



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

*Executive Committee Meeting  
March 20, 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)*



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Bay Area Air Quality Management District  
Executive Committee Meeting

# Utilizing Aclima Mobile Monitoring and Associated Services

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March 20, 2019  
Eric Stevenson  
Director  
Meteorology and Measurements Division



# Need for Highly Localized Monitoring

## ❖ Current Regulatory Air Monitoring Network

- Over 30 stations throughout the Bay Area
- 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 study





# Why this Approach?

## ❖ 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 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
- Re-creation and implementation would take years to complete and result in significantly higher costs



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



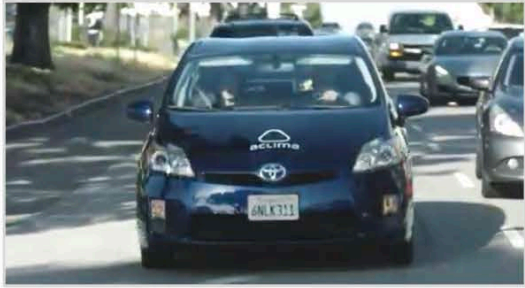
# Why this Approach? (Continued)

## ❖ Supported by Community

- 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 study 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



# 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.)





# What is Being Proposed?

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

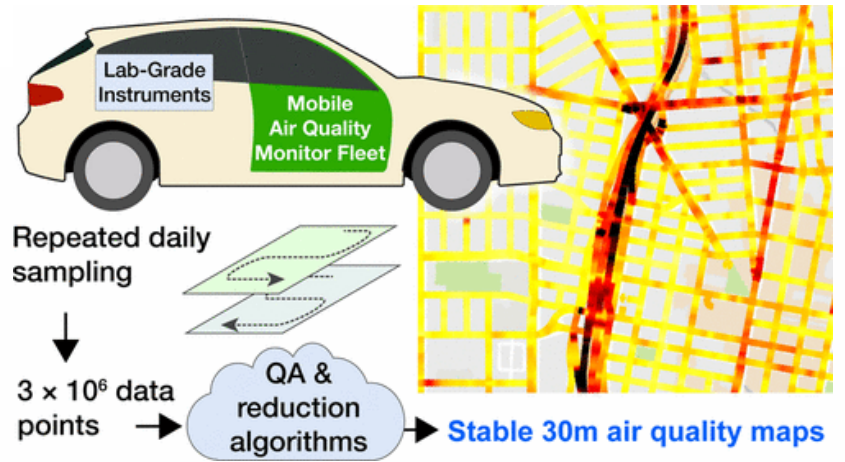
- Richmond completed in one quarter to help guide identification and investigation of “hot spots” that meets AB 617 timeline
- Bay Area-wide baseline to aid in determining differences in air quality on a highly localized scale

## ❖ Analytics and Website

- Provides data management and analytics for all mobile data and can include measurements from other platforms
- Website 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





# 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 10 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



# Funding

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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



# Recommended Action

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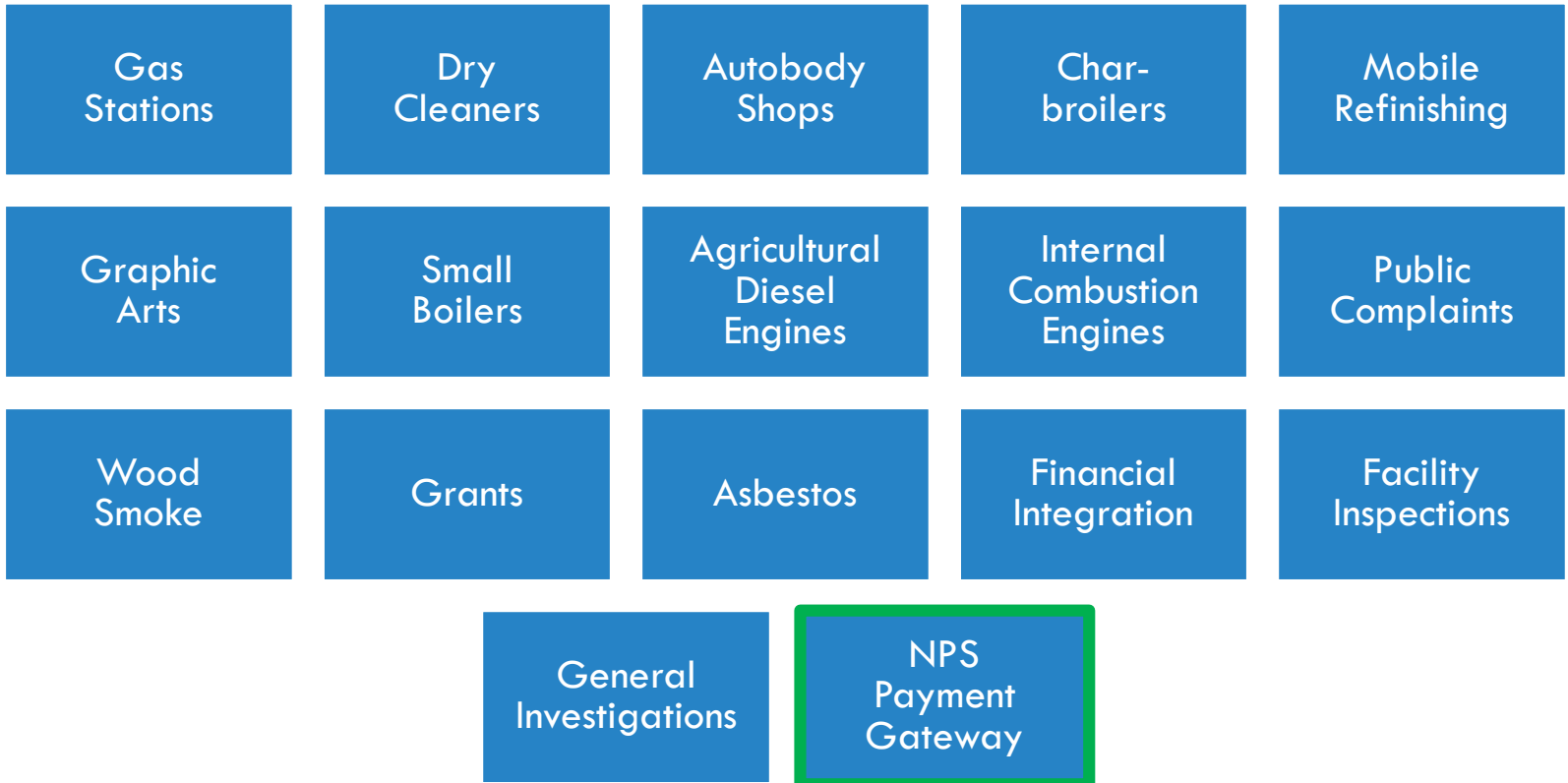
- Recommend to the Board of Directors to authorize the Executive Officer/APCO to execute a two-year Master Services Agreement (MSA) with Aclima in the amount not to exceed \$5,980,000 over two years for hyperlocal, background air quality mapping of the entire Bay Area, a data repository and web portal,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

