2019 Inventory of Air Emissions

THE PORT OF LOS ANGELES

Chris Cannon, Director
Environmental Management

October 2020

Presentation Acronyms

- CAAP: Clean Air Action Plan
- CARB: California Air Resources Board
- CHE: Cargo Handling Equipment
- CH_4: methane
- CO: carbon monoxide
- CO_2: carbon dioxide
- CO_2e: carbon dioxide equivalent
- DPM: diesel particulate matter
- EI: emissions inventory
- EPA: U.S. Environmental Protection Agency
- ESI: Environmental Ship Index
- HC: hydrocarbons
- NOx: oxides of nitrogen
- N_2O: nitrous oxide
- OGV: ocean-going vessel
- PM: particulate matter
- SCAQMD: South Coast Air Quality Management District
- SOx: sulfur oxides
- TEU: twenty-foot equivalent unit
- tonnes or mtons: metric tons
- $\mu g/m^3$: micrograms per cubic meter (concentration in air)

POLA Annual Emissions Inventories

- Annual activity-based
  - 2001, 2005 – 2019
- Source categories
  - Ships, harbor craft, cargo handling equipment, trucks, locomotives
- Pollutants

  PM • PM_{10} • $PM_{2.5}$ • DPM • NO_x • SO_x • HC • CO
- Greenhouse gases

  CO_2 • CH_4 • N_2O • CO_2e
- Annually coordinated with & reviewed by CARB, SCAQMD, & EPA

Emissions Reductions Since 2005

Diesel Particulate Matter: DOWN

87%

2023 Goal **77%**

Nitrogen Oxides: DOWN

62%

2023 Goal **59%**

Sulfur Oxides: DOWN

98%

2023 Goal **93%**

Greenhouse Gases Equivalent: DOWN

15%

25%

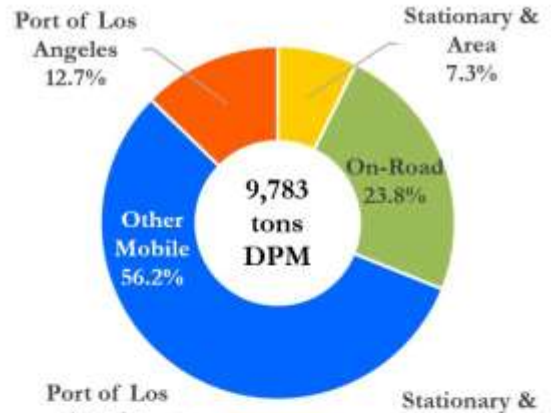
TEU Increase

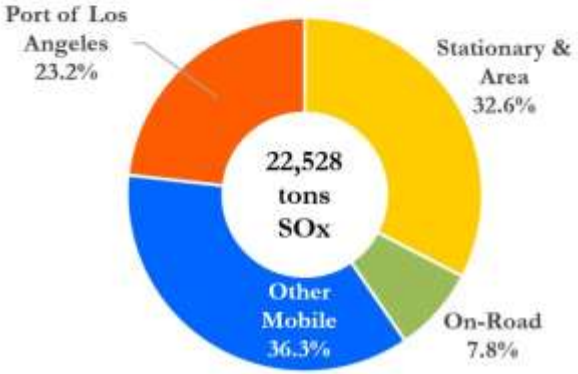
Comparisons to 2005 & 2018

EI Year	DPM	NO_x	SO_x	CO	HC	CO_2e
	tons	tons	tons	tons	tons	tonnes
2019	112	6,172	109	2,003	363	879,774
2018	118	6,554	118	2,132	380	933,572
2005	879	16,206	4,983	3,757	850	1,036,876
Previous Year (2018-2019)	**-5%**	**-6%**	**-7%**	**-6%**	**-5%**	**-6%**
CAAP Progress (2005-2019)	**-87%**	**-62%**	**-98%**	**-47%**	**-57%**	**-15%**

