Discussion on Election of Officers

Advisory Council Meeting
July 29, 2019

Jack P. Broadbent
Executive Officer/APCO
Policy for Election of Advisory Council Officers

- Per Health and Safety Code Section 40267, the Council shall select a Chairperson and Vice Chairperson and such other officers as it deems necessary.

- The Advisory Council has the authority to implement a policy for election of officers, including frequency of election, and duration of office.
Suggested Policy

• The Advisory Council shall elect a Chairperson and Vice Chairperson.

• Elections shall occur annually as the first item in the second meeting of the year.

• Election requires a majority vote of a quorum of the Advisory Council.
Community-Scale Assessments of Air Pollution Impacts to Support Assembly Bill (AB) 617
Overview

- October 2018 Advisory Council Meeting: Questions about metrics and targets
  - How to set equity-based targets for AB 617 assessments?
  - How can we relate PM$_{2.5}$ concentration to a risk?
  - What level of PM$_{2.5}$ is health protective?

- Progress on new approach for equity based-targets: Working with community partners on AB 617

- Draft ideas for PM$_{2.5}$ risk assessment
Bay Area PM$_{2.5}$ Trending Down, BUT

- Health benefits below standard
- Health impacts from near-source exposures
- Population & vehicle miles increasing
- Wildfires projected to continue
AB 617 Communities

Year 1
West Oakland - action plan
Richmond - monitoring

Years 2-5
• West Oakland Indicators Project strong community partner to lead effort

• Very high mobile source emissions
  o Port of Oakland largest single source of diesel particulate matter (DPM)
  o Roadways contribute significantly to PM$_{2.5}$

• High health burdens and socio-economic vulnerabilities

• Previous studies: truck survey, measurements, emissions inventories, and modeling
Modeling-Based Technical Assessment

- Regional-scale, grid-based modeling for Bay Area
- Community-scale, plume dispersion-based modeling for West Oakland
- Regional modeling emissions “zeroed out” in community-scale modeling area
West Oakland detailed emissions inventory

- Each source modeled individually to support source apportionment
Community-Scale Emissions Inventory

- Community-scale modeling for sources with known locations

- Not included:
  - construction
  - wood burning
  - restaurants
PM$_{2.5}$ Regional Modeling: Primary & Secondary Contributions

- Total PM$_{2.5}$
- Primary PM$_{2.5}$ (about 53%)
- Secondary PM$_{2.5}$ (about 47%)
How Much is Local?

Modeled Impact, on Residential PM$_{2.5}$, of Local (versus Regional) Emissions

Top Local Contributors*

- Road Dust (38%)
- On-Road Vehicles (27%)
- Permitted (17%)

* PM$_{2.5}$ from cooking and construction not modeled
How Much is Local?

Cancer Risk

Modeled Impact, on Residential Cancer Risk, of Local (versus Regional) Emissions of Toxic Air Contaminants

Top Local Contributors*
- Trucks (39%)
- Marine Vessels (31%)
- Rail (17%)

* cancer risk from construction was not modeled
### Modeled Impact of Local Sources on Residential Cancer Risk

#### Top Local Contributors
- Trucks (39%)
- Marine Vessels (31%)
- Rail (17%)

* cancer risk from construction was not modeled

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#### Impacts on Cancer Risk (30-yr, per million)

<table>
<thead>
<tr>
<th>Source</th>
<th>Impact (per million)</th>
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<tr>
<td>Highway</td>
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<tr>
<td>Non-truck vehicles</td>
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<tr>
<td>Light HD trucks</td>
<td>1.6</td>
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<tr>
<td>Street</td>
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<tr>
<td>Heavy/Medium HD trucks</td>
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<tr>
<td>Non-truck vehicles</td>
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<tr>
<td>Light HD trucks</td>
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<tr>
<td>Port</td>
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<td>Harbor craft</td>
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<tr>
<td>OGV (berthing)</td>
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<td>OGV (maneuvering)</td>
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<tr>
<td>Dredging</td>
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<td>Drayage trucks*</td>
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<td>Cargo handling</td>
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<td>Railyard (OGRE)</td>
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<tr>
<td>Railyard (BNSF)</td>
<td>1.6</td>
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<tr>
<td>Bunkering (tugs + pumps)</td>
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<tr>
<td>Non-truck vehicles</td>
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<tr>
<td>Rail</td>
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<tr>
<td>Railyard (UP)</td>
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<tr>
<td>Rail lines</td>
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<tr>
<td>EBMUD</td>
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<tr>
<td>Other</td>
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<tr>
<td>Schnitzer (ships)</td>
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<tr>
<td>Truck-related businesses</td>
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<tr>
<td>Schnitzer (trucks)</td>
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</table>

