

AB617: Particulate Matter in Vallejo

April 24, 2018

Charley Knoderer

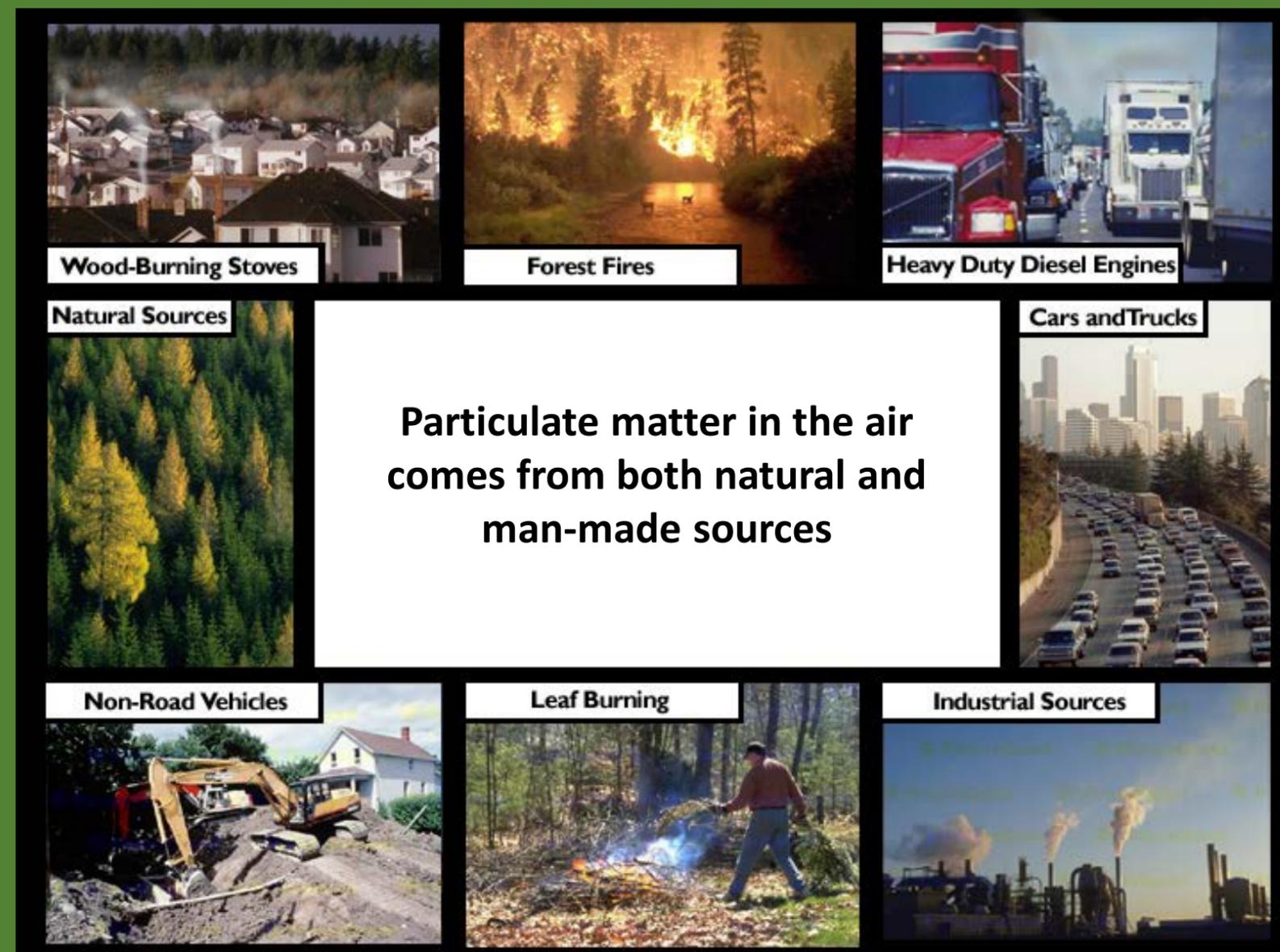
Bay Area Air Quality Management
District

Supervising Air Quality Meteorologist



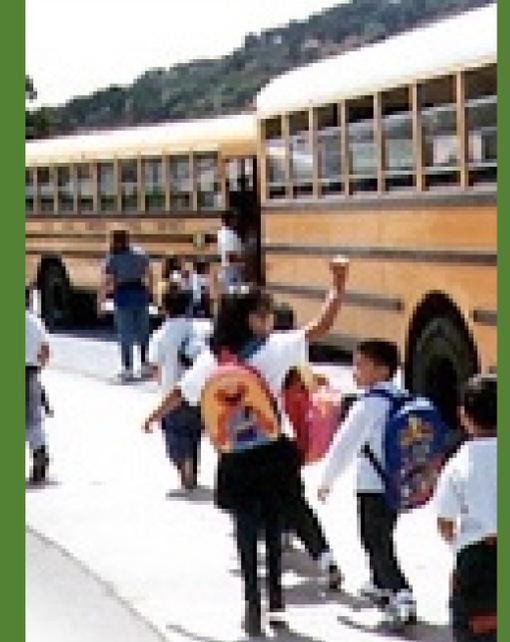
Particulate Matter (PM)

