



Community Emission Inventory Update CARB Mobile and Area Source Emissions

**Stockton
AB 617 Community Steering Committee Meeting
June 3, 2020**

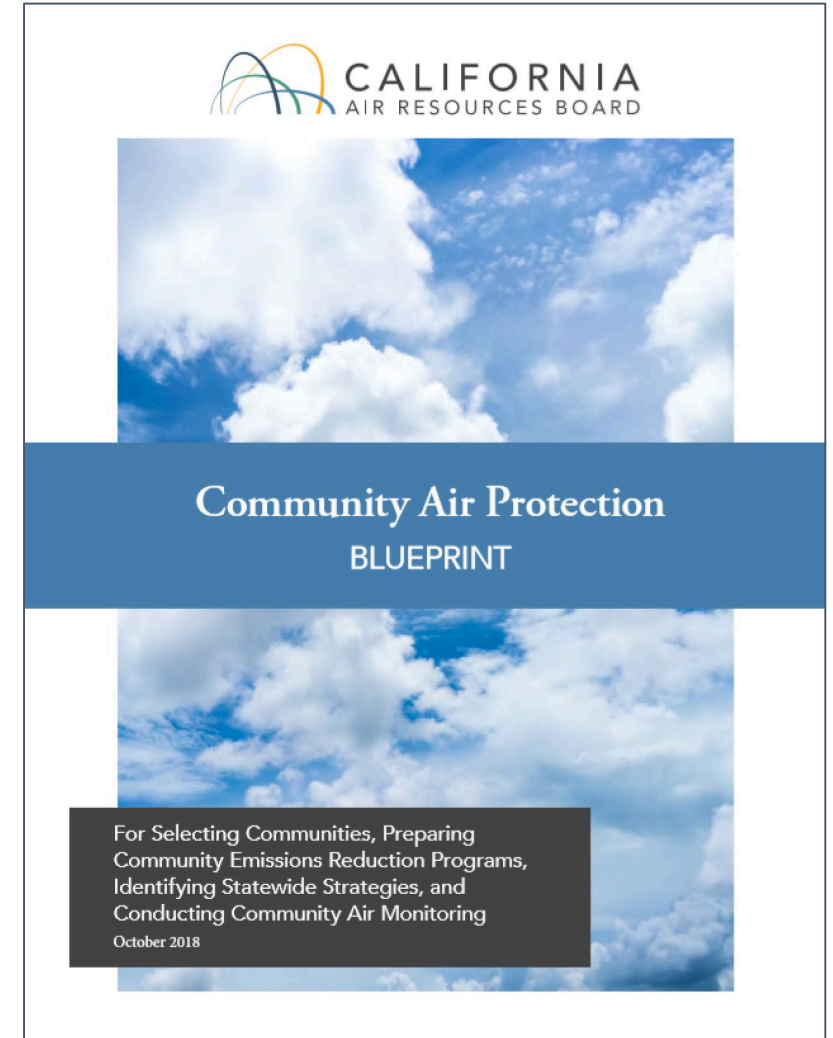
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Air Quality Planning and Science Division
California Air Resources Board**

Emission Inventories

Foundation of Air Quality Programs

AB 617 calls for the use of emission inventories in community emissions reduction programs to:

- Identify emission sources
- Establish baseline emissions
- Set emission targets and reduction measures
- Track emission reductions in communities selected for a community emissions reduction programs



