

Co-powering Solutions to Air Pollution in Stockton

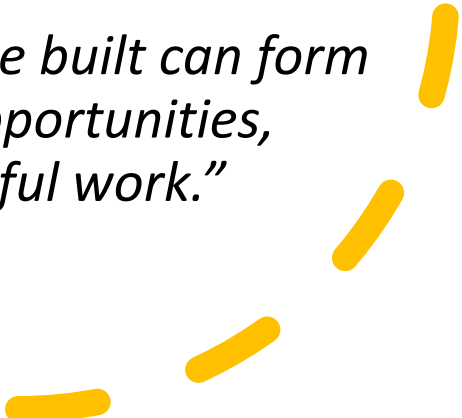
**Little Manila Rising
Central Valley Air Quality Coalition (CVAQ)
Edge Collaborative**



Community Based Research

1. **Share and be mindful of power.**
 2. **Listen carefully.**
 3. **Question assumptions and preconceptions.**
 4. **Value different perspectives.**
- **Rigor:** blending multiple sources of knowledge and ways of knowing
 - **Relevance:** informed by people with the most direct experience of issues
 - **Reach:** builds action-oriented collaborations

“Over the long term, the relationships that are built can form the basis for additional research ideas and opportunities, more varied perspectives, and more meaningful work.”