Regional Contributions

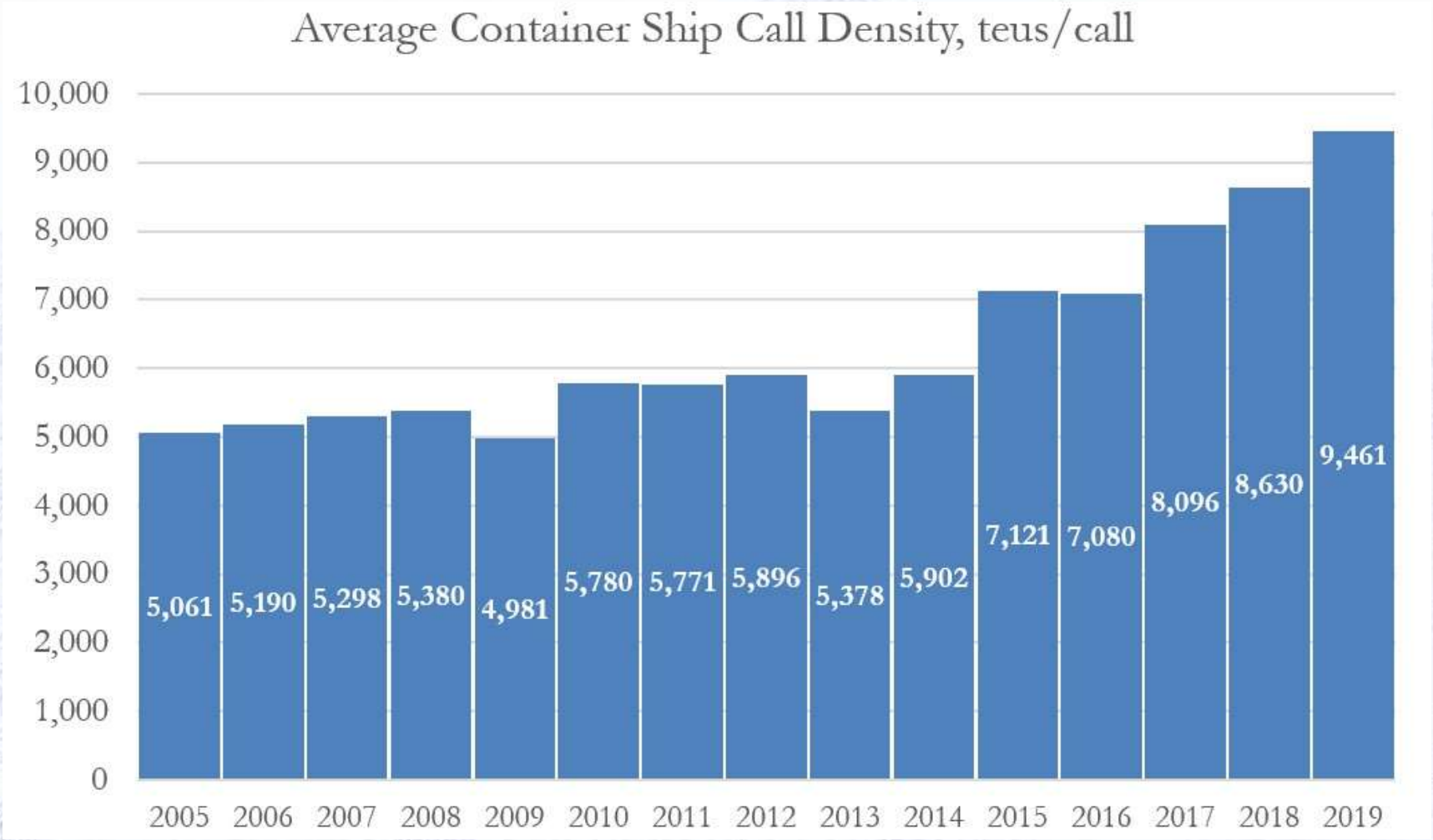
2005



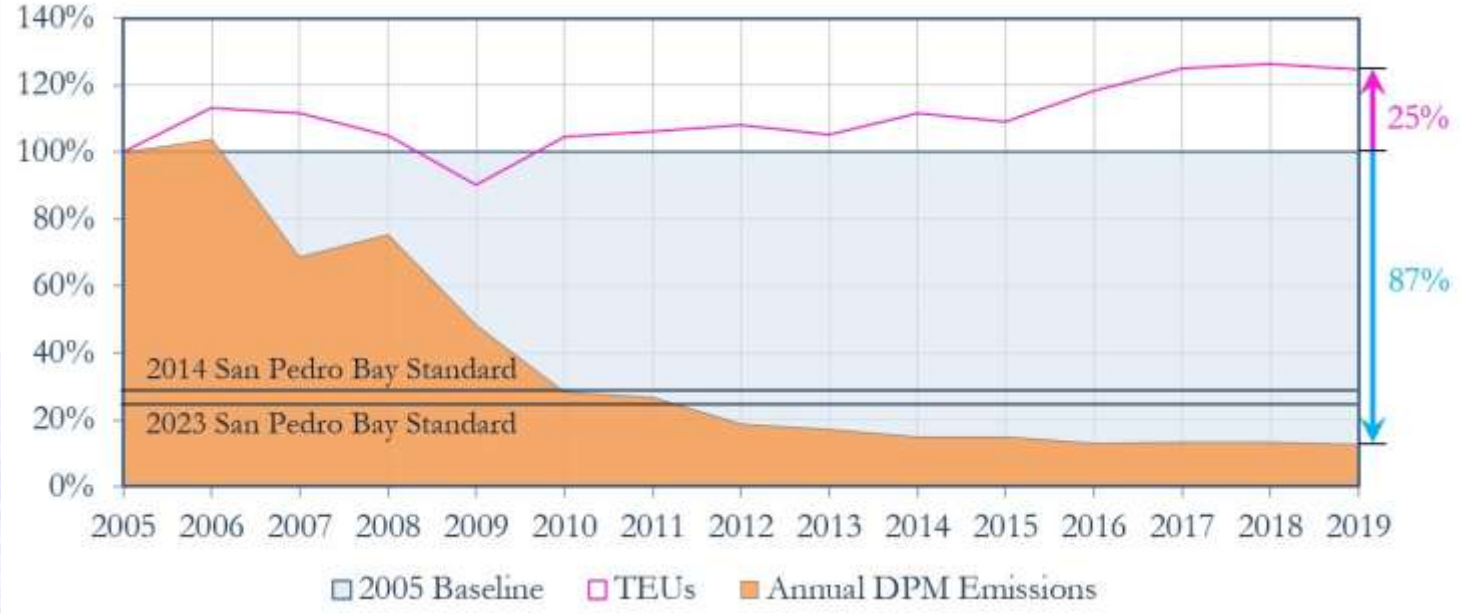


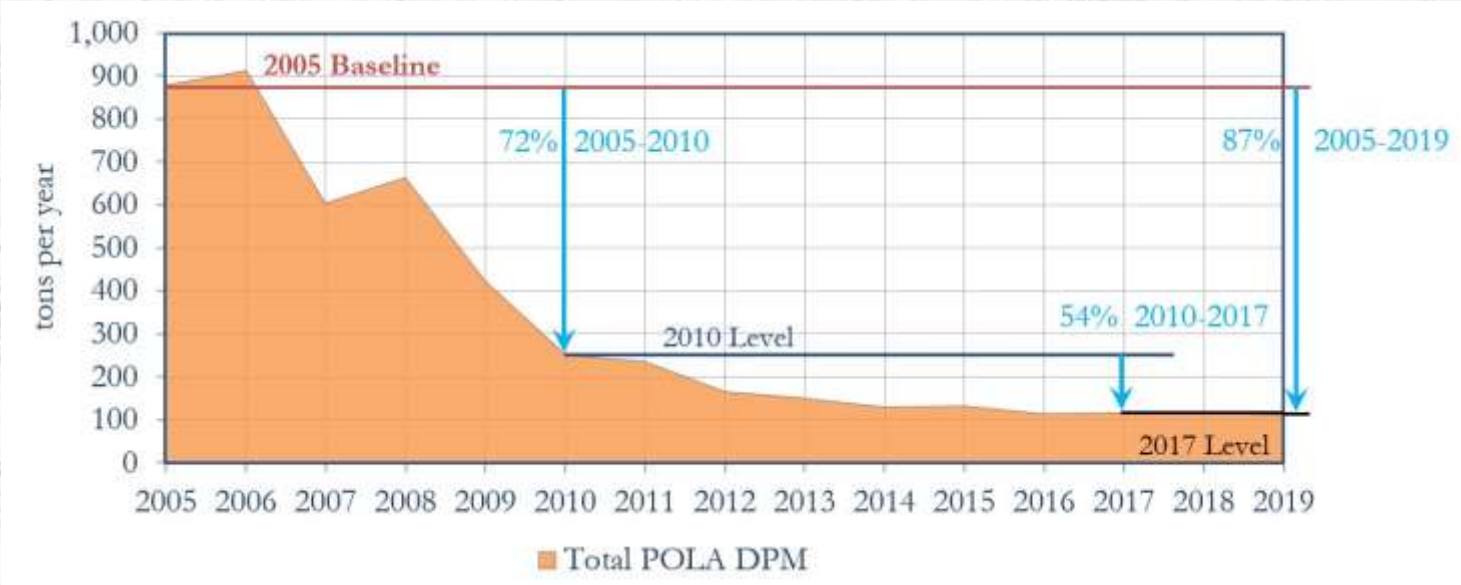
2019

Vessel Efficiency Improvements



CAAP DPM Progress

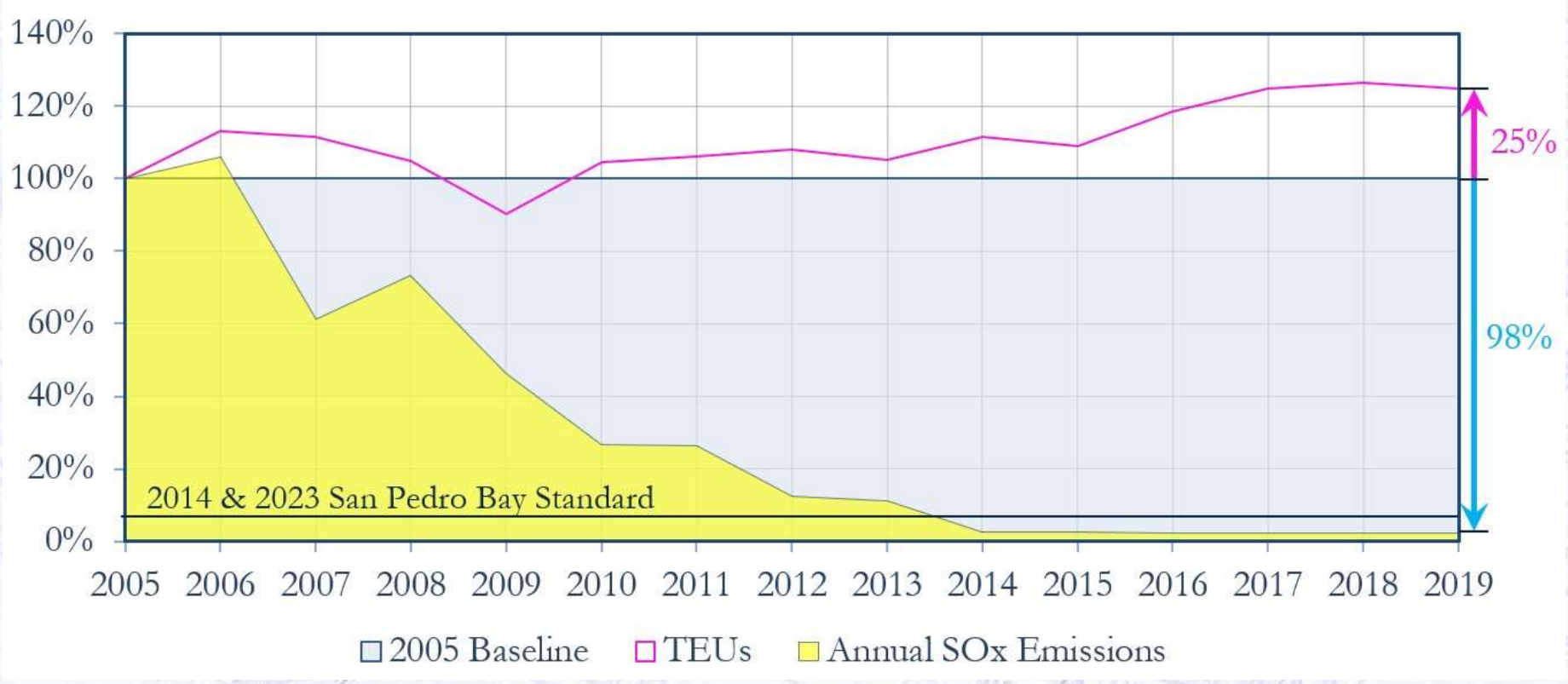