Air District & CARB Staff Collaboration



Stationary Sources:
Power Plants, Refineries, Industry

District



Area Sources:
Residential Wood Combustion, Consumer
Products, Pesticides

CARB/District



On-road Mobile Sources:
Cars, Trucks

CARB



Off-road Mobile Sources:
Forklifts, Tractors, Transport Refrigeration
Units

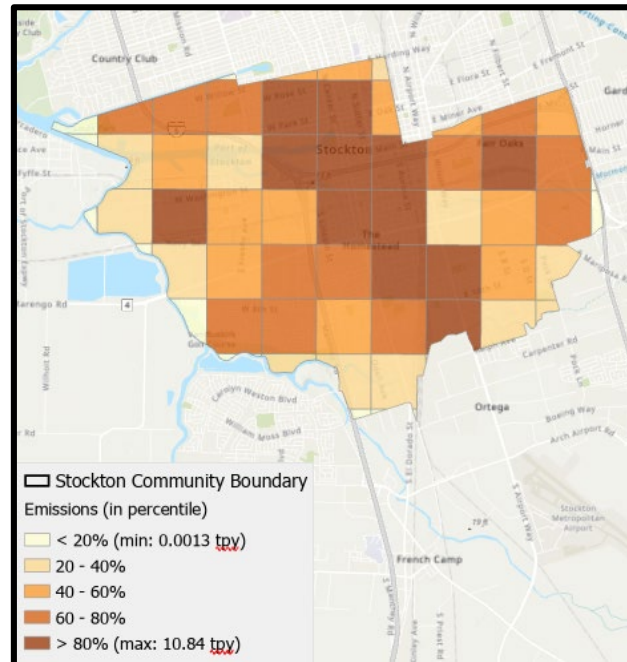
CARB

June, 2020

High Resolution 1-km Grid Approach

- Characterized community-specific emissions using 1x1 km grid
- Use spatial surrogates to allocate regional-level area source emissions to more specific locations
- Use resulting high-resolution 1x1 km grid to determine sources and allocate emissions by source category within each community

Example maps below show gridded PM_{2.5} emissions from area sources



** Map shows area-weighted emissions for grids that are only partially within the community boundary.*

Allows for better characterization of sources and emissions in communities

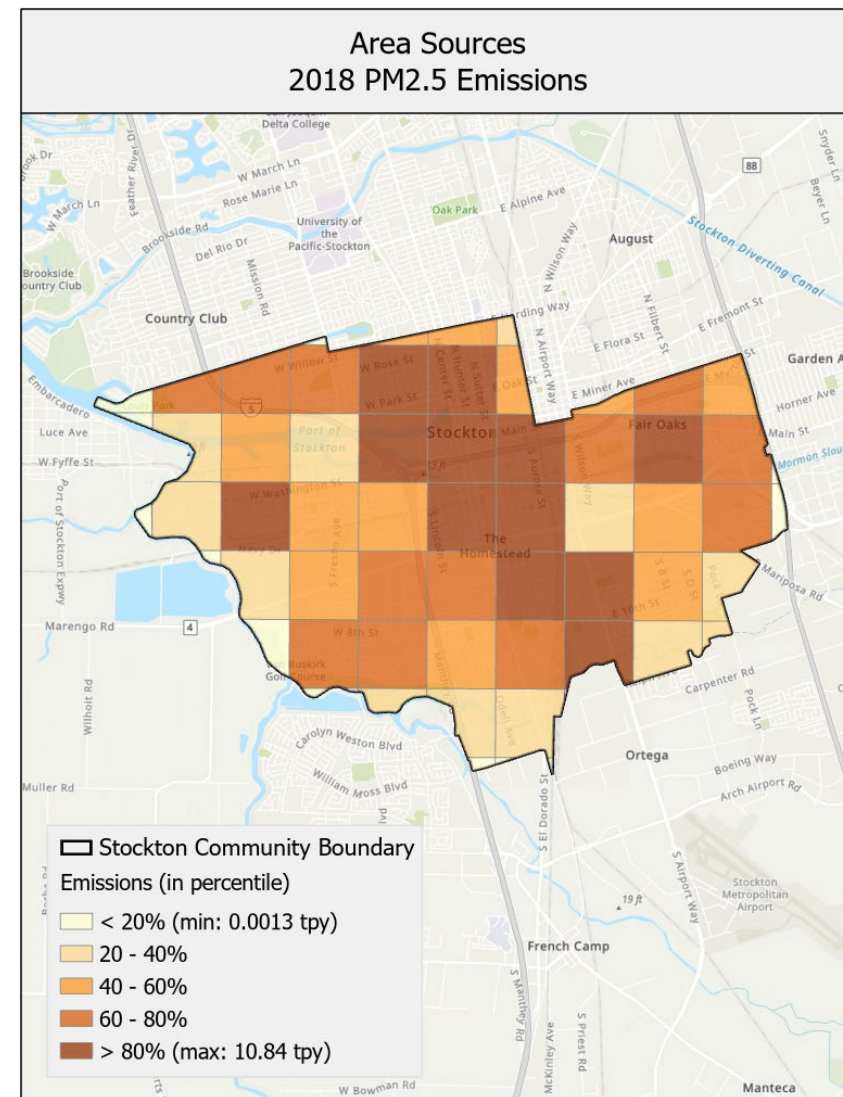
Area Sources



Sources that can be moved to actual emission location:
Small emission sources spread over an area, but with specific locations (e.g., gas stations, auto body shops, print shops)