**Total: 204.2**

*Drayage trucks at any location (Port, street, or highway).*

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Residential impacts from modeled local sources only.
Impact Zones

- Community partners used black carbon (BC) measurements to identify impact zones
- From West Oakland Google/EDF driving study

Maps produced by Environmental Defense Fund (EDF)

Black carbon levels above Oakland study area median

- BC > 0.5 micrograms/m³
- Residential parcels
Plan Goals: Remove Air Quality Disparities

**By 2025:** All neighborhoods to reach levels of the “average” West Oakland neighborhood today.

**By 2030:** All neighborhoods to reach levels of the “cleanest” West Oakland neighborhood today.

Most Impacted Neighborhoods

- **W Prescott**
  - 46% Port, 26% Rail, 23% Truck

- **Third St**
  - 42% Port, 33% Rail, 18% Truck

- **Seventh St**
  - 35% Port, 15% Rail, 44% Truck

- **Acorn**
  - 42% Port, 16% Rail, 35% Truck
Cancer Risk

Source apportionments drill down into what’s responsible

Cancer Risk (30-yr, per million)

West Prescott  Third St  Seventh St  Acorn  Adeline  Clawson  W Grand & San Pablo

Highway  Street  Port  Rail  Permitted  Permitted  Permitted  Permitted

2025 target: 200/million

2030 target: 120/million

DRAFT 2019-07-08
Local Impacts

Source apportionments drill down into what’s responsible, block by block
PM$_{2.5}$

Source apportionments drill down into what’s responsible

- West Prescott: 2.1 μg/m$^3$
- Third St: 1.5 μg/m$^3$
- Seventh St: 2.1 μg/m$^3$
- Acorn: 1.8 μg/m$^3$
- Adeline: 1.9 μg/m$^3$
- Clawson: 2.1 μg/m$^3$
- W Grand & San Pablo: 1.5 μg/m$^3$

2025 target: 1.7 μg/m$^3$
2030 target: 1.2 μg/m$^3$
$$PM_{2.5}$$

Source apportionments drill down into what’s responsible

38%  
... of these* $$PM_{2.5}$$ impacts on West Prescott are attributed to stationary sources.

CA Waste and Pinnacle Ag (indicated on the map at right) account for four-fifths of that.

* $$PM_{2.5}$$ impacts from “modeled local sources”, as depicted in maps. Excludes construction dust and commercial cooking. (See Draft Plan for details.)
PM$_{2.5}$

Source apportionments drill down into what’s responsible

43%  
... of these* PM$_{2.5}$ impacts on West Prescott are attributed to highways and streets.

Road dust accounts for half of that. (The rest is from tailpipe exhaust, brake wear, and tire wear.)

* PM$_{2.5}$ impacts from "modeled local sources", as depicted in maps. Excludes construction dust and commercial cooking. (See Draft Plan for details.)
Risk-Assessment Approach for PM$_{2.5}$

- The Air District is working with the US EPA and the Office of Environmental Health Hazard Assessment (OEHHA) to assess health risks from facility PM$_{2.5}$ releases
  - Similar to health risk assessments from toxic air contaminants conducted for facilities

- Approach to account for *existing community health* records and *PM$_{2.5}$ levels* to assess
  - Increased risk of death
  - Increase risk of heart attack
DRAFT
Risk-Assessment Approach for PM$_{2.5}$

Test Facility:

- Use modeling setup for West Oakland
- Relatively simple winds in West Oakland
DRAFT
Risk-Assessment Approach for PM$_{2.5}$

Approach similar to US EPA's BenMAP model

PM Mortality “Risk” from

- County baseline mortality rate
- Increment in PM$_{2.5}$ concentrations
- Census block population characteristics
Assessing Impacts from Large Stationary Sources

- Standard regional-scale models cannot track near-field impacts from individual sources - not fine-grained enough

- Standard dispersion models cannot track emissions in areas with complex wind patterns from hilly terrain or wind shear

- District staff are currently evaluating alternative modeling approaches:
  - Sub-grid plume tracking or puff models

Examples:
- Refineries
- Large cement plant
Next Steps

- Use community-scale modeling - with enhanced emission estimates - to assess potential impacts on nearby residents.
- Use relative air pollution levels within the community to set equity-based targets.
- Continue to develop a risk assessment approach for PM$_{2.5}$.
- Investigate approaches to assess potential near-source impacts from large permitted sources with tall stacks in areas with complex winds.
Update on Wildfire Response Efforts

