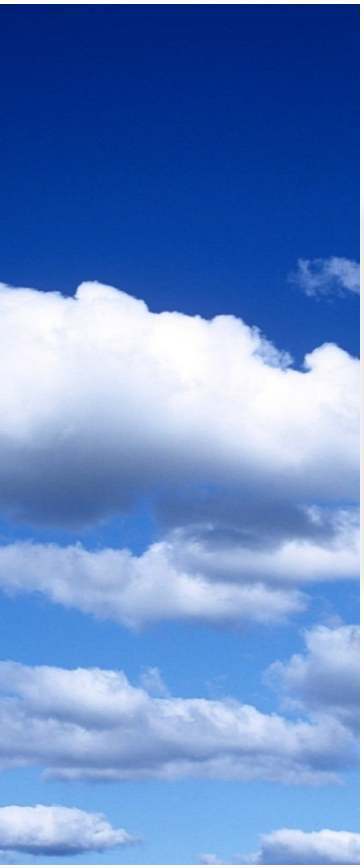
AGENDA: 8



Update on the Port of Oakland's Seaport Air Quality Plan

Board of Directors Special Meeting
May 15, 2019

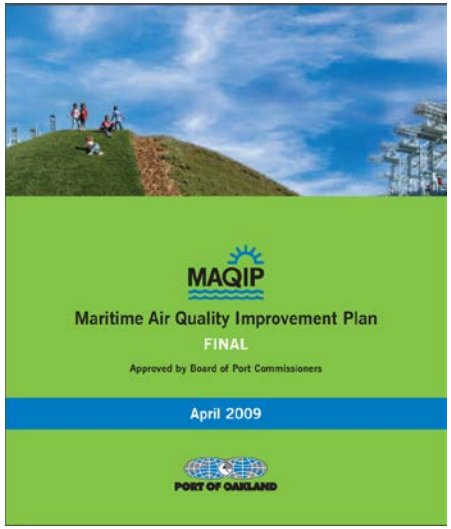
Jack P. Broadbent
Executive Officer/APCO

Greg Nudd
Deputy Air Pollution Control Officer - Policy

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Maritime Air Quality Improvement Plan

- Developed between 2007 and 2009

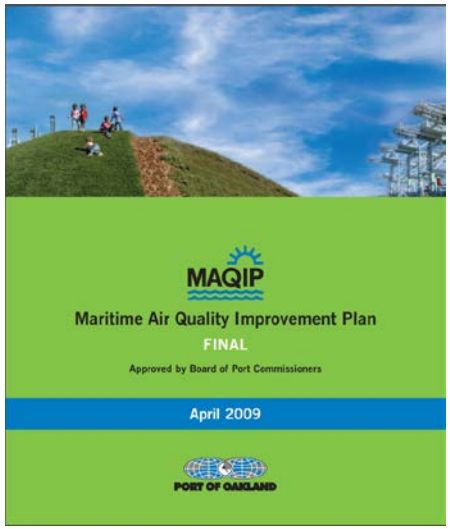


- Input from 35 member Task Force
  - Community Groups
  - Shipping Lines
  - Terminal Operators
  - Truckers
  - Labor
  - Government Agencies

- Port of Oakland, Air District, West Oakland Environmental Indicators Project, and Mr. Andy Garcia acted as Co-Chairs of Task Force.

Maritime Air Quality Improvement Plan (cont.)