# AUTHORIZATION TO EXECUTE CONTRACT AMENDMENTS FOR PRODUCTION SYSTEM OFFICE

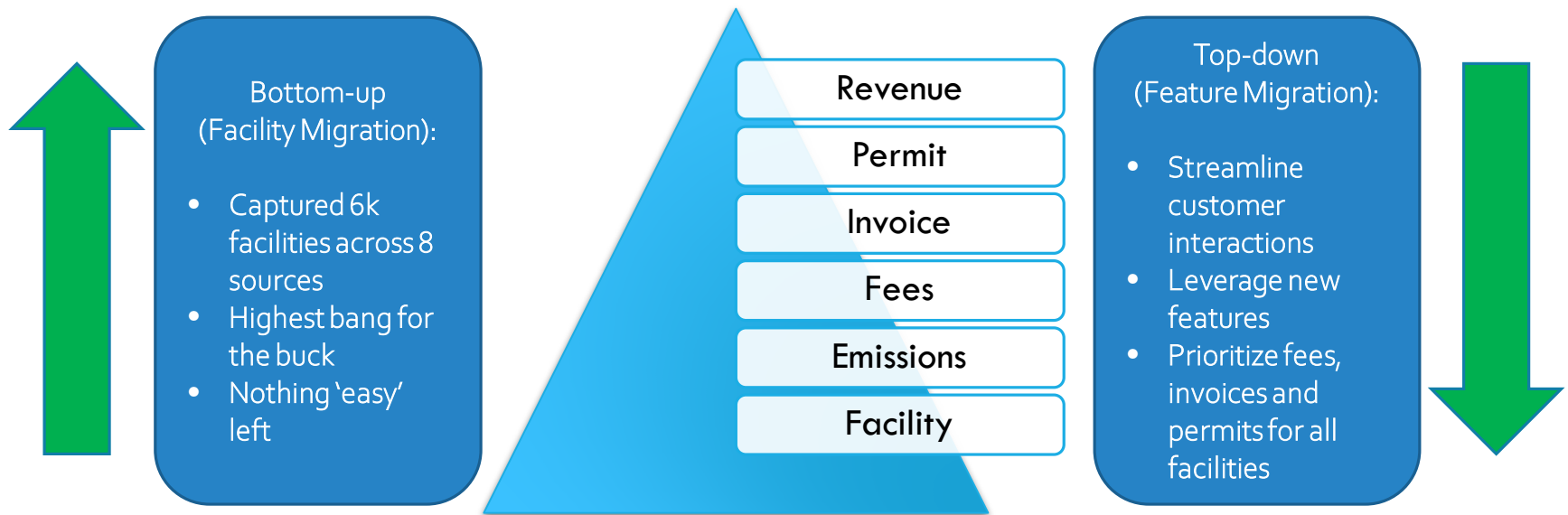
Executive Committee Meeting  
March 20, 2019  
Blair L. Adams



# PERMITTING AND COMPLIANCE SYSTEM: CURRENT FEATURES IN PRODUCTION



# CONCEPTUAL APPROACH: FEATURE MIGRATION



# REMAINING LEGACY FEATURES: ENFORCEMENT & COMPLIANCE

Data Transfer  
Databank <> NPS

Financial Integration  
Databank <> NPS <> JDE

Ingres Relationship Information System (IRIS)

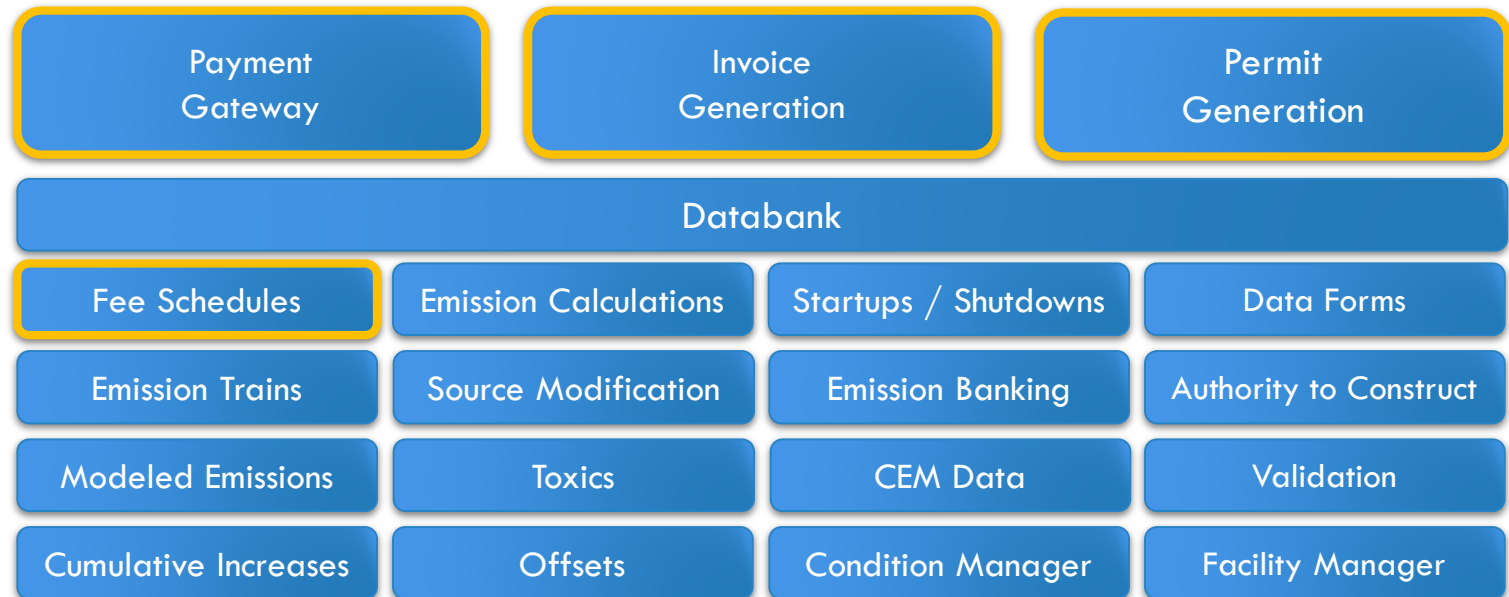
Notice to Comply / Notice  
of Violation / Mutual  
Settlement

