

CTDEP NO_x Trading Order Policy Options Under Consideration October 27, 2009



Overview

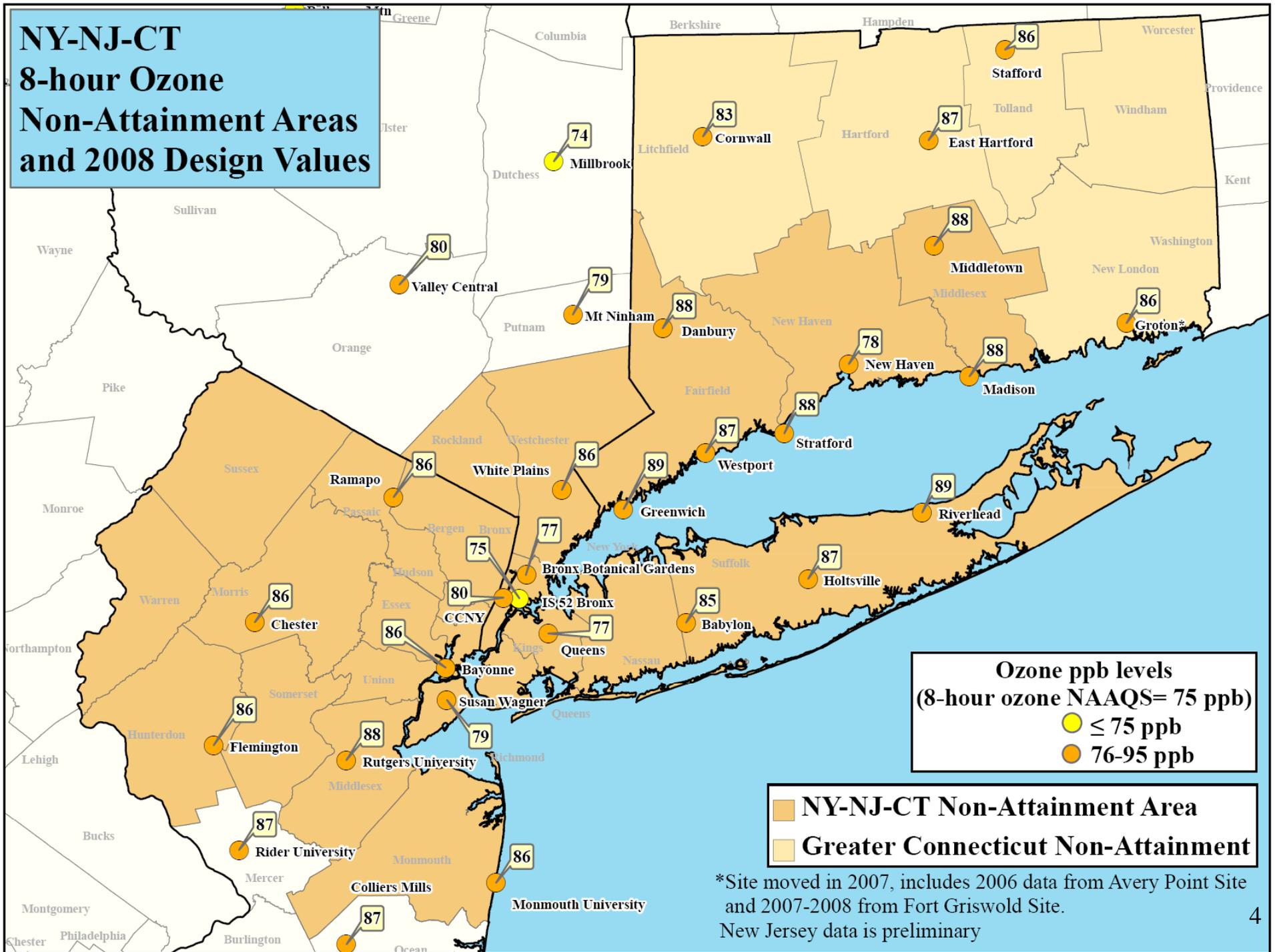
- Section 22 w/trading as a compliance option yielded reductions in the total emissions of NO_x within CT from stationary sources
- CT's has not attained the 1997 Ozone NAAQS and federal mandates require additional NO_x emissions reductions
- The current Trading Orders do not adequately protect and preserve current emissions or encourage consideration of further controls
- A number of RCSA Section 22a-174-22 NO_x trading order extension options are under consideration

Health Effects

O3 and PM2.5

- Ozone & PM2.5: airway irritation; reduced lung capacity; asthma aggravation; permanent lung damage
- PM2.5: irregular heartbeat; heart attacks; premature death in those with heart or lung disease
- Benefits of Attainment: EPA estimates \$2-17 billion for ozone and \$17-35 billion for PM2.5

