

NOACA Air Quality Public Advisory Task Force
Meeting Summary
May 5, 2006

The Chair, Dr. Nora Nock, called the meeting of the NOACA Air Quality Public Advisory Task Force to order at 12:30 p.m. (See attached sign-in sheet and the revised slate of recommended Ozone SIP Recommendations.)

The meeting began with introductions and a thank you to the Task Force members for their participation in the Ozone SIP development process.

As requested, NOACA staff presented a summary analysis of the Task Force's Voting Tally results. In addition, staff explained that the agenda was crafted based upon the emission reduction options that needed further discussion, clarification and/or consensus.

The first issue that required clarification and discussion was the EGU1 and EGU2 scenarios (Options PT-1 and PT-2). Staff, with assistance from local industry experts, clarified that PT-1 would require additional emission caps based on "Retrofit NOx BACT" (Best Available Control Technology) levels of 0.10 lbs/mmBtu NOx on all six plants for a 33% reduction from the CAIR program. PT-2 would require additional emission caps based on "NOx BACT For New Plants" levels of 0.07 lbs/mmBtu NOx on all six plants for a 53% reduction from the CAIR program. Each would require the installation of additional selective catalytic reduction (SCR) controls on increased units at the various plants. It was noted that the costs described by LADCO for each control included only capital costs, not operating and maintenance costs. First Energy noted that its position was that even the capital costs were underestimated by LADCO.

The Task Force recommended that the Ohio EPA be guided by the air-shed modeling for Northeast Ohio and impose further controls on electric utilities (electric generating units - EGUs), using either PT-1 and/or PT-2 as may be deemed necessary. However, the Task Force recommended that such controls be mandated on a multi-state basis through Ohio EPA's work with the states of LADCO (Lake Michigan Air Directors Consortium), those states being Ohio, Indiana, Illinois, Michigan, and Wisconsin, because only multi-state NOx controls show an appreciable benefit to Northeast Ohio. A motion for the recommendation was made by K. Fagan and seconded by T. McCormick; the motion passed in an 11 to 6 vote. A Task Force quorum was present.

The next agenda item included a clarification regarding Ohio EPA's plans to write VOC and NOx RACT Rules and the stringency of the emission reduction options voted on by the Task Force. Staff explained that although Ohio EPA may be considering writing rules for many of the options considered by the Task Force, the level of stringency of the proposed rules was unknown. Staff also pointed out the many of the Task Force members had commented that if Ohio EPA was considering rules for any of the options, those options should be removed from the recommended slate of options as a way to recommend more emission reduction options. Discussion followed, resulting in a decision by the Task Force to keep all of the VOC and NOx RACT rule options and the voted upon level of stringency in the slate of recommended options. A motion was made by S. Martin and seconded by R. Evans; the motion passed unanimously.

The Task Force also agreed to recommend that all NO_x RACT rules developed by Ohio EPA be written to cover the entire state of Ohio to ensure economic competitiveness among nonattainment and attainment areas.

The Task Force expressed no comment on other new VOC and NO_x rules requiring Reasonably Available Control Technology (**RACT**) at industries in Northeast Ohio, to be determined by the Ohio EPA after study, because the Task Force has seen no drafts of such rules, could not study their air impacts or their costs, and did not study the categories independently. The categories might include the following:

Additional NO_x RACT - Ohio EPA possibilities

- 1.) Process heaters, e.g., for chemical or steel processes
- 2.) Large stationary internal combustion engines, either gasoline or diesel
- 3.) Combustion turbines, often at electric generating units, requiring either a change in operating practices or a change in fuels
- 4.) Asphalt batch plants, possibly statewide
- 5.) Other sources, after top-down RACT study -- glass furnaces, etc.

Additional VOC RACT - Ohio EPA possibilities

- 1.) Synthetic organic compound manufacturing - Northeast Ohio only
- 2.) Organic compound batch processes - Northeast Ohio only
- 3.) Wood manufacturing - Northeast Ohio only
- 4.) Industrial wastewater (to capture petroleum, etc.) - Northeast Ohio only
- 5.) Aerospace industry, including repair facilities - Northeast Ohio only
- 6.) Shipbuilding and boat building and repair - Northeast Ohio only
- 7.) Bakeries (large), with extended compliance deadline - Northeast Ohio only
- 8.) Plastic parts coating (often auto subcontractors) - Northeast Ohio only
- 9.) Volatile organic liquid storage tanks (large) - Northeast Ohio only
- 10.) Industrial solvent cleaning - Northeast Ohio only
- 11.) Offset lithography - Northeast Ohio only
- 12.) Other sources, after top-down RACT study - case by case

The third item for discussion and clarification was the emission reduction option of moving to the final standards of the E-Check inspection and maintenance program – ASM 2525 Final standards, as well as a potential “Cash for Clunkers” program. Staff reported that the Mobile Source Work Group spent considerable time on potential enhancements to E-Check, including going final on the ASM 2525 standards, which are more stringent than existing standards. Staff also explained that the Work Group stated that going final on the standards would result in additional vehicles failing, perhaps as many as 1 in 4, resulting in impacts to the economically disadvantaged, thus creating an environment justice issue. As such, the Work Group also explored a “Cash For Clunkers” program as a potential solution.

After review of the ASM 2525 standards, the representative from E-Check supplied the corrected figures for the costs of the program (increased costs to car owners for additional repairs) and corrected costs per ton of pollutant removed. Upon review of the new data and review of the information on the “Cash for Clunkers” program, B. Leidich motioned to remove the “Cash For

Clunkers” program from the slate of recommended options as not cost-effective. J. Segedy seconded the motion and the motion passed 16 to one.

Transportation control measures were identified as the fourth agenda item and included the following subcategories for discussion: anti-idling practices, alternative fuels, trip reduction programs and funding priorities.

Staff requested that the Task Force clarify its anti-idling practices recommendation as to its geographic applicability. After much discussion, the Task Force felt that state leadership should drive a state anti-idling policy/regulation. A motion was made by P. Carey and seconded by K. Fagan and the motion passed with only one vote against.

The Task Force agreed to table the biodiesel and ethanol recommendation for discussion as part of the PM_{2.5} SIP development process since neither fuel has a proven VOC emission reduction benefit and the data regarding NO_x reductions has not been validated by USEPA.

The Task Force also clarified its recommendation for trip reduction programs that they are a voluntary measure for reducing air pollution. The Task Force did articulate the need for a more visible marketing campaign regarding trip reductions. Some suggestions included more staffing to meet with local businesses to market all type of trip reduction programs.

