JUDICIAL COUNCIL OF CALIFORNIA

TRIAL COURT FACILITY MODIFICATION ADVISORY COMMITTEE

Meeting Documents

Meeting Date
November 15, 2021

JUDICIAL COUNCIL OF CALIFORNIA

TRIAL COURT FACILITY MODIFICATION ADVISORY COMMITTEE

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TRIAL COURT FACILITY MODIFICATION ADVISORY COMMITTEE

NOTICE AND AGENDA OF OPEN MEETING

Open to the Public (Cal. Rules of Court, rule 10.75(c)(1) and (e)(1))

THIS MEETING IS BEING CONDUCTED BY ELECTRONIC MEANS

THIS MEETING IS BEING RECORDED

Date:	November 15, 2021
Time:	12:10 PM
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Agenda items are numbered for identification purposes only and will not necessarily be considered in the indicated order.

I. OPEN MEETING (CAL. RULES OF COURT, RULE 10.75(C)(1))

Call to Order and Roll Call

II. PUBLIC COMMENT (CAL. RULES OF COURT, RULE 10.75(K)(1))

This meeting will be conducted by electronic means with a listen only conference line available for the public. As such, the public may submit comments for this meeting only in writing. In accordance with California Rules of Court, rule 10.75(k)(1), written comments pertaining to any agenda item of a regularly noticed open meeting can be submitted up to one complete business day before the meeting. For this specific meeting, comments should be e-mailed to tcfmac@jud.ca.gov. Only written comments received by 12:00 Noon on November 12, 2021 will be provided to advisory body members prior to the start of the meeting.

III. ACTION ITEMS (ITEMS 1–1)

Item 1

Revised Draft Air Scrubber Policy and Invitation to Comment (Action Required)

1. Approve the revised draft *Judicial Council of California Policy on the Use of Air Filtration Devices During Wildfires* to proceed to public comment beginning on or about November 22, 2021 and ending on January 10, 2022.
2. Approve the *Invitation to Comment* cover memorandum which provides background information for the draft policy.

Presenters: Ms. Pella McCormick, Director, Facilities Services
Ms. Jennifer Chappelle, Manager, Facilities Services

IV. ADJOURNMENT

Adjourn

JUDICIAL COUNCIL OF CALIFORNIA

455 Golden Gate Avenue . San Francisco, California 94102-3688
www.courts.ca.gov/policyadmin-invitationstocomment.htm

INVITATION TO COMMENT

[ITC prefix as assigned]-__

Title
Court Facilities: Use of Air Filtration Devices During Wildfires

Proposed Rules, Forms, Standards, or Statutes
Adopt Judicial Council Policy on the Use of Air Filtration Devices During Wildfires

Proposed by
Trial Court Facility Modification Advisory Committee
Hon. Donald Cole Byrd, Chair

Action Requested
Review and submit comments by January 10, 2022

Proposed Effective Date
May 13, 2022

Contact
Jennifer Chappelle, 916-263-1945
jennifer.chappelle@jud.ca.gov

Executive Summary and Origin

At its October 2021 meeting, the Trial Court Facility Modification Advisory Committee (TCFMAC) recommended to the Judicial Council that it adopt the proposed policy which terminates the recent practice of providing air filtration devices at Judicial Council expense during wildfires events. The policy permits trial courts to fund such services if they want.

Background

Over the past several years, as wildfire events have increased in scope and number, the Judicial Council's Facilities Services has allocated an increasing portion of its Facility Modification (FM) annual budget to the deployment of air filtration devices (portable air cleaning equipment, also known as air purifiers, air scrubbers, or air sanitizers) in courthouses impacted by excessive smoke. In fiscal year 2020-21 alone, $4,844,692 were expended on air filtration devices, causing a budget shortfall. To address the shortfall, the TCFMAC ceased all funding of Priority 2 FMs for several months while the Judicial Council sought a budget augmentation from the State.

At the July 2021 TCFMAC meeting, the committee received a presentation from staff on the available data on the effectiveness of air filtration devices, industry standards, and workplace safety regulations. Due to the lack of data, standards, and regulations, and to prevent a budget shortfall in fiscal year 2021-22, the committee 1) adopted interim guidelines for deployment and funding of air filtration devices (Interim Guidelines), 2) approved a pilot study on the effectiveness of air filtration devices in courthouses affected by wildfire smoke (which

concluded on September 30, 2021), and 3) directed staff to develop a formal policy on the use of air filtration devices during wildfires. The Interim Guidelines are as follows:

> a. If the outside Air Quality Index (AQI) (level) is 400 or less, the air scrubbers be provided exclusively at the expense of the trial court that requests the use of such devices; and
>
> b. If the AQI is in excess of 400, the cost of air scrubbers for that trial court locality will be shared 50/50 between the Judicial Council's budget and the budget of the trial court.

The Proposal

The goal of this policy reviewed and discussed at the October 2021 TFMAC meeting is to make clear that the Judicial Council will no longer pay for air filtration devices during wildfire events since a recent test conducted by a licensed industrial hygienist of the effectiveness of such devices in three courthouses found they "did not appear to consistently improve air quality throughout the facility tested." Further, no other state agency uses such devices on a regular basis during these conditions. This policy also addresses other mitigation measures that can be used during such wildfire events, including the possibility that a local court may exercise its discretion to curtail or fully close operations at a given location when necessary.

To determine the efficacy of air filtration devices in operating court facilities, the Judicial Council retained an industrial hygienist to perform indoor air quality assessments at three courthouses impacted by wildfires during the summer of 2021. The purpose of the assessment was to evaluate indoor air quality before and after using air filtration devices. Specifically, the hygienist monitored particulate matter 2.5 (PM2.5) levels, provided recommendations for the optimal number and locations of air filtration devices for each building to best improve the air quality in the building, conducted air monitoring for PM2.5 while using air filtration devices, and analyzed the PM2.5 levels post-filtration usage.

These steps were undertaken to determine if the use of air filtration devices in buildings situated near wildfires improve the indoor air quality for the occupants.

Baseline data was collected without the use of air filtration devices and was compared to data collected during and after using air filtration devices. The comparison was performed by calculating the difference in concentrations of PM2.5 between the indoor and outdoor air.

The data did not indicate a consistent improvement of air quality when operating the air filtration devices. Slight improvements in PM2.5 levels were identified but were localized to locations very near where the air filtration devices were operating. The hygienist concluded that the use of air filtration devices in the facilities did not reduce the level of PM2.5 particulates, nor did they provide an improvement to indoor air quality throughout any of the facilities.

Additionally, a review of the practices of other California state government agencies identified that air filtration devices are not routinely used by other State and public agencies. Given the lack of improvement in indoor air quality as defined by PM2.5 levels with the use of air filtration devices, and the lack of air filtration device usage by State and public agencies, the policy would establish that the Judicial Council would not fund the deployment of air filtration devices in trial court facilities.

Alternatives Considered

Alternatives considered included continuing to fund, in whole or in part, deployment of air filtration devices during wildfire events (a) on request with 100% of the cost carried by the FM budget; (b) as provided in the Interim Guidelines; or (c) as provided in the Interim Guidelines but with the AQI trigger changed from 400 to 250 or some other level. The alternatives were rejected based, in part, on the findings of the pilot program which indicate a lack of consistent improvement of air quality when operating the air filtration devices in operating courthouses.

The policy includes mitigation measures the Judicial Council and courts can take to limit the effects from wildfire smoke in court facilities, such as adjusting the ventilation systems air intake settings. The courts may provide respirators, such as N95 filtering facepiece respirators, to all employees for voluntary use in accordance with California Code of Regulations, title 8, section 5144. Further, when conditions warrant it, a court may curtail or fully close in-person operations and/or rely on remote access to provide continuing public services when air pollution is at such an extreme level that it is prudent to do so.

Fiscal and Operational Impacts

Due to the extensive nature of fires statewide in FY2020/21 and the many requests from trial courts for deployment of air scrubbers Judicial Council expended $4.8 million deploying air scrubbers. These unplanned expenses limited the Judicial Council's ability to perform other needed rehabilitation of failed and almost failed building systems and required Judicial Council to seek emergency funding from the State to augment the FM budget to respond to emergency maintenance projects, such a water leaks/floods and failed HVAC systems.

Since the pilot program testing established that the deployment of air filtration devices did not significantly improve indoor air quality in the operating court facilities tested and that other State and public agencies do not deploy air scrubbers during wildfire smoke events, the policy would establish that the Judicial Council would not fund the deployment of air filtration devices in trial court facilities.

Request for Specific Comments

In addition to comments on the proposal as a whole, the advisory committee is interested in comments on the following:

- Does the proposal appropriately address the stated purpose?
- Would a continuation of the Interim Guidelines as currently stated or at a different AQI trigger level better address the stated purposes and why?

The advisory committee also seeks comments from *courts* on the following cost and implementation matters:

- Are there other mitigation measures the Judicial Council has not considered?
- What would the implementation requirements be for courts—for example, training staff (please identify position and expected hours of training), revising processes and procedures?
- Would a May 2022 Judicial Council approval of this proposal provide sufficient time for implementation?
- How well would this proposal work in courts of different sizes?

All written comments received will be judicial administrative records disclosable under Rules of Court Rule 10.500.

Attachments and Links

1. Materials for October 2021 Meeting of TCFMAC (see Action Item 6): https://www.courts.ca.gov/documents/tcfmac-20211029-open-materials.pdf
2. Materials for July 2021 Meeting of TCFMAC (see Action Item 7): https://www.courts.ca.gov/documents/tcfmac-20210719-OPEN-materials.pdf
3. Minutes for the July 2021 Meeting of TCFMAC (see Action Item 7): https://www.courts.ca.gov/documents/tcfmac-20210719-Open-Minutes.pdf

Judicial Council of California Policy on the Use of Air Filtration Devices During Wildfires

NOVEMBER 15, 2021

1. Purpose and Scope

The purpose of this Judicial Council of California policy is to establish guidelines for the use of air filtration devices during wildfires to mitigate the impacts of wildfire smoke on Judicial Council-owned and Judicial Council-managed court facilities and operations. This policy also includes an analysis of the efficacy of air filtration devices.

2. Legal Authorities

Government Code section 70352 establishes the Court Facilities Trust Fund (Fund 3066) and authorizes money deposited in this fund and appropriated by the Legislature to be administered by the Judicial Council for the operation, repair, and maintenance of court facilities and for other purposes provided by statute.

Government Code section 70301 includes heat, ventilation, air-conditioning, light, and fixtures for those rooms and chambers as components of court facilities. (Section 70301(d).) Section 70301(g) defines "maintenance" as the ongoing upkeep of buildings, equipment, grounds, and utilities required to keep a building and its systems in a condition adequate to support its designed level of service. Section 70301(h) defines "responsibility for facilities" as the obligation of providing, operating, maintaining, altering, and renovating a building that contains the facilities.

3. Policy Goal

The goal of this policy is to define actions that can be taken by the Judicial Council during wildfire events to support court facilities, court operations, and court occupants.

4. Definitions

4.1 **Air filtration devices:** Portable air cleaning equipment, also known as air purifiers, air scrubbers, or air sanitizers, designed to filter the air in a single room or area by using fans to draw in air from a room, passing it through a filter to remove particles, then expelling the filtered air back into the room.

4.2 **Particulate matter 2.5 (PM2.5):** Solid particles and liquid droplets suspended in air, known as particulate matter, with an aerodynamic diameter of 2.5 micrometers or smaller.

4.3 **Air Quality Index:** The U.S. Environmental Protection Agency's index for reporting air quality, ranging from 0 ("Good") to 301 and higher ("Hazardous"). An index value of 151 is considered "Unhealthy," in which some members of the general public may experience health effects and members of sensitive groups may experience more serious health effects

4.4 **Mechanical ventilation system:** Heating, ventilation, and air-conditioning system used for moving air between indoor and outdoor areas, along with heating and cooling in buildings.

4.5 **Filtering facepiece respirator:** A negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium (examples include N95 filtering facepiece respirators).

5. Efficacy of Air Filtration Devices

The Judicial Council has determined, based upon the findings of a professional industrial hygienist, that air filtration devices do not significantly reduce the level of PM2.5 particulates and do not provide a significant improvement to indoor air quality in the court facilities studied.

6. Air Filtration Use by Other Public Agencies and the Private Sector

A review of the practices of other California state government agencies demonstrates that air filtration devices are not used by the Department of General Services, the Department of Corrections and Rehabilitation, or other state agencies for state-owned buildings. A similar review of the practices of public and private universities in California has failed to demonstrate any regular use of air filtration devices in their facilities during the occasions of wildfires.

7. Judicial Council-Permitted and Judicial Council-Funded Deployment of Air Filtration Devices

7.1 Given the lack of improvement in indoor air quality as defined by PM2.5 levels with the use of air filtration devices and the lack of use by public agencies and the private sector, the Judicial Council will not fund the deployment of air filtration devices in trial court facilities.

7.2 Courts occupying Judicial Council-owned and Judicial Council-managed facilities may utilize air filtration devices at their own expense.

8. Other Mitigation Measures

8.1 When the outdoor Air Quality Index for PM2.5 is 151 or greater, building operators of mechanical ventilation systems in Judicial Council-owned and Judicial Council-managed facilities may minimize the quantity of outside air provided to the extent feasible to mitigate the impact of wildfire smoke.

8.2 Any deviation from the standard operations of mechanical ventilation systems in Judicial Council-owned and Judicial Council-managed facilities must be coordinated with Judicial Council Facility Services staff.

8.3 Employers may provide respirators, such as N95 filtering facepiece respirators, to all employees for voluntary use in accordance with California Code of Regulations, title 8, section 5144. The Judicial Council will not be responsible for provision of respirators to employees of other entities, court users or the public.

8.4 Further, when conditions warrant it, a court may curtail or fully close in-person operations and/or rely on remote access to provide continuing public services when air pollution is at such an extreme level that it is prudent to do so.

9. Questions Regarding Facility Operations During Wildfires

Judicial Council Facility Services staff are available to assist with questions regarding facility operations during wildfires.

Following are wildfire smoke impact reports for three courthouses:

1. Redding Main Courthouse, Annex and Modular
2. Placerville Main Street Courthouse
3. South Lake Tahoe Johnson Building

FACS
Forensic Analytical Consulting Services

October 4, 2021

Wildfire Smoke Impact Report: IEQ Investigation Study

Shasta County Superior Court
45-A1 Main Courthouse Proper
45-A7 Courthouse Annex
1500 Court Street, Redding, CA

45-A9 Justice Center Court Modular
1655 West Street, Redding, CA

Prepared for:

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FACS Project #PJ66116
JCC SWO #1707761, 1707756, 1707751

Contents

Introduction

Forensic Analytical Consulting Services, Inc. (FACS) was retained by the Judicial Council of California (Client, hereafter JCC) to perform an Indoor Environmental Quality (IEQ) Investigation in the Shasta County Superior Court Main Courthouse Proper (45-A1), and Courthouse Annex (45-A7) located at 1500 Court Street in Redding, California, as well as the Justice Center Court Modular (45-A9) located at 1655 West Street in Redding, California. This investigation was prompted by the McFarland Fire in the McFarland Ridge and Baker Flat, west of Platina and Dixie Fire above the Cresta Dam in the Feather River Canyon. Both of which were still burning during FACS' investigation.

The purpose of this investigation was to 1) conduct baseline air monitoring for particulate matter 2.5 (PM2.5) as it relates to air quality index (AQI) values; 2) provide assistance in identifying the number of portable air filtration devices needed to provide an additional two air changes per hour in the facility; 3) conduct air monitoring for PM2.5 following the use of air filtration devices (AFDs); and 4) analyze the PM2.5 AQI data in order to assist in determining if the use of AFDs in the building contribute to improved indoor environmental quality.

The investigation was performed by FACS between the dates of August 17, 2021 and August 30, 2021, with the baseline monitoring taking place from August 17, 2021 through August 23, 2021. This report contains the findings from our investigation.

Scope of Work

In the course of this project, FACS conducted the following scope of work:

1. Development of a history and site characterization (see sections below).
2. Collection of a baseline PM2.5 data (prior to implementation of AFDs) using TSI DustTrak™ II Aerosol Monitors at two (2) exterior location and seventeen (17) interior locations.
3. Provide assistance in identifying the number of portable air filtration devices needed to provide an additional two air changes per hour in the facility.
4. Collection of PM2.5 data, post implementation of AFDs using TSI DustTrak™ II Aerosol Monitors at two (2) exterior location and seventeen (17) interior locations (same locations as baseline monitoring). Some monitors were removed during a portion of the evaluation, to assist in collection of data from other JCC facilities.
5. Generation of a data comparison tables, figures, and final report.

Data collection methodologies are described in the body of this report. The data collected in the course of the investigation is presented in this report as follows:

- Appendix A: PM2.5 AQI Data Summary Tables
- Appendix B: PM2.5 Data Figures
- Appendix C: Site Diagrams

Site History and Characterization

On July 29, 2021, the McFarland Fire erupted in McFarland Ridge, south of Highway 36. The wildfire burned in the Shasta-Trinity National Forest north of Wildwood in Trinity County, Shasta County, and Tehama County, and was deemed as contained on September 16, 2021. Additionally, on July 14, 2021, the Dixie Fire erupted in Feather River Canyon near Cresta Dam. Both wildfires were reportedly negatively impacting air quality in Redding, CA.

JCC contacted FACS on August 17, 2021, requesting an immediate mobilization to conduct the IEQ investigation in the Superior Court of Shasta County – the Main Courthouse Proper (45-A1) and Courthouse Annex (45-A7) buildings located at 1500 Court Street in Redding, CA, and the Justice Center Court Modular located at 1655 West Street in Redding, CA.

The Courthouse Proper building is an approximately 44,528 square feet, 3-story building (plus basement) built in 1956. The Courthouse Annex is an approximately 35,445 square feet, 3-story building added on to the main courthouse in 1965. The exterior construction is characterized by concrete block and mortar. The interior of the Courthouse Proper and Annex buildings is generally characterized by gypsum drywall walls and dropped ceilings. Flooring generally consists of carpeting and vinyl floor tile. The building features operable windows, which were observed to be closed during FACS' investigation. Air is supplied to the building through multiple roof-top heating, ventilation, and air conditioning (HVAC) units. The units are reportedly set to run continuously 24 hours a day, seven days a week, due to internal COVID-19 protocols.

The Justice Center Court Modular building is an approximately 4,320 square feet, single-story building built in 2008. The exterior construction is characterized by vertical wood siding. The interior construction of the building is generally characterized by wall partitions and dropped ceilings. Flooring generally consisted of carpeting. The building features operable windows, which were observed to be closed during FACS' investigation. Air is supplied to the building through multiple HVAC units. The units are reportedly set to run continuously 24 hours a day, seven days a week, due to internal COVID-19 protocols.

Data Collection Methodology

Per client's request, FACS' IEQ investigation was limited to PM2.5 airborne particulates (particulates less than 2.5 micrometers in diameter). FACS performed monitoring of baseline conditions (pre implementation of the secondary air filtration devices), followed by PM2.5 monitoring post implementations of the AFDs in selected locations of the buildings.

Baseline testing (pre-operation of AFDs) was performed from between the dates of August 17, 2021 and August 23, 2021 with the primary heating, ventilation, and air conditioning (HVAC) mechanical filtration system operating in the building. The AFDs were reportedly deployed at selected locations in the building on August 24, 2021. Following installation and operation of the AFDs, air monitoring continued from August 24, 2021 through August 30, 2021.

Air monitoring was conducted using direct-reading data-logging DustTrak™ II Aerosol Monitors. The DustTrak™ II desktop monitor is a light-scattering laser photometer that provided real-time aerosol mass concentration readings. The DustTrak™ DRX II Aerosol Monitor reports a mass concentration using the PM2.5 particulate size fraction and reported in milligrams per cubic meter (mg/m^3). Readings were collected at 10-minute log intervals over the monitoring duration.

A total of nineteen (19) monitors were deployed at the following locations:

- Exterior, roof at outdoor air intake (monitor #8)
- Exterior, annex near elevators (monitor #12)
- Courthouse Proper, basement hallway (monitor #13)
- Courthouse Proper, 1st floor at Security (monitor #1)
- Courthouse Proper, 1st floor, Office 100 Jury Room (monitor #2)
- Courthouse Proper, 2nd floor, Marshal' s Office Room 206 (monitor #5)
- Courthouse Proper, 3rd floor, Department 4 Room 308 (monitor #6)
- Courthouse Proper, 3rd floor, Department 3 Room 304 (monitor #18)
- Courthouse Proper, 3rd floor, Department 5 (monitor #19)
- Courthouse Annex, 1st floor, Room 117 Jury Assembly Area (monitor #3)
- Courthouse Annex, 1st floor, Room 112 Clerks Office (monitor #11)
- Courthouse Annex, 2nd floor, adjacent to staircase (monitor #4)
- Courthouse Annex, 2nd floor, Department 9 Room 112 (monitor #10)
- Courthouse Annex, 3rd floor, hallway (monitor #7)
- Courthouse Annex, 3rd floor, Room 319 (monitor #9)
- Justice Center Court Modular, Jury Room (monitor #14)
- Justice Center Court Modular, office (monitor #15)
- Justice Center Court Modular, Court Staff (monitor #16)
- Justice Center Court Modular, hallway (monitor #17)

See site diagrams in Appendix C for specific locations.

Monitors #6, 9, 12, 15, and 17 were removed from the Shasta County Superior Court facilities on August 27, 2021, in order to accommodate a new wildfire smoke investigation request in the South Lake Tahoe Branch of the El Dorado County Superior Court.

Results of the airborne particulate matter (PM2.5) monitoring following implementation of the AFDs were compared to the baseline air monitoring in order to evaluate the effectiveness of air filtration devices during heavy wildfire smoke impact.

Air quality index (AQI) values were calculated using the PM2.5 data collected during the investigation. The AQI value for PM2.5 data that was collected prior to the installation of AFDs, between 8/17/21 and 8/23/21, was calculated between 7am-6pm (typical work shift). Following installation of AFDs, AQI values were also calculated using the average PM2.5 concentration measured between 7am-6pm (typical work shift).

Findings and Observations

The following findings were generated by FACS as a result of this investigation:

- It was reported to FACS that outdoor air intakes for the air handling units serving the buildings were closed during the monitoring event.
- A total of eleven (11) AFDs were deployed and operated in the building during FACS' investigation. Ten (10) of the AFDs were rated to deliver 2,000 cubic feet per minute (CFM), and one (1) was rated to deliver 500 CFM, delivering a total of 20,500 CFM of air. The AFD locations were observed to be as follows:

- Courthouse Proper – four (4) 2,000 CFM AFDs and one (1) 500 CFM AFD, for a total of 8,500 CFM of air
    1. Courthouse Proper, basement, hallway adjacent to Mechanical Room
    2. Courthouse Proper, 1st floor, hallway adjacent to the Courthouse Annex entrance
    3. Courthouse Proper, 1st floor, hallway adjacent to Office 100
    4. Courthouse Proper, 2nd floor, hallway adjacent to an office and hallway to Annex
    5. Courthouse Proper, 3rd floor, hallway adjacent to Department 3 Room 304
- Courthouse Annex – four (4) 2,000 CFM AFDs, for a total of 8,000 CFM of air
    1. Courthouse Annex, 1st floor, hallway adjacent to the restrooms
    2. Courthouse Annex, 2nd floor, hallway adjacent to the restrooms
    3. Courthouse Annex, 2nd floor, lobby
    4. Courthouse Annex, 3rd floor, hallway adjacent to the restrooms
- Justice Center Court Modular – two (2) 2,000 CFM AFDs, for a total of 4,000 CFM of air
    1. Justice Center Court Modular, hallway adjacent to the Judge's Chamber
    2. Justice Center Court Modular, hallway adjacent to the Clerk's Office

- Upon FACS' mobilization to the Shasta County Superior Court on August 17, 2021, a smoke odor was observed in the interior of the buildings as well as outside the buildings. Additionally, a cloud of smoke was observed in the area and visible smoke related particulate (i.e., char, ash) was observed on exterior surfaces of the building. Visible smoke related particulate was observed at entry door thresholds and in the interior of the building in locations directly adjacent to the entrances.
- Upon return to the site on August 30, 2021, to retrieve equipment FACS observed odors appearing milder and visibility had improved.

Discussion

In general, the purpose of this investigation was to assist in determining if the use of AFDs in the building contributes to improvement of indoor environmental quality for occupants during large wildfire events. Baseline data collected without the use of AFDs was compared to data collected during the use of the AFDs. Comparison was performed by calculating the difference in concentrations between the outdoor and indoor locations during a typical work shift (7 am – 6 pm) for each of the sampling events. Results of the air monitoring assessment, along with calculated values (% of outdoor, AQI levels) are provided in Tables 1 and 2.

Additionally, data graphically plotted showed a direct correlation between the outdoor particulate concentrations and the indoor particulate concentrations. During spikes in PM2.5 concentrations in the outdoor locations, spikes in indoor locations were also identified at the same time or shortly thereafter. This was identified with and without the use of AFDs in the buildings. See Figures 1 – 15.

In general, the data did not indicate consistent improvement of air quality when operating the AFDs. Additionally, the outdoor air quality appears to have a heavy influence on the indoor air quality. Based on results of the limited assessment, the use of eleven air filtration devices in the Courthouse Proper, Courthouse Annex, and Justice Center Court Modular buildings did not appear to consistently improve air quality throughout the facility. No notable improvement was identified in the data collected in the any areas assessed including locations where AFDs were operating (e.g., Courthouse Proper Room 304).

Limitations

This investigation is limited to the conditions and practices observed and information made available to FACS. The methods, conclusions and recommendations provided are based on FACS' judgment, expertise, and the standard of practice for professional service. They are subject to the limitations and variability inherent in the methodology employed. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Please do not hesitate to contact our offices at 916-726-1303 with any questions or concerns. Thank you for the opportunity to assist Judicial Council of California in promoting a more healthful environment.

Respectfully,

FORENSIC ANALYTICAL

Diana Lutsik
Project Manager, Sacramento

Reviewed by:

FORENSIC ANALYTICAL

Michelle Rosales, MPH, CIH
Principal Consultant

Appendix A

PM2.5 AQI Data Summary Tables

Table 1: Redding - PM2.5 Air Quality Index (AQI) – 8/17/21 to 8/23/21 (Without Air Filtering Devices)

Location	Without AFDs													
	8/17/2021		8/18/2021		8/19/2021		8/20/2021		8/21/2021		8/22/2021		8/23/2021	
	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI
EXTERIOR														
Exterior - Roof by Air Intake	NA	NA	183	234	254	304	209	259	152	203	182	232	101	174
Exterior - Annex Near Elevator	NA	NA	212	262	284	327	223	273	166	217	201	251	132	190
Exterior - Average			198		269		216		159		191		116	
INTERIOR - COURTHOUSE PROPER (MAIN BUILDING)														
Monitor #1 (Front Security)	138	194	107	178	115	182	90	169	72	160	80	164	49	135
% of Outdoor			*54%*		*43%*		*42%*		*45%*		*42%*		*42%*	
Monitor #2 (Office 100 Jury Rm)	116	182	72	160	100	174	77	162	62	155	74	160	42	118
% of Outdoor			*37%*		*37%*		*36%*		*39%*		*39%*		*36%*	
Monitor #5 (Marshalls Office Rm 206)	82	164	84	166	112	180	88	168	72	159	83	165	46	127
% of Outdoor			*42%*		*42%*		*41%*		*45%*		*43%*		*40%*	
Monitor #6 (3rd Fl Dept 4 Rm 308)	43	119	142	196	189	239	150	221	113	181	138	194	80	164
% of Outdoor			*72%*		*70%*		*70%*		*71%*		*72%*		*69%*	
Monitor #13 (Basement Hallway)	NA	NA	56	151	79	163	62	154	48	131	57	152	28	85
% of Outdoor			*28%*		*29%*		*29%*		*30%*		*30%*		*24%*	
Monitor #18 (3rd Fl Dept Rm 304)	NA	NA	104	176	140	195	114	181	85	166	103	175	55	149
% of Outdoor			*53%*		*52%*		*53%*		*54%*		*54%*		*47%*	
Monitor #19 (Dept 5 - 3rd Fl Proper)	NA	NA	52	143	127	188	86	167	56	151	67	157	37	106
% of Outdoor			*27%*		*47%*		*40%*		*35%*		*35%*		*32%*	
INTERIOR - ANNEX														
Monitor #3 (Room 117)	76	162	61	154	76	162	62	154	46	127	56	151	30	88
% of Outdoor			*31%*		*28%*		*29%*		*29%*		*29%*		*25%*	
Monitor #4 (Adj. 2nd Fl Staircase)	66	157	63	155	84	166	68	157	49	133	59	153	30	88
% of Outdoor			*32%*		*31%*		*32%*		*30%*		*31%*		*25%*	
Monitor #7 (3rd Fl Hallway)	51	139	68	157	90	169	71	159	53	145	64	156	31	90
% of Outdoor			*34%*		*33%*		*33%*		*33%*		*34%*		*27%*	
Monitor #9 (3rd Fl Rm 319)	NA	NA	61	154	89	168	79	163	54	147	65	156	39	110
% of Outdoor			*31%*		*33%*		*37%*		*34%*		*34%*		*33%*	
Monitor #10 (2nd Fl Dept 9 Rm 112)	NA	NA	28	84	38	108	28	84	19	65	23	75	13	53
% of Outdoor			*14%*		*14%*		*13%*		*12%*		*12%*		*11%*	
Monitor #11 (1st Fl Rm 112)	NA	NA	56	151	76	161	64	155	49	135	59	153	30	89
% of Outdoor			*28%*		*28%*		*30%*		*31%*		*31%*		*26%*	
INTERIOR - PORTABLES														
Monitor #14 (Portables - Jury Rm)	NA	NA	99	173	154	205	108	178	86	167	98	173	55	149
% of Outdoor			*50%*		*57%*		*50%*		*54%*		*51%*		*47%*	
Monitor #15 (Portables Office)	NA	NA	70	158	98	173	64	155	NA	NA	NA	NA	NA	NA
% of Outdoor			*35%*		*36%*		*30%*							
Monitor #16 (Portables Court Staff)	NA	NA	260	308	305	345	253	303	193	243	234	284	105	177
% of Outdoor			*131%*		*113%*		*117%*		*121%*		*122%*		*90%*	
Monitor #17 (Portables Hallway)	NA	NA	12	50	4	15	0	2	0	0	0	0	0	0
% of Outdoor			*6%*		*1%*		*0%*		*0%*		*0%*		*0%*	

Notes: *1.AQI for PM2.5 data was calculated using the average PM2.5 concentration measured during 7am-6pm on the day of monitoring. 2. ">500" indicates that values are above an AQI of 500, which is considered beyond the AQI. 3. "NA" indicates no measurement taken.*

Table 2: Redding - PM2.5 Air Quality Index (AQI) –8/24/21 to 8/30/21 (With Air Filtering Devices)

