

# Enhanced Vapor Recovery

California Air Resources Board

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# Enhanced Mission

## Phase II Vapor Recovery Problems

- Installed system failures
- Substandard equipment sold
- Multiple manufacturers per certification
- ORVR here now
- Unhappy districts
- Significant emissions!

**Enhanced  
Vapor  
Recovery**

ORVR  
Compatibility

In-Station  
Diagnostics

Program  
Improvements

**CLEANER AIR**

# EVR Workplan - Goals

- Ensure compatibility between Phase II and ORVR Systems
- Ensure in-use performance of Phase II Systems
- Improve existing vapor recovery program
- Reduce emissions

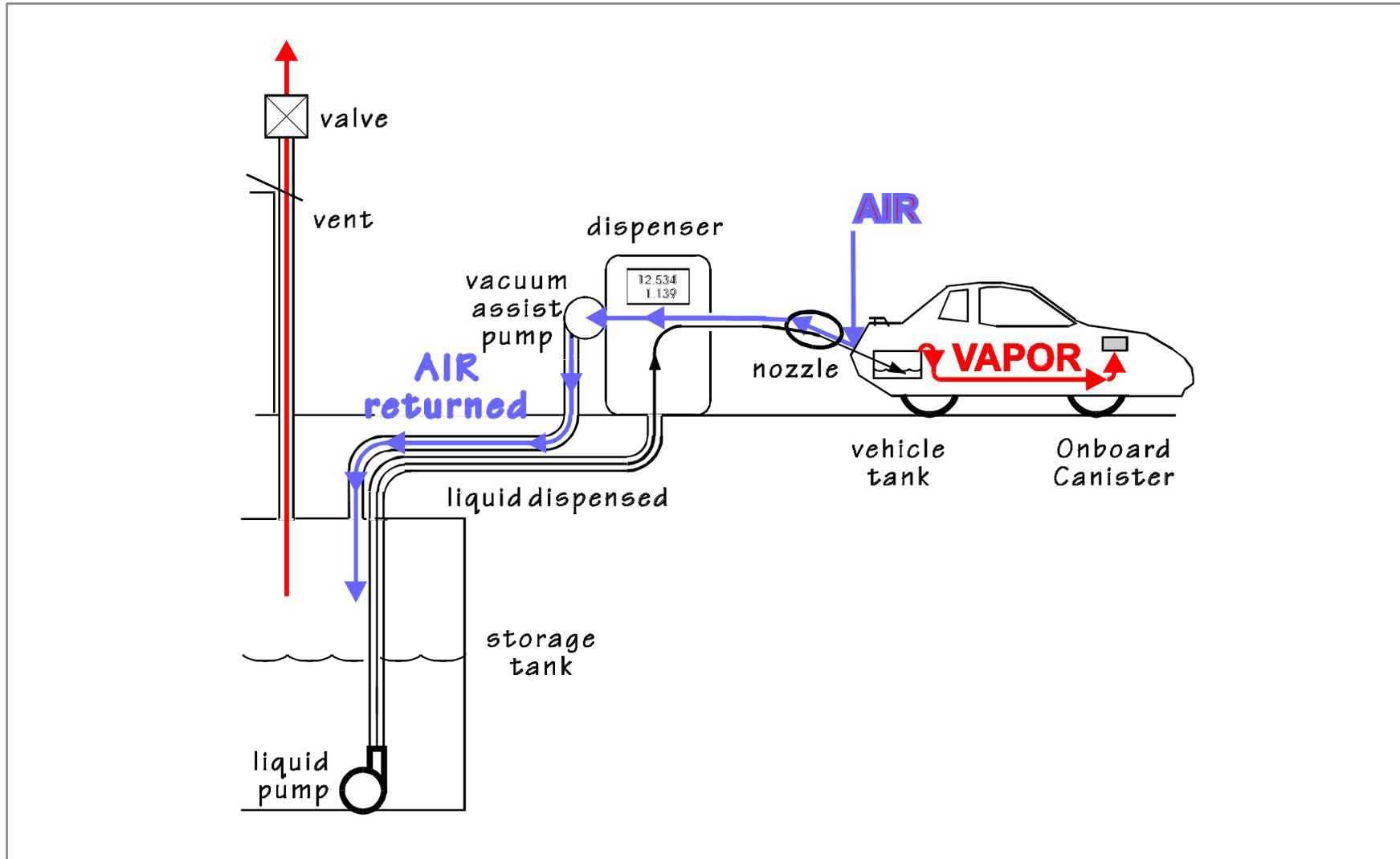
# Workplan Components

- Adopt ORVR test procedure
- Develop specifications for diagnostics
- ARB/District working group to develop improved inspection and test procedures
- Analyze benefit/cost issues
- Hold workshops