Radio Telephone  
Operators Complaints

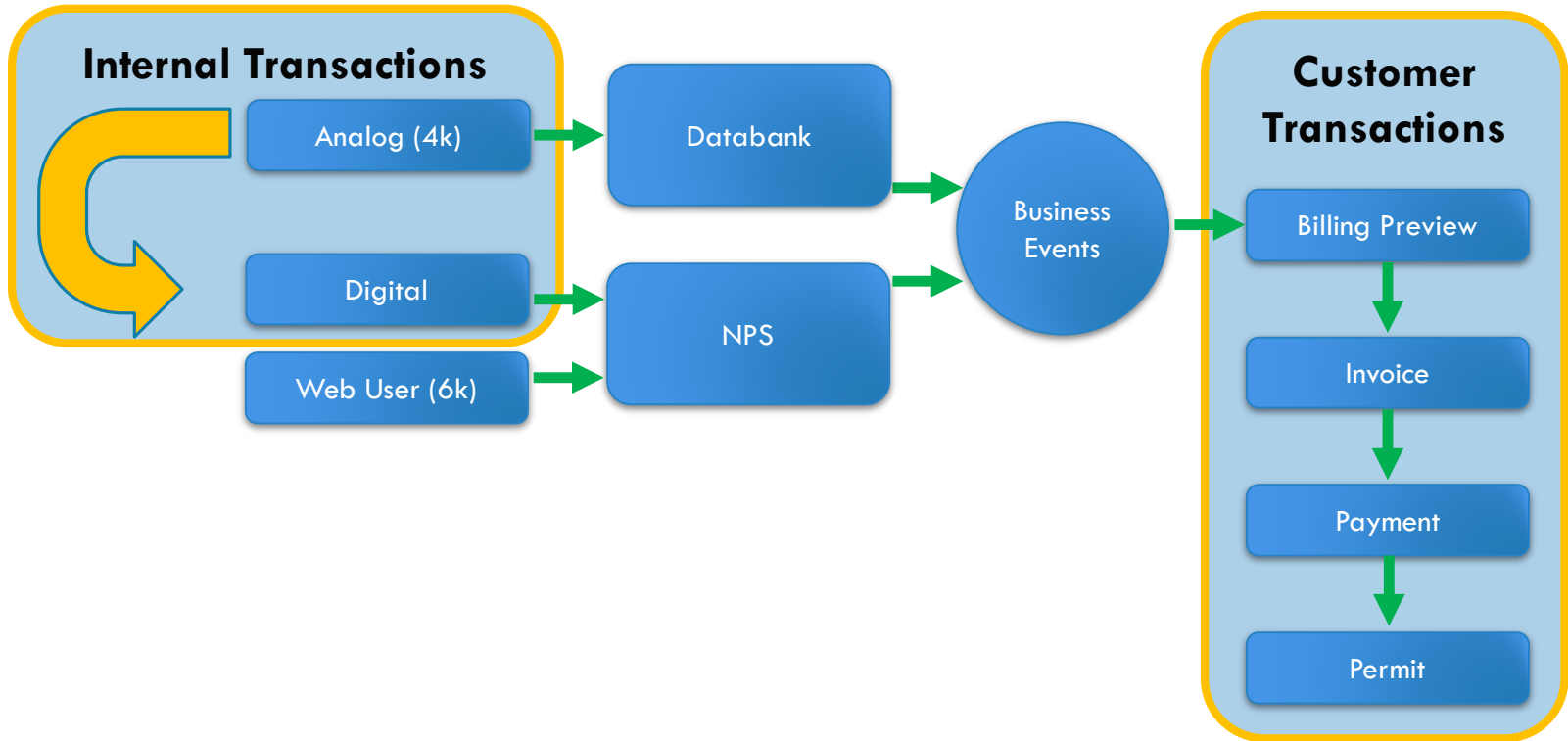
Stipulated Abatement  
Orders

Reportable Compliance  
Activities

# REMAINING LEGACY FEATURES: PERMITTING SYSTEM



# CONCEPTUAL INFORMATION FLOW DIAGRAM



# PARALLEL DEVELOPMENT TRACKS












Revenue and Reporting

Renewals and Applications (12-15)