HIGHWAY

HIGHWAY

COMMUNITY

HIGHWAY

Schuff
Steel

COLD STORAGE

TRUCK
S

HIGHWAY

TRUCKS

TRAINS

OIL & GAS

BIOMASS INCINERATOR

OCEAN-GOING
VESSELS & TUGS

Cargo
Equipment
& Forklifts

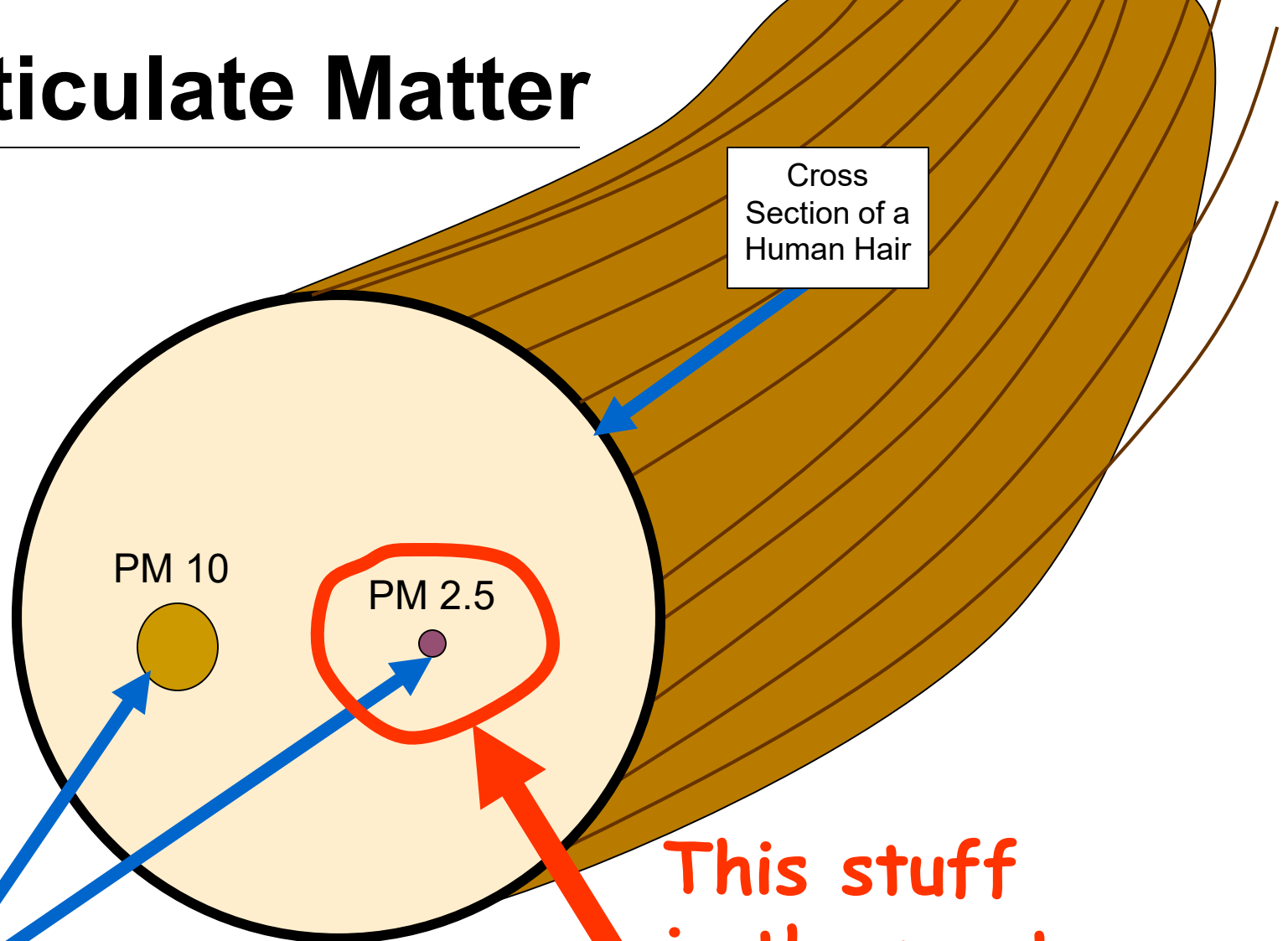
OIL & GAS

TRAINS

Pacific
Ethanol

PM Particulate Matter

10x to 100x smaller than the width of a human hair!



