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# **Emission Reductions from Inspection & Maintenance**

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# Vehicle Emissions - a World-Wide Problem

- Need for I&M Programs
- Emissions Distribution
- Repair Effectiveness  
(Gasoline & Diesel)



# Purpose of I&M

**To identify high polluting  
vehicles**

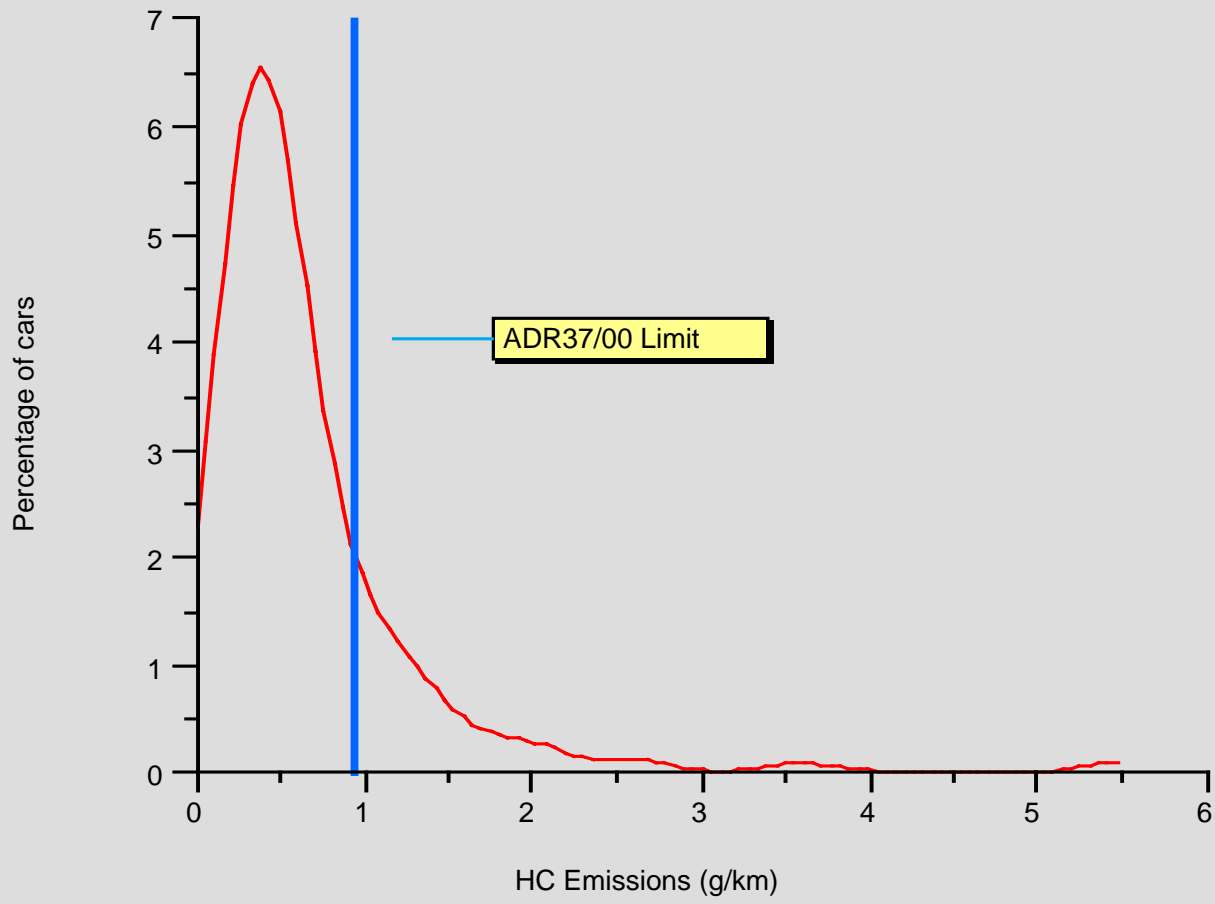