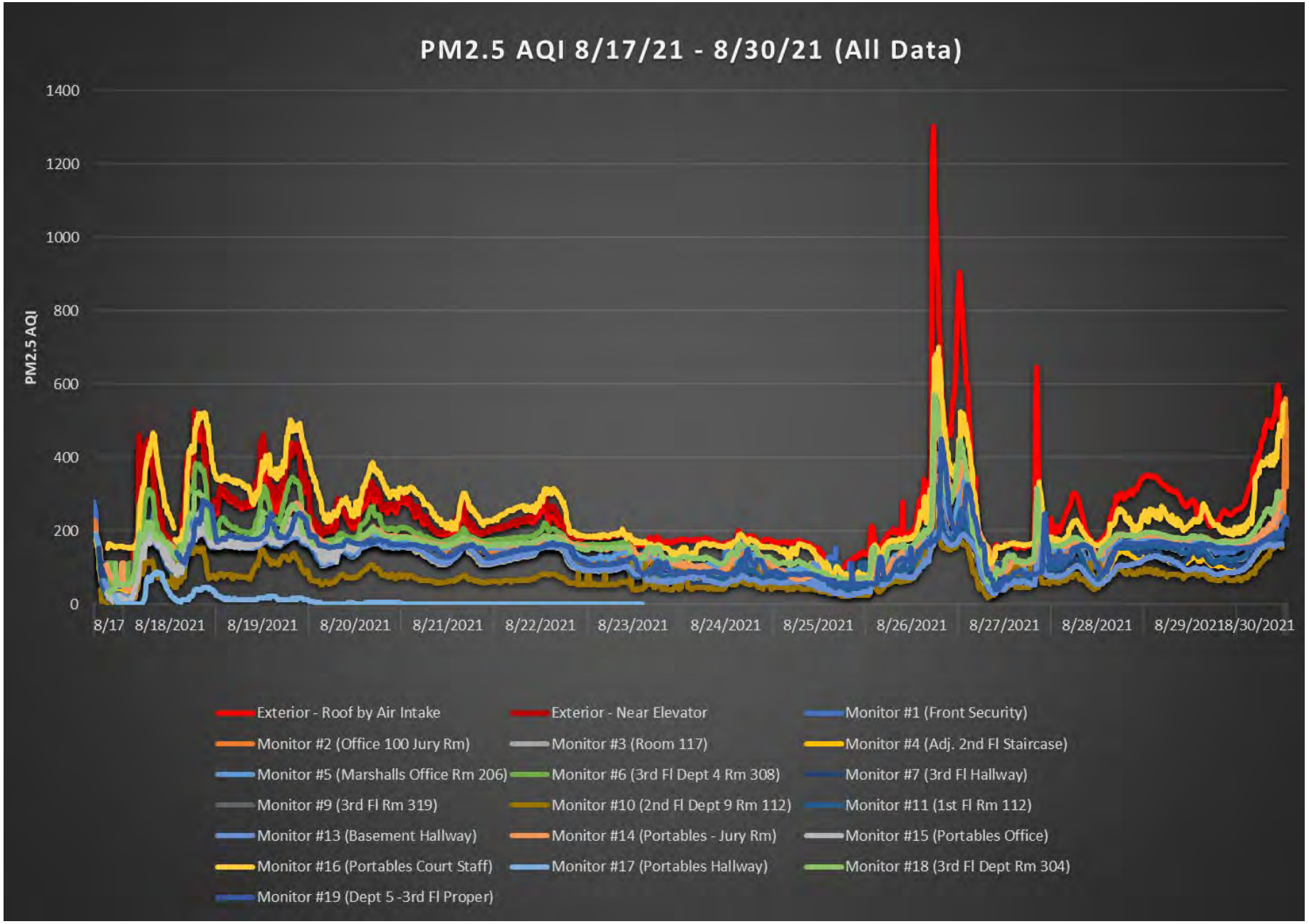
Location	With Air Filtering Devices (AFDs)													
	8/24/2021		8/25/2021		8/26/2021		8/27/2021		8/28/2021		8/29/2021		8/30/2021	
	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI
EXTERIOR														
Exterior - Roof by Air Intake	98	173	57	152	259	308	63	155	154	205	218	268	512	510
Exterior - Annex Near Elevator	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Exterior - Average	98		57		259		63		154		218		512	
INTERIOR - COURTHOUSE PROPER (MAIN BUILDING)														
Monitor #1 (Front Security)	51	139	30	88	69	158	29	87	51	140	74	160	125	187
% of Outdoor	*52%*		*52%*		*27%*		*47%*		*33%*		*34%*		*24%*	
Monitor #2 (Office 100 Jury Rm)	39	109	23	74	67	157	28	84	56	151	82	165	198	248
% of Outdoor	*39%*		*41%*		*26%*		*45%*		*36%*		*38%*		*39%*	
Monitor #5 (Marshalls Office Rm 206)	43	121	25	78	78	163	29	87	63	155	90	169	169	219
% of Outdoor	*44%*		*44%*		*30%*		*47%*		*41%*		*41%*		*33%*	
Monitor #6 (3rd Fl Dept 4 Rm 308)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
% of Outdoor														
Monitor #13 (Basement Hallway)	18	64	11	48	34	97	13	53	24	77	35	98	73	160
% of Outdoor	*18%*		*20%*		*13%*		*21%*		*16%*		*16%*		*14%*	
Monitor #18 (3rd Fl Dept Rm 304)	51	140	30	88	119	184	36	101	82	165	112	180	216	266
% of Outdoor	*52%*		*52%*		*46%*		*57%*		*53%*		*51%*		*42%*	
Monitor #19 (Dept 5 - 3rd Fl Proper)	32	93	22	72	56	151	23	75	51	140	75	161	137	193
% of Outdoor	*33%*		*38%*		*22%*		*37%*		*33%*		*34%*		*27%*	
INTERIOR - ANNEX														
Monitor #3 (Room 117)	28	84	16	59	57	152	17	61	39	110	54	146	104	176
% of Outdoor	*28%*		*27%*		*22%*		*27%*		*25%*		*25%*		*20%*	
Monitor #4 (Adj. 2nd Fl Staircase)	20	68	11	47	46	127	15	56	31	91	42	116	83	165
% of Outdoor	*20%*		*20%*		*18%*		*23%*		*20%*		*19%*		*16%*	
Monitor #7 (3rd Fl Hallway)	21	71	12	51	53	145	16	60	35	99	45	124	79	163
% of Outdoor	*22%*		*21%*		*21%*		*26%*		*23%*		*20%*		*15%*	
Monitor #9 (3rd Fl Rm 319)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
% of Outdoor														
Monitor #10 (2nd Fl Dept 9 Rm 112)	13	52	9	36	38	106	10	40	19	66	25	79	58	152
% of Outdoor	*13%*		*15%*		*15%*		*15%*		*13%*		*12%*		*11%*	
Monitor #11 (1st Fl Rm 112)	27	83	16	59	58	152	17	61	38	108	54	145	105	177
% of Outdoor	*28%*		*28%*		*23%*		*27%*		*25%*		*25%*		*20%*	
INTERIOR - PORTABLES														
Monitor #14 (Portables - Jury Rm)	43	120	24	76	97	172	40	112	79	163	109	179	185	235
% of Outdoor	*44%*		*42%*		*37%*		*64%*		*51%*		*50%*		*36%*	
Monitor #15 (Portables Office)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
% of Outdoor														
Monitor #16 (Portables Court Staff)	87	167	48	131	172	222	68	157	128	188	179	229	400	420
% of Outdoor	*88%*		*83%*		*66%*		*108%*		*83%*		*82%*		*78%*	
Monitor #17 (Portables Hallway)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
% of Outdoor														

Notes: *1.AQI for PM2.5 data was calculated using the average PM2.5 concentration measured during 7am-6pm on the day of monitoring. 2. ">500" indicates that values are above an AQI of 500, which is considered beyond the AQI. 3. "NA" indicates no measurement taken.*

Appendix B

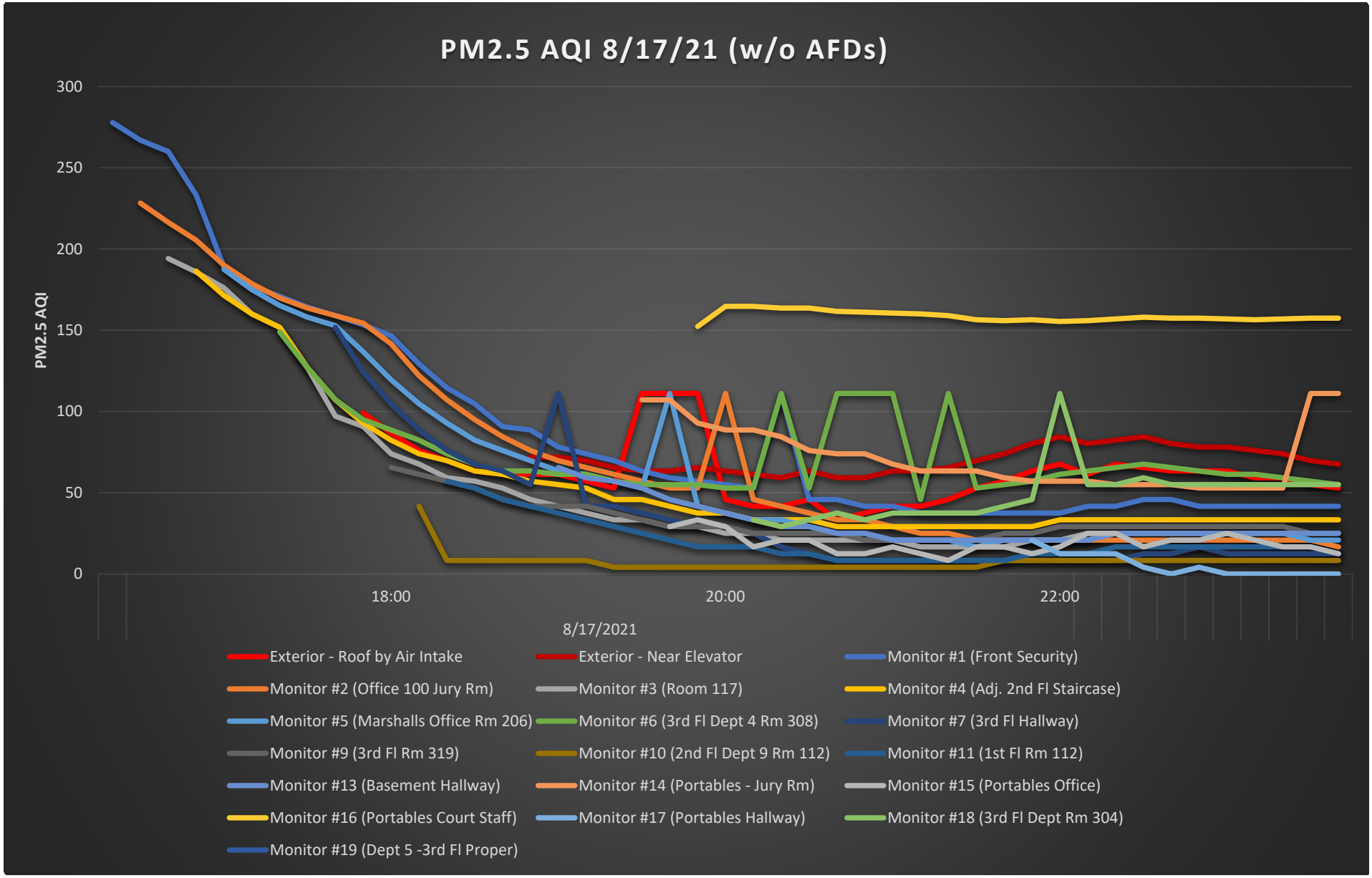
PM2.5 Data Figures

Figure 1: Redding - PM2.5 Air Quality Index (AQI) – 8/17/21 to 8/30/21 (All Data)



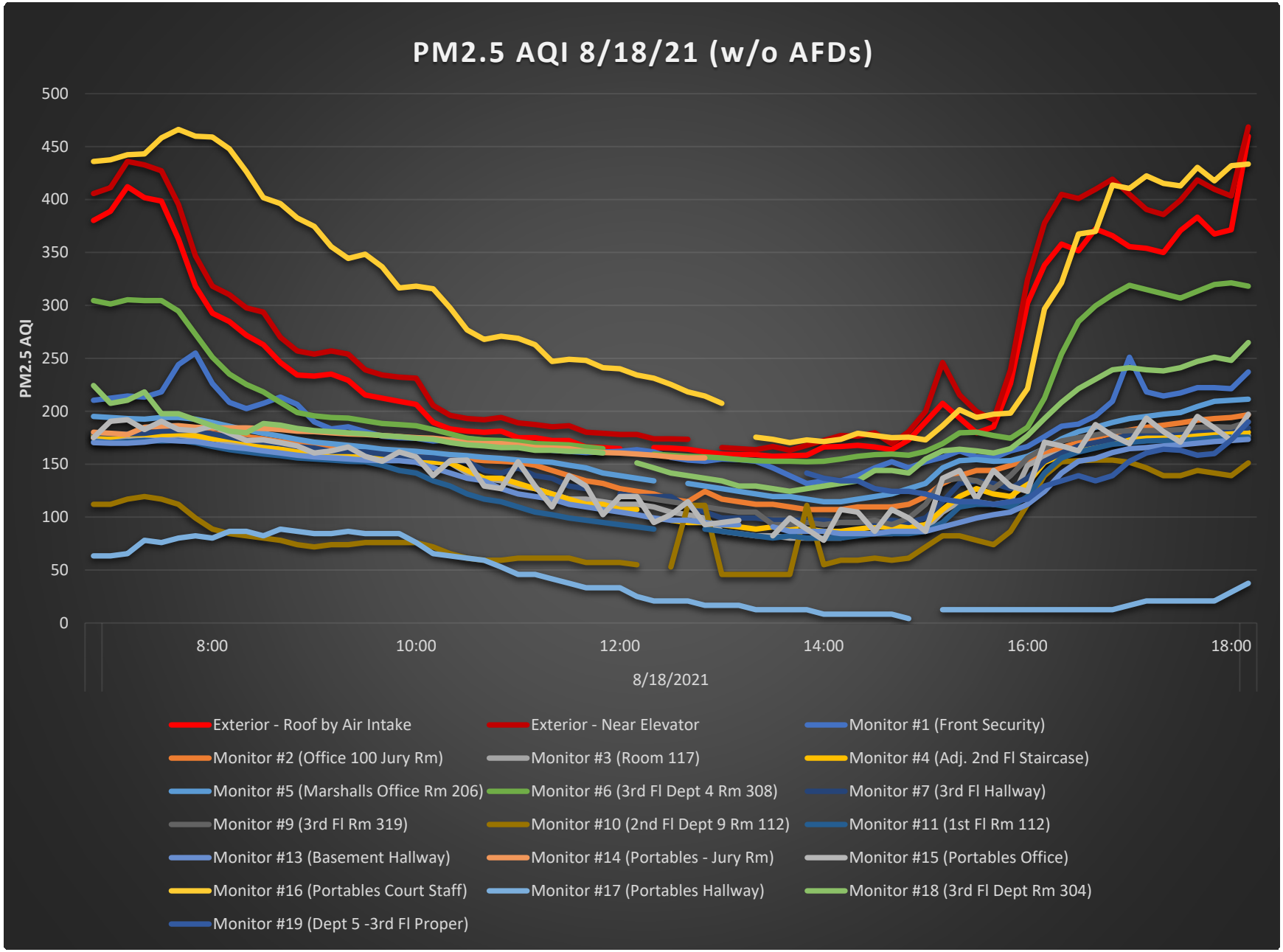
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 2: Redding - PM2.5 Air Quality Index (AQI) – 8/17/21 (Without Air Filtering Devices)



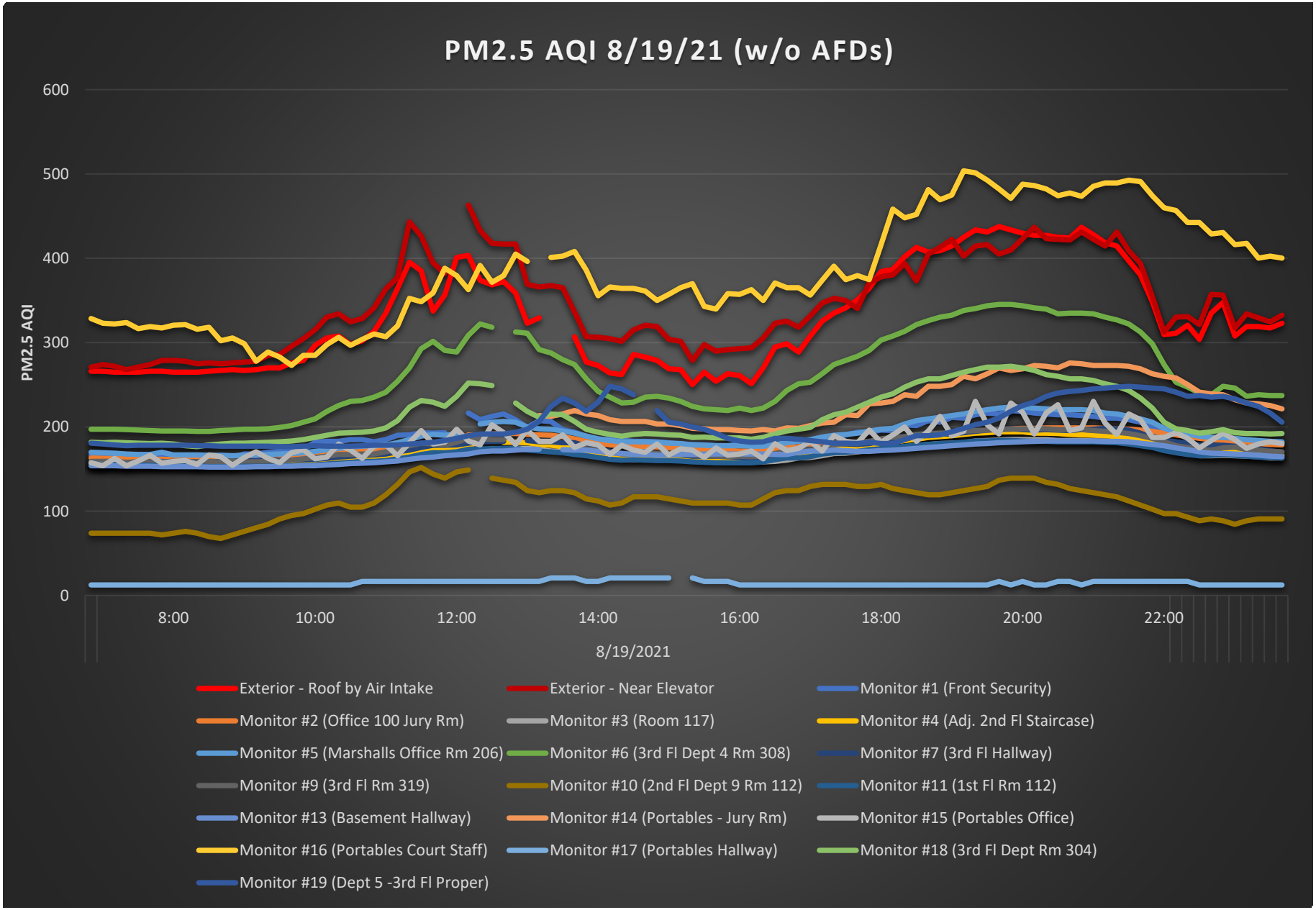
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 3: Redding - PM2.5 Air Quality Index (AQI) – 8/18/21 7am-6pm (Without Air Filtering Devices)



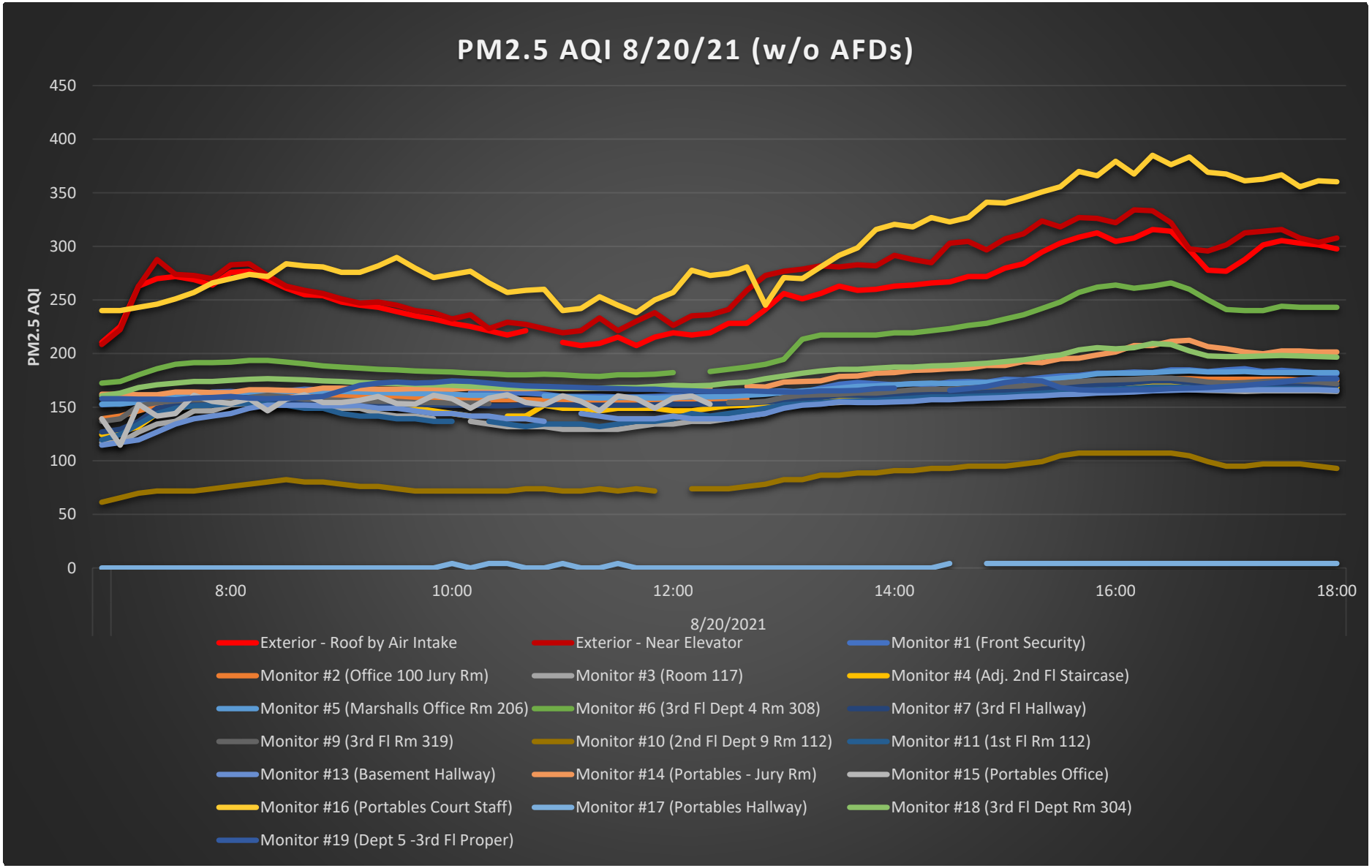
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 4: Redding - PM2.5 Air Quality Index (AQI) – 8/19/21 7am-6pm (Without Air Filtering Devices)



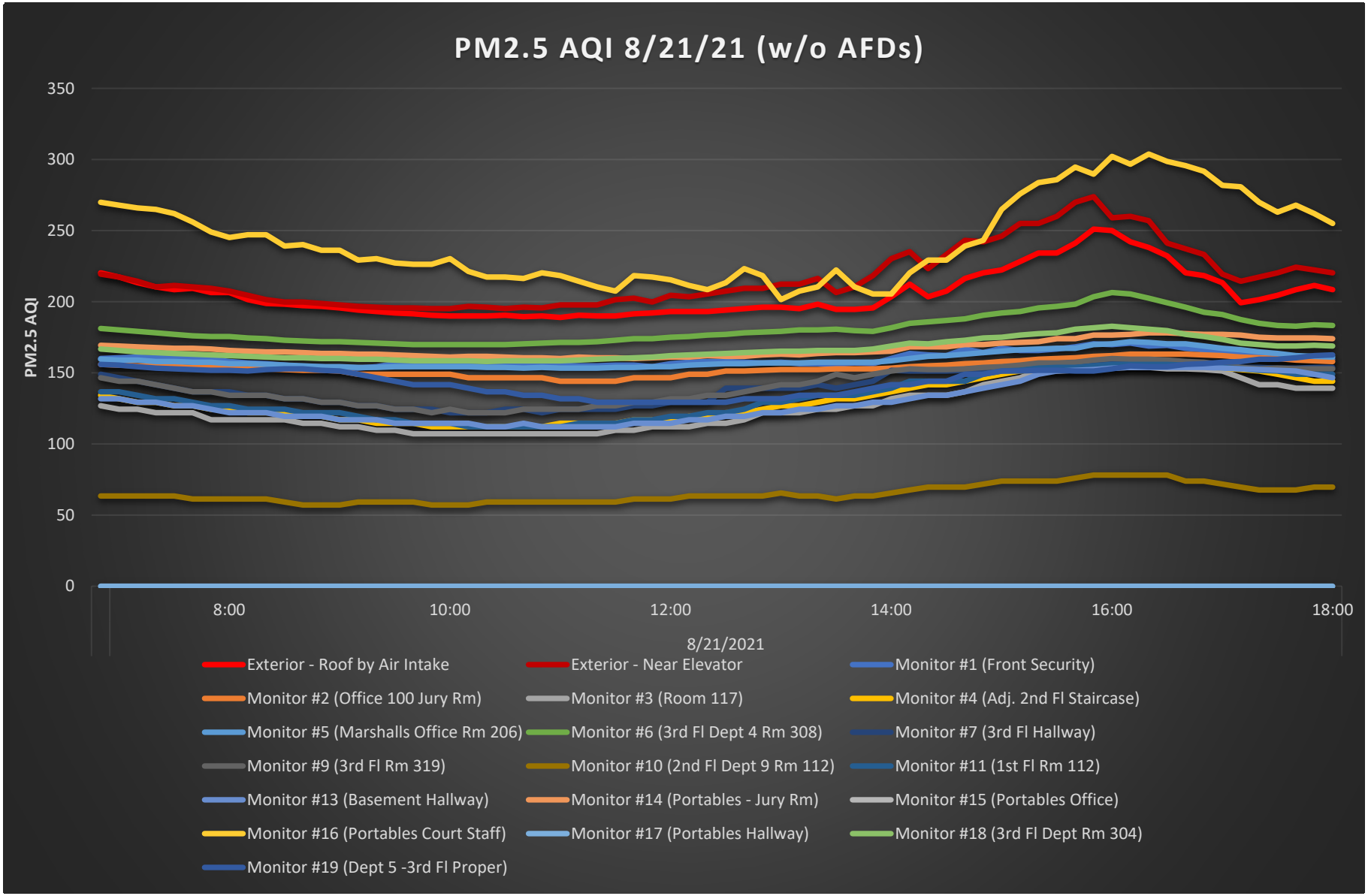
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 5: Redding - PM2.5 Air Quality Index (AQI) – 8/20/21 7am-6pm (Without Air Filtering Devices)



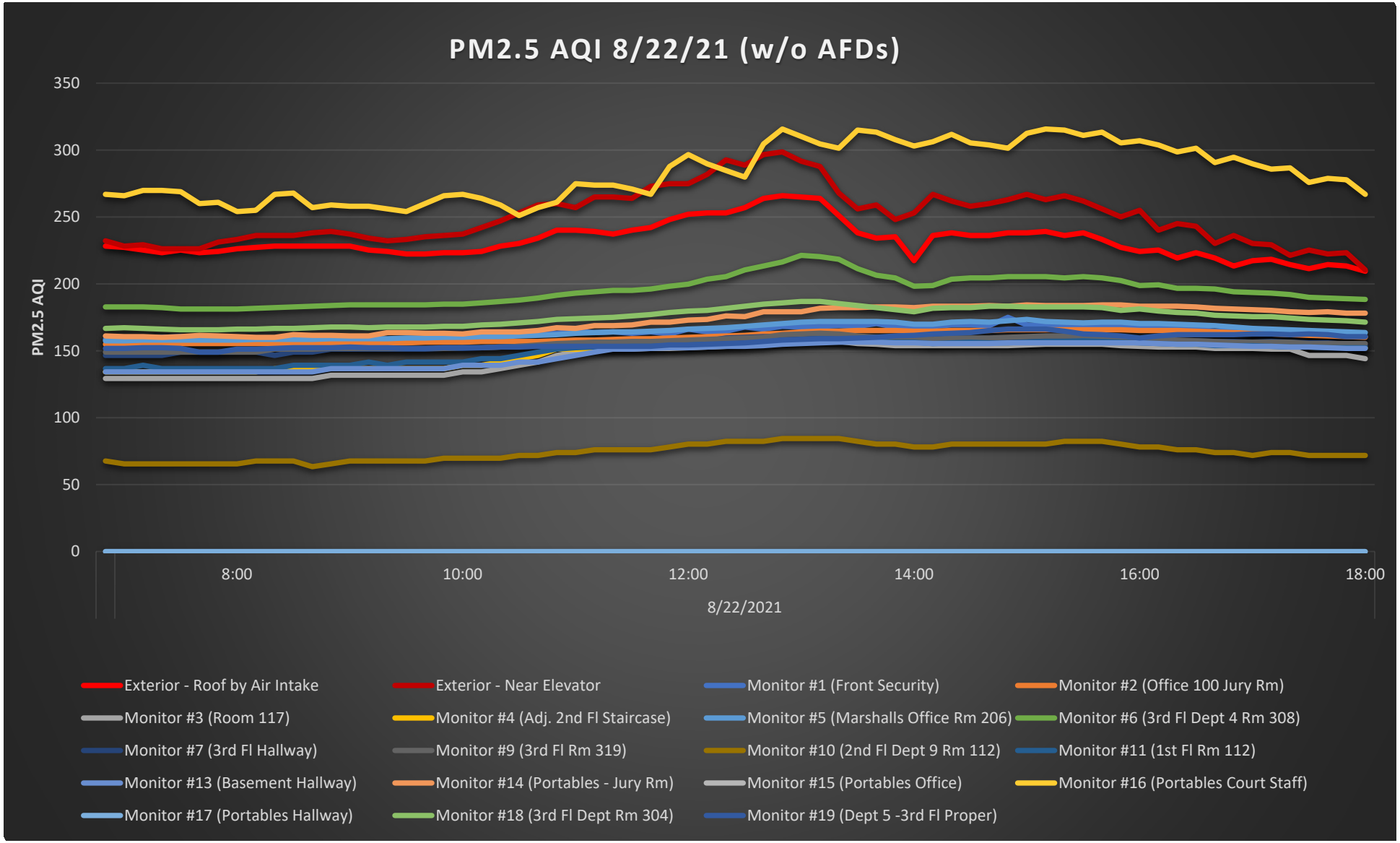
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 6: Redding - PM2.5 Air Quality Index (AQI) – 8/21/21 7am-6pm (Without Air Filtering Devices)



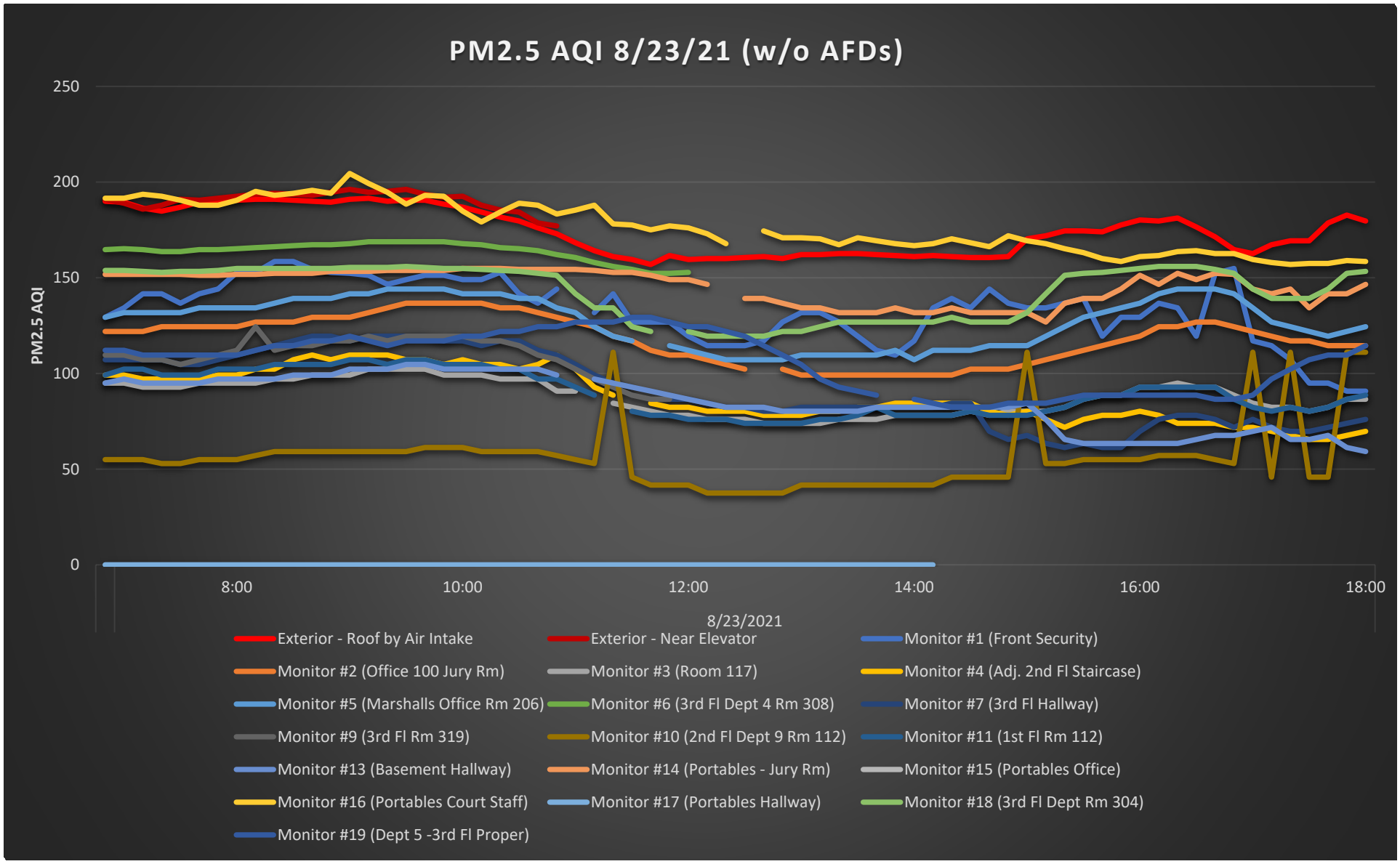
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 7: Redding - PM2.5 Air Quality Index (AQI) – 8/22/21 7am-6pm (Without Air Filtering Devices)



