



**PORT OF OAKLAND
SEAPORT**

Task Force Meeting – 6/26/20
Air Quality 2020 & Beyond Plan



Andy Garcia

6/26/2020

Air Quality Task Force Meeting



Agenda

- Welcome from Co-Chairs
- Setting the Context
 - 2020 & Beyond Plan Refresher
 - Screening & Evaluation Results
- Year 1 Projects Underway
 - ZANZEFF Grant Projects
 - Electric Truck Demonstrations
 - Hybrid RTG Cranes
- Other Related Plans and Studies
 - West Oakland Community Action Plan (WOCAP)
 - Port Truck Parking Planning
 - Joint City/Port Heavy Container Permit Program Evaluation
- Next Steps – Day 2 Webinar (July 10, 2020)

Setting the Context

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Planning Process Refresher

Draft Plan Development
Dec. 2017-June 2018

Revised Draft to Final
July 2018-Spring 2019

Implementation

Task Force Meetings

- #1 February 23, 2018: Reconvening
- #2: May 9, 2018: Draft Plan Blueprint
- #3: June 21, 2018: Draft Plan Policy Issues

Draft Plan

- June 29, 2018: *Draft Seaport Air Quality 2020 and Beyond Plan (Draft Plan)* posted online
- July 12, 2018: Presentation to the Board and Public
- June 29 to August 31, 2018: Public Review and Comment Period

Task Force Meetings

- #4: Sept. 26, 2018: Comments and Responses; Industry Roundtable
- #5: Jan. 10, 2019: *Revised Draft Plan* Overview; Workforce Development; AECOM Study; Grant Panel
- #6: April 23, 2019: Preview of *Final Plan*

Revised Draft Plan

- New Appendices; Response to Comments; Revised Draft Plan; Revised Near-Term Action Plan
- December 14, 2018: *Revised Draft Seaport Air Quality 2020 and Beyond Plan (Revised Draft Plan)* and Response to Comments posted online
- Dec. 14, 2018 to January 17, 2019: Public Review and Comment Period
- Comment Period extended one week by request.

Final Plan

June 13, 2019: Board Approval

Phases

- Near-Term (2019-2023)
- Intermediate-Term (2023-2030)
- Longer-Term (2030-2050)

On-Going Stakeholder Engagement

Public Engagement Plan (Appendix G)
Screening & Evaluation Process

Annual Progress Reports and Review/Update of Near-Term Action Plan (NTAP)

Plan Update

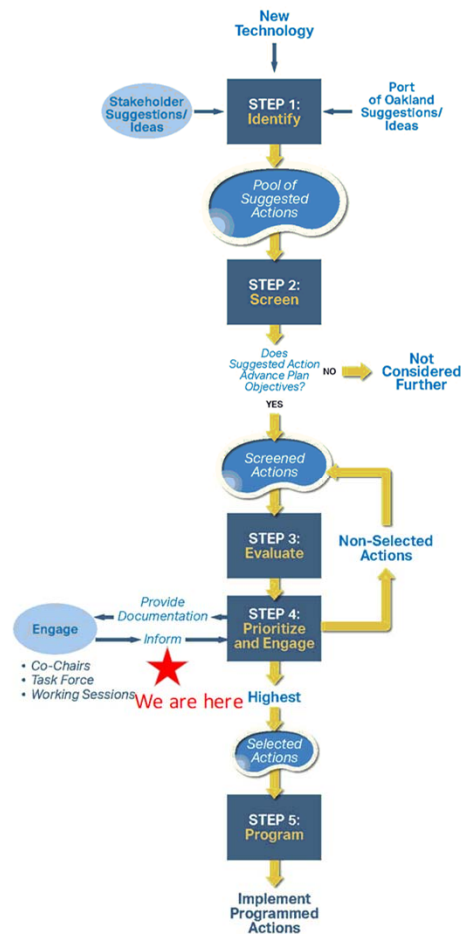
Year 2023 (Year 5)

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Screening & Evaluation Process



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Screening Summary (Step 2)