**and.....**

**Ensure that repairs achieve the  
required emission reduction**

# Australian I&M Research

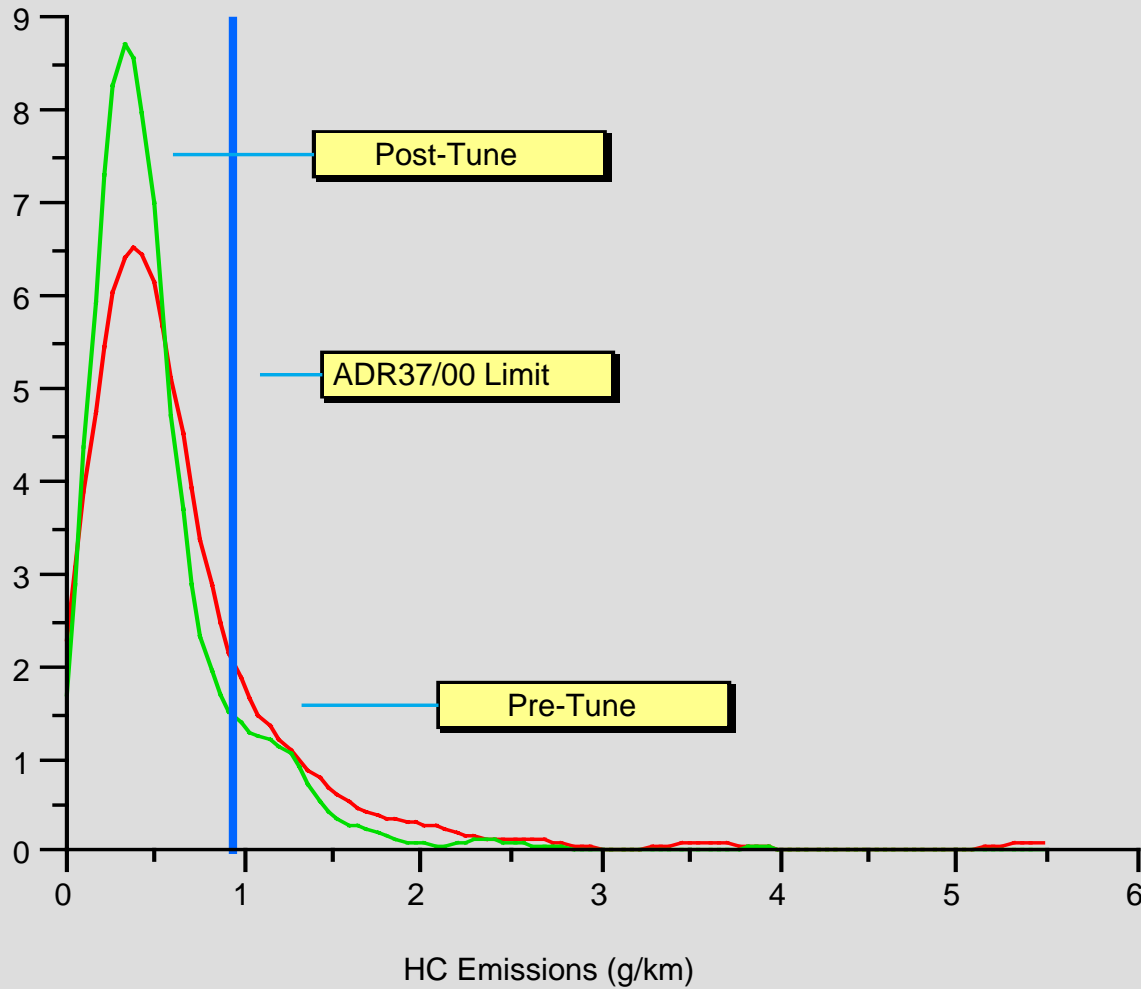
- **Contracted by Australian Government**
- **Gasoline : 640 vehicle program**
  - **FTP + 5 short tests + Repairs + repeat FTP + 5 short tests**
- **Diesel: >1,000 vehicle programs**
  - **Transient dyno tests (long and short)**
  - **Repairs on sub-set**

