



# REPORT OF THE ADVISORY COUNCIL MEETING FROM MARCH 11, 2019

Board of Directors Meeting  
April 3, 2019

Stan Hayes, Chairperson  
Advisory Council



# Council Report: Context

- **FOCUS** – *“To Attainment and Beyond”*
  - Nearing or at attainment
  - But, more health benefits to be had
- **NEXT**
  - What are the **next best things** to do?
  - How do we **most move** the public health needle?
    - Especially for those in highest-risk communities (Assembly Bill (AB) 617)
    - For everyone in the Bay Area
- **KEY**
  - Particulate matter (**PM**) is **dominant health risk driver** for both air toxics and criteria pollutants in Bay Area.



# Council Report: Important Questions

- Are current standards sufficiently **health protective**?
- What's the bullseye in the **clean air target**? How clean is clean enough? How will we know when we **get to the target**?
- What **metrics** should we use to track progress?
- How do we **combine criteria pollutants and toxics**? Cancer and non-cancer health endpoints? Short- and long-term effects?
- How can we make sure **everyone is treated fairly**?
- How can we ensure that everyone **everywhere breathes clean air**?
- What are the **most important actions** that can be taken now? And, in the future?



# Council Report: Best Science

- **US Environmental Protection Agency (EPA)**
  - **Accelerated review** of Particulate Matter (PM) standards by December 2020
  - Draft PM Integrated Science Assessment (**PM ISA**)
  - But: CASAC reconfigured, **deemphasis of science** backgrounds
    - PM Review Panel **disbanded**
    - **Highly critical** of draft PM ISA
      - “Lack of comprehensive, systematic review”
      - “Lack of scientific method”
      - “Use of unverifiable opinions”
      - “Lack of scientific support”
- **IMPLICATIONS**
  - Air District must develop its **own assessment** of the best science
    - Last PM ISA done **ten years ago** in 2009
    - Much research since then, **stronger health evidence, additional health concerns** (e.g., UFP, neurological effects, cancer)



# Council Report: Best Science

- **Draft PM Integrated Science Assessment**
  - **Presentation** by Jason Sacks, USEPA Assessment Lead
    - Advisory Council meeting on March 11, 2019
- **Highlights**
  - **1,879** pages
  - Dozens **more recent research** papers since 2009 PM ISA
  - **Stronger evidence** for
    - **CAUSAL**: mortality, cardiovascular effects, heart disease, stroke
    - **LIKELY CAUSAL**: respiratory effects (e.g., asthma and COPD exacerbation, ED visits, respiratory mortality, impaired lung function)
  - **New conclusions**
    - Cancer – **LIKELY CAUSAL**
    - UFP, nervous system effects – **LIKELY CAUSAL**
    - Children and nonwhite populations at disproportionately increased risk



# Council Report: Best Science

- **PM Symposium**

- Convened by Advisory Council for its **late fall meeting**
- PM health **experts**, including state officials, local health officials, and community groups
- **Goals**
  - Review new PM **health research**, complexities of PM characterization
  - Review Air District actions on PM
  - Set stage for **possible Air District action** (e.g., establishing guidelines beyond those already in effect at federal, state, and local levels)



AGENDA: 13E

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Bay Area Air Quality Management District  
Board of Directors Meeting

# Utilizing Mobile Monitoring and Associated Services

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April 3, 2019

Katherine Hoag  
Assistant Manager  
Meteorology and Measurements Division



# Need for Highly Localized Monitoring

## ❖ Current Regulatory Air Monitoring Network

- Over 30 stations throughout the Bay Area and includes fence line, ground level and emissions monitoring
- Meets stringent Environmental Protection Agency (EPA) monitoring requirements
- Designed to represent typical concentrations in populated areas or impacts of a few specific individual sources (refineries, near roadway, etc.)

## ❖ Assembly Bill (AB) 617 Design

- Determine air quality impacts at a highly localized scale

## ❖ Mobile Monitoring Advantages/Uses

- Determines concentrations using roadways, covering large areas
- Identifies “hotspots” and other areas for further consideration by Steering Committees





# Why this Approach?



Aclima drivers with fully equipped vehicle, currently mapping San Diego communities

## ❖ Excellent Spatial Coverage

- Entire communities can be mapped providing data identifying problem areas
- Decreases likelihood of missing air quality issues

## ❖ Targeted use of Resources

- By using this screening method, resources can be more efficiently targeted by AB 617 Steering Committees and utilized to further analyze air quality issues and apportion emissions

## ❖ Results in Cost Savings

- Maximizes ability to identify and address air quality issues in a given area with a single screening program



# Why this Approach? (Continued)

## ❖ Community-Level Information

- Looks at air quality block by block
- Covers the entire community and measures variation in air quality

## ❖ Supports Data-Driven Decisions

- Fills in monitor gaps to support community choices for timing and inclusion into AB 617
- Provides support for further consideration and helps identify reduction methods



1

**Stationary & Mobile Sensors**  
Best-in-class data quality

2

**End-to-end network management**  
Enabling unprecedented scale and block-by-block resolution

3

**Analytics**  
Synthesis of Aclima and integrated third party data to derive insights

4

**Software Tools**  
Intuitive software tools for experts and citizens to drive action



# What is Being Proposed?

## ❖ Drive and Analyze Richmond and the Entire Bay Area

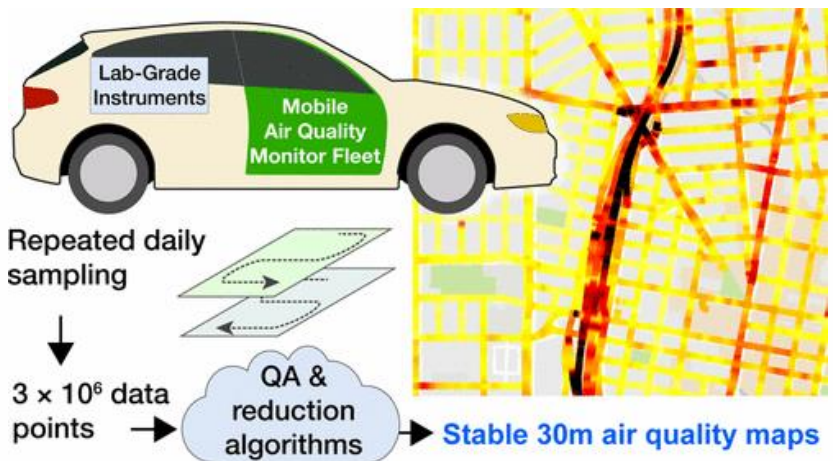
- Richmond completed in one quarter to aid the Richmond Steering Committee identify and address “hot spots” that meets AB 617 timeline
- Bay Area-wide baseline to aid in determining differences in air quality on a highly localized scale

## ❖ Analytics and Website

- Data management and analytics for all mobile data and can include measurements from other platforms
- Website that presents the information in an easily understood format that incorporates community input

## ❖ Community Engagement

- Engagement of key stakeholders, including supplementary funders, to improve the website and aid in understanding of results





# Mobile Monitoring

## ❖ **Equipment must be tested and proven to be applicable**

- Must be capable of accurate measurement in various conditions (temperature, humidity, know interferences, etc.)
- Must be capable of high time resolution

## ❖ **Methods for compiling and Quality Control and Quality Assurance (QA/QC) must be defined**

- Large amounts of different types of data must be “married” to inform concentration and location
- Methods for determining how many times a segment must be driven must be developed and determined (how does changes in time of day, day of week and background affect the outcome)
- Ways to determine data quality, and when data should be included/excluded must be developed

