention Program**

**Questions?**