Table 3. Summary of Screening Results

	Number	Percent
Total Suggested Actions as of Dec. 5, 2019	281	
Duplicate Actions	39	14%
Suggested Actions Screened in Step 2	242	86%
Suggested Actions Passing Screening	195	69%
Suggested Actions Not Passing Screening	47	17%
Completed Actions	13	5%
Actions in Progress, On-going Actions, and Action in NTAP not yet underway	44	16%
Screened Actions to be Evaluated in Step 3	138	49%

Evaluation (Step 3)

Process

- 138 Actions
- 6 Groups
- Group 1: WOCAP strategies and initial high-interest actions
- 7 Feasibility Criteria in Plan

- | | |
|---|--|
| <ul style="list-style-type: none">• Exposure Reduction• Affordability• Cost Effectiveness | <ul style="list-style-type: none">• Commercial Availability• Operational Feasibility• Acceptability• Need |
|---|--|

- Rate each action None/Low/Moderate/High on each criterion
- Quantitative analysis in 4 Technical Memos

Results

Table 4. Summary of Evaluation and Prioritization Results for Group 1 Actions

Action No.	Name of Suggested Action	Qualitative or Quantitative Evaluation?	1 - Exposure Reduction	2 - Affordability	3 - Cost Effectiveness	4 - Commercial Availability	5 - Operational Feasibility	6 - Acceptability	7 - Need
198	Use Air District Incentives to Upgrade Tugs and Barges	Quantitative	H	M	M	H	M	H	H
188	Establish Permanent Truck Parking & Container Staging in Logistics Area	Qualitative	L	M	N/A	N/A	H	H	M
217	Low Sulfur Diesel Fuel in Ocean-Going Vessels	Quantitative	H	L	L	H	M	L	H
186	Adopt Electrical Infrastructure Plan Incorporating Trucks	Qualitative	N/A	M	N/A	N/A	M	M	M
192	Develop Investment Plan to Support Port Infrastructure for Truck Charging	Qualitative	N/A	M	N/A	N/A	M	M	M
193	Study Favorable Time-of-Day Electricity Rate Structure for Truckers	Qualitative	N/A	M	N/A	N/A	M	M	M
195	Study Effects of Larger Vessels on Truck Traffic	Qualitative	N/A	M	N/A	N/A	M	M	L
280	Pursue a Hydrogen Fuel Cell Demonstration Project	Qualitative	L	Unk.	L	L	L	H	H
194	Award Long-Term Lease for Trucker Services Center	Qualitative	N/A	L	N/A	N/A	M	L	M
197	Study of Efficiency Gains from Increased Truck Double-Cycling	Qualitative	N/A	M	N/A	N/A	M	L	L
201	Study Feasibility of Electric Switchers at BNSF, OGRE	Qualitative	N/A	M	N/A	N/A	M	L	L
183	Provide Common Drayage Truck Charging Infrastructure	Qualitative	N/A	L	N/A	L	L	M	M
282	Retrofit Tugs with Diesel Particulate Filters (DPFs)	Quantitative	L	L	L	L	L	L	M
200	Implement a Clean Locomotive (Tier 4 Locomotive) Program	Quantitative	L	Unk.	L	H	L	L	L
187	Create Sustainable Freight Advisory Committee	Qualitative	N/A	N/A	N/A	N/A	L	L	L
189	Set Interim Targets for Zero Emissions Trucks	Qualitative	N/A	N/A	N/A	N/A	L	L	L
199	Implement a Clean Ship (Tier 3 Vessel) Program	Quantitative	L	L	L	L	L	L	L
190	Commercialization Effort for ZE Trucks	Qualitative	L	L	L	N/A	L	None	M
196	Study Feasibility of Off-Dock Yard Using ZE Trucks	Qualitative	L	L	L	N/A	M	None	L
191	Increase Weight Limit for Single Axle Zero-Emissions Trucks	Qualitative	N/A	L	L	N/A	L	None	L

Prioritization (Step 4)

- Two highly-rated actions identified:
 - Action 198: Use Air District Incentives to Upgrade Tugs and Barges
 - Action 188: Establish Permanent Truck Parking & Container Staging in Logistics Area
- Webinar 2 (July 10, 2020): Task Force Input and Discussion

