

Update on South Central Fresno Community Air Monitoring

South Central Fresno CSC Meeting
March 9, 2022

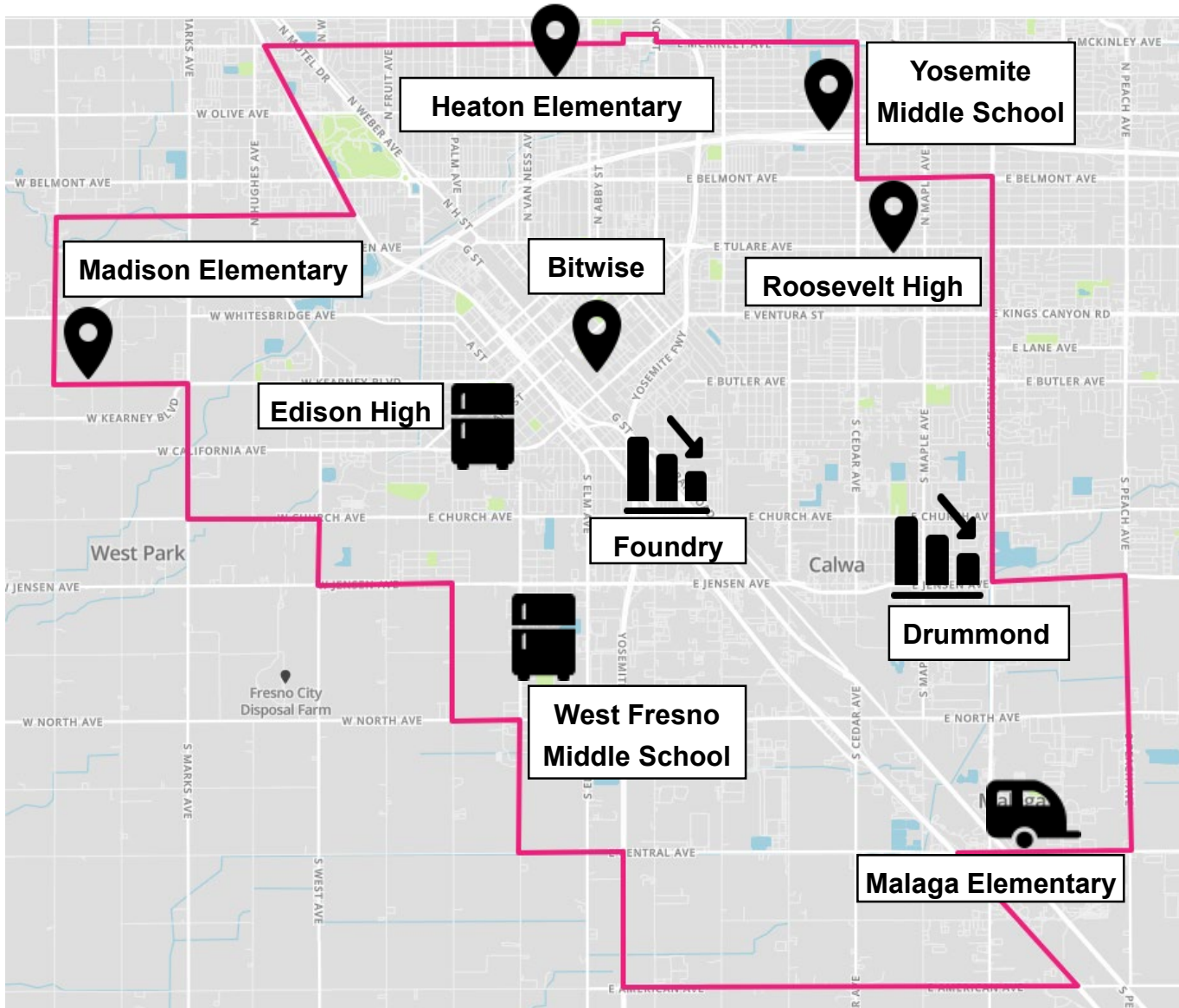
Air Monitoring Update

Status of Community Air Monitoring Plan Implementation

Review Air Monitoring Data Collected

Questions, Comments, And Recommendations

CAMP Fully Implemented



**PM2.5
Monitor**



Compact System:
PM2.5, Black Carbon,
Ozone, BTEX, NO_x, &
VOC, CO (Edison), SO₂
(West Fresno)