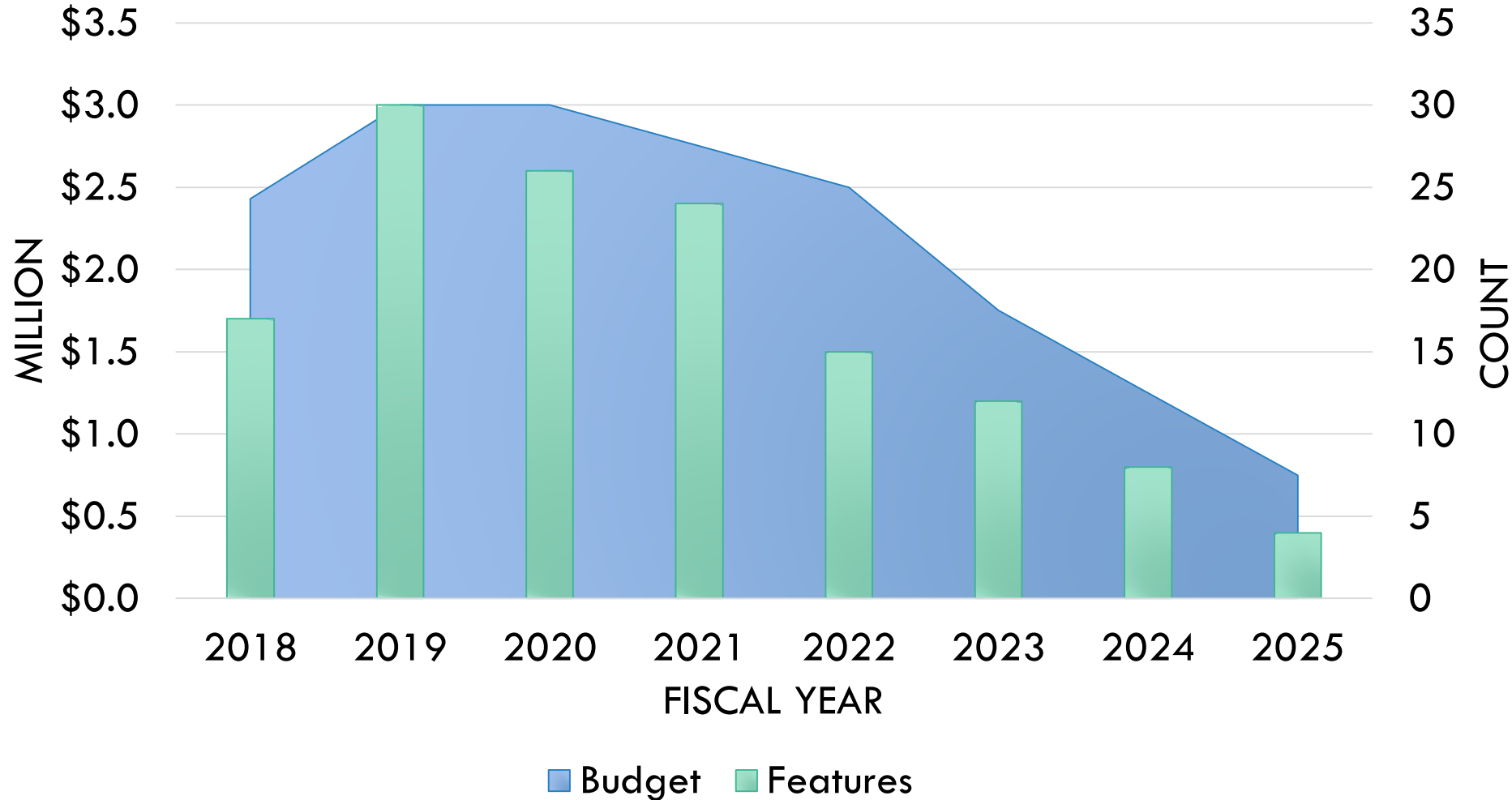
Renewals and Applications Refactor

Data Transfer and Integration

# SCHEDULE OVERVIEW: LEGACY TRANSITION

Epic	Description	2019 Q1	2019 Q2	2019 Q4	2021 Q1	2022 Q1	2023 Q1
0	Payment Gateway						
1	Business Events						
2	Renewals: 12-15 facilities						
3	Applications: 12-15 facilities						
4	All remaining facilities						
5	IRIS: Remaining modules						

# BUDGET AND FEATURE ESTIMATES



\* Estimated based on current scope, does not include AB617 requirements



# RECOMMENDED ACTION

Recommend the Board of Directors:

1. Approve contract amendments in the amount of \$1,495,303 as shown in Table 1; and
2. Authorize the Executive Officer/APCO to execute contract amendments.



# QUESTIONS

[badams@baaqmd.gov](mailto:badams@baaqmd.gov)



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

# **Build-Out of a Portion of the Richmond, Lakeside Drive Building**

**Executive Committee Meeting  
March 20, 2019**

Jeff McKay  
Chief Financial Officer



# BACKGROUND

## Richmond, Lakeside Build-Out

- Building purchase completed in December 2018
- Lease back from previous owner until January 2020
- 7,300 square feet currently available to Air District
- Not less than three bidders for General Contractor
- Continuing contract for cubicles and furniture
- Continuing contracts for I.T.



# DESCRIPTION OF BUILD-OUT

## Richmond, Lakeside Property

- 7,300 square feet
- Twenty-Eight Cubicles
- Six Offices
- Two Meeting Rooms
- One Copy Room
- One Pantry
- One Server Room
- Restrooms



# ESTIMATED COST OF BUILD-OUT

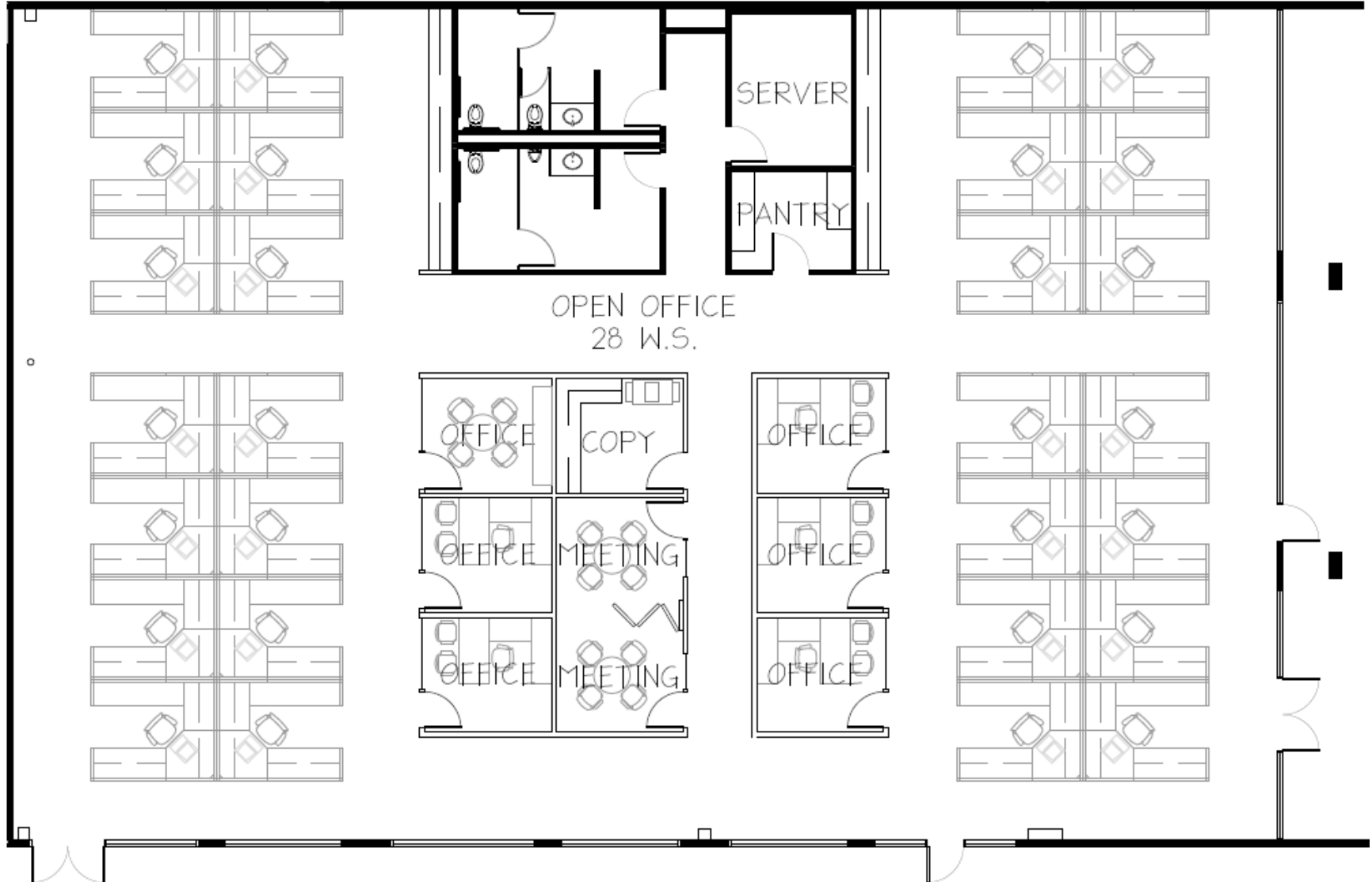
## Richmond, Lakeside Property

(\$ K)

General Contractor	\$ 345
Furnishings	\$ 321
Electrical	\$ 241
IT	\$ 225
Mechanical	\$ 161
Ceiling	\$ 80
Drywall	\$ 72
ADA	\$ 64
Cabinets	\$ 48
Flooring	\$ 40
<u>Contingency</u>	<u>\$ 183</u>
<b>TOTAL</b>	<b>\$ 1,780</b>



# DIAGRAM OF BUILD-OUT Richmond, Lakeside Property





# FUNDING FOR BUILD OUT Richmond, Lakeside Property

The proposed FYE 2020 budget includes \$4 M from reserves for Richmond, Lakeside build out. Reserves are currently \$30 M against a \$20 M policy minimum.