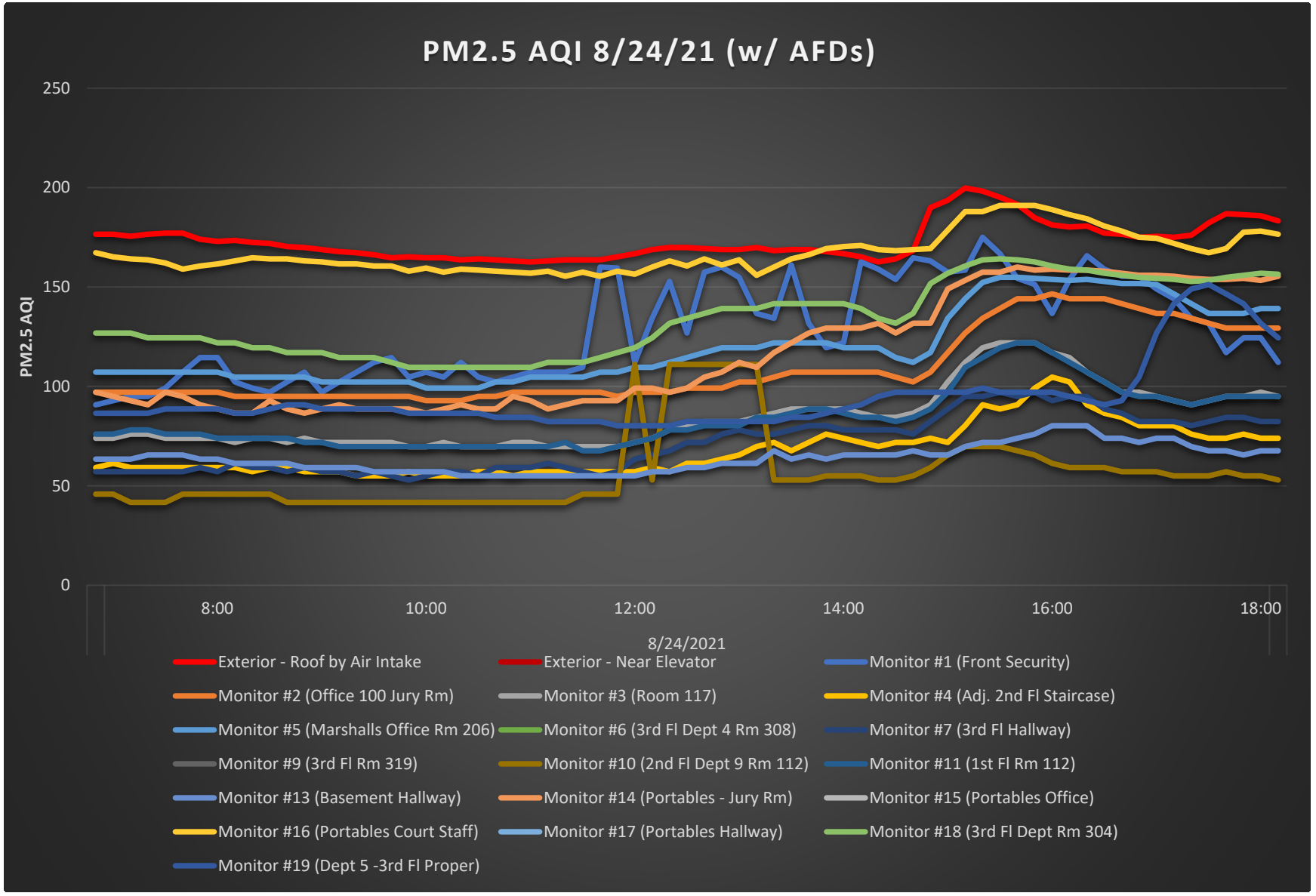
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 8: Redding - PM2.5 Air Quality Index (AQI) – 8/23/21 7am-6pm (Without Air Filtering Devices)



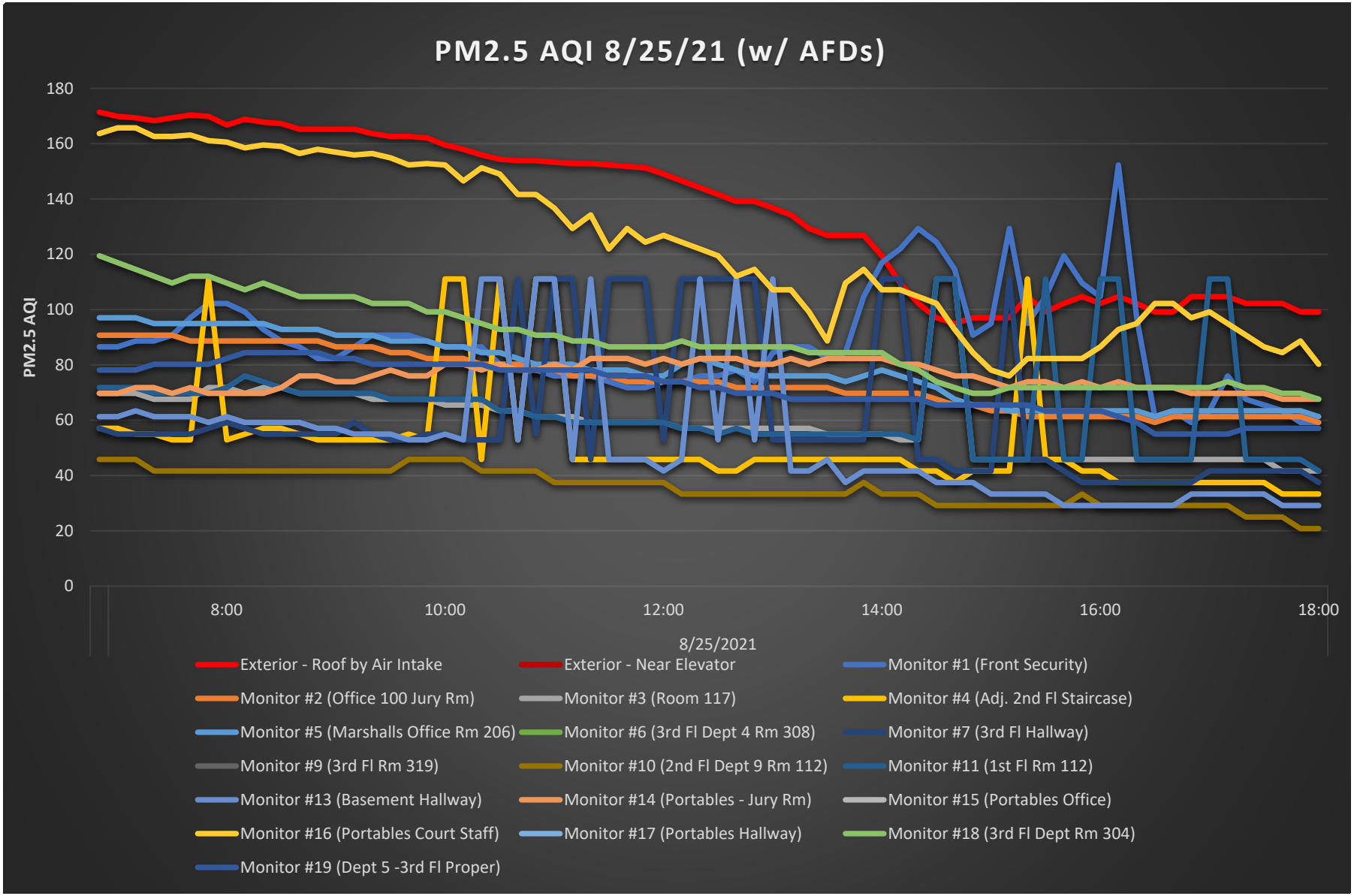
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 9: Redding - PM2.5 Air Quality Index (AQI) – 8/24/21 7am-6pm (With Air Filtering Devices)



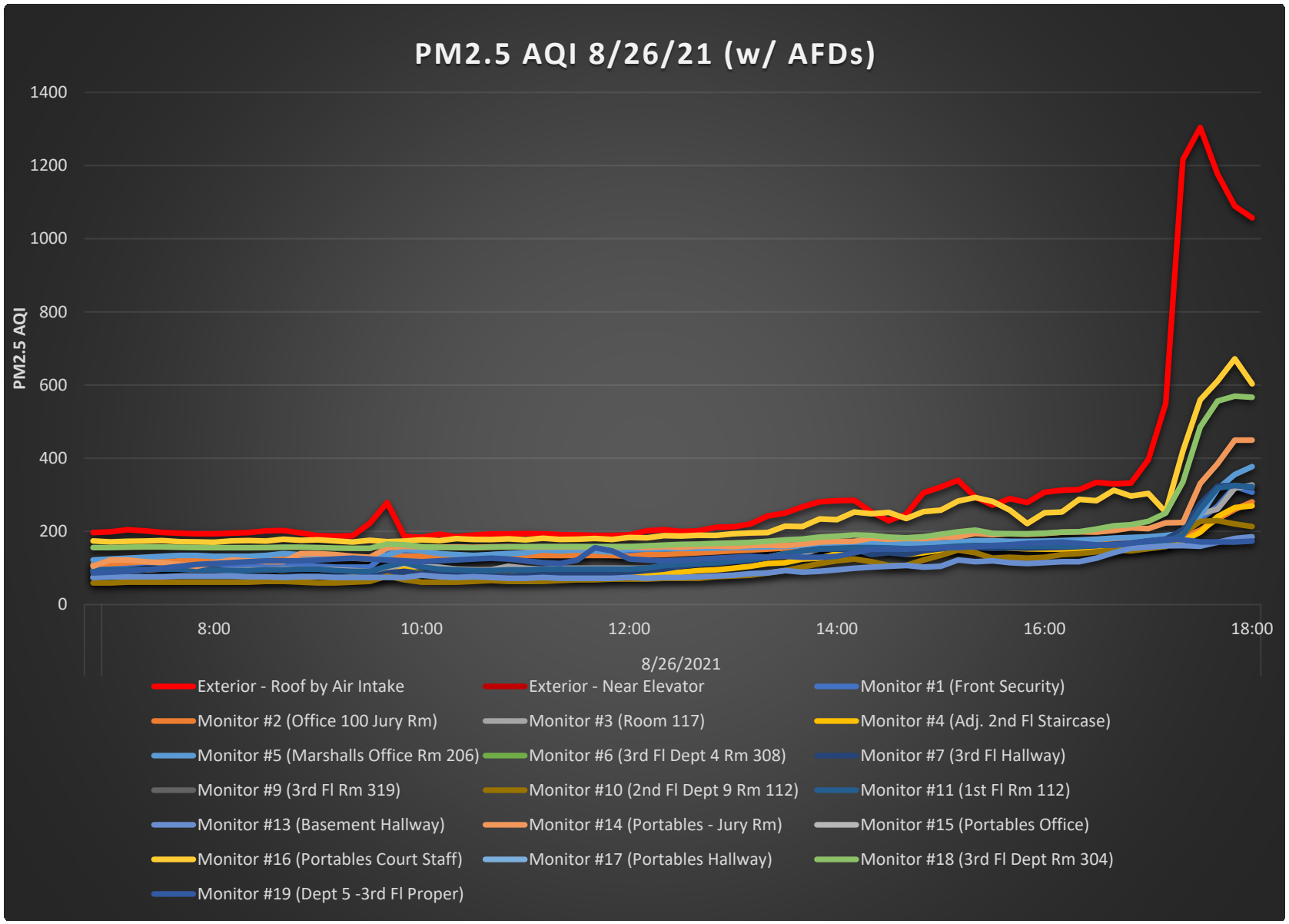
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 10: Redding - PM2.5 Air Quality Index (AQI) – 8/25/21 7am-6pm (With Air Filtering Devices)



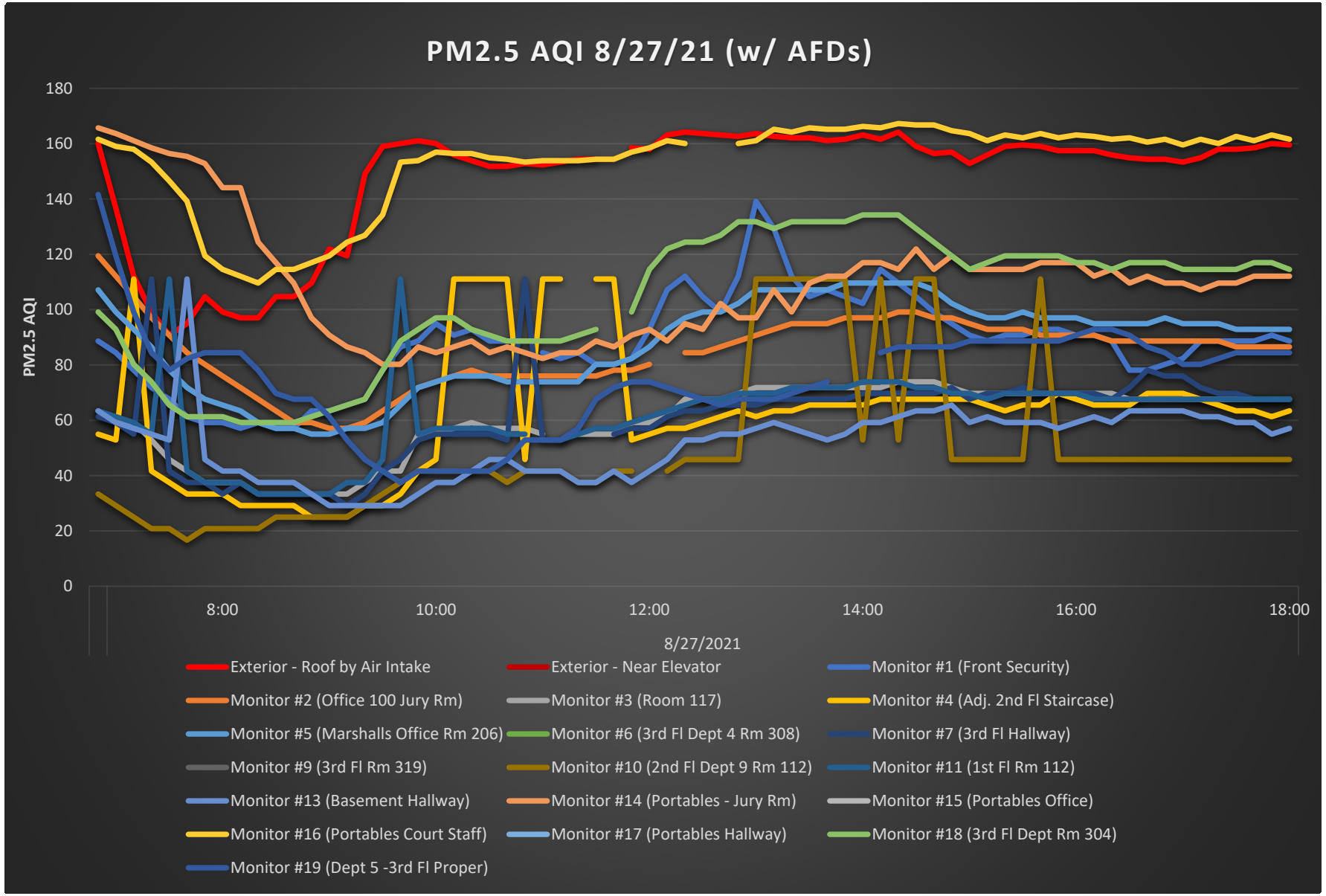
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 11: Redding - PM2.5 Air Quality Index (AQI) – 8/26/21 7am-6pm (With Air Filtering Devices)



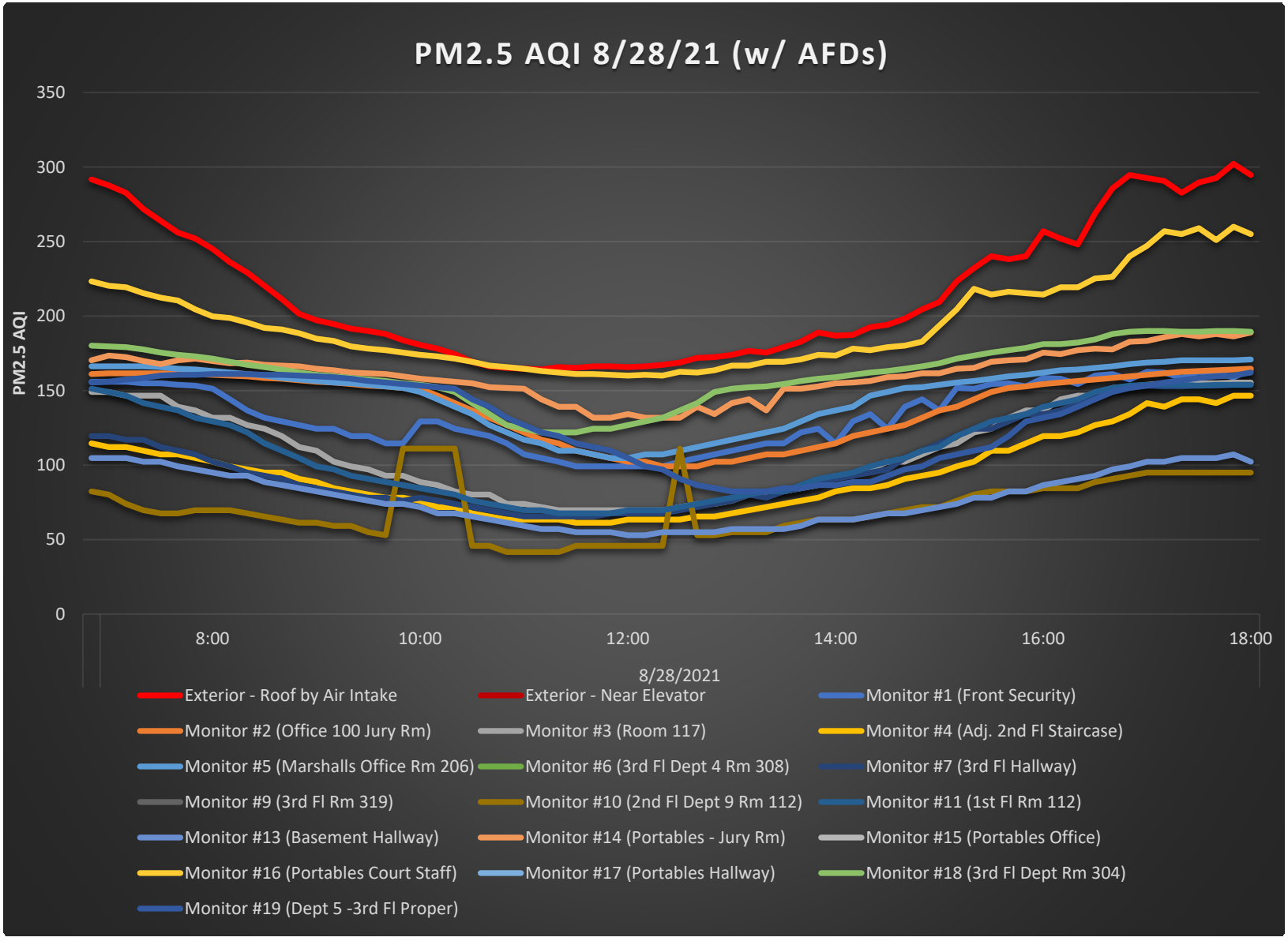
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 12: Redding - PM2.5 Air Quality Index (AQI) – 8/27/21 7am-6pm (With Air Filtering Devices)



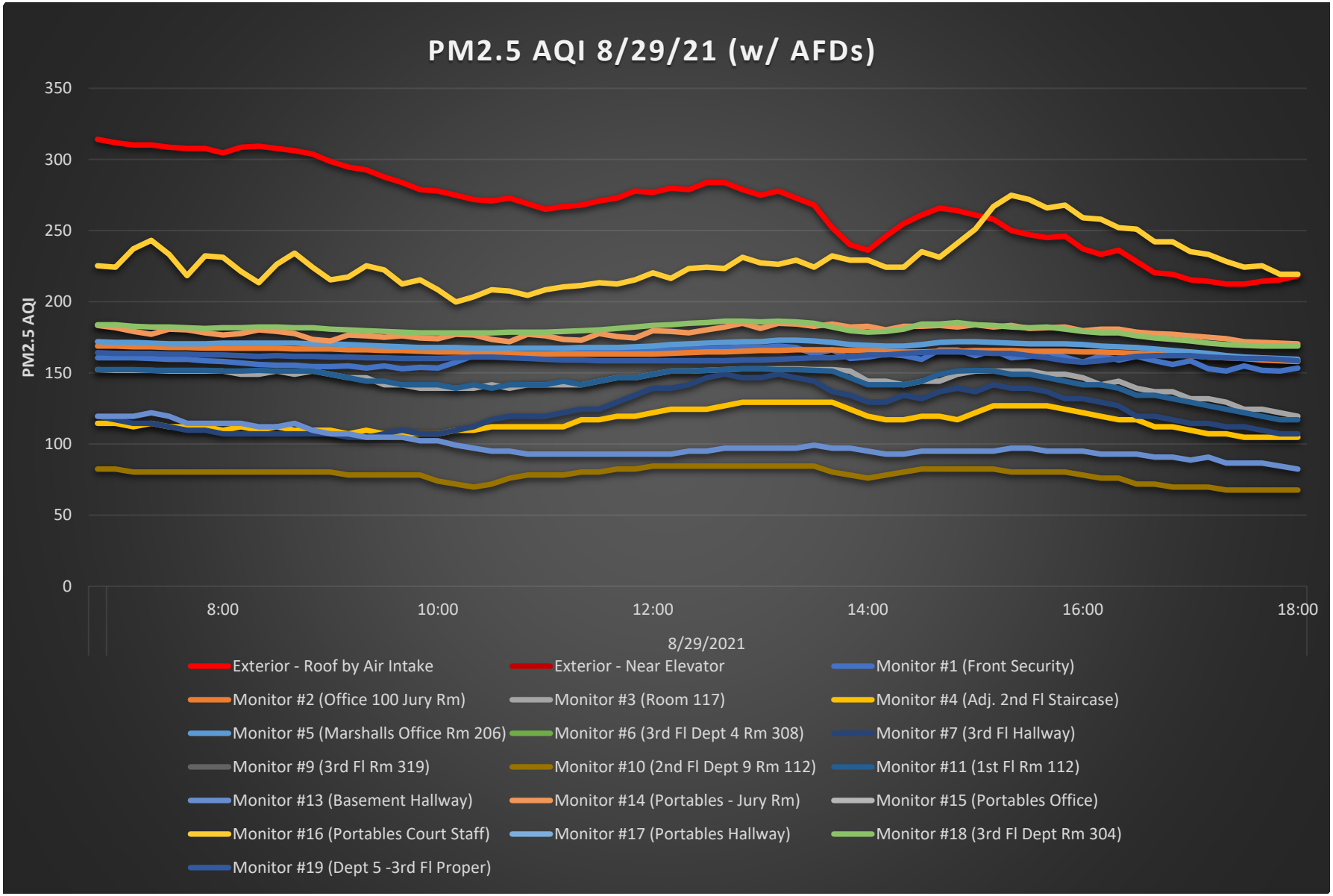
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 13: Redding - PM2.5 Air Quality Index (AQI) – 8/28/21 7am-6pm (With Air Filtering Devices)



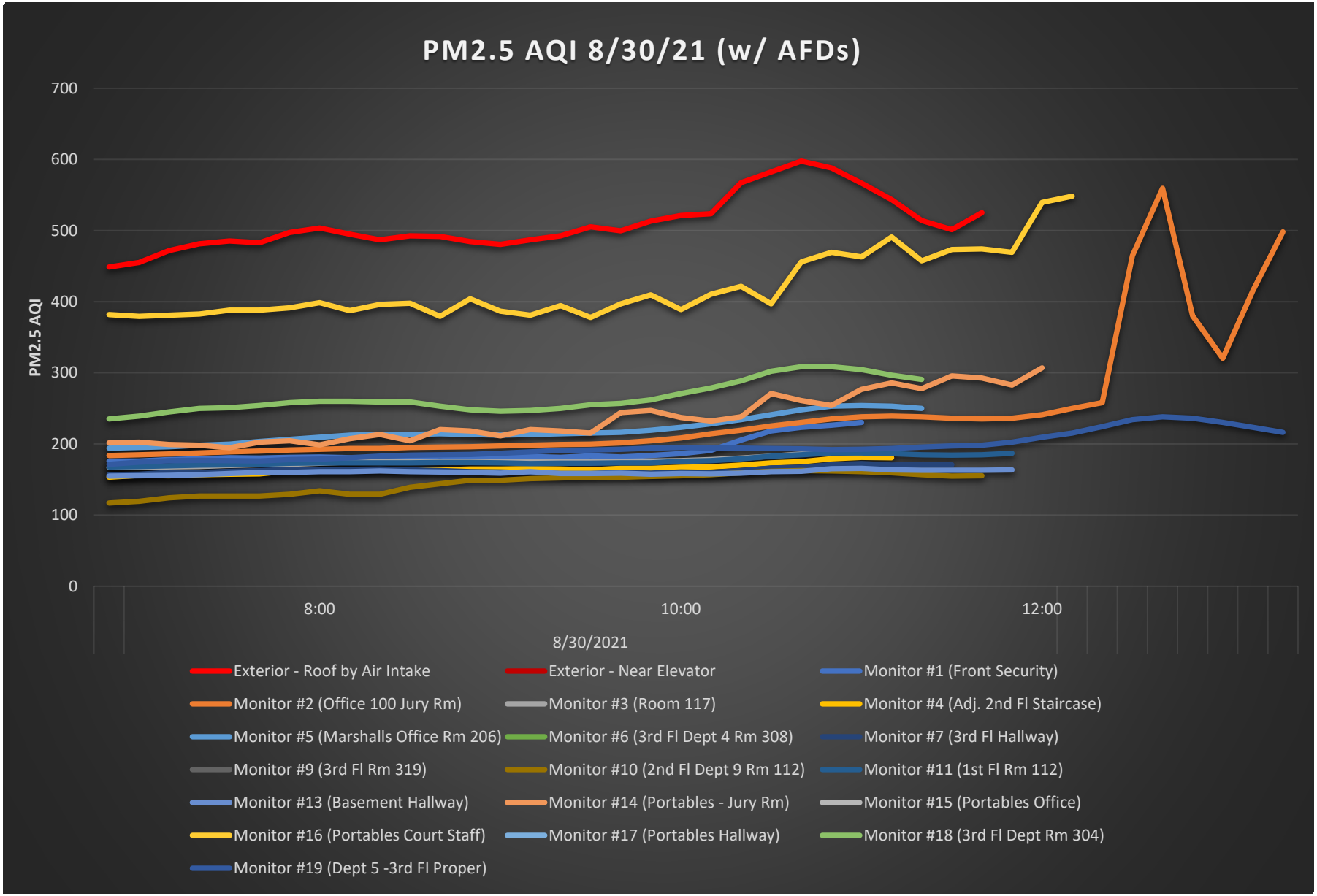
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Figure 14: Redding - PM2.5 Air Quality Index (AQI) – 8/29/21 7am-6pm (With Air Filtering Devices)



Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

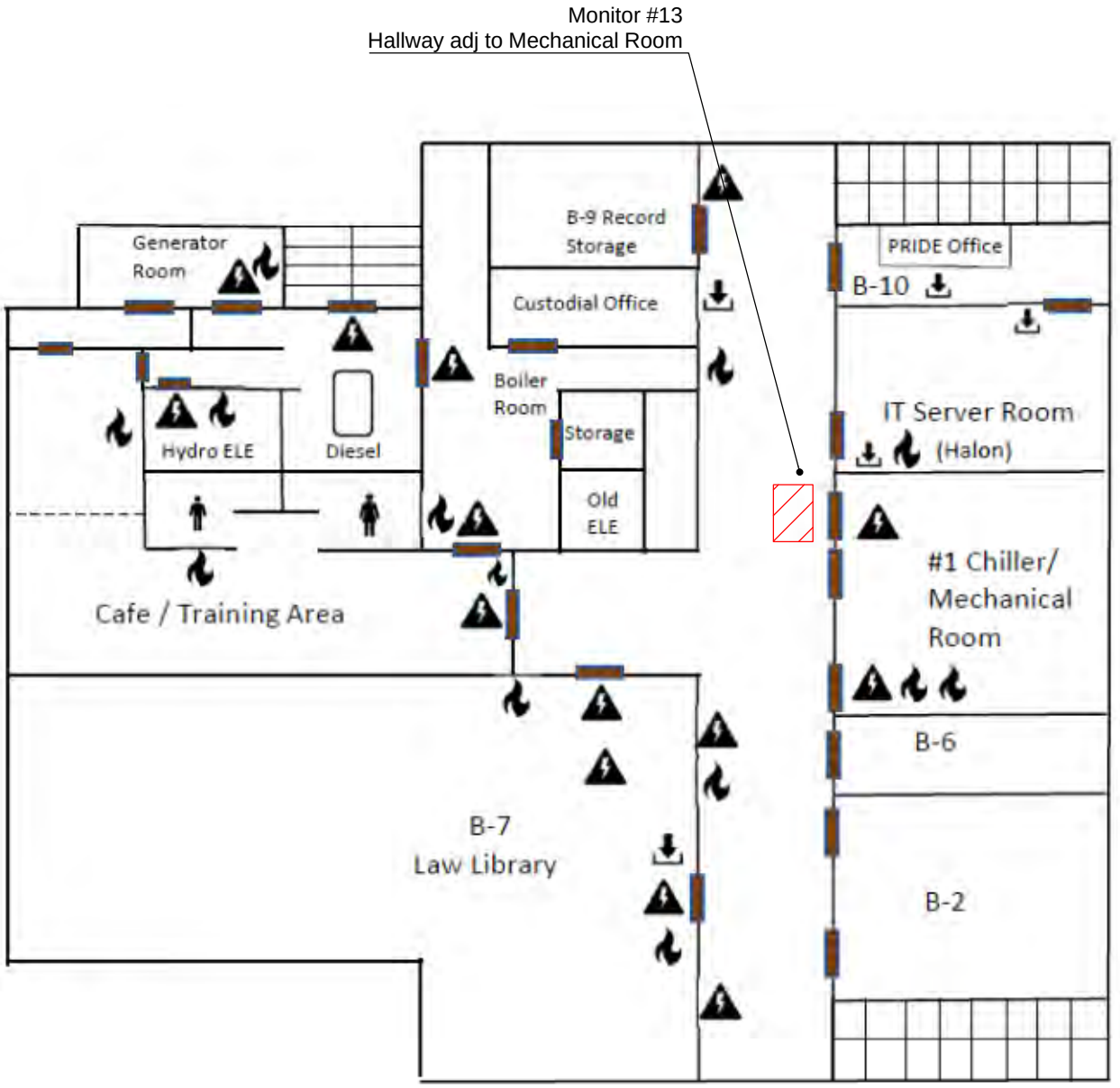
Figure 15: Redding - PM2.5 Air Quality Index (AQI) – 8/30/21 7am-6pm (With Air Filtering Devices)



Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI is typically calculated for a 1-hour or 24-hour average.*