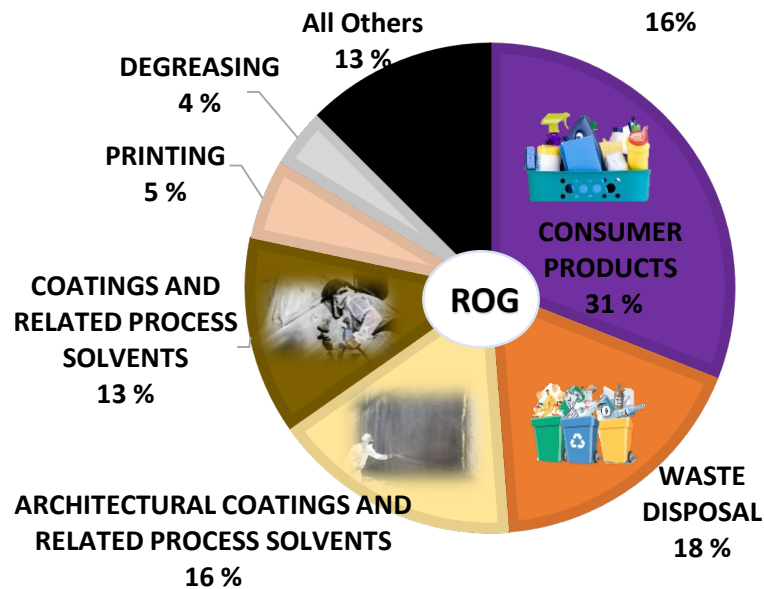
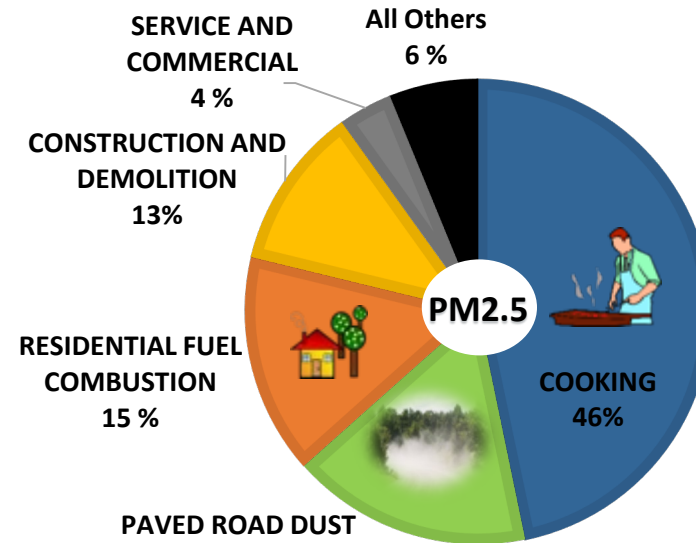
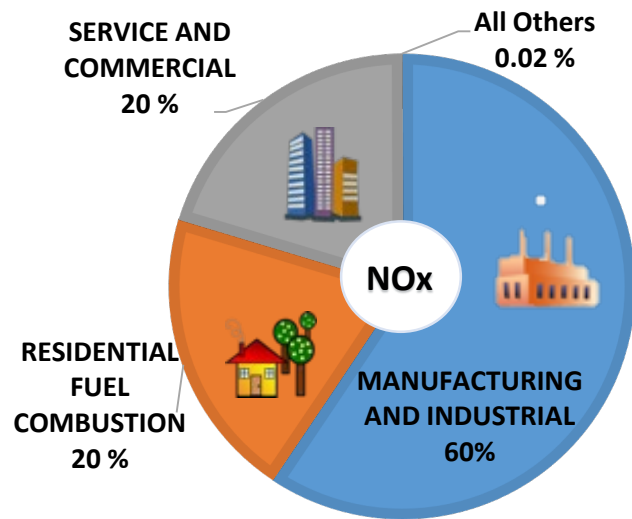


Sources that operate and emit over large areas:
Emission sources that lack specific location detail (e.g., consumer products, road dust, architectural coating)