- Tracy Lee, Compliance & Enforcement Manager
- Alan Abbs, Legislative Officer
- Lisa Fasano, Communications Officer
- Judy Cutino, DO, PE, Health Officer
Presentation Overview

- Local and Regional Particulate Matter (PM) from Wildfires

- Wildfire Air Quality Response Program
  - Rule Development
  - Legislative Initiatives
  - Grants and Incentives
  - Partnership and Regional Alliance
  - Community Information and Resources

- Health Effects - PM and Wildfire Smoke
Local and Regional PM from Wildfires

20 HIGHEST BAY AREA PARTICULATE POLLUTION DAYS SINCE 1999

WILDFIRES are increasingly devastating for our communities and greatly impact the air quality of the region.

### PM$_{2.5}$ Concentration (µg/m$^3$)

- 11/19/18 - Camp Fire
- 11/18/18 - Camp Fire
- 11/17/18 - Camp Fire
- 11/16/18 - Camp Fire
- 11/15/18 - Camp Fire
- 11/14/18 - Camp Fire
- 11/13/18 - Camp Fire
- 11/12/18 - Camp Fire
- 11/11/18 - Camp Fire
- 11/10/18 - Camp Fire
- 11/9/18 - Camp Fire
- 11/8/18 - Camp Fire
- 10/13/17 - North Bay Fires
- 10/12/17 - North Bay Fires
- 10/11/17 - North Bay Fires
- 10/10/17 - North Bay Fires
- 1/21/01 - Residential Woodsmoke
- 1/7/01 - Transport & Local Emissions
- 1/1/01 - Fireworks
- 12/26/99 - Residential Woodsmoke

Note: Data from 2018 is preliminary.
2017 North Bay Fires
2018 Camp Fire
Wildfire Air Quality Response Program

Program intended to prepare, prevent, and respond to future wildfire smoke, and ensure health-protective measures and strategies are in place.
Rule Development

2019

- **Regulation 5: Open Burning**
  - Remove cost barriers to public agencies to encourage prescribed burning

- **Rule 6-3: Wood-Burning Devices**
  - A year-round, mandatory burn ban when the federal PM$_{2.5}$ health standard is forecast to be exceeded

2020

- **Regulation 15: Wildfire Episode Plan**
Legislative Initiatives

Assembly Bill (AB) 836, Wildfire Smoke Clean Air Center Incentive Program for Vulnerable Populations

• Introduced by Assembleymember Buffy Wicks (Oakland)
• Create incentive program to fund ventilation retrofit programs
• State guidelines would be developed in consultation with air districts, cities, counties, public health agencies, school districts and other stakeholders
• State board to prioritize applications in areas with high cumulative exposure burden
Legislative Initiatives (cont.)

• Funding would be subject to appropriation by Legislature
• Current Bill Status
  o Passed Assembly Natural Resources Committee and Assembly Floor without a single no vote
  o Passed Senate Environmental Quality unanimously
  o Currently assigned to Senate Appropriations Committee
  o If bill makes it out of Appropriations, it would go to Senate Floor for vote, and then to Governor
• Currently working with Author’s staff, California Air Resources Board (CARB), and DOF to identify potential funding
Grants and Incentives

Wildfire Recovery Assistance Program
• $3 million to support rebuild efforts in the North Bay
• Encourage and incentivize building energy-efficient homes

Additional grant development aimed to:
• Establish clean air centers across Bay Area
• Provide cleaner air at sheltering facilities and evacuation centers during emergencies
Partnership with American Red Cross

*Red Cross’ mission, vision and fundamental principles align with Air District’s Wildfire Air Quality Response Program goals*

- Approximately 1100 existing Red Cross affiliated facilities across nine Bay Area counties
  - Schools (i.e. elementary, middle, high schools, colleges)
  - Community spaces (i.e. community centers, recreation centers, government buildings, commercial and event centers)
  - Faith-based organizations
Partnership Goals

Ensure health-protective actions are taken to prepare for future wildfire disasters and regional smoke impacts

• Provide funding to purchase portable air filtration units
• Enhance new Red Cross’ National Shelter System database
• Improve how sheltering and evacuation centers are prioritized to open
• Target funding to Red Cross affiliated facilities to encourage other local partnerships with Red Cross
Regional Partnerships

2017 North Bay wildfires messaging challenges
• Different messages from different agencies
• Coordinated during the emergency, but not prior to fires
• Coordinated closely with Napa and Sonoma Health Officers

2018 Camp Fire new messaging challenges
• Not enough cleaner air shelters
• Counties quickly trying to develop a response for homeless, outdoor workers, and schools
Beginning in 2019 Regional Partnership development