## RECOMMENDED ACTION

Recommend the Board of Directors authorize the Executive Officer/APCO to obtain bids and execute contracts to build out approximately 7,300 square feet of the Richmond, Lakeside building with cubicles and offices, in an amount not to exceed \$1,800,000.

# 2018 - 19 Winter Spare the Air Program Overview



**Eric Stevenson, Director of Meteorology & Measurement**  
**Jeff Gove, Director of Compliance & Enforcement**  
**Lisa Fasano, Communications Officer**

**Executive Committee Meeting**  
**March 20, 2019**

# Presentation Outline

- Season Overview
- Enforcement
- Outreach
- Wood Smoke Reduction Incentive Program
- Summary and Next Steps



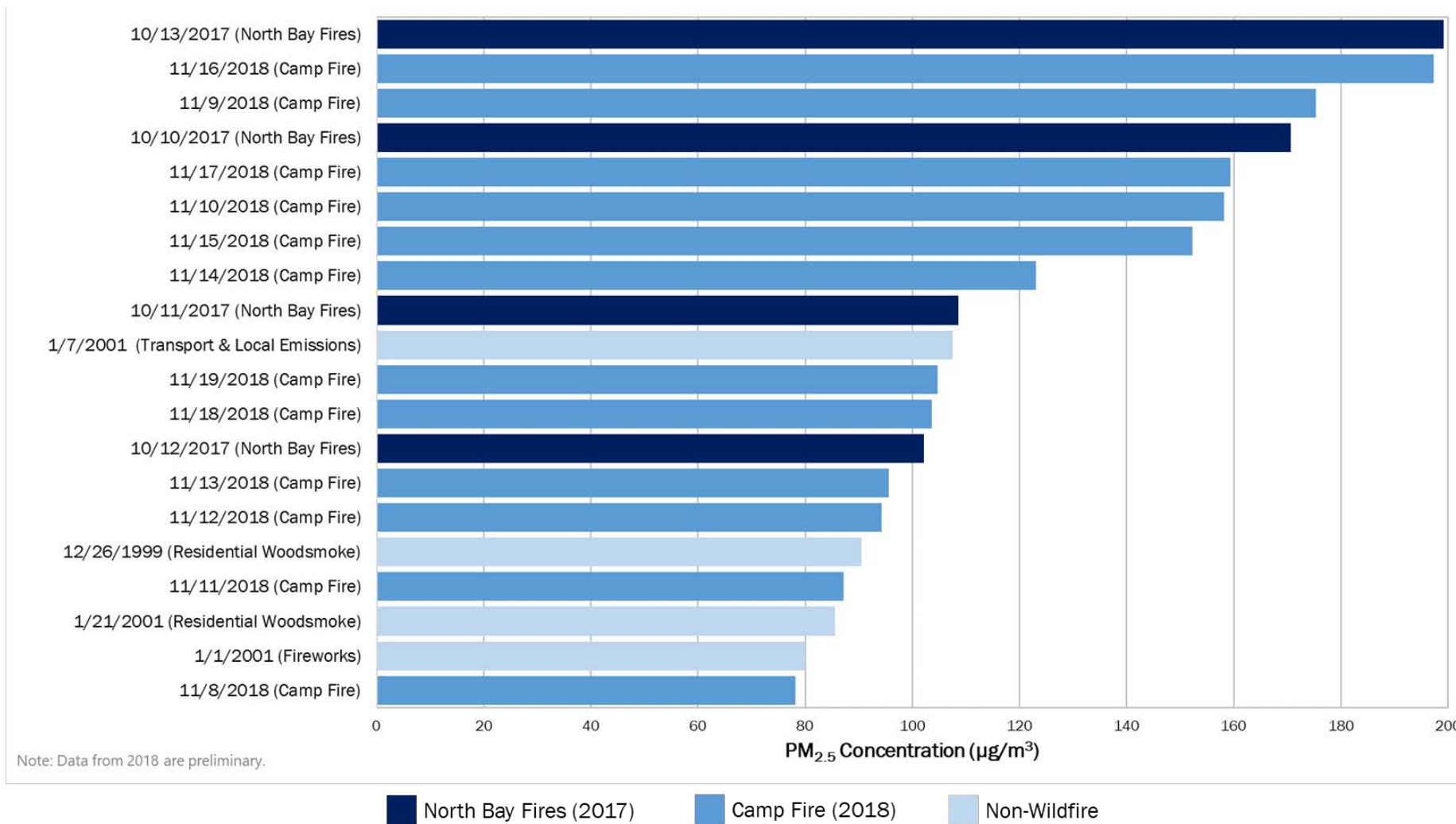
# Winter PM<sub>2.5</sub> Seasons

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)