## ❖ **There are other researchers investigating these issues, but none are to a point capable of implementing their systems**

- Staff have worked on mobile research projects, gaining knowledge in the process
- San Diego went through a Request for Qualification (RFQ) process and determined Aclima the best fit for a much smaller project



# Why Aclima?

## ❖ Extensive Experience in the Field

- Aclima has contracted within agencies and organizations throughout California and the nation
- Aclima has worked in partnership with other companies/organizations including Google

## ❖ Specifically Designed and Thoroughly Tested Equipment/Methods

- Developed equipment over ten years and tested against EPA reference instruments
- Staff has evaluated methodologies and data and found it to be of high quality and errors are understood
- Data used by various air district/academic/Non-Governmental Organizations (NGO)/community studies

## ❖ Communicating Information with Context to Meet the Needs of Community

- Website developed in cooperation with communities
- Worked with communities, NGOs and community-oriented funding organizations



# Aclima's Approach and Experience

## ❖ Mobile monitoring

- Drives roadways multiple times (at minimum 20 different times/dates)
- Equipment sensor pack is routinely tested against highly accurate equipment
- Aclima has already participated in projects in partnership with the West Oakland Environmental Indicators Project, EDF and other Districts around the State
- Able to scale to our need to map the entire Bay Area

## ❖ Analytics and display

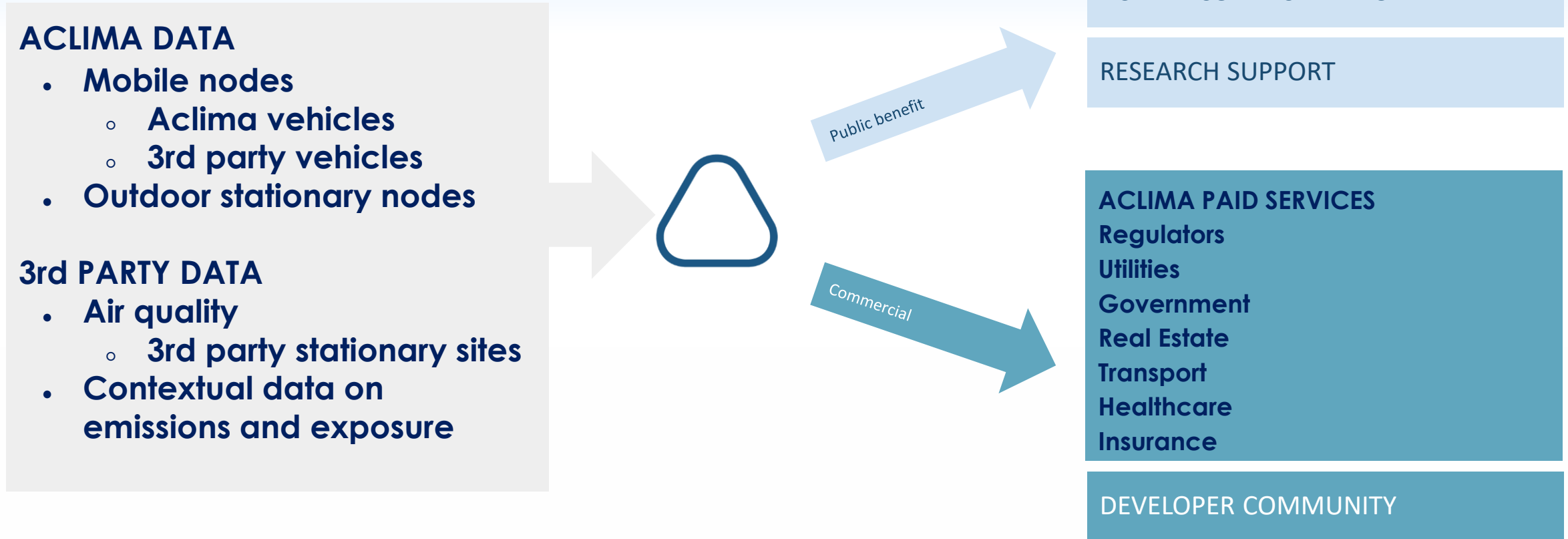
- Database and analytics already in place and tested in numerous communities
- Website can also display other measurements (current air monitoring network, PurpleAir, etc.)





# Aclima's Cost-Sharing Business Model

The Air District realizes significant cost savings by not having to develop monitoring capabilities and website interface





# Aclima's Data Licensing Approach

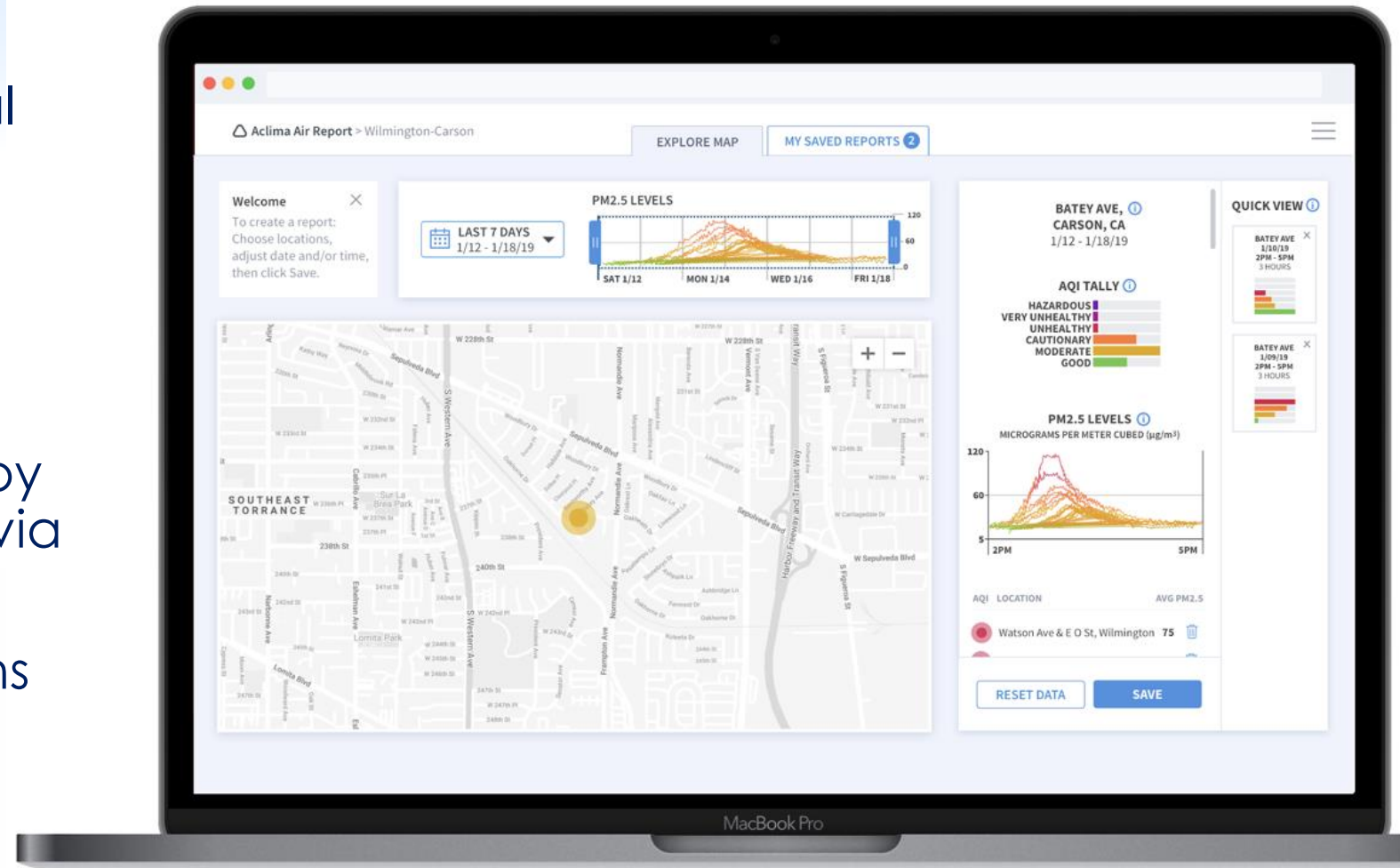
User Type	Data Product	Access Philosophy
Paid users	<b>Aclima Pro</b> <ul style="list-style-type: none"><li>• Qualified and derived datasets</li></ul>	Paid licenses
Academia	<b>Aclima Pro</b> <ul style="list-style-type: none"><li>• Qualified and derived datasets</li></ul>	Free licenses for non-commercial use
Public	<b>Aclima Community Portal</b> <ul style="list-style-type: none"><li>• Select spatial and temporal aggregations</li></ul>	Free public interface, with downloadable visualizations