In regards to transportation funding priorities, the Task Force agreed that the items included on the agenda: bus replacements, traffic signal synchronizations, truck stop electrification, the replacement of ground support vehicles at Cleveland Hopkins Airport and vehicle retrofits should be considered as funding priorities for NOACA and other potential funding sources, but the Task Force requested that this priorities be presented in order of how they were ranked by votes. The Task Force also requested that all of the mobile options that were identified in the working slate of recommendations be listed, including: Transit incentives on high pollution days, improved transit waiting environments, i.e. transit centers, etc. The Task Force asked for a revised agenda that listed these transportation options in order of ranking.

The fifth agenda items included a discussion of long-term issues that have arose out of the work of the Task Force. The group felt very strongly that the regional dialogue regarding long-term air quality issues and the forum for discussion created by the Task Force was a valuable resource. The Task Force also felt that a recommendation should be presented to the NOACA Governing Board to continue this type of work program to address issues such as climate change and carbon dioxide, energy efficiency, land use planning and transportation efficiency, education and outreach regarding the current status of air quality and pollution levels, and the engagement of the business community in longer term solution to air pollution and regional economic competitiveness. Staff indicated that they are tracking long-term solutions for inclusion in a final report at the completion of the PM_{2.5} SIP development process.

Staff described the next steps of the Ozone SIP development process. Staff reported that the Director of Ohio EPA would be addressing the NOACA Governing Board on Friday, May 12, 2006, which would be followed by an informational staff briefing on the work of the Task Force. It was suggested that the Task Force Chair introduce the Director and that the Work Group chairs

assist in the briefing. Staff indicated that the agenda for the Governing Board was very full and very little time would be allocated for the staff informational briefing. Staff suggested that the Task Force plan to attend the July 14, 2006 meeting of the Governing Board when the Ozone SIP recommendations would be included on the agenda as an action item.

Staff also indicated that the mobile source emission reduction options would be presented to the NOACA Transportation Advisory Committee as an informational item in May and for potential endorsement in June.

Staff again thanked all of the Task Force Members, members of the work groups and all interested observers for their hard work and commitment to the process and requested their assistance again in September as part of the PM_{2.5} SIP development process.

NORTHEAST OHIO AREAWIDE COORDINATING AGENCY

MEMORANDUM

TO: NOACA EAC Air Quality Subcommittee

FROM: Pamela Davis, AICP, Senior Environmental Planner
Amy M. Wainright, Esq., Air Quality Planner

DATE: May 9, 2006

RE: **NOACA Air Quality Public Advisory Task Force:
Preliminary Recommendations for the 8-Hour Ozone State Implementation
Plan (SIP) for Northeast Ohio**

I. Preliminary Recommendations

The NOACA Air Quality Public Advisory Task Force concluded its public involvement process for the 8-Hour Ozone State Implementation Plan (SIP) for Northeast Ohio on May 5, 2006. The Task Force reviewed a large number of emission control options for possible inclusion in a slate of recommendations for Governing Board review.

The Task Force met nine times over the past year, on May 25, 2005; July 25, 2005; September 28, 2005; October 27, 2005; December 6, 2005; March 1, 2006; March 29, 2006; April 26, 2006; and May 5, 2006. Staff are now creating the Task Force's Final Report to the NOACA Governing Board.

Preliminary 8-Hour Ozone options are shown in Appendix A of this memo. Recommendations for fine particles (PM_{2.5}) will not be made to the NOACA Governing Board until January 2007. Many ozone solutions will also be considered as solutions to fine particle pollution.

Air Pollution Reductions from Reformulations of Summertime Gasoline

For ozone, the Task Force has voted to support a recommendation to the NOACA Governing Board for a low-Reid Vapor Pressure (RVP) gasoline, which emits fewer volatile organic compounds (VOCs), of 7.8 psi for the summer of 2009, followed by a low-RVP gasoline of 7.0 psi, which emits even fewer VOCs, for the summer of 2010 and every summer thereafter until the federal standard is attained. (Currently, 9.0 psi gasoline is sold in the summer in Northeast Ohio.) Federal reformulated gasoline (RFG) was not selected as an option because of the claimed preparation time needed by refineries to provide such a fuel to the region.

The reductions that might be achieved in the 8-county nonattainment area, according to NOACA and ODOT Mobile 6.2 modeling, including potential costs as cited by industry, are as follows:

7.8 psi	5.25 tons per day VOCs eliminated 0.32 tons per day NOx eliminated	1 cent at refinery
7.0 psi	8.20 tons per day VOCs eliminated 0.48 tons per day NOx eliminated	0.6 - 3 cents at refinery

Costs at the refinery do not translate directly to increased prices for the consumer. Actual "price at the pump" figures could not be predicted for the summer of 2009 or beyond, due to fluctuations in the price of oil. However, consumers in Cleveland, Pittsburgh, and Detroit each paid approximately the same price per gallon for gasoline in the summer of 2005, even though Pittsburgh and Detroit were each using 7.8 psi gasoline.

II. Background

Ozone: On April 15, 2004, the eight counties of Northeast Ohio were declared by the United States Environmental Protection Agency (USEPA) to be a moderate nonattainment area under the new federal 8-hour ozone standard. This designation includes Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit Counties. Ground-level ozone reduces lung function.

The Ohio EPA, on behalf of Northeast Ohio, must submit to USEPA an 8-Hour Ozone SIP by June 2007 with sufficient control measures, plus air-shed modeling, to show attainment of the federal standard by June 2010. Control measures, however, must be in place by June 2009.

Fine Particles (PM_{2.5}): On December 17, 2004, the USEPA designated Ashtabula (partial), Cuyahoga, Lake, Lorain, Medina, Portage, and Summit Counties as in nonattainment for the new fine particle standard (particulate matter of 2.5 microns or less in diameter - PM_{2.5}). Fine particles aggravate heart and lung diseases, and have been associated with premature death, according to USEPA.

The Ohio EPA, on behalf of Northeast Ohio, must submit to USEPA a PM_{2.5} SIP by April 2008, sufficient to show attainment of the fine particle standard by April 2010. Control measures must be in place by April 2009.

SIP Submission: Ohio EPA is responsible for submitting all SIPs for Ohio. NOACA will contribute recommendations for the two SIPs for Northeast Ohio. In Akron, the AMATS Governing Board will also send comments as they relate to Summit and Portage Counties.