- PM has known health impacts and has been measured at higher levels in Vallejo compared to other parts of the Bay Area
- PM can be emitted directly by a source or formed in the air from gases
- Particles of smaller size are of particular health concern ($PM_{2.5}$)

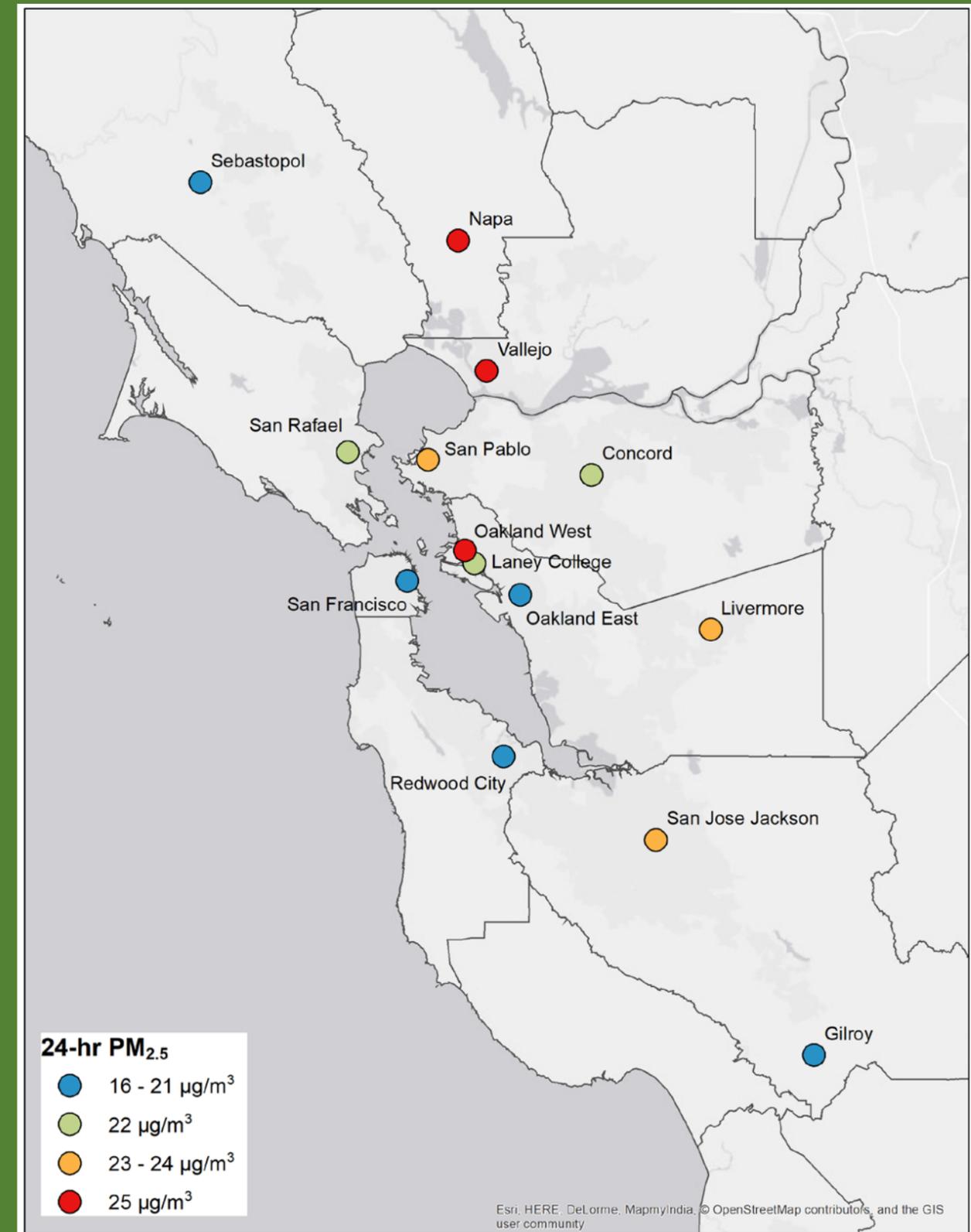
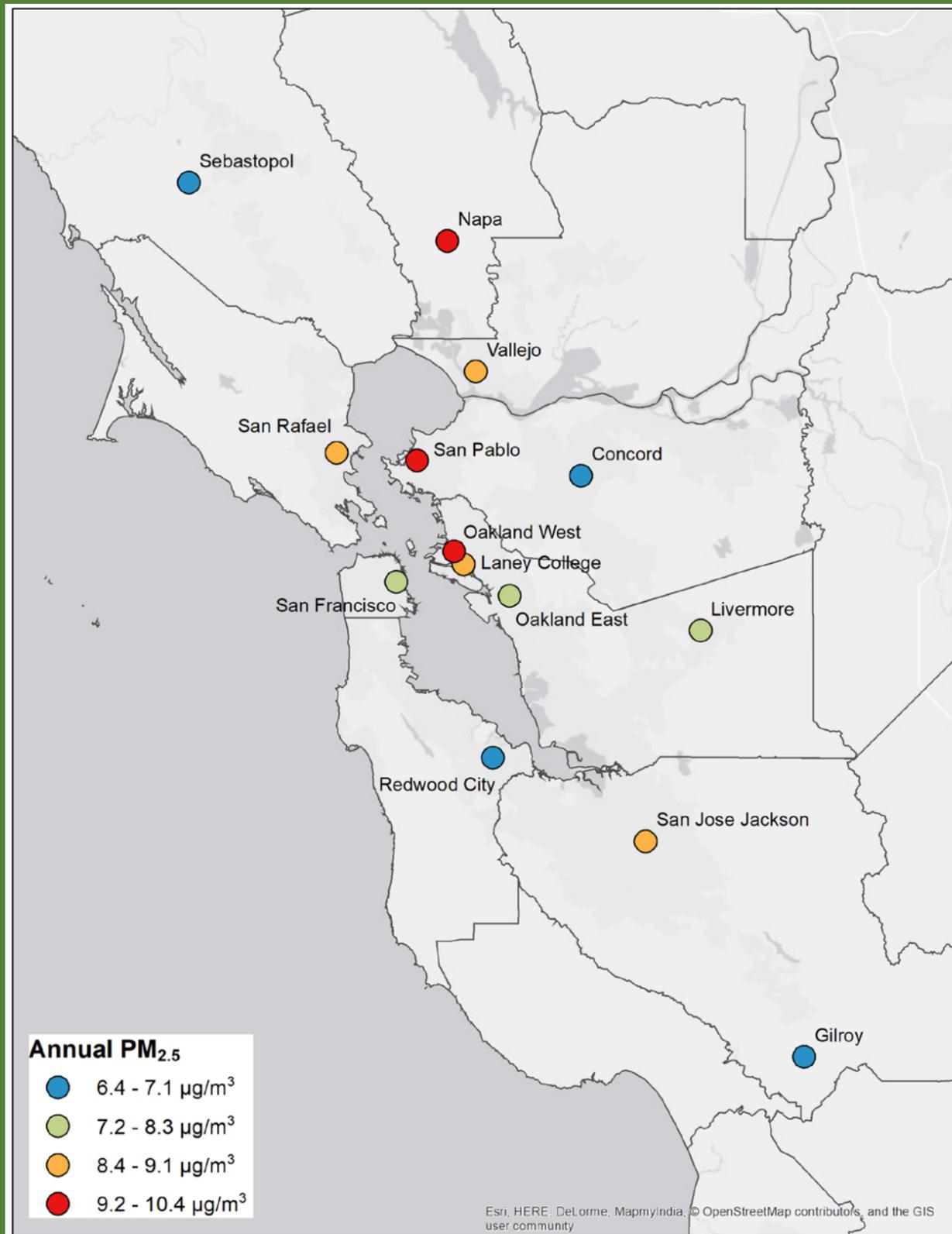