- Association of Bay Area Health Officers
- SF Department of Emergency Management, Bay Area UASI
- Created Air Quality Communications Alliance (AQCA)
- Working to align messaging with all applicable agencies
- Developed preparedness messaging
- Reviewing public messaging plan
- Public announcement when completed
- Share with all Bay Area regional agencies
Community Information and Resources

• Developing Wildfire Information on Air District Website
• Will incorporate guidance for schools
• Wildfire Air Quality Response Program
• Messages before and during smoke
• Informational materials will be developed and available at events
• Further guidance about preparing home and family
## Health Effects of PM

### Health Effects:

#### Causality Determinations

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<th>Health Outcome</th>
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<th>Current PM Draft ISA</th>
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<tr>
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</tbody>
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* = new determination or change in causality determination from 2009 PM ISA
Health Effects - PM and Wildfire Smoke

Gaps in Understanding

• Differentiating between health impacts due to the wildfire smoke vs long term PM exposure risks

• Long-term health effects of repeated exposures:
  o Acute versus chronic
  o Short-term, hourly to daily exposures, of high concentrations of PM

• Tools needed to assess health risk above and below the current standards

• What further actions to consider?
Discussion Regarding Particulate Matter (PM) Symposia

Advisory Council Meeting
July 29, 2019

Jack P. Broadbent
Executive Officer/APCO
Proposed PM Symposia: Goals

• **“Beyond attainment”:** Achieve additional health benefits, even after attainment of standards

• Identify measures that would most move public health needle, especially in most impacted communities

• Recognize PM as principal health risk driver both for criteria pollutants and toxics

• Identify gaps in knowledge, or current policy, and address

• Provide national leadership
Proposed PM Symposia

Overview

• Convened by Advisory Council as series of meetings

• Identify health-focused guidelines based on latest science, setting target beyond standards already in effect

• Engage nationally-recognized experts, including leading experts previously engaged at the Federal level

• Include local stakeholders
Proposed PM Symposia: Meetings

- **October 2019**: PM Health Effects and Impacts
  - Keynote Speaker

- **December 2019**: PM Policy and Stakeholder Issues

- **February 2020**: Draft PM Recommendations

- **April 2020**: District Response
  - Keynote Speaker
  - Large, offsite venue
Proposed PM Symposia: October 2019

October 2019: PM Health Effects and Impacts

• PM Health Effects
  ▪ Updated assessment, latest science
  ▪ Biological mechanisms and observed effects

• PM Impacts
  ▪ Emissions, sources, air quality
  ▪ Exposure and health risk
  ▪ Local-scale impact assessment

• Advisory Council Discussion
  ▪ Findings
Proposed PM Symposia: December 2019

December 2019: PM Policy and Stakeholder Issues

• Stakeholders
  - Assembly Bill (AB) 617 Community
  - Nonprofit organizations (NGOs)
  - Regulated community, etc.

• Policy (Air District Staff)
  - Air District current efforts
  - Air District discussion of gaps
  - Cost/benefit framework – maximizing health improvement

• Advisory Council Discussion
  - Findings
February 2020: Draft PM Recommendations

- **Presentation of Draft Findings**
  - Air District summary of draft symposia findings

- **Advisory Council Discussion**
  - Review and revision of draft findings
  - Recommendations to Air District Board and Staff
April 2020: District Response (Large, offsite venue)

- Health effects overview
- PM impacts overview
- Advisory Council recommendations
- Air District response
  - Both acute and chronic effects targeted
  - Cost/Benefit of response
  - Equity effects of response
  - Timeline of response
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?
    • For **everyone** in the Bay Area
    • Especially for those in **highest-risk communities** (AB 617)

• **KEY**
  – Particulate matter (PM) is dominant health risk driver for both criteria pollutants and air toxics.
Council Report: Important Questions

• Are current PM 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 breathes clean air?
• What are the most important actions that can be taken now? And, in the future?
Council Report: Best Science

• USEPA
  – Draft PM Integrated Science Assessment (PM ISA) in October 2018
  – Accelerated review of PM standards by December 2020
  – 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
  – 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
    • AC meeting on March 11th

• **Highlights**
  – 1,879 pages
  – Dozens more recent research papers since 2009 PM ISA
  – Stronger evidence for PM health effects
    • **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**
  • **LIKELY CAUSAL**: Cancer
  • **LIKELY CAUSAL**: UFP, nervous system effects
  • 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 District actions on PM
    - Set stage for *possible District action* (e.g., establishing guidelines beyond those already in effect at federal, state, and local levels)