III. NOACA Air Quality Public Advisory Task Force - Process

Ohio EPA signed a Memorandum of Understanding with NOACA and northeast Ohio's Local Air Agencies, acknowledging NOACA's lead role in coordinating the public involvement process related to the nonattainment status of Northeast Ohio for both ozone and fine particles (PM_{2.5}). NOACA established a public stakeholder process with the following charge:

- a.) Develop an understanding of Northeast Ohio's air quality issues.
- b.) Serve as a forum for public discussion of Northeast Ohio's air quality challenge.
- c.) Review and evaluate alternative controls addressing Northeast Ohio's sources of ozone precursors and particulate matter pollution.
- d.) Make recommendations for attaining federal clean air standards for ozone and particulate matter to the NOACA Governing Board.

The NOACA Air Quality Public Advisory Task Force, made up of 29 members who represent a broad spectrum of interests in Northeast Ohio, has been meeting almost monthly since May 2005. It has established Work Groups for Mobile Sources, Point Sources, Area Sources, Long-Term Planning Strategies, and a Public Health Forum on air pollution. The Work Groups have met approximately every 3 weeks since August 2005. They will continue to meet through the fall of 2006 to address PM_{2.5}.

The Task Force employed the following evaluation criteria to assess potential options for Northeast Ohio:

- Quantifiable
- Enforceable
- VOC Reductions in Tons Per Day
- NOx Reductions in Tons Per Day
- Technically Possible
- Successful Implementation Elsewhere
- Require State Legislation/ State Rules/ Local Ordinances
- Costs Per Ton of Pollutant Removed
- Costs in Other Units
- Economic Investment Required
- Economic Benefit or Detriment
- Health Benefit
- Other Benefits or Detriments
- Behavioral Change Required
- 2009 Timing Requirement
- Long-Term Effect
- Additional Comments or Concerns

IV. Target Goal for Northeast Ohio

Ohio EPA is estimating that Northeast Ohio's moderate nonattainment area for 8-hour ozone would have to reduce its VOCs by 25% of the 2009 projections in order to come into attainment, coupled with a statewide reduction in NOx of 15%.

This goal, as stated by Ohio EPA, is approximately 65 tons/day VOCs (local reduction in Northeast Ohio) and 240 tons/day NOx (statewide reduction).

Ohio EPA states that VOCs reductions locally produce a corresponding ozone reduction. However, NOx controls must be statewide or even multi-state-wide to be effective.

V. Air-Shed Modeling

To predict whether Northeast Ohio will attain the federal 8-hour ozone standard by June 2010, several parallel air-shed modeling efforts are ongoing. These include work done by the Lake Michigan Air Directors' Consortium (LADCO), working on behalf of USEPA, Ohio EPA, and the states of Ohio, Indiana, Illinois, Wisconsin, and Michigan.

The 8-hour ozone standard to be attained is 85 parts per billion (ppb). The high reading from the summer of 2002 (modified and lowered pursuant to USEPA rule) is 99 ppb.

The LADCO modeling results do not yet show Northeast Ohio attaining the federal 8-hour ozone standard, even if strong controls are placed on industry and a clean gasoline (7.0 psi) is chosen. Further transportation control measures appear to be needed. The most recent LADCO modeling results show Northeast Ohio at 88.8 ppb in the summer of 2009.

A second modeling effort is being undertaken directly for the NOACA Air Quality Public Advisory Task Force by Ohio University. As with the LADCO results, no collection of controls yet shows Northeast Ohio in attainment by June 2010. However, Ohio University is pursuing changes to the emissions inventory for industrial sources between 2002 and 2004, which are not being studied by LADCO.

VI. Conclusion

The work of the Task Force on its 8-Hour Ozone SIP Recommendations is now complete. **A full and detailed report is being drafted and will be provided to the NOACA Governing Board for final action by the Board in July 2006.** All background Task Force documents and reports can be found at:

<http://www.noaca.org/sipplan.html>

Appendix A

(Revised as of May 5, 2006 following final Task Force meeting on ozone.)

Among measures under consideration by the NOACA Air Quality Public Advisory Task Force are the following, ranked in priority order by their votes:

Mobile Source Options

- 1) **Low-Reid Vapor Pressure (RVP) gasoline, emitting fewer VOCs, of 7.8 psi for the summer of 2009, followed by a Low-RVP gasoline of 7.0 psi, emitting even fewer VOCs, for the summer of 2010 and every summer thereafter until the standard is attained.**
- 2) **Anti-idling policies** statewide for cars, trucks, buses, railroad locomotives, and off-road equipment, to be implemented "at the state policy level."
- 3) **Voluntary trip reduction programs** across Northeast Ohio, including increased support for NOACA air quality education programs, transit use, carpooling and RideShare, compressed work weeks, telecommuting, conference calls and other "virtual meetings," trip combining and increased efficiency, and commuting alternatives such as bicycling and walking.
- 4) **Truck stop electrification** of the 3 large truck stops in Northeast Ohio (2 in Medina County and 1 in Cuyahoga County).
- 5) **Continued support for ODOT's Intelligent Transportation System (ITS)** in the Cleveland area and the Akron area.
- 6) ~~**Increased use of alternative fuels such as biodiesel and ethanol.** Although minimal reductions in ozone formation occur from either biodiesel or ethanol, substantial reductions in PM_{2.5} formation occur. (Deleted on 5/5/06 for lack of ozone effect. Further discussion to be held in the fall of 2006 for the PM_{2.5} SIP recommendations.)~~
- 7) ~~**"Cash For Clunkers"** a program that would be funded to purchase and scrap all vehicles that fail E-Check in Northeast Ohio. (Deleted on 5/5/06 for failure of cost-effectiveness and lack of a funding source.)~~
- 8) **E-Check enhancement** - adoption of the ASM 2525 Final Standards for older vehicles not having onboard diagnostic (OBD) testing. These cars are the pre-1996 models that are currently tested using dynamometers.
- 9) Continued support for **bus replacement programs**.
- 10) **Transit incentives** to encourage consumers to ride on high air pollution days.
- 11) Greater use of **transit centers** to make transit more attractive to riders.
- 12) Continued support for **traffic signal synchronizations**.
- 13) **NOx retrofits for diesel vehicles**.
- 14) **Additional enforcement of existing speed limits**.
- 15) **Replacement of ground-support vehicles** at Cleveland-Hopkins International Airport with electric, CNG, or hydrogen vehicles.