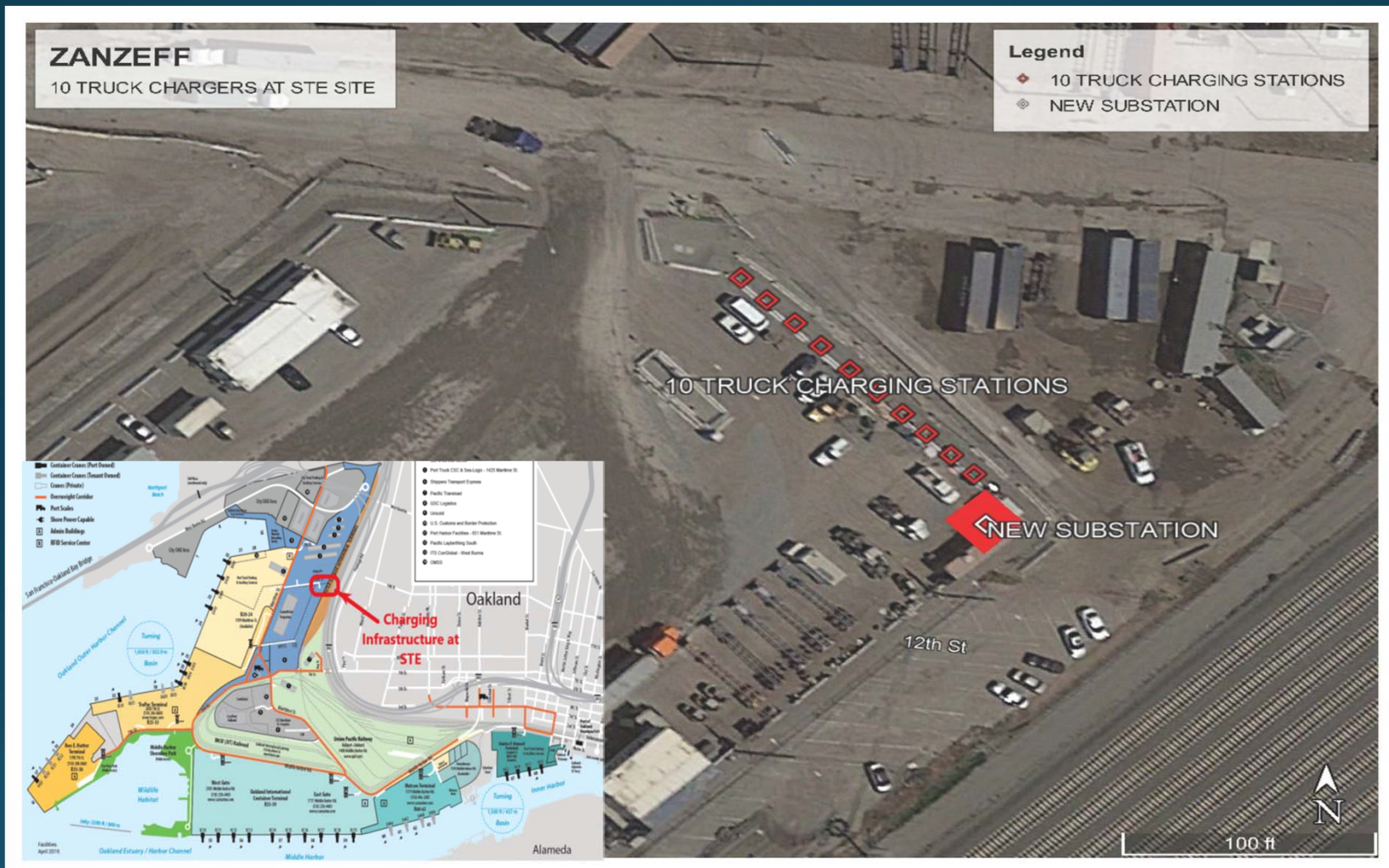
Year 1 Projects Underway

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Zero and Near-Zero Emission Freight Facilities (ZANZEFF) Project