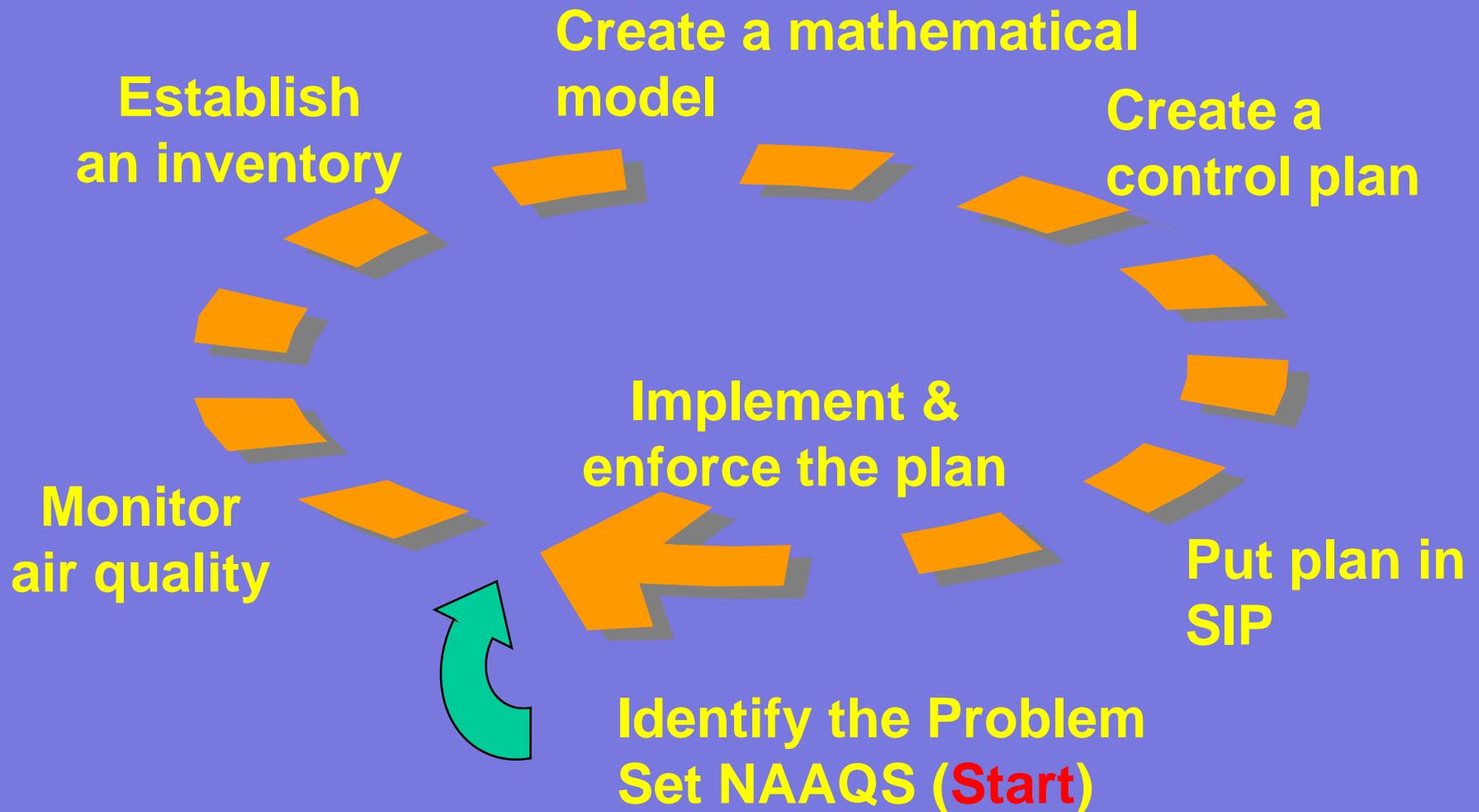
NY-NJ-CT 8-hour Ozone Non-Attainment Areas and 2008 Design Values



*Site moved in 2007, includes 2006 data from Avery Point Site and 2007-2008 from Fort Griswold Site.
New Jersey data is preliminary