PM_{2.5} Health Information

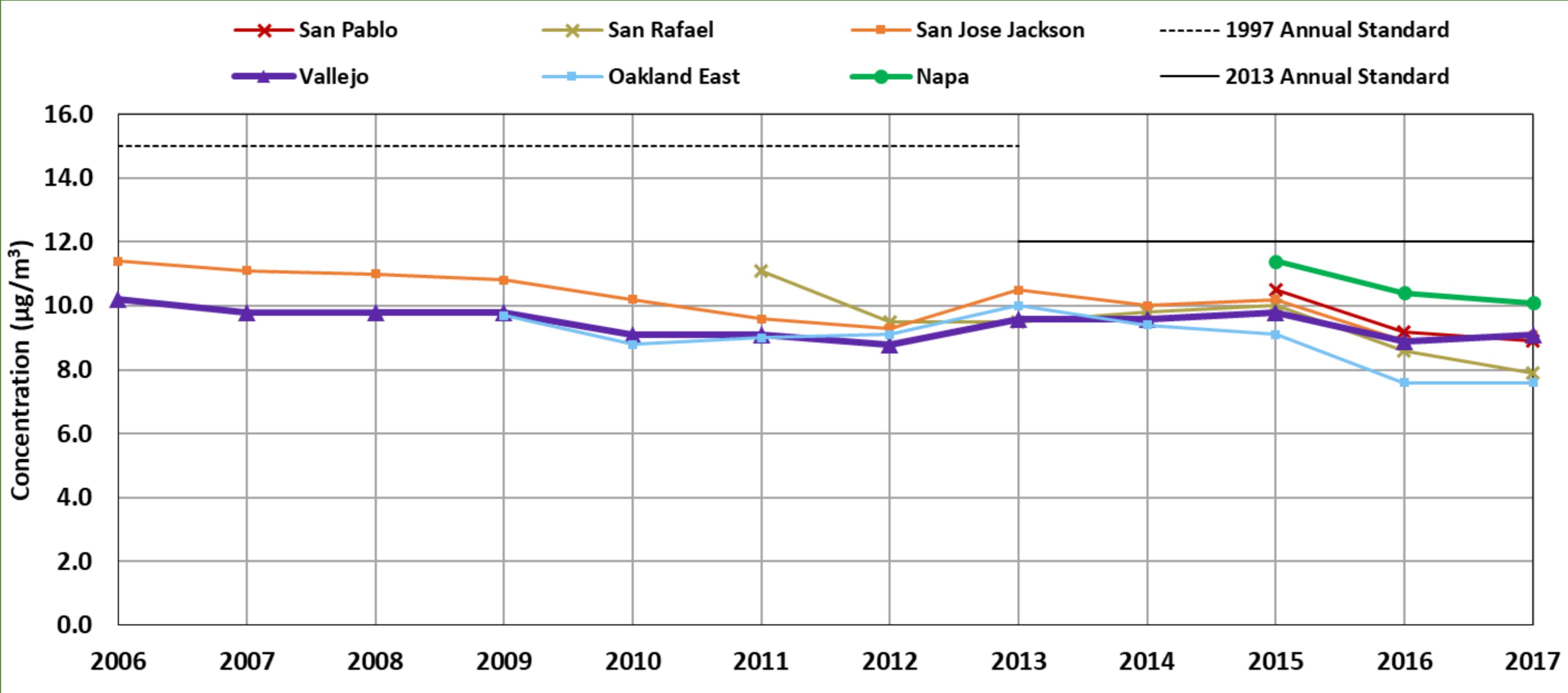
- Annual standard is 12.0 $\mu\text{g}/\text{m}^3$
24-hour standard is 35 $\mu\text{g}/\text{m}^3$
- Recent studies indicate that there are health effects of exposures below these levels
- Determining PM_{2.5} standards at shorter time scales is challenging due to the lack of relevant concentration, exposure, and health data