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Electric Truck Demonstration (GSC Logistics)



BYD Electric
On-Road Truck

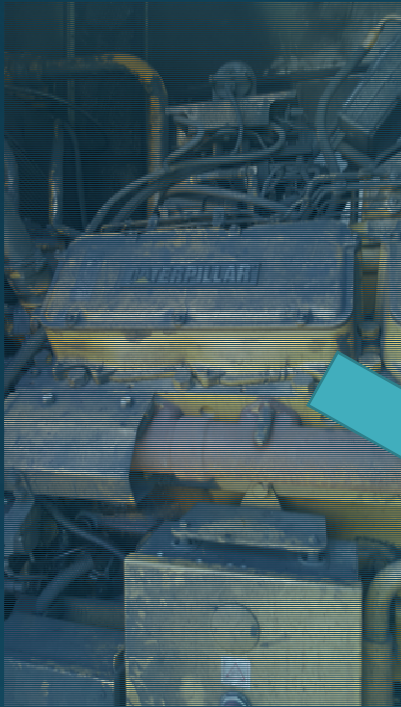
BYD Electric
Yard Tractor



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Hybrid RTGs (SSA Terminals)



- 13 Rubber Tired Gantry Cranes converted to hybrid
- 93% reduction in fuel consumption
- 95% reduction in DPM
- 99% reduction in NOx
- \$5M Carl Moyer Grant covered 85% of cost

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Related Plans and Studies

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Greg Nudd
Deputy Air Pollution Control Officer
BAAQMD

West Oakland Community Action Plan

Related Plan

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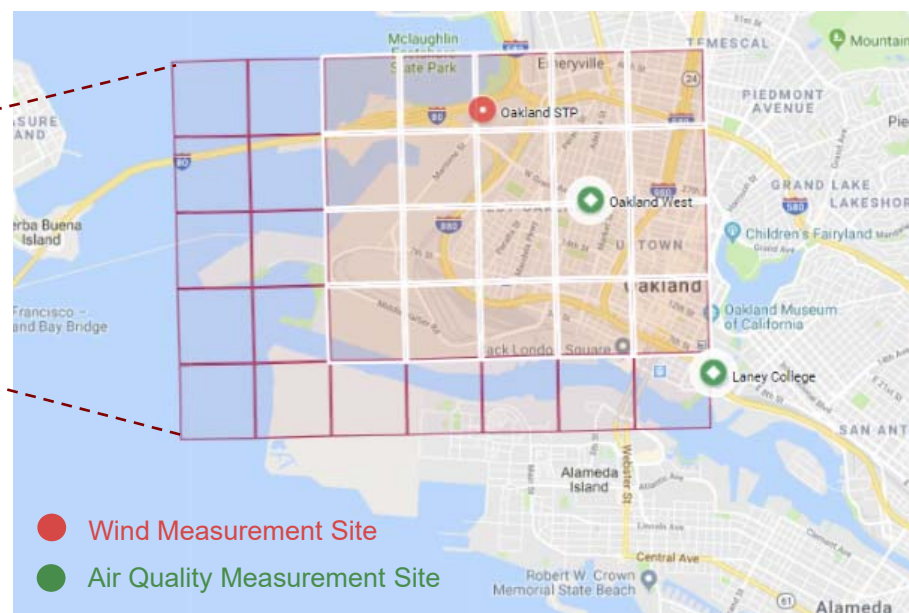
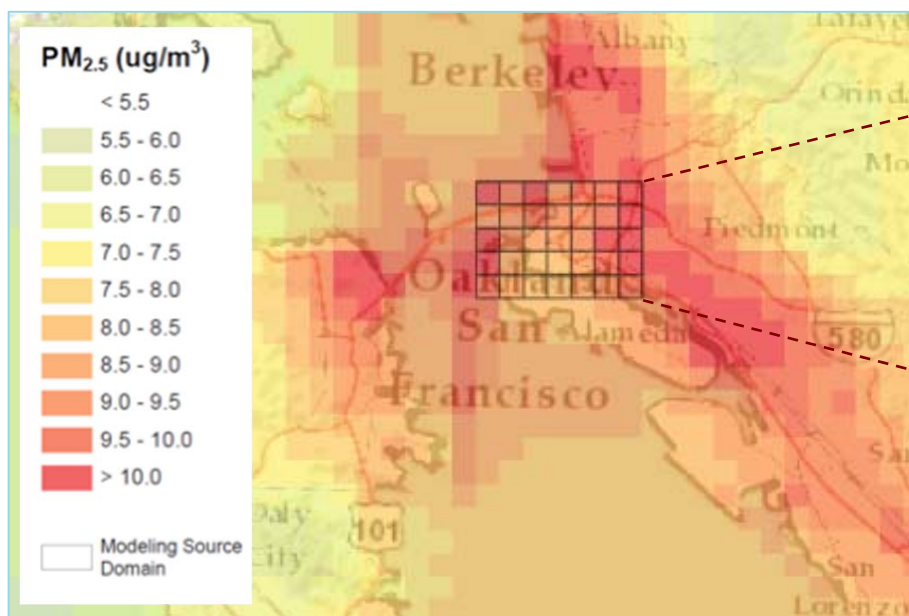
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Key Take-aways