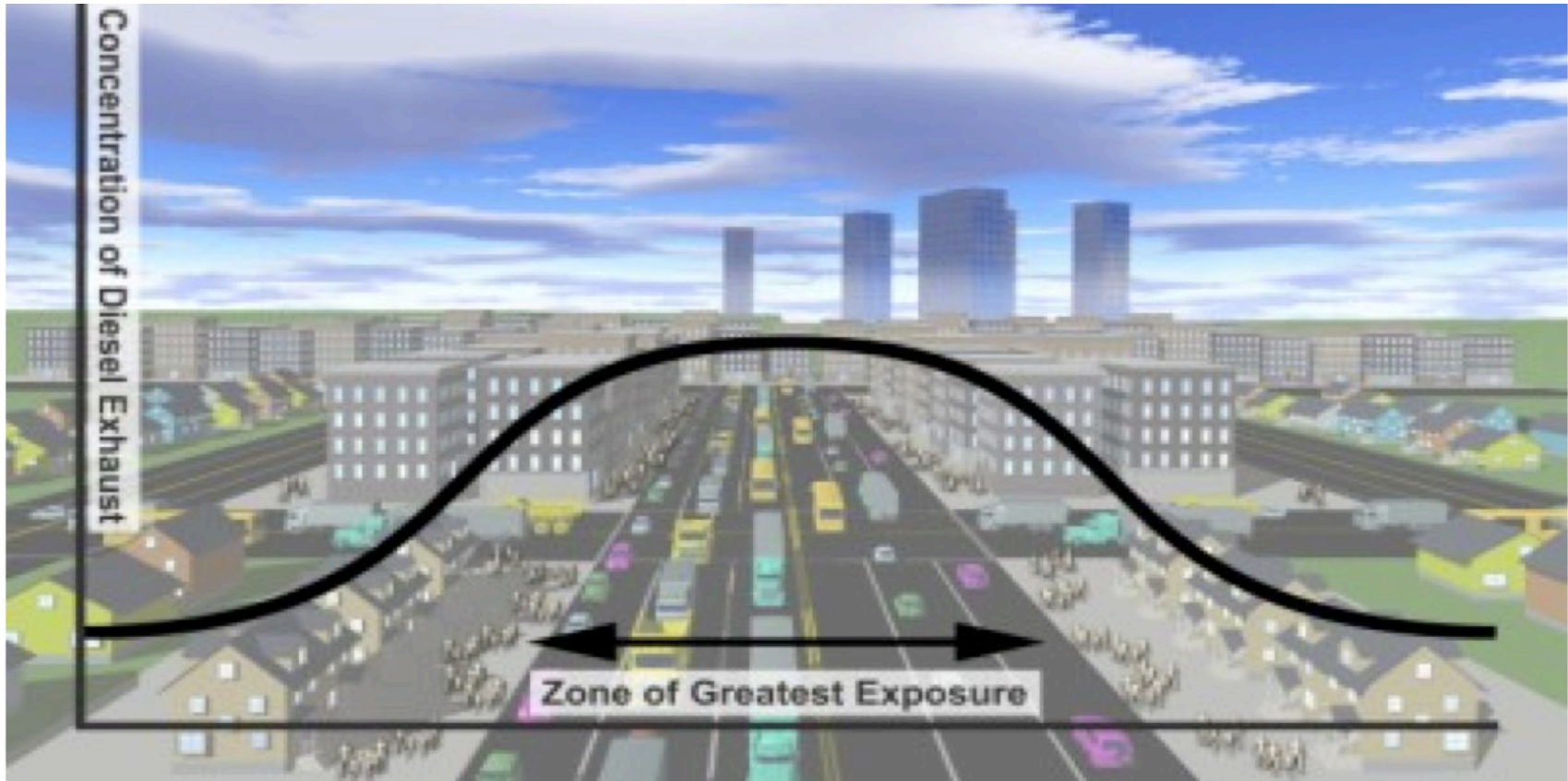
Cross Section of a Human Hair

PM 10

PM 2.5

This stuff is the most dangerous!