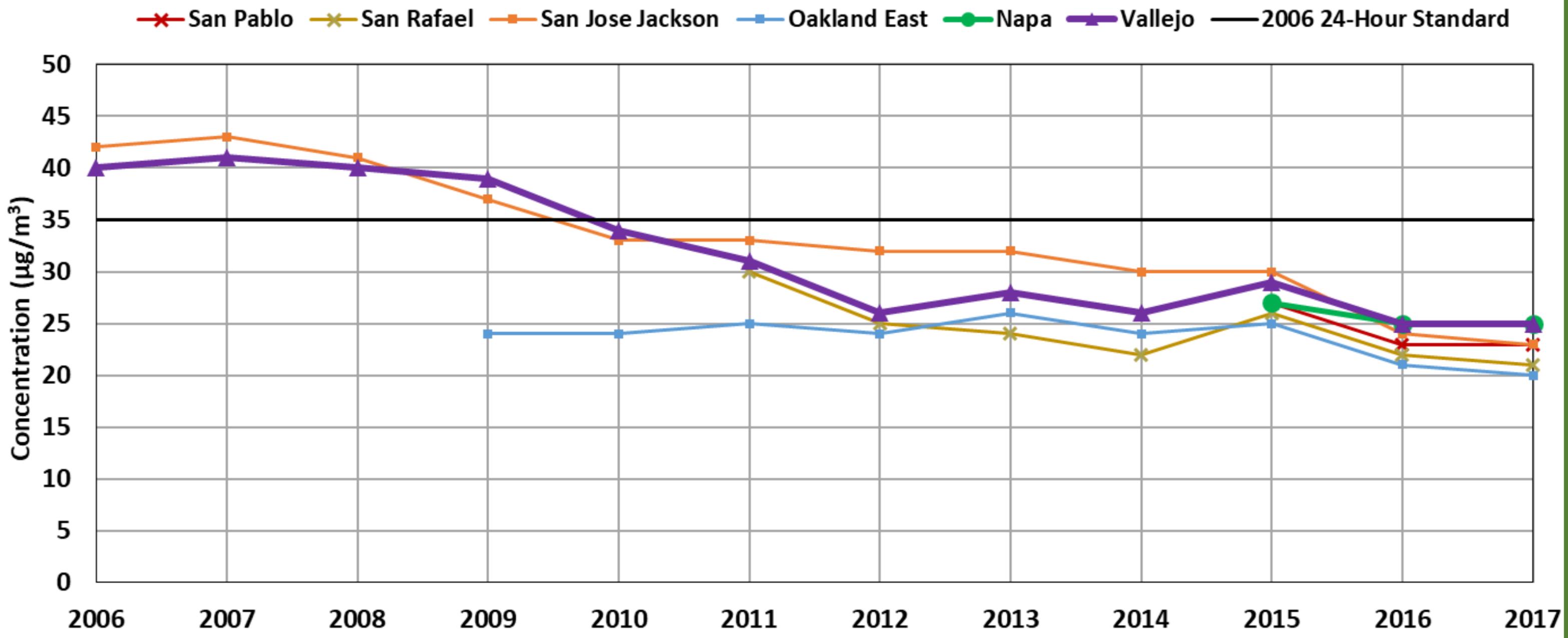
PM_{2.5} across the Air District's Monitoring Network (2014-2016)