- Local Emissions Impact Local Health
- *West Oakland Community Action Plan* Guiding Near-term Improvements
- Maritime Sources are Significant Contributors
- Coordinated Implementation with the *2020 and Beyond Plan* is Key
- Recent Actions by Tug Operators, and others, shows what is possible in the near-term
- Additional Opportunities for Local Actions to meet goals of both Plans

Regional-Scale and Community-Scale Modeling (2017)



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How Much is Local?

2019-08-26 DRAFT

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

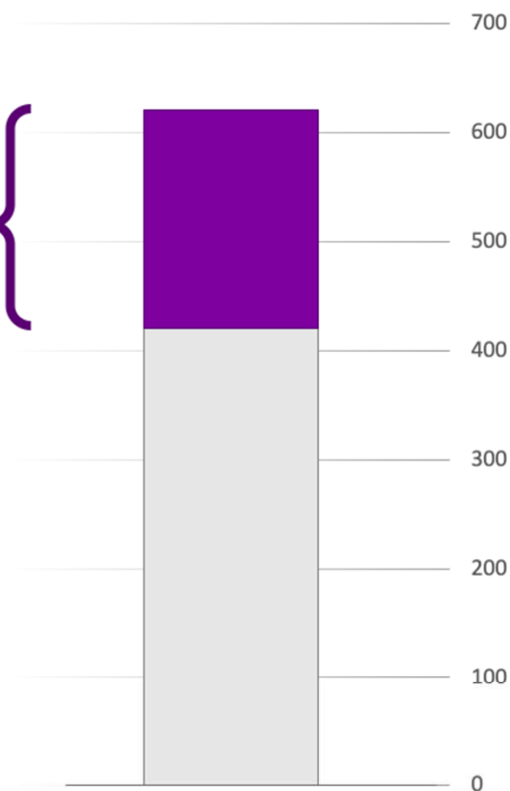
Top Local Contributors*

- Trucks (40%)
 - 38% Non-Port
 - 2% Port
- Marine Vessels (30%)
- Rail (17%)

Cancer Risk

+200
per million

■ Local model – mapped impacts
□ Regional model (minus West Oakland)



* construction in West Oakland not included



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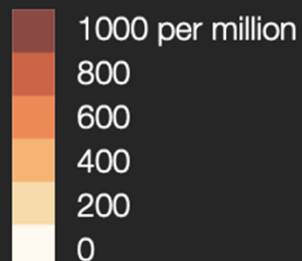
Modeled Impact of Local Sources on Residential