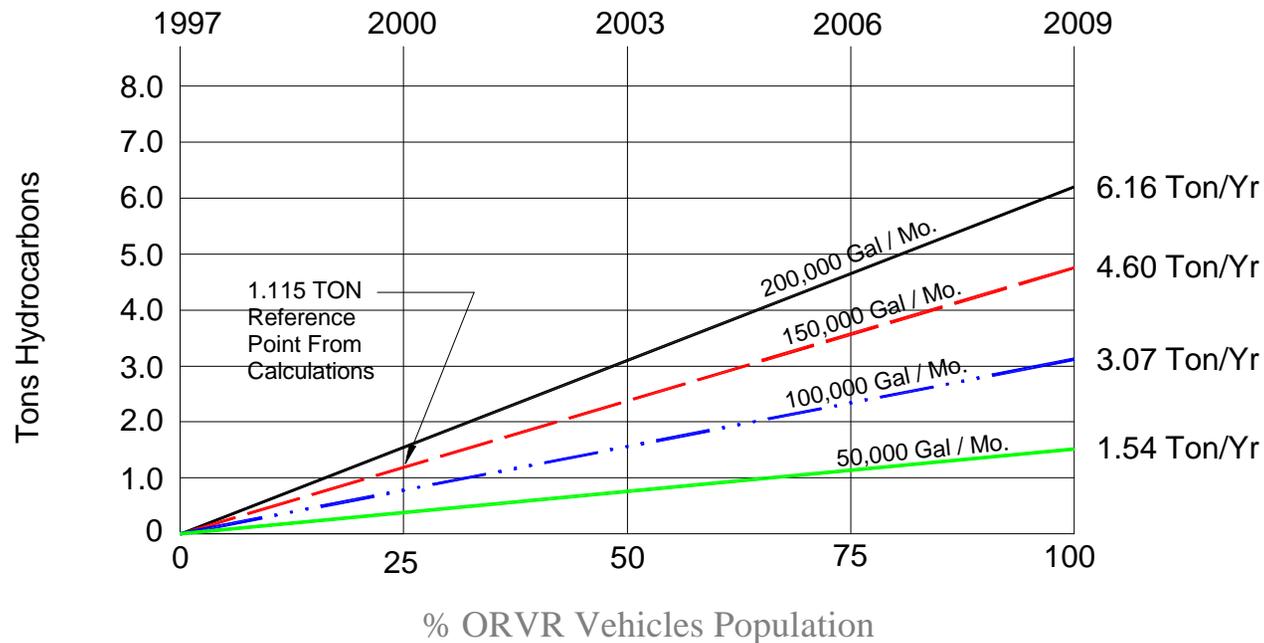
# Workplan Components (cont.)

- Re-assess existing certifications
- Re-evaluate Warranty/Liability requirements
- Establish “ownership” of certification with regard to systems and components