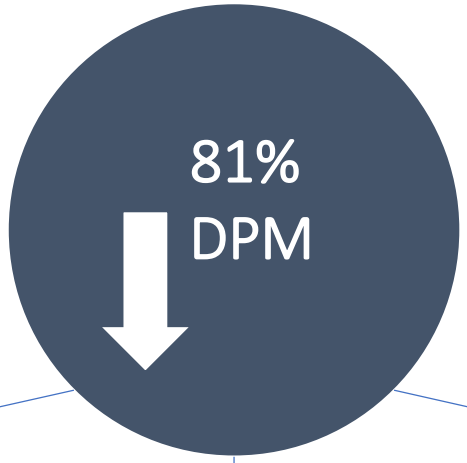
- Goal:
  - *Reducing the excess community cancer health risk related to exposure to DPM emissions associated with the Port's maritime operations by 85% from 2005 to 2020, through all practicable and feasible means.*



Source	DPM Reduced Since 2005*
Ships	80%
Tugs	54%
Trucks	> 90%
Cargo Handling Equip.	92%
Locomotives	85%

* According to Port estimates

Emission Reductions at the Port of Oakland: 2008-2017



Enforcement

- Regulations on Trucks, Oceangoing Vessels, Other Equipment
- Noncompliant truck ban

Planning & Monitoring

- Marine Air Quality Improvement Plan
- Real-time emissions monitoring

Grants

- $33 M for drayage trucks
- $10 M Locomotives
- $24.5 M for Shorepower
- $50 M to replace On-road Trucks

Seaport Air Quality 2020 and Beyond Plan
A Pathway to Zero-Emissions Seaport Operations

- Update to the Port's Air Quality Plan begun in 2018
- Reconvened 35 member Task Force for Six Meetings; Same Co-Chairs
- Goals
  1. Keep the Port competitive, financially sustainable, and a catalyst for jobs and economic development.
  2. Minimize emissions of criteria air pollutants and Toxic Air Contaminants (TACs), with a focus on reducing DPM emissions.
  3. Reduce Greenhouse Gas emissions.
  4. Build and strengthen partnerships among the Port, tenants, equipment manufacturers, owners and operators, community organizations, regulatory agencies, and the public.
  5. Provide opportunities for meaningful stakeholder engagement.

Seaport Air Quality 2020 and Beyond Plan
A Pathway to Zero-Emissions Seaport Operations (cont.)

- Strategies
  1. Continue near-term Emission Reduction Programs and Projects
  2. Promote Pathway to Zero Emissions
  3. Develop Zero Emission Infrastructure
  4. Build and Strengthen Partnerships
  5. Engage Stakeholders
  6. Pursue External Funding

- Near Term Action Plan (2019-2023) – Emphasis on reducing diesel PM emissions to reduce exposure in West Oakland; initial deployment of a 21 zero emission trucks and equipment; tug retrofits; hybrid-drive rubber tire gantry crane retrofits.

- Additional Strategies – to be selected by Co-Chairs and Task Force members. Major selection criterion will be potential to reduce exposure in West Oakland. Task Force to meet twice yearly.

How Much is Local?