Point Source and Area Source Options

- 1) Further controls statewide on **cold cleaning/degreasing operations**.
- 2) More stringent limits statewide for formulation of **industrial surface coatings**.
- 3) More stringent limits statewide for formulation of **consumer and commercial products**.
- 4) Switch to California-design portable fuel containers (**gas cans**) statewide.
- 5) Further controls statewide on **mid-size industrial boilers**.
- 6) Further controls greater than federal on **electric utilities (coal-fired power plants)**, implemented on a multi-state basis.
- 7) Enhancement of underground **gasoline storage tank pressure-valve vents** at gas stations in Northeast Ohio and statewide implementation of Stage I vents at all gas stations.
- 8) Enhancement of **Stage II vapor recovery nozzles** at gas stations in Northeast Ohio.
- 9) High Volume Low Pressure (HVLP) spray guns statewide for **auto body paint sprayers**.
- 10) Seeking of grant funding for **energy efficiency projects** in Northeast Ohio.
- 11) More stringent limits statewide for formulation of **paints and varnishes** (architectural and industrial coatings).
- 12) **NOx Credit Trading Bank** to be implemented at the Ohio EPA, for the trading of NOx allowances and offsets within any nonattainment area.

PD/AMW/jy/5609e

**NOACA Air Quality Public Advisory Task Force - As Completed May 5, 2006
8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
PT-9	Cold Cleaners/Degreasers - Adopt Chicago/Metro East regulations	8.0000	0.0000	\$1,400	\$4.3 million	185	Yes, on a statewide basis.
PT-7	Industrial Surface Coatings - Area Sources - SOLV5A - more stringent RACT regulations, lower applicability thresholds & extend geographic areas	13.0000	0.0000	\$100-5,000	\$0.5-24 million	181	Yes, on a statewide basis.
MO-1	Summer fuel - Low-RVP gasoline of 7.8 psi	5.25	0.32	\$7,367 VOC	1 cent at refinery	155	Yes for 2009, followed by 7.0 psi for 2010 and beyond
MO-25	Anti-Idling Policies - assuming 500,000 participating vehicles across NAA	1.466	0.402	Cost savings	Cost savings	143	Yes, to be set at the "state policy level."
MO-14	Trip Reduction Program - Voluntary - All Residents in Nonattainment Area	2.12	4.63	Cost savings and costs to implement	Cost savings and costs to implement	130	Yes
PT-12	Consumer & Commercial Products - SOLV2A - adopt OTC Model Rules with additional product coverage & more stringent VOC limits (14.2% reduction beyond Federal rules)	4.0000	0.0000	\$800	\$1.2 million	130	Yes, on a statewide basis.
AR-13	Portable Fuel Containers - Adopt Ozone Transport Commission Model Rule	4.0000	0.0000	\$250-480	\$2-3 million	123	Yes, on a statewide basis.
PT-3	ICI 1 Boilers - Apply 60% NOx Reduction (NOx SIP Call for midsized boilers 100-250 mmBtu/hr) (24% reduction 2002)	0.0000	2.0000	\$280-1,300	\$0.2-0.7 million	121	Yes, on a statewide basis.

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8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
MO-2	Summer fuel - Low-RVP gasoline of 7.0 psi	8.2	0.48	\$14,150 VOC	0.6-3 cents at refinery	112	Yes, for 2010 and beyond, preceded by 7.8 psi in 2009
PT-1	EGU 1 - Emissions Caps based on "Retrofit NOx BACT" levels of 0.10 lbs/mmBtu NOx (33% reduction from CAIR)	0.0000	14.0000	\$700-1,600	\$4-14 million	107	Yes, as may be needed, coupled with PT-2, as may be needed, based on modeling and implemented on a multi-state basis. Operating and maintenance costs were not included. Capital costs may be underestimated. PT-1 or PT-2 MAY NOT be implementable before 2011, according to industry.
AR-1	Anti-Idling Policy at the Port of Cleveland - Trucks	0.0020	0.0190	Unknown	Enforcement Costs Fuel Savings	104	Yes, as part of MO-25.
PT-2	EGU 2 - Emissions Caps based on "NOx BACT for New Plants" levels of 0.07 lbs/mmBtu NOx (53% reduction from CAIR)	0.0000	28.0000	\$700-2,100	\$7-27 million	100	Yes, if needed, as part of PT-1 (see above).
MO-3	Summer fuel - Federal Reformulated Gasoline	11.22	0.13	\$20,683 VOC	1.7-6.2 cents at refinery	98	No, due to lack of implementation capability prior to 2009.
MO-20	Truck Stop Electrification at the 3 truck stops in the NAA	0.02	0.38	\$44,838 VOC and \$2,359 NOx over 10 years	\$3,273,200	85	Yes
PT-16	Gasoline Distribution Facilities - SOLV7A - adopt CARB EVR Stage I Requirements	2.0000	0.0000	\$0-2,100	\$0-2 million	81	Yes, with Stage I for all gas stations statewide.
PT-5	ICI 3 Boilers - Apply 80% reduction (similar to BART) to midsized boilers (100-250 mmBtu/hr) (6% reduction 2002)	0.0000	2.5000	\$536-4,493	\$0.05-4 million	78	No - See PT-3 above.

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8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
PT-15	Auto Body Refinishing HVLP Spray Guns - SOLV4B - adopt more stringent RACT requirements based on SCAQMD 1145	4.0000	0.0000	\$7,200	\$11 million	75	Yes, on a statewide basis.
MO-16	Intelligent Transportation System - Cleveland Area	0.549	-0.071	\$23,330 VOC over 6 years	\$28 million	72	Yes.
PT-21	Grant funding for energy efficiency projects	UnK	UnK	Receipt of Grant Funds	Receipt of Grant Funds	70	Yes.
MO-28	Alternative Fuel - Biodiesel	0	0.001	Approximately neutral	Approximately neutral - assume 100 refuse trucks	60	Tabled until PM2.5 discussions in fall of 2006.
MO-26	Cash For Clunkers Program - Purchase all vehicles failing E-Check	0.03	0.03	\$1.1 million VOC \$1.1 million NOx	\$12,183,500	56	No, as not cost-effective and having no likely funding source.
MO-27	Alternative Fuel - Ethanol	0.0003	0.0001	Approximately neutral	Approximately neutral - assume 100 cars	56	Tabled until PM2.5 discussions in fall of 2006.
MO-17	Intelligent Transportation System - Akron Area	0.211	-0.093	\$31,162 VOC over 6 years	\$14.4 million	55	Yes.
PT-8	Industrial Surface Coatings - Point Sources - SOLV5B - more stringent RACT regulations, lower applicability thresholds & extend geographic areas	2.0000	0.0000	\$100-5,000	\$0.07-3.5 million	55	Yes, on a statewide basis.