Air Quality Management Process

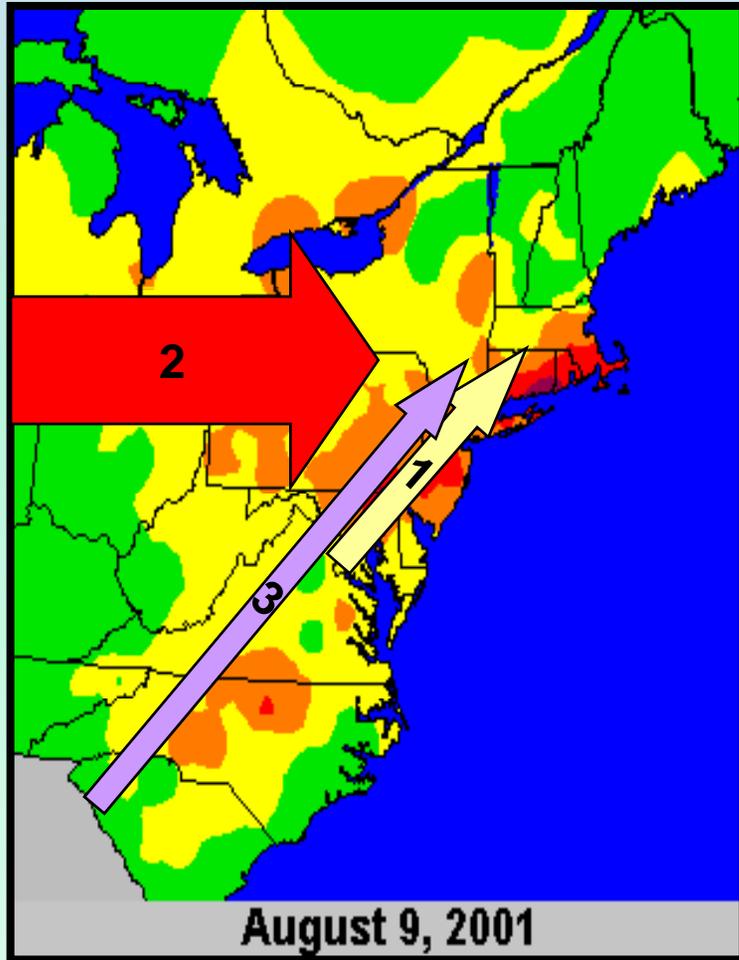
“What Comes Around Goes Around”



New Mandates to Affect NO_x Sources

- 2010 reconsidered O₃ NAAQS (EPA)
- 2010 CAIR replacement rule (EPA)
- 2011 Reconsidered PM_{2.5} NAAQS (EPA)
- 2010+ Revised Hg rule (EPA)
- Greenhouse Gas Programs (EPA, Congress, RGGI, CT)