# Aclima's Community Portal

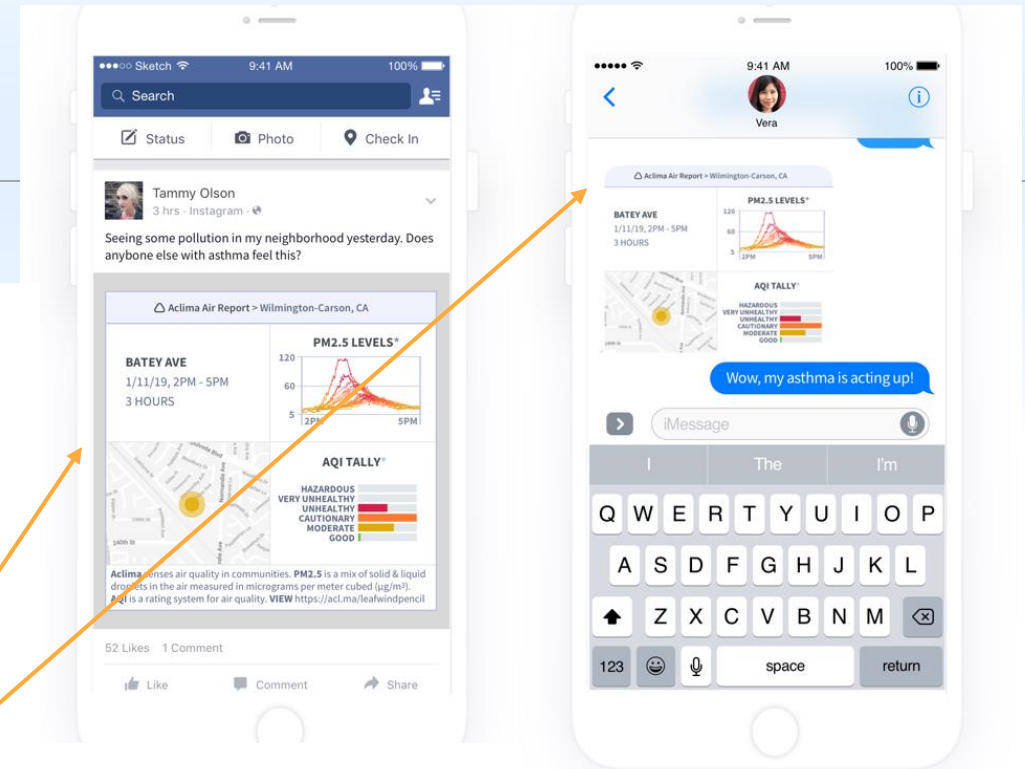
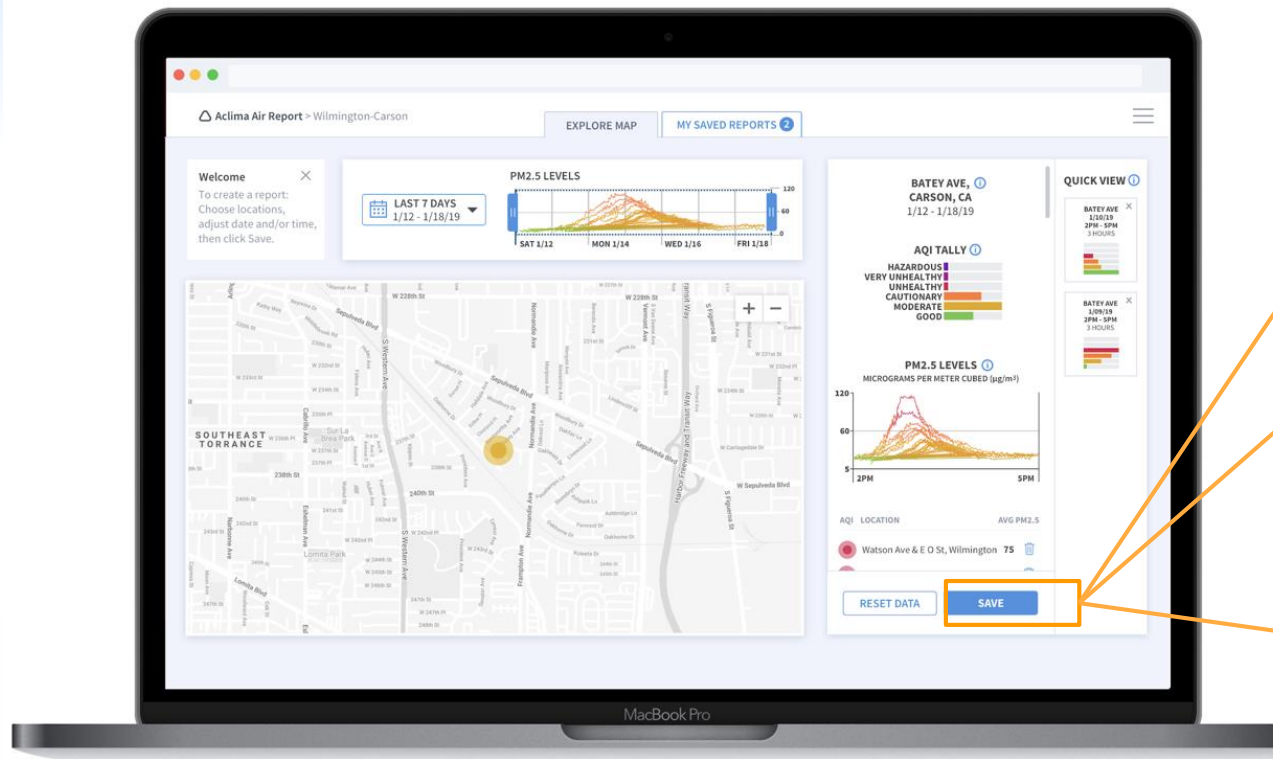
- ❖ Select spatial and temporal aggregations
- ❖ Free to the general public
- ❖ Intuitive, designed to drive awareness and action
- ❖ Aggregated observations by pollutant types accessible via location lookup
- ❖ Downloadable visualizations





## Accessing Air Quality Insights

Create & download personalized reports by clicking “save” on the Community Portal.



Any member of the public can share data snapshots via social networks, text messages or print materials.