# ORVR Vehicle Fueling



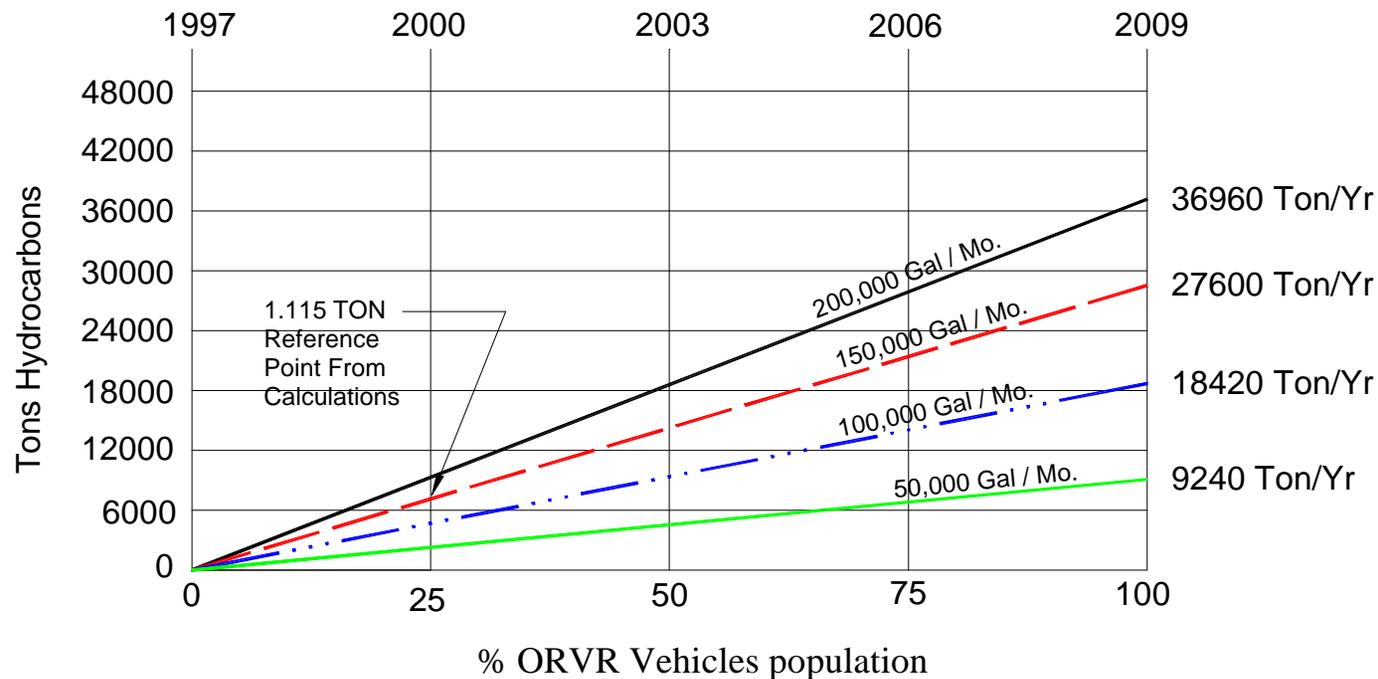
# ORVR - Potential Emission Problem <sup>1</sup> ( Vent Loss - Per Station / Year)



- theoretical analysis shows significant emission increases with Phase II/ORVR interaction
- tons/year **per assist service station** in year 2000 (25% ORVR penetration)