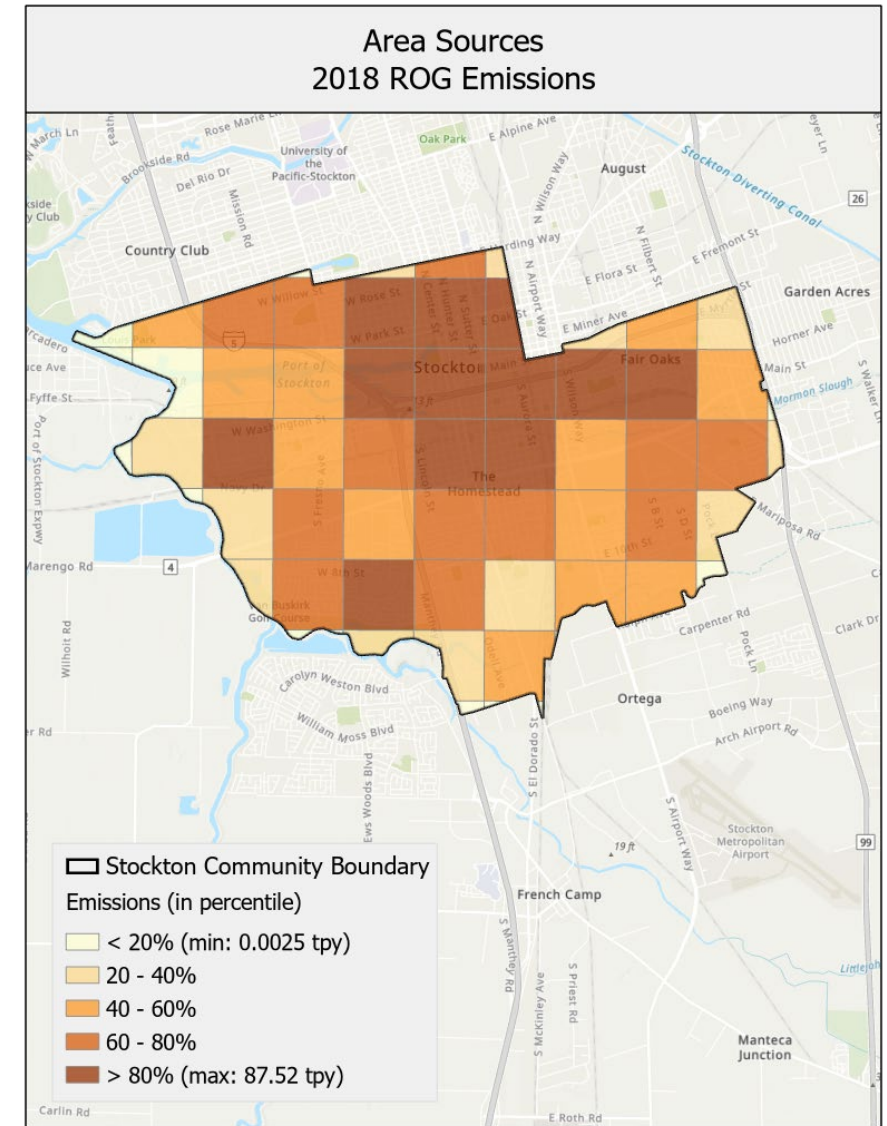


* Map shows area-weighted emissions for grids that are only partially within the community boundary.

DRAFT 2018 Area Source Emissions



NOx: Nitrogen Oxides
ROG: Reactive Organic Gases
PM2.5: Particulate Matter 2.5 Microns or Smaller



* Map shows area-weighted emissions for grids that are only partially within the community boundary.

Off-Road Mobile Sources

- **Facility Sources:**
(e.g., forklifts, cargo handling equipment, locomotives)
- Specific location of operation and facility level data