# Air District's Access

## Aclima Pro

- ❖ Qualified and derived datasets
- ❖ Paid premium service distills complex data for users
- ❖ Provides access to individual observations
- ❖ Millions of observations per day
- ❖ Limited commercial license for Air District analysis and QA/QC

	A	B	C	D	E	F	G	H
1	Datetime.UTC	Billie-AMN1	Billie-AMN1	Billie-AMN1	Billie-AMN1	Billie-AMN1	Billie-AMN1	Billie-AMN1
2	2019-03-27T13:18:11.000Z	0.01210927	0.00610716	60	0.53407683	0.05422996	8494.53333	52.5145906
3	2019-03-27T13:19:11.000Z	0.01210927	0.00610716	59	0.53186331	0.1012515	8492.38983	98.0487629
4	2019-03-27T13:20:11.000Z	0.01189791	0.00586198	60	0.50433608	0.07810133	8465.73333	75.6308726
5	2019-03-27T13:21:11.000Z	0.01189791	0.00586198	59	0.59095273	0.1444122	8549.61017	139.844225
6	2019-03-27T13:22:10.000Z	0.00964479	0.00324836	60	0.45172182	0.02331101	8414.78333	22.5736511
7	2019-03-27T13:23:10.000Z	0.00964479	0.00324836	60	0.4661447	0.02689665	8428.75	26.045873
8	2019-03-27T13:24:10.000Z	0.01159611	0.00551189	60	0.49764097	0.03633338	8459.25	35.1840992
9	2019-03-27T13:25:10.000Z	0.01159611	0.00551189	60	0.49261534	0.03238579	8454.38333	31.3613837
10	2019-03-27T13:26:10.000Z	0.01287747	0.00699826	60	0.49638457	0.03325542	8458.03333	32.2035022
11	2019-03-27T13:27:10.000Z	0.01287747	0.00699826	60	0.45266843	0.02404823	8415.7	23.2875503
12	2019-03-27T13:28:10.000Z	0.01399611	0.00829589	60	0.45642044	0.0207757	8419.33333	20.1185376
13	2019-03-27T13:29:10.000Z	0.01399611	0.00829589	60	0.46072321	0.02367221	8423.5	22.9234232
14	2019-03-27T13:30:11.000Z	0.0144272	0.00879596	60	0.8989689	0.43751024	8847.88333	423.671142
15	2019-03-27T13:31:11.000Z	0.0144272	0.00879596	60	0.78250153	0.14287837	8735.1	138.358917
16	2019-03-27T13:32:11.000Z	0.01152211	0.00542605	60	0.55395562	0.04746443	8513.78333	45.9630619
17	2019-03-27T13:33:10.000Z	0.01152211	0.00542605	60	0.54743262	0.07762737	8507.46667	75.1719067
18	2019-03-27T13:34:11.000Z	0.01263054	0.00671183	60	0.62388423	0.04679939	8581.5	45.3190541
19	2019-03-27T13:35:11.000Z	0.01263054	0.00671183	60	0.68921749	0.05918871	8644.76667	57.3164801
20	2019-03-27T13:36:10.000Z	0.0124932	0.00655251	60	0.53237293	0.04105285	8492.88333	39.7542835
21	2019-03-27T13:37:10.000Z	0.0124932	0.00655251	60	0.61149226	0.08164857	8569.5	79.0659008
22	2019-03-27T13:38:10.000Z	0.01334869	0.00754488	60	0.62080345	0.09935635	8578.51667	96.2135631
23	2019-03-27T13:39:10.000Z	0.01334869	0.00754488	60	0.49371685	0.02608879	8455.45	25.2635607
24	2019-03-27T13:40:10.000Z	0.01391587	0.00820281	60	0.62347117	0.12473671	8581.1	120.791101
25	2019-03-27T13:41:10.000Z	0.01391587	0.00820281	60	0.46540462	0.0189553	8428.03333	18.3557136
26	2019-03-27T13:42:10.000Z	0.01346125	0.00767546	60	0.55037572	0.07593667	8510.31667	73.5346838
27	2019-03-27T13:43:10.000Z	0.01346125	0.00767546	60	0.59837742	0.10970182	8556.8	106.231791
28	2019-03-27T13:44:10.000Z	0.01347817	0.00769508	60	0.72968073	0.14896517	8683.95	144.253183
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30	2019-03-27T13:46:10.000Z	0.01473258	0.00815122	60	0.55553147	0.03100522	8524.03333	30.1117317



# Funding and Control

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- Funding will be provided by AB 617 grants funds through FYE 2020. Possible alternative funding sources will be investigated and incorporated into the FYE 2021 budget. An MSA provides a means to better scale activities
- Utilizing a Master Service Agreement (MSA) allows for better control of the project, incentivizing a closer working relationship with Aclima, resulting in lower costs and closer project management.



# Recommended Action

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- Recommend the Board of Directors authorize the Executive Officer/APCO to execute a two-year Master Services Agreement (MSA) with Aclima in the amount not to exceed \$5,980,000 over two years for hyperlocal, background air quality mapping of the entire Bay Area, a data repository and web portal, and community capacity building activities.