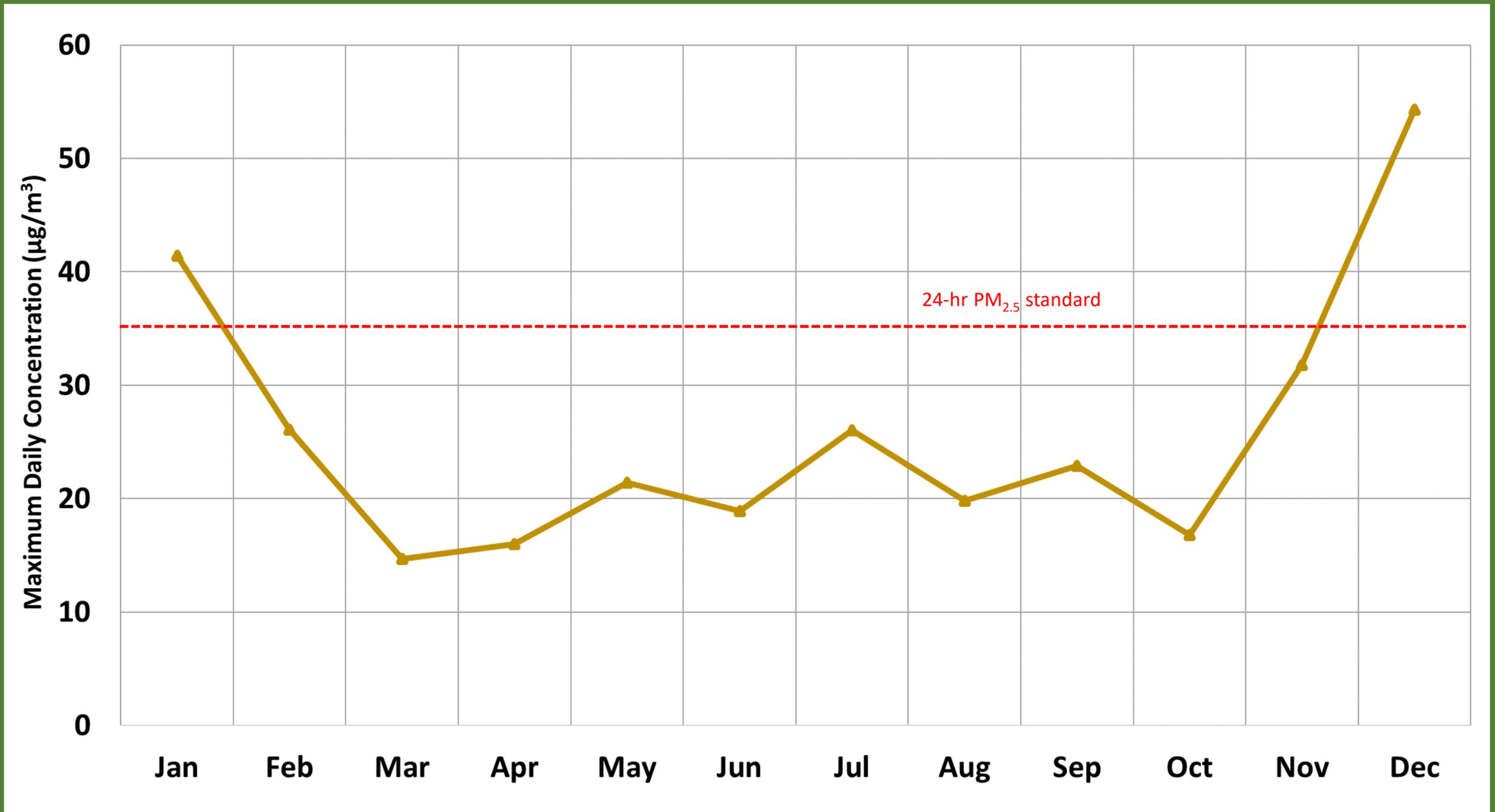
PM_{2.5} Trends – Annual Standard



PM_{2.5} Trends – 24-hr Standard

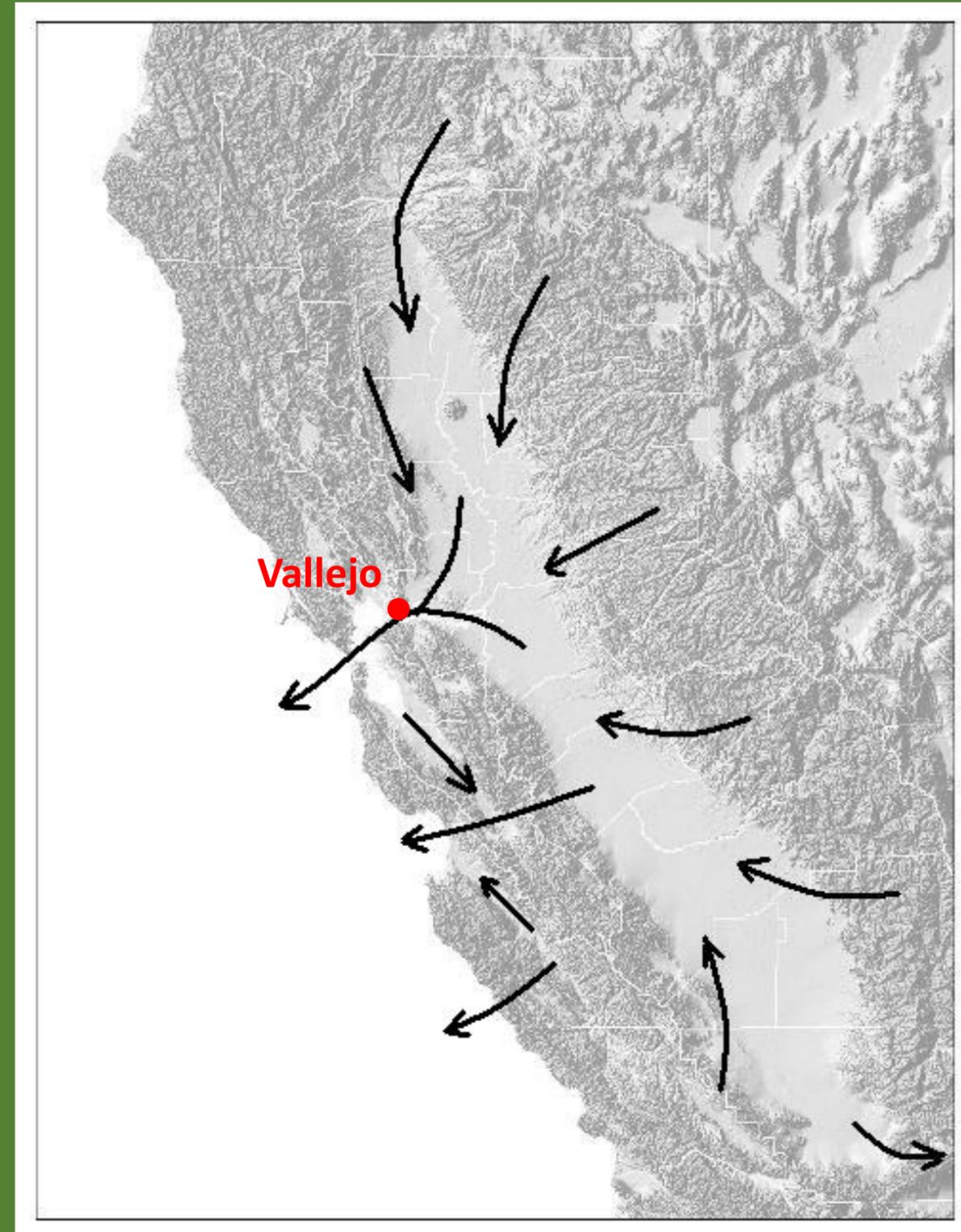


