BAAQMD OVERVIEW & RULE UPDATE

BACWA ANNUAL MEETING

Jack Broadbent
Executive Officer/APCO

January 27, 2017

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

AGENDA

- BAAQMD Background
- Regulatory Updates
  - Toxic Risk Reduction Rule
  - Permitting Rule
  - Particulate Matter Rule Updates
- Technology Implementation Office
- Questions

AIR DISTRICT BACKGROUND

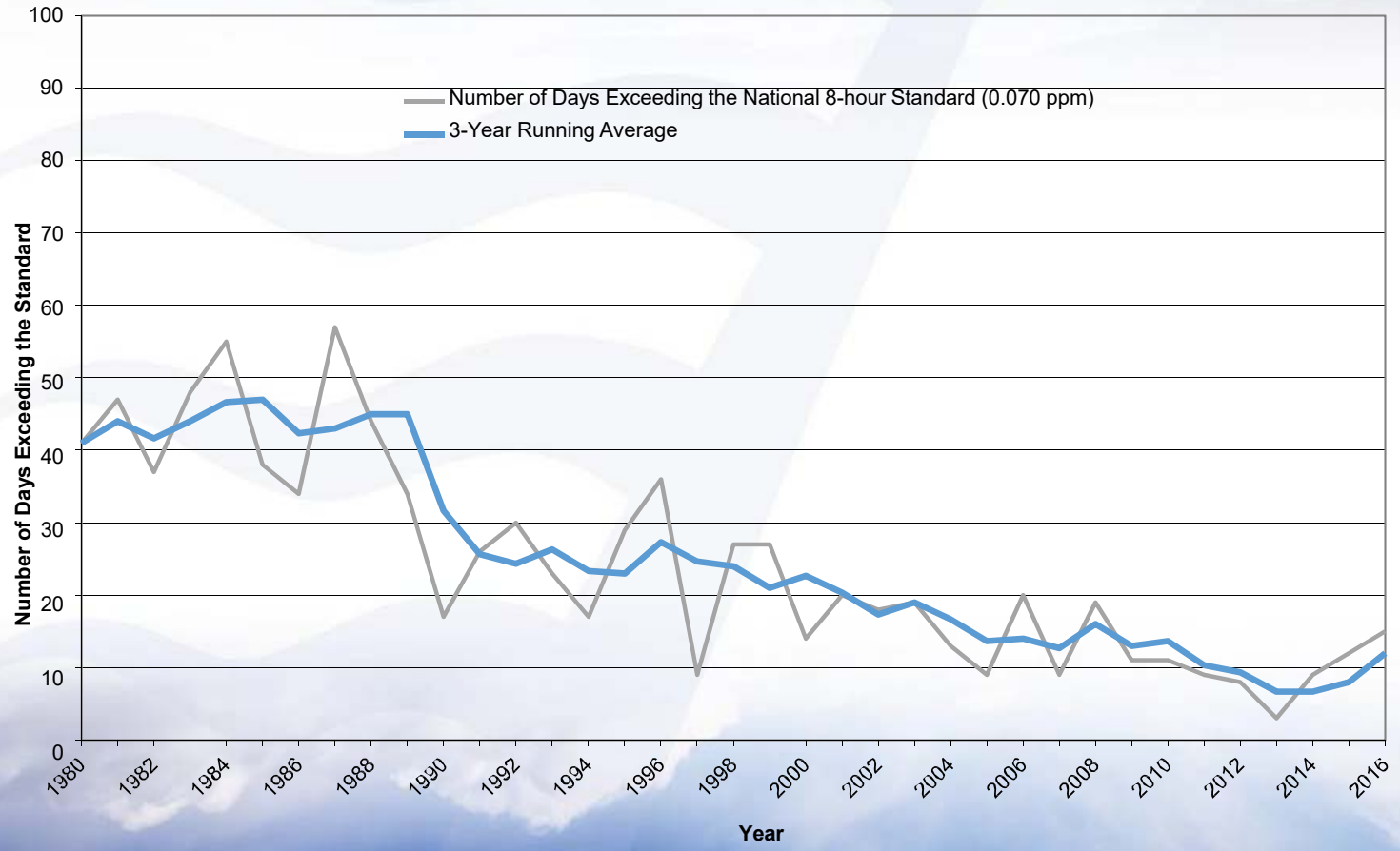
- Oldest local air pollution agency: established in 1955
- Responsible for achieving and maintaining National and State standards
- 9 Bay Area Counties
- 7+ Million People
- Activities directed towards Stationary Sources (~25,000, ~11,000 Facilities)
- 350 staff
- Regulations, Incentives and Education