# 2018 - 2019 Winter Spare the Air Program Overview



**Eric Stevenson, Director of Meteorology & Measurement**

**Lisa Fasano, Communications Officer**

**Board of Directors Meeting**

**April 3, 2019**

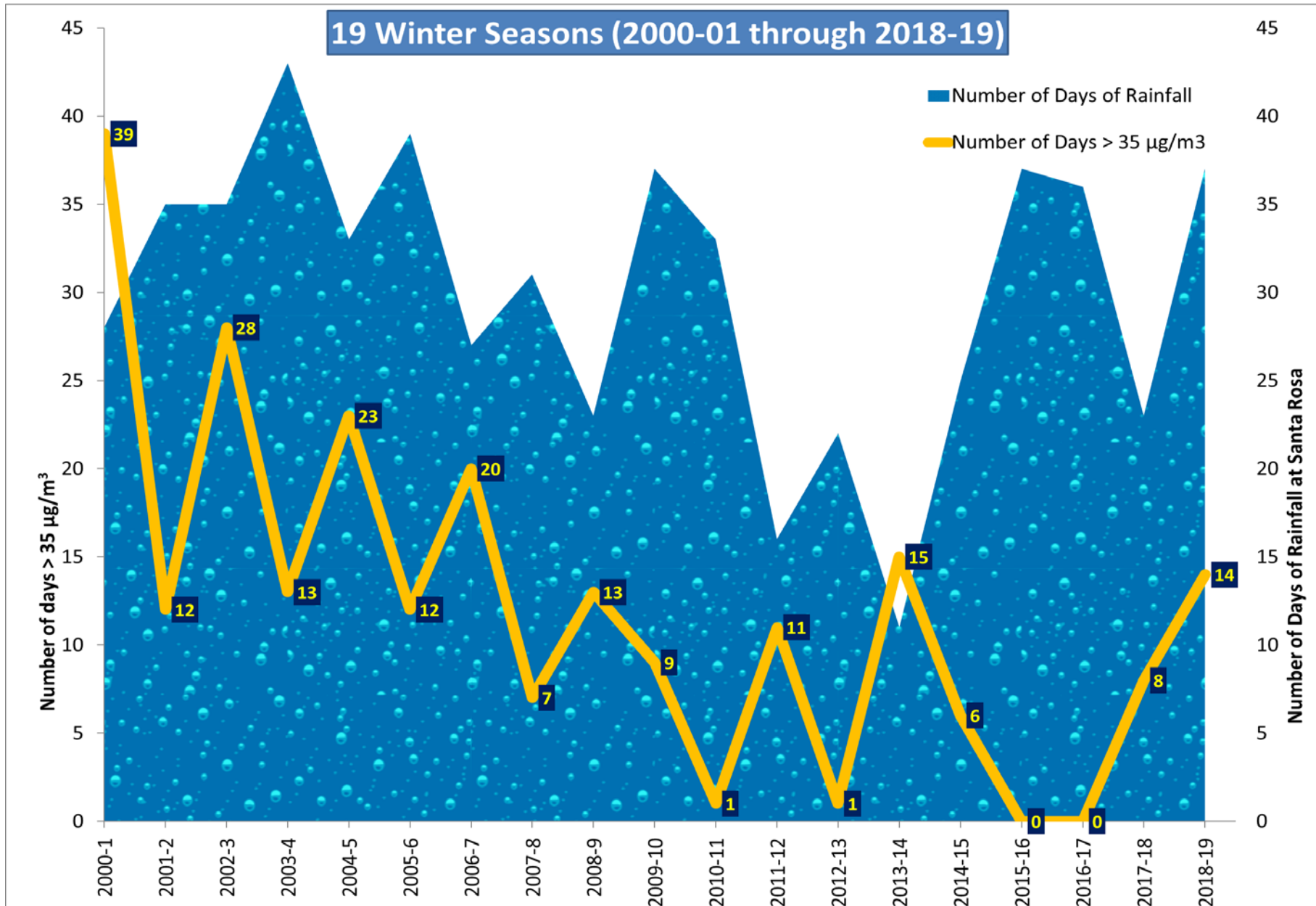
# Winter PM<sub>2.5</sub> Seasons

Year	Days > 35 µg/m <sup>3</sup>	Winter Spare the Air Alerts
2011/2012	11	15
2012/2013	1	10
2013/2014	15	30
2014/2015	6	23
2015/2016	0	1
2016/2017	0	7
2017/2018	8	19
2018/2019	14*	16

\* All 14 days of exceedances in 2018/19 are due to smoke from the Camp Fire (Nov. 8 - Nov. 21)



# Less Rainfall = More PM Pollution





# Highest Air Quality Readings

Air Quality Index Levels of Health Concern	Numerical Value
Good	0 to 50
Moderate	51 to 100
Unhealthy for Sensitive Groups	101 to 150
Unhealthy	151 to 200
Very Unhealthy	201 to 300
Hazardous	301 to 500

November 2018						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1 58	2 53	3 54
4 55	5 52	6 57	7 56	8 163	9 226	10 209
11 167	12 171	13 172	14 186	15 203	16 247	17 210
18 176	19 176	20 158	21 103	22 36	23 32	24 31
25 48	26 59	27 55	28 38	29 42	30 38	

December 2018						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1 39
2 36	3 43	4 59	5 54	6 47	7 55	8 71
9 89	10 84	11 64	12 59	13 62	14 64	15 59
16 51	17 40	18 45	19 50	20 67	21 57	22 46
23 55	24 48	25 33	26 45	27 38	28 39	29 54
30 59	31 41					

January 2019						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 56	2 62	3 74	4 90	5 67
6 34	7 39	8 37	9 38	10 55	11 48	12 49
13 50	14 42	15 37	16 38	17 54	18 56	19 55
20 39	21 35	22 38	23 52	24 57	25 64	26 75
27 78	28 67	29 62	30 58	31 67		

February 2019						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 39	2 42
3 38	4 40	5 34	6 41	7 41	8 46	9 41
10 41	11 46	12 45	13 40	14 42	15 39	16 38
17 39	18 36	19 40	20 37	21 38	22 38	23 38
24 39	25 39	26 36	27 38	28 40		

Note: The data listed above is preliminary and represents the highest air quality index readings in the region for each day.



# Wood Smoke Enforcement

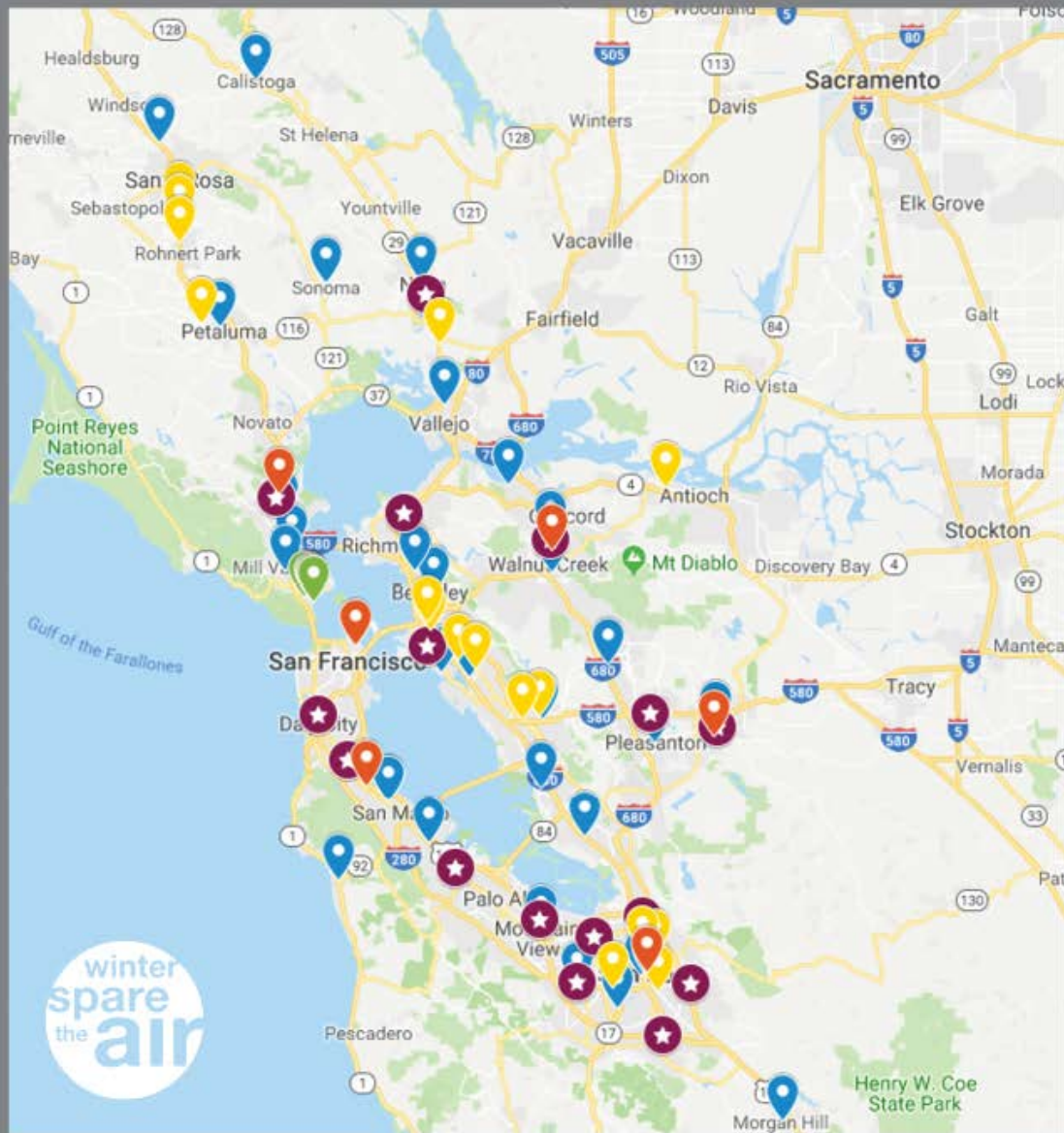
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
<b>WSTA Alerts</b>	15	10	30	23	1	7	19	<b>16</b>
<b>PM<sub>2.5</sub> Excesses</b>	11	1	15	6	0	0	8	<b>14*</b>
<b>Complaints</b>	3,777	2,316	5,091	3,834	1,302	1,564	2,177	<b>1,319</b>
<b>Info Packets</b>	11,476	3,720	1,768	2,029	577	577	1,206	<b>810</b>
<b>Violations</b>	359	178	267	155	1	91	128	<b>45**</b>
<b>Exemptions</b>	76	91	150	193 + 23 Seasonal	215 + 1 Seasonal	129 + 1 Seasonal	132 Reg + 4 Temp	<b>136 Reg + 7 Temp</b>