PM



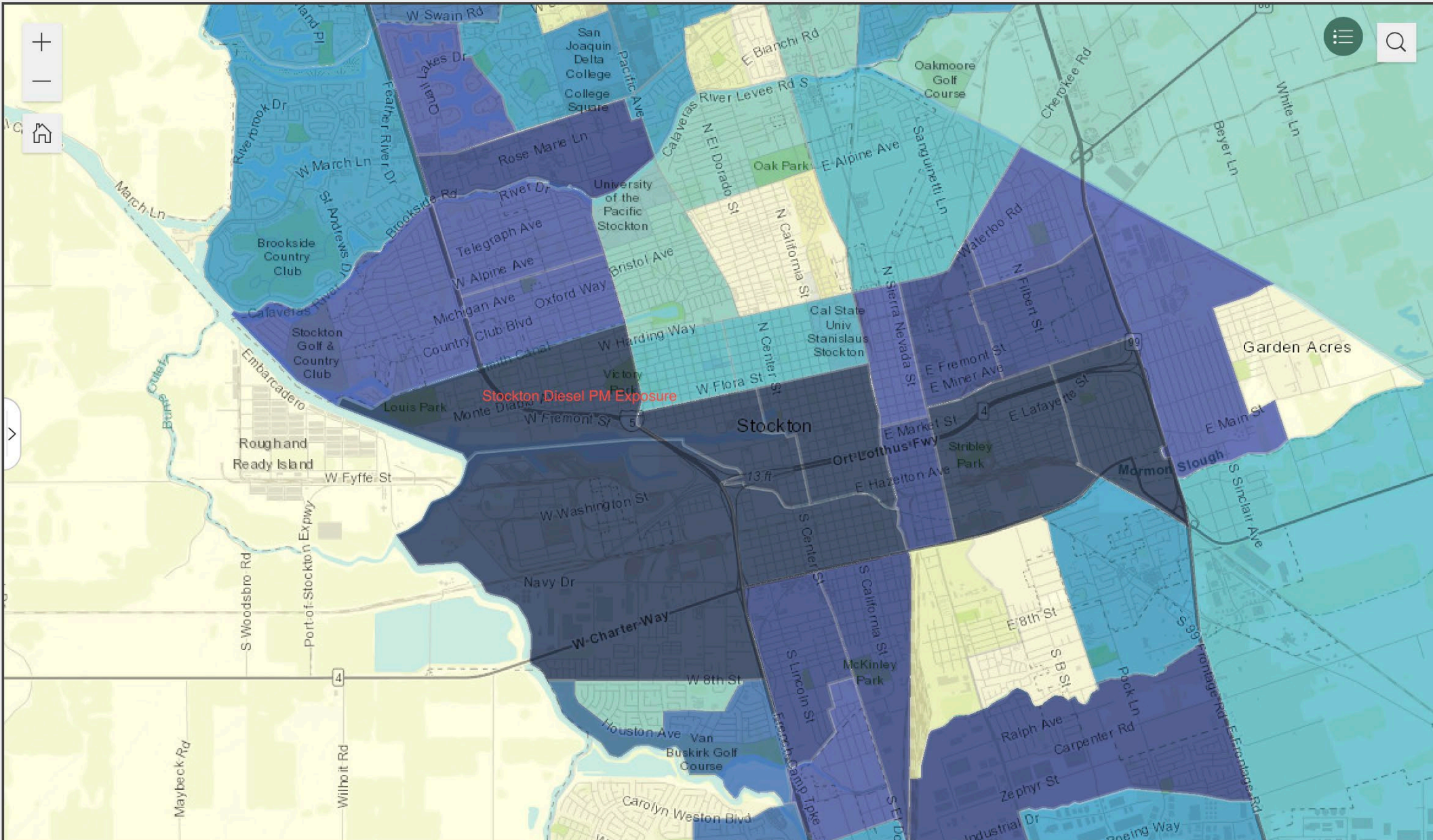


Pollution Burden

- Ozone
- PM2.5
- Diesel Particulate Matter**
- Drinking Water Contaminants
- Children's Lead Risk from Housing
- Pesticide Use
- Toxic Releases from Facilities
- Traffic Impacts
- Cleanup Sites
- Groundwater Threats

Population Characteristics

- Asthma
- Cardiovascular Disease
- Low Birth Weight
- Education
- Housing Burden
- Linguistic Isolation
- Poverty
- Unemployment



Metro Area Statistics: Stockton-Lodi, CA

Annual Projected Impacts in 2023: Health		
Deaths	47	# of deaths
Heart Attacks	22	# of heart attacks
Acute Bronchitis	39	# of cases
Upper Respiratory Symptoms	705	# of cases
Lower Respiratory Symptoms	493	# of cases
Emergency Room Visits, Asthma	11	# of visits
Asthma Exacerbation	739	# of cases
Lifetime Cancer Risk Per Million	584	# of cases per million people

DIESEL

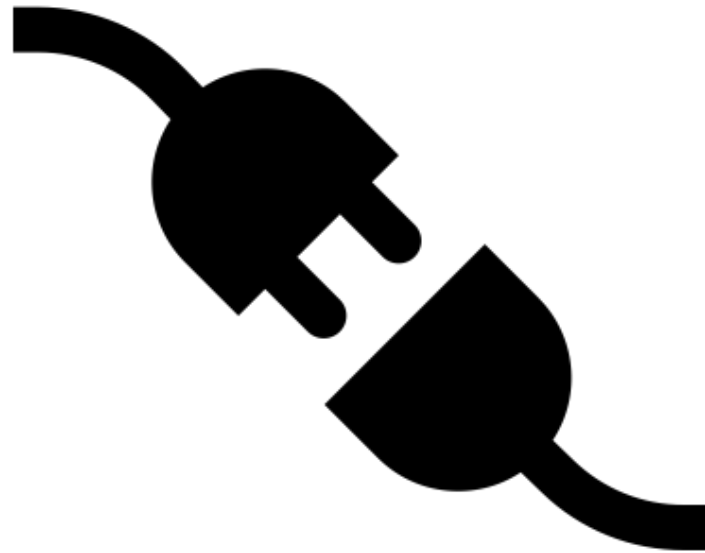


Three main ways to clean the air

1. Reduce Emissions
2. Filter Pollutants
3. Move Pollution Away

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Vehicle Electrification



Air Filters and Buffers

Air filters in homes and schools

Home weatherization

Sound walls *and* vegetative barriers

Health and safety zones (Land use)



Safer Distances



Freeways and Major Roads: 500 - 2,000 feet



Distribution Centers: 80% drop in emissions at 1,000 feet



Trains: Highest level of impact is 1,000 feet (service and maintenance activities). Next level of impact is 0.5-1 mile.