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# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
PT-10	AIM Coatings - SOLV1A - 21% reduction beyond Federal AIM Rules (40 CFR Part 59) and Wisconsin NR433.17 requirements	4.0000	0.0000	\$6,500	\$37 million	55	Yes, on a statewide basis.
PT-18	Gasoline Distribution Facilities - SOLV7C - require air pollution control devices for underground storage tank vents	1.0000	0.0000	Minimal	Minimal	55	No - See PT-16 above.
AR-3	Anti-Idling Policy at Cleveland Hopkins International Airport - Buses and Cars	0.0050	0.0010	Unknown	Enforcement Costs Fuel Savings	55	Yes, as part of MO-25.
AR-14	Portable Fuel Containers - Adopt incentive programs to phase in compliance	4.0000	0.0000	\$4,600	\$10 million	53	Yes, on a statewide basis.
MO-5	E-Check - Adopt ASM 2525 Final Standards for Older Vehicles	0.31	0.43	\$24,745 VOC and \$17,840 NOx	\$2.8 million incremental cost to consumers	50	Yes.
MO-15	Bus Replacements in NOACA TIP and AMATS TIP	0.001	0.52	\$5,507 NOx	\$240,000 per bus - less for an engine replacements	50	Yes.
MO-33	Transit Incentive for High Air Pollution Days	0.003	0.002	Unknown	Depends on number of days	50	Yes.
AR-6	Idling at Railroad Switch Yards - Auxiliary power units on switch yard locomotives	UnK	UnK	Unknown	Cost of APU; Fuel Savings	50	Yes, as part of MO-25.

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MO-22	Transit Centers in NOACA TIP	0.45	0.33	\$3,056 VOC over 10 years \$4,167 NOx over 10 years	\$5 million	41	Yes, with greater and more widespread use.
PT-17	Gasoline Distribution Facilities - SOLV7B - adopt CARB EVR Stage II Requirements	2.0000	0.0000	\$840-\$13,400	\$0.5-10 million	38	Yes.
MO-21	Traffic Signal Synchronizations in NOACA TIP and AMATS TIP	0.125	0.038	\$66,150 VOC over 10 years \$217,599 NOx over 10 years	\$30,181,000	37	Yes.
MO-12	On-Road Diesel Vehicles - NOx Retrofit - Selective Catalytic Reduction	0	0.4	\$3,139	\$2.75 million for 100 trucks	36	Yes.
MO-19	Additional Enforcement of Existing Speed Limits	-1.000	2.00	Cost savings	Cost savings	35	Yes.
PT-14	Auto Body Refinishing HVLP Spray Guns - SOLV4A - extend existing VOC RACT regulations beyond 1- hour Ozone nonattainment counties	1.5000	0.0000	\$1,354	\$0.75 million	35	Yes - See PT-15 above.
PT-30	NOx Credit Trading Bank	0.0000	UnK	Unknown	Cost to Ohio EPA to implement	35	Yes.
AR-2	Ground Support Equipment (GSE) Replacement with Electric, CNG, or Hydrogen	UnK	UnK	Unknown	Depends on vehicles replaced	35	Yes.

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# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
MO-32	Ozone Action Program/ Fine Particle Program	0.003	0.002	\$1.7 million VOC and \$2.6 million NOx	\$250,000	34	No, except as part of MO-14 above.
MO-7	E-Check - Include Ashtabula County	0.108	0.065	\$25,367 VOC and \$42,149 NOx	\$1 million plus staff, maintenance & administration	33	No, as not cost-effective.
MO-4	E-Check - Change to Most Stringent Possible Program	3.13	1.09	\$99,325 VOC and \$285,218 NOx	\$44 million for administration and \$69 million to consumer	30	No.
MO-13	Trip Reduction Program - Mandatory - Government Employees in NAA	0.125	0.047	Cost savings and costs to implement	Cost savings and costs to implement	30	No - but see MO-14 above for voluntary.
AR-12	Clean Marina / Clean Boater Program	UnK	UnK	Unknown	Unknown	30	No.
MO-11	On-Road Diesel Vehicles - NOx Retrofit - Exhaust Gas Recirculation & Diesel Filter	0	0.15	\$5,970	\$2.3 million for 100 trucks	25	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
PT-29	Increased Enforcement and Funding for Enforcement	UnK	UnK	Unknown	\$800,000	25	No.
PT-4	ICI 2 Boilers - Apply likely controls to ICIs subject to BART (6% reduction 2002)	0.0000	0.4000	\$536-4,493	\$0.1-0.7 million	24	No - See PT-3 above.

**NOACA Air Quality Public Advisory Task Force - As Completed May 5, 2006
8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
MO-23	Park & Ride Lot Enhancements in NOACA TIP	0.04	0.037	\$54,279 VOC over 10 years \$58,681 NOx over 10 years	\$7,925,000	23	Yes, as part of MO-22 above.
MO-30	Alternative Fuel - Natural Gas	0	0.4	\$9,188 NOx	\$3 million to purchase 100 dual-fuel engines	22	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
PT-27	Encourage wind power on or near Lake Erie	UnK	UnK	Unknown	Unknown	21	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
MO-18	Reduced Speed Limits from 65 mph to 55 mph where possible	-1.000	2.00	Cost savings	Cost savings	20	No.
MO-24	Transit Waiting Environment Improvements	0.003	0.002	Unknown	Unknown	20	Yes, as part of MO-22 above.
PT-6	Asphalt Batch Plants - Low-NOx burners	0.0000	UnK	UnK	UnK	20	No.
PT-13	Consumer & Commercial Products - SOLV2B - adopt CARB requirements in addition to SOLV2A (12.5% reduction beyond SOLV2A)	3.0000	0.0000	\$4,800	\$6 million	20	No - see PT-12 above.
PT-26	Create incentives for combined heat and power (CHP) projects	UnK	UnK	Unknown	Unknown	20	No.