Appendix C

Site Diagrams



LEGEND

: Air filtration device locations

FACS 35
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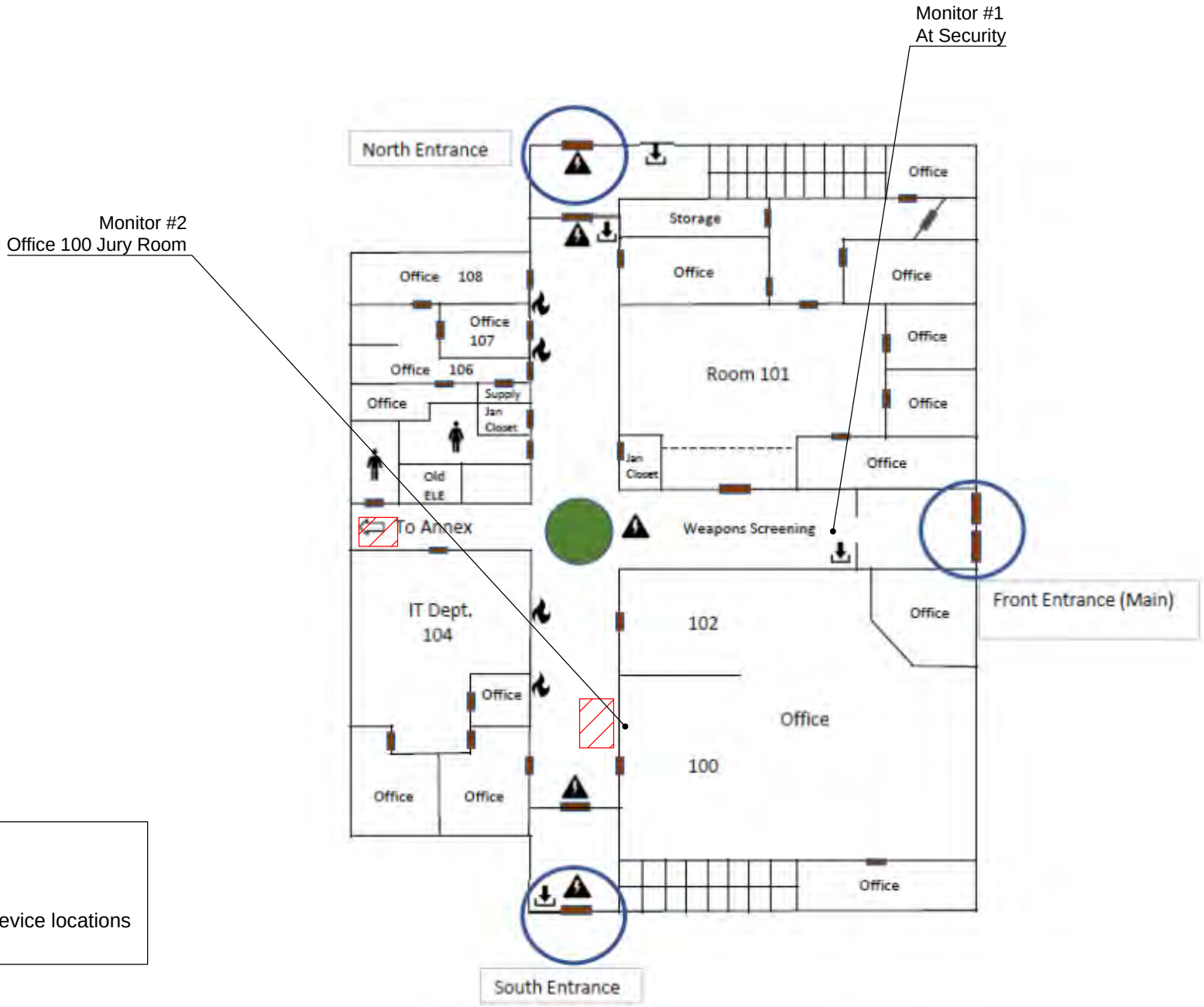
NORTH

Site Diagram
Shasta County Superior Court, Redding
Courthouse Proper, Basement

CLIENT:	Judicial Council of California
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study
LOCATION:	Shasta County Superior Court (45-A1) 1500 Court Street, Redding, CA
DATE:	08/17/2021 - 08/30/2021
JOB NUMBER:	PJ66116
DRAWN BY:	Diana Lutsik
SHEET NUMBER:	S(1-1)



LEGEND

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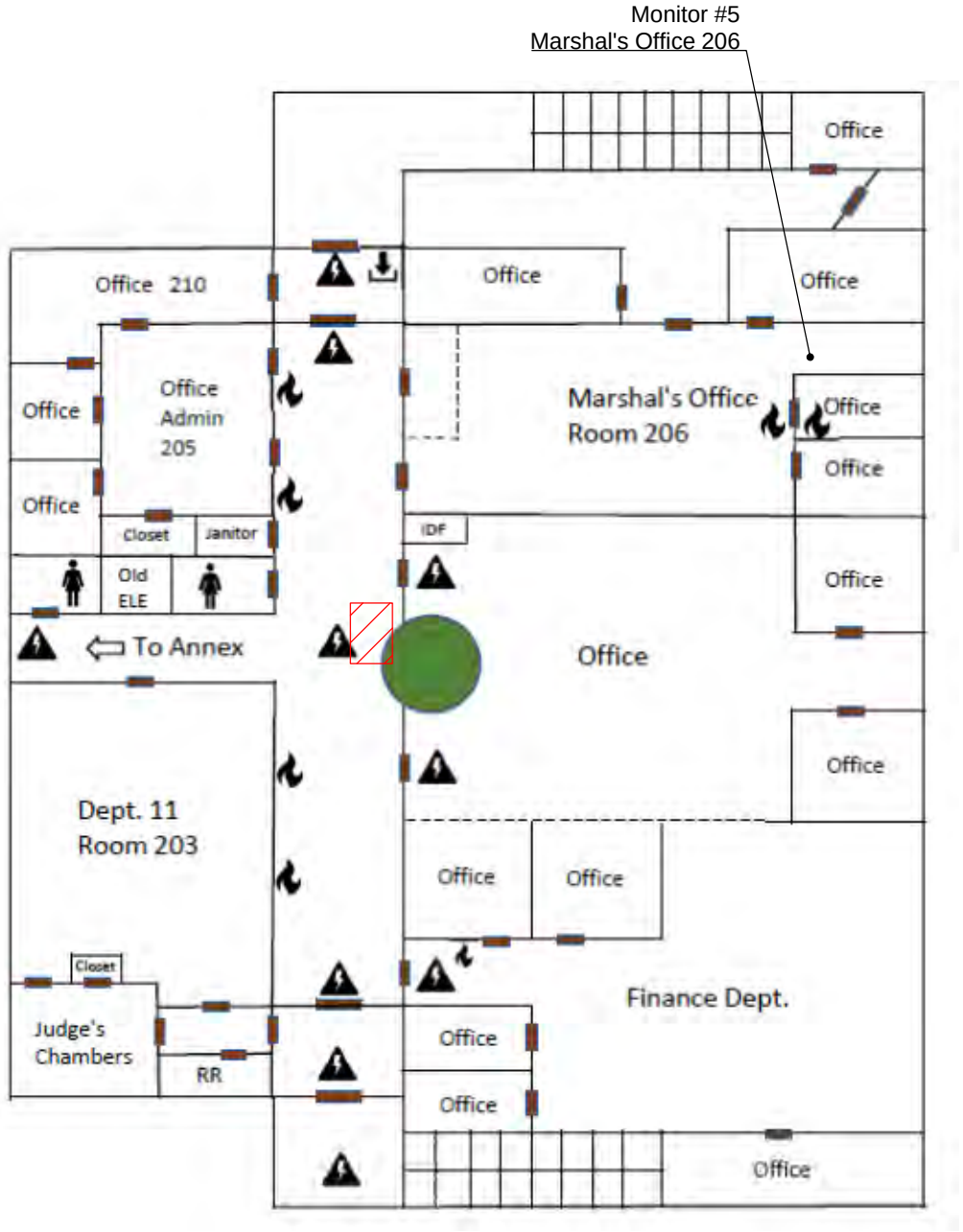
NORTH

Site Diagram
Shasta County Superior Court, Redding
Courthouse Proper, 1st Floor

CLIENT:	Judicial Council of California	DATE: 08/17/2021 - 08/30/2021	
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66116	SHEET NUMBER: S(1-2)
LOCATION:	Shasta County Superior Court (45-A1) 1500 Court Street, Redding, CA	DRAWN BY: Diana Lutsik	



LEGEND

: Air filtration device locations

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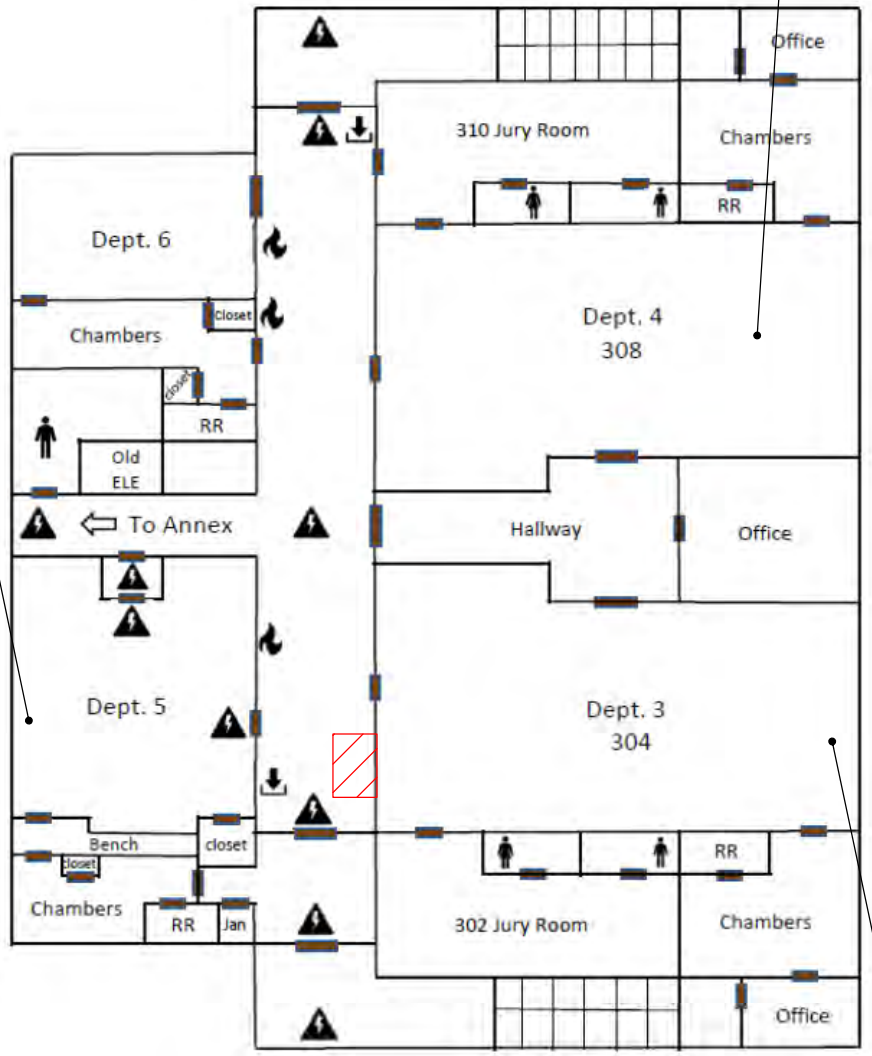
NORTH

Site Diagram
Shasta County Superior Court, Redding
Courthouse Proper, 2nd Floor

CLIENT:	Judicial Council of California	DATE: 08/17/2021 - 08/30/2021	SHEET NUMBER: S(1-3)
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66116	
LOCATION:	Shasta County Superior Court (45-A1) 1500 Court Street, Redding, CA	DRAWN BY: Diana Lutsik	

Monitor #19
Department 5

Monitor #6
Department 4 Room 308



Monitor #18
Department 3 Room 304

LEGEND

: Air filtration device locations

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P: 916.726.1303

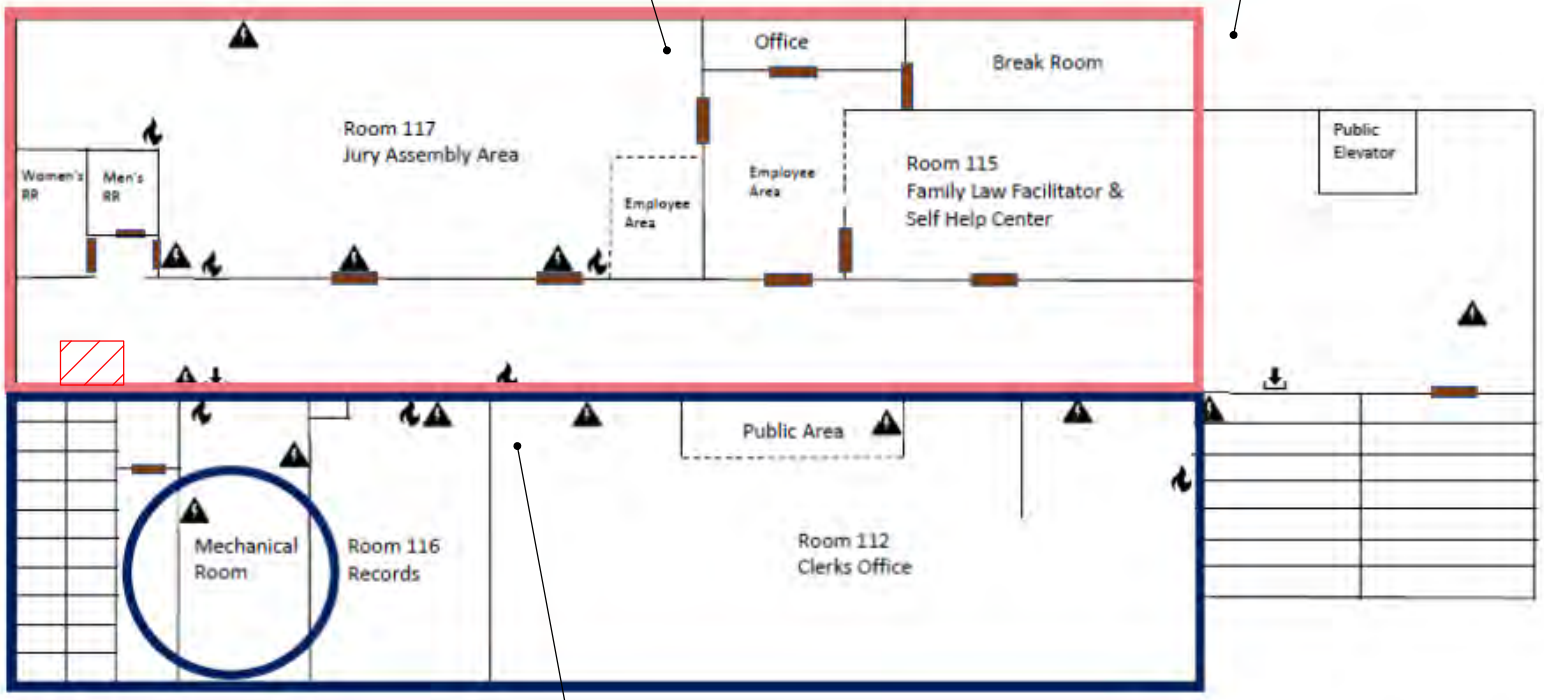
NORTH

Site Diagram
Shasta County Superior Court, Redding
Courthouse Proper, 3rd Floor

CLIENT:	Judicial Council of California	DATE: 08/17/2021 - 08/30/2021	
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66116	SHEET NUMBER: S(1-4)
LOCATION:	Shasta County Superior Court (45-A1) 1500 Court Street, Redding, CA	DRAWN BY: Diana Lutsik	

Monitor #3
Room 117 Jury Assembly Area

Monitor #12
Exterior near elevators



Monitor #11
Room 112 Clerks Office

LEGEND

: Air filtration device locations

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Citrus Heights, California
P: 916.726.1303

NORTH

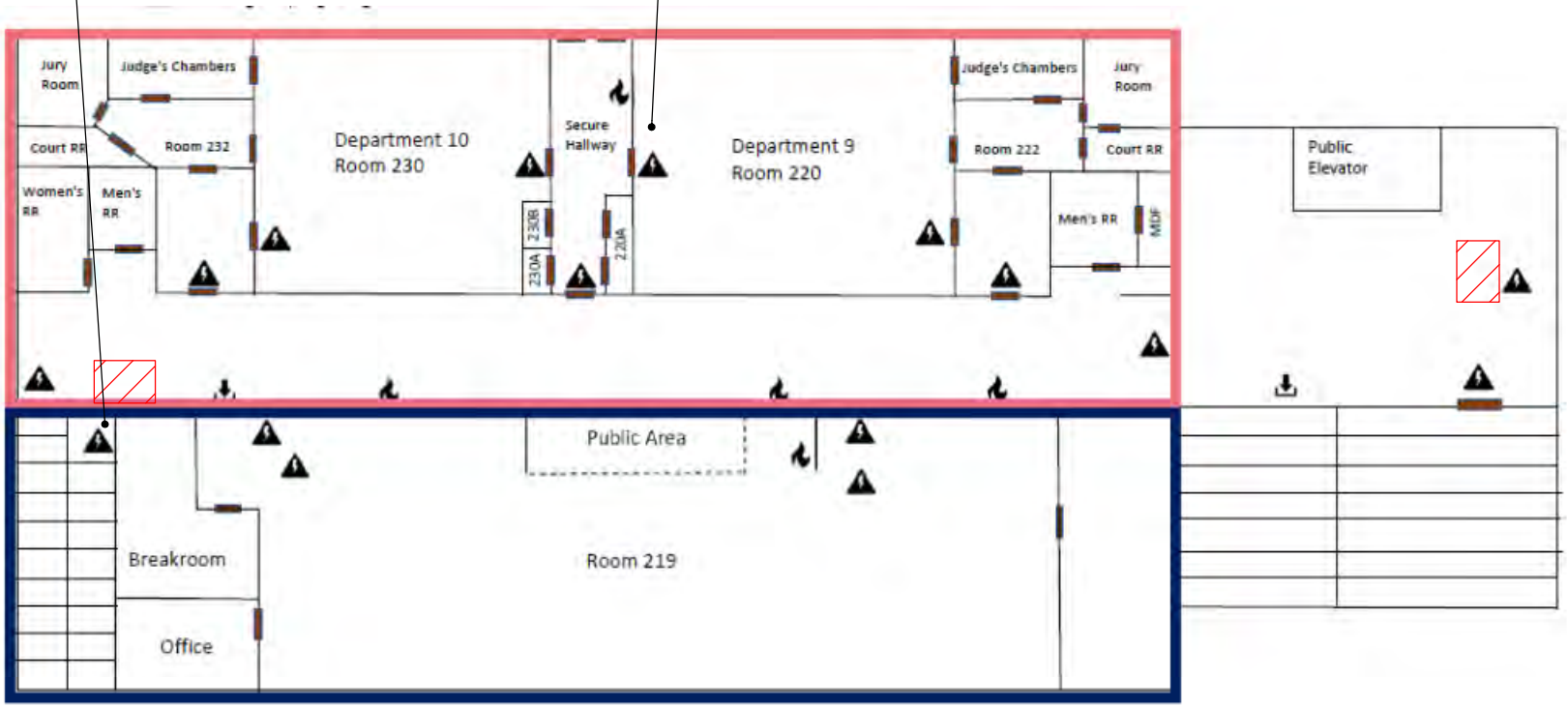
Site Diagram
Shasta County Superior Court, Redding
Courthouse Annex, 1st Floor

CLIENT:	Judicial Council of California
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study
LOCATION:	Shasta County Superior Court Annex (45-A7) 1500 Court Street, Redding, CA

DATE: 08/17/2021 - 08/30/2021
JOB NUMBER: PJ66116
DRAWN BY: Diana Lutsik
SHEET NUMBER: S(2-1)

Monitor #4
Adjacent to staircase

Monitor #10
Department 9 Room 112



LEGEND

: Air filtration device locations

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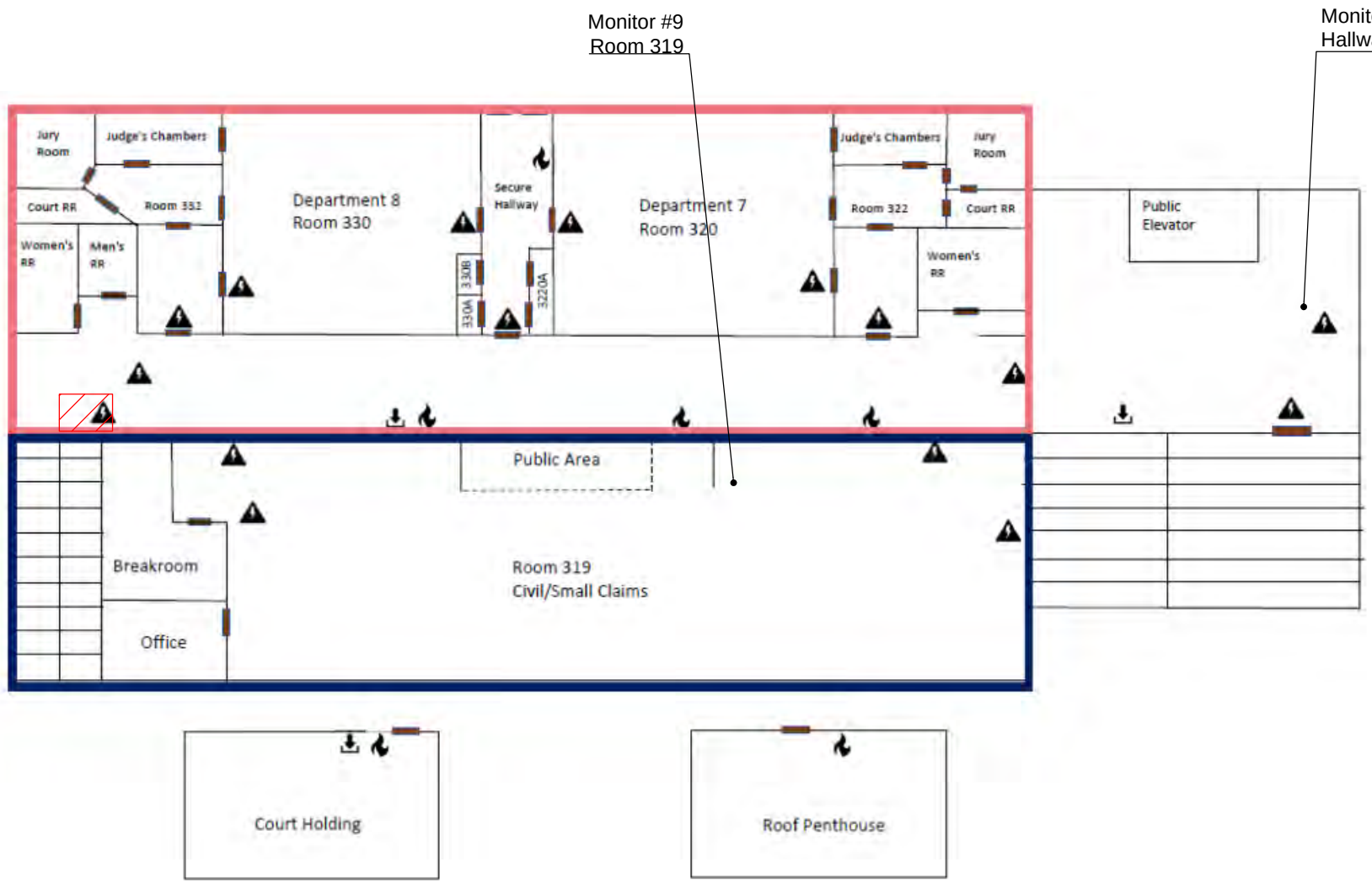
Citrus Heights, California
P: 916.726.1303

NORTH

Site Diagram
Shasta County Superior Court, Redding
Courthouse Annex, 2nd Floor

CLIENT:	Judicial Council of California
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study
LOCATION:	Shasta County Superior Court Annex (45-A7) 1500 Court Street, Redding, CA

DATE: 08/17/2021 - 08/30/2021
JOB NUMBER: PJ66116
DRAWN BY: Diana Lutsik
SHEET NUMBER: S(2-2)



LEGEND

: Air filtration device locations

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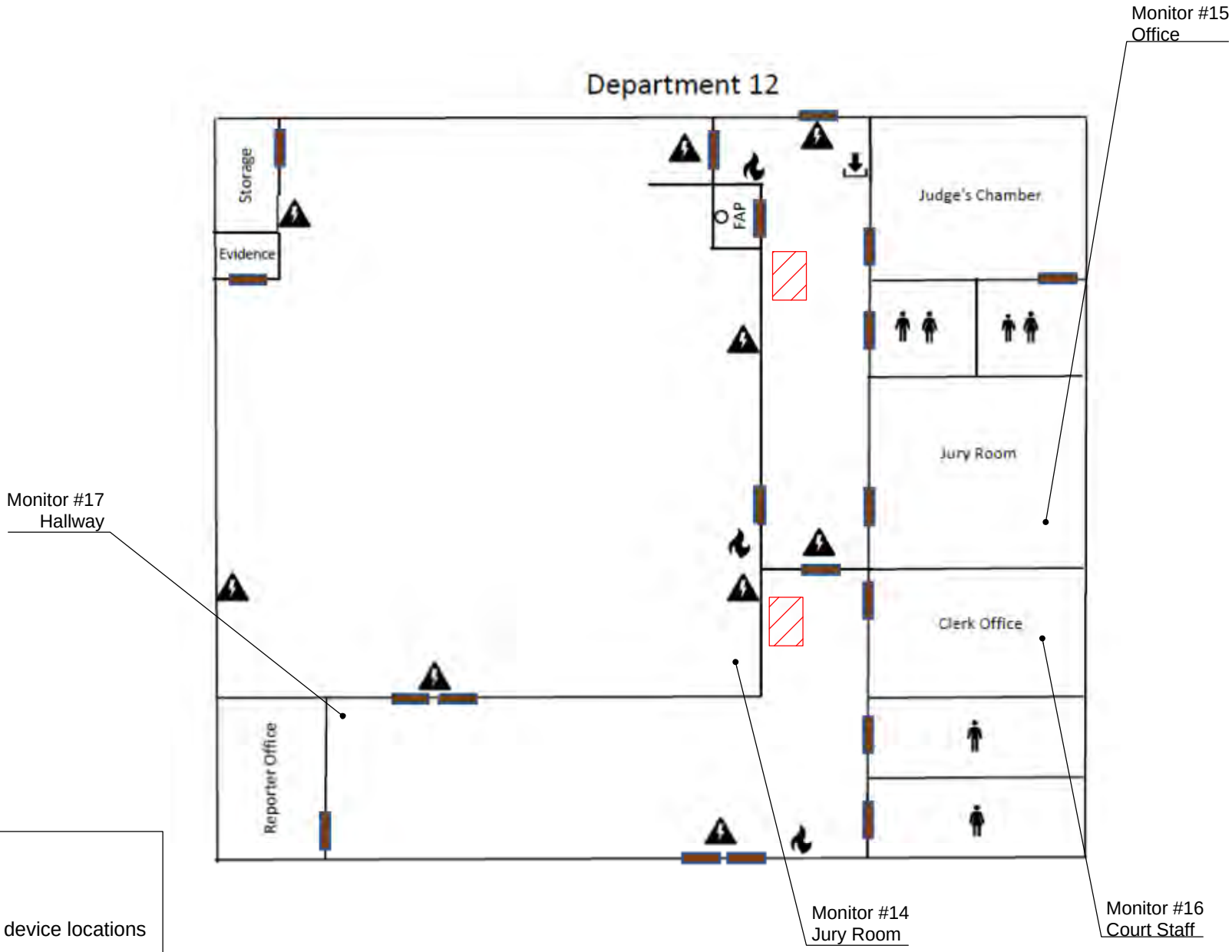
NORTH

Site Diagram
Shasta County Superior Court, Redding
Courthouse Annex, 3rd Floor

CLIENT:	Judicial Council of California
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study
LOCATION:	Shasta County Superior Court Annex (45-A7) 1500 Court Street, Redding, CA

DATE: 08/17/2021 - 08/30/2021
JOB NUMBER: PJ66116
DRAWN BY: Diana Lutsik
SHEET NUMBER: S(2-3)



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NORTH

Site Diagram
Shasta County Superior Court, Redding
Justice Center Court Modular

CLIENT:	Judicial Council of California
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study
LOCATION:	Shasta County Superior Court Annex (45-A7) 1655 West Street, Redding, CA
DATE:	08/17/2021 - 08/30/2021
JOB NUMBER:	PJ66116
DRAWN BY:	Diana Lutsik
SHEET NUMBER:	S(3-1)

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October 5, 2021

Wildfire Smoke Impact Report: IEQ Investigation Study

El Dorado County Superior Court (09-A1)
495 Main Street
Placerville, CA 95667

Prepared for:

Jennifer Chappelle
Manager, Risk Management
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FACS Project #PJ66306
JCC SWO #1709200

Contents

Introduction

Forensic Analytical Consulting Services, Inc. (FACS) was retained by the Judicial Council of California (Client, hereafter JCC) to perform an Indoor Environmental Quality (IEQ) Investigation in the El Dorado County Superior Court (09-A1) located at 495 Main Street in Placerville, California. This investigation was prompted by the Caldor Fire which was burning in areas of El Dorado County during the investigation.

The purpose of this investigation was to 1) conduct baseline air monitoring for particulate matter 2.5 (PM2.5) as it relates to air quality index (AQI) values; 2) provide assistance in identifying the number of portable air filtration devices needed to provide an additional two air changes per hour in the facility; 3) conduct air monitoring for PM2.5 following the use of air filtration devices (AFDs); and 4) analyze the PM2.5 AQI data in order to assist in determining if the use of AFDs in the building contribute to improved indoor environmental quality.

The investigation was performed by FACS between the dates of August 26, 2021 and September 3, 2021. This report contains the findings from our investigation.

Scope of Work

In the course of this project, FACS conducted the following scope of work:

1. Development of a history and site characterization (see sections below).
2. Collection of a baseline PM2.5 data (prior implementation of AFDs) using TSI DustTrak™ II Aerosol Monitors at one exterior location and four interior locations.
3. Provide assistance in identifying the number of portable air filtration devices needed to provide an additional two air changes per hour in the facility.
4. Collection of PM2.5 data, post implementation of AFDs using TSI DustTrak™ II Aerosol Monitors at one exterior location and four interior locations (same locations as baseline monitoring).
5. Generation of a data comparison table, figures, and final report.

Data collection methodologies are described in the body of this report. The data collected in the course of the investigation is presented in this report as follows:

- Appendix A: PM2.5 AQI Data Summary Table
- Appendix B: PM2.5 Data Figures
- Appendix C: Site Diagrams

Site History and Characterization

On August 14, 2021, the Caldor Fire erupted in El Dorado County, east of Omo Ranch and south of the Grizzly Flats community, negatively impacting the air quality in Placerville. JCC contacted FACS on August 26, 2021, requesting an immediate mobilization to conduct the IEQ investigation in the Superior Court of El Dorado County located at 495 Main Street in Placerville, CA.

The Main Street Branch of the Superior Court of El Dorado County is an approximately 18,560 square feet, three-story courthouse building originally built in 1913. The exterior construction is characterized by white concrete block and off-white mortar. The interior of the building is generally characterized by

painted gypsum drywall walls and dropped ceilings. Flooring generally consisted of vinyl floor tile or carpeting. The building features operable windows, which were observed to be closed during FACS' investigation. Air is supplied to the building through multiple roof-top heating, ventilation, and air conditioning (HVAC) units. The units are reportedly set to run continuously 24 hours a day, seven days a week, due to internal COVID-19 protocols

Data Collection Methodology

Per client's request, FACS' IEQ investigation was limited to PM2.5 airborne particulates (particulates less than 2.5 micrometers in diameter). FACS performed monitoring of baseline conditions (prior to implementation of AFDs), followed by PM2.5 monitoring after implementation of the AFDs in selected locations of the building

Baseline testing (pre-operation of AFDs) was performed from 1830 hours on August 26, 2021, until approximately 0800 hours on August 27, 2021, with the primary heating, ventilation, and air conditioning (HVAC) mechanical filtration system operating in the building. The AFDs were deployed at selected locations in the building on August 27, 2021. Following installation and operation of the AFDs, air monitoring continued post implementation of AFDs in operation in addition to the primary mechanical filtration system from August 27, 2021 through September 3, 2021.