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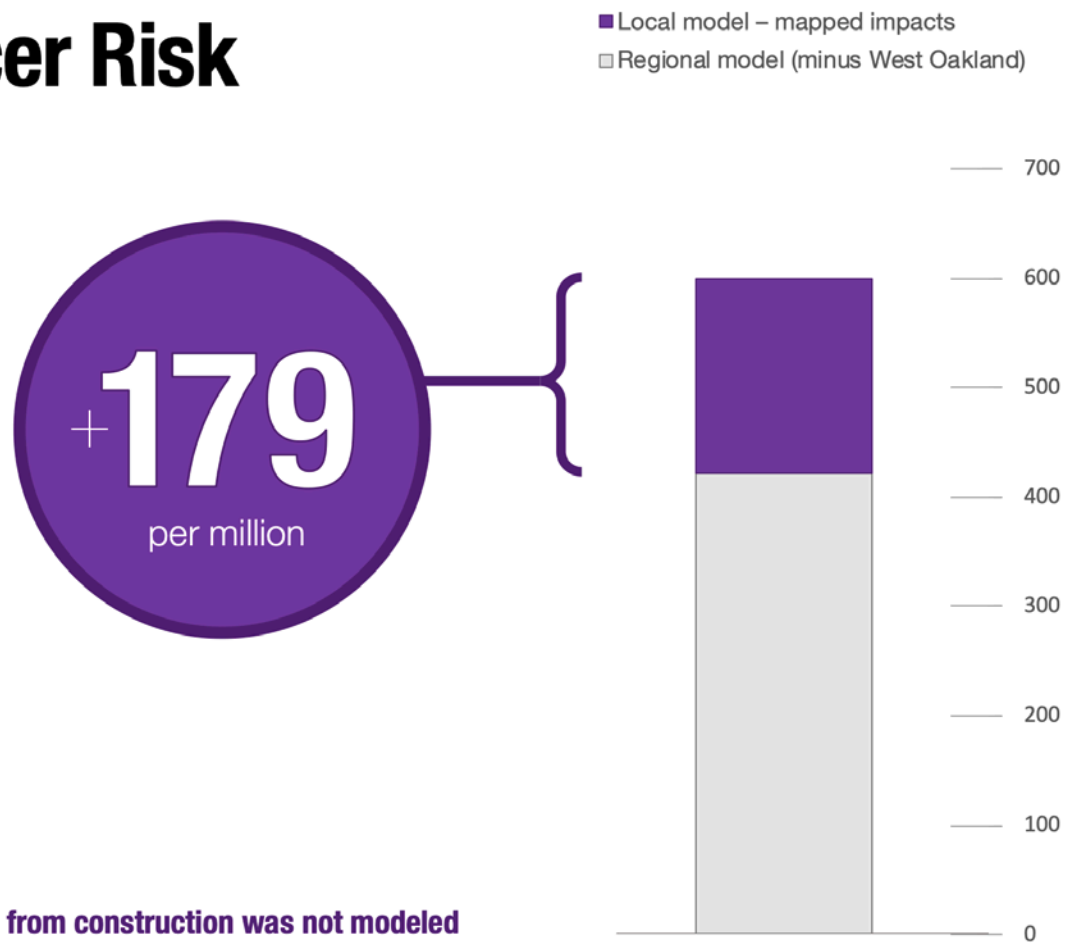
Modeled Impact, on Residential Cancer Risk, of **Local (versus Regional)** Emissions of Toxic Air Contaminants

Top Local Contributors*

- Marine Vessels (**34%**)
- Trucks (**33%**)
- Rail (**20%**)

Cancer Risk



*** cancer risk from construction was not modeled**

Modeled Impact of Local Sources on Residential

Cancer Risk

Top Local Contributors*

- Marine Vessels (**34%**)
- Trucks (**33%**)
- Rail (**20%**)