BAY AREA AIR QUALITY CONCERNS

- Ozone (O3) [N]
- Fine Particulate Matter (PM2.5) [N]
- Toxic Air Contaminants (TACs)
- Climate Pollutants (e.g. GHG)

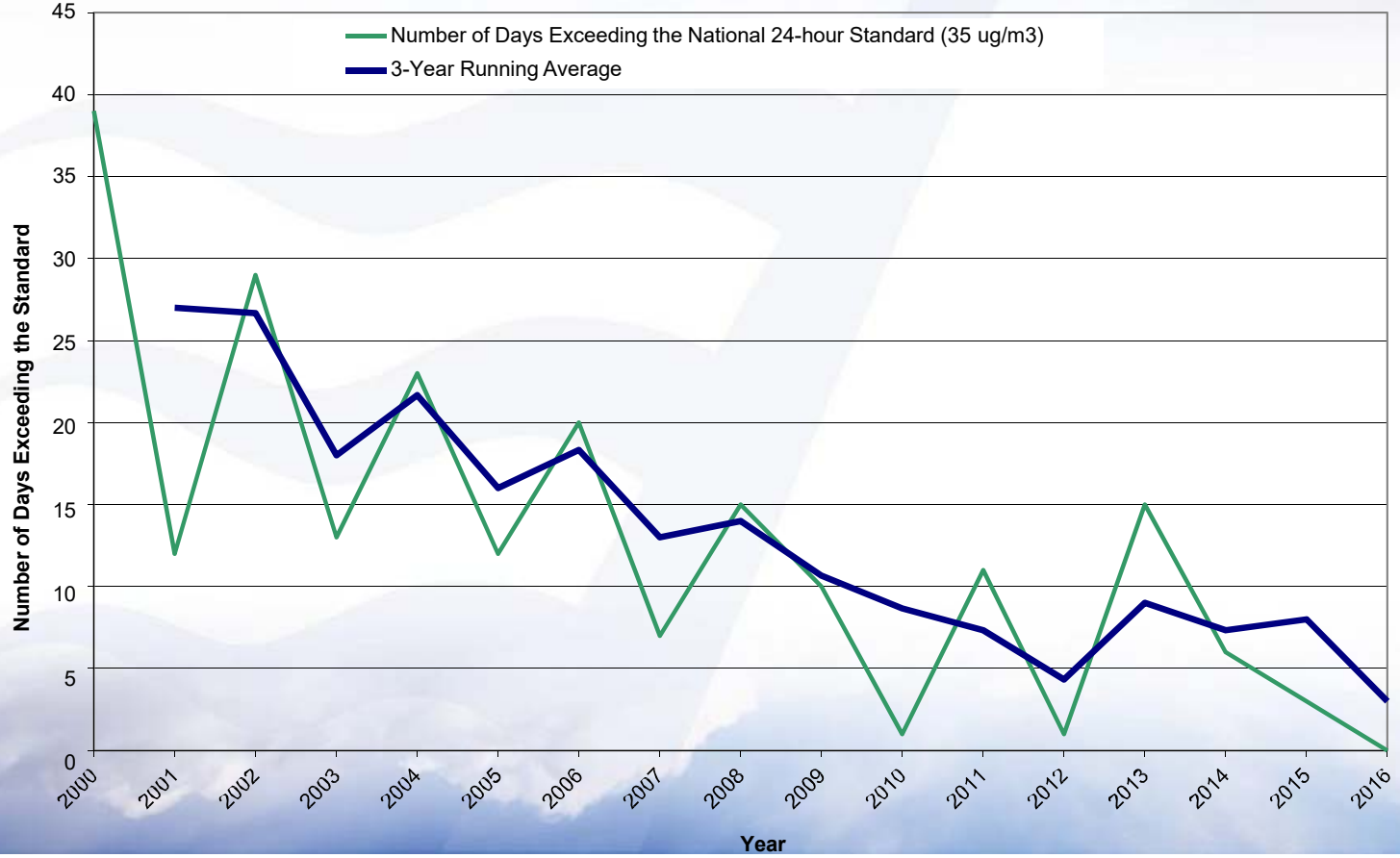
N – Non Attainment

OZONE EXCEEDANCE TRENDS
1980 TO PRESENT

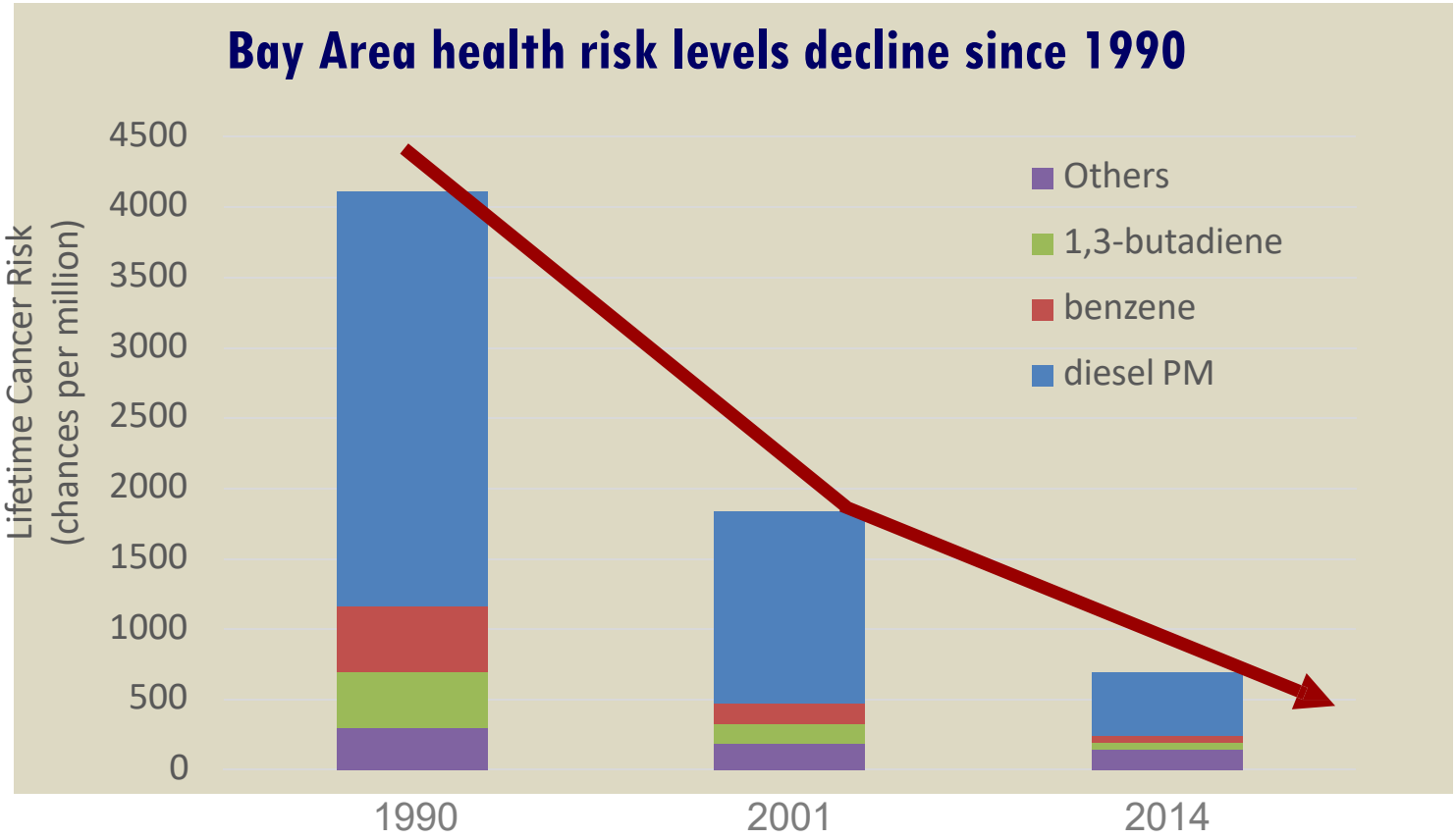