Air monitoring was conducted using direct-reading data-logging DustTrak™ II Aerosol Monitors. The DustTrak™ II desktop monitor is a light-scattering laser photometer that provided real-time aerosol mass concentrations readings. The DustTrak™ DRX II Aerosol Monitor reports a mass concentration using the PM2.5 particulate size fraction and reported in milligrams per cubic meter (mg/m^3). Readings were collected at 10-minute log intervals over the monitoring duration.

A total of five (5) samples were collected and included the following locations:

- Exterior at lower roof parapet
- 1st floor entry
- 2nd floor entry
- 2nd floor interior (Auditor Office)
- 3rd floor interior (Board of Supervisors Office)

See site diagrams in Appendix C for specific locations.

Results of the airborne particulate matter (PM2.5) monitoring following implementation of the AFDs were compared to the baseline air monitoring in order to evaluate the effectiveness of air filtration devices during heavy wildfire smoke impact.

Air quality index (AQI) values were calculated using the PM2.5 data collected during the investigation. The AQI value for PM2.5 that was collected prior to the installation of AFDs, between 8/26/21-8/27/21 was calculated using the entire time duration (1830 hours on August 26, 2021 until approximately 0800 hours on August 27, 2021). Following installation of AFDs, AQI values were calculated using the average PM2.5 concentration measured between 7am-6pm (typical work shift).

Note, the monitor located at the 2nd floor entry appeared to malfunction on 9/1 and 9/2. Data collected during this time period is considered false and not included in the results table.

Findings and Observations

The following findings were generated by FACS as a result of this investigation:

- It was reported to FACS that only the AHU serving the 3rd floor of the building had outdoor air intakes, which were reported as closed.
- Reportedly, a total of four (4) AFDs were deployed and operated in the building during FACS' investigation. All units were rated to deliver 2,000 cubic feet per minute (CFM), delivering a total of 8,000 CFM of air. The AFD locations were reported to be as follows:
    1. 1st floor lobby
    2. 2nd floor lobby
    3. 3rd floor lobby
    4. Court room
- Upon FACS' mobilization to the El Dorado County Superior Court on August 26, 2021, a strong smoke odor was observed on the third floor of the courthouse, in particular the 3rd floor courtrooms, as well as outside the building. A milder smoke odor was present throughout the 1st and 2nd floor of the building. Furthermore, visibility was very low outdoors and visible smoke related particulate (i.e., char, ash) was observed on exterior surfaces of the building. Visible smoke related particulate was observed at entry door thresholds and in the interior of the building in locations directly adjacent to the entrances.
- Upon return to the site to retrieve monitoring equipment on September 3, 2021, FACS observed smoke odors appearing milder and visibility had improved.

Discussion

In general, the purpose of this investigation was to assist in determining if the use of AFDs in the building contributes to improvement of indoor environmental quality for occupants during large wildfire events. Baseline data collected without the use of AFDs was compared to data collected during the use of the AFDs. Comparison was performed by calculating the difference in concentrations between the outdoor and indoor locations during a typical work shift (7 am – 6 pm) for each of the sampling events. Results of the air monitoring assessment, along with calculated values (% of outdoor, AQI levels) are provided in Table 1.

Additionally, data graphically plotted showed a direct correlation between the outdoor particulate concentrations and the indoor particulate concentrations. During spikes in PM2.5 concentrations in the outdoor locations, spikes in indoor locations were also identified at the same time or shortly thereafter. This was identified with and without the use of AFDs in the buildings. See Figures 1 – 10.

In general, the data did not indicate a consistent improvement of air quality when operating the AFDs. Additionally, the outdoor air quality appears to have a heavy influence on the indoor air quality. Slight improvements were identified in areas known to contain the air filtration devices (e.g., 1st floor entry). However, no identifiable improvements were noted for areas without AFDs operating in the space (e.g., 3rd floor interior). Improvement in air quality was observed at the 2nd floor entry, while improvement was not observed in the 2nd floor interior.

Based on results of the limited assessment, the use of four air filtration devices in the facility did not appear to consistently improve air quality throughout the facility, particularly when the outdoor air reached AQI levels greater than 500. Small improvements were identified but appeared to be localized to locations where AFDs were operating.

Limitations

This investigation is limited to the conditions and practices observed and information made available to FACS. The methods, conclusions and recommendations provided are based on FACS' judgment, expertise and the standard of practice for professional service. They are subject to the limitations and variability inherent in the methodology employed. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Please do not hesitate to contact our offices at 916-726-1303 with any questions or concerns. Thank you for the opportunity to assist Judicial Council of California in promoting a more healthful environment.

Respectfully,

FORENSIC ANALYTICAL

Diana Lutsik
Project Manager, Sacramento

Reviewed by:

FORENSIC ANALYTICAL

Michelle Rosales, MPH, CIH
Principal Consultant

Appendix A

PM2.5 AQI Data Summary Table

Table 1: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI)

Location	Without AFDs		With Air Filtering Devices (AFDs)															
	8/26/2021 - 8/27/2021		8/27/2021		8/28/2021		8/29/2021		8/30/2021		8/31/2021		9/1/2021		9/2/2021		9/3/2021	
	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI
Exterior																		
Exterior - Roof	1020	914	2981	>500	1403	>500	1423	>500	466	473	114	181	60	153	287	330	2096	>500
Interior																		
1st Floor Entry	105	177	322	358	36	103	35	100	16	60	7	27	7	29	30	88	464	471
% of Outdoor	*10%*		*11%*		*3%*		*2%*		*3%*		*6%*		*12%*		*10%*		*22%*	
2nd Floor Entry	102	175	352	382	53	145	45	125	29	86	14	56	0	0	0	0	548	>500
% of Outdoor	*10%*		*12%*		*4%*		*3%*		*6%*		*12%*		*0%*		*0%*		*26%*	
2nd Floor Interior	41	115	269	316	317	354	263	311	69	158	16	59	17	62	68	157	153	203
% of Outdoor	*4%*		*9%*		*23%*		*18%*		*15%*		*14%*		*28%*		*24%*		*7%*	
3rd Floor Interior	186	236	731	>500	259	307	258	307	111	180	29	86	17	61	78	163	177	227
% of Outdoor	*18%*		*25%*		*18%*		*18%*		*24%*		*25%*		*28%*		*27%*		*8%*	

Notes:

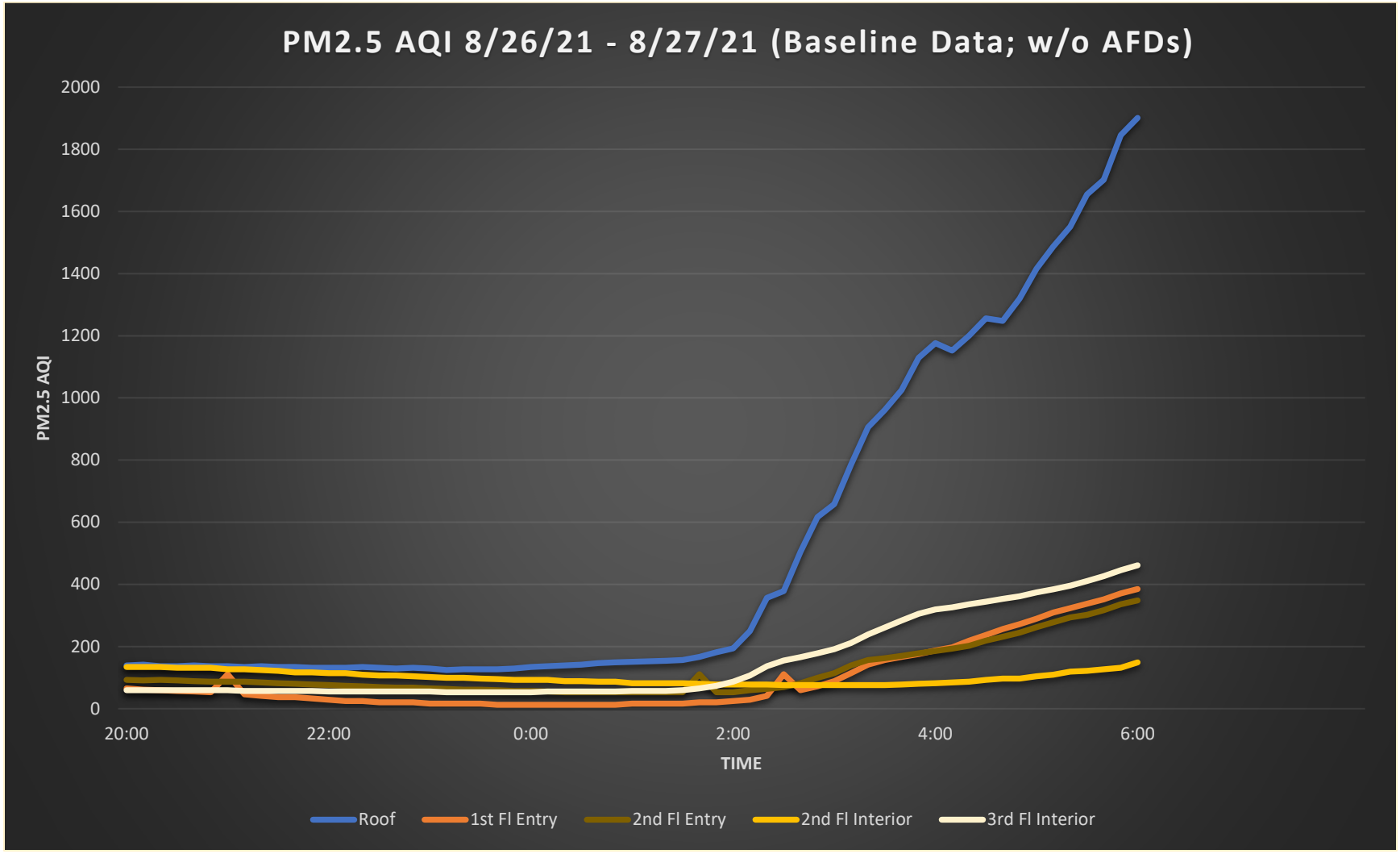
1. In general, average data collected from 7am-6pm is presented for each day of monitoring. Exceptions are as follows: Baseline PM2.5 data collected prior to implementation of air filtering devices (8/26-8/27) was for an overnight period from approximately 8pm on 8/26 to 6am on 8/27, and all consolidated data was averaged and presented for this baseline data. On 8/27/21, after AFDs were installed, air monitoring began again at 12pm; the average of data collected from 12pm-6pm was provided for that day under the column for 8/27/21 "with air filtering devices". On 9/3/21, the last day of monitoring, air monitoring ended at 8am; the average of data collected from 7am-8am was provided for that day.

2. ">500" indicates that values are above an AQI of 500, which is considered beyond the AQI.

Appendix B

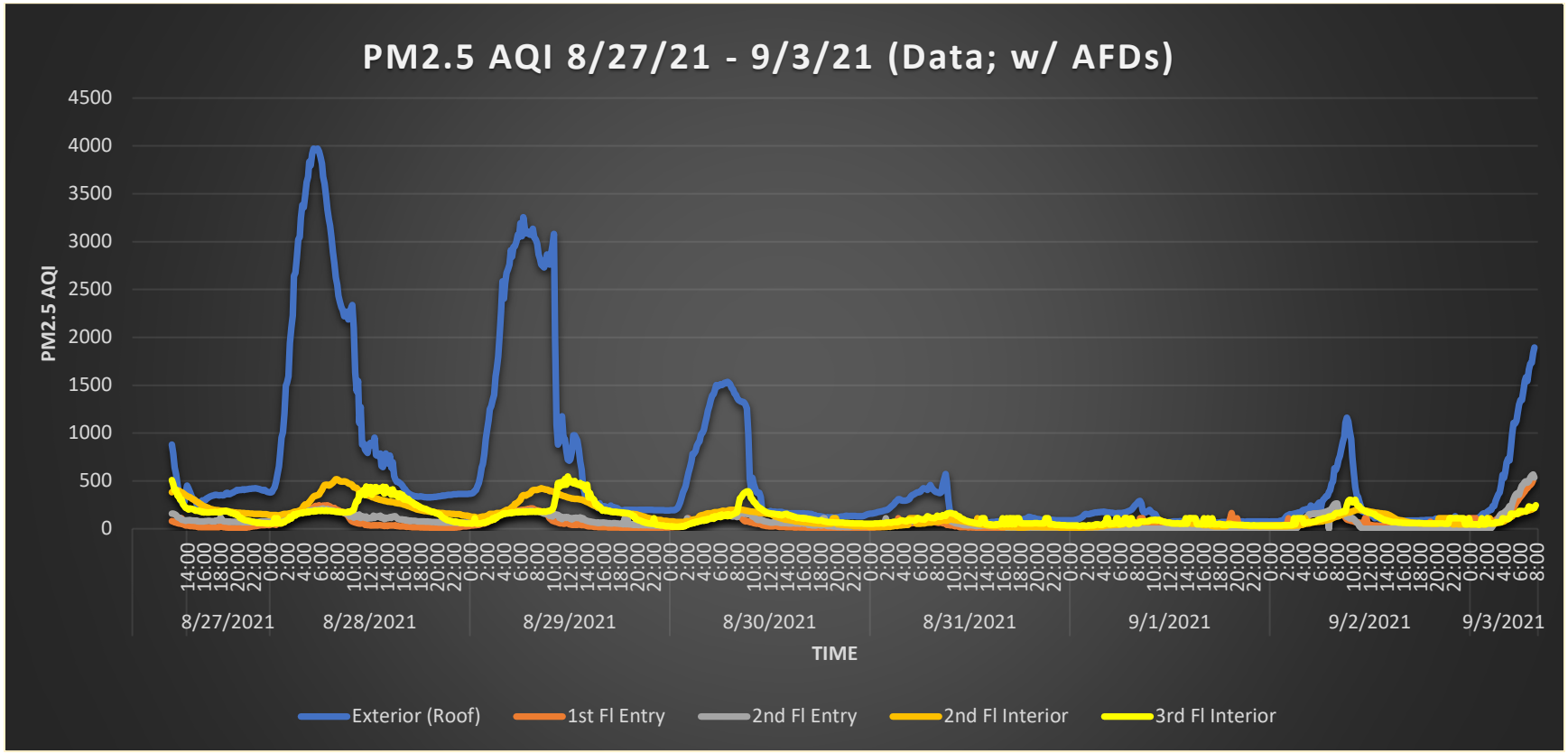
PM2.5 Data Figures

Figure 1: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) - 8/27/21 (Without Air Filtering Devices)



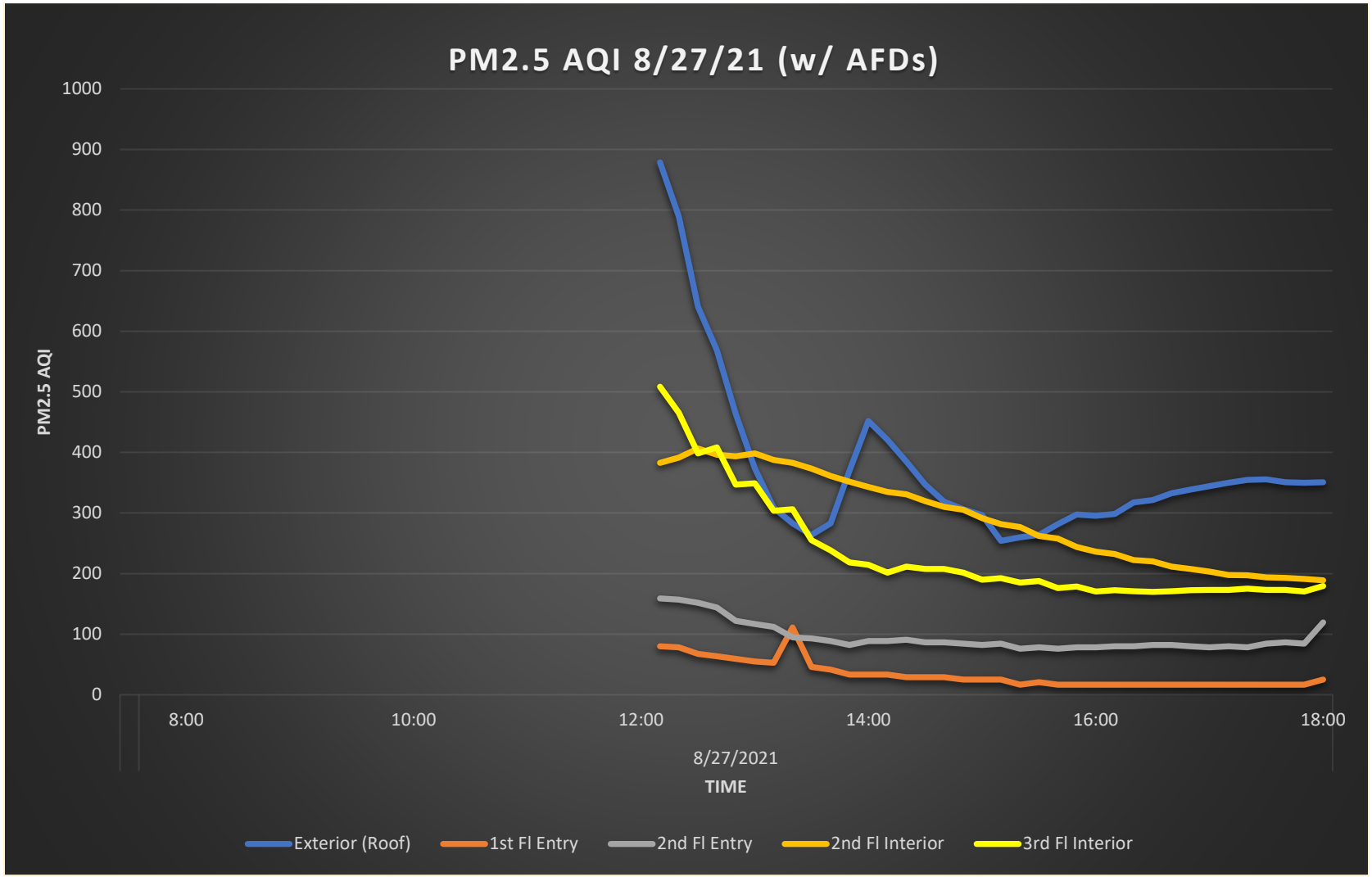
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 2: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 8/27/21 to 9/3/21 (With Air Filtering Devices)



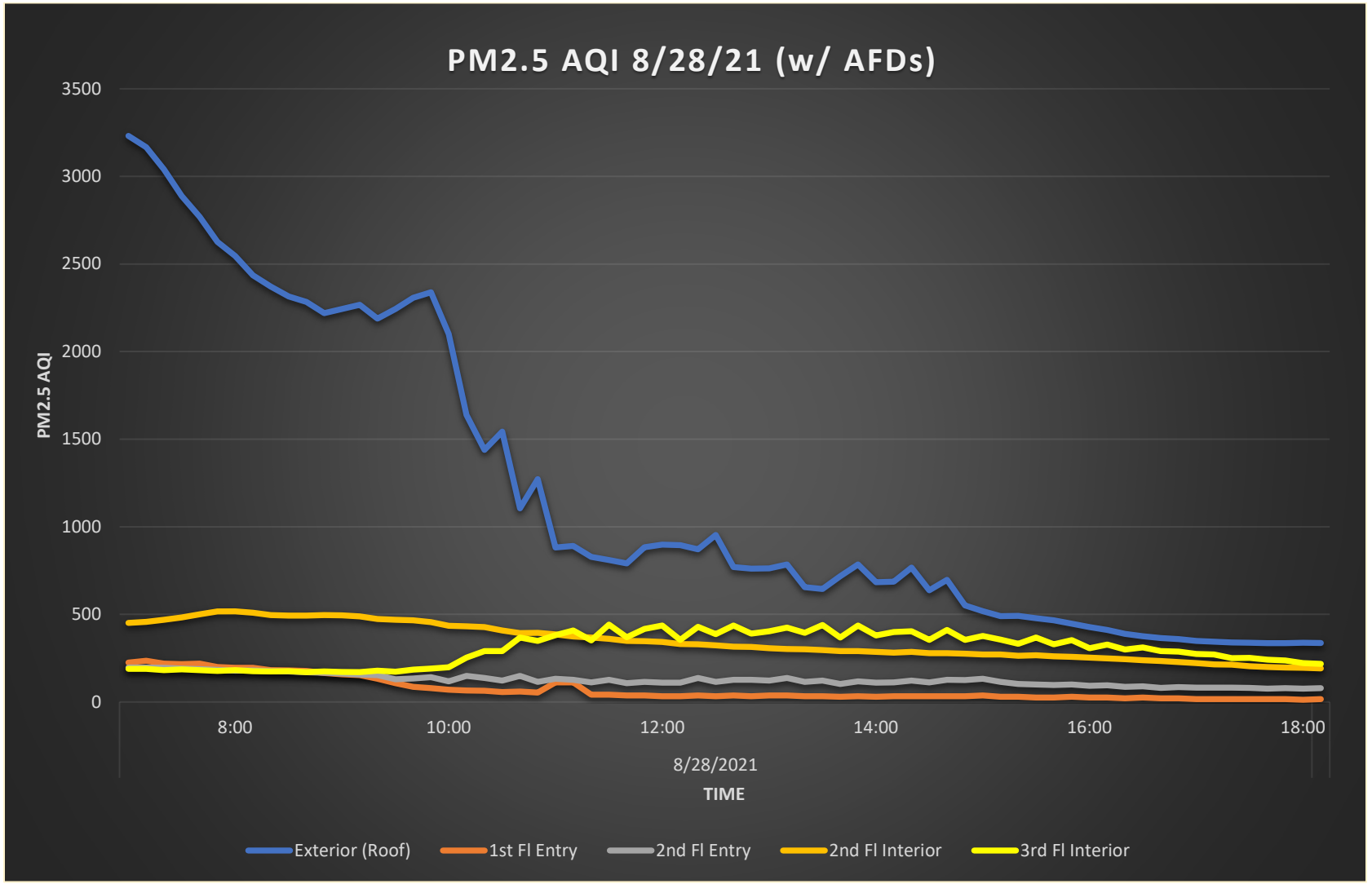
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 3: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 8/27/21 (With Air Filtering Devices)



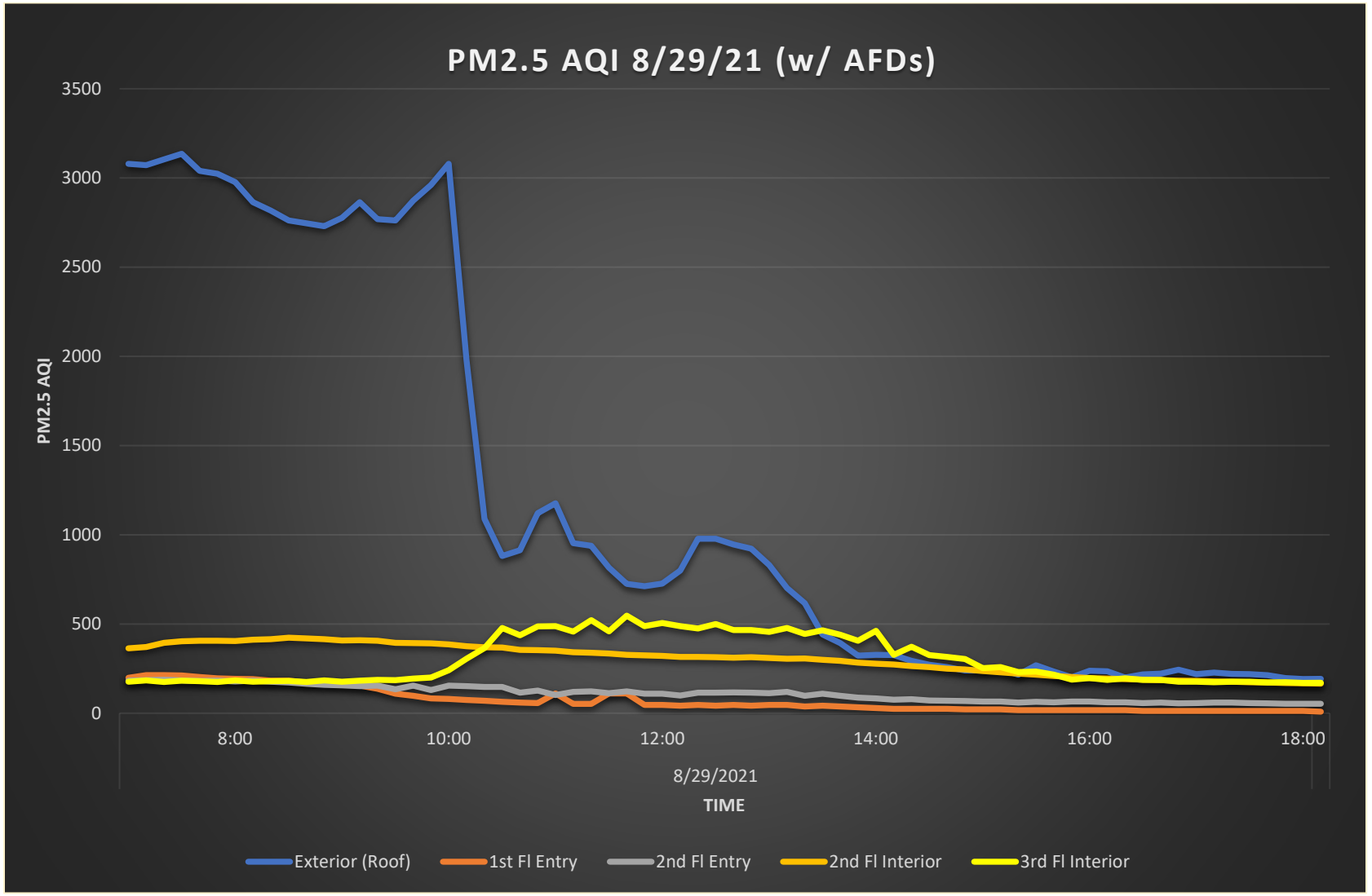
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 4: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 8/28/21 (With Air Filtering Devices)



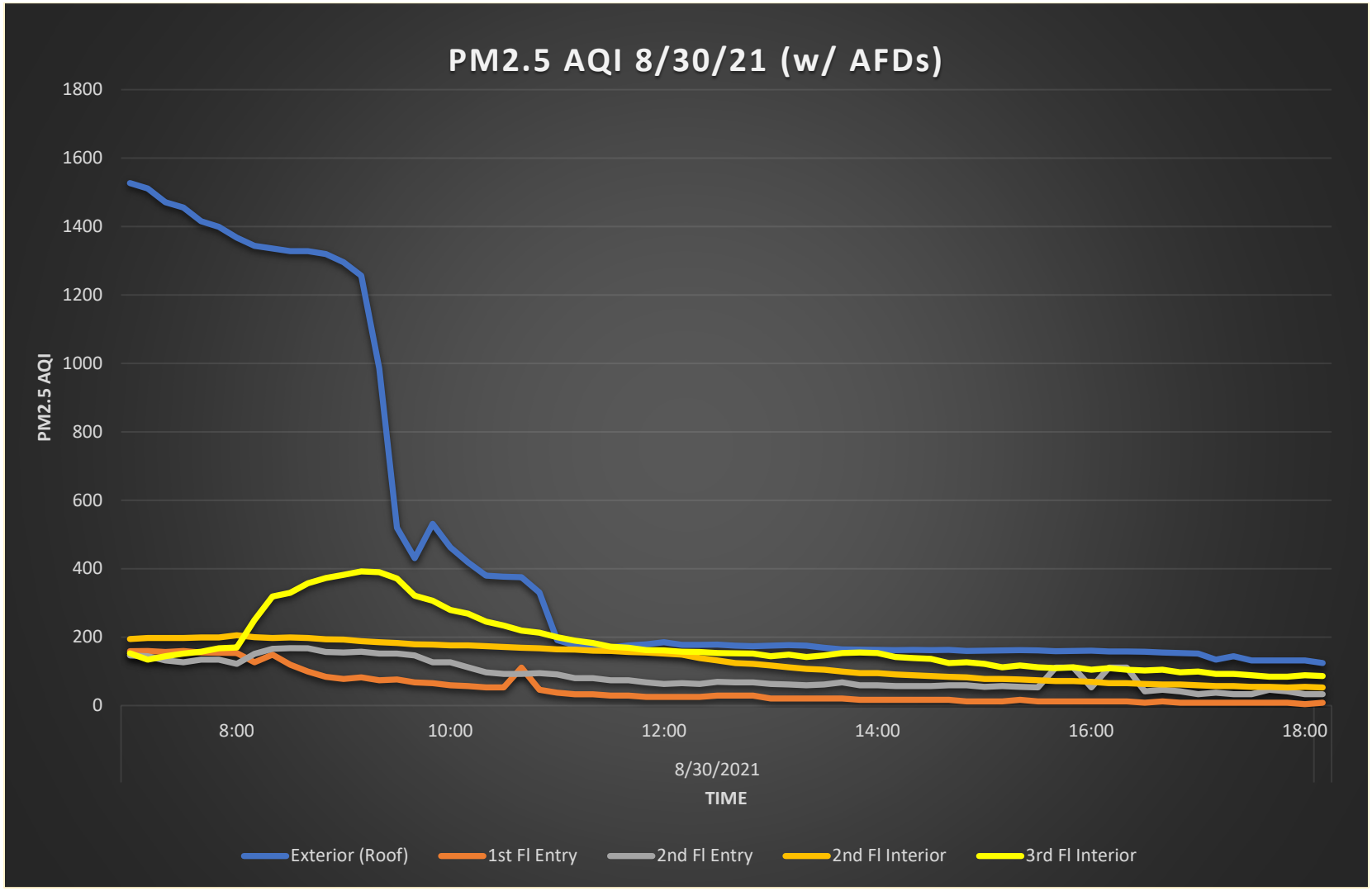
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 5: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 8/29/21 (With Air Filtering Devices)



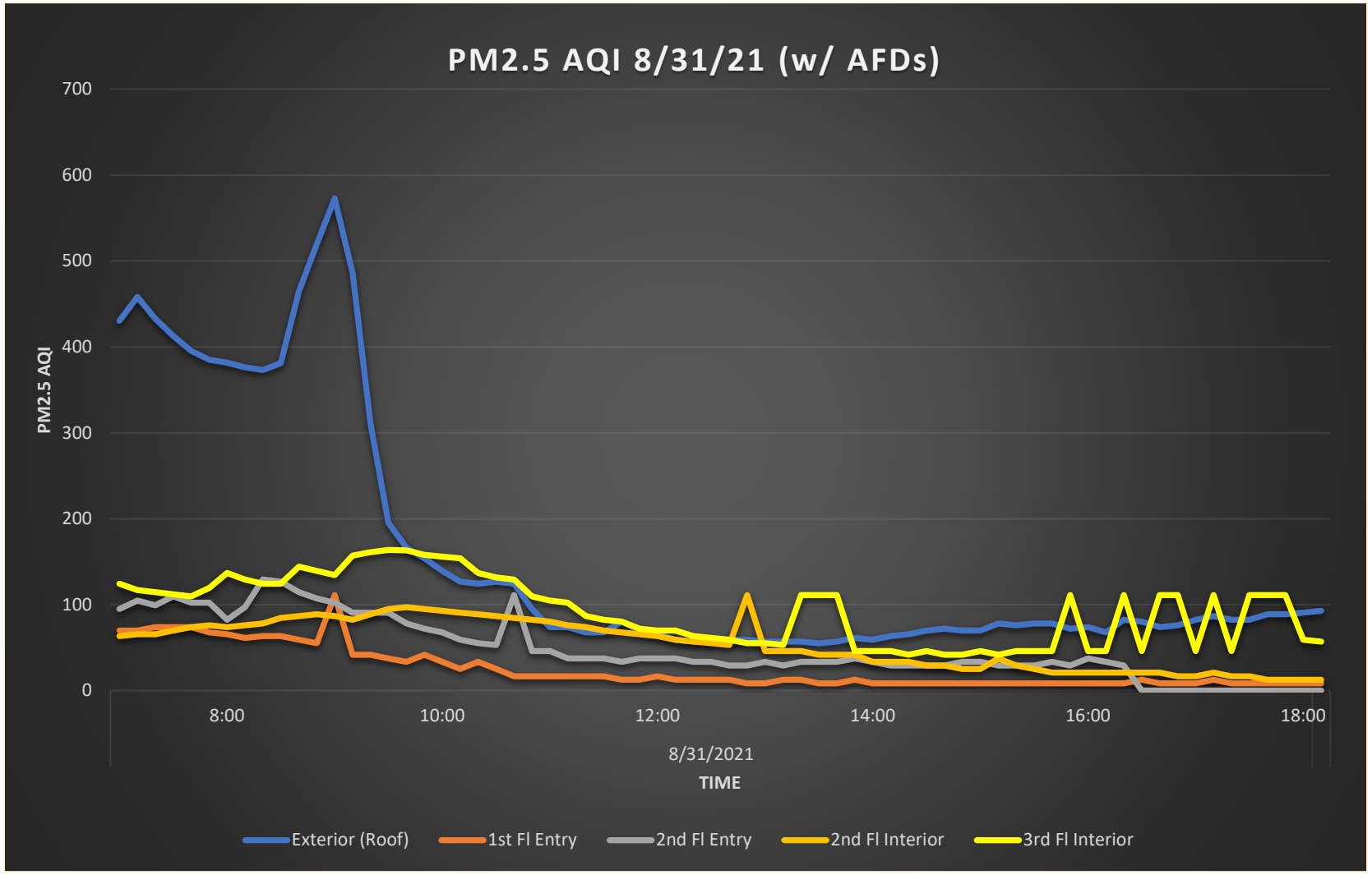
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 6: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 8/30/21 (With Air Filtering Devices)