* cancer risk from construction was not modeled

1000 per million
800
600
400
200
0

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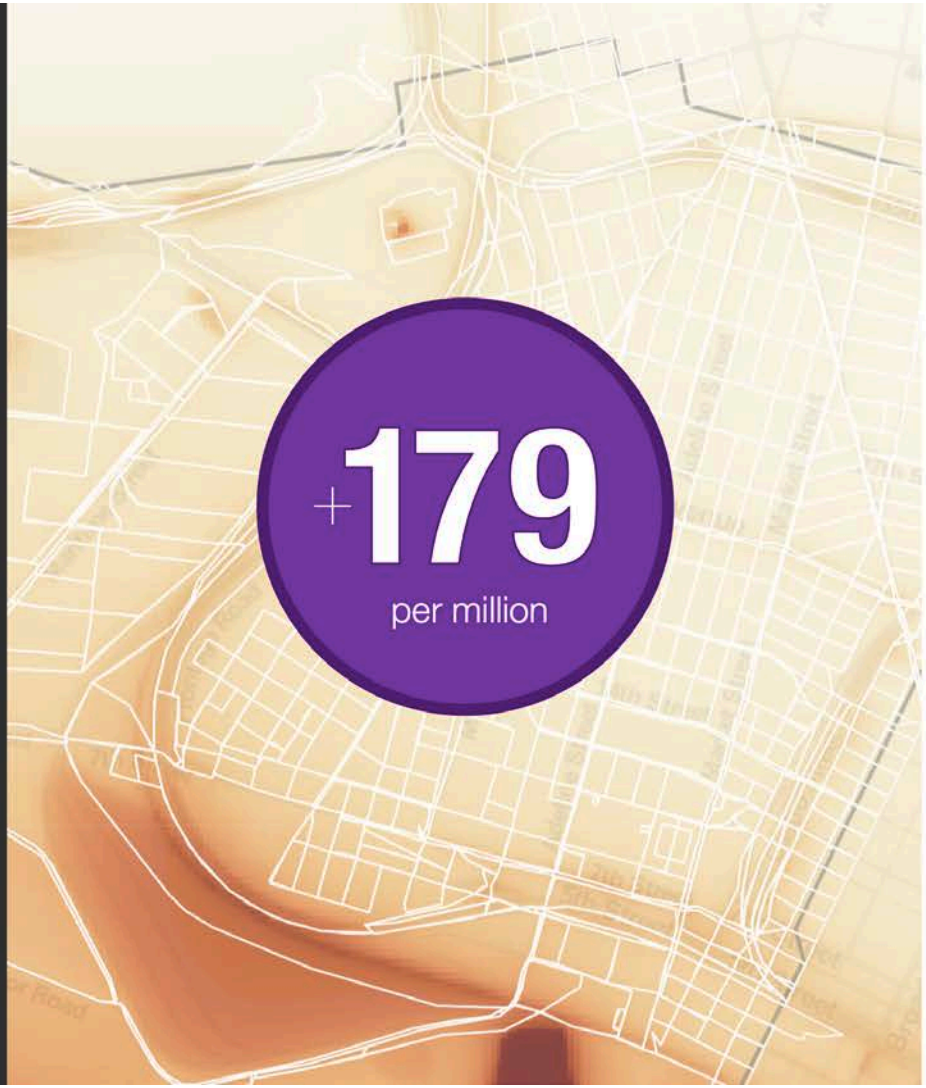


Impacts on Cancer Risk (30-yr, per million)		
Highway		
Heavy/Medium HD trucks	20.5	11%
Passenger vehicles	5.4	3%
Light HD trucks	1.3	1%
Street		
Heavy/Medium HD trucks	24.0	13%
Passenger vehicles	5.5	3%
Light HD trucks	1.6	1%
Port		
Harbor craft	22.5	13%
OGV (berthing)	16.5	9%
OGV (maneuvering)	10.5	6%
Dredging	6.1	3%
Drayage trucks†	3.7	2%
Cargo handling	3.4	2%
Railyard (OGRE)	2.2	1%
Railyard (BNSF)	1.6	1%
Bunkering (tugs + pumps)	1.0	1%
Rail		
Railyard (UP)	18.0	10%
Rail lines	14.9	8%
Permitted		
Schnitzer (stationary)	3.7	2%
Other facilities	2.0	1%
EBMUD	1.5	1%
Other		
Schnitzer (trucks)	7.5	4%
Ferries	2.5	1%
Schnitzer (ships at berth)	2.3	1%
Truck-related businesses	0.9	1%
	179.1	**100%**