# Gasoline Fleet Emissions Profile



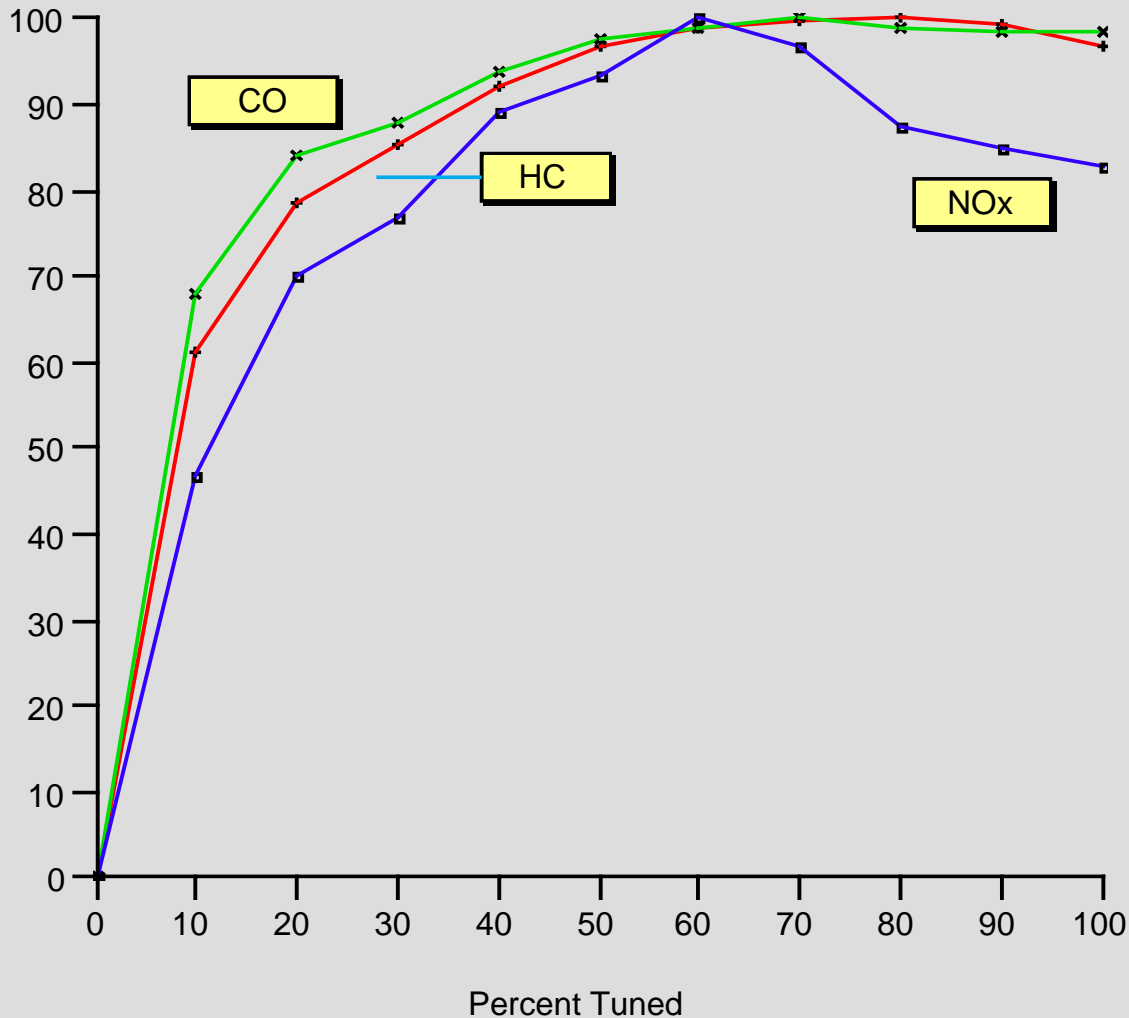
Most vehicles below regulated limit, but long “tail” of high polluters

# Response to Repairs



Long “tail”  
of high  
polluters  
greatly  
reduced,  
overall HC  
reduction  
21%