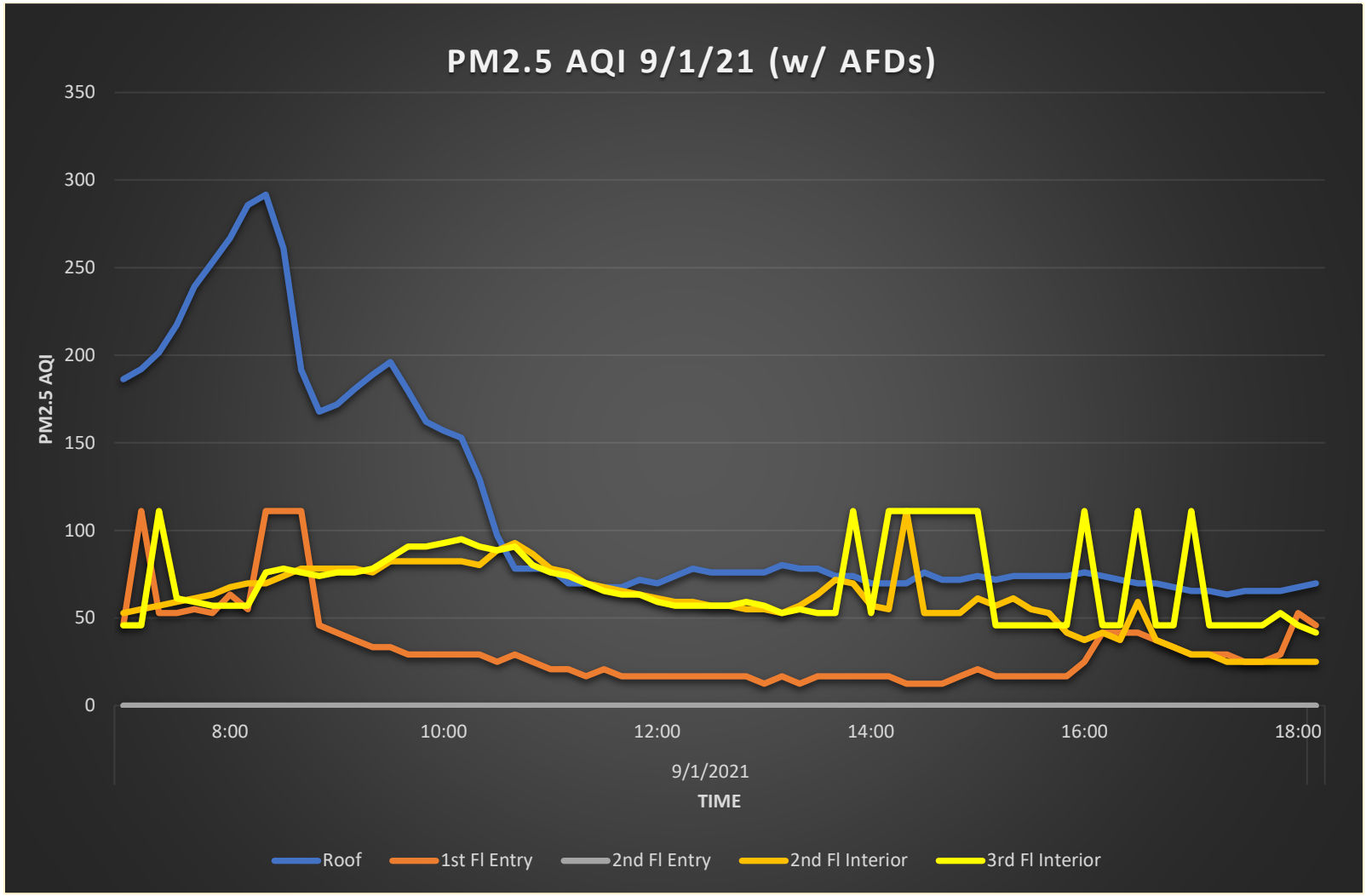
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 7: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 8/31/21 (With Air Filtering Devices)



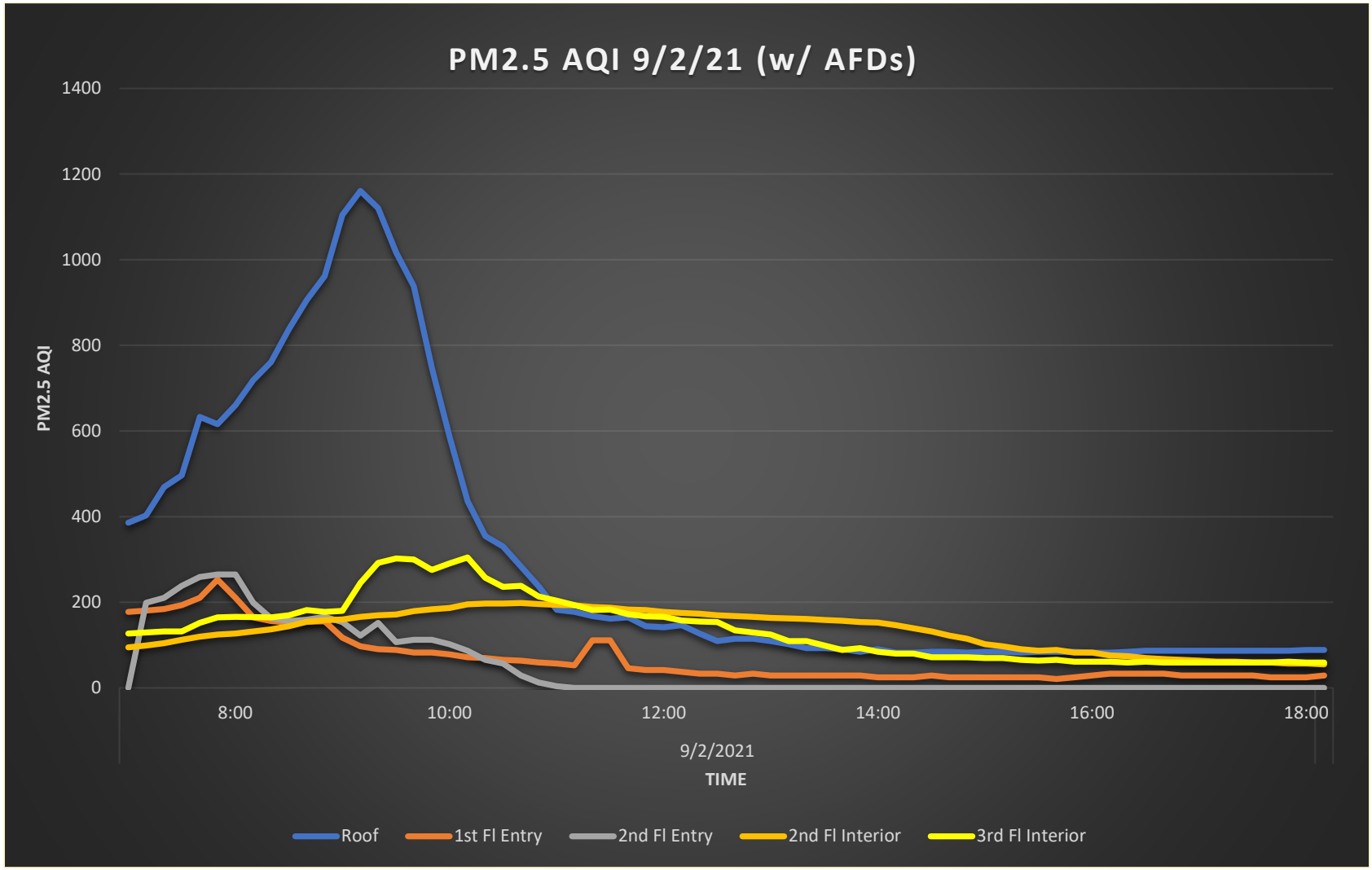
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 8: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 9/1/21 (With Air Filtering Devices)



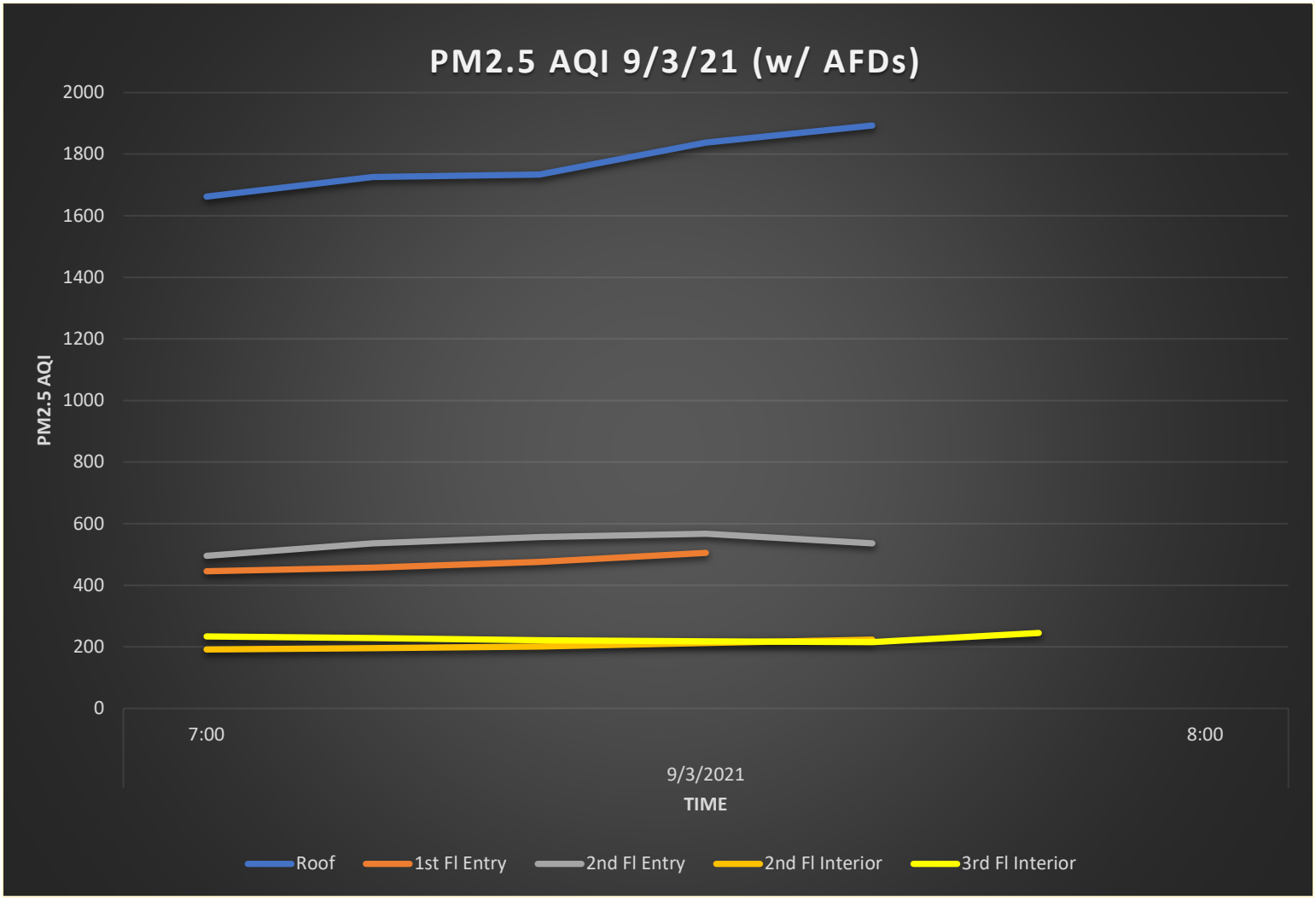
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 9: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 9/2/21 (With Air Filtering Devices)



Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 10: El Dorado Main (Placerville) PM2.5 Air Quality Index (AQI) – 9/3/21 (With Air Filtering Devices)

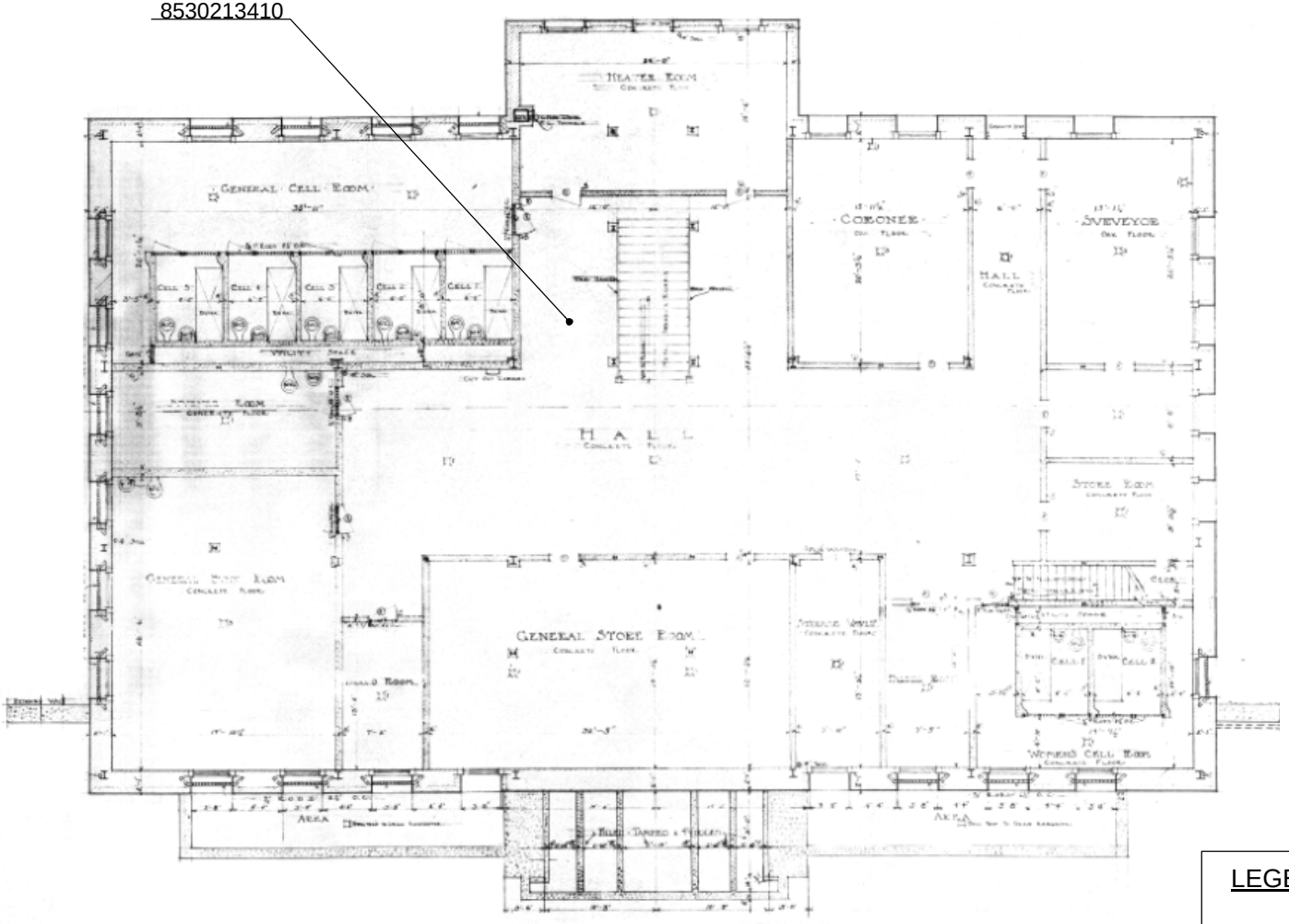


Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Appendix C

Site Diagrams

1st floor entry
8530213410



LEGEND

XXXXX : Sampling locations

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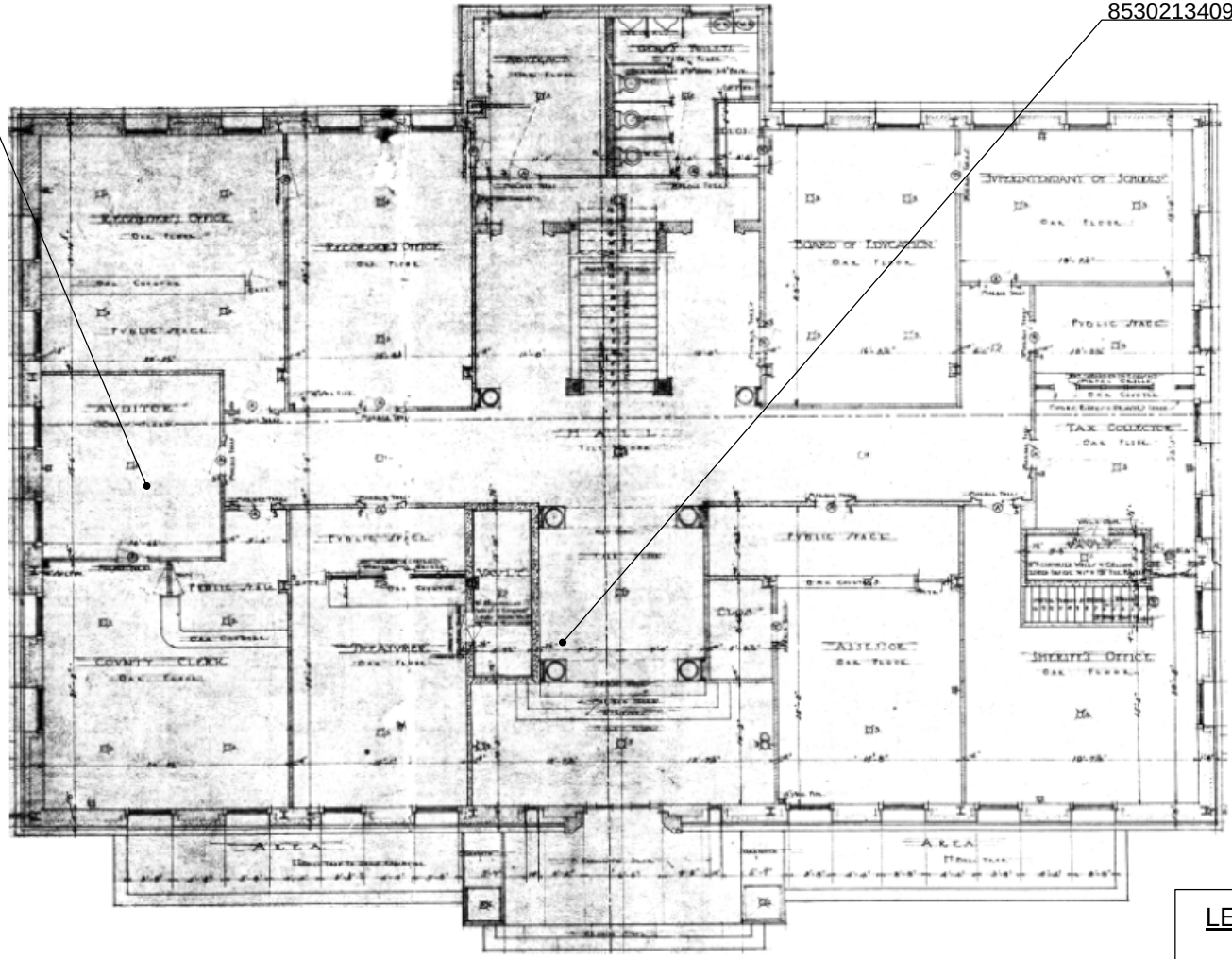
NORTH

Site Diagram
El Dorado County Superior Court
1st Floor

CLIENT:	Judicial Council of California	DATE: 08/26/2021 - 09/03/2021	SHEET NUMBER: S(1-1)
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66306	
LOCATION:	El Dorado County Superior Court (09-A1) 495 Main Street, Placerville, CA 95667	DRAWN BY: Diana Lutsik	

2nd floor interior
8530213408

2nd floor entry
8530213409



LEGEND

XXXXX : Sampling locations

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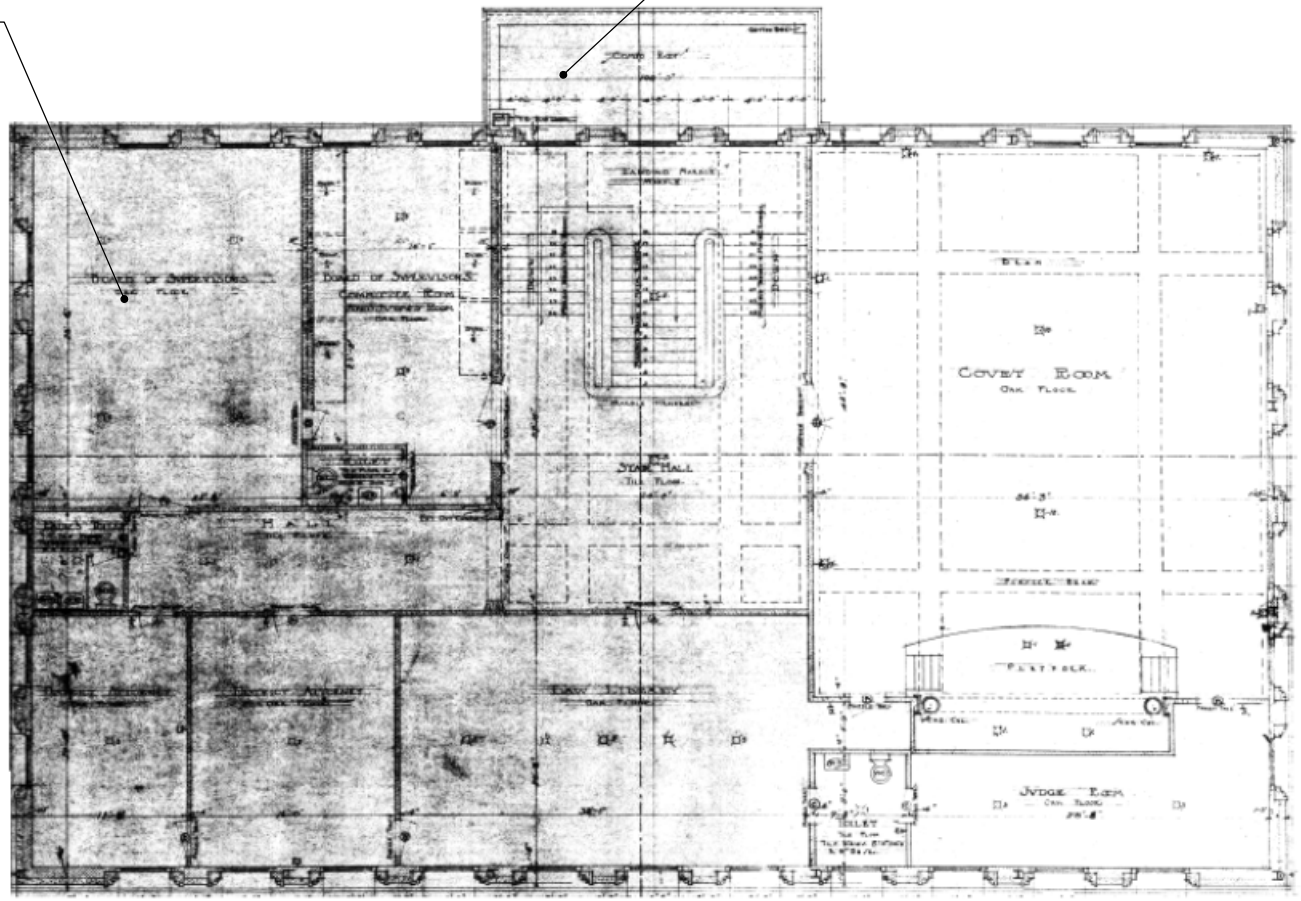
NORTH

Site Diagram
El Dorado County Superior Court
2nd Floor

CLIENT:	Judicial Council of California	DATE: 08/26/2021 - 09/03/2021	SHEET NUMBER: S(1-1)
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66306	
LOCATION:	El Dorado County Superior Court (09-A1) 495 Main Street, Placerville, CA 95667	DRAWN BY: Diana Lutsik	

Exterior parapet room
8530162710

3rd floor interior
8530213407



LEGEND

XXXXX : Sampling locations

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Site Diagram
El Dorado County Superior Court
3rd Floor

CLIENT:	Judicial Council of California	DATE: 08/26/2021 - 09/03/2021	SHEET NUMBER: S(1-1)
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LOCATION:	El Dorado County Superior Court (09-A1) 495 Main Street, Placerville, CA 95667	DRAWN BY: Diana Lutsik	

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Forensic Analytical Consulting Services

October 5, 2021

Wildfire Smoke Impact Report: IEQ Investigation Study

El Dorado County Superior Court (09-E1)
Johnson Building
1354 Johnson Blvd. #2
South Lake Tahoe, CA 96150

Prepared for:

Jennifer Chappelle
Manager, Risk Management
Judicial Council of California
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Sacramento, CA 95833
916-263-1945 |
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Prepared By:

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FACS Project #PJ66225
JCC SWO #1708565

Contents

Introduction

Forensic Analytical Consulting Services, Inc. (FACS) was retained by the Judicial Council of California (Client, hereafter JCC) to perform an Indoor Environmental Quality (IEQ) Investigation in the South Lake Tahoe Branch of the El Dorado County Superior Court (09-E1) located at 1354 Johnson Boulevard, #2 in South Lake Tahoe, California. This investigation was prompted by the Caldor Fire which was burning in areas of El Dorado County during the investigation.

The purpose of this investigation was to 1) conduct baseline air monitoring for particulate matter 2.5 (PM2.5) as it relates to air quality index (AQI) values; 2) provide assistance in identifying the number of portable air filtration devices needed to provide an additional two air changes per hour in the facility; 3) conduct air monitoring for PM2.5 following the use of air filtration devices (AFDs); and 4) analyze the PM2.5 AQI data in order to assist in determining if the use of AFDs in the building contribute to improved indoor environmental quality.

The investigation was performed by FACS between the dates of August 23, 2021 and September 3, 2021. This report contains the findings from our investigation.

Scope of Work

In the course of this project, FACS conducted the following scope of work:

1. Development of a history and site characterization (see sections below).
2. Collection of baseline PM2.5 data (prior to implementation of AFDs) using TSI DustTrak™ II Aerosol Monitors at one exterior location and four interior locations.
3. Provide assistance in identifying the number of portable air filtration devices needed to provide an additional two air changes per hour in the facility.
4. Collection of PM2.5 data, post implementation of AFDs, using TSI DustTrak™ II Aerosol Monitors at one exterior location and four interior locations (same locations as baseline monitoring).
5. Generation of a data comparison table, figures, and final report.

Data collection methodologies are described in the body of this report. The data collected in the course of the investigation is presented in this report as follows:

- Appendix A: PM2.5 AQI Data Summary Table
- Appendix B: PM2.5 Data Figures
- Appendix C: Site Diagrams

Site History and Characterization

On August 14, 2021, the Caldor Fire erupted in El Dorado County, east of Omo Ranch and south of the Grizzly Flats community, negatively impacting the air quality in South Lake Tahoe. JCC contacted FACS on August 23, 2021, requesting an immediate mobilization to conduct the IEQ investigation in the South Lake Tahoe Branch of the Superior Court of El Dorado County located at 1354 Johnson Boulevard #2 in South Lake Tahoe, CA.

The South Lake Tahoe Branch of the Superior Court of El Dorado County is an approximately 37,453 square feet, two-story courthouse building built in 1974. The exterior construction is characterized by wood siding and decorative stone. The interior of the building is generally characterized by painted gypsum drywall walls and dropped ceilings. Flooring generally consists of ceramic floor tile or carpeting. The building features operable windows, which were observed to be closed during FACS' investigation. Air is supplied to the building through multiple roof-top heating, ventilation, and air conditioning (HVAC) units. The units are reportedly set to run continuously 24 hours a day, seven days a week, due to internal COVID-19 protocols.

Data Collection Methodology

Per client's request, FACS' IEQ investigation was limited to PM2.5 airborne particulates (particulates less than 2.5 micrometers in diameter). FACS performed monitoring of baseline conditions (prior to implementation of AFDs), followed by PM2.5 monitoring after implementation of the AFDs in selected locations of the building.

Baseline testing (pre-operation of AFDs) was performed from approximately 1900 hours on August 23, 2021, until approximately 0700 hours on August 24, 2021, with the primary heating, ventilation, and air conditioning (HVAC) mechanical filtration system operating in the building. The AFDs were deployed at selected locations in the building on August 24, 2021. Following installation and operation of the AFDs, air monitoring continued from August 24, 2021, through September 3, 2021.

Air monitoring was conducted using direct-reading data-logging DustTrak™ II Aerosol Monitors. The DustTrak™ II desktop monitor is a light-scattering laser photometer that provided real-time aerosol mass concentration readings. The DustTrak™ DRX II Aerosol Monitor reports a mass concentration using the PM2.5 particulate size fraction and reported in milligrams per cubic meter (mg/m^3). Readings were collected at 10-minute log intervals over the monitoring duration.

A total of five (5) monitors were deployed at the following locations:

- Exterior balcony
- 1st floor entry adjacent to Security
- 1st floor Court Room
- 1st floor Employee Hall
- 2nd floor Judges Chamber

See site diagrams in Appendix C for specific locations.

Results of the airborne particulate matter (PM2.5) monitoring following implementation of the AFDs were compared to the baseline air monitoring in order to evaluate the effectiveness of air filtration devices during heavy wildfire smoke impact.

Air quality index (AQI) values were calculated using the PM2.5 data collected during the investigation. The AQI value for PM2.5 data that was collected prior to the installation of AFDs, between 8/23/21 and 8/24/21, was calculated using the entire time duration (*1900 hours on August 23, 2021, until approximately 0700 hours on August 24, 2021)*. Following installation of AFDs, AQI values were calculated using the average PM2.5 concentration measured between 7am-6pm (typical work shift).

Note, the monitor located at the 1st floor Court Room appeared to malfunction on 8/24 and was removed by FACS. Data collected during this time period is considered false and not included in the results tables.

Findings and Observations

The following findings were generated by FACS as a result of this investigation:

- It was reported to FACS that the outdoor air intakes for the air handling units serving the building were closed during the monitoring event.
- A total of six (6) AFDs were deployed and operated in the building during FACS' investigation. Three units were rated to deliver 2,000 cubic feet per minute (CFM) and three units were rated to deliver 500 CFM; delivering a total of 7,500 CFM of air. The AFD locations were observed to be as follows:
    1. 2,000 CFM AFD in the lobby of the lower level
    2. 2,000 CFM AFD in the Employee Hall of the lower level
    3. 500 CFM AFD in Department 4 of the lower level
    4. 2,000 CFM AFD in the hallway near Department 3 on the upper level
    5. 500 CFM AFD in the Clerk's Office on the upper level
    6. 500 CFM AFD in the northeast room of the upper level
- Upon FACS' mobilization to the South Lake Tahoe Branch of the El Dorado County Superior Court on August 23, 2021, a strong smoke was odor was observed inside and outside the building. Furthermore, visibility was very low outdoors and visible smoke related particulate (i.e., char, ash) was observed on exterior surfaces of the building. Visible smoke related particulate was observed at entry door thresholds and in the interior of the building in locations directly adjacent to the entrances.
- Upon return to the site on September 9, 2021, to retrieve equipment, FACS observed that smoke odors were milder and visibility had improved. Equipment was picked-up by FACS upon the lifting of the mandatory evacuation orders in South Lake Tahoe; however, the DustTrak™ DRX II Aerosol Monitors' storage memory was exhausted on September 3, 2021. Therefore, FACS' air monitoring event ended on September 3, 2021.

