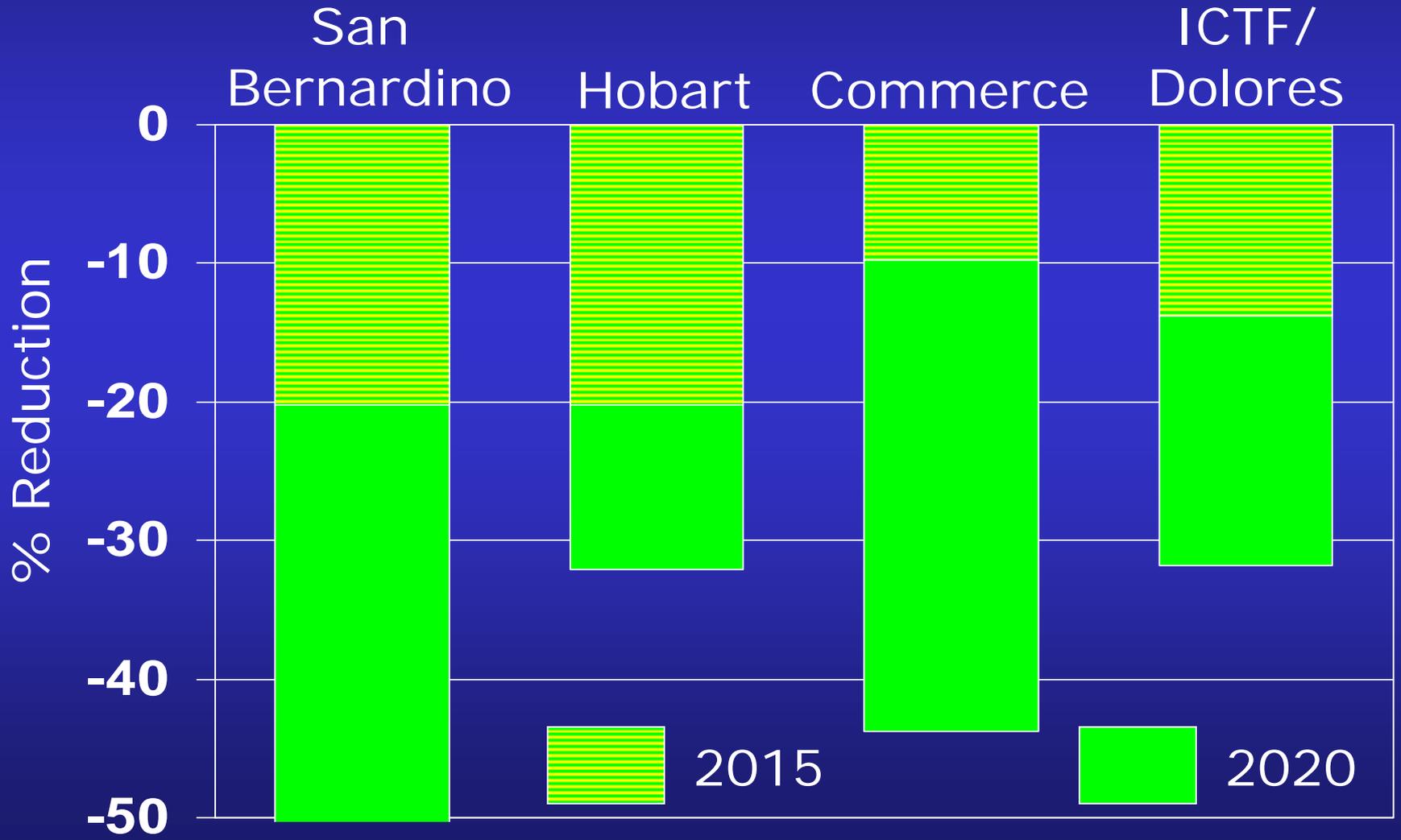


# Commitments Would Cut Diesel PM Beyond Existing Program



# Proposed Commitments to Reduce Diesel Particulate Matter at Four High Priority Railyards

Air  
Resources  
Board  
Meeting



June 24, 2010

California Environmental Protection Agency

 **Air Resources Board**

# Presentation Outline

- Key elements of proposal
- Basis - all feasible measures
- Railyard-specific benefits
- Response to public comments
- Staff recommendations