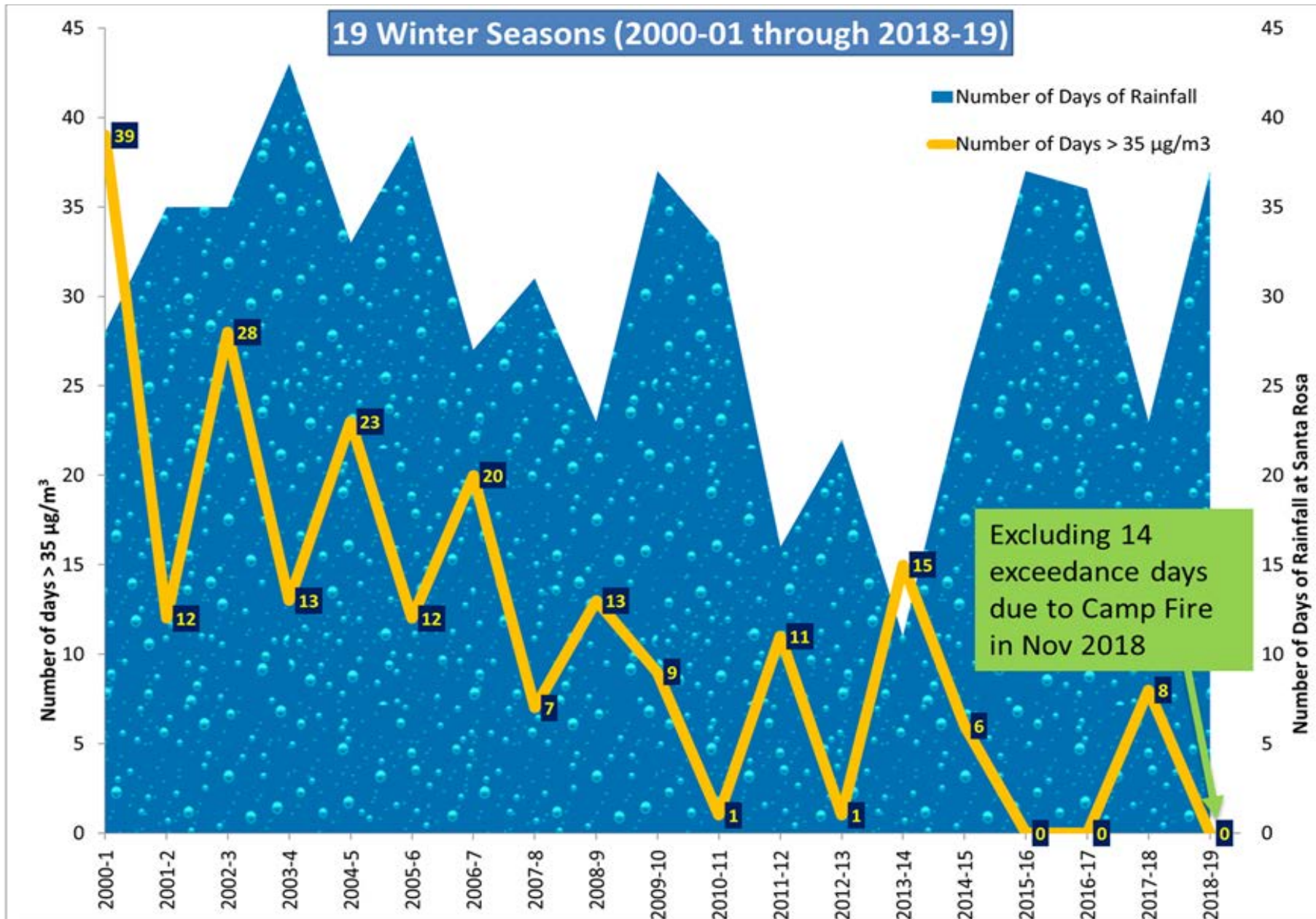


# 20 Worst PM<sub>2.5</sub> Days in the Bay Area (Since 1999)

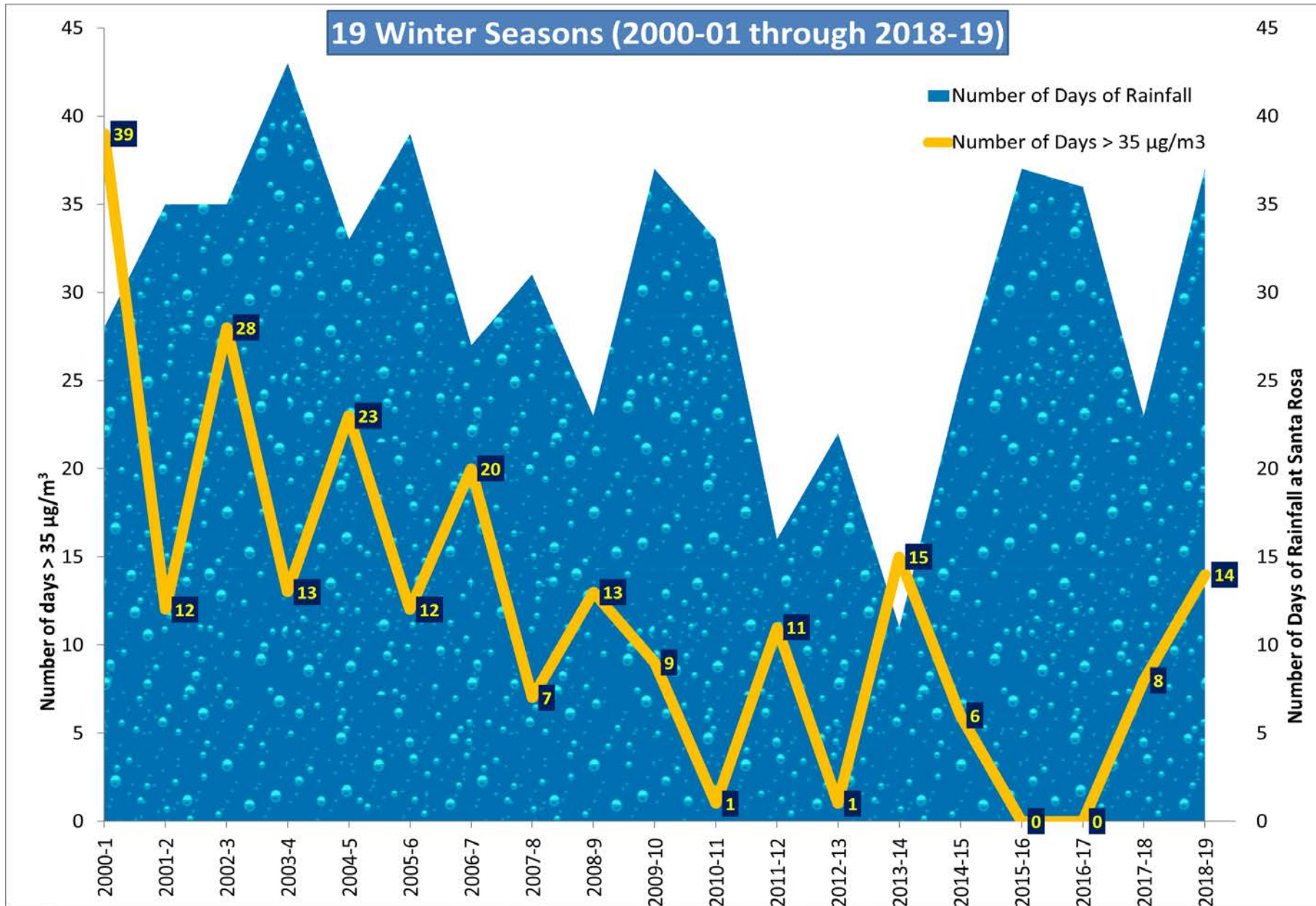


- 4 of these days are from North Bay Fires in 2017
- 12 of these days are from Camp Fire in 2018