Discussion

In general, the purpose of this investigation was to assist in determining if the use of AFDs in the building contributes to improvement of indoor environmental quality for occupants during large wildfire events. Baseline data collected without the use of AFDs was compared to data collected during the use of the AFDs. Comparison was performed by calculating the difference in concentrations between the outdoor and indoor locations during a typical work shift (7 am – 6 pm) for each of the sampling events. Results of the air monitoring assessment, along with calculated values (% of outdoor, AQI levels) are provided in Tables 1 – 3.

Additionally, data graphically plotted showed a direct correlation between the outdoor particulate concentrations and the indoor particulate concentrations. During spikes in PM2.5 concentrations in the outdoor locations, spikes in indoor locations were also identified at the same time or shortly thereafter. This was identified with and without the use of AFDs in the buildings. See Figures 1 – 13.

In general, the data did not indicate consistent improvement of air quality when operating the AFDs. Additionally, the outdoor air quality appears to have a heavy influence on the indoor air quality. Slight

improvements were identified in areas known to contain the air filtration devices (e.g., lower-level front entry and upper-level Judges Chamber). However, no identifiable improvements were noted for areas without AFDs operating in the space.

Based on results of the limited assessment, the use of six air filtration devices in the facility did not appear to consistently improve air quality throughout the facility, particularly when the outdoor air reached AQI levels greater than 500. Small improvements were identified but appeared to be localized to locations where AFDs were operating.

Limitations

This investigation is limited to the conditions and practices observed and information made available to FACS. The methods, conclusions and recommendations provided are based on FACS' judgment, expertise and the standard of practice for professional service. They are subject to the limitations and variability inherent in the methodology employed. As with all environmental investigations, this investigation is limited to the defined scope and does not purport to set forth all hazards, nor indicate that other hazards do not exist.

Please do not hesitate to contact our offices at 916-726-1303 with any questions or concerns. Thank you for the opportunity to assist Judicial Council of California in promoting a more healthful environment.

Respectfully,

FORENSIC ANALYTICAL

Diana Lutsik
Project Manager, Sacramento

Reviewed by:

FORENSIC ANALYTICAL

Lydia Feng, MS, CIH
Senior Project Manager

Appendix A

PM2.5 AQI Data Summary Tables

Table 1: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/23/21 to 8/24/21 (Without Air Filtering Devices)

Location	Without AFDs			
	8/23/2021		8/24/2021	
	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI
Exterior				
Exterior - Balcony	2718	>500	637	>500
Interior				
Adjacent Front Security	702	>500	205	255
% of Outdoor	*26%*		*32%*	
Employee Hall	941	>500	245	295
% of Outdoor	*35%*		*38%*	
Judges Chamber	525	>500	149	199
% of Outdoor	*19%*		*23%*	

Notes:
1. AQI for PM2.5 data that was collected following implementation of air filtering devices (8/24/21-9/3/21) was calculated using the average PM2.5 concentration measured during 7am-6pm on the day of monitoring. AQI for PM2.5 data that was collected prior to implementation of air filtering devices (8/23-8/24) included all measurement data including data outside of 7am-6pm.
2. ">500" indicates that values are above an AQI of 500, which is considered beyond the AQI.

Table 2: El Dorado SLT - PM2.5 Air Quality Index (AQI) –8/24/21 to 8/28/21 (With Air Filtering Devices)

Location	With Air Filtering Devices (AFDs)									
	8/24/2021		8/25/2021		8/26/2021		8/27/2021		8/28/2021	
	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI
Exterior										
Exterior - Balcony	855	>500	617	>500	1011	>500	1536	>500	281	326
Interior										
Adjacent Front Security	166	217	121	185	180	231	306	345	52	141
% of Outdoor	*19%*		*20%*		*18%*		*20%*		*18%*	
Employee Hall	270	317	197	247	274	320	408	427	71	159
% of Outdoor	*32%*		*32%*		*27%*		*27%*		*25%*	
Judges Chamber	138	193	98	173	140	195	229	278	43	118
% of Outdoor	*16%*		*16%*		*14%*		*15%*		*15%*	

Notes:
1. AQI for PM2.5 data that was collected following implementation of air filtering devices (8/24/21-9/3/21) was calculated using the average PM2.5 concentration measured during 7am-6pm on the day of monitoring. AQI for PM2.5 data that was collected prior to implementation of air filtering devices (8/23-8/24) included all measurement data including data outside of 7am-6pm.
2. “>500” indicates that values are above an AQI of 500, which is considered beyond the AQI.
3. “NA” indicates no measurement taken.

Table 3: El Dorado SLT - PM2.5 Air Quality Index (AQI) –8/29/21 to 9/3/21 (With Air Filtering Devices)

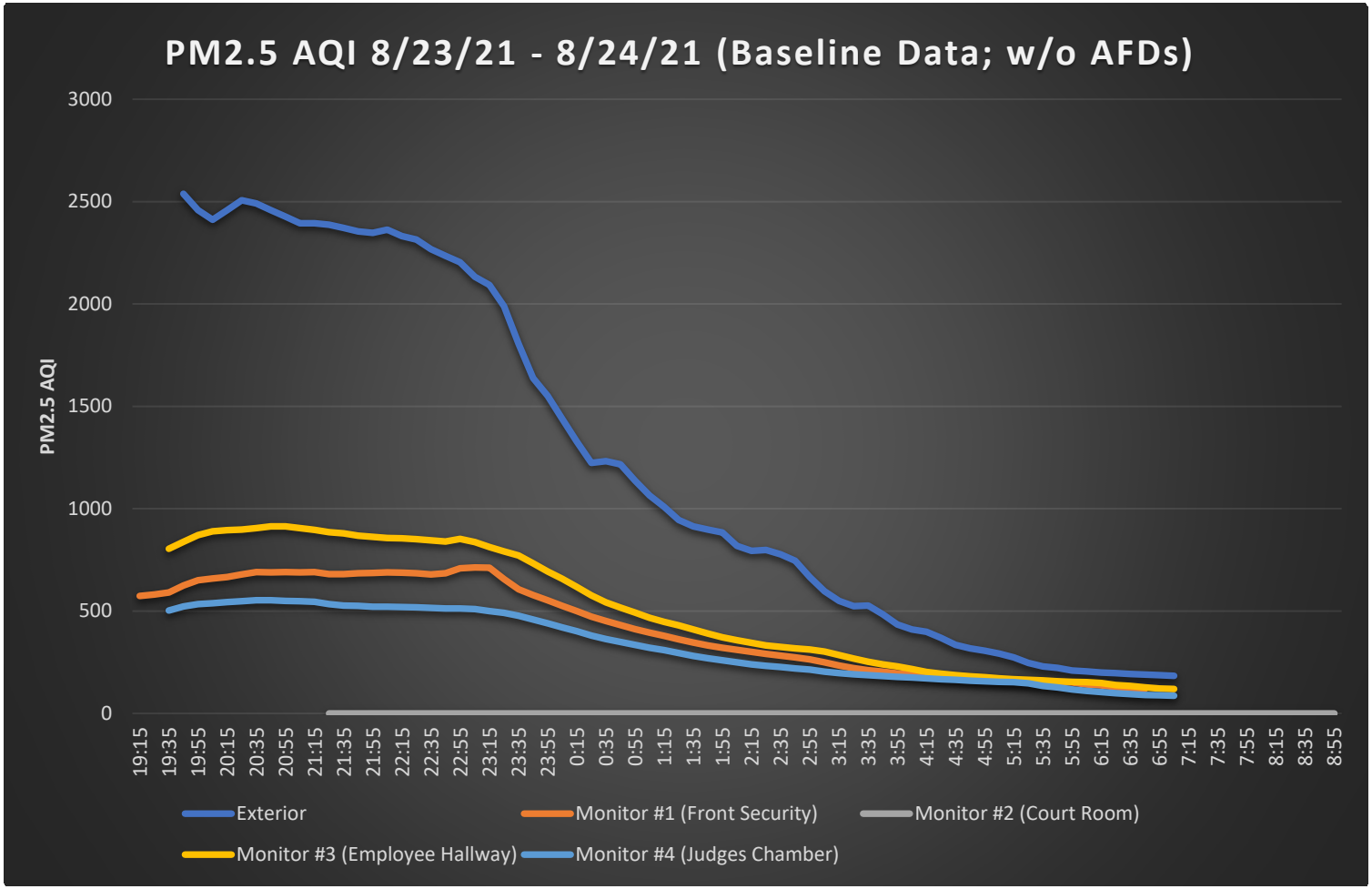
Location	With Air Filtering Devices (AFDs)											
	8/29/2021		8/30/2021		8/31/2021		9/1/2021		9/2/2021		9/3/2021	
	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI	PM2.5 (µg/m3)	AQI
Exterior												
Exterior - Balcony	375	400	1125	>500	901	>500	907	>500	1598	>500	3409	>500
Interior												
Adjacent Front Security	65	156	184	234	153	204	159	210	319	355	655	>500
% of Outdoor	*17%*		*16%*		*17%*		*18%*		*20%*		*19%*	
Employee Hall	99	173	249	299	161	211	160	211	287	330	521	>500
% of Outdoor	*26%*		*22%*		*18%*		*18%*		*18%*		*15%*	
Judges Chamber	50	137	141	195	122	185	129	189	227	276	431	444
% of Outdoor	*13%*		*13%*		*14%*		*14%*		*14%*		*13%*	

Notes:
1. AQI for PM2.5 data that was collected following implementation of air filtering devices (8/24/21-9/3/21) was calculated using the average PM2.5 concentration measured during 7am-6pm on the day of monitoring. AQI for PM2.5 data that was collected prior to implementation of air filtering devices (8/23-8/24) included all measurement data including data outside of 7am-6pm.
2. “>500” indicates that values are above an AQI of 500, which is considered beyond the AQI.
3. “NA” indicates no measurement taken.

Appendix B

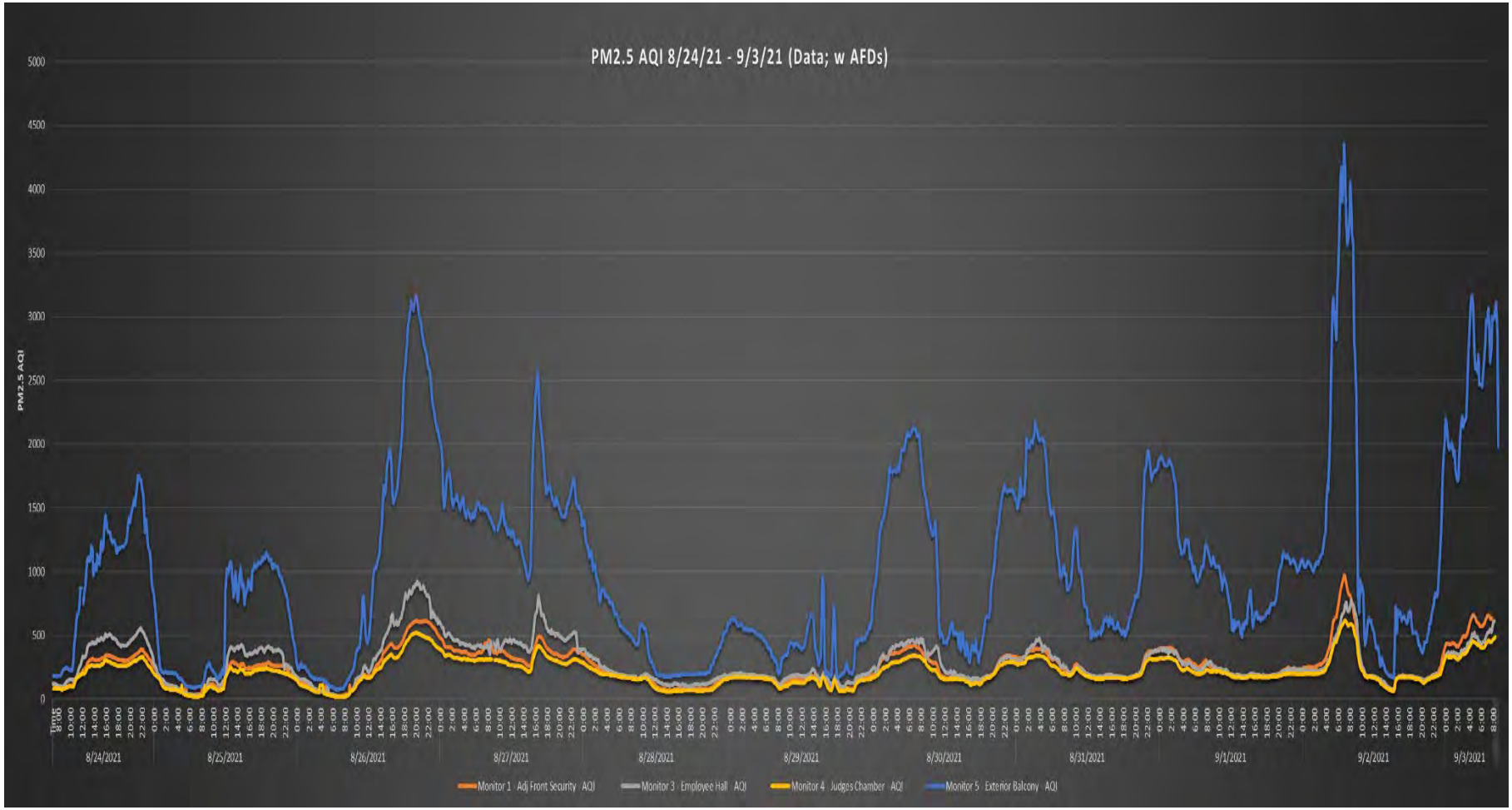
PM2.5 Data Figures

Figure 1: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/23/21 to 8/24/21 (Without Air Filtering Devices)



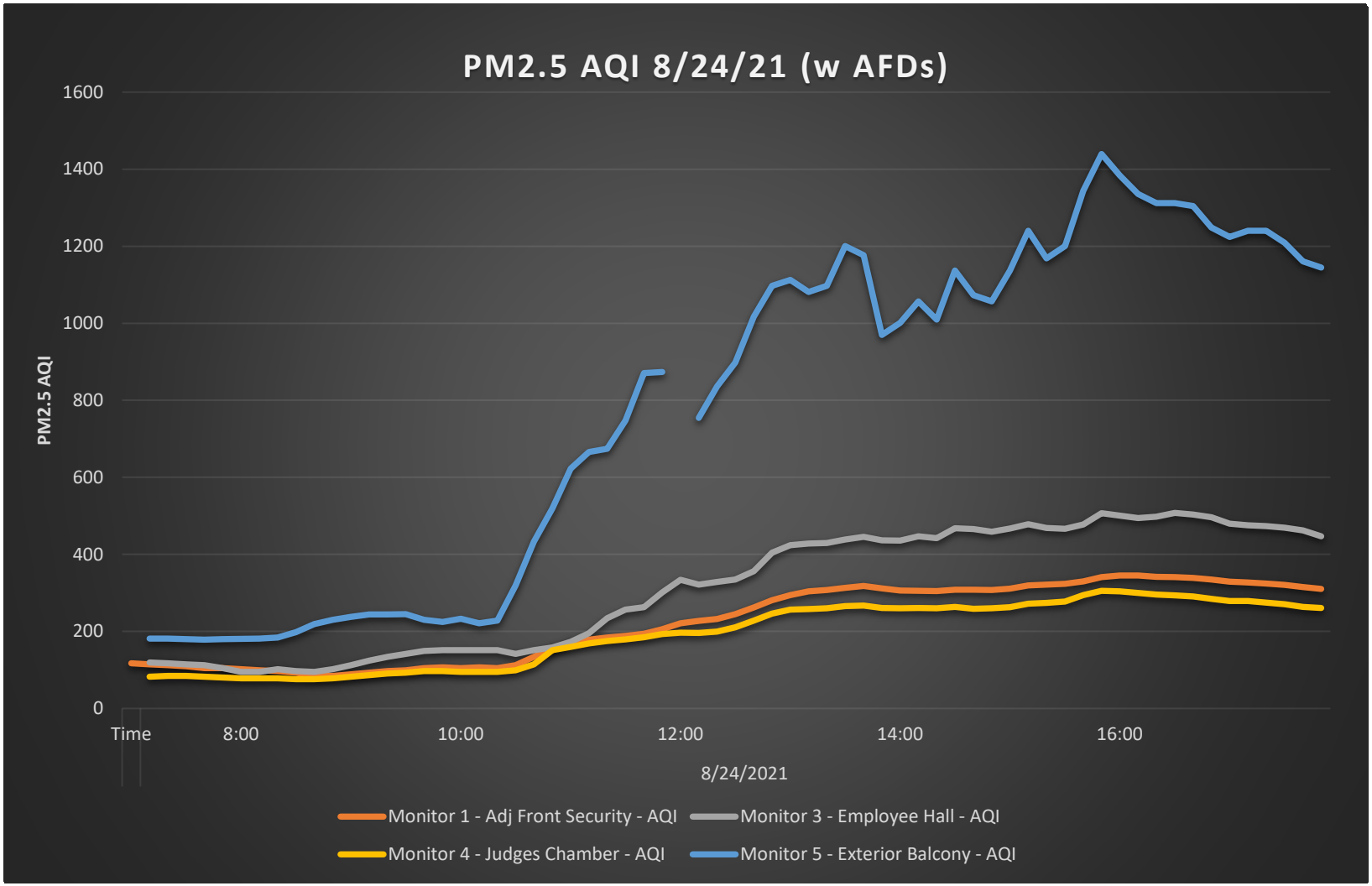
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 2: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/24/21 to 9/3/21 (With Air Filtering Devices)



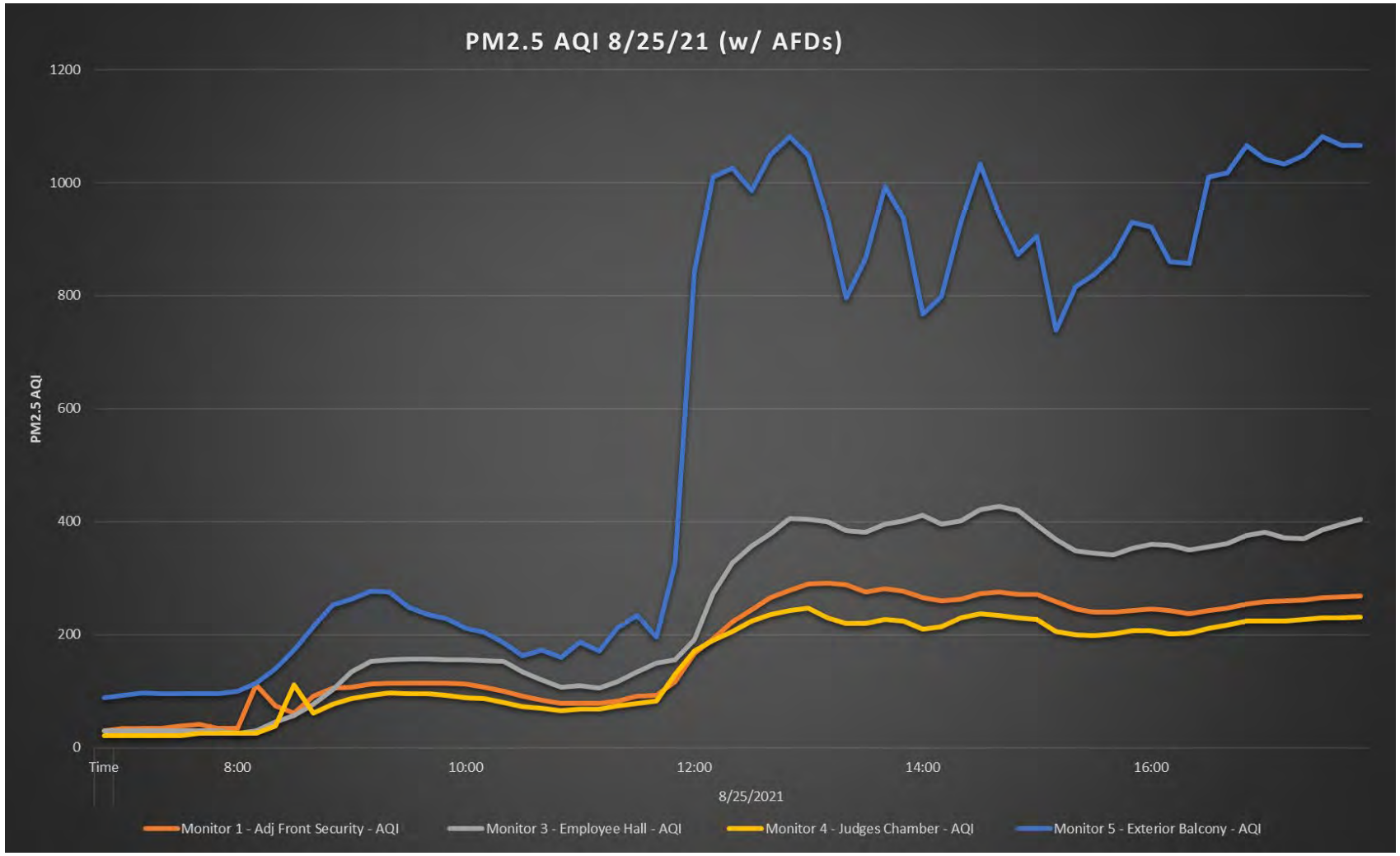
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 3: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/24/21 7am-6pm (With Air Filtering Devices)



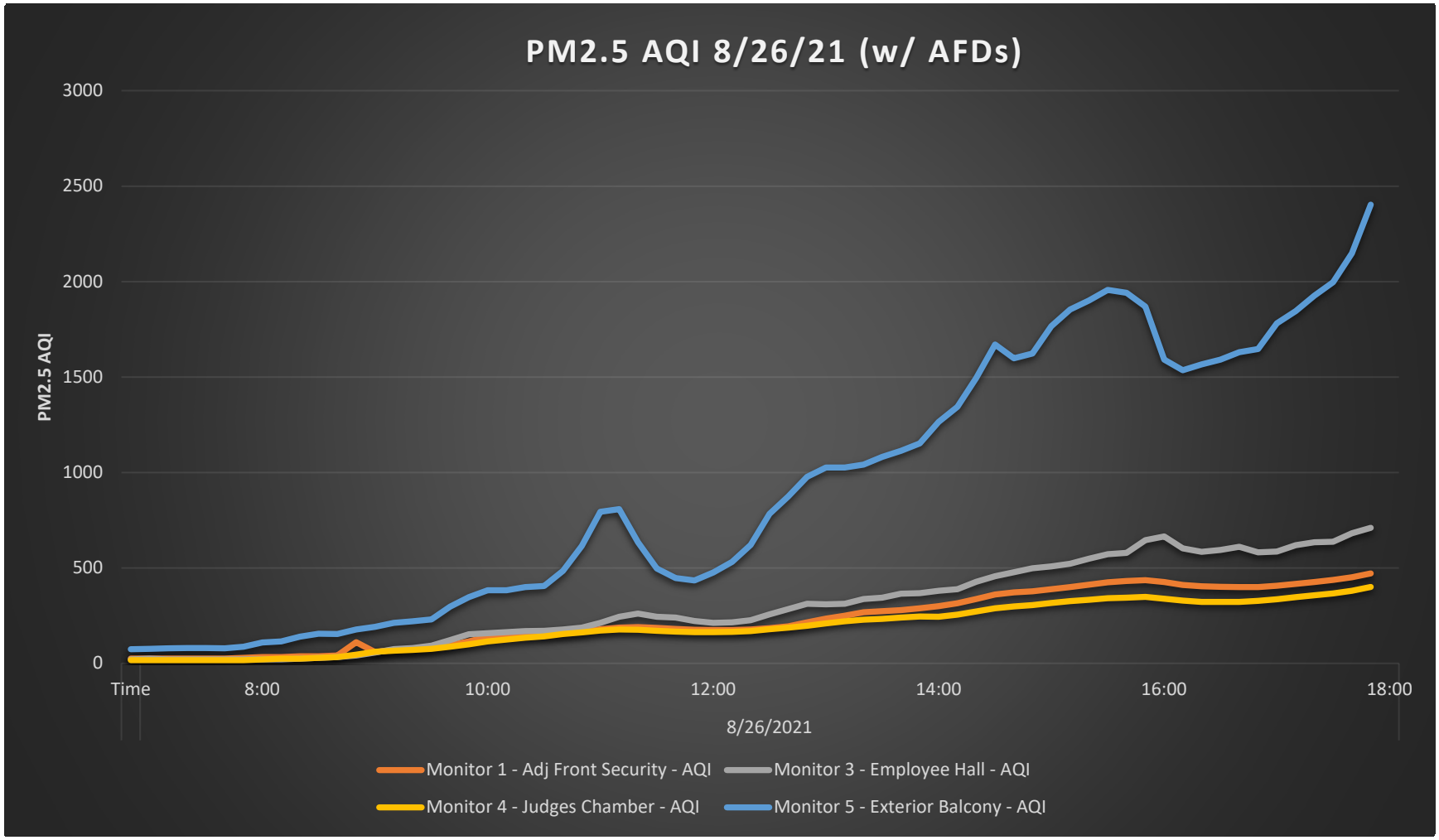
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 4: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/25/21 7am-6pm (With Air Filtering Devices)



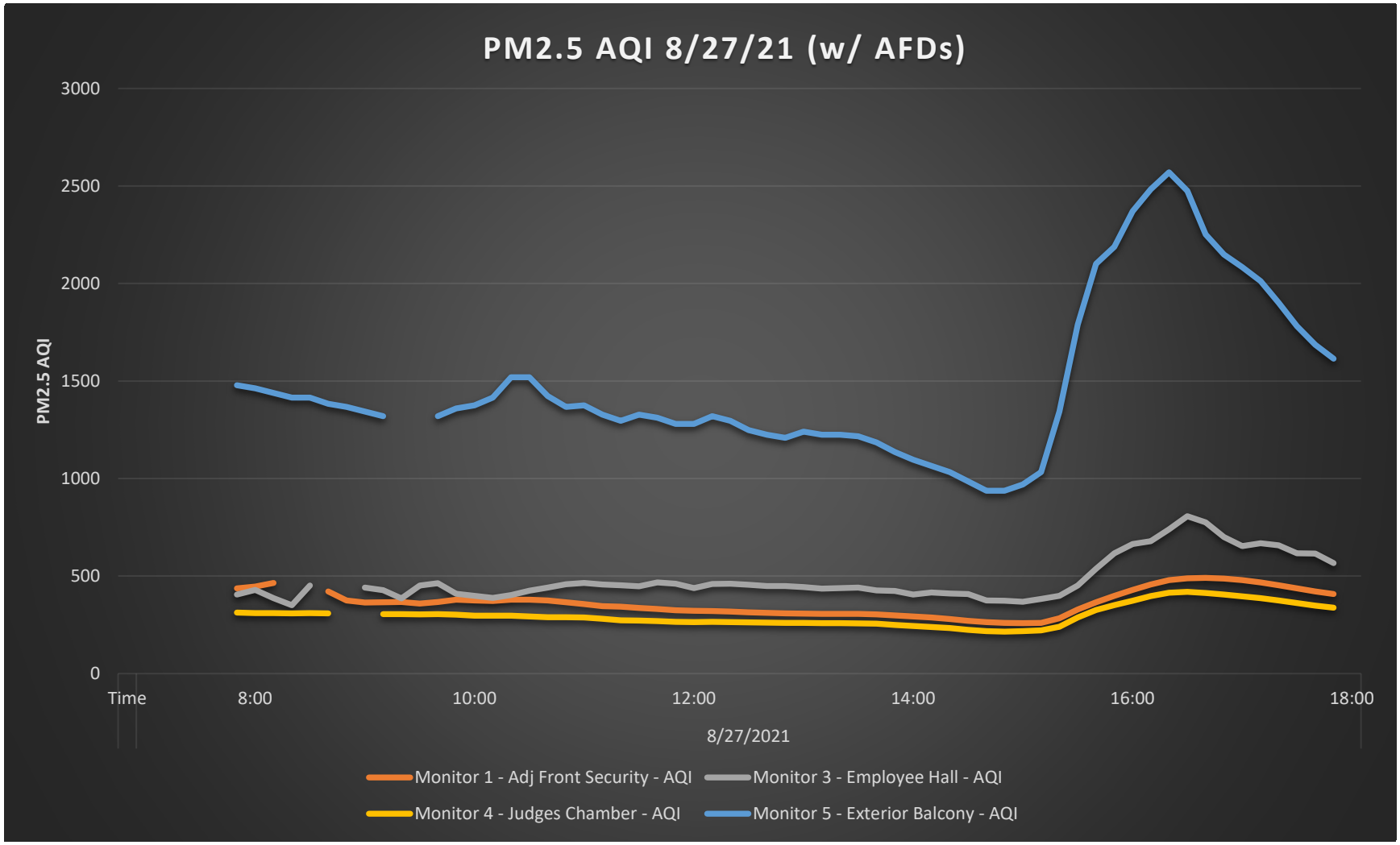
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 5: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/26/21 7am-6pm (With Air Filtering Devices)



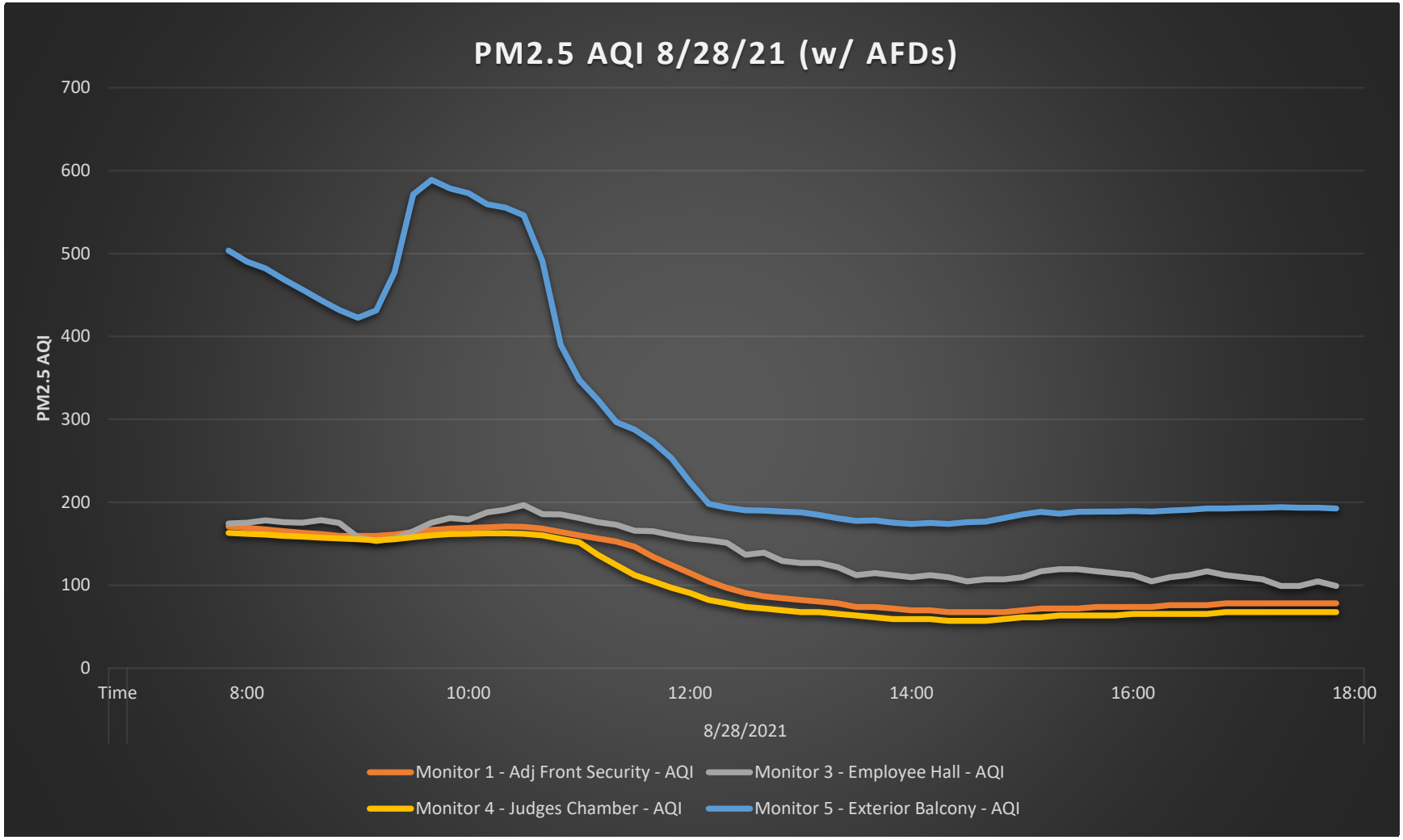
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 6: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/27/21 7am-6pm (With Air Filtering Devices)