Seasonal Pattern of Highest 24-hr PM_{2.5} (2011-2017)



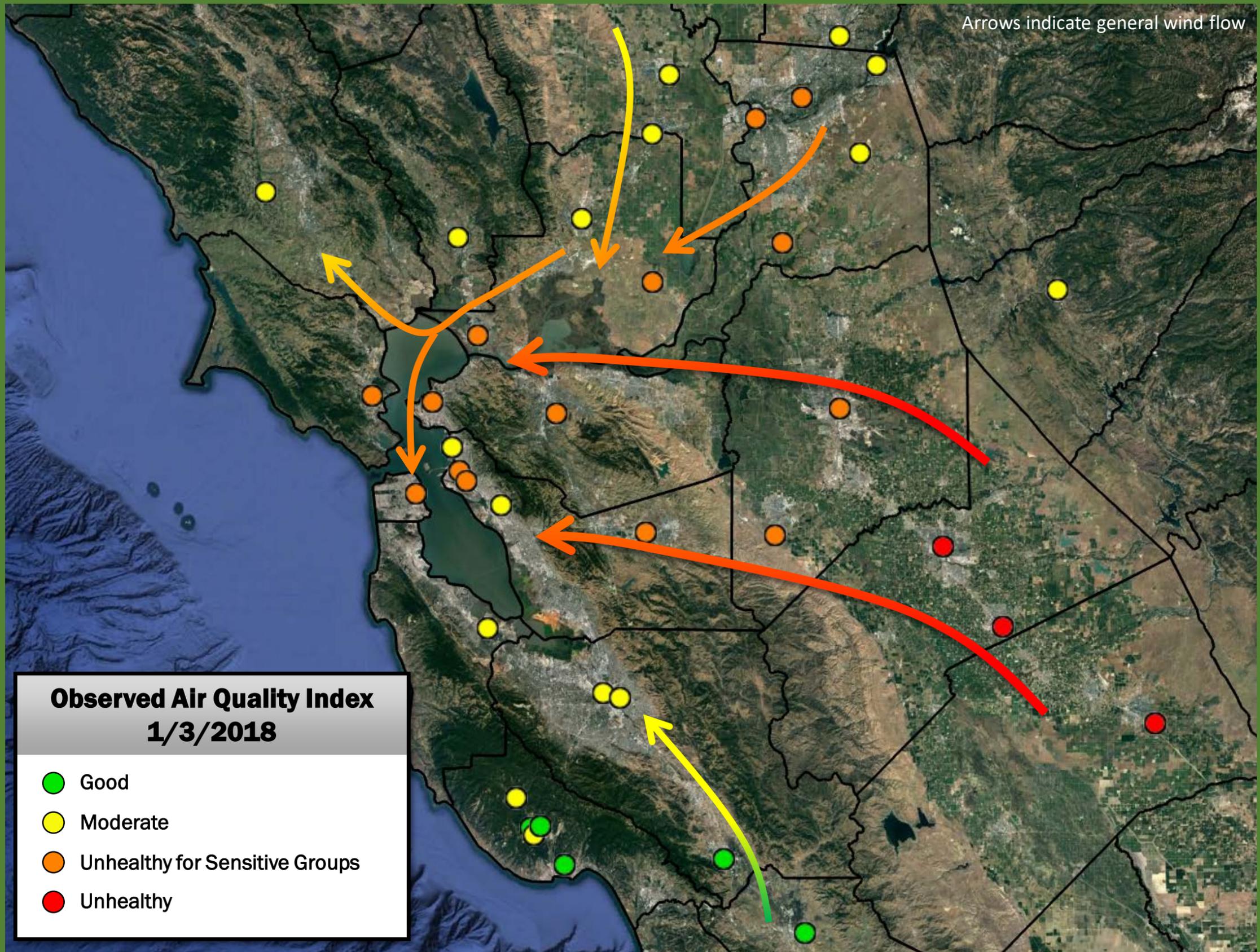
Wintertime Air Quality Episodes in the Bay Area