$PM_{2.5}$ EXCEEDANCE TRENDS 2000 TO PRESENT

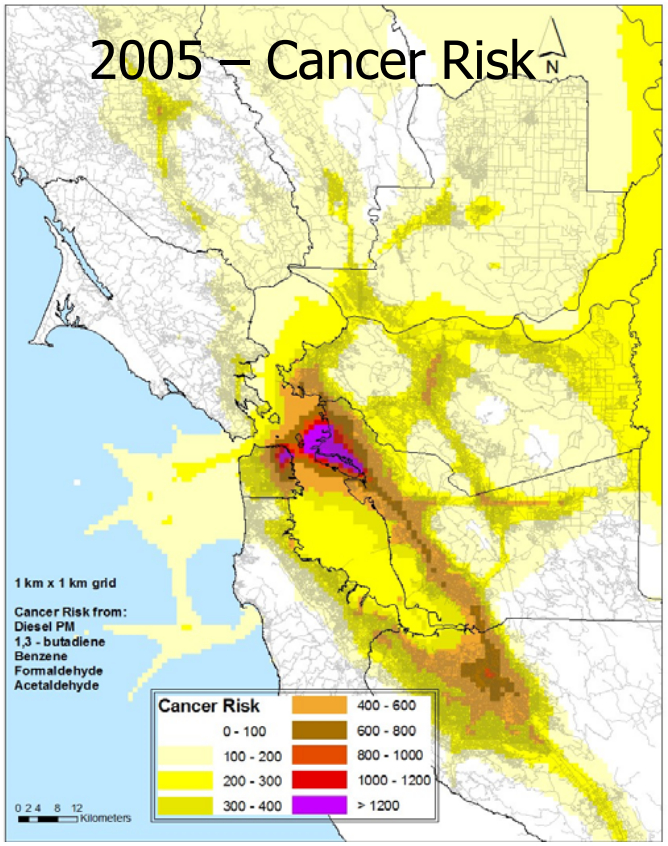
Bay Area $PM_{2.5}$ Trend (March to February)

