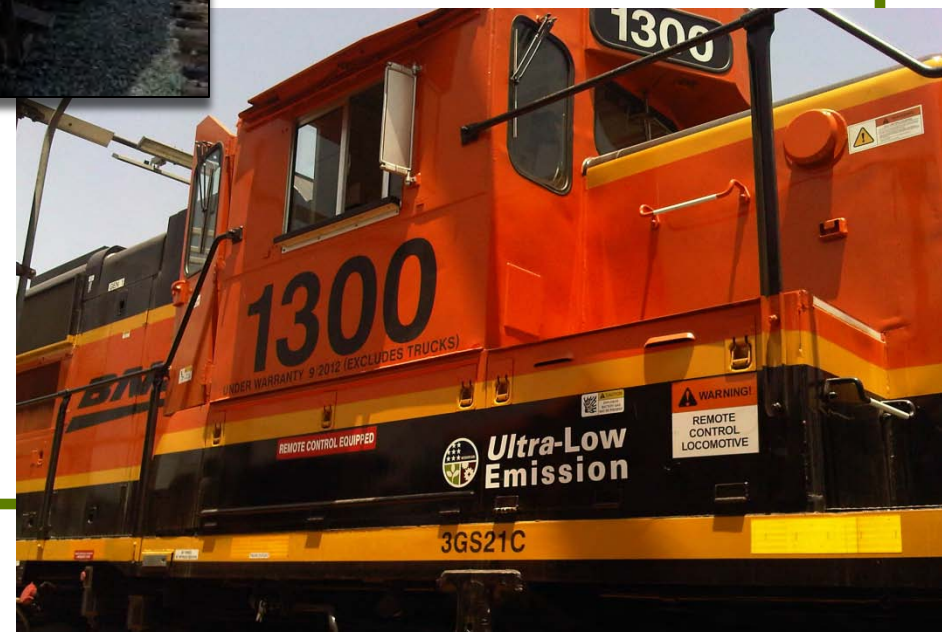
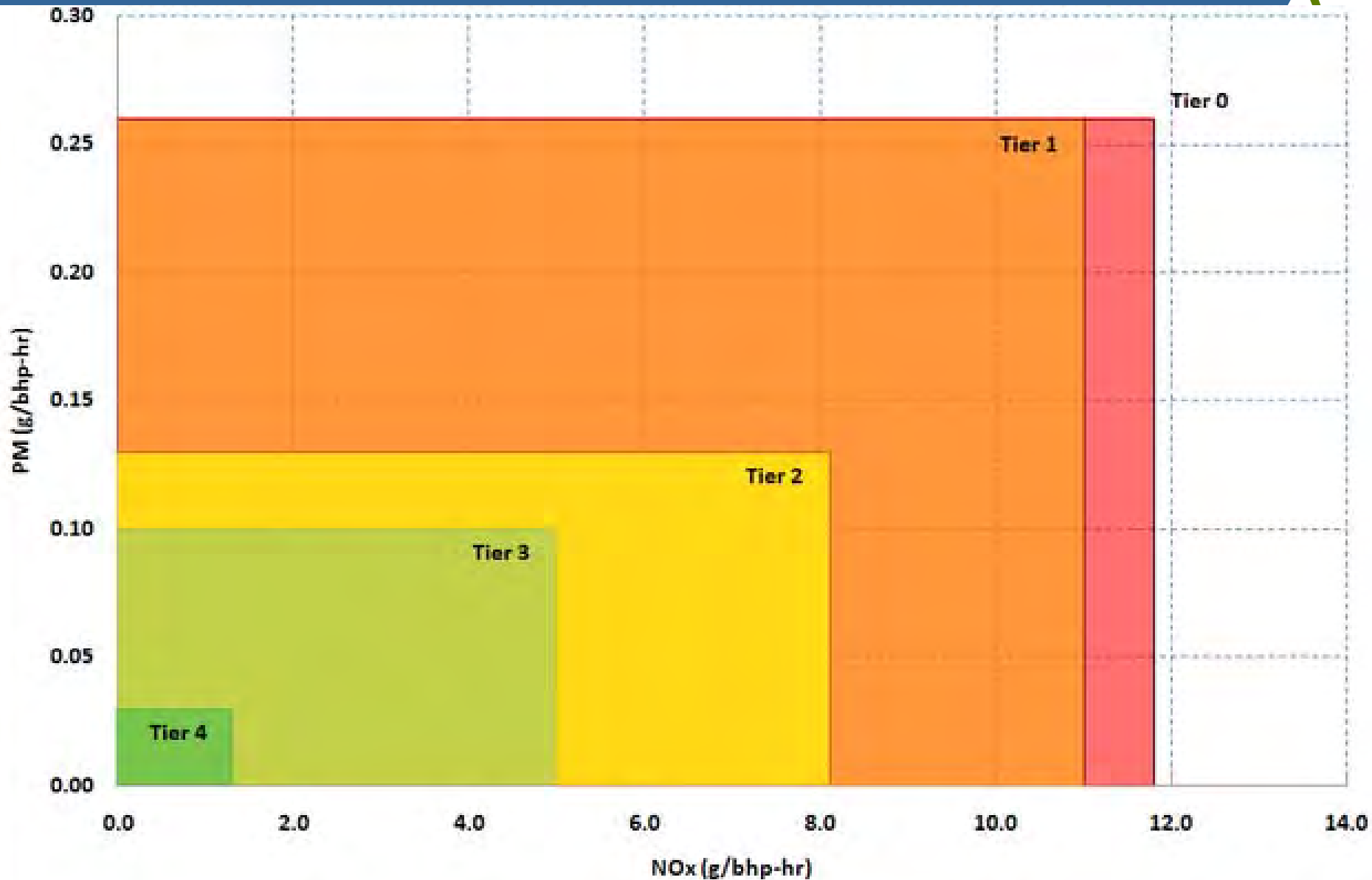