Cancer Risk

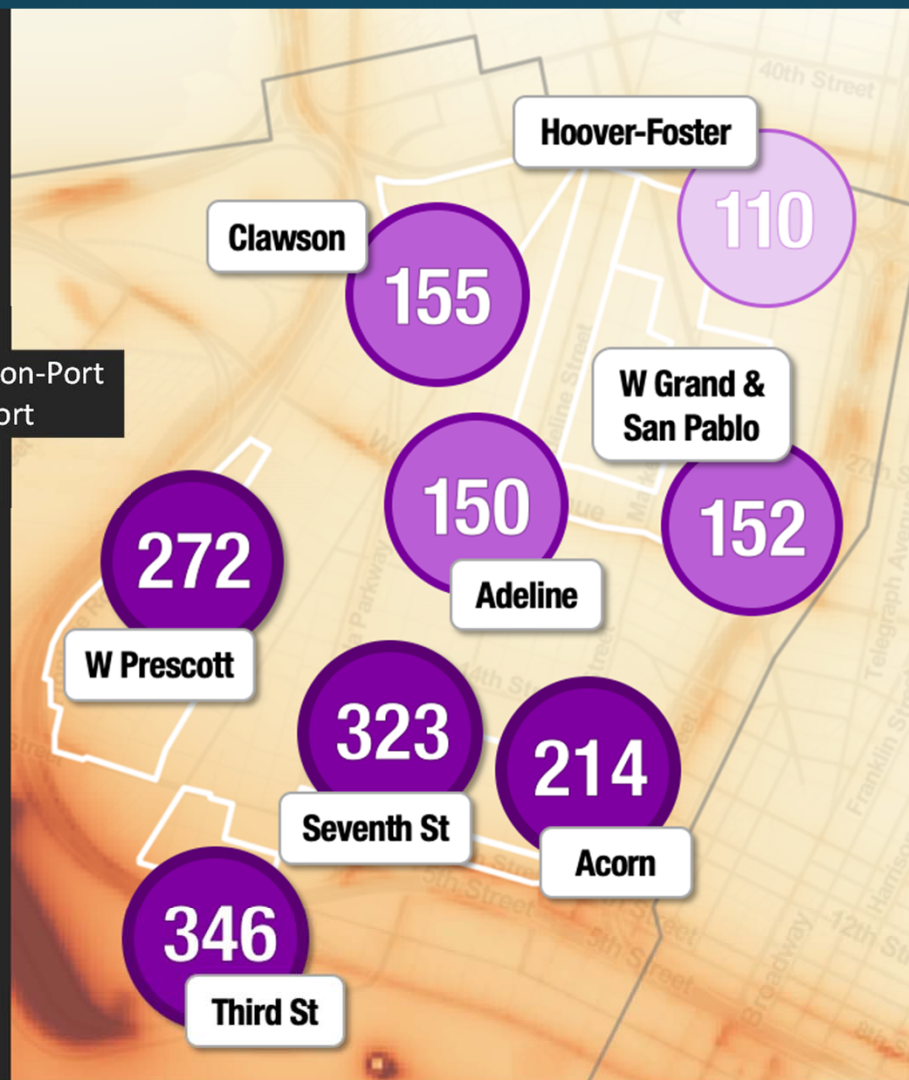
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2019-08-26 DRAFT