# Less Rainfall = More PM Pollution



# 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



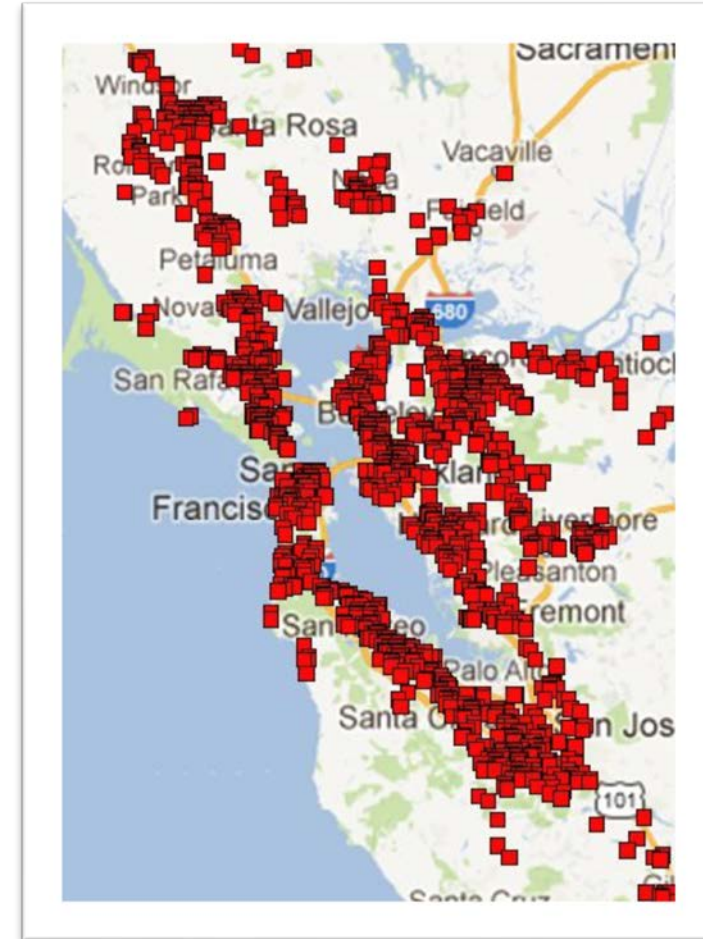
# Enforcement Highlights

- Violations: 45
  - 42 - 1<sup>st</sup> Notice of Violation (NOV) Wood Smoke Awareness Course or \$100 penalty
  - 3 - 2<sup>nd</sup> NOV \$500 (increased with additional NOVs)
  - Total Exemptions – 136 Registered EPA Certified Devices, 7 Temporary Exemptions for broken heaters
- Complaints: 1,319
  - 34 addresses with 5 or more complaints
  - 8 addresses with 10 or more complaints
  - 2 addresses with 20 or more complaints



# Enforcement Practices

- Complaint information is used to determine patrols and to concentrate enforcement on locations with multiple complaints
- Patrol deployment varied throughout the season
- Violations are documented and issued when discovered



# Advertising



今年冬天您家中是否煙霧瀰漫？呼吸燒木材的煙非常不健康。

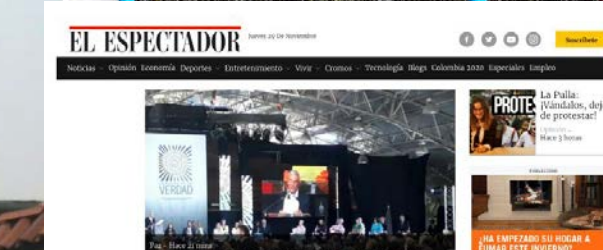
您的空氣，一定得保護。

1-877-466-2876 SpareTheAirNow.org

ADVERTISEMENT

HAS YOUR HOME TAKEN UP SMOKING THIS WINTER? Breathing wood smoke is unhealthy.

It's your air, protect it. 1-877-4NO-BURN SpareTheAir.org

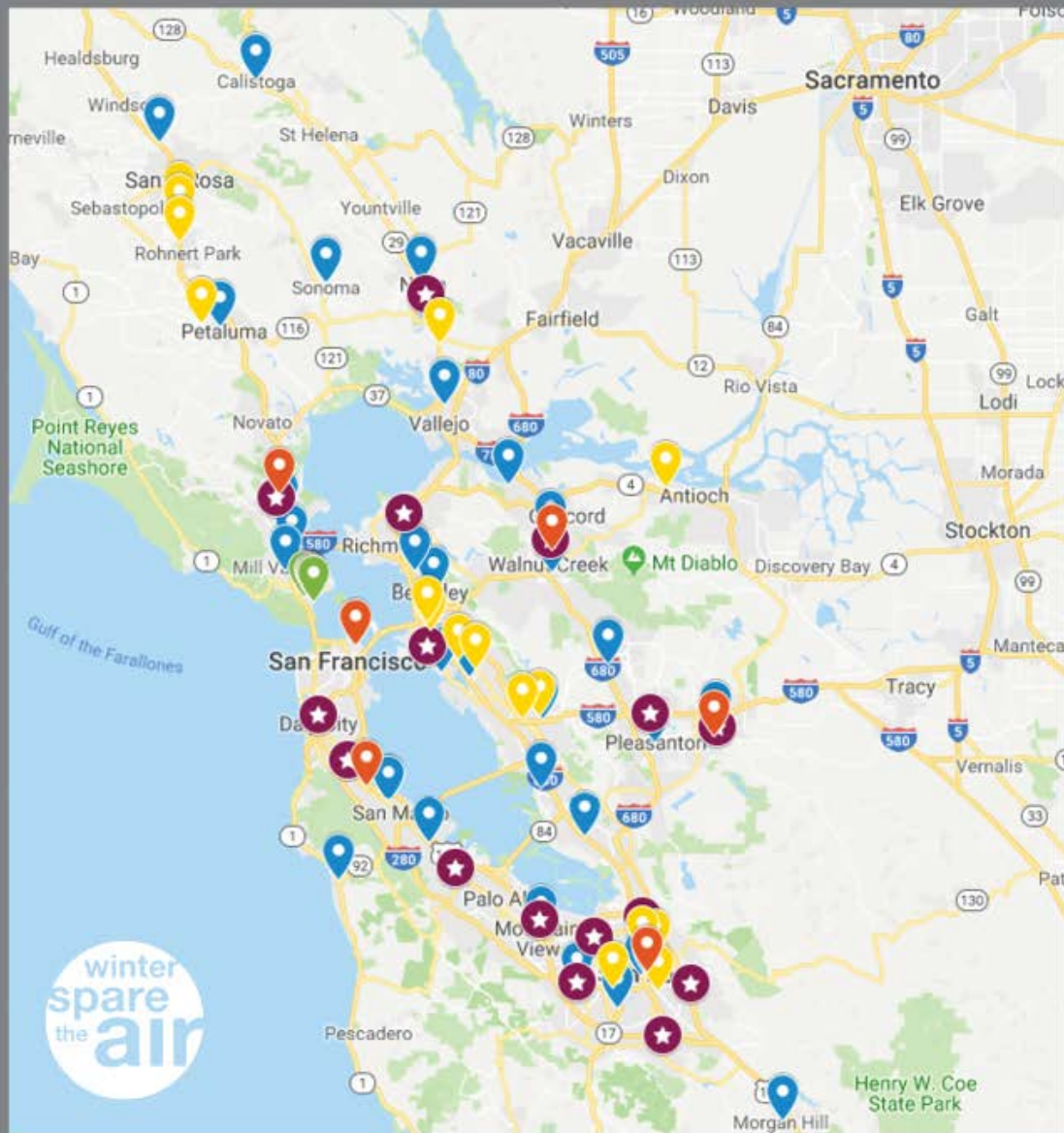


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您的空氣，一定得保護。

1-877-466-2876 SpareTheAirNow.org

# 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**



EMBED <-> MORE VIDEOS ▶

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...