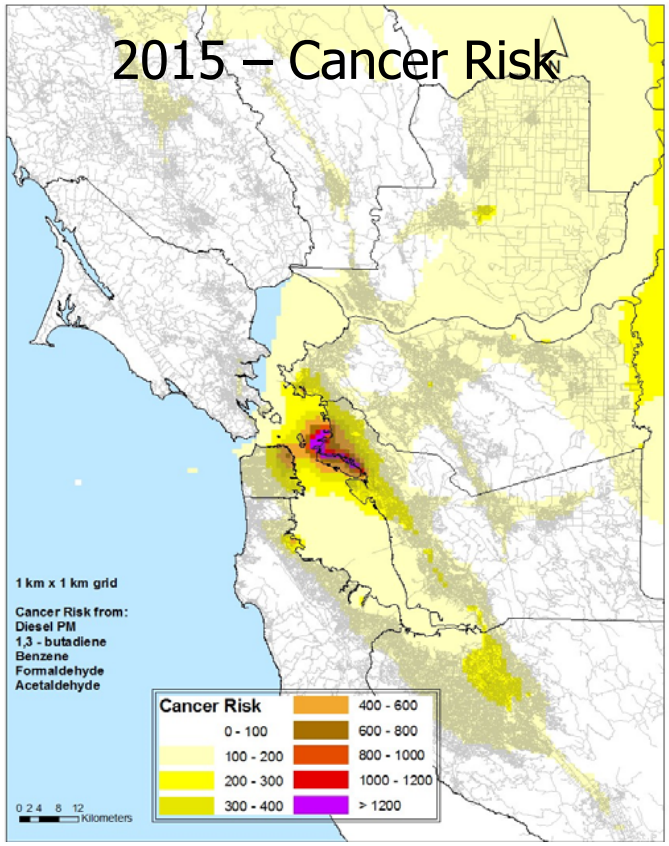


TOXIC AIR CONTAMINANTS



CARE MAPS


2005 – Cancer Risk
N
1 km x 1 km grid
Cancer Risk from:
Diesel PM
1,3 - butadiene
Benzene
Formaldehyde
Acetaldehyde
Cancer Risk
0 - 100
100 - 200
200 - 300
300 - 400
400 - 600
600 - 800
800 - 1000
1000 - 1200
> 1200
0 2 4 8 12
Kilometers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Kilometers

DRAFT RULE 11-18
TOXIC RISK REDUCTIONS FROM EXISTING SOURCES

DRAFT RULE 11-18

- 6000 Facilities Reporting Toxic Emissions
- About 1000 Facilities Potentially Affected
  - Refineries, gas stations, hospitals, foundries, data centers, landfills, wastewater treatment plants, crematoria, chemical plants, schools and universities, military facilities, power plants, etc.
- Reduce Risk Action Level from 100 per million (100/M) to 10 per million (10/M)
- Incorporate latest OEHHA guidelines and health values

DRAFT 11-18 REQUIREMENTS

BAAQMD will screen and conduct Health Risk Assessments (HRAs)

Facilities above the threshold must submit and execute a BAAQMD approved **risk reduction plan**

Potential Risk Reduction Measures

- Installation of best available retrofit control technologies for toxics (TBARCT)
- Modification of operating hours and activity levels
- Modification of emissions point locations and stack heights

PROPOSED IMPLEMENTATION PHASES

Phase 1 (Prioritization Score > 250)

- Health Risk Assessments (2017-2018) - 1 Year to complete
- Risk Reduction Plan Development and Approval (2018-2019) ~ 9 months
- Risk Reduction Plan Implementation (2019-2022) – 3 years

Phase 2 (Prioritization Score > 10)

- Mixed Source Facilities (2019-2025)

Phase 3

- Diesel Internal Combustion Engines

Phase 4

- Retail Gas Stations

PROPOSED IMPLEMENTATION APPROACH

1. Prioritize Facilities
2. Conduct Health Risk Assessment (HRA)
   - Set-up Model
   - Validate Model
   - Conduct Health Risk Assessment
3. Public Comment on HRA
4. Publish HRA Results to BAAQMD Website & Email Subscription List
5. Risk Reduction Plan
   - Publish Requirement, Submission and Implementation Status to BAAQMD Website & Email Subscription List
   - 3-year implementation timeline

POTENTIAL POTW RISK REDUCTION MEASURES

Sewage Sludge Incinerators

- Main risk drivers:
  - Cadmium
  - Mercury
  - Hexavalent chromium
- Potential Risk Reduction Measures:
  - Afterburners
  - Scrubbers
  - Activated carbon injection
  - Baghouses
  - Increase stack heights

Diesel Engines

- Main risk driver:
  - Diesel particular matter
- Potential Risk Reduction Measures:
  - Increase stack heights
  - Diesel particulate filters
  - Replacement with cleaner engines