# Response to Repairs



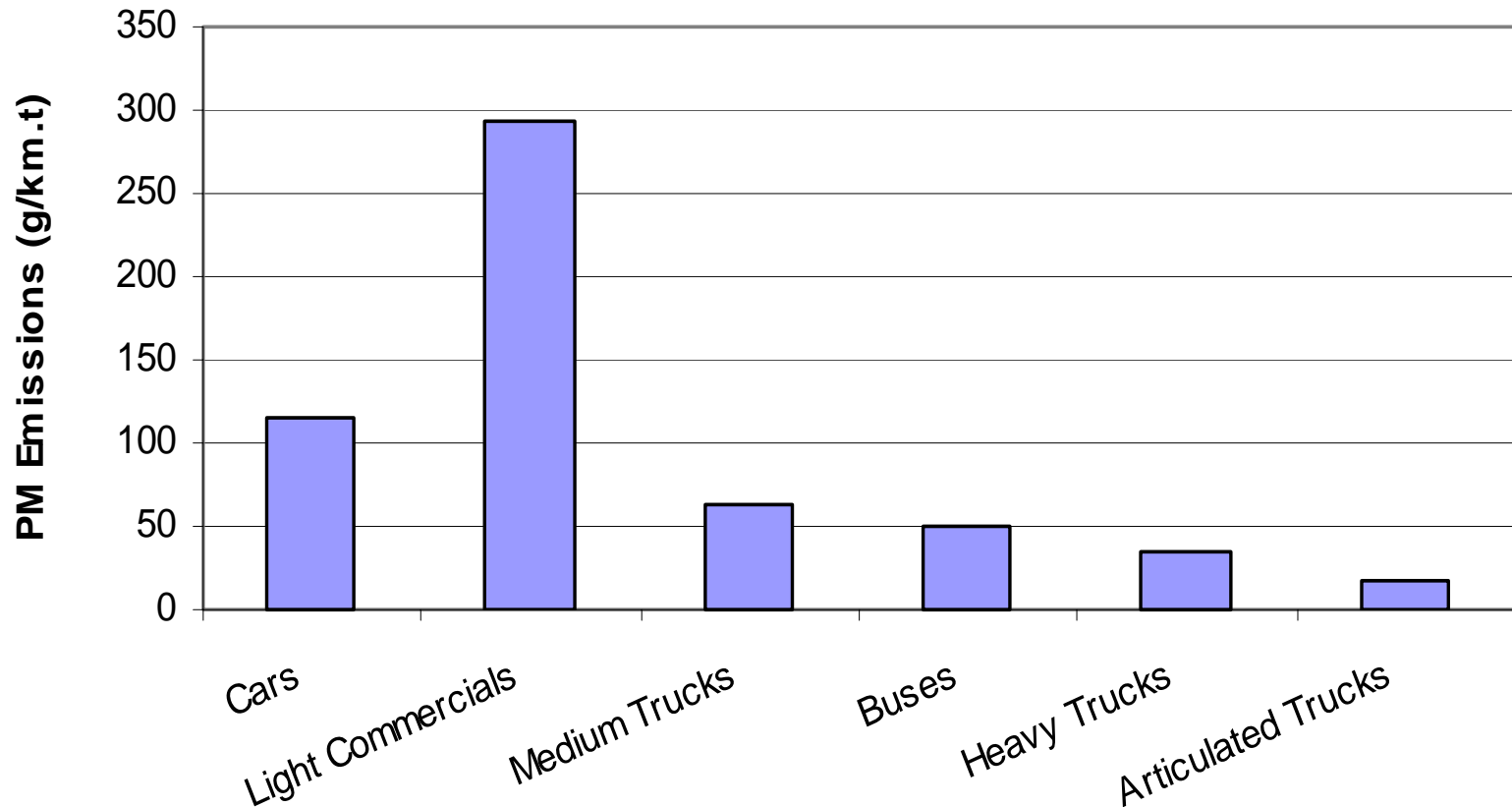
Fixing  
worst 20%  
polluters  
delivers  
80% of  
available  
emission  
reductions