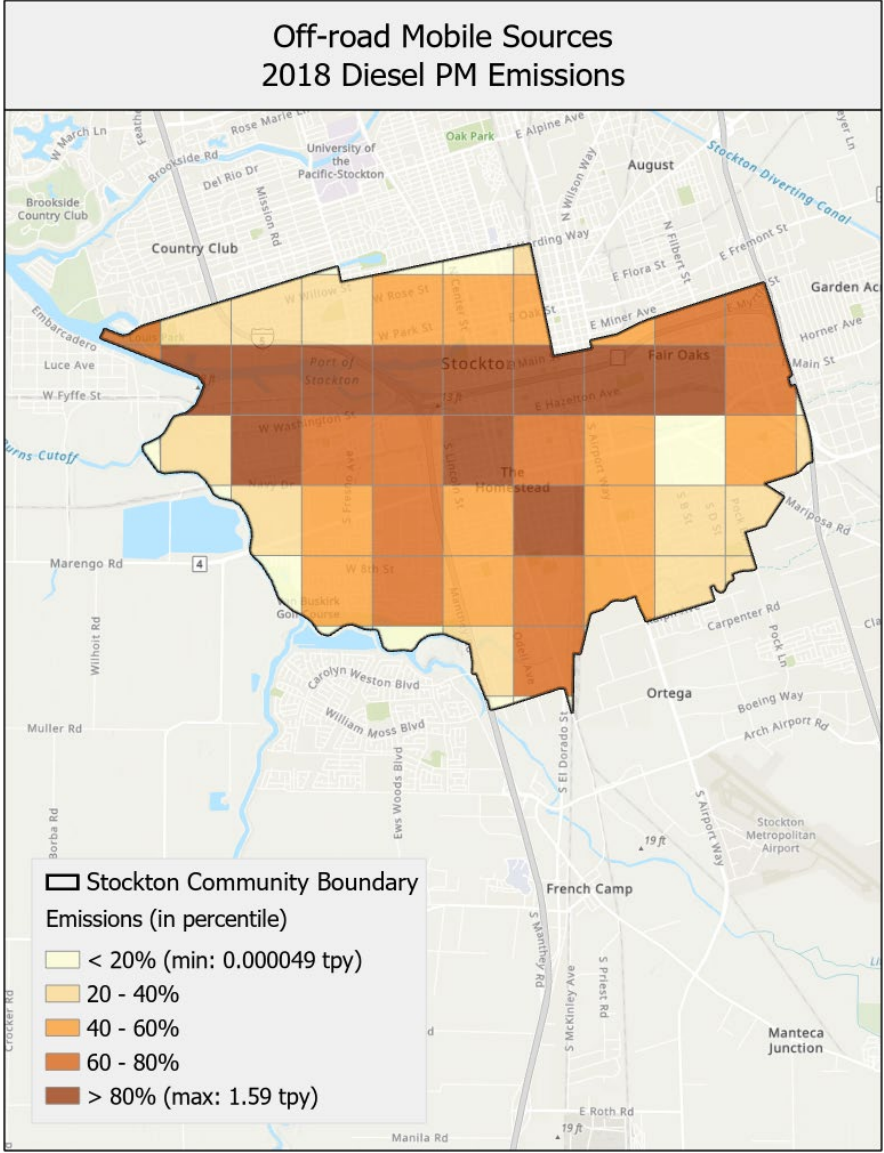
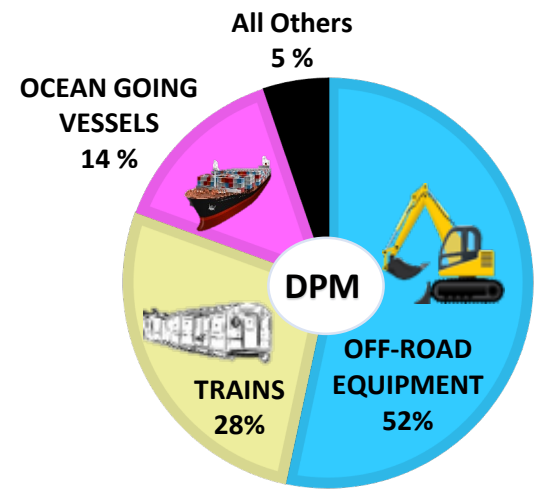
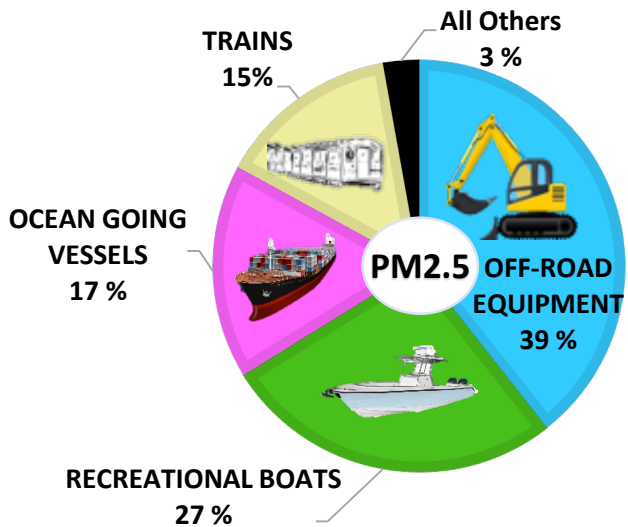
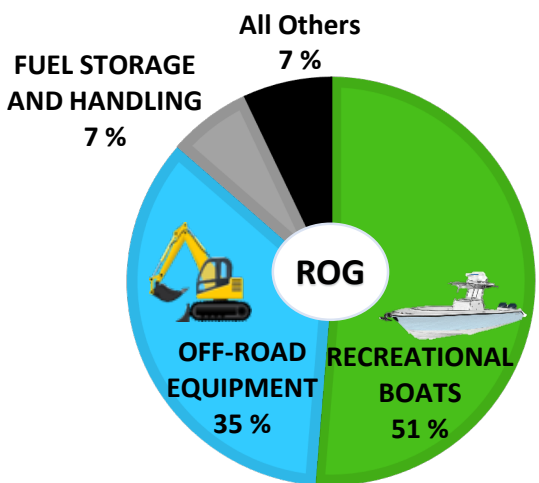
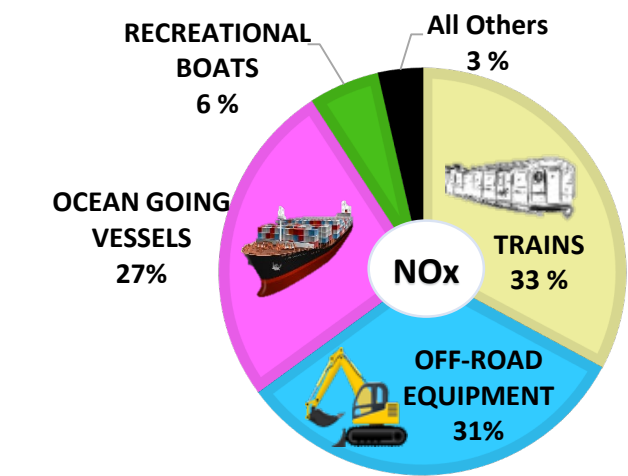