Highways



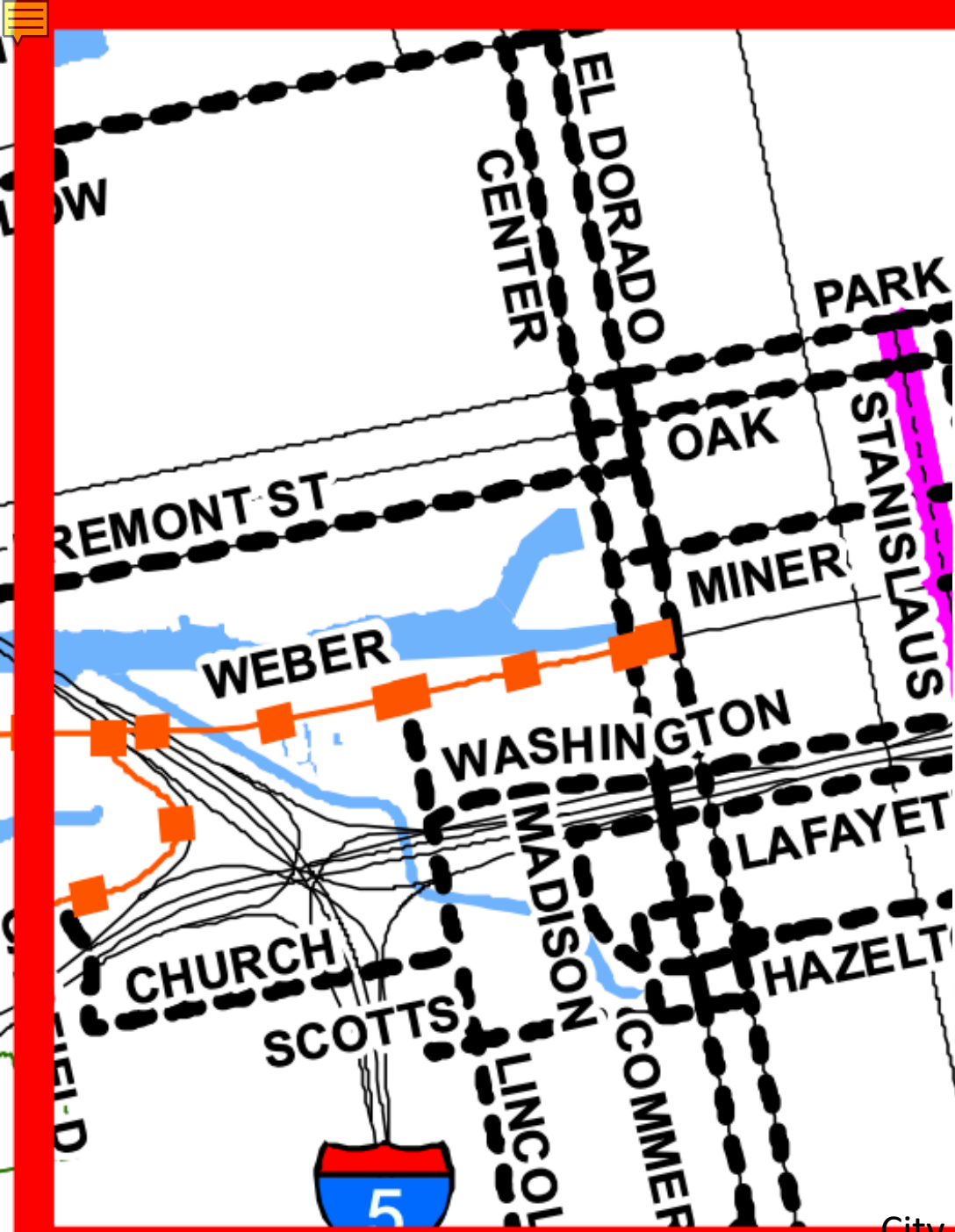


Figure 13-76 (Rubenstein, 2019)



Boston's Central Artery freeway (left) was demolished and replaced with an underground freeway and the Rose Kennedy Greenway (right).



(a)



(b)

CARB Enforcement