- Offshore winds transport pollution from the Central Valley into the Bay Area
- Strong temperature inversions trap local pollution (e.g., wood smoke) near the surface



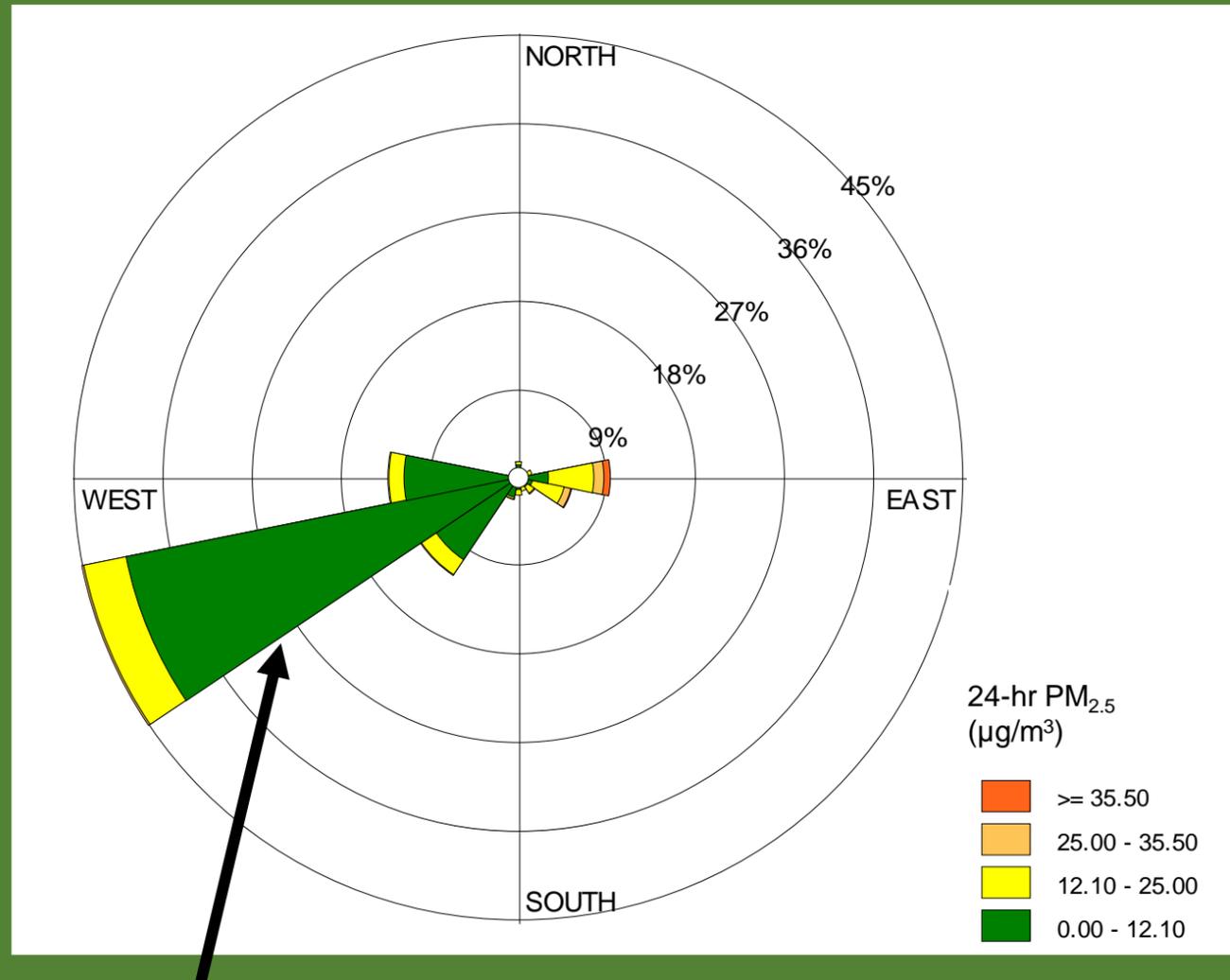
Recent High PM_{2.5} Day: January 3, 2018