Highest impacts found at community-designated

Impact Zones

W Prescott

46% Port, 29% Rail, 23% Truck

Third St

41% Port, 36% Rail, 20% Truck

Seventh St

34% Port, 16% Rail, 46% Truck

Acorn

41% Port, 17% Rail, 33% Truck



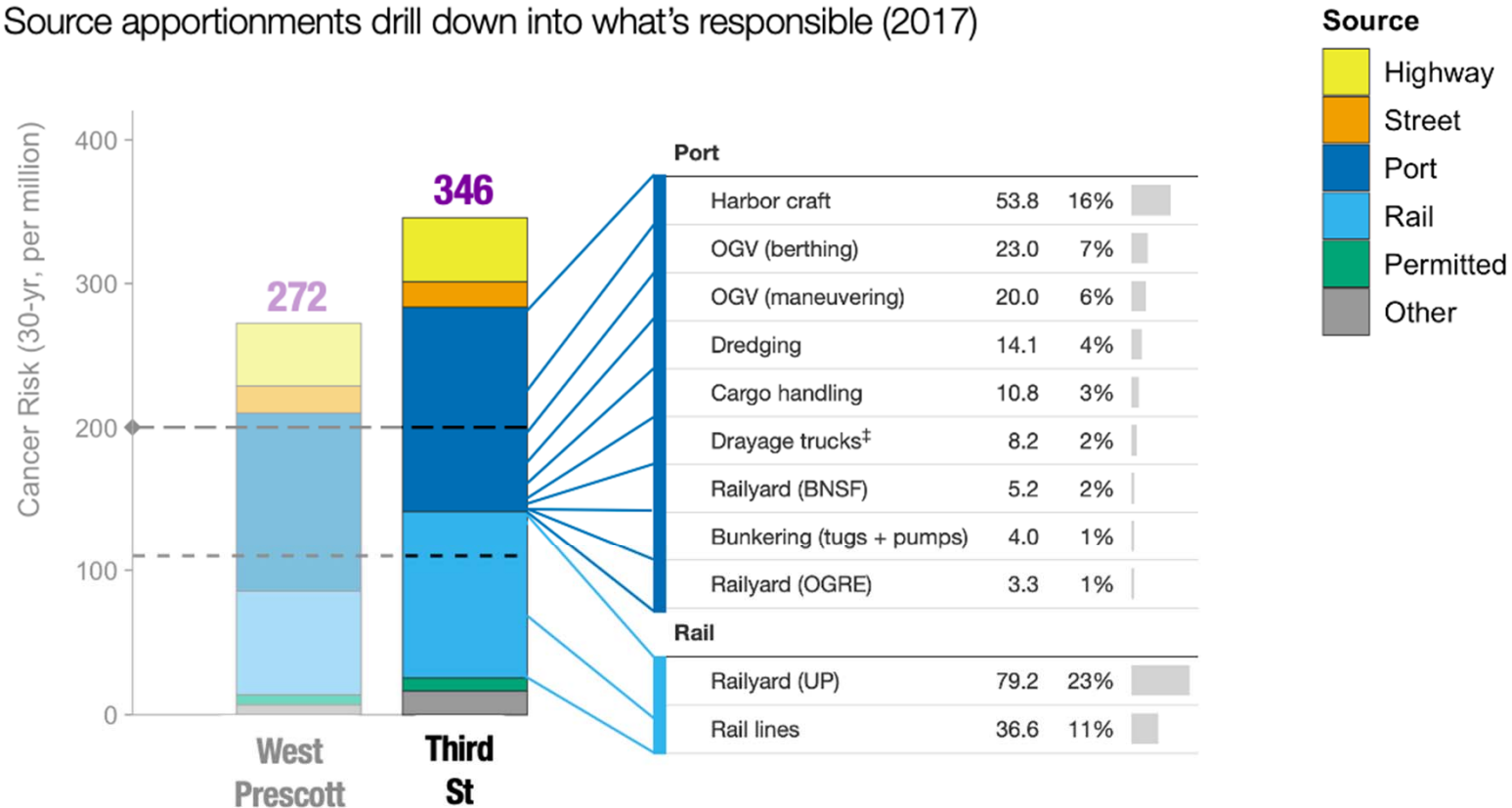
Black Carbon Measurements
EDF / Google / Aclima (2017)

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Source Contributions for Cancer Risk

Source apportionments drill down into what's responsible (2017)



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Tug Operators Reducing Emissions