**Regulatory Air
Monitor:** Foundry
(PM2.5),
Drummond (Ozone,
NO₂, PM₁₀)



Trailer: PM2.5, Black
Carbon, Ozone, CO,
NO₂/NO, H₂S/SO₂,
BTEX & Toxics



Mobile Monitoring

Van: respond to community concern

Community Air Monitoring Platforms



Community Air Monitoring Platforms (cont'd)



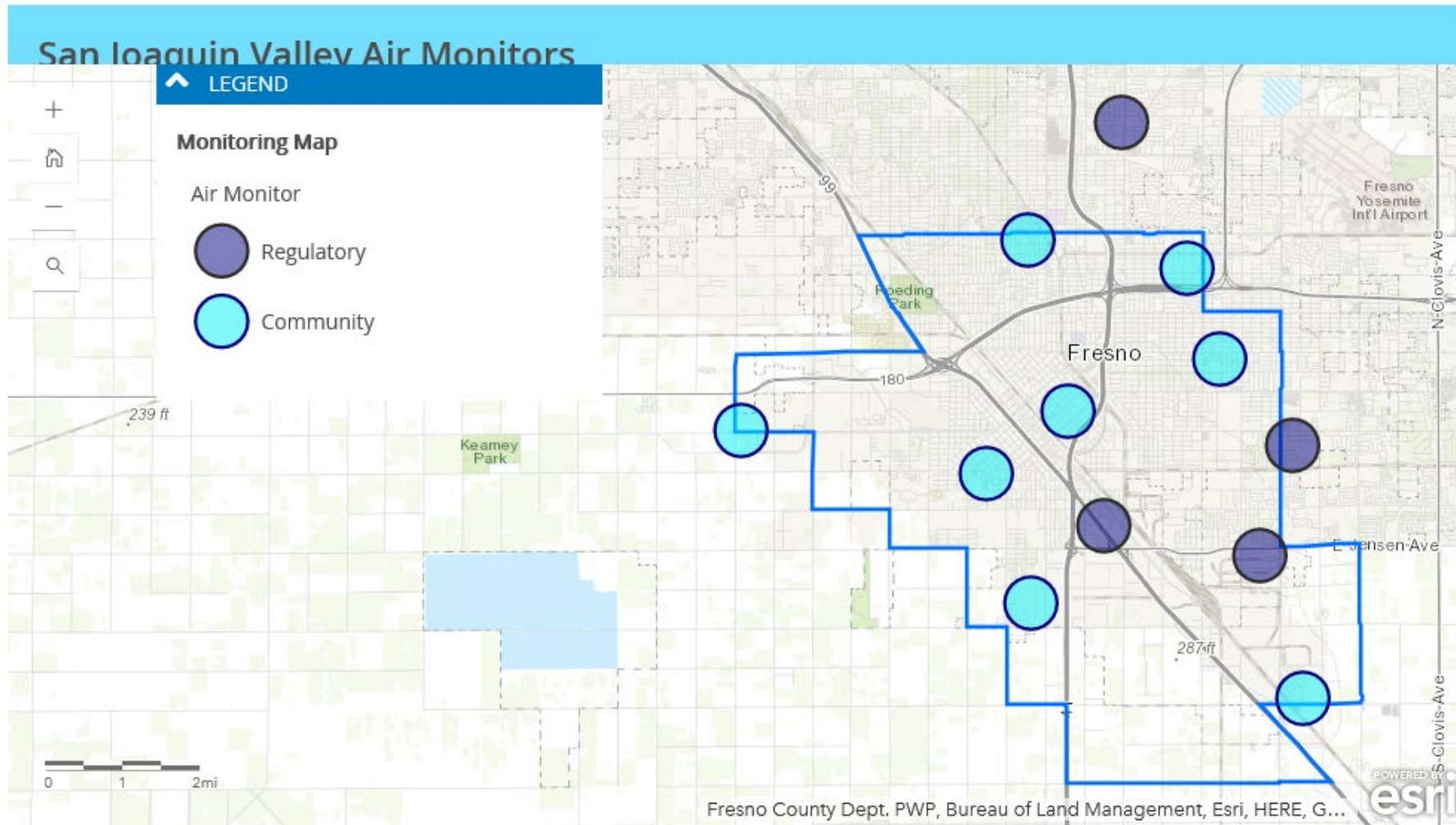
Community Air Monitoring Platforms (cont'd)