# Key Elements of Staff Proposal

# 4 Railyards with Highest Health Risks

**BNSF San Bernardino**



**UP Commerce**



**BNSF Hobart**



**UP ICTF/Dolores**



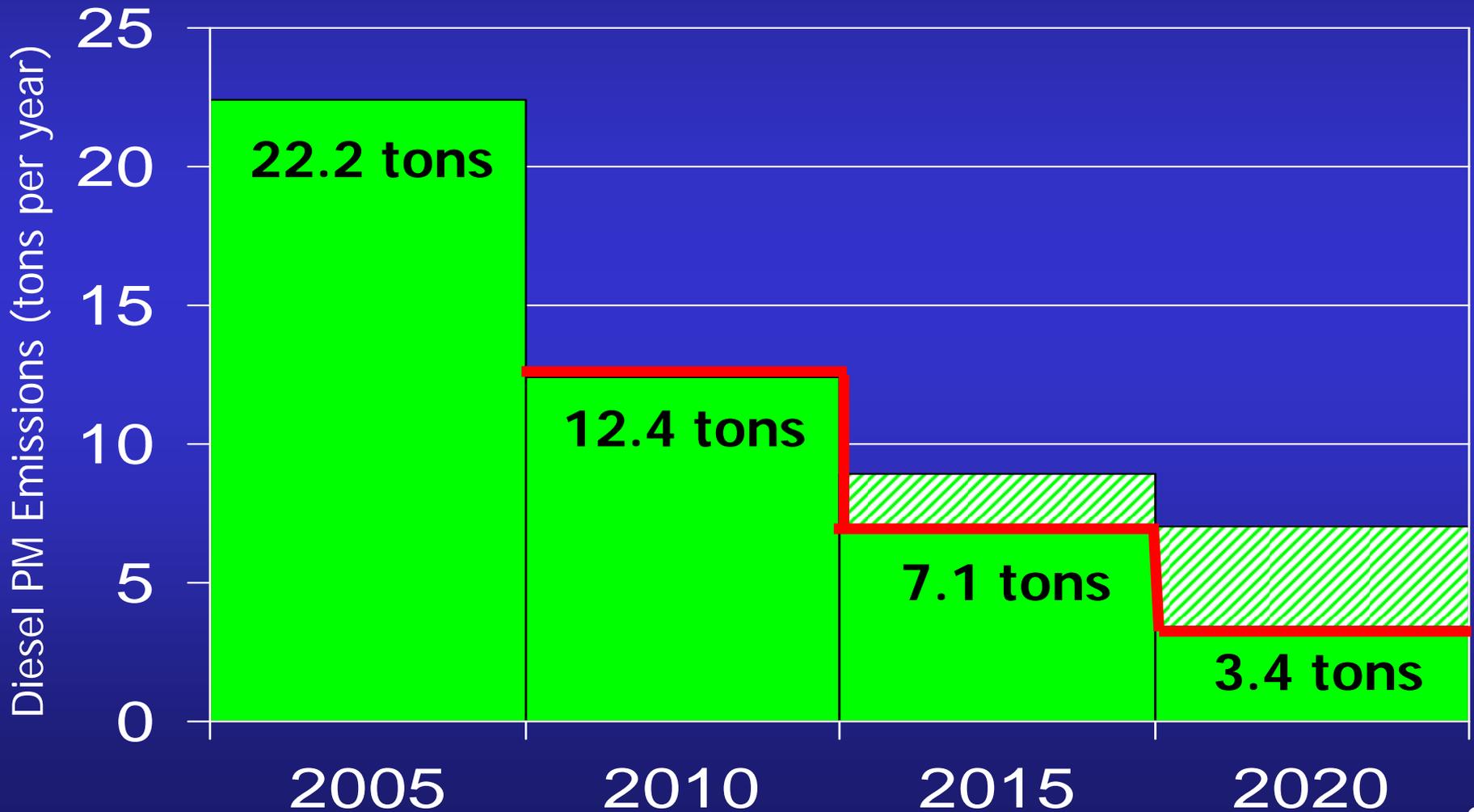
# Benefits

- Reduce diesel PM emissions and health risk by 85% between 2005 and 2020
- Ensure that growth does not slow air quality improvements
- Provide supplemental benefits in rest of South Coast Air Basin and California