# Diesel I/M

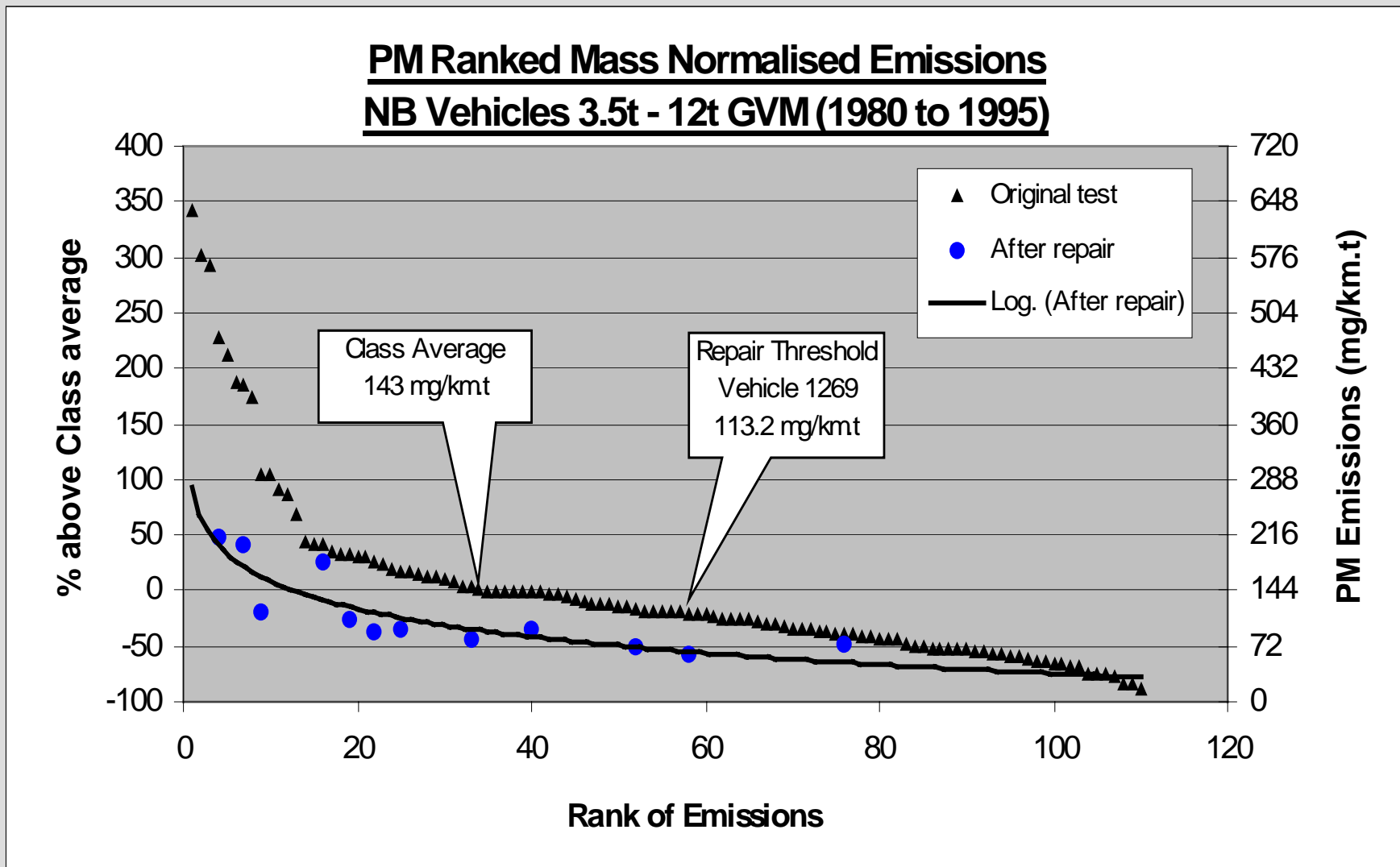
- **Significant emission reductions available on a larger percentage of vehicles**
- **Light-duty vehicles tend to have higher emission rates relative to work done**
- **Higher overall % reductions than gasoline vehicles**

# Emission Rates by Diesel Vehicle Category

Particulate Emissions from 1996-99 Diesel Vehicles in Australia (normalised to g/km.t)