- PM_{2.5} concentrations were very high in the San Joaquin Valley
- Offshore winds transported pollution into the Bay Area



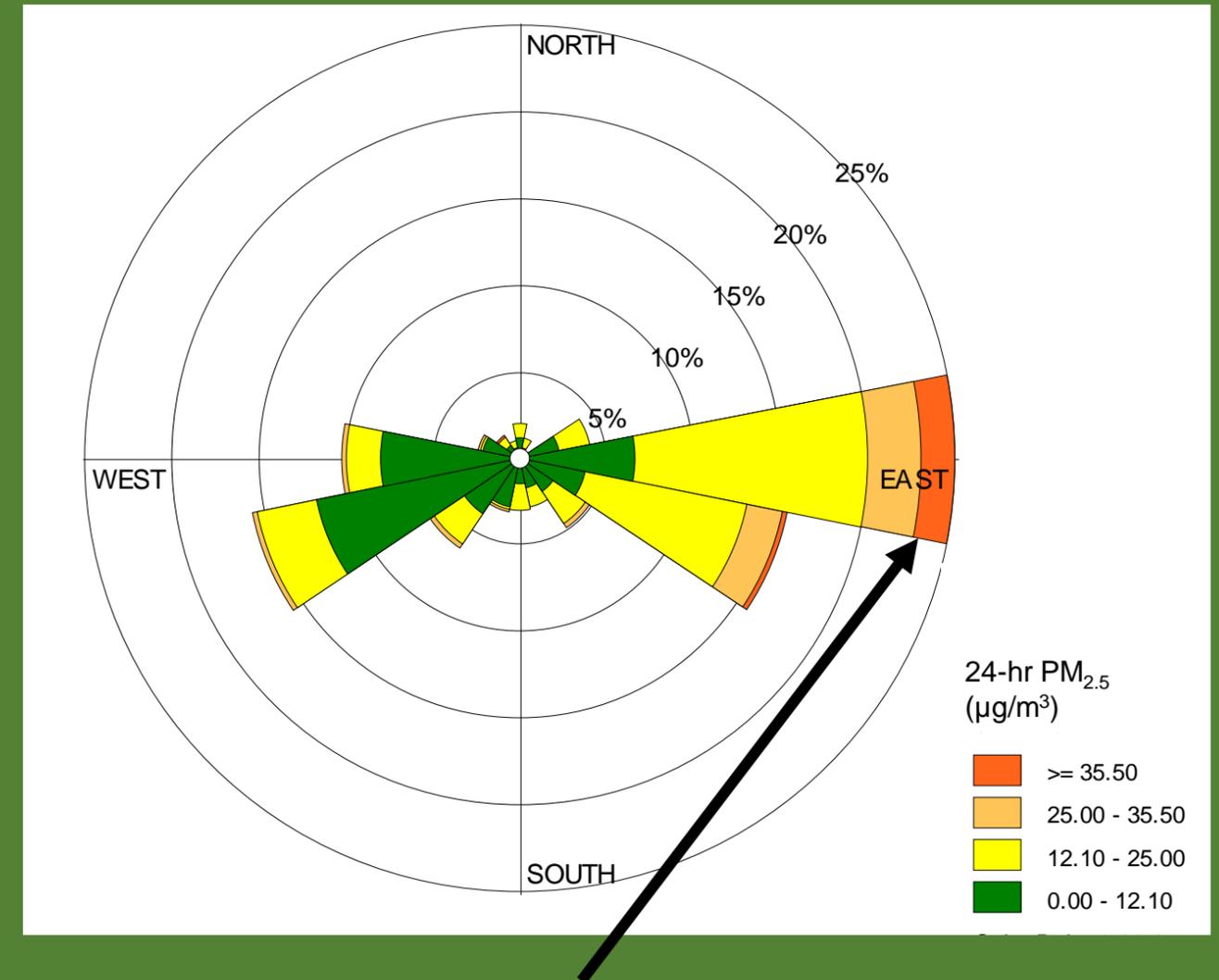
PM_{2.5} and Wind Direction in Vallejo – 2011-2017

All year



- Winds are most often from the ocean
- Air quality is generally good during those periods

Nov-Feb



- Winds are most often from the land during winter
- Unhealthy air quality episodes are most common during these periods of easterly (offshore) winds

Thank you!

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