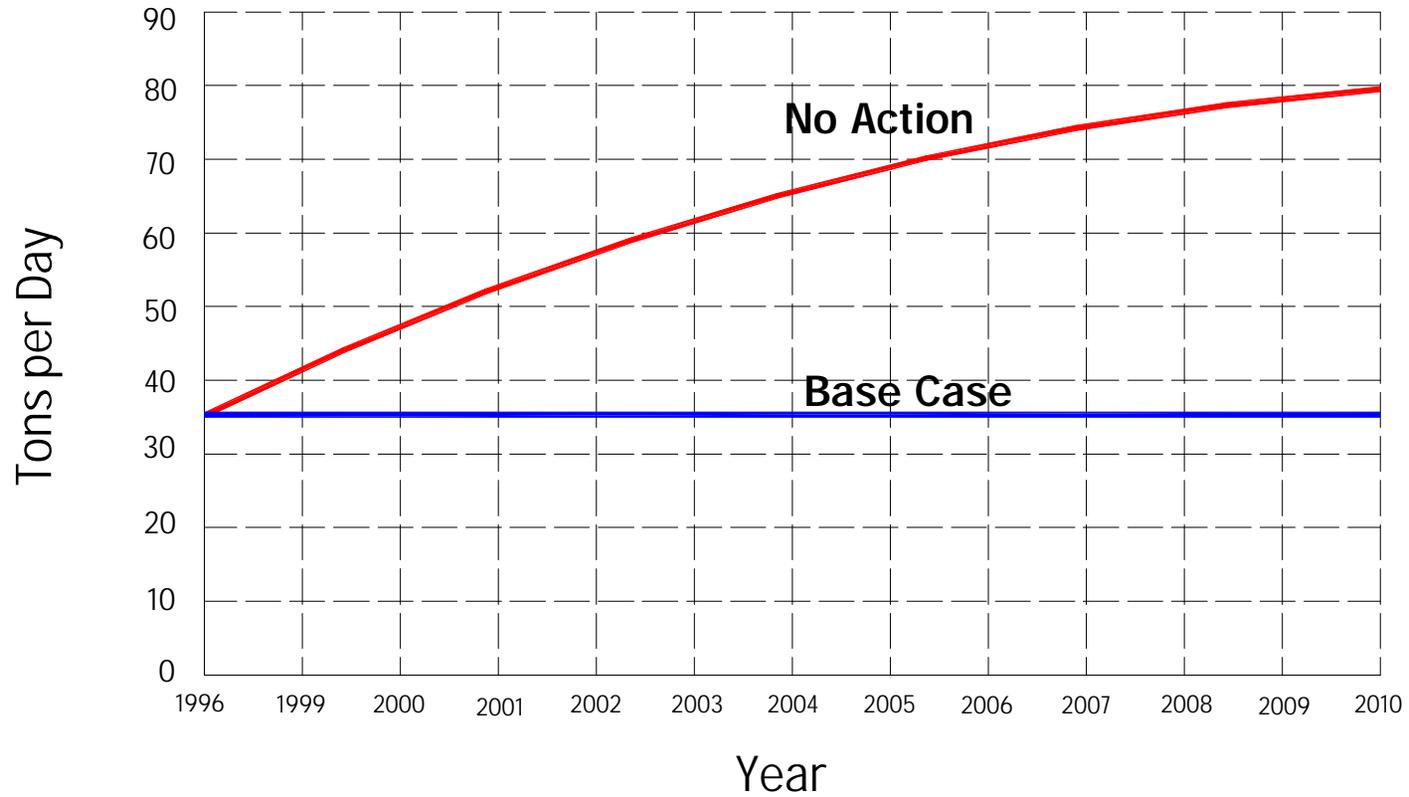
1- Data and Estimations provided by Healy Systems Inc.

# ORVR - Potential Emission Problem<sup>1</sup> (Vent Loss - per 6,000 Service Stations)



- theoretical analysis shows significant emission increases with Phase II/ORVR interaction
  - tons/year **per assist service station** in year 2000 (25% ORVR penetration)
- 1- Data and Estimations provided by Healy Systems Inc.