Ongoing Community Air Monitoring

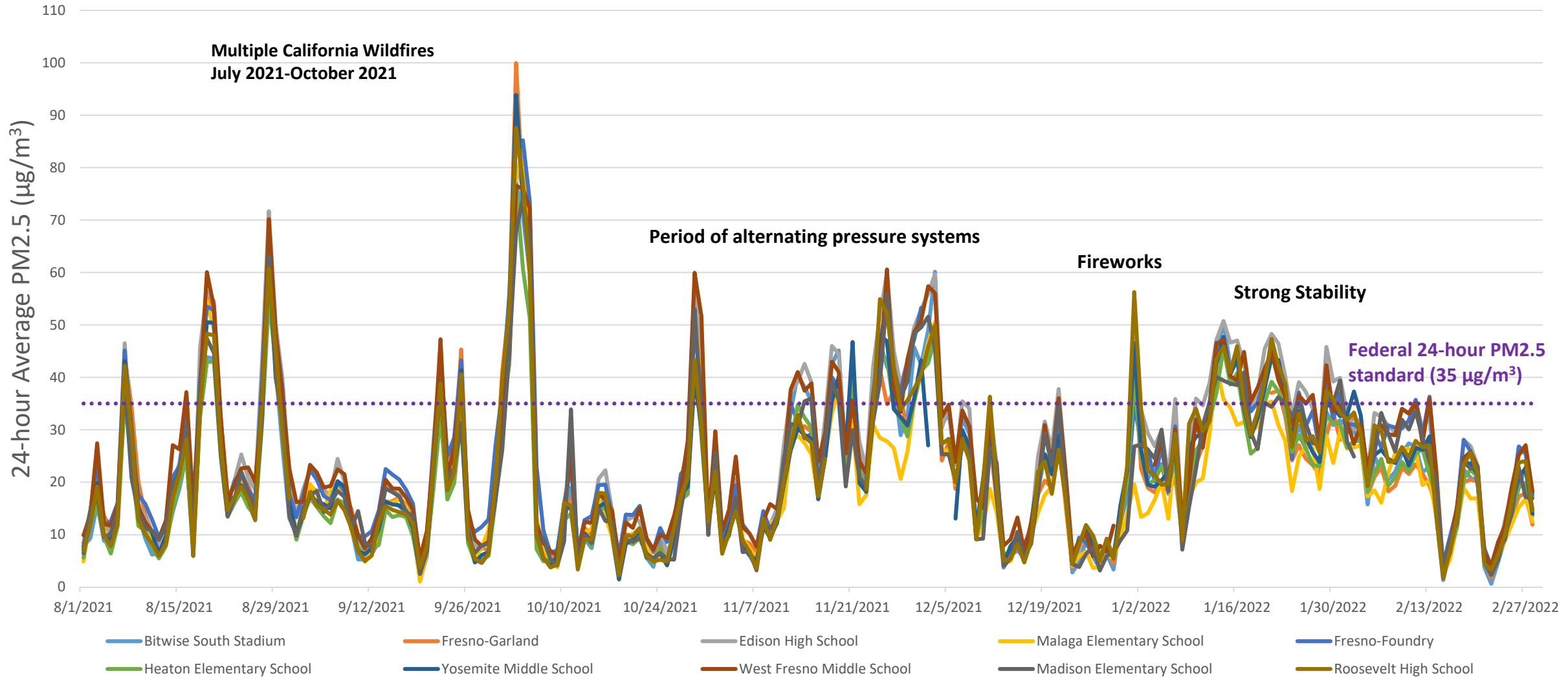
- District continuing to conduct localized air monitoring in the South Central Fresno community
- Air monitoring van actively being used to regularly monitor pollutants in areas of interest of the community and near recommended site locations for network design
- Extensive PM_{2.5} and VOC speciation sampling and laboratory analysis being conducted since late 2019