**NOACA Air Quality Public Advisory Task Force - As Completed May 5, 2006
8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
AR-4	Free Pick-up/Drop-off Parking Lot at Cleveland Hopkins International Airport	0.0280	0.0070	Unknown	Several million dollar loss annually	20	No.
AR-10	Construction Equipment - Selective Catalytic Reduction	0.0000	0.1400	\$7,788	\$2.75 million for 100 vehicles	20	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
MO-29	Alternative Fuel - Emulsified Diesel (PuriNOx)	0	0.002	\$9,000 NOx for older trucks; more for newer	\$300,000 fuel cost - assume 100 trucks	19	No.
MO-31	Alternatively Powered Vehicles - Hybrid Electric	0.002	0.001	\$41,095 VOC and \$82,191 NOx	\$3,000 more per car = \$300,000 for 100 cars	15	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
MO-34	Roadside Diesel Testing for Particulate Matter	0	0	Unknown	May produce \$13 million annually in revenue	15	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
PT-11	AIMCoatings - SOLV1B -Adopt SCAQMD Phase III VOC limits to VOLV1A (13.4% reduction beyond SOLV1A)	4.0000	0.0000	\$20,000	\$16 million	15	No - see PT-10 above.
PT-24	Set a statewide or nonattainment-areawide electricity reduction goal of 5%	UnK	UnK	Cost savings for all participants	Cost Savings for Region	15	No.
PT-25	Create incentives for government entities and businesses to replace electric devices with energy efficient models	UnK	UnK	Unknown	Unknown	15	No.

**NOACA Air Quality Public Advisory Task Force - As Completed May 5, 2006
8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
PT-28	Create a statewide model Green Building Code with Leed rating system	UnK	UnK	Unknown	Unknown	15	No.
AR-5	Parking Garage - Improved Signage at Cleveland Hopkins International Airport	UnK	UnK	Unknown	Unknown	15	No.
AR-8	Construction Equipment - Lean-NOx Diesel Retrofits	0.0000	0.0700	\$10,542	\$2 million for 100 vehicles	15	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
MO-6	E-Check - Eliminate the Waiver	0.03	0.03	\$1.1 million VOC and \$1.1 million NOx	\$12,183,500 to consumers	10	No.
MO-8	On-Road Diesel Engine or Vehicle Replacement with Newer	0	0.4	\$4,423 NOx	\$4.5 million for 100 trucks	10	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
MO-9	On-Road Heavy Duty Diesel Vehicle Low-NOx Rebuild/Chip Reflashing	0	0.06	\$1,842	\$39,800 for 100 trucks	10	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
MO-10	On-Road Diesel Vehicles - NOx Retrofit - Lean-NOx Catalyst	0	0.15	\$5,905	\$2 million for 100 trucks	10	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
PT-19	Glass Manufacturing - GLASS1 - apply controls to achieve 30% reduction over uncontrolled	0.1400	0.0000	Unknown	Unknown	10	No.

**NOACA Air Quality Public Advisory Task Force - As Completed May 5, 2006
8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
AR-7	Hybrid Electric Locomotives - replace existing switch yard locomotives	Unk	UnK	Unknown	\$1 million per engine	10	No.
AR-9	Construction Equipment - Exhaust Gasoline Recirculation plus Diesel Filters (DPF)	0.0000	0.0600	\$23,788	\$2.3 million for 100 vehicles	10	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
AR-15	Diesel Agricultural Tractors - Lean-NOx Retrofits	0.0000	0.0040	\$10,498	\$104,980 for 10 tractors	10	No.
PT-20	Glass Manufacturing - GLASS2 - apply controls to achieve 75% reduction over uncontrolled	0.3500	0.0000	Unknown	Unknown	5	No.
AR-11	Construction Equipment - Replacing Older Engines with Newer Engines	0.0000	0.0600	\$7,675	\$1.375 million for 100 vehicles	5	No, but will be re-visited during PM2.5 discussions in the fall of 2006.
AR-17	Electric Towmotors for Industry					5	No.
PT-22	State appliance standards for electric appliances not covered by federal law	UnK	UnK	Unknown	Unknown	0	No.
PT-23	Disallow (PUCO) electric rates increases where there is no renewable energy initiative on the part of the EGU	UnK	UnK	Unknown	Unknown	0	No.

**NOACA Air Quality Public Advisory Task Force - As Completed May 5, 2006
8-Hour Ozone SIP Recommendations**

# s	Potential Emission Reduction Options 2009	VOC/HC Tons/Day Eliminated	NOx Tons/Day Eliminated	Cost Per Ton	Costs	Sum Weighted Vote Total	Recommended by Task Force?
AR-16	Diesel Agricultural Tractors - Replacing Older Engines with Newer Engines	0.0000	0.0060	\$7,833	\$134,500 for 10 tractors	0	No.

NOACA Air Quality Public Advisory Task Force

Working Document - Revised to Reflect Final Ozone Recommendations Made at the 5/5/06 Meeting

The following lists represent the 8-Hour Ozone options chosen by the NOACA Air Quality Public Advisory Task Force through voting, each of which received a weighted score of 35 or more.

Identifying numbers refer to the numbering in the Final Reports, which are available at: www.noaca.org/siplan.html.

The air pollution reductions for volatile organic compounds (VOCs) and oxides of nitrogen (NOx) are shown for the Northeast Ohio nonattainment area only (Ashtabula, Geauga, Cuyahoga, Lake, Lorain, Medina, Portage, and Summit Counties.)

The options are listed in priority order, as set by the Task Force voting, and divided between "Mobile Source Options" and "Point & Area Source Options."

Mobile Source Options

MO-1 and MO-2 - Low-Reid Vapor Pressure (RVP) gasoline of 7.8 psi for the summer of 2009, followed by a low-RVP gasoline of 7.0 psi for the summer of 2010 and every summer thereafter until the standard is attained.

7.8 psi VOCs reduced:	5.25 tons per day (tpd)
7.8 psi NOx reduced:	0.32 tpd
Cost:	\$0.01 per gallon at refinery
Cost per ton of pollutant removed	\$7,367 VOCs

7.0 VOCs reduced:	8.2 tpd
7.0 NOx reduced:	0.48 tpd
Cost:	\$0.6 - 3 cents per gallon at refinery
Cost per ton of pollutant removed	\$14,150 VOCs

Note: The Task Force realizes that more air quality benefit can be obtained by 7.0 psi gasoline than by 7.8 psi gasoline, but also realizes that preparation time is needed by refineries to be able to provide 7.0 psi. Consequently, a phased-in approach was approved.