- **Non-facility Sources:**
(e.g., construction/ ag equipment, portable engines)
- No specific location of operation or facility level data



Existing activity data from reporting requirements, voluntary reporting, surveys, or purchased data sources

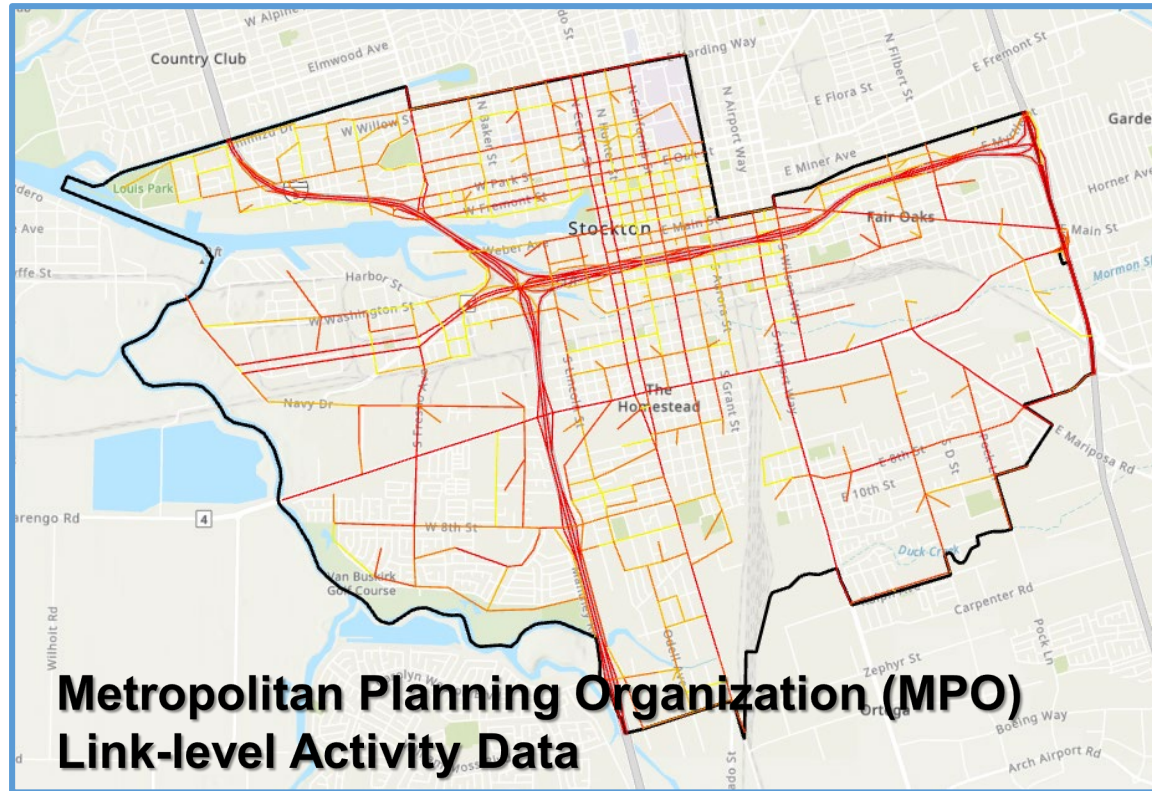
DRAFT 2018 Off-Road Mobile Source Emissions