# Possible Emission Increases without ORVR Compatibility



\* Base Case - 1996 inventory data

# Achieving ORVR Compatibility

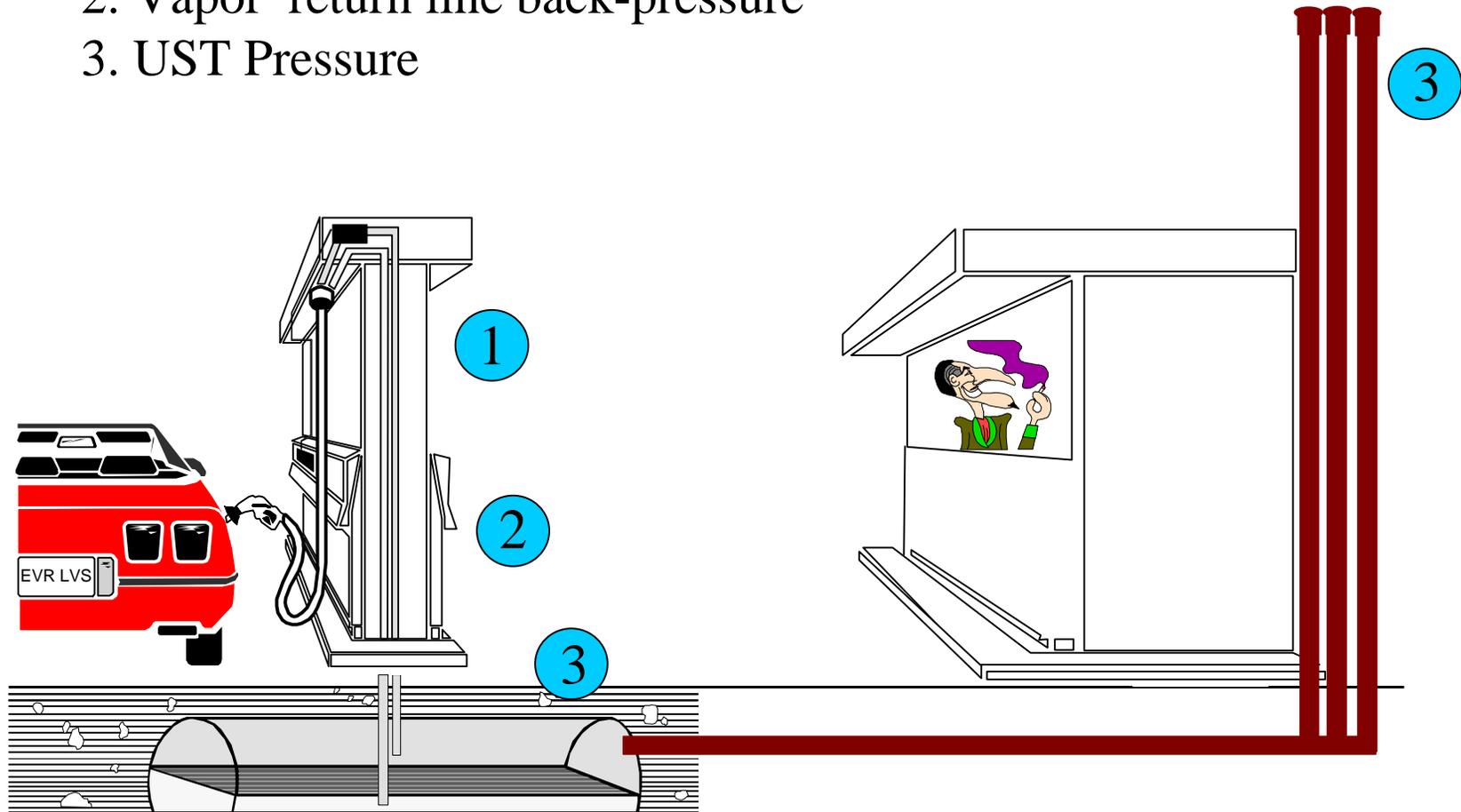
- Evaluation of new Phase II and ORVR technology
- Emissions Impact
- Detailed benefit/cost analysis including evaluation of possible changes to ORVR vehicles