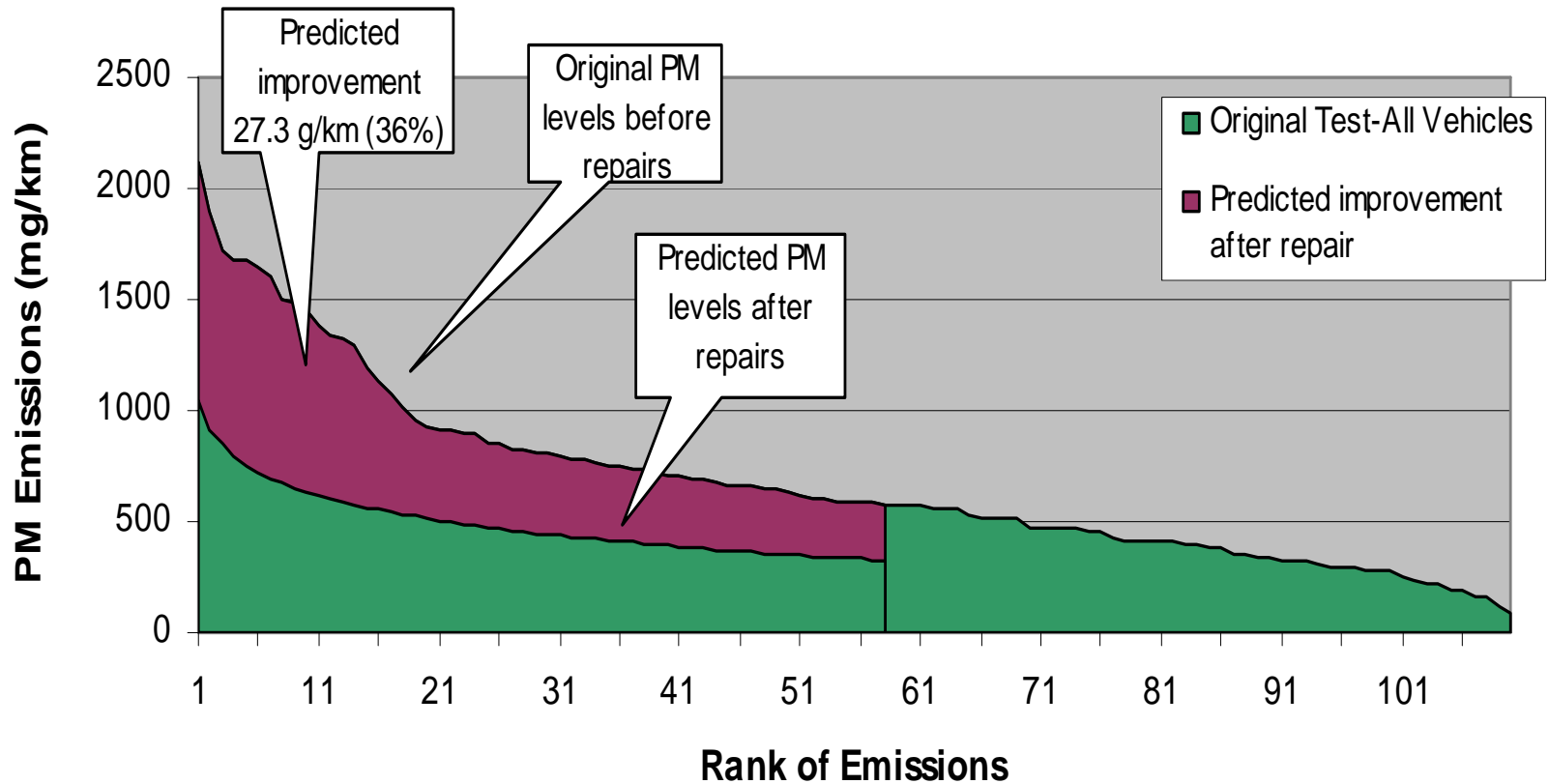


# Diesel PM Emissions Profile



# Diesel PM Repair Benefits

**PM Ranked Emissions**  
**NB Vehicles 3.5t - 12t GVM (1980 to 1995)**



# Summary

- **Select an effective test to identify high polluters**
- **Run a pilot program to establish a fleet emissions profile and repair response**
- **Select cut points that balance emission reductions against cost of repairs to the community**
- **Diesel failure rates will probably be higher than gasoline**