# Summary of Railroad Obligations

- Comply with enforceable emission reductions 2011-2020 (despite growth)
- Submit annual emission inventories and periodic emission reduction plans
- Evaluate specific operational changes
- Help test advanced technology
- Hold public meetings

# Commitments Cap Emissions, Despite Growth (ex: *BNSF San Bernardino*)



# What public incentives are available?

\$13M Federal ARRA/DERA

- ✓ 5 switchers in San Bernardino
- ✓ 6 switchers in Hobart

\$33M State/Prop 1B through South Coast

- ✓ 4 switchers in San Bernardino (2010)
- 8 switchers in South Coast (2010)
- 30 locomotives in South Coast (2011)

# Summary of ARB Obligations

- Prepare health risk assessments
- Evaluate inventories/plans
- Independently verify compliance
- Pursue regulations if railroads fail to meet commitments
- Provide documents to the public
- Add 2 community air quality monitors
  - Collaborate with South Coast AQMD

# How will ARB assure the commitments are reducing health risk?

- Verify emission reductions are real
- Every 2 years, assess changes in health risk at each yard (current through 2020)
- In 2011-2012, quantify health risk impacts of potential operational changes
- Highlight any issues in public letters to railroads and in reports to the Board

# How will ARB verify railroad compliance?

- Inspections inside the railyards
- Unannounced field surveys
- Photo-tracking of locomotives
- Cross-checks of railroad data



# How will ARB provide transparency?

- Railyard materials on web
- Annual inventory reports will expand the yard-specific data to supplement ARB inspections and tracking/verification
- Need to increase data and ease of use
- Staff will begin improvements this summer

# What is the backstop?

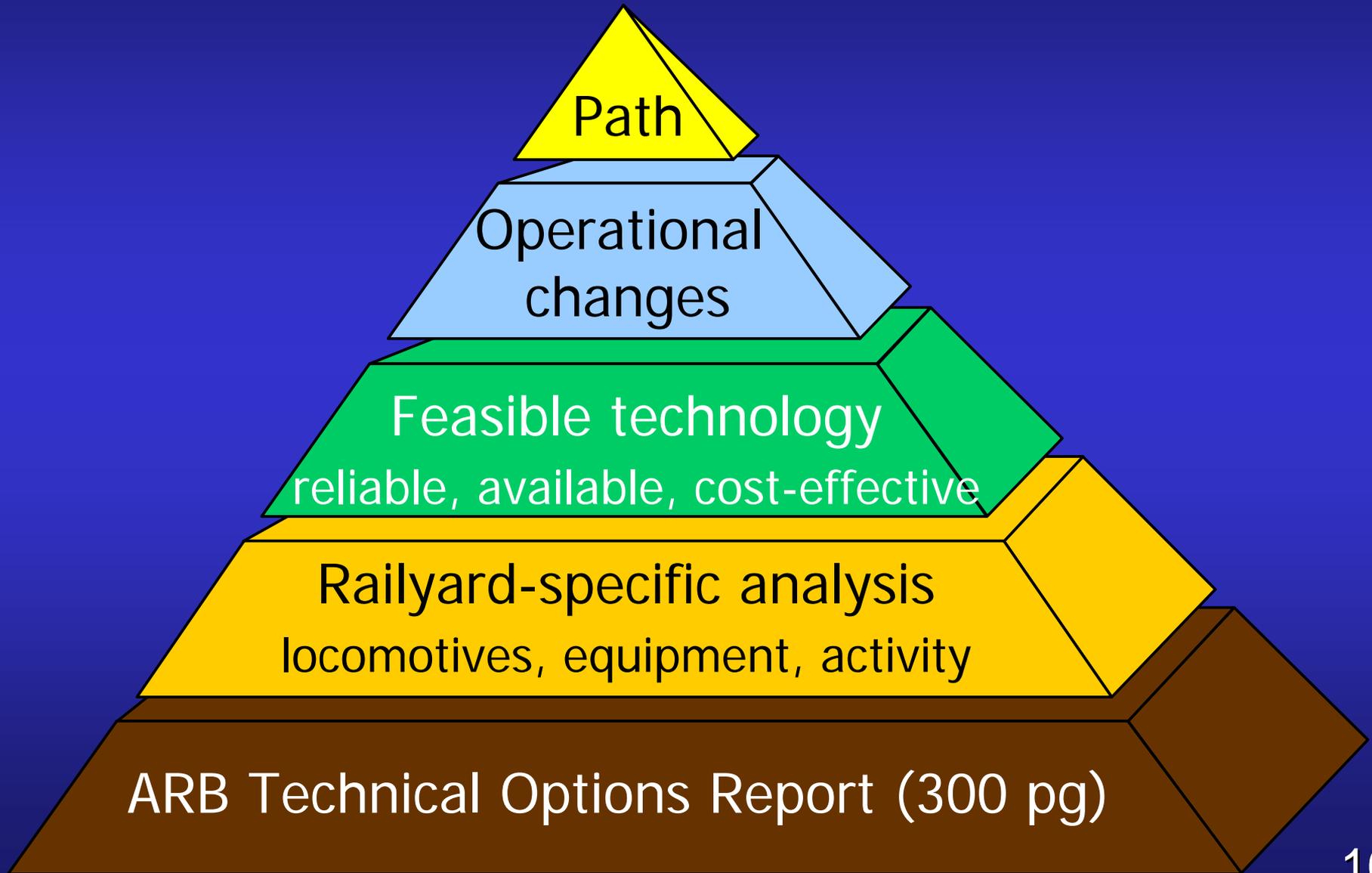
- Trigger ARB rulemaking if a railroad fails to meet its commitments
  - Non-preempted (Pre-Tier 0) locomotives
  - Railyard risk reduction audits and plans
- Seek greater authority to regulate locomotives
- Petition US EPA to tighten its locomotive emission standards