# In-Station Diagnostics (ISD)

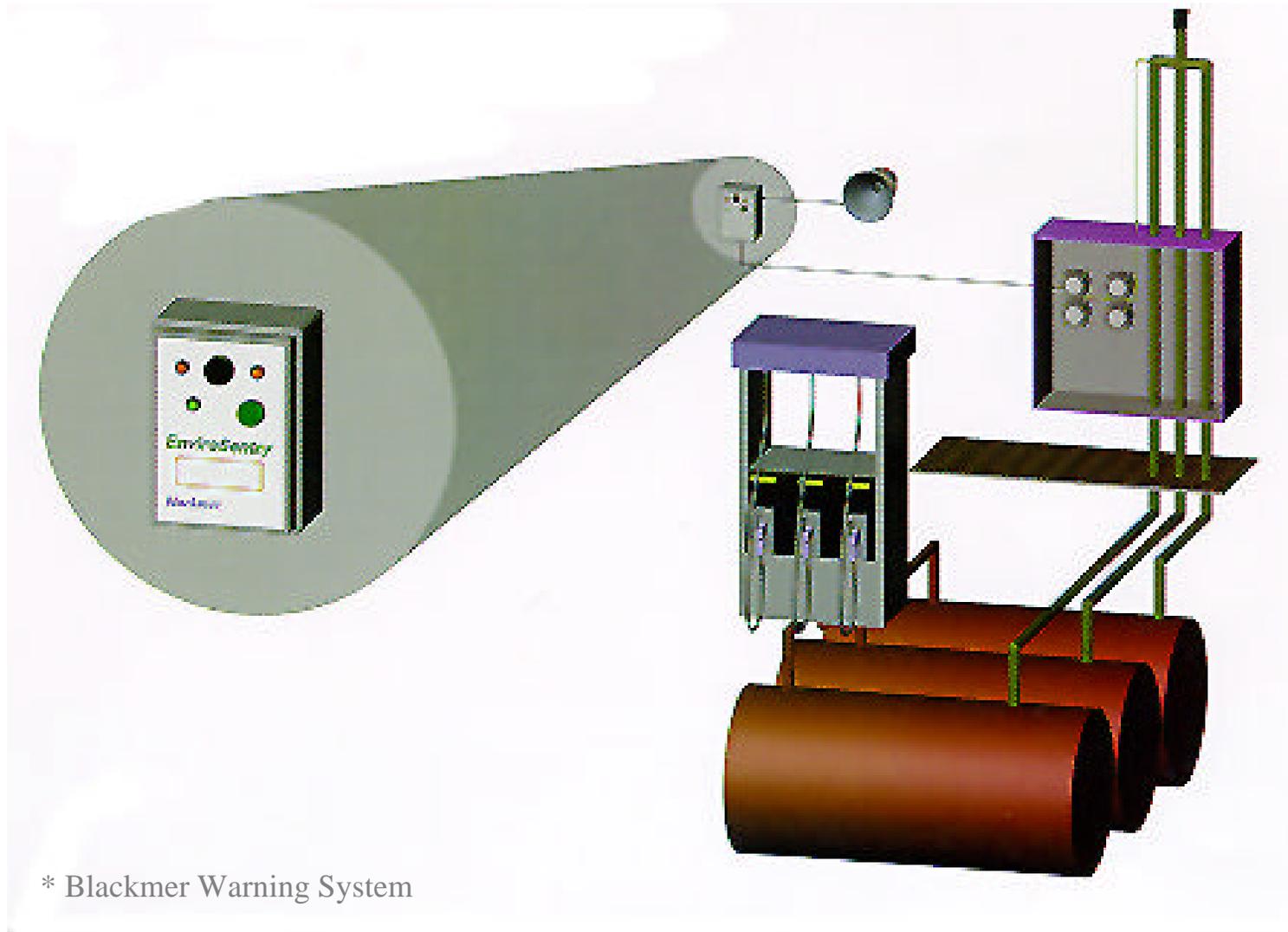
- “Real Time” diagnostics for service stations
- Need to develop concept, identify alternatives and cost/benefit analysis
- Start with existing performance specs

# Example ISD diagram

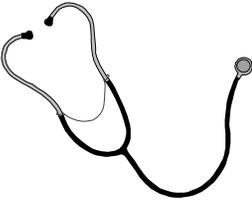
1. Vapor pump running vacuum
2. Vapor return line back-pressure
3. UST Pressure