2019 Tug Assist Activity, Port of Oakland						
Company	Tug	# of Ship assists	% Share	EPA Engine Tier, 2019	EPA Engine Tier, AQMD Grant	Note
AMNAV	REVOLUTION	775	12%	Tier 3	Tier 3	Repowered in 2018
STARLIGHT	AHBRA FRANCO	642	10%	Tier 3		
AMNAV	DR. HANK KAPLAN	604	10%	Tier 3		
AMNAV	SANDRA HUGH	572	9%	Tier 3	Tier 3	Repowered in 2018
STARLIGHT	Z_THREE	430	7%	Tier 2	Tier 3	Repower by 2022
STARLIGHT	Z FOUR	401	6%	Tier 2	Tier 3	Repower by 2022
AMNAV	LIBERTY	396	6%	Tier 2		
STARLIGHT	Z FIVE	388	6%	Tier 2	Tier 3	Repower by 2022
AMNAV	PATRICIA ANN	329	5%	Tier 2	Tier 3	Repower by 2022
Bay Delta	TUG VIGILANT	275	4%	Tier 2	Tier 4	Repower by 2022
CROWLEY	VALOR	244	4%	Tier 2	Tier 4	Repower by 2022
FOSS	DELTA LINDSEY	213	3%	Tier 2		
AMNAV	INDEPENDENCE	201	3%	Tier 2		
FOSS	CADEN FOSS	195	3%	Tier 4		
FOSS	SARAH	169	3%	NA		
BAYDELTA	DELTA BILLIE	155	2%	Tier 2		
BAYDELTA	DELTA CATHRYN	118	2%	Tier 2		
AMNAV	PATRIOT	63	1%	Tier 1		
FOSS	POINT FERMIN	44	1%	Tier 1		
BRUSCO	TERESA BRUSCO	38	1%	NA		
AMNAV	AMNAV LIBERTY	8	0%	Tier 2		
FOSS	KEEGAN FOSS	5	0%	Tier 2	Tier 4	Repower by 2022
WESTAR	SAGITTARIAN	1	0%	NA		

Sources: Marine Exchange of the San Francisco Bay Region, BAAQMD

Since 2017:

Tugs with cleaner engines brought into service

State funding to upgrade additional engines.

Additional upgrades possible?

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Other Recent Successes

High compliance with CARB regulations

Switcher Locomotives – Union Pacific recently introduced four Tier 4 locomotives in local service

SSA Terminals' upgrades to 13 rubber tire gantry cranes to hybrid drive systems

Independent Truckers purchasing zero emission trucks through the Statewide HVIP program -- <https://www.californiahvip.org/>

Zero-Emission equipment and truck demonstrations and infrastructure development

Near-Term Opportunities

- Dredges equipped with Tier 4 engines
- Zero and Near-Zero Emission Cargo Handling Equipment equipment
- Funding available from the Air District
 - Replace heavy-duty on- & off-road vehicles and equipment, marine engines, and locomotives www.baaqmd.gov/ab617grants and www.baaqmd.gov/moyer
- State Funding
 - Clean Off-Road Equipment Voucher Incentive Project -- <http://californiacore.org/>
 - CEC/CARB Zero Emission Drayage Truck and Infrastructure Pilot Project – Air District interested in supporting a Port and Industry-led application <https://www.energy.ca.gov/event/workshop/2020-06/carbcec-pre-solicitation-workshop-zero-emission-drayage-truck-and>

Port Truck Parking Planning

- Port currently provides approximately 50 acres
- Operation moving from Outer Harbor Terminal (30 acres) and Howard Terminal (20 acres) to Roundhouse
 - Reduction to approximately 40 acres (end of 2020)
 - Eventually, down to 15 acres (30 acres total including City obligation)
 - 2019 work by Tioga Group supports 15 acre Port requirement
- Efforts to focus depot operations on “core” purposes
 - Overnight parking for tractors
 - Staging of containers-chassis
 - Marine terminal efficiency
 - Reduction of tractor/chassis parking in neighborhoods
- Smart Parking App
 - FITS component
 - Leverage technology to enhance operational efficiencies

Related Study

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Joint City/Port Heavy Container Permit Program Evaluation

How is this program being utilized today and what are the program's constraints?



Last program update completed in the early 1990's.

New topics to review/update (e.g., truck weights, container weights, and roadway designations).

Is the existing program competitive with other nationwide port programs?



If No:
What updates/modifications are suggested to maintain program competitiveness in Oakland?

Does the existing program meet the needs of its users?



If No:
What enhancements are suggested to meet the users needs?

Next Steps

- Task Force Day 2 Webinar
 - July 10, 2020
 - Task Force Input and Discussion
- Board Meeting
 - July 23, 2020
 - Progress Report
 - Recommendations

Thank you!

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