# WCC-Funded Locomotive Projects



# Locomotive Emission Standards



# San Joaquin Valley Air Pollution Control District

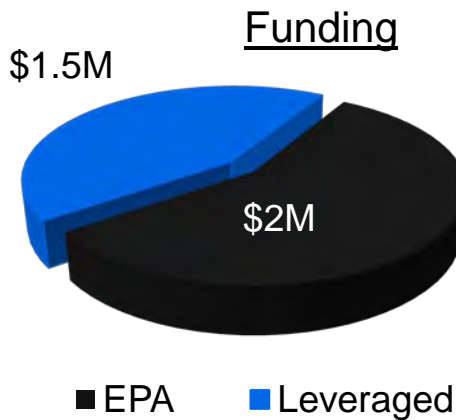
## Repowering Locomotives in the San Joaquin Valley

Greatest Impact: San Joaquin Valley  
(specific rail yards TBD)

Repower at least two locomotives reducing particulate matter and other air emissions in the San Joaquin Valley. DERA 2011 Grant.



Generator set switch locomotives significantly reduce NOx & PM



Lifetime  
Emission Reduction

12 tons PM  
280 tons NO<sub>x</sub>



# California Air Resources Board

## Repower Older Switch Locomotives



### Innovative Financing & Technology

Repowered 11 switch locomotives with new Tier 3 nonroad or gen-set engines that operate in the South Coast Air Basin. ARRA 2009 Grant.