Basis for Proposal:

***All Feasible Measures***



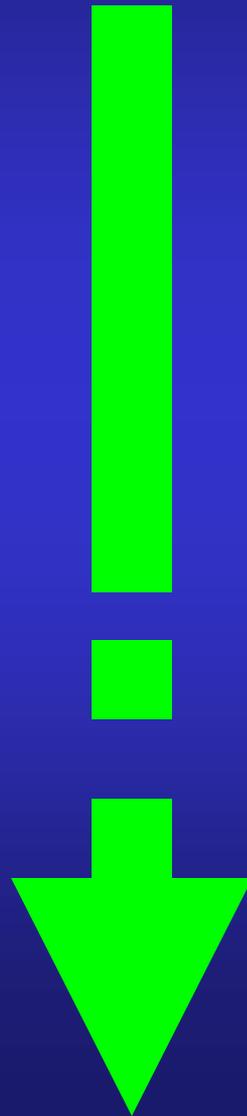
# % Reduction Performance Standard



# "Tiers" of Cleaner Locomotives

*(U.S. EPA Emission Standards for PM)*

Emissions



Pre Tier 0 (*non-preempted*)  
Tier 0 (*no control*)

Tier 1 (*25% control*)

Tier 2 (*67% control*)

Tier 3 (*83% control*)

Tier 4 (*95% control*)

# Examples of Operational Changes

- Relocation of truck gate, yard tractors, transport refrigeration units (TRUs), locomotive maintenance facilities
- Reduction in TRU operating hours
- Installation of hood system
- Electric infrastructure for cranes & TRUs

# What is the possible path that staff identified to meet the commitments?

- Container growth – 3% per year
- Upgrade switch locomotives
- Retrofit switch locomotives with PM filters
- Upgrade line-haul locomotives
  - Ex: 100% Tier 4 line haul in San Bernardino
- Implement operational changes to meet emissions cap
-

# Railyard-Specific Benefits

# San Bernardino with Commitments

	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
Diesel PM (tons/yr)	22.2	12.4	7.1	3.4
Maximum Cancer Risk (70-yr exposure)	2,500	1,400	800	400

# Hobart with Commitments

	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
Diesel PM (tons/yr)	24.2	10.3	5.9	3.6
Maximum Cancer Risk (70-yr exposure)	500	215	120	75