\*Exceedances due to wildfires

\*\*35 violations occurred during the Camp Fire



# Advertising



## WSTA 2018-19

### REGION-WIDE

(Includes multicultural)

- Digital
- Broadcast TV
- Cable TV
- Radio
- Print

### TARGETED

-  Winter Bicycle Events
-  Movie Theater Locations
-  Outdoor Locations/Eco Posters
-  Sausalito Flag Banners
-  Newspaper Locations

### TRANSIT/BUS ROUTES

#### AC Transit (Includes Multicultural)

- East Bay

#### Golden Gate Transit

- Marin/Sonoma Counties

#### Tri-Valley Transit

- Amador, Livermore, San Ramon Valleys

#### SMART Train

- Marin/Sonoma Counties

#### Vine Transit

- Napa County



- **Emphasis on personal community health**
- **2,479 stories**
  - 663 Television
  - 296 Radio
  - 1,520 Online/Print



**NEWS RELEASE**

FOR IMMEDIATE RELEASE: November 12, 2018  
CONTACT: Walter Wallace, 415.519.4628

**A Winter Spare the Air Alert is being extended through Friday, November 16, due to smoke impacts from the Butte County fire**  
*Use of wood-burning devices is prohibited this weekend*

**SAN FRANCISCO** – Due to heavy smoke moving into the Bay Area from the extensive Camp Fire in Butte County, the Air District is extending the Winter Spare the Air Alert through Friday, November 16.

**Burning wood, including manufactured fire logs or any other solid fuel, indoors or outdoors, is banned throughout this Winter Spare the Air Alert.**

The Bay Area is continuing to experience heavy smoke from the Camp Fire in Butte County. Air quality continues to be unhealthy through much of the region and these conditions are expected to persist through Friday at least. While weather conditions will vary somewhat throughout the week, air quality is expected to remain unhealthy because there is so much smoke trapped at the surface and surrounding the region.

**AIR QUALITY**

**Bay Area residents rethinking wood-burning fireplaces for the holidays**



As fireplaces heat up for the holiday season, some could experience the equivalent of the bad air the Bay Area saw during the recent wildfires. That has some people rethinking how they heat their homes.

**OPINION • GUEST COMMENTARY**

**Marin Voice: No one should have to breathe neighbors' wood smoke**

By FRED LURMANN | February 11, 2019 at 10:00 am

Bay Area residents don't need to be reminded how harmful it is to breathe smoke. They experienced firsthand the suffocating effects of the wildfire smoke just three months ago.

While the Camp Fire smoke exposure was out of our control, residential burning in a woodstove or fireplace is controllable. Imagine breathing smoke nightly in your neighborhood due to a neighbor who burns wood in their fireplace or wood-burning stove. Unfortunately, this is the situation for far too many Bay Area residents.

While the crisis of the wildfires has passed, it is important to remember that wood smoke pollution from residential wood burning can also be harmful. Home fireplaces or wood-burning stoves in a neighborhood can cause breathing difficulties and other serious health risks for those living...



**SFGATE LOCAL NEWS SPORTS REAL ESTATE BUSINESS A&E EAT + DRINK LIVING TRAVEL**



**Winter Spare The Air Season Ends With 16 Alerts**

Bay City News Service | Published 5:17 am PST, Tuesday, March 5, 2019



The Bay Area Air Quality Management District's Winter Spare the Air season ended with 16 alerts issued between November and February, almost all of them due to the devastating Camp Fire in Butte County that sent smoke throughout the region, district officials said Monday.

Only two of the alerts, which ban the burning of wood in the Bay Area, were caused by normal cold and still conditions that trap smoke and other pollutants near the ground, according to the air district.

Nearly two weeks of the alerts came from November's Camp Fire, which caused some of the unhealthiest air quality ever recorded in the region, air district officials said.

Air district executive officer Jack Broadbent said in a news release that the



# Outreach Results

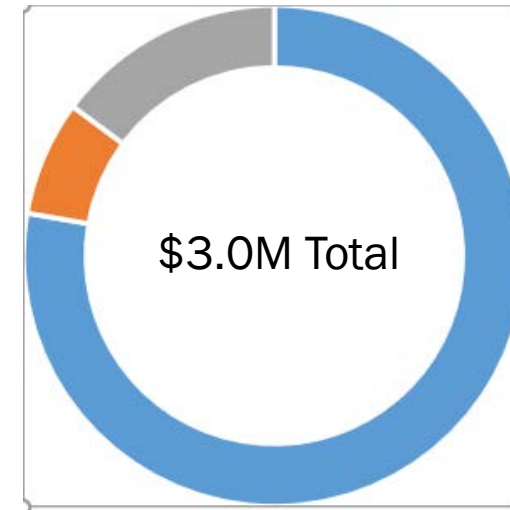
- Support for the wood smoke rule is strong at 75%
- 31% of households didn't burn wood or reduced burning due to Winter Spare the Air
- 62% heard, read or saw media stories about Winter Spare the Air program
- 50% aware that a Winter Spare the Air Alert had been called
- 78% think there are negative health effects associated with breathing wood smoke



# Wood Smoke Reduction Grant Program Results

- Program Launched on August 26, 2016
- As of 3/11/19: 5,215 applications reviewed
  - 991 changeouts completed totaling \$2.33 million
    - ✓ 800 fireplaces, 191 woodstoves
    - ✓ ~126 tons of PM emission reduced/yr

Project Type	# of projects
Decommission a Fireplace or Stove	61
Replace with Natural Gas	886
Replace with Electric Heat Pump	44



- Awarded and Paid (\$2.33M)
- Allocated (\$223k)
- Available (\$445k)