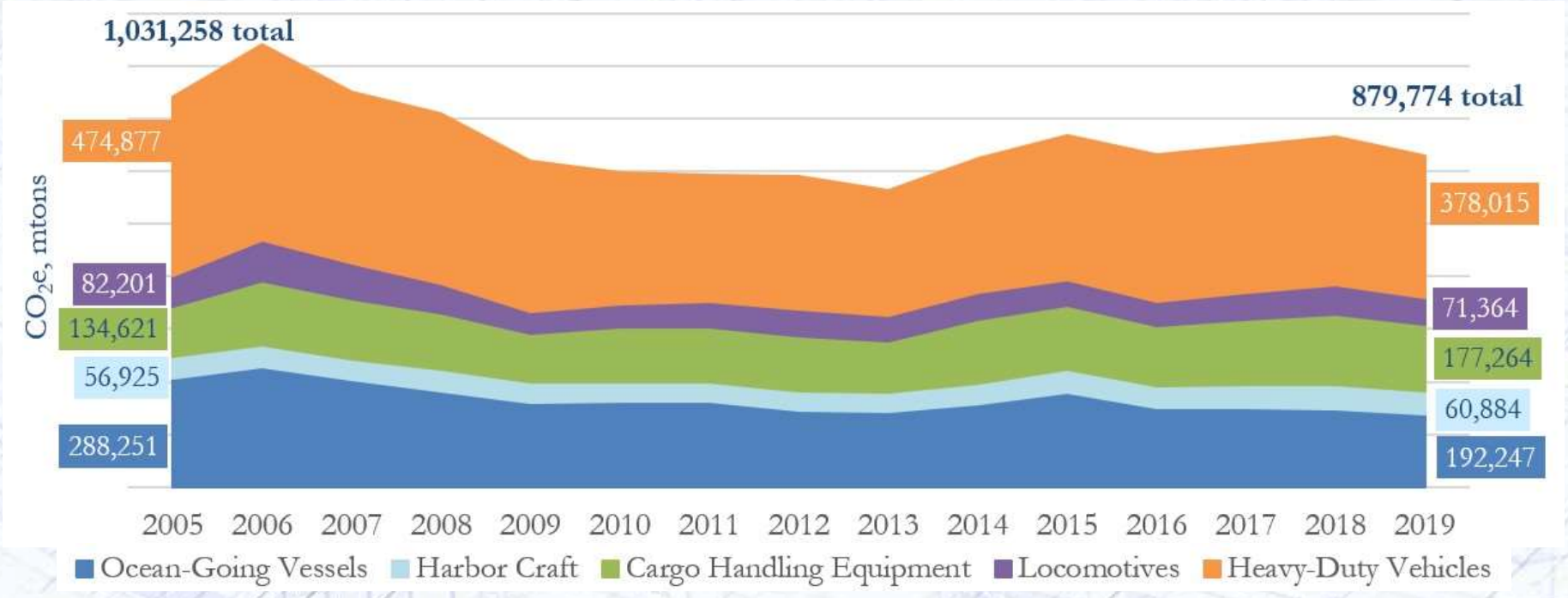
CAAP NO_x Progress

THE PORT OF LOS ANGELES

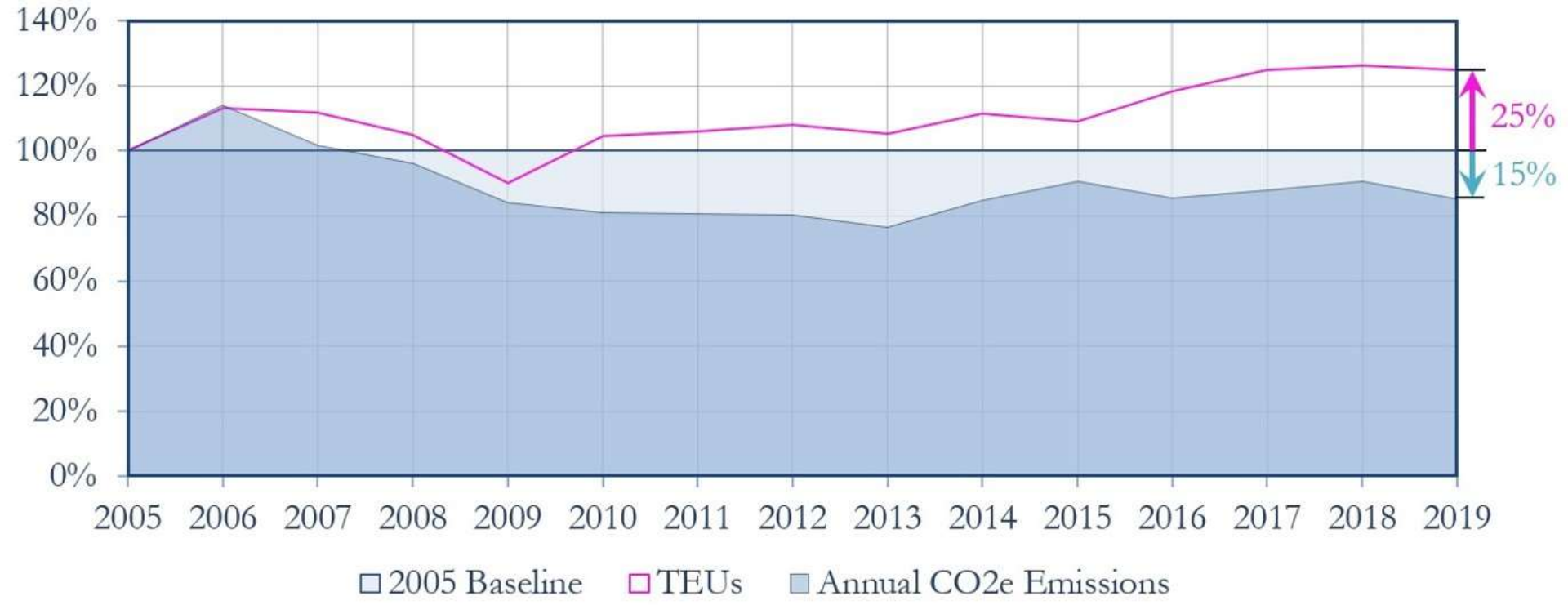
CAAP SO_x Progress



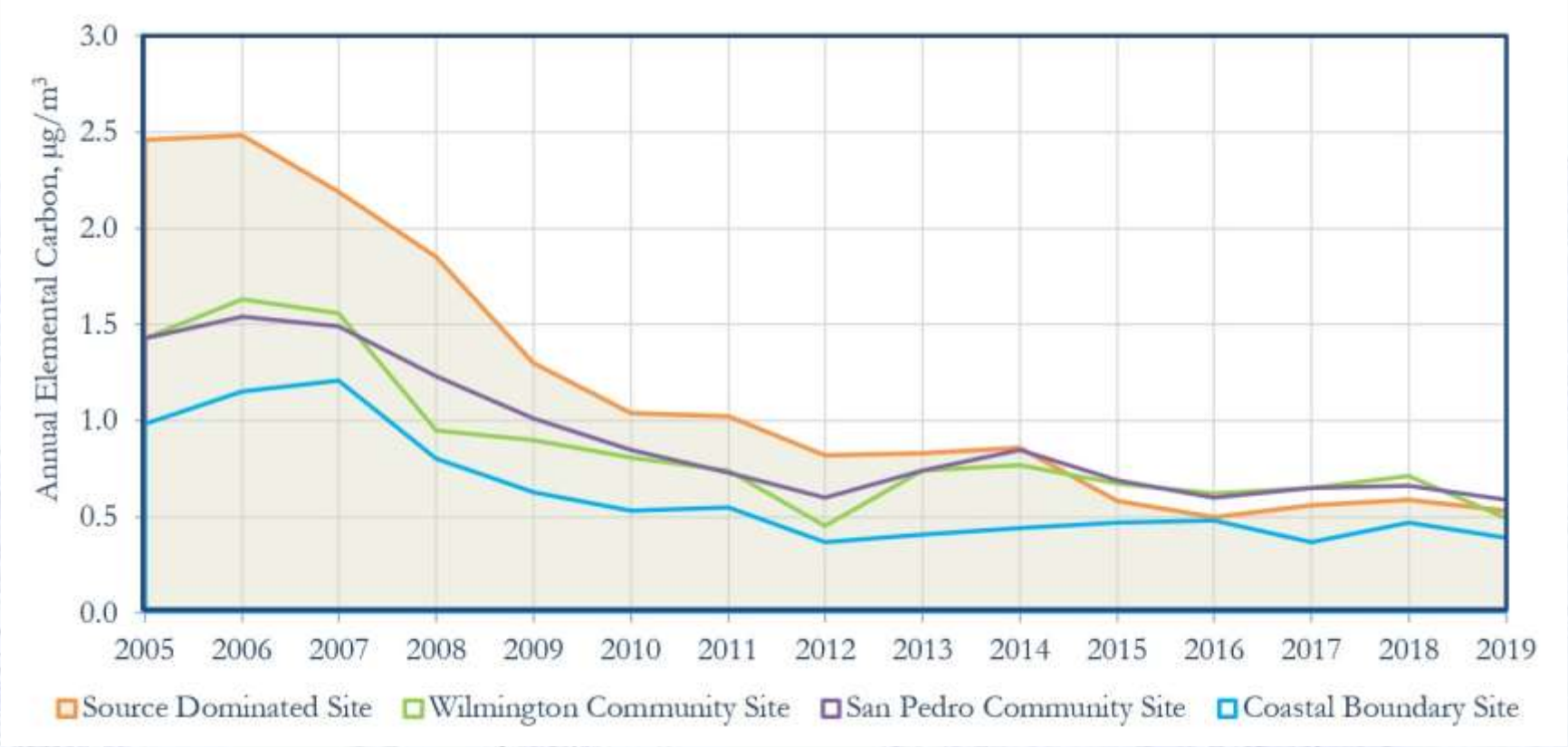
Source Category CO_2e Trends



CAAP CO_2e Progress



POLA Air Monitoring Network



Looking Ahead

- Covid-19 Impacts
  - Ships appear to be the most affected emission source category
  - Types of ship activity: Calls to POLA, Calls to POLB, Calls to POLA+POLB, & ***Transient calls***
  - Container ships – cargo volumes down, blank sailings due to economic impact of pandemic
  - Cruise ships – high POLA and transient activity in April and then nearly no activity since
  - Bulk liquid ships – unprecedented low activity for POLA & unprecedented high activity for transient ships

Looking Ahead

- Governor's Executive Orders (EO) related to suspension of shore power
  - Due to extreme heat event, State of Emergencies were proclaimed
  - First EO: 'Ships berthed between 17-20 August at California ports shall not be required to use shore power until 24 August.'

    Data for POLA
    - Total AMP calls cancelled 4
    - Calls that remained AMP'd 3
  - Second EO: 'Ships berthed between 4-8 September at California ports shall not be required to use shore power until 11 September.'

    Data for POLA
    - Total AMP calls cancelled 7
    - Calls that remained AMP'd 6

Available Online

http://portofla.org/emissions-inventory