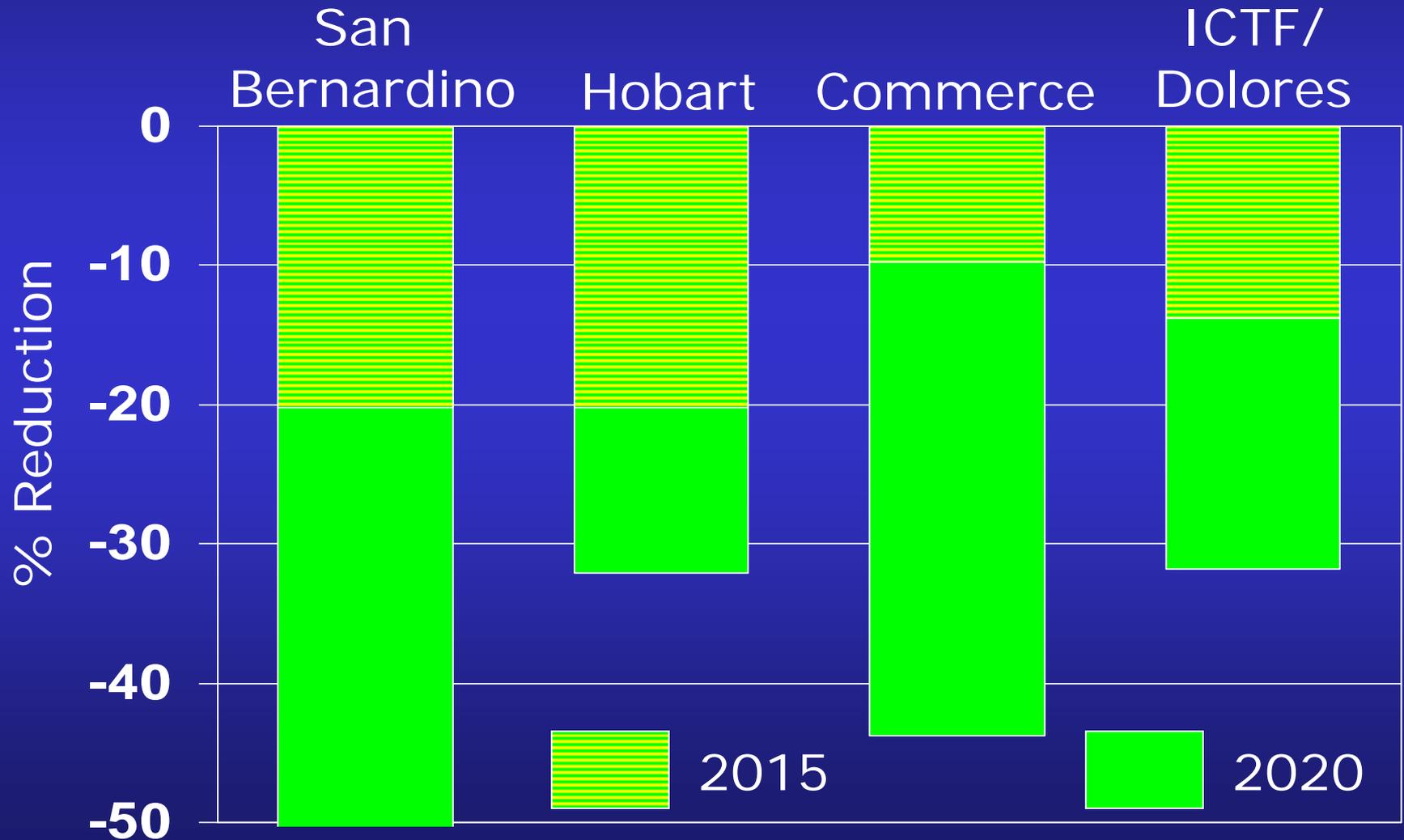
# Commerce with Commitments

	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
Diesel PM (tons/yr)	12.1	5.9	3.7	1.8
Maximum Cancer Risk (70-yr exposure)	500	240	155	75