# In-Station Diagnostics



\* Blackmer Warning System



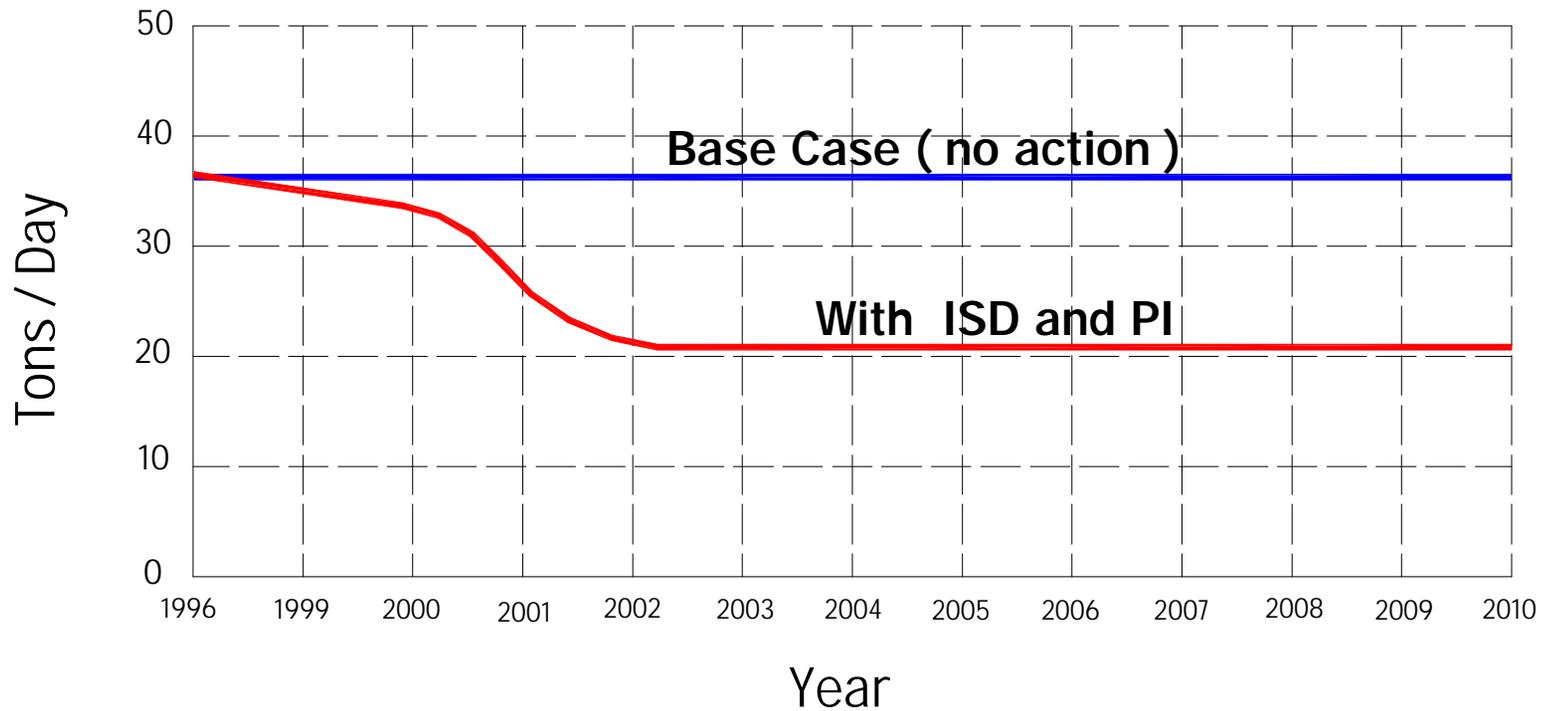
# Diagnostics Cost Impact

- Equipment costs determined with input from
  - Manufacturers
  - Service Station Industry
  - Districts

# Program Improvements ( PI )

- Prohibit installation of incompatible systems
- Warranty/Liability
- Re-examine system/component relationship
- Re-evaluate older systems
- Limited term certifications
- New standards/test procedures