New Interactive Map



<https://community.valleyair.org/selected-communities/south-central-fresno/community-air-monitoring/>

PM2.5 Daily Average Comparison



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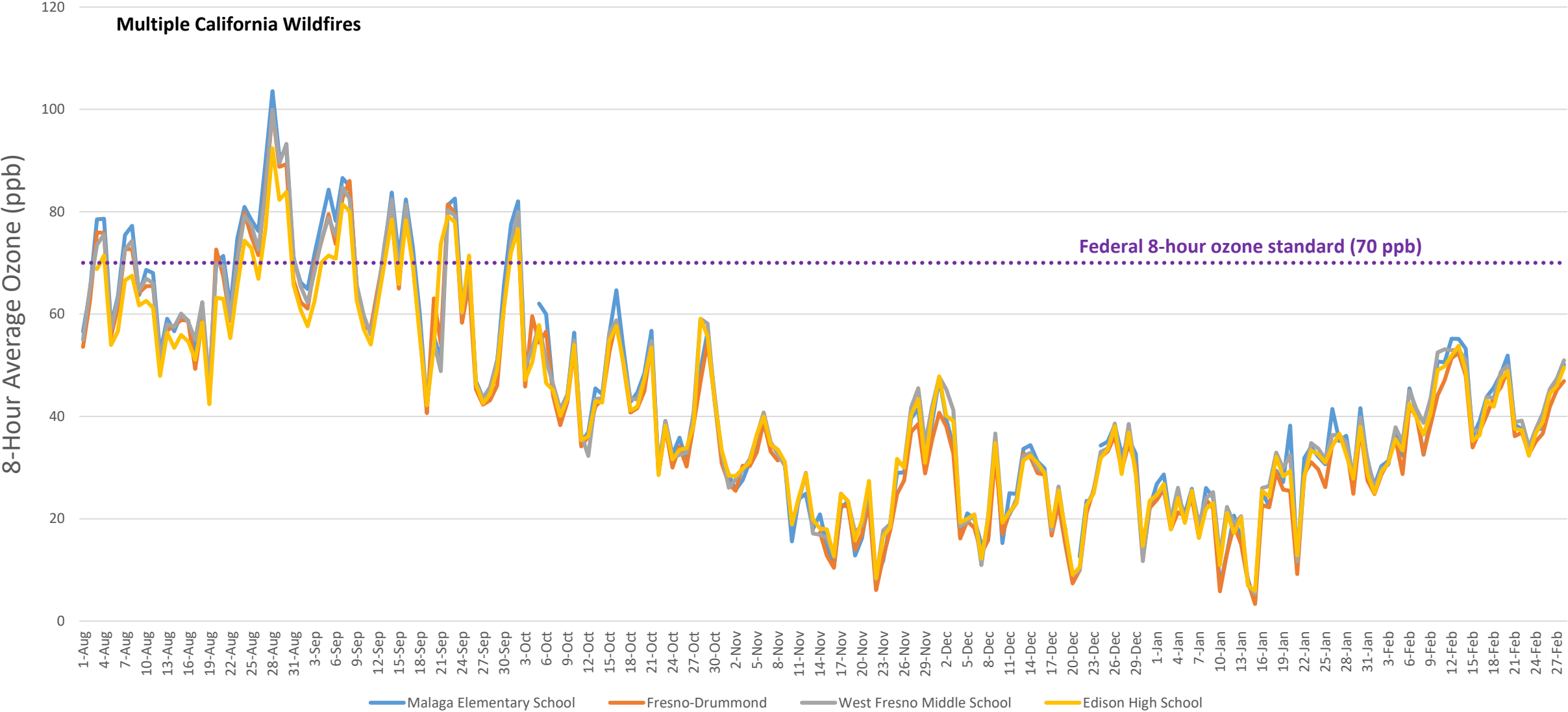
August 2021-February 2022