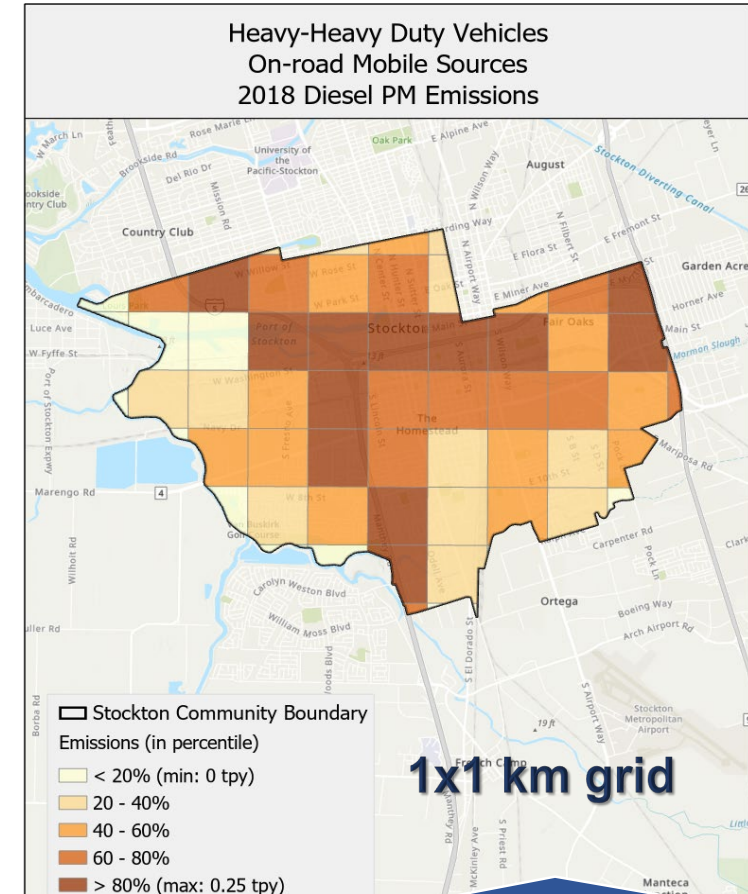
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DPM: Diesel Particulate Matter

On-Road Mobile Sources

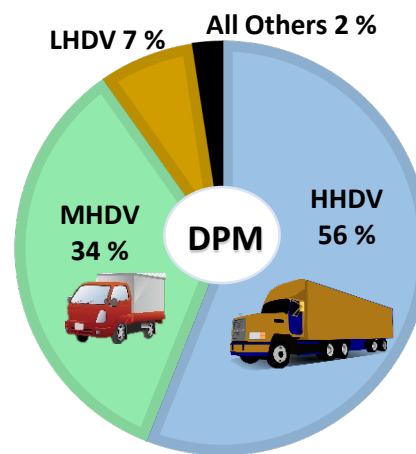
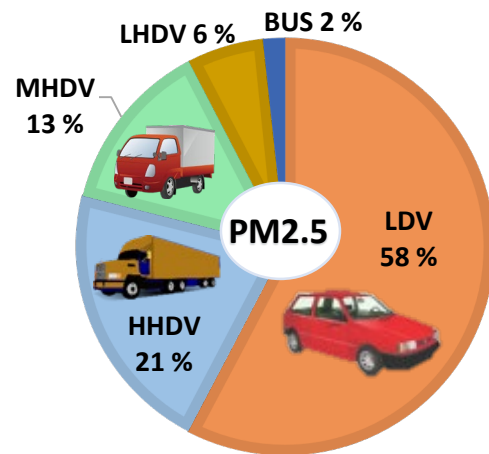
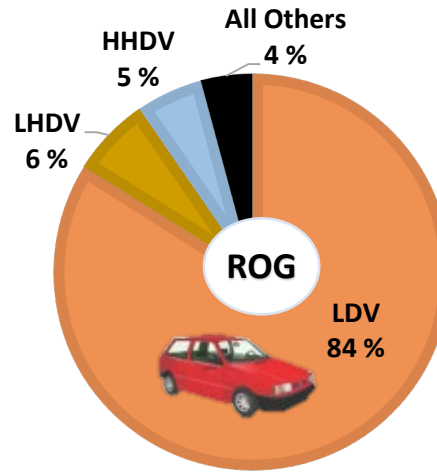
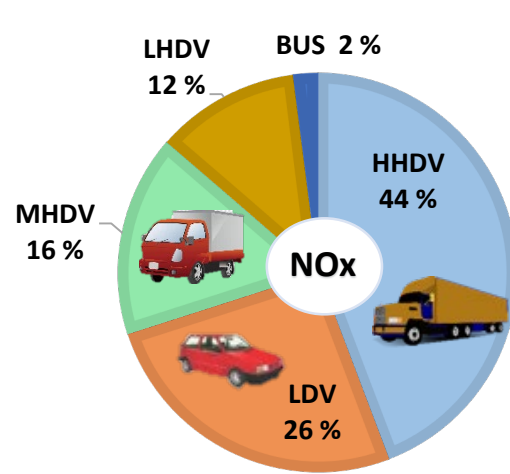