Our Air Pollution Comes From

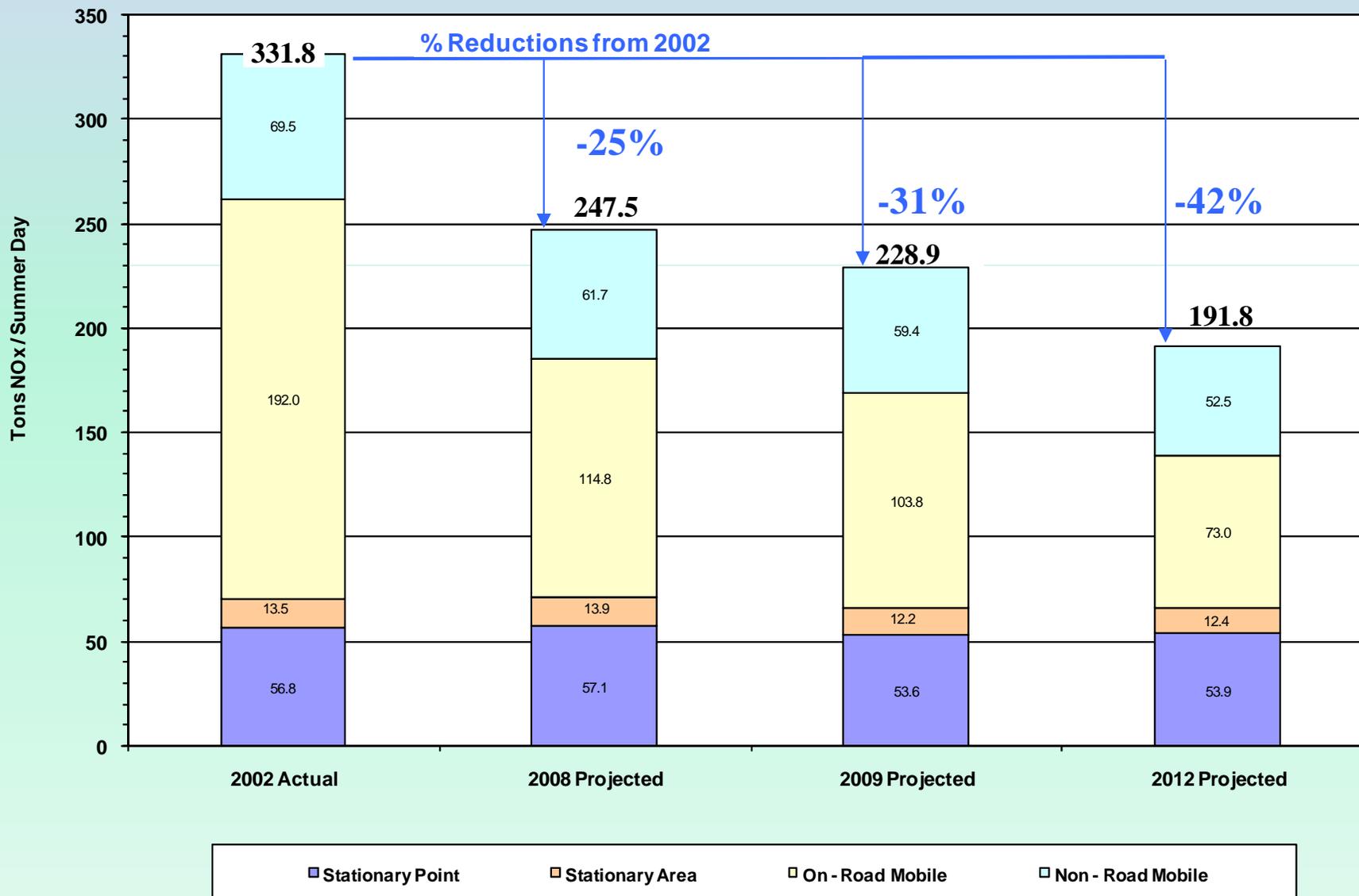


- **Local emissions**
- **Transport**
 - Short range**
 - Long range**

CT's Ozone SIP Status

- Submitted 1997 O3 Attainment Demonstration with commitments, 1Feb08
- EPA published proposed disapproval 8May09 (several rules lacking; modeling too optimistic)
- Need continuous reasonable further progress (RFP)
- 2009 clean data holding off disapproval
- Tighter standard and additional reductions needed for next SIP

From CT's O3 SIP: Projected Anthropogenic NOx Emission Trends for Connecticut



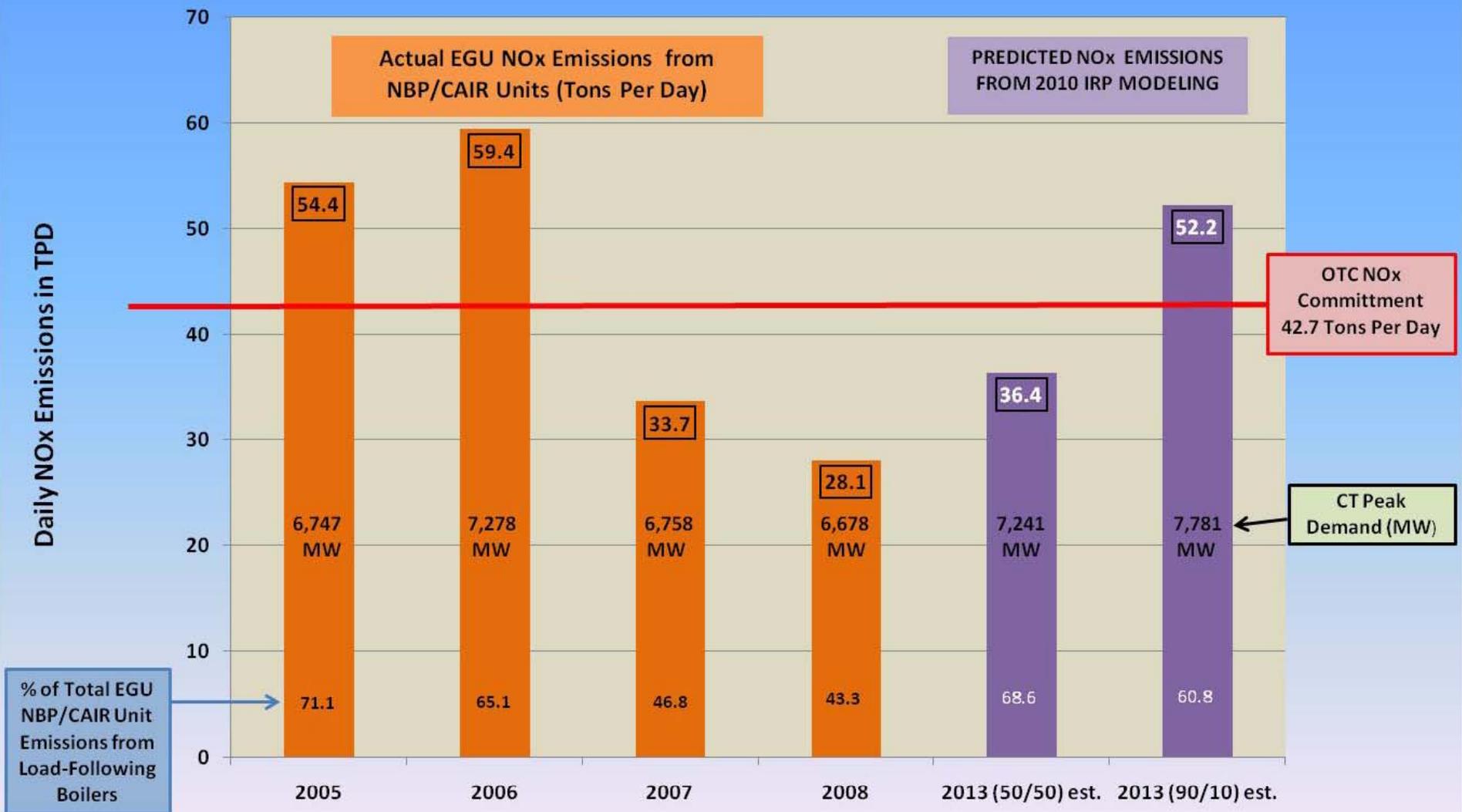
Why do more now?