	Highest 24-hour PM2.5	Aug-Feb Average PM2.5	Average Daily Percent (%) Difference from Garland
Fresno Community Monitors			
Bitwise	130.4*	21.5	+2%
Edison †	141.0*	25.8	+23%
Malaga	141.0*	19.8	-6%
Heaton	120.0*	20.1	-4%
Yosemite	140.2*	21.3	+1%
West-Fresno	145.5*	25.1	+20%
Madison	128.7*	21.8	+4%
Roosevelt	197.0*	21.9	+4%
Nearby Regulatory Monitors			
Garland	153.3*	21.0	---
Foundry	152.0*	24.2	+15%

† Additional PM2.5 speciation sampling and analysis is planned for Edison

* Measured during wildfire impact day

8-Hr Average Ozone Comparison



Ozone Daily Average Comparison August 2021-February 2022

	Highest 8-hour Ozone	Aug-Feb Average 8-hour Ozone	Average Daily Percent (%) Difference from Drummond
Fresno Community Monitors			
Edison	92.4*	41.6	-0.2%
Malaga	103.6*	43.2	+4%
West-Fresno	99.9*	43.2	+4%
Nearby Regulatory Monitors			
Drummond	99.5*	41.7	---

* Measured during wildfire impact day

Summary of Air Monitoring Van Data

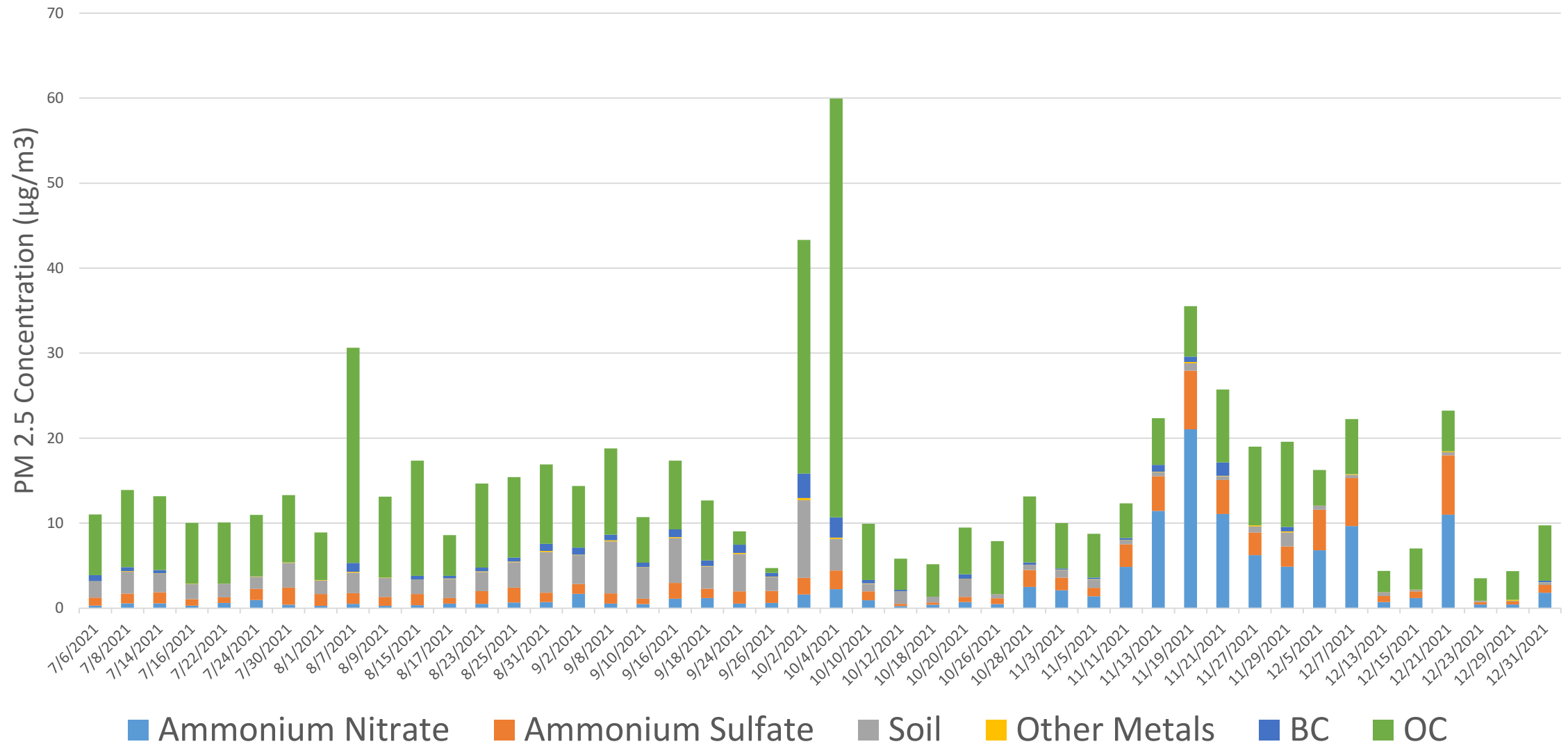
August 2021-February 2022

Pollutant	Average of All Hourly Values	Peak Hourly Average	Applicable Standard
Benzene	<0.1 ppb	2.8 ppb	1 ppb (Chronic REL)
Toluene	<0.1 ppb	2.3 ppb	111 ppb (Chronic REL)
Ethylbenzene	<0.1 ppb	1.7 ppb	461 ppb (Chronic REL)
Xylene	<0.1 ppb	4.8 ppb	161 ppb (Chronic REL)
PM2.5	20.6 µg/m ³	56.0 µg/m ³	35 µg/m ³ (24-hr average)
Ozone	38.7 ppb	99.5 ppb	70 ppb (8-hr average)
CO	0.3 ppm	0.6 ppm	35 ppm (1-hr average)
NO ₂	11.8 ppb	37.5 ppb	100 ppb (1-hr average)
SO ₂	1.9 ppb	6.3 ppb	75 ppb (1-hr average)

PM2.5 Speciation

- Collected samples sent to laboratory for analysis to determine types and sources of PM2.5
- July 2020, sampling began at Malaga Elementary
- From July 2021 to December 2021, primarily Ammonium Nitrate in winter and Organic Carbon in summer