MO-25 - **Anti-idling policies** for cars, trucks, buses, and off-road equipment across Northeast Ohio. Although these could be implemented voluntarily by policy at individual agencies and employer, or through municipal ordinance, or by state law, the Task Force recommends that they be set "at the state policy level" (whether by state law or by state air pollution regulation) to affect both public and private vehicles, using a reasonable approach such as that contained in the USEPA Model Anti-Idling Ordinance.

An example, for 500,000 vehicles of all types, eliminating 10 minutes of idling from each vehicle per day:

VOCs reduced:	1.466 tpd
NOx reduced:	0.402 tpd
Cost:	Cost savings (if no auxiliary power units are purchased)
Cost per ton	Cost savings through less fuel usage

As a second example, for 5,000 heavy-duty diesel trucks, eliminating 30 minutes of idling from each truck per day:

VOCs reduced:	1.01 tpd
NOx reduced:	0.10 tpd
Cost:	Cost savings (if no auxiliary power units are purchased)
Cost per ton	Cost savings through less fuel usage

Note: This recommendation also includes:
AR-1, Anti-Idling Policy at the Port of Cleveland for trucks;
AR-3, Anti-Idling Policy at Cleveland-Hopkins Airport for all buses, taxis, and cars;
AR-6, Anti-Idling at Railroad Switchyards through the use of auxiliary power units on locomotives or changes in practices.

MO-14 - **Voluntary trip reduction programs** across Northeast Ohio, including increased transit use, carpooling and RideShare, compressed work weeks, telecommuting, conference calls and other "virtual meetings," trip combining and increased efficiency in routing and deliveries, and commuting alternatives such as bicycling and walking.

An example, for 10% of drivers in the NOACA 5 counties taking mass transit and 10% of drivers in the NOACA 5 counties working at home instead of driving to work:

VOCs reduced:	2.12 tpd
NOx reduced:	4.63 tpd
Cost:	Cost savings
Cost per ton	Cost savings through less fuel usage

Note: The Task Force did not support mandatory trip reduction programs, either for government agencies or for employers of a certain size.

MO-20 - **Truck stop electrification** of the 3 large truck stops in Northeast Ohio (2 in Medina County and 1 in Cuyahoga County). Such electrification services, provided by a private contractor such as IdleAire, would allow diesel tractor-trailer rigs to turn off their engines while parked and, at the same time, "plug in" for an hourly fee to receive lights, heat, power, computer hook-ups, air conditioning, and other necessary services in the truck's cab.

VOCs reduced:	0.02 tpd
NOx reduced:	0.38 tpd
Cost:	\$3,273,200
Cost per ton	\$44,838 VOCs (over 10 years) \$ 2,359 NOx (over 10 years)

Note: It is believed that the TCA truck stop in Seville, Ohio, will be electrified in the summer of 2006 through the private funds of TCA and the services of IdleAire.

MO-16 and MO-17 **Continued support for ODOT's Intelligent Transportation System (ITS)** in the Cleveland area and the Akron area, which will relieve traffic congestion through vehicle counting, electronic signage, and radio broadcasts.

For the Cleveland area:

VOCs reduced:	0.549 tpd
NOx reduced:	(-0.071) tpd
Cost:	\$28 million
Cost per ton	\$23,330 VOCs (over 6 years)

For the Akron area:

VOCs reduced:	0.211 tpd
NOx reduced:	(-0.093) tpd
Cost:	\$14.4 million
Cost per ton	\$31,162 VOCs (over 6 years)

Note: NOx shows an increase because diesel trucks, when a traffic jam is alleviated, are able to return to speeds higher than 45 mph, after which NOx emissions increase with speed.

MO-28- and MO-27 - **Increased use of alternative fuels such as biodiesel and ethanol.**

Note: Because neither biodiesel nor ethanol shows an ozone-formation benefit, the Task Force will study biodiesel and ethanol again for recommendation in the PM_{2.5} SIP, where significant benefits are anticipated in particulate matter emissions. The Task Force noted that there may be as many as 36,000 "flex-fuel vehicles" (FFVs) in Northeast Ohio capable of using 85% ethanol (E85); however E85 has a fuel penalty in terms of miles per gallon. Recommendations will be made to the NOACA Governing Board in early 2007.

MO-5 - E-Check Enhancements, **Adoption of the ASM 2525 Final Standards for Pre-1996 Cars** not having onboard diagnostic (OBD) testing. These models are currently tested using dynamometers.

VOCs reduced:	0.31 tpd
NOx reduced:	0.43 tpd
Cost:	\$2.8 million to the car owners in increased repair costs
Cost per ton	\$24,745 VOCs \$17,840 NOx

Note: A companion option for "Cash For Clunkers" was not supported by the Task Force because of lack of cost-effectiveness and lack of a funding source.

MO-15 - Continued support for **bus replacement programs** such as those already contained in the NOACA and AMATS Transportation Improvement Programs (TIPs).

VOCs reduced:	0.001 tpd
NOx reduced:	0.52 tpd
Cost:	\$240,000 per bus - less for engine replacements
Cost per ton	\$5,507 NOx

MO-33 - **Transit incentives (free rides)** to encourage use of mass transit on high air pollution days.

VOCs reduced:	0.003 tpd (for each day declared)
NOx reduced:	0.002 tpd (for each day declared)
Cost:	Unknown (loss of full day's revenue to each transit agency) Example: \$40,000 per day for Greater Cleveland RTA
Cost per ton	Depends on number of high air pollution days declared.

MO-22 - Greater use of **transit centers** to make transit more attractive to riders.

One example is already in the NOACA TIP (W. 3rd St., Cleveland):

VOCs reduced:	0.45 tpd
NOx reduced:	0.33 tpd
Cost:	\$5 million per center
Cost per ton	\$3,056 VOCs (over 10 years)
	\$4,167 NOx (over 10 years)

Note: This recommendation also includes:

MO-23 - Park & Ride Lot Enhancements

MO-24 - Transit Waiting Environment Improvements

MO-21 - Continued support for **traffic signal synchronizations** such as those already contained in the NOACA and AMATS TIPs.

Current NOACA and AMATS TIPs show:

VOCs reduced:	0.125 tpd
NOx reduced:	0.038 tpd
Cost:	\$30.2 million
Cost per ton	\$66,150 VOCs (over 10 years)
	\$217,599 NOx (over 10 years)

MO-12 - **NOx retrofits for diesel vehicles** specifically by using selective catalytic reduction (SCR) devices on on-road trucks.