Estimate VMT based on vehicle activity
in the community

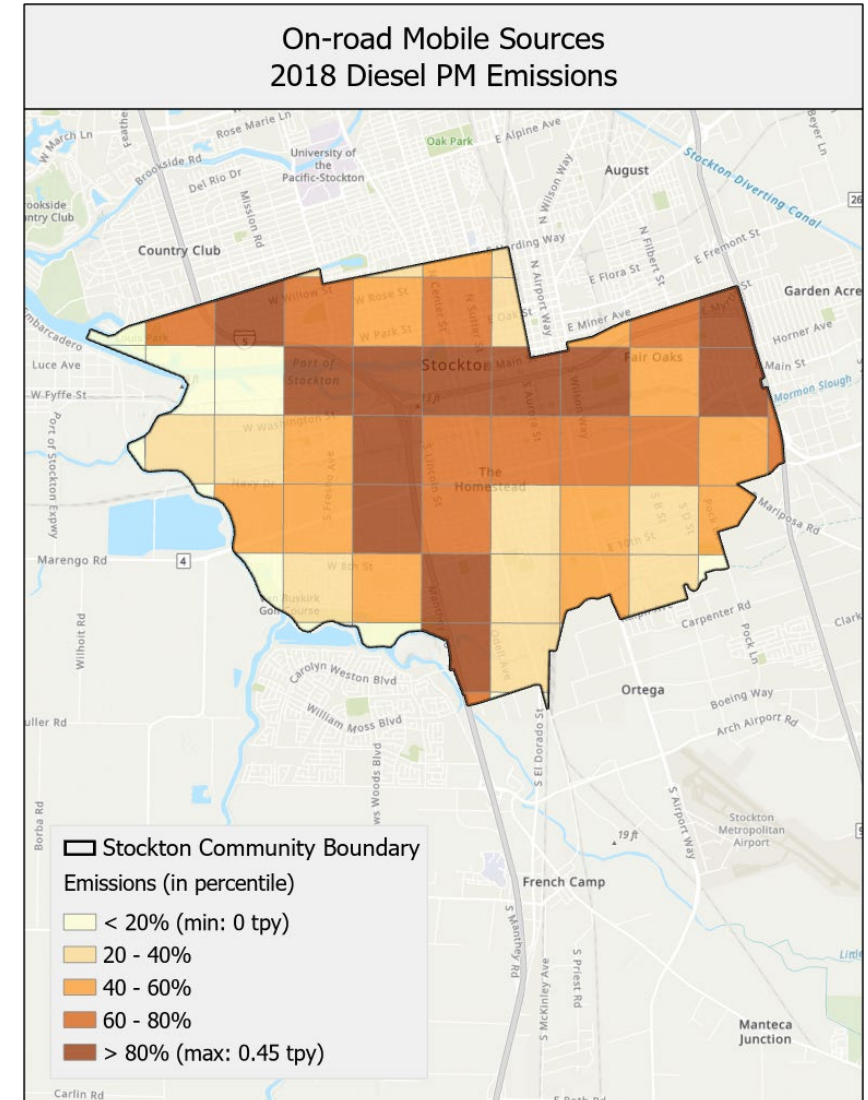


Apply emission factors to VMT
to calculate emissions

DRAFT 2018 On-Road Mobile Source Emissions



LDV: Light Duty Vehicles
 LHDV: Light-Heavy Duty Vehicles
 MHDV: Medium-Heavy Duty Vehicles
 HHDV: Heavy-Heavy Duty Vehicles
 BUS: Buses



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