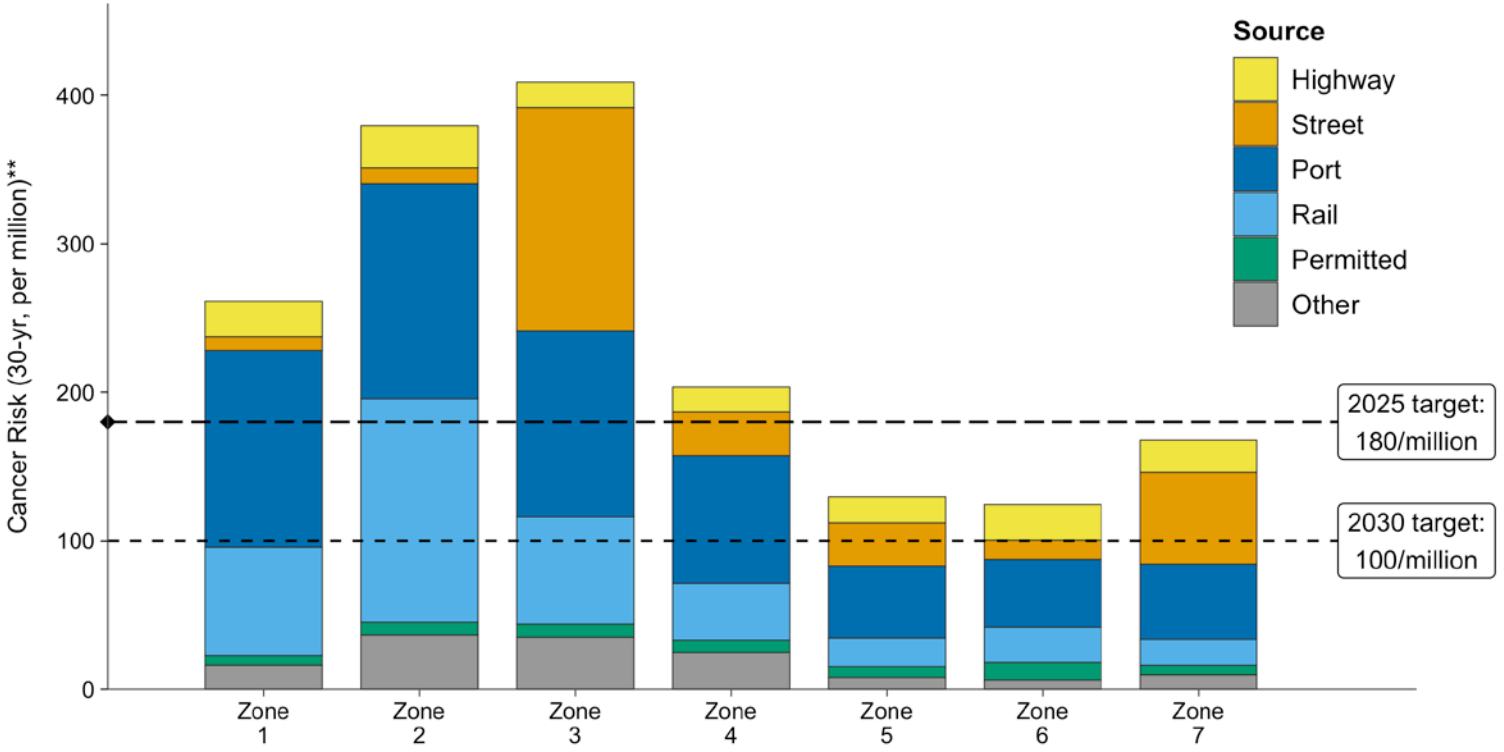
Local Impact Zones

1. Lower bottom/West Prescott
2. Third Street
3. Seventh Street
4. Acorn
5. Upper Adeline
6. Clawson
7. West Grand and San Pablo
8. Freeways

Black Carbon above Median (Env. Def. Fund, 2019-01-13)

Local Impacts and Targets for Cancer Risk (30-yr, per million)

Each bar breaks down the cumulative impacts* at a particular Local Impact Zone.**
Dashed lines show the 2025 target ("today's average residential neighborhood")
and 2030 target ("today's cleanest residential neighborhood").



* Contributed by modeled "present-day" emissions from existing local sources. Impacts from sources outside West Oakland not included.
** Zones shown here do not include all places identified by the Co-Leads or Steering Committee (e.g. Prescott Elementary).