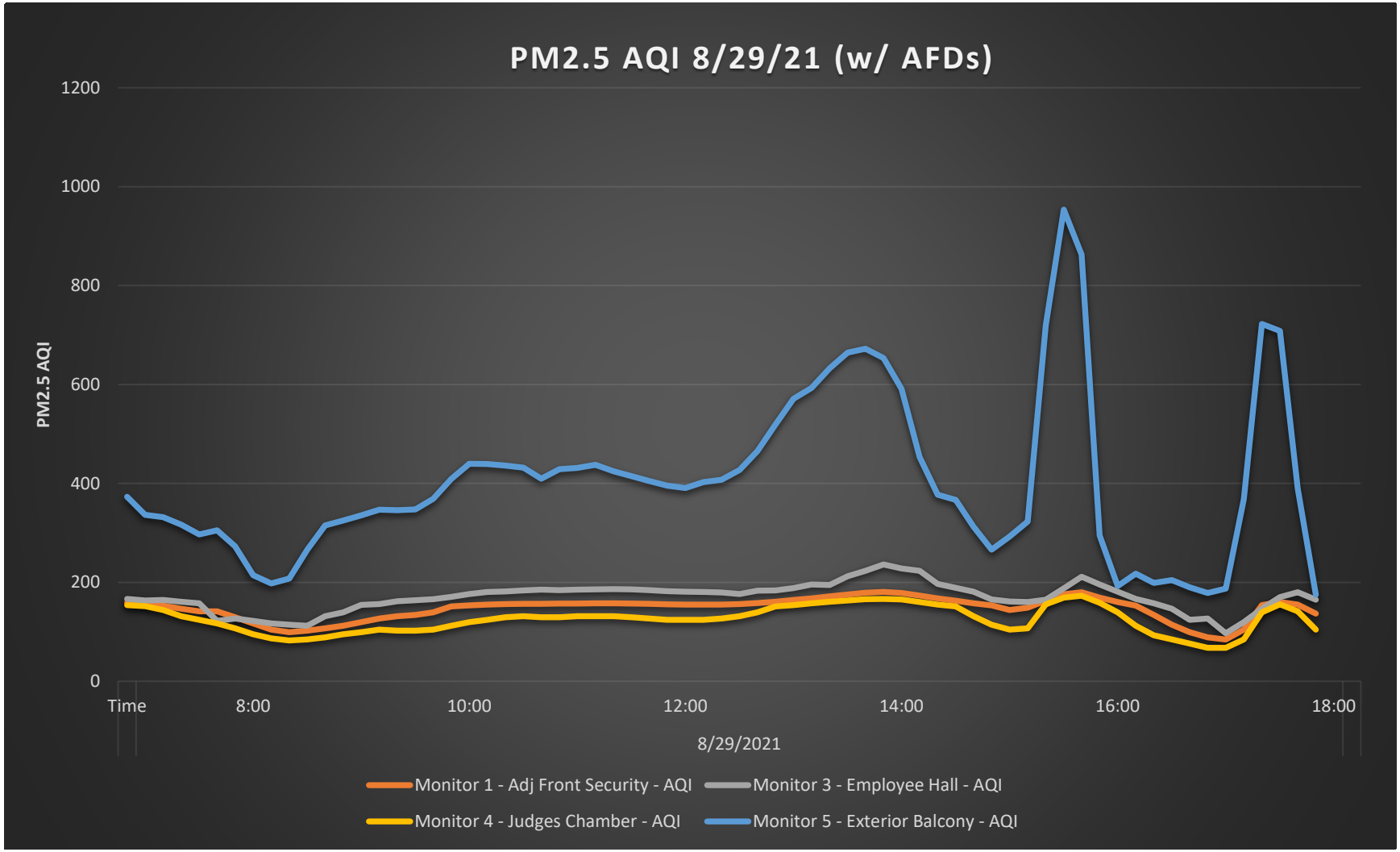
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 7: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/28/21 7am-6pm (With Air Filtering Devices)



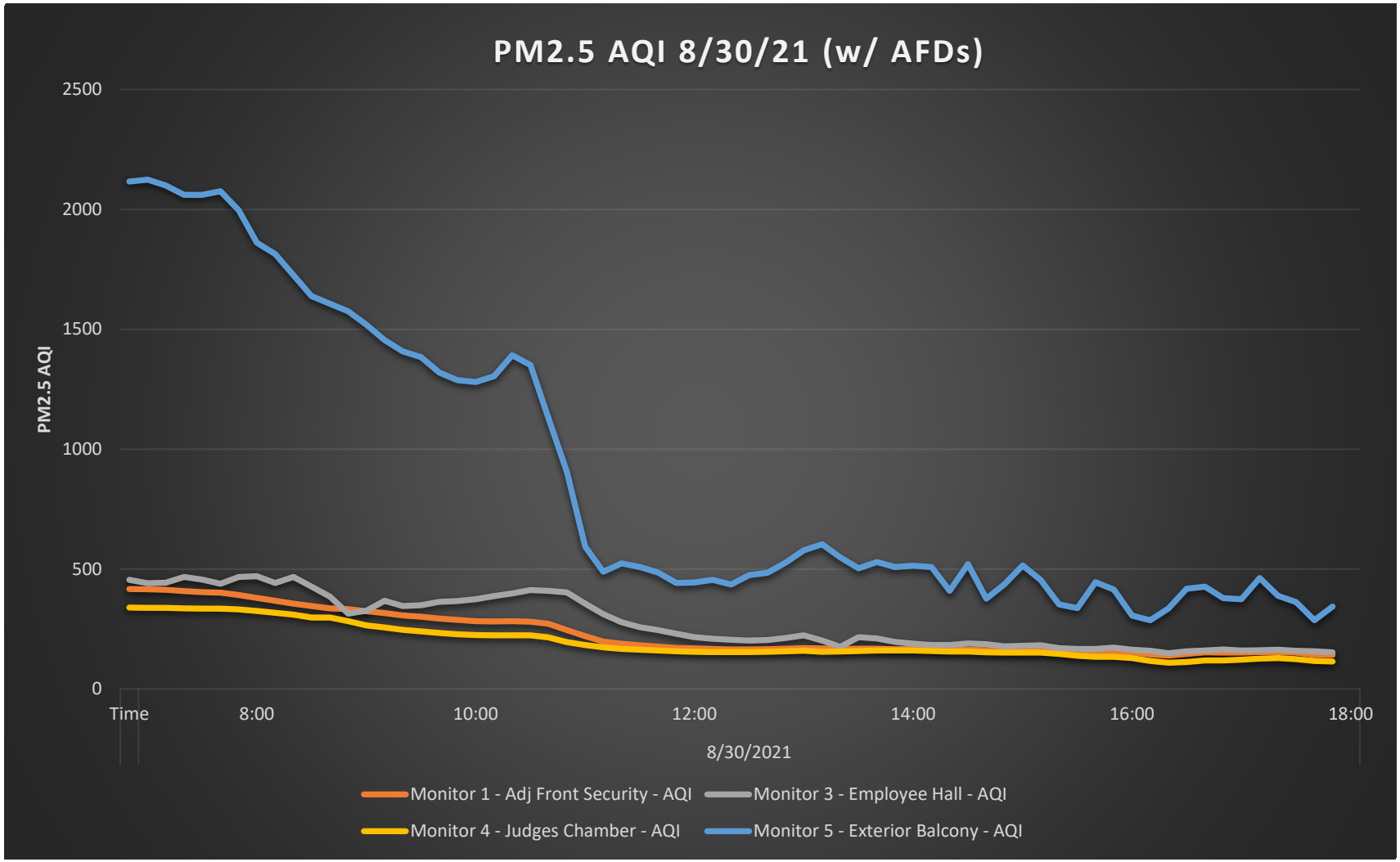
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 8: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/29/21 7am-6pm (With Air Filtering Devices)



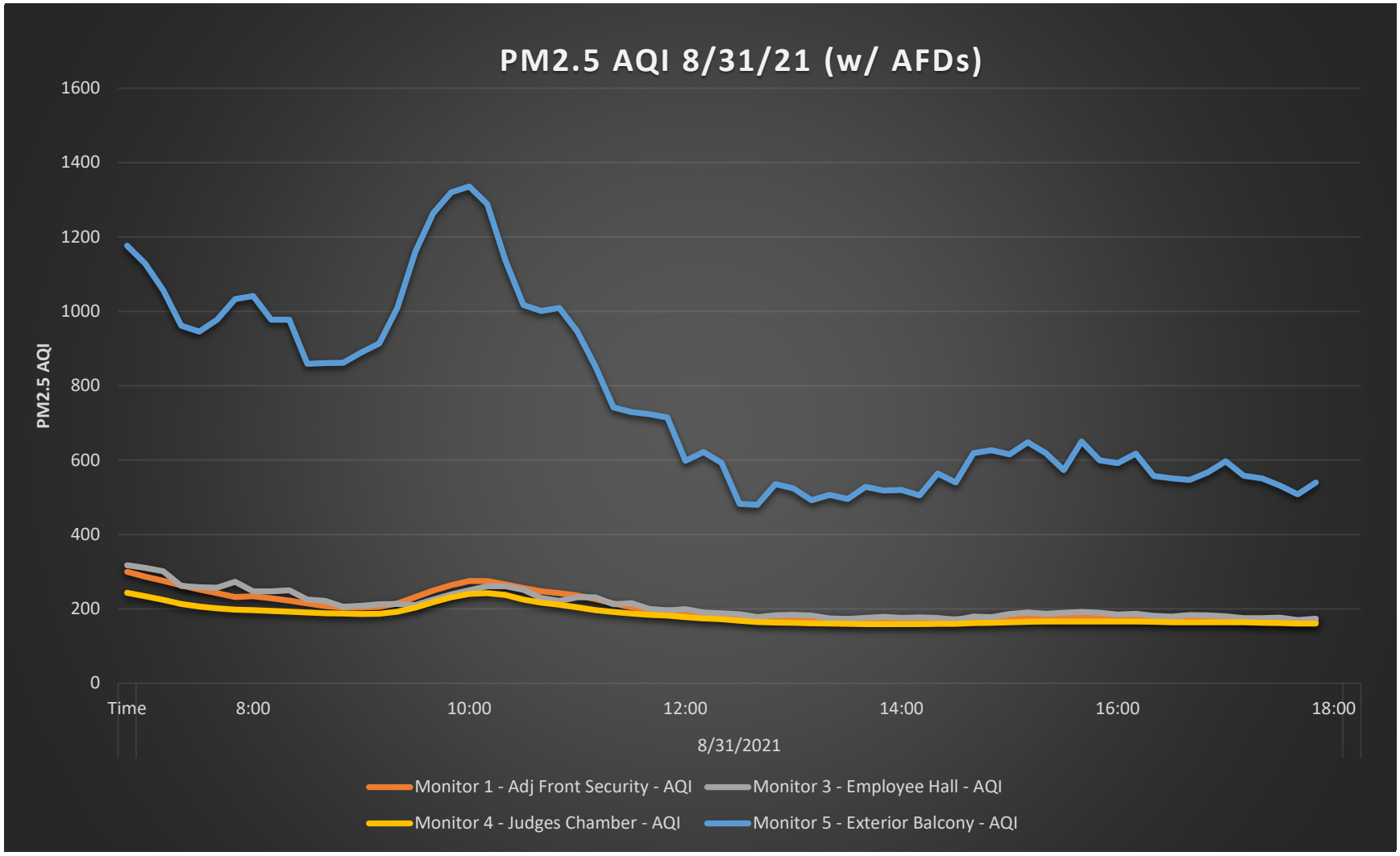
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 9: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/30/21 7am-6pm (With Air Filtering Devices)



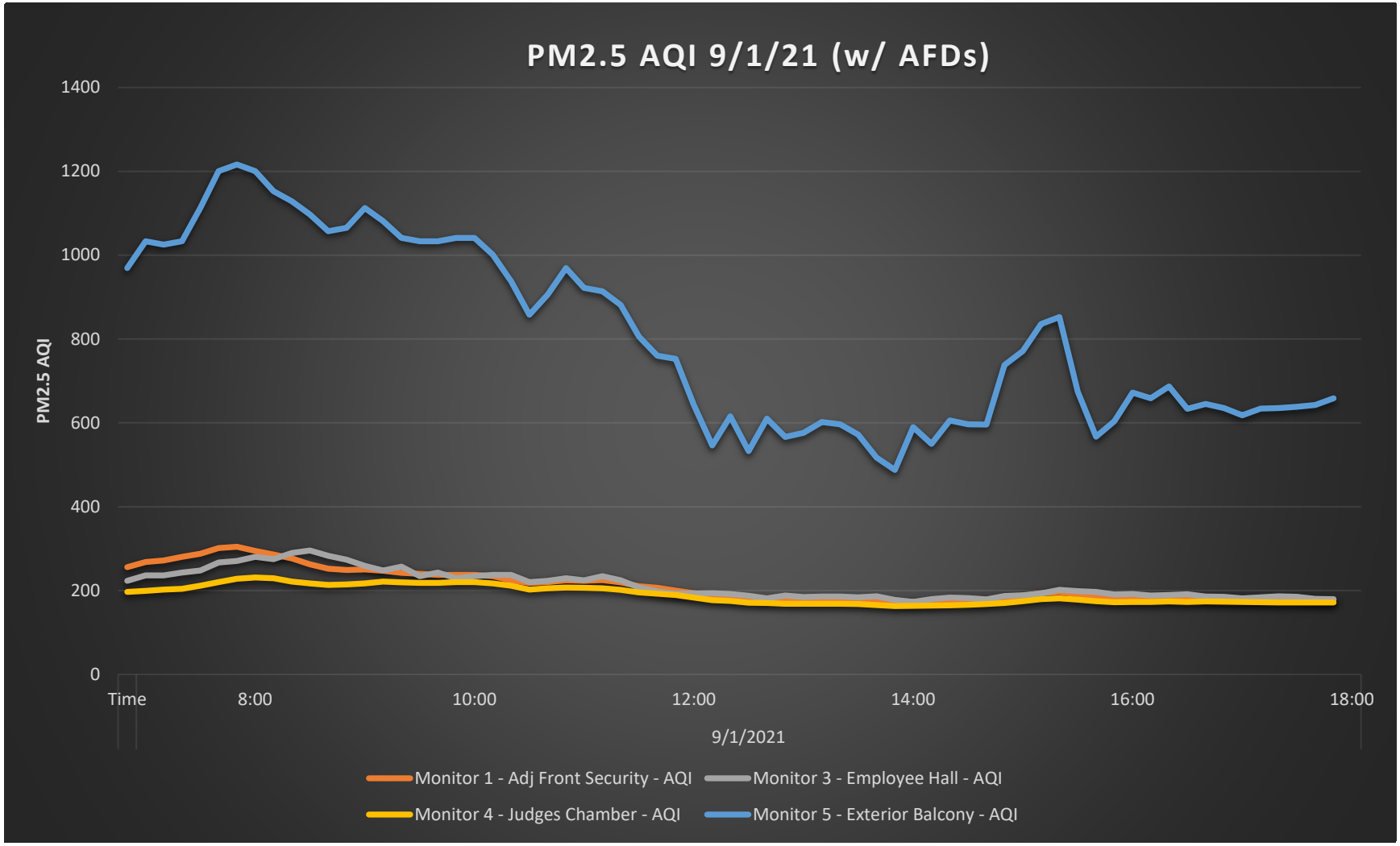
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 10: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 8/31/21 7am-6pm (With Air Filtering Devices)



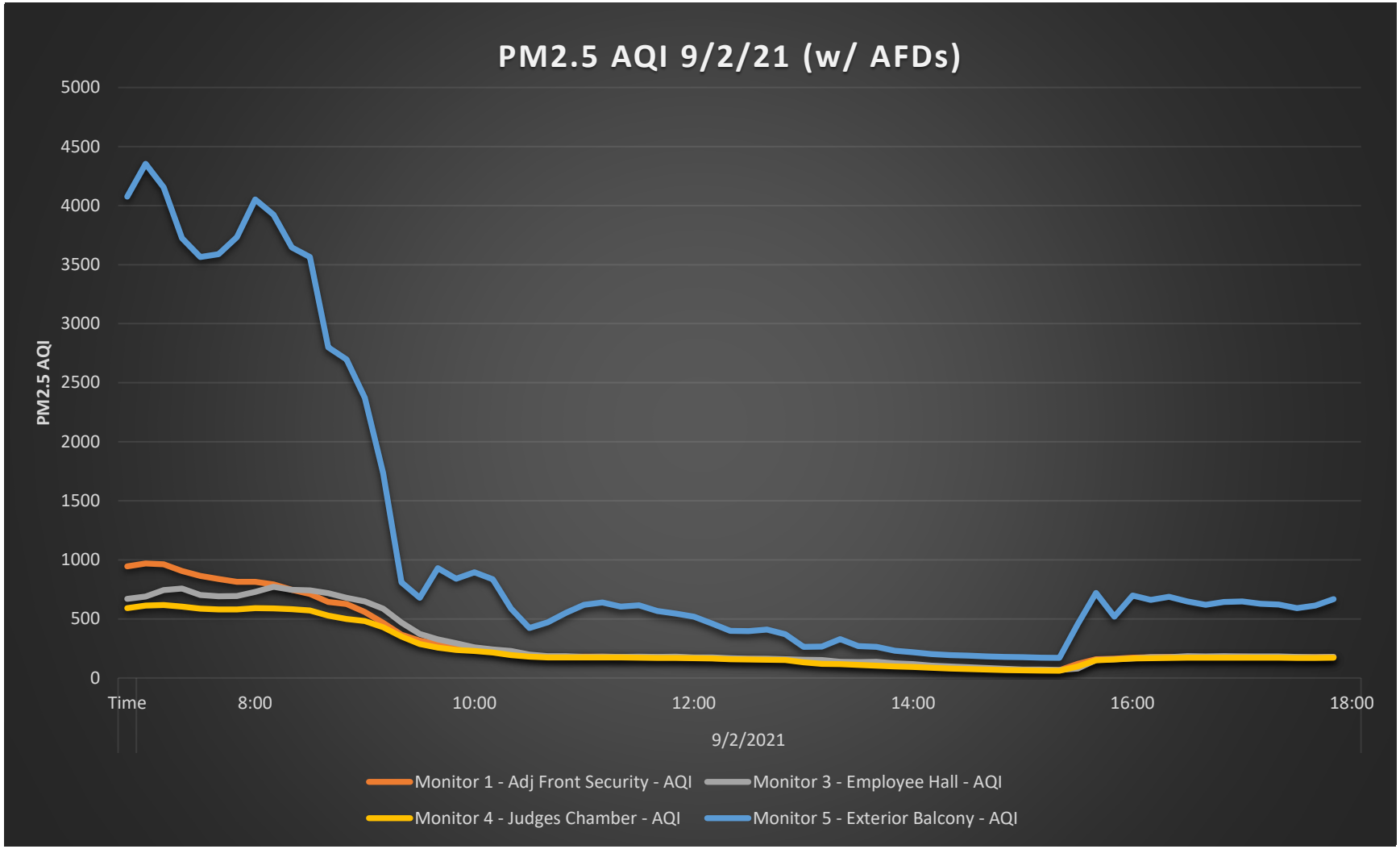
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 11: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 9/1/21 7am-6pm (With Air Filtering Devices)



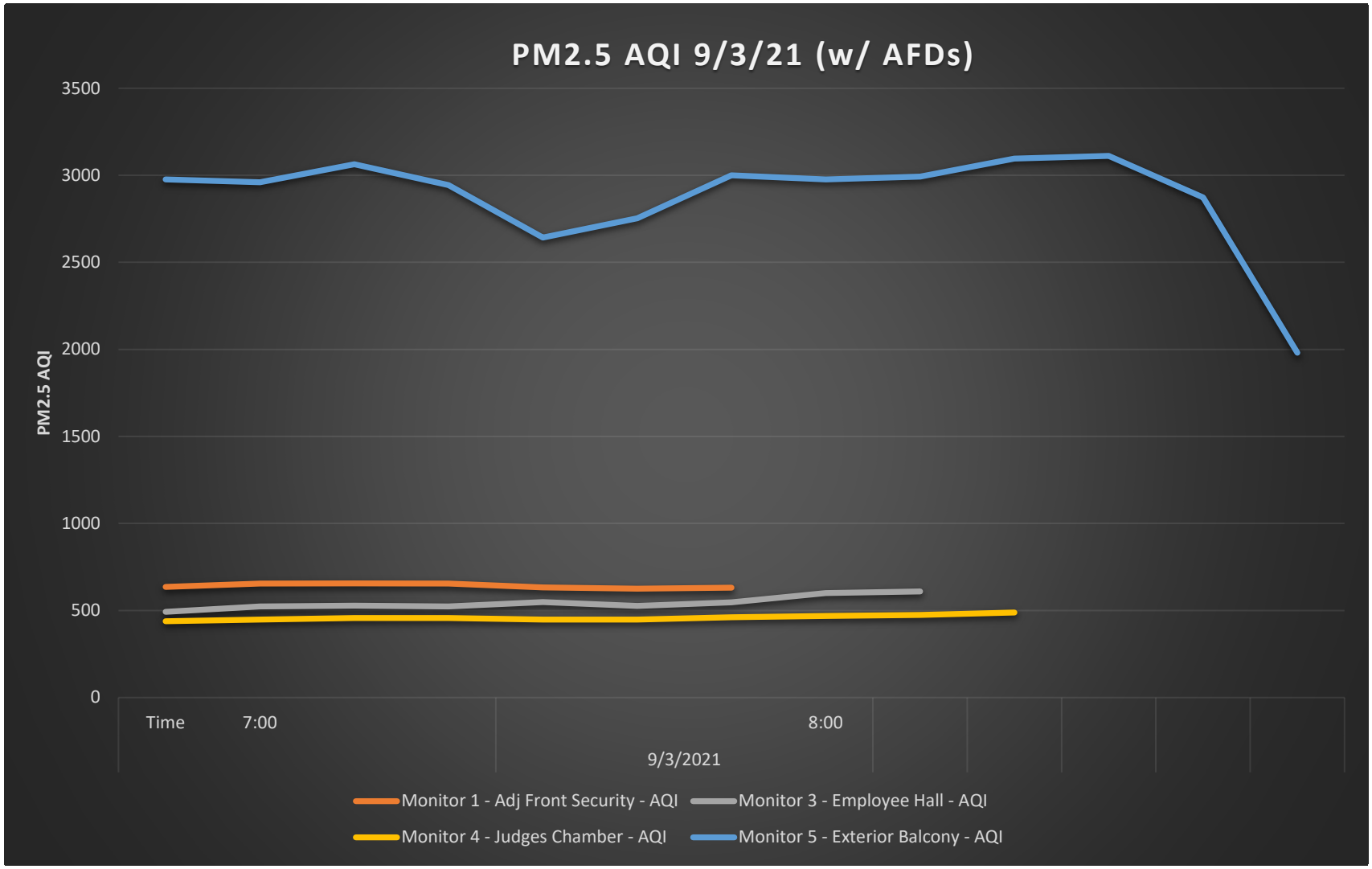
Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 12: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 9/2/21 7am-6pm (With Air Filtering Devices)



Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Figure 13: El Dorado SLT - PM2.5 Air Quality Index (AQI) – 9/3/21 7am-6pm (With Air Filtering Devices)



Notes: *1. AQI was calculated for a point in time using the measured point-in-time PM2.5 concentration. AQI for PM2.5 is typically calculated for a 1-hour or 24-hour average.*

Appendix C

Site Diagrams

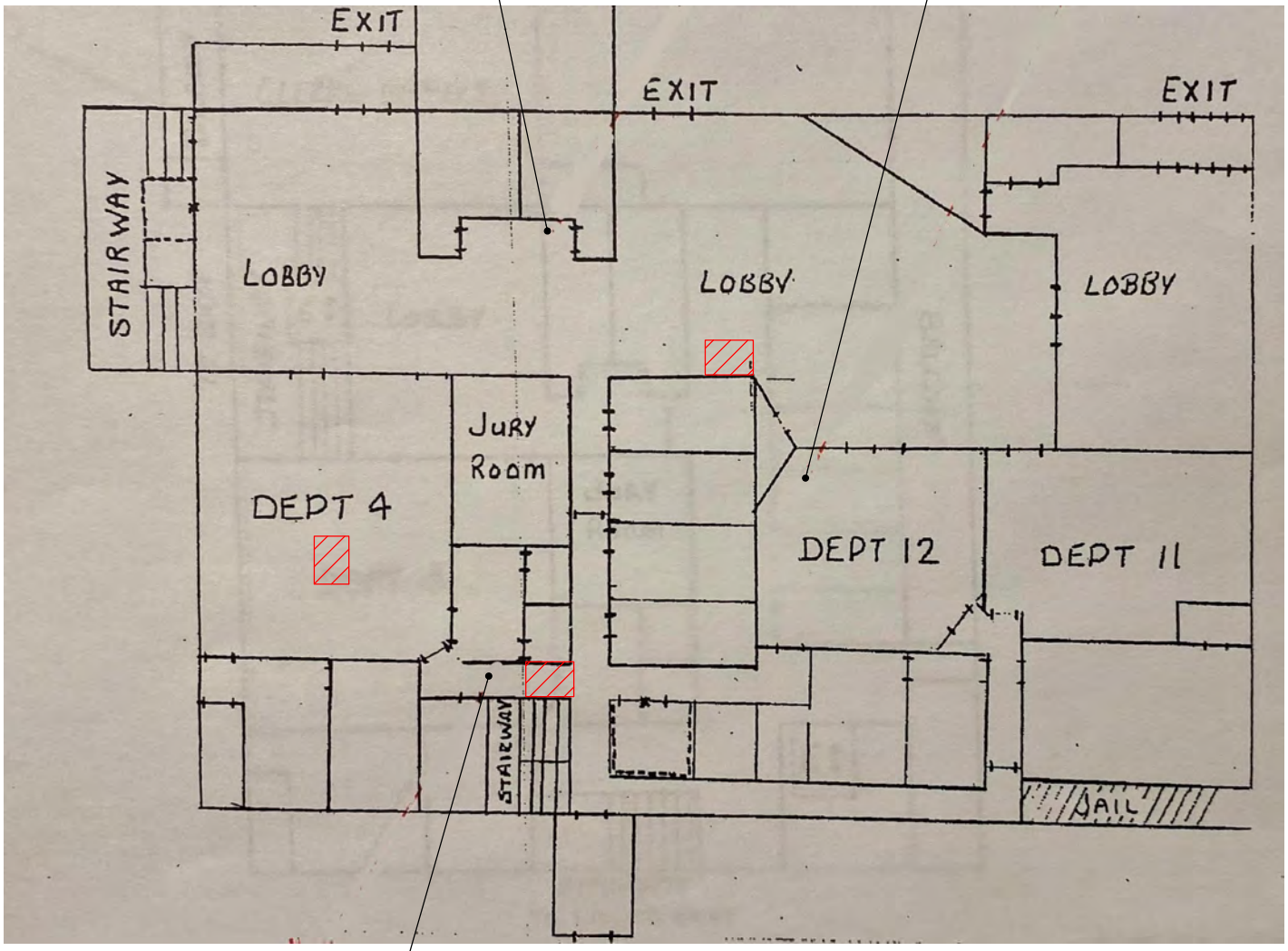
LEGEND

: Air filtration device locations

xxxxx : Sampling locations

Lower level entry at Security

Lower level Court Room (removed)



Lower level Employee Hall

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NORTH

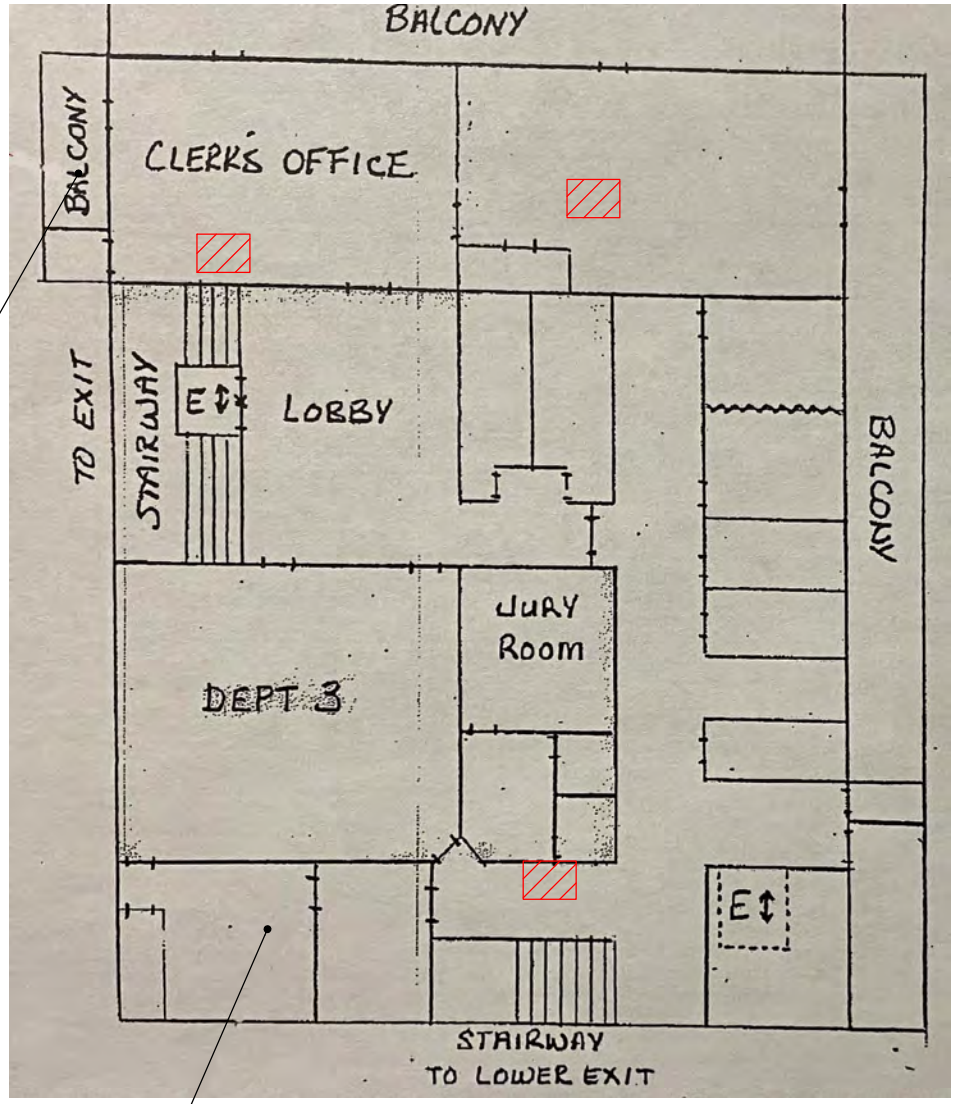
Site Diagram
El Dorado County Superior Court
South Lake Tahoe Branch - Lower Level

CLIENT:	Judicial Council of California	DATE: 08/23/2021 - 09/03/2021	
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66225	SHEET NUMBER: S(1-1)
LOCATION:	El Dorado County Superior Court (09-E1) 1354 Johnson Blvd, #2, South Lake Tahoe, CA	DRAWN BY: Diana Lutsik	

LEGEND

: Air filtration device locations

XXXXX : Sampling locations



Exterior Balcony

Upper Level Judges Chamber

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NORTH

Site Diagram
El Dorado County Superior Court
South Lake Tahoe Branch - Upper Level

CLIENT:	Judicial Council of California	DATE: 08/23/2021 - 09/03/2021	
PROJECT:	Wildfire Smoke Impact IEQ Investigation Study	JOB NUMBER: PJ66225	SHEET NUMBER: S(1-1)
LOCATION:	El Dorado County Superior Court (09-E1) 1354 Johnson Blvd, #2, South Lake Tahoe, CA	DRAWN BY: Diana Lutsik	

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