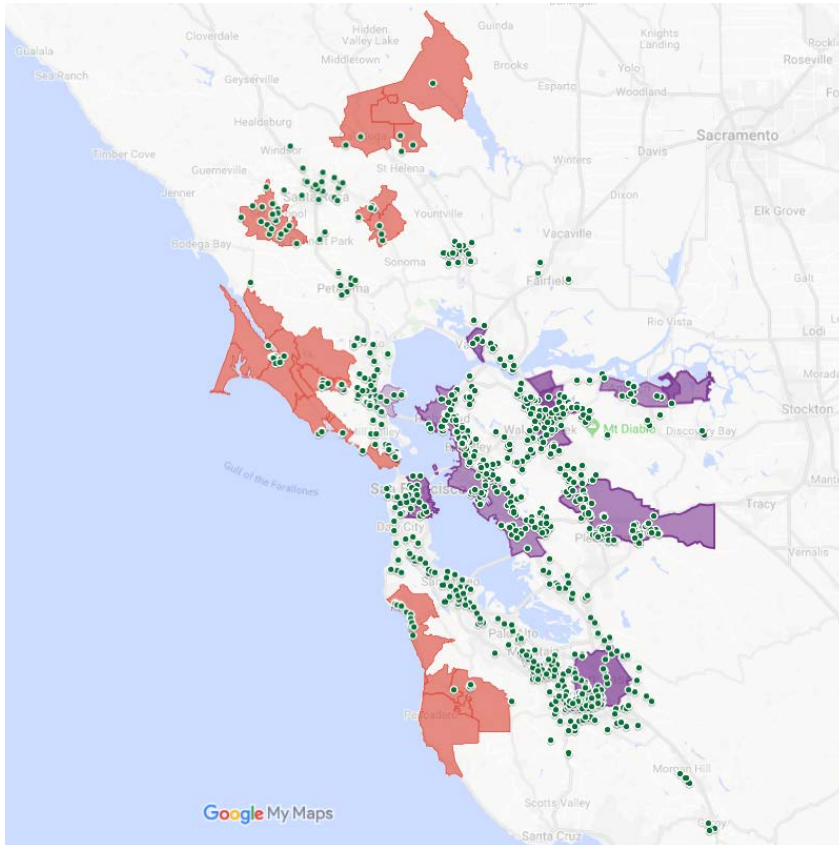
- 117 projects currently in progress
- Next Steps - Return to Executive Committee with proposal for 2019 program



# Wood Smoke Reduction Grant Program Results

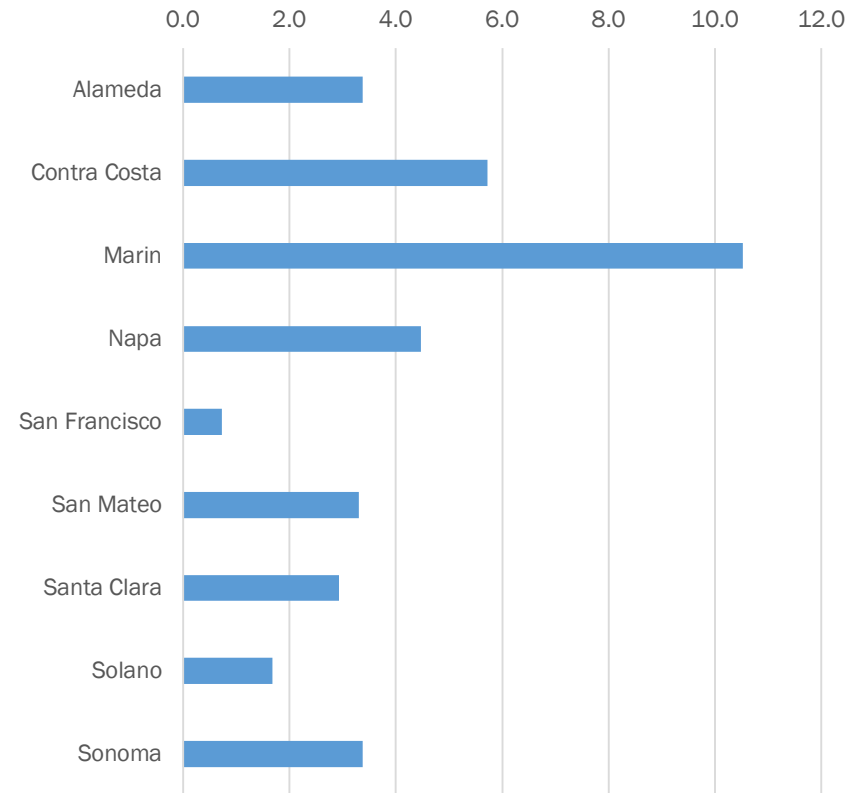
991 Total Changeouts (as of 3/11/19)

Distribution of projects by location



- High Woodsmoke Areas
- CARE Areas
- Awarded Projects

# of changeouts per 10,000 households



# Summary and Next Steps

- Continue Forecasting and Enforcement Program
- Evaluate the effectiveness of the Winter Spare the Air advertising and outreach campaign
- Evaluate the effectiveness of the Wood Smoke Reduction Incentive Program
- Return to Executive Committee with proposal for 2019 Incentive Program
- Adopt year round wood burning restrictions (Amend Regulation 6, Rule 3) consistent with the Wildfire Air Quality Response Program





# **Valero Refinery Incident Update**

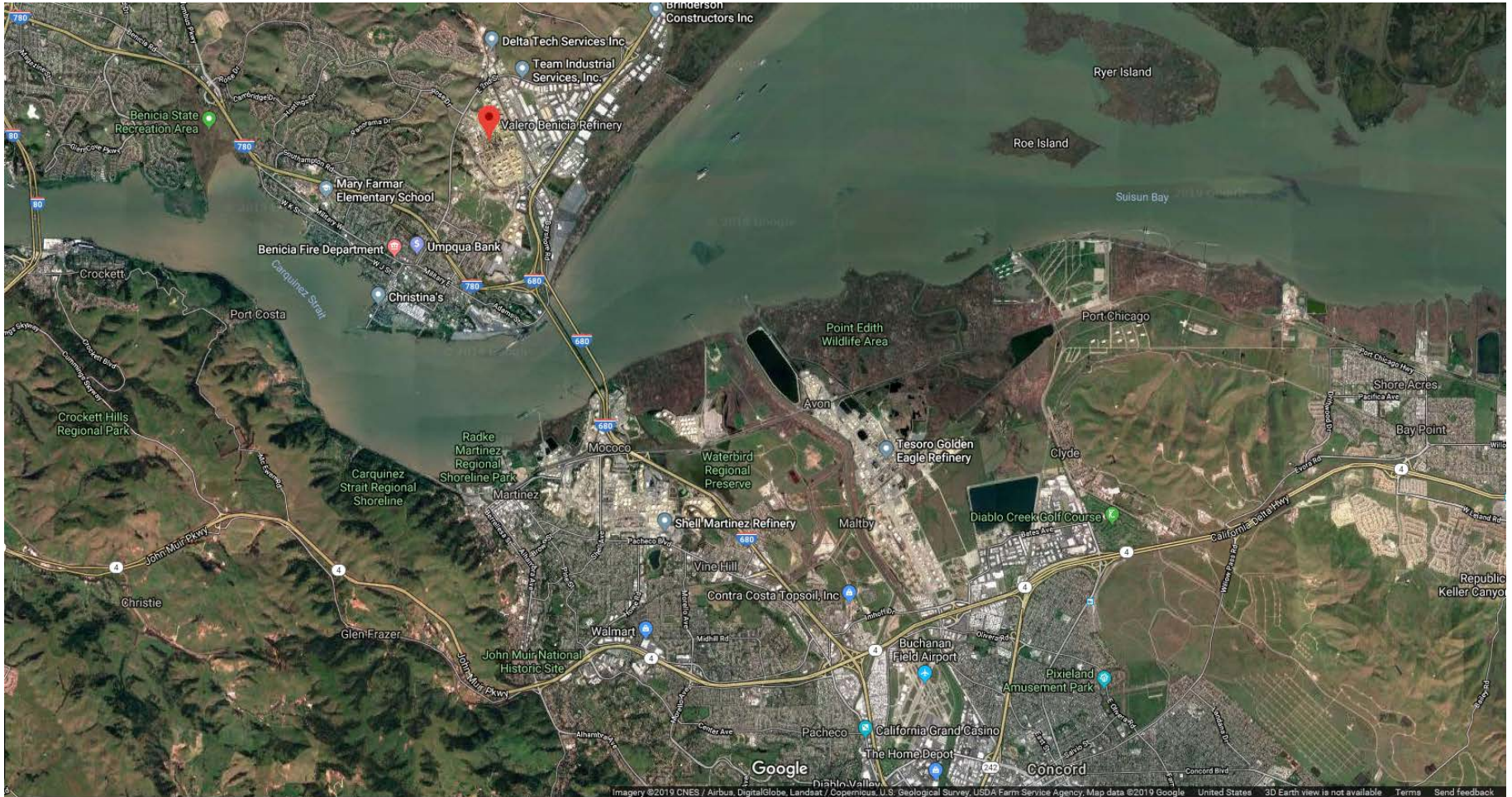
**Board of Directors Meeting  
April 3, 2019**