 - Ammonium Nitrate: Formed from reaction of ammonia and nitric acid, where nitric acid is formed from nitrogen oxides. Key sources of nitrogen oxides is from burning of fuel.
 - Organic Carbon: Organic carbon (OC) are generated as primary organic aerosol, predominantly through combustion of fuel. In summer 2021, much of the PM2.5 is OC from wildfire emissions. OC also includes cooking, industrial processes, mobile source exhaust, tire wear, and wood burning.

PM2.5 Speciation Sampling



VOC Speciation

- Collected samples sent to third-party laboratory for analysis to determine various specific VOC detected in atmosphere
 - Capable of isolating 68 to 86 different VOCs from each air sample
- In July 2020, sampling began at Malaga Elementary
- VOC Speciation results from July 2021 to December 2021:
 - Acetaldehyde, methanol, ethanol, 2-propanol, and acetone were the primary VOCs detected
 - Only acetaldehyde, methanol, and 2-propanol have an associated Reference Exposure Level (REL), a health risk metric established by the OEHHA
 - Methanol detected were well below OEHHA REL chronic value of 3,000 ppb
 - Acetaldehyde detected were well below OEHHA REL chronic value of 80 ppb
 - 2-propanol detected were well below OEHHA REL acute value of 1,302 ppb

Community Air Quality Data

- District AB 617 webpage at: <http://community.valleyair.org/communityair-monitoring>
 - Real-time community air monitoring data
 - Air monitoring data from vans
 - Quarterly reports
 - Weekly air monitoring updates
- CARB's statewide air quality data portal (AQview) displays and provides community air monitoring data from AB 617 communities
 - AQview website located at: <https://ww2.arb.ca.gov/es/community-airquality-portal>
 - Air quality data from Valley AB 617 communities available at this website
 - Development ongoing, new features to be added

Comments/Questions?