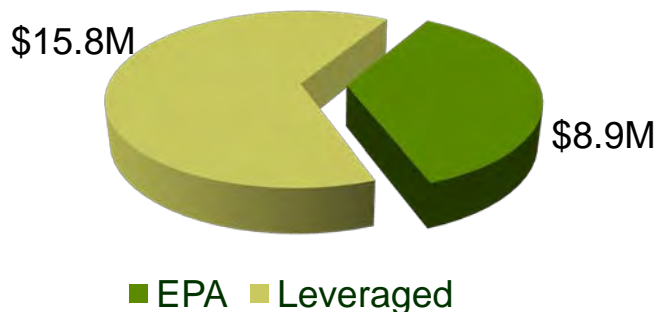


ARRA-funded locomotives



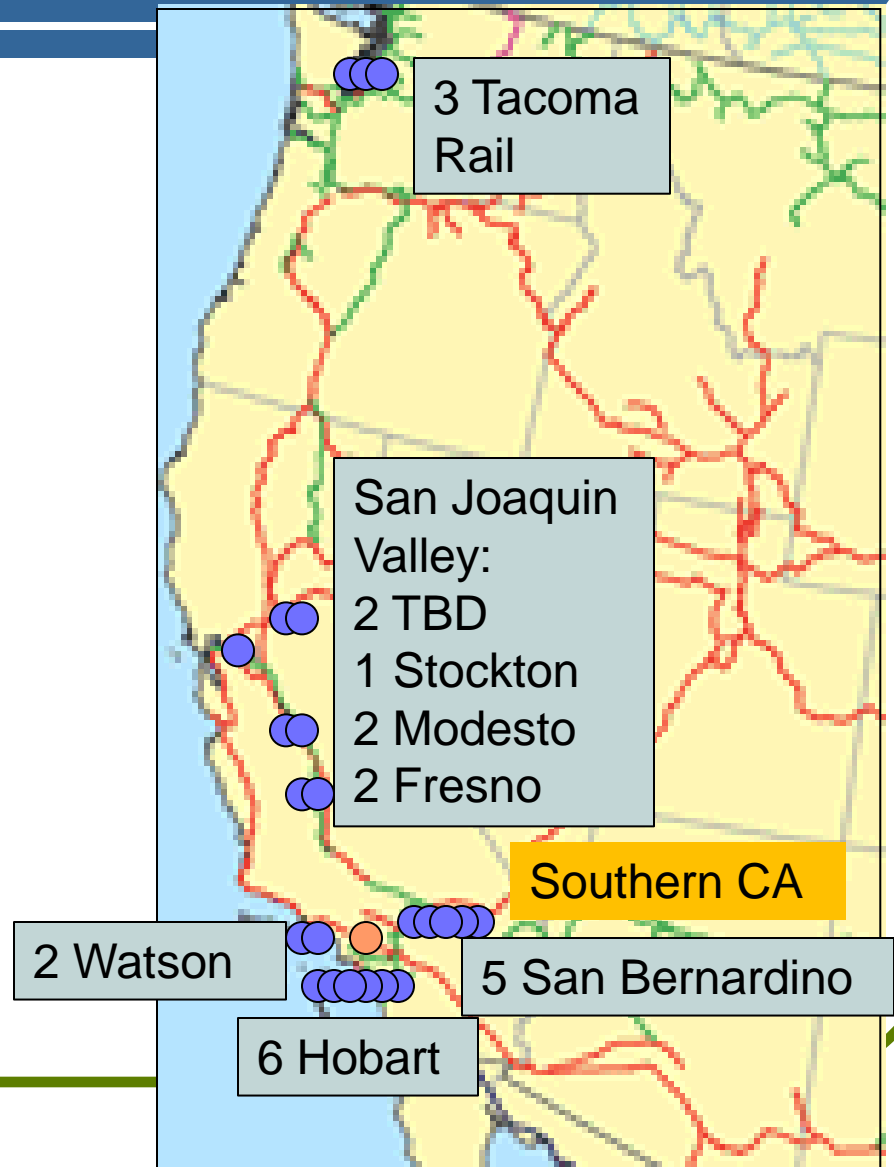
Annual  
Emission  
Reduction  
7 tons PM  
170 tons NO<sub>x</sub>

### Funding Sources



# Location of WCC DERA-Funded Locomotives

- Switcher
- Line Haul



# Summary of Locomotive Funding

- DERA funding 2008-2011
- Repowered engines 26
- EPA funding + \$18,250,000
- Other leveraged funding + \$11,000,000
- Lifetime emission reductions (for a 15 year project)
  - NOx 4,080 tons
  - PM 160 tons
  - CO2 37,400 tons

