Commercial Harbor Craft (CHC) Emissions Inventory Update
CHC Workshop - 11/7/14

1. Why the emissions inventory has been updated

2. How the CHC inventory was updated

3. Results
Updates Made to Harbor Craft Inventory

• Provide model year specific output
  – Model year specific emissions, population, etc
  – Model year output indicated changes to turnover methodology were needed.

• Improvements made to turnover methodology
  – Methodology consistent with other ARB emissions inventories (construction, cargo handling, etc)
  – Updated turnover curve, turnover rate reduced as a result of new methodology
Survival Rate Methodology Change Necessary

• Old survival rate didn’t reflect baseline age distribution seen in data.
  – Projected population average age dropped 40%
  – Baseline age distributions should hold relatively constant over time.
• Old survival rate turned over vehicles too quickly.
• Methodology for developing new turnover rate consistent with other off-road inventories.
Survival Rate Methodology Change Necessary

![Graph showing average age over calendar years from 2005 to 2025 for new and old inventory. The graph compares the survival rate methodology change necessary.]
Survival Rate Methodology Update

Old

New
Survival Rate Methodology Update

- Useful life defined in the new methodology as 1.5 x the average age.
Survival Rate Methodology Update

• And tail-end of distribution changed to account for older vehicle larger survival rates.

Old

New
Survival Rate Methodology Update

Population % of Fleet

Useful Life

Heavy Use

Low Use
Emissions Results
Statewide Baseline NOx Emissions
(100 nautical miles)
Statewide Baseline PM Emissions
(100 nautical miles)

PM tons/day

Calendar Year

New Inventory

Old Inventory
Statewide w/Rule NOx Emissions

NOx tons/day

Calendar Year

1990 2000 2010 2020 2030 2040 2050

New Inventory

Old Inventory
Statewide w/Rule PM Emissions
South Coast w/Rule NOx Emissions

Calendar Year

NOx tons/day

New Inventory

Old Inventory

1990 2000 2010 2020 2030 2040 2050
South Coast w/Rule PM Emissions

PM tons/day

Calendar Year

1990 2000 2010 2020 2030 2040 2050

1.2

1.0

0.8

0.6

0.4

0.2

0.0

New Inventory

Old Inventory
Bay Area w/Rule NOx Emissions

NOx tons/day

Calendar Year

1990 2000 2010 2020 2030 2040 2050

New Inventory
Old Inventory
Bay Area w/Rule PM Emissions

PM tons/day

Calendar Year
Conclusions

• Harbor craft baseline turnover methodology improved to better reflect baseline age distribution seen in data.

• Results in relatively small change to w/rule emissions.
  – Larger differences for baseline inventory and therefore more benefits of harbor craft regulation