# ICTF/Dolores with Commitments

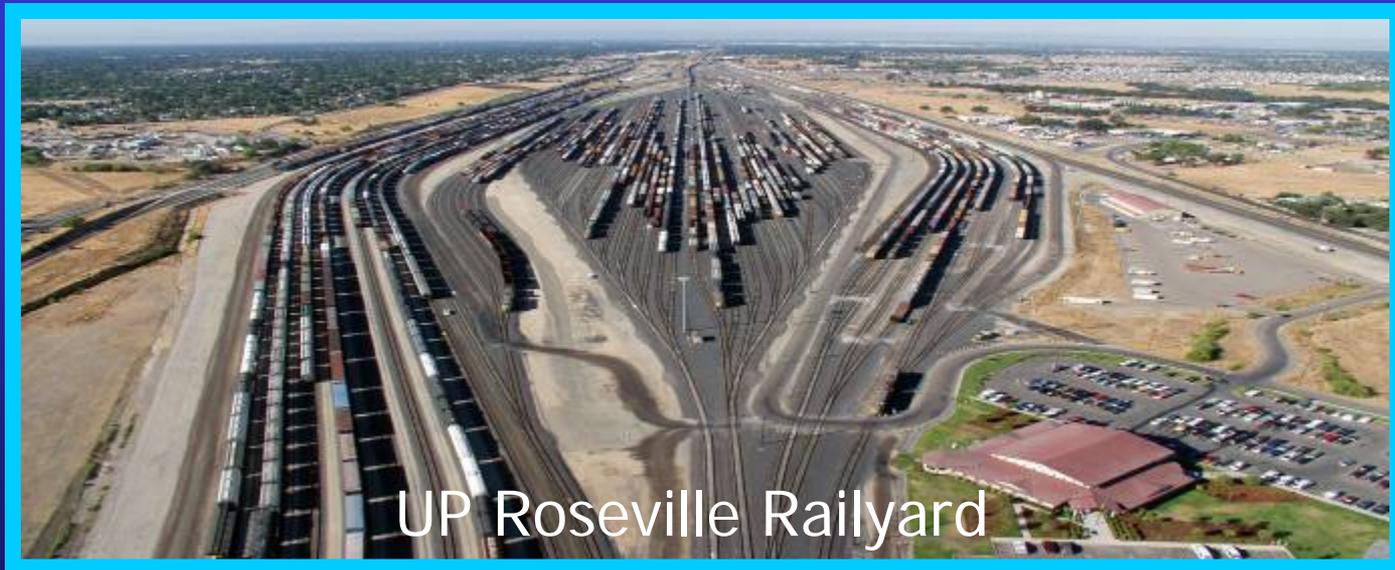
	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
Diesel PM (tons/yr)	20.3	7.5	5.3	3.0
Maximum Cancer Risk (70-yr exposure)	800	300	210	120

# Commitments Would Cut Diesel PM Beyond Existing Program



# Beyond the Four High Priority Yards

- Supplemental benefits of cleaner locomotives in other communities
- Next priority railyards:
  - UP Roseville, UP Oakland, BNSF Barstow
  - Year 2011 emission inventories in 2012



UP Roseville Railyard

# Response to Public Comments

# Changes in Response to Comments from Early June Public Meetings

- Increased near-term reductions
- Accelerated evaluation of operational changes
- Emphasized ARB commitment to make compliance data available to the public

## *Why not just regulate now?*

- ARB has already adopted every cost-effective measure for railyards, except for locomotives due to federal preemption
- Regulating non-preempted locomotives would achieve virtually no emission reductions at these yards

## *Why not require natural gas/electric yard trucks, and electric gantry cranes?*

- ARB analysis shows these are not cost effective today
- Reconfiguring an existing railyard for electric cranes may pose operational difficulties

## *Why is the risk in San Bernardino with the commitments still high?*

- The required 85% emission reduction assumes use of all technologies and operational changes that we know of today
  - 100% Tier 4 line haul, switch and medium HP locomotives
  - Electric rail mounted gantry cranes and TRUs
  - Reduced TRU operating hours

# *What will ARB do to achieve reductions beyond the commitments?*

- Future freight transport system
  - Work with South Coast, ports, railroads, transportation agencies
  - Southern California National Freight Gateway Collaborative
- ARB Climate Change Scoping Plan Measure T-6: Freight Efficiency

# Staff Recommendation

- Approve Resolution 10-29
- Move forward expeditiously to achieve the benefits