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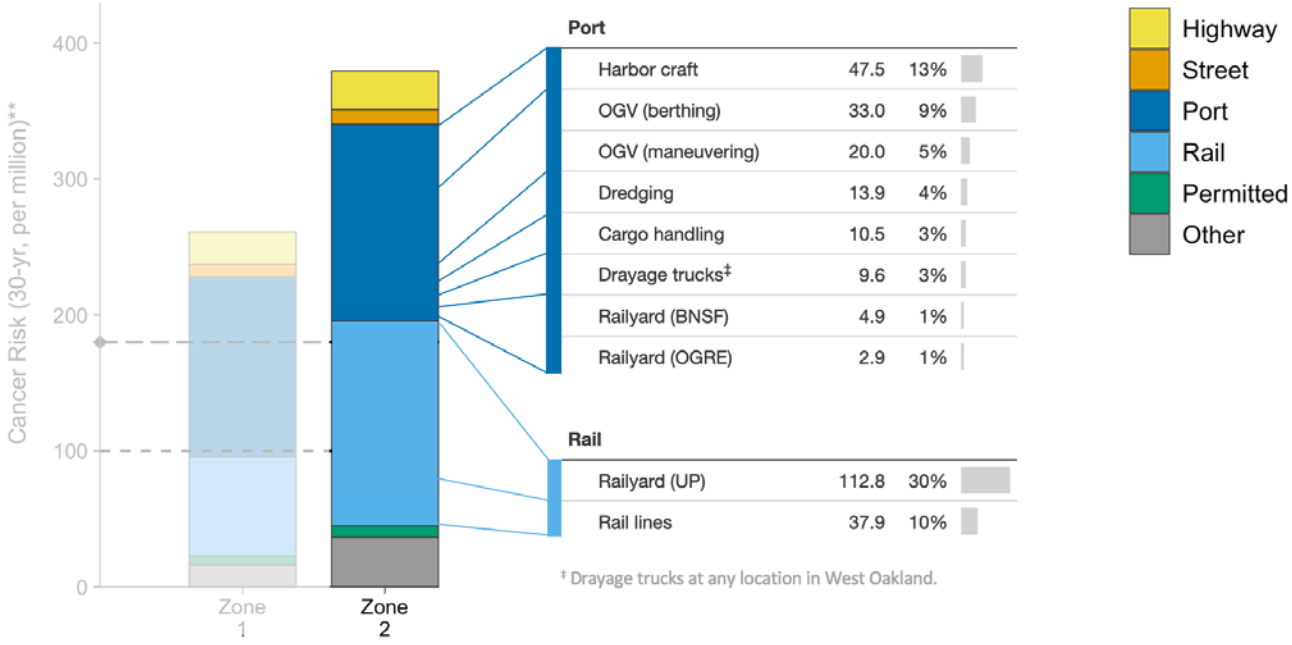
Zone #2: Drilling Down

Cancer risk differences attributed to specific local sources



* Contributed by modeled "present-day" emissions from existing local sources. Impacts from sources outside West Oakland not included.
** Zones shown here do not include all places identified by the Co-Leads or Steering Committee (e.g. Prescott Elementary).

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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	0	0	0

Spare the Air Alerts: None

Days > 0.070 ppm 8-hour NAAQS: None

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

Winter $PM_{2.5}$ Seasons

Year	Days > 35 µg/m³	Winter Spare the Air Alerts
2015/2016	0	1
2016/2017	0	7
2017/2018	8	19
2018/2019	14	16

- **Spare the Air Alert Called for:** **11/8/18 – 11/21/18, 12/15/18, 1/28/19**
- **Days > 35 µg/m³ 24-hr NAAQS:** **11/8/18 – 11/21/18**

Calendar Year Summary

Year	National Ozone Exceedances	Days > 35 µg/m^3 due to Wildfires ($PM_{2.5}$)	Total Days > 35 µg/m^3 ($PM_{2.5}$)
2015	5*	3	9
2016	15	0	0
2017	6	14	18
2018	3	16	20
2019	0	0	0

For Ozone - Days > 0.070 ppm 8-hour NAAQS: None

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

For Wintertime - Days > 35 µg/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)