POTENTIAL POTW CONTROL TECHNOLOGIES

Gas-Powered Engines

- Main risk driver: Formaldehyde
- Potential Risk Reduction Measures:
  - Cleanup digester gas to remove hydrogen sulfide and siloxanes
  - Replacement with cleaner engines

Wet Processes

- Main risk drivers:
  - Hydrogen sulfide
  - Perchloroethylene
- Potential Risk Reduction Measures:
  - Covering headworks
  - Routing to Carbon Absorption, Scrubbers, Trickling Filters or Bio-filters
  - Ferric chloride injection at headworks
  - Peroxide injection at headworks

NEXT STEPS

- Continue meetings and presentations to interested groups
- Form Technical Working Group – January/February 2017
- Publish for Review and Comment - March 2017
  - Proposed rule language
  - Staff Report
  - Socioeconomic Analysis
  - CEQA Environmental Impact Report
- Public Hearings - May 2017

RULES 2-1/2-2
PERMITTING RULE UPDATES

Address EPA disapproval items from 2016

- Determining of emissions offsets
- PSD modeling requirements

Adjust BACT Threshold for GHGs

Define Crude Slate Changes that will Trigger Permit Modifications

REGULATION 6
PARTICULAR MATTER RULE UPDATES

- Regulation 6: General Provisions
- Regulation 6-1: General/Visible Emissions Requirements
- Regulation 6-6: Prohibition of Trackout
- Regulation 6-7: Roofing Asphalt
- Regulation 6-8: Bulk Material Storage and Handling

- 8 Workshops – January 30th – February 8th

TECHNOLOGY IMPLEMENTATION OFFICE

THE NEED

- Implementation of lower carbon intensity practices has lagged at regulated facilities
- Heavy industry has not bounced back as quickly as the rest of the economy
- A "knowledge gap" exists relative to cost effective CO2 emissions reductions technologies
- Energy efficiency has not been embraced as quickly as necessary to meet CAP 2050 goals
- Zero emissions vehicle deployment and smart/connective technologies still require support

TECHNOLOGY IMPLEMENTATION OFFICE

Purpose: *Assist regulated facilities in implementing low-cost solutions greenhouse gas emissions reductions technologies in the areas of energy generation and efficiency.*

Consider use of several million dollars in general fund reserves to seed the TIO

Seek matching funding via the Air District's Foundation from private industry based on the concept of "challenge grants to implement disruptive greenhouse gas reduction technologies"

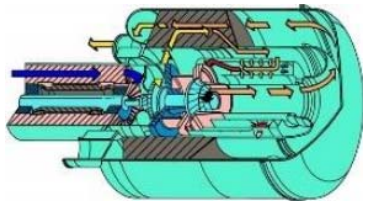
Harness the Silicone Valley innovation machine relative to green technology

Investigate the feasibility of a revolving loan fund using general fund seed monies

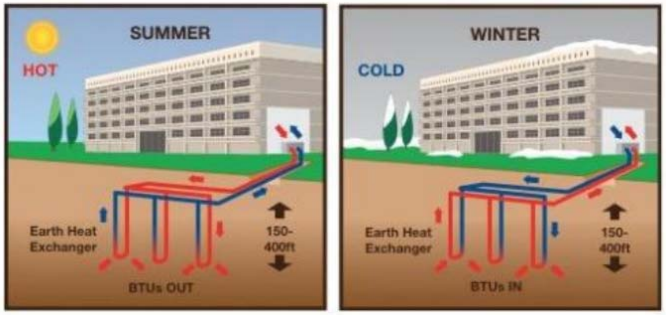
EXAMPLE IMPLEMENTATION PROJECTS

- Gas micro turbines for combined heat and power
- Hydrogen fuel cells for combined heat and power
- Carbon sequestration/hydrogen generation from natural gas
- Renewable diesel from renewable natural gas
- Battery storage for renewable power
- Geothermal water heating and cooling

Source – Fuel Cell and Hydrogen Energy Association



Source – PESwiki.com - PowerPedia:Gas turbine



Source – Advance Heat and Air Company

QUESTIONS & COMMENTS