For a fleet of 100 trucks, as an example:

VOCs reduced:	0 tpd
NOx reduced:	0.4 tpd
Cost:	\$2.75 million for 100 trucks
Cost per ton	\$3,139 NOx (over 8 years)

Note: The Task Force will continue to study all diesel retrofit options for possible inclusion in the PM_{2.5} SIP. Recommendations will be made in early 2007.

MO-19 - **Additional enforcement of existing speed limits** specifically those where cars and trucks are exceeding 55 mph in a 55 zone or 60 mph in a 60 zone.

VOCs reduced:	(-1) tpd
NOx reduced:	2 tpd
Cost:	Cost savings through less fuel usage and increased ticket revenue
Cost per ton	Cost savings

As an example, the hiring of 10 additional freeway patrol officers would cost approximately \$750,000 total. If each issued just 8 tickets per shift, at \$100 per ticket, and worked 236 shifts per year, a total of \$188,800 would be recouped by each officer each year, for a total revenue stream of \$1,888,000 per year.

Note: The emissions reductions/increases are the result of NOACA Mobile 6.2 modeling that shows that some drivers may begin to avoid the freeways and begin using side streets, thus increasing their VOC output. However, Environ/LADCO modeling results show VOC and NOx reductions for both cars and trucks when speed is reduced from 65 to 55 mph.

AR-2 - **Replacement of ground-support vehicles** at Cleveland-Hopkins International Airport with electric, CNG, or hydrogen vehicles. Approximately 100 of the 300 ground-support vehicles at Cleveland-Hopkins are municipally owned.

VOCs reduced:	Unknown
NOx reduced:	Unknown
Cost:	Depends on type of vehicles chosen for replacement
Cost per ton	Depends on type of vehicles chosen for replacement

Note: Cleveland-Hopkins has already replaced emergency vehicles with new vehicles capable of "quick start" without constant idling, and is in the process of replacing older diesel snow plows so that they have the same capability, thus reducing NOx output.

Point Source and Area Source Options

PT-9 - **Cold cleaners/degreasing operations.**- Adopt Chicago-Metro East Regulations on a **statewide** basis.

Northeast Ohio air pollution reductions:

VOCs reduced: 8 tpd
NOx reduced: 0 tpd
Cost: \$4.3 million
Cost per ton \$1,400

Ohio EPA rule? Under consideration for statewide. Substitute solvents may be allowed in order to meet the limits.

PT-7 - More stringent limits for formulation of **industrial surface coatings for area sources** by creating more stringent RACT (Reasonably Available Control Technology) rules, lowering the applicability thresholds, and extending geographic coverage to **statewide**.

Northeast Ohio air pollution reductions:

VOCs reduced: 13 tpd
NOx reduced: 0 tpd
Cost: \$0.5 - 24 million
Cost per ton \$100 - 5,000
Ohio EPA rule? Under consideration - statewide.

PT-12 - More stringent limits for formulation of **consumer and commercial products** by adopting the Ozone Transport Commission Model Rules **statewide** with additional product coverage and more stringent VOC limits, a 14.2% reduction beyond current federal regulation.

Northeast Ohio air pollution reductions:

VOCs reduced: 4 tpd
NOx reduced: 0 tpd
Cost: \$1.2 million
Cost per ton \$800
Ohio EPA rule? Under consideration - statewide.

Note: The Task Force did not support the more expensive and more stringent standard set in California by the California Air Resources Board.

AR-13 - Improve design of portable fuel containers (**gas cans**) by **adopting the Ozone Transport Commission Model Rule statewide**, for an 18% reduction in 2009 and a 54% reduction in 2015, assuming a 10% turnover per year, starting in 2007. No "old style" gas cans would be available for purchase in Ohio after promulgation of the rule; however, they would still be allowed to be filled and used.

Northeast Ohio air pollution reductions:

VOCs reduced: 4 tpd

NOx reduced: 0 tpd

Cost: \$2 - 3 million

Cost per ton \$250 - 480

Ohio EPA rule? Yes - statewide - using California design standards (California Air Resources Board). Already proposed.

Note: The Task Force did not support increased funding in order to provide the new gas cans (for free or at a reduced cost) on an accelerated basis to consumers for faster turnover.

PT-3 - Further controls on **mid-size industrial boilers** requiring a 60% NOx reduction, making the NOx SIP Call levels apply to boilers of 100-250 mmBtu/hr **statewide**.

Northeast Ohio air pollution reductions:

VOCs reduced: 0 tpd

NOx reduced: 2 tpd

Cost: \$0.2 - 0.7 million

Cost per ton \$280 - 1,300

Ohio EPA rule? Under consideration, but stringency level unknown.

Note: The Task Force did not support the more expensive 80% reduction option.

PT-1 and PT-2 - Further controls greater than the federal CAIR program (Clean Air Interstate Rule) on **electric utilities (coal-fired power plants)**, of which there are six in Northeast Ohio.

PT-1 would require additional emission caps based on "Retrofit NOx BACT" (Best Available Control Technology) levels of 0.10 lbs/mmBtu NOx on all six plants for a 33% reduction from the CAIR program. Pt-2 would require additional emission caps based on "NOx BACT For New Plants" levels of 0.07 lbs/mmBtu NOx on all six plants for a 53% reduction from the CAIR program. Each would require the installation of additional selective catalytic reduction (SCR) controls on increased units at the various plants.

The Task Force recommends that the Ohio EPA be guided by the air-shed modeling for Northeast Ohio and impose further controls on electric utilities (electric generating units - EGUs), using either PT-1 and/or PT-2 as may be deemed necessary. However, the Task Force recommends that such controls be mandated on a **multi-state basis** through Ohio EPA's work with the states of LADCO (Lake Michigan Air Directors Consortium), those states being Ohio, Indiana, Illinois, Michigan, and Wisconsin, because only multi-state NOx controls show an appreciable benefit to Northeast Ohio.

Northeast Ohio air pollution reductions for PT-1:

VOCs reduced:	0 tpd
NOx reduced:	14 tpd
Cost:	\$4 - 14 million, according to Environ/LADCO
Cost per ton	\$700 - 1,600
Ohio EPA rule?	Under consideration, but stringency level unknown.

Five-state (Ohio, Indiana, Illinois, Michigan, and Wisconsin) reductions for PT-1:

VOCs reduced:	0 tpd
NOx reduced:	337 tpd
Cost:