- Making good progress, but not attainment
- Relying on past two years is overly optimistic (cool weather and slow economy)
- Gaps to fill for the 1997 O₃ NAAQS (84 ppb)
- Need more local reductions for reconsidered 2010 O₃ NAAQS (≤ 70 ppb)

Regional Control Strategies Under Development

- **Collaborative.** Coal EGUs.
- **Mobile sources.**
- **Architectural Coating and Consumer Products.**
- **EGU and Non-EGU Boilers.** Reduced NOx limits
- **Peak Day EGU.**
- **Municipal Waste Combustors.** Tighter NOx emission limits
- **Small Natural Gas-Fired Boilers, Process Heaters and Water Heaters.** Ultra Low NOx Burners

Connecticut's High Electric Demand Day (HEDD) Progress



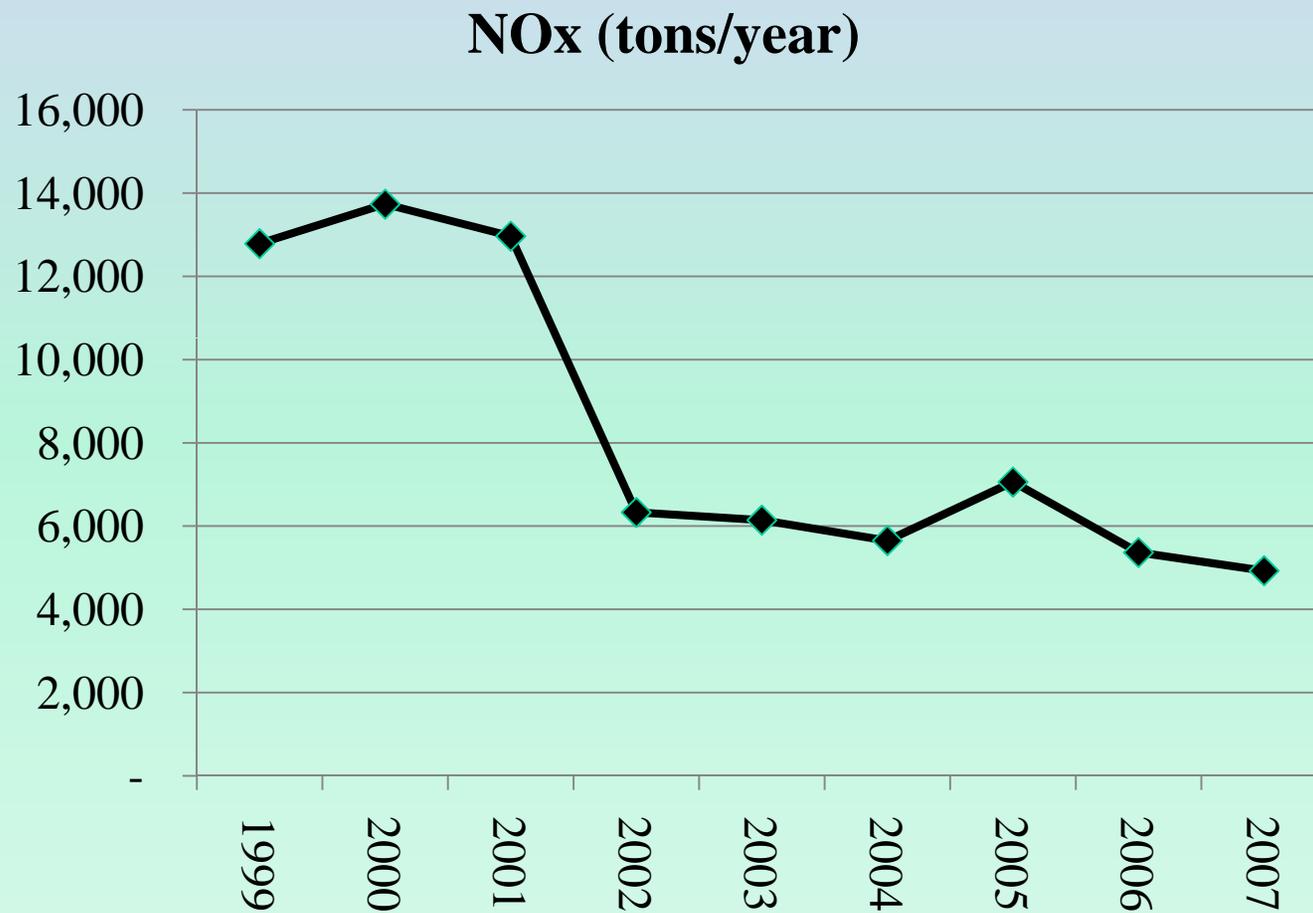
State's Obligation

- Fulfill obligations under the federal Clean Air Act
 - Develop a plan and attain.
 - Do not impede downwind State's efforts to achieve attainment.

NO_x Trading Orders

- 1994 NO_x RACT Concept
 - Allow ERC trading for sources that cannot comply with NO_x limits
 - Many old sources with limited life span remaining
 - Most cost effective approach
 - Never intended to last into perpetuity
- NO_x trading program is now 15 years old
- More NO_x reductions needed to meet mandates

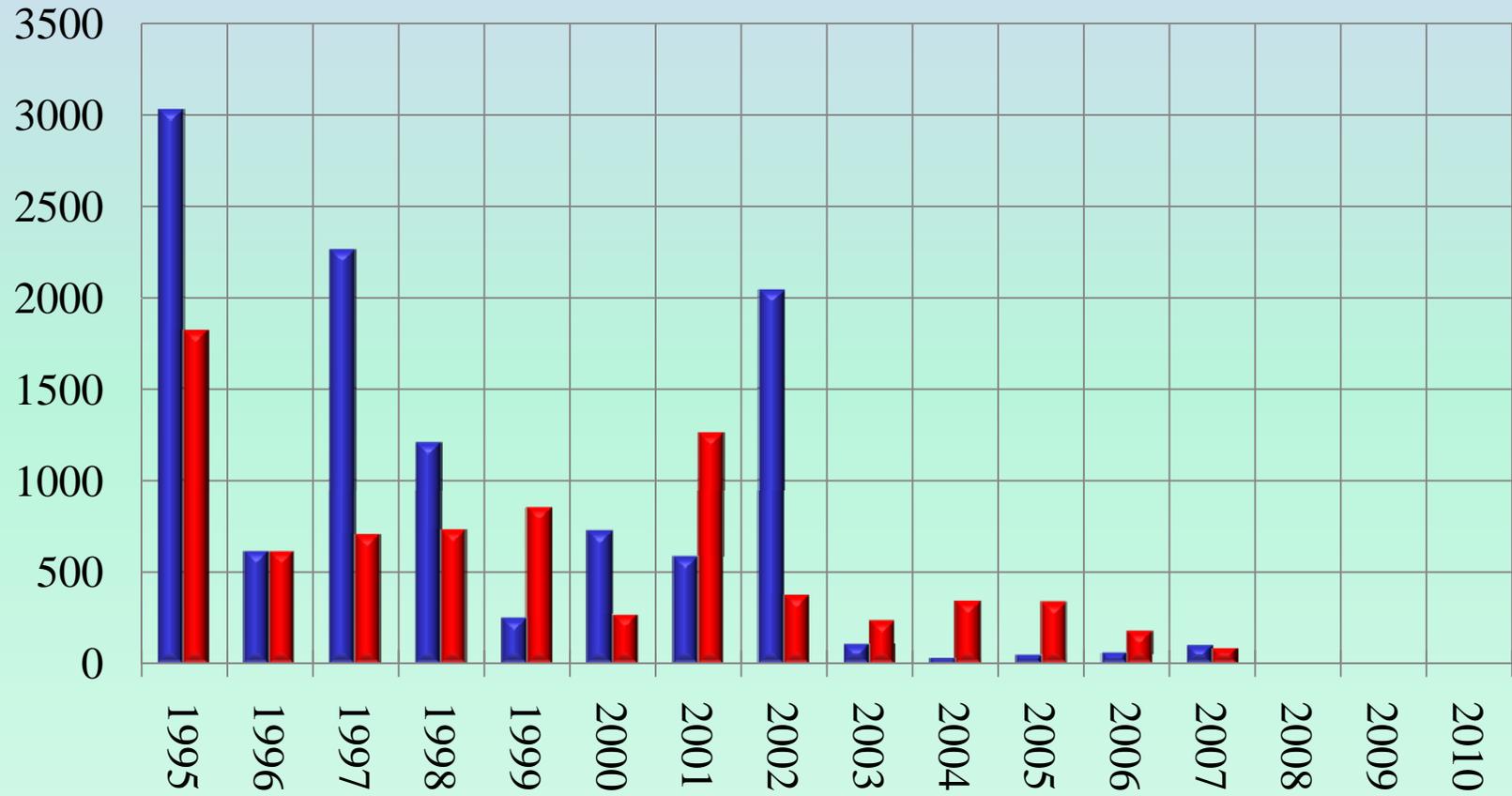
*NBP Source NO_x Emissions



*Budget Sources are the largest NO_x emitting sources in the State.