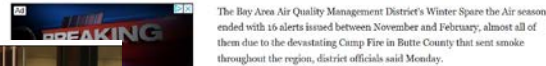


**SFGATE** LOCAL NEWS SPORTS REAL ESTATE BUSINESS A&E EAT + DRINK LIVING TRAVEL



**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



Guy Posts Selfie With His Dog. Police Say It Aint' Right To Like Livestream



# Outreach Results

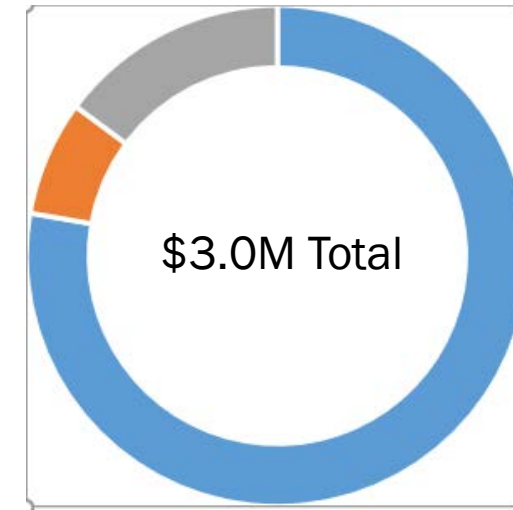
- Support for the wood smoke rule is strong at 75%
- 31% of households didn't burn wood or reduced burning due to Winter Spare the Air
- 62% heard, read or saw media stories about Winter Spare the Air program
- 50% aware that a Winter Spare the Air Alert had been called
- 78% think there are negative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

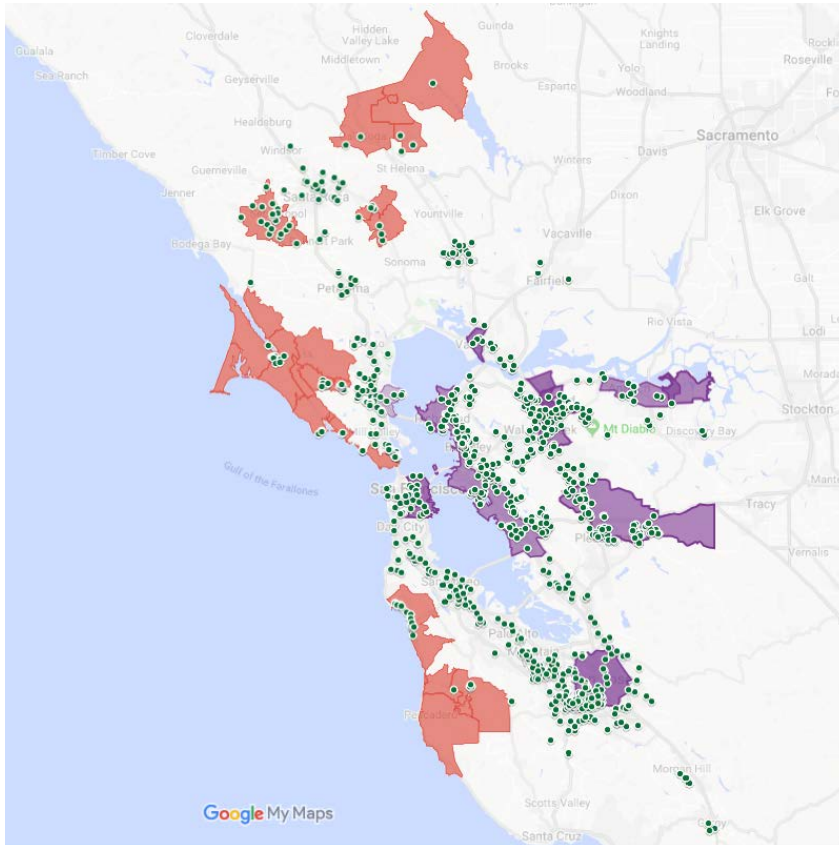




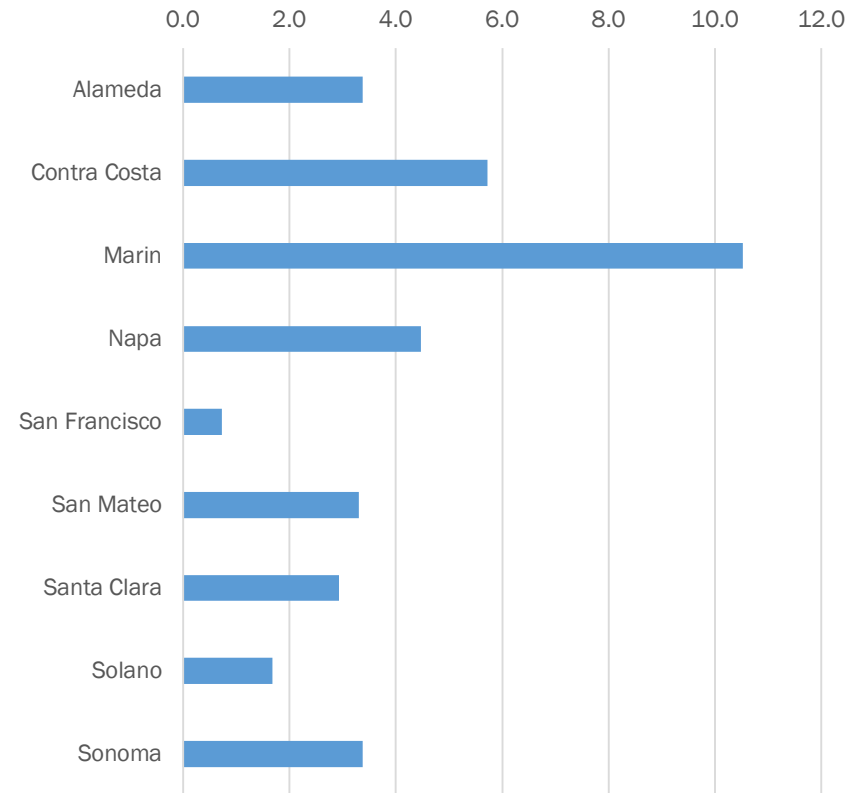
# Wood Smoke Reduction Grant Program Results

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

Distribution of projects by location



# of changeouts per 10,000 households



- High Woodsmoke Areas
- Awarded Projects
- CARE Areas



# Summary and Next Steps

- Continue Forecasting and Enforcement Program
- Integrate wood burning restrictions with Wildfire Air Quality Response 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