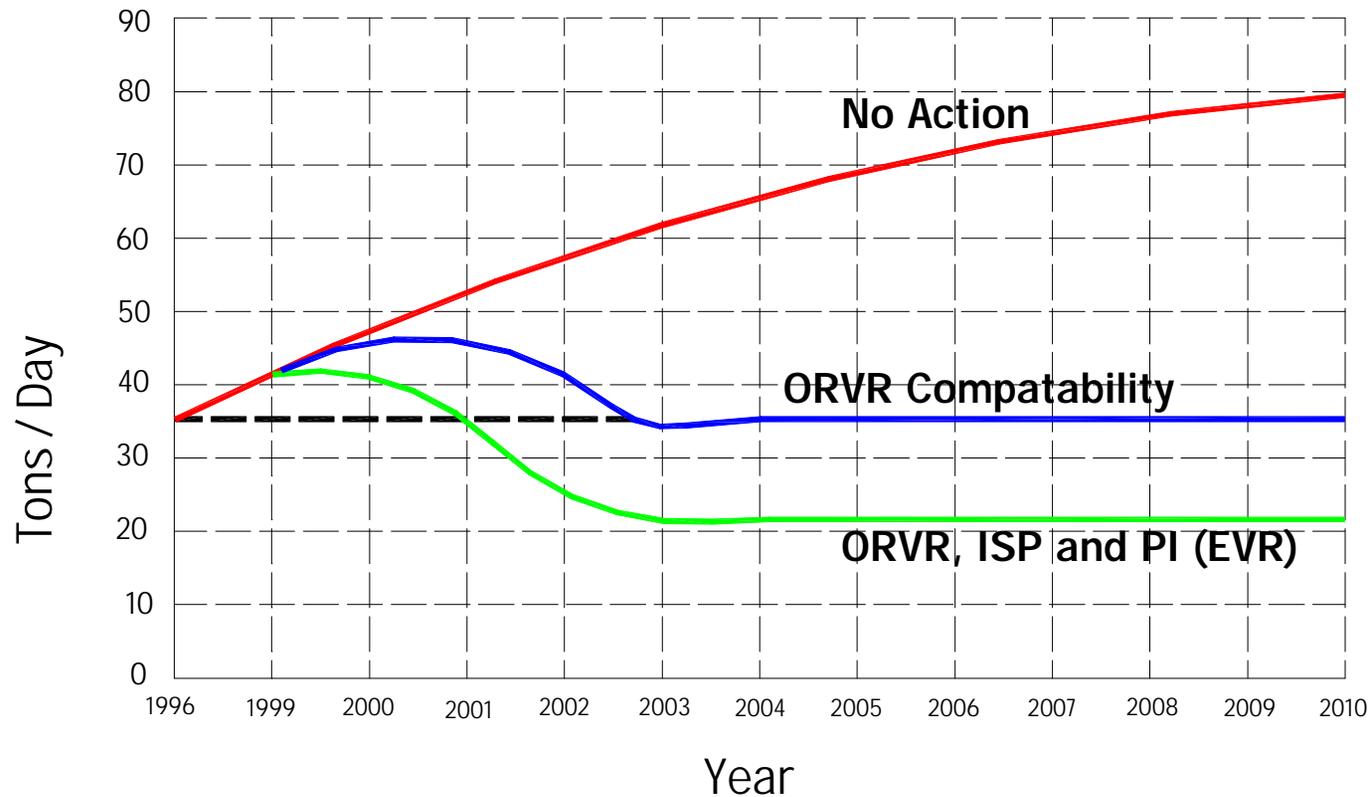
# Emissions Reduction From ISD and PI (assuming no ORVR impact)



\* Base Case - 1996 inventory data

# Emission Reductions From EVR

\* (Base case is 86% efficiency, goal is 95%)



\* Base Case - 1996 inventory data

# Implementation Strategy

- Regulation Changes (workshops, etc)
- ARB/District/Industry Partnerships

# Critical Deadlines

- July 29-30 present non-ORVR items to Board
- Sept. 1 economic impact analysis form due
- Sept. 22 Board package due to EO
- Dec. 10-11 present EVR to Board

# Main Tasks for CD / MLD

- ORVR Compatibility Test Procedure
- Diagnostic criteria
- Procedure changes
- Board meetings
- Bench testing
- Field testing
- Warranty/Liability

# Potential Pitfalls

- Increasing ORVR/Phase II Interactions
- Research results suspect
- Staff limitations
- Requests for certifications continues

# Decisions Needed Now

- Concurrence to Districts to deny new installations
- ORVR test procedure adoption delayed to December
- Resource Increases
  - personnel
  - test equipment
- Present ISD to Board in December
- How to handle requests for certification for
  - Systems compatible with ORVR
  - Systems not compatible with ORVR
  - Components

# Program Implementation

	1998							1999														
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC			
<b>ORVR and Diagnostics</b>																						
Prep for Board Adoption	█																					
Regs for OAL								█														
Recertification Period												█										
<b>Program Improvements</b>																						
District Buy-in on Above	█																					
Test Method Evaluation	█																					
Prioritize District Concerns		█ (Districts)																				
Identify ARB Priorities	█																					
Develop Schedule								█														
Work From Schedule									█													