**Jack P. Broadbent  
Air Pollution Control Officer/APCO**

**Wayne Kino  
Deputy Air Pollution Control Officer**



# Area Overview



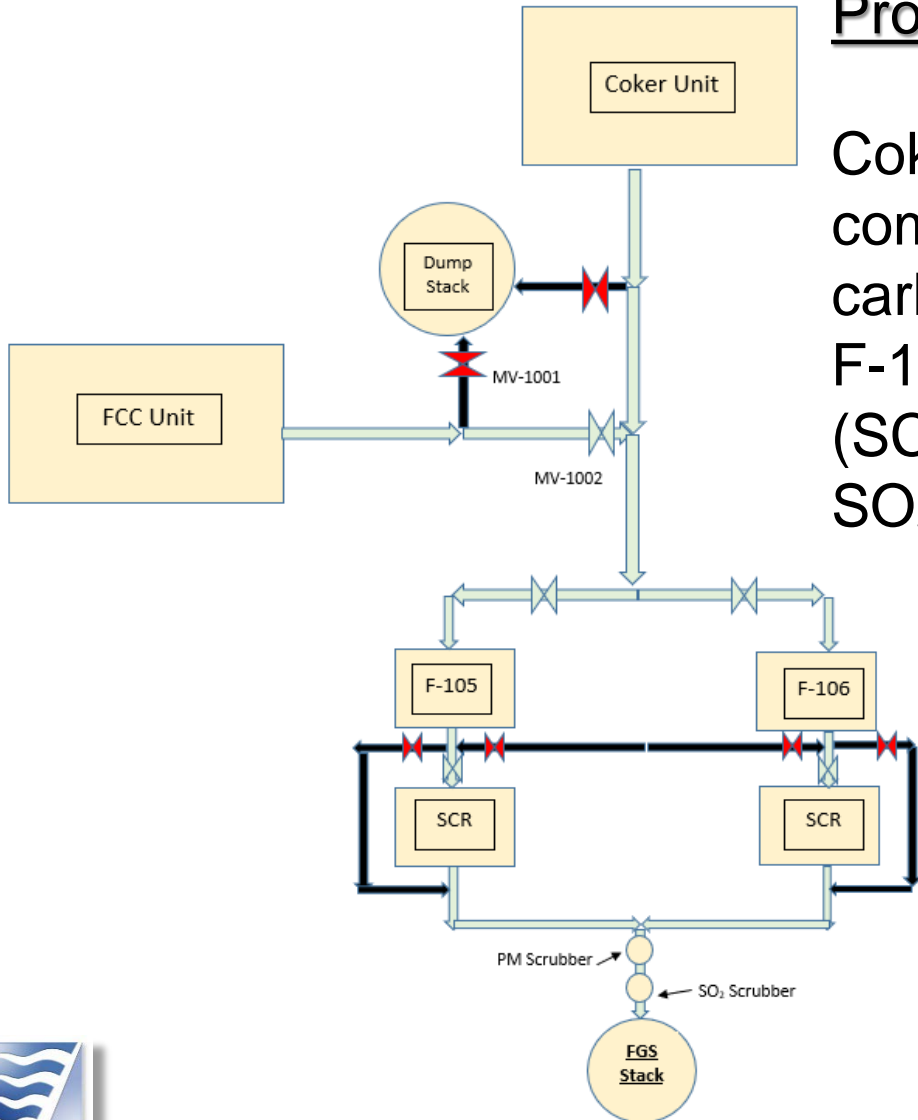
Imagery ©2019 CNES / Airbus, DigitalGlobe, Landsat / Copernicus, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2019 Google United States 3D Earth view is not available Terms Send feedback



# Process Stream Overview

## Process Flow

Coker and Fluid Catalytic Cracking Unit combined flue gas stream is abated by carbon monoxide (CO) boilers (F-105 & F-106), Selective Catalytic Reduction (SCR) units, Flue Gas Scrubber (PM & SO<sub>2</sub> Scrubbers).



# Valero Refinery Incident Update

## Incident Summary

March 11, 2019

- Planned Maintenance being performed on Valero's Coker Unit
- First unit upset began
- Continuous Emissions Monitor (CEM) data indicated carbon monoxide (CO) emissions in excess of the regulatory standard since March 11, 2019
- Visible Emissions from the Flue Gas Scrubber (FGS) Stack
  - Visible Emissions continued until March 15, 2019
- FGS is an emission control device



# Valero Refinery Incident Update (cont.)

## Incident Summary (cont.)

March 23, 2019

- Second incident began
- Nature of the contaminants in the flue gas stream had changed
- By Sunday, March 24, 2019, Valero investigators believed oil was leaking into flue gas from the Crude Unit



# Valero Refinery Incident Summary

## Next Steps

- Joint investigation with US EPA, Solano County Hazmat and the Benicia Fire Department
- Evaluation of Valero's maintenance and decision process to keep operating while in violation after March 12, 2019
- Root Cause Investigation



# Valero Refinery Incident Summary



## Violations

- 12 NOVs issued to Valero
- March 11, 2019 to March 14, 2019, excess visible emissions and Public Nuisance (8 NOVs)
- March 23, 2019 and March 24, 2019, excess visible emissions and Public Nuisance (4 NOVs)
- CO violation pending



# Questions





# Summary of Ozone Seasons

Year	National 8-Hour	State 1-Hour	State 8-Hour
2015*	5	4	11
2016	15	5	15
2017	6	6	6
2018	3	2	3
2019	-	-	-

Spare the Air Alerts: 6/22/18, 6/23/18, 6/30/18, 7/26/18, 8/8/18, 8/9/18, 8/18/18, 8/19/18, 8/23/18, 8/24/18, 9/3/18, 9/25/18, 9/26/18

Days > 0.070 ppm 8-hour NAAQS: 8/3/18, 8/9/18, 8/18/18

\*Based on NAAQS of 0.075 ppm that was in place during that year

# Calendar Year Summary

Year	National Ozone Exceedances	Days > 35 $\mu\text{g}/\text{m}^3$ due to Wildfires (PM <sub>2.5</sub> )	Total Days > 35 $\mu\text{g}/\text{m}^3$ (PM <sub>2.5</sub> )
2015	5*	3	9
2016	15	0	0
2017	6	14	18
2018	3	16	20
2019	-	0	0

For Ozone - Days > 0.070 ppm 8-hour NAAQS: 08/03/18, 8/9/18, 8/18/18

\* Based on NAAQS of 0.075 ppm that was in place during those years

For Wintertime - Days > 35  $\mu\text{g}/\text{m}^3$  24-hr NAAQS: 12/15/17, 12/24/17, 12/30/17, 12/31/17, 1/1/18, 1/2/18, 1/3/18, 1/4/18, 11/8/18 – 11/21/18

(Other exceedances occurred due to wildfires)