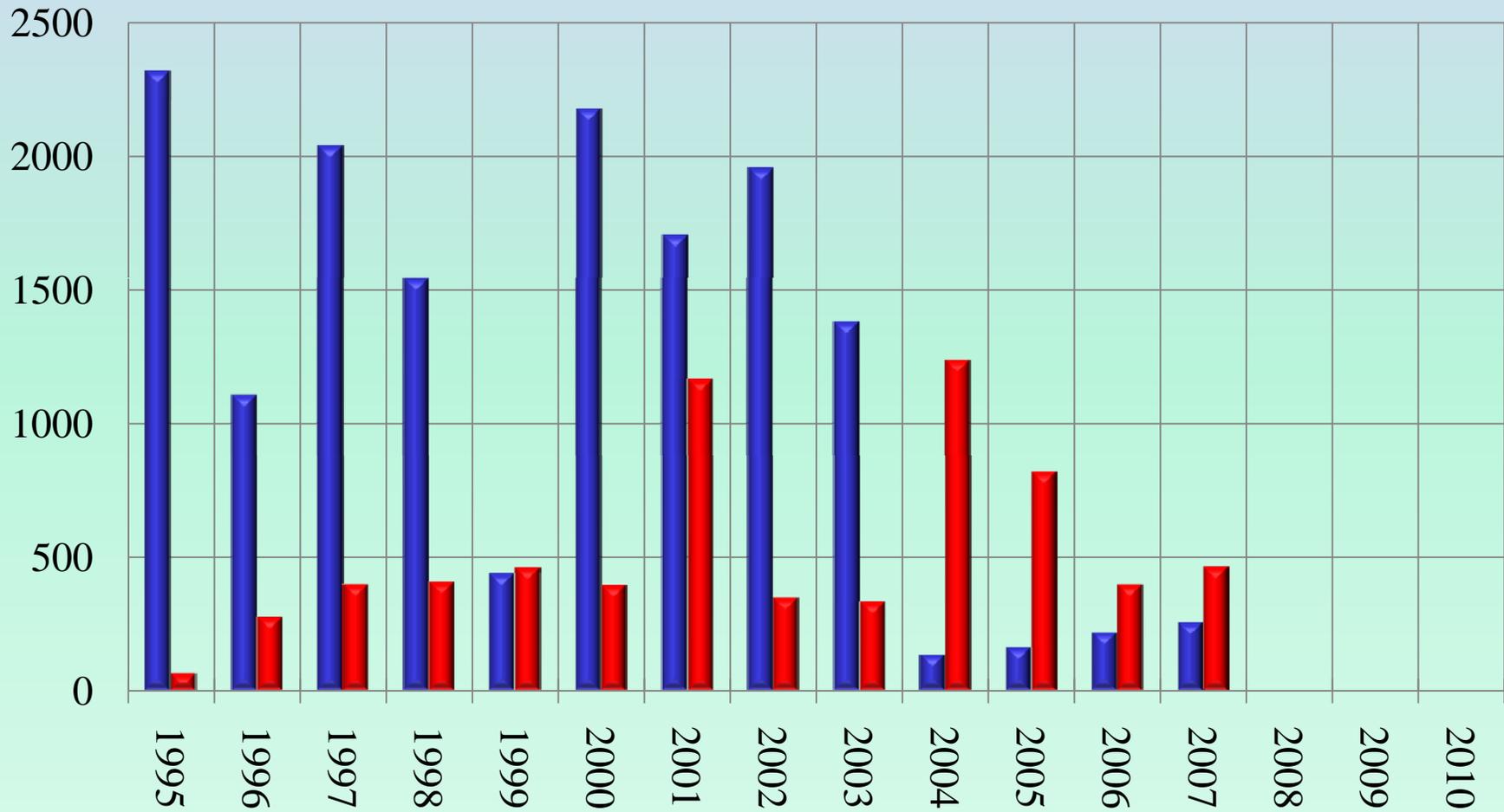
Ozone Season DERC Creation vs. Usage

■ Creation ■ Usage



Non-Ozone Season DERC Creation vs. Usage

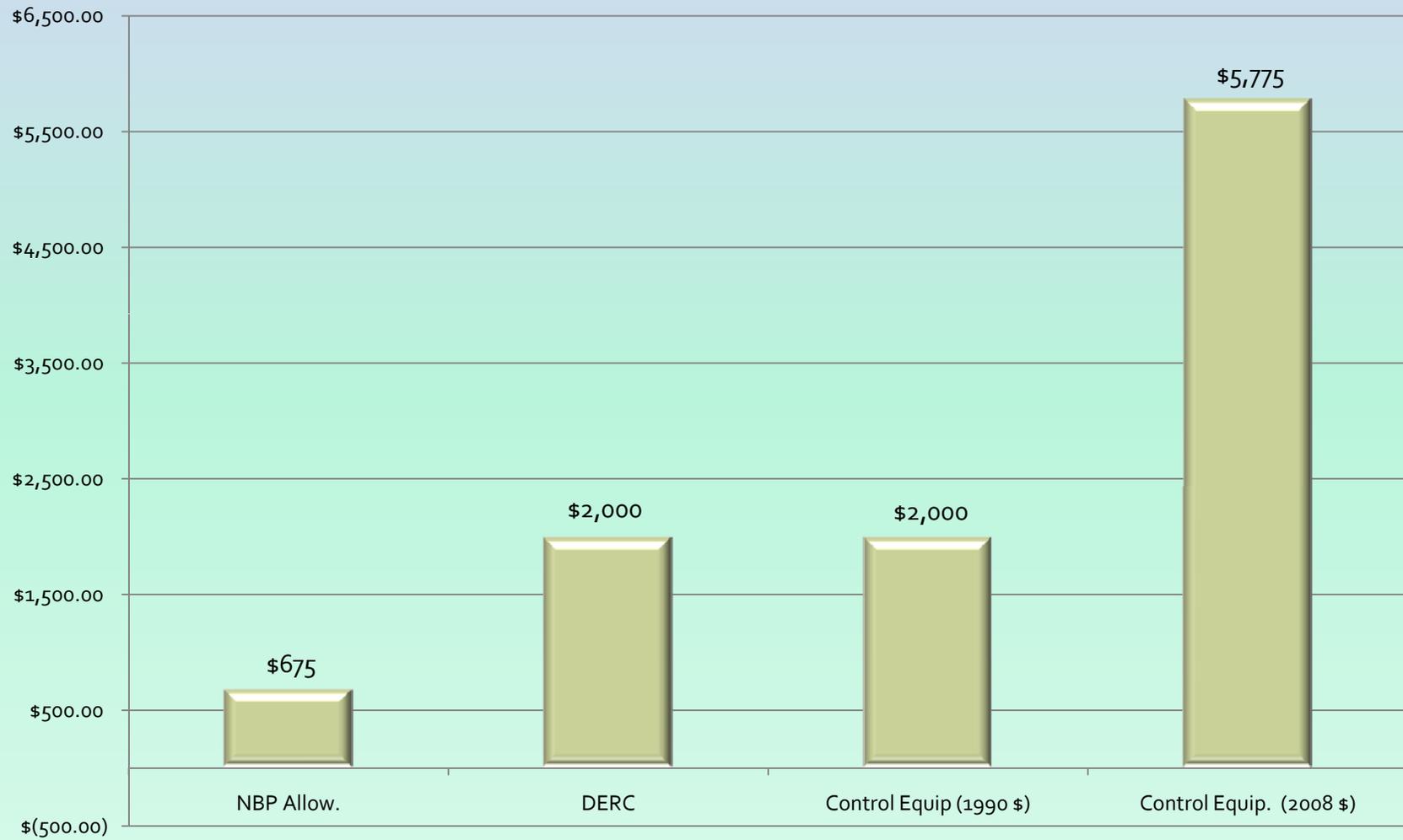
■ Creation ■ Usage



Current Trading Orders

- Source retires 1 DERC or allowance for each ton of emissions in excess of regulatory limit.
- No longer parity between cost of credit and cost effective control.
- Does not encourage real consideration of cost-effective controls or equipment replacement.
- Do not adequately protect or preserve current emissions reduction levels.

NOx Control Costs (\$/ton)



State Framework

- Fulfill obligations under the federal Clean Air Act
- Achieve public health goals cost effectively
- Allow for NO_x allowance or DERC use subject to permit or order
- Permits/orders can be conditional

Trading Program Policy Options for Short-term Order Renewals

- Establish a multi-tiered program that distinguishes categories of equipment
- Require low cost modifications or optimization as a prerequisite to credit use
- Increase the DERC/allowance ratio for high NO_x emitters
- Continue trading for a limited period of time in combination with commitment to a lower NO_x emission rate at a future date
- Establish a new baseline for “surplus”

Changes under Consideration (continued)

- Use trading orders as a mechanism to address HEDD commitment
- Discontinue to allow the use of NOx allowances or impose a geographic restriction on NOx allowance use
- Other?

Next steps

- Impacted stakeholder input
- Agency decision on terms for renewal of orders
- Follow EPA's regulatory agenda and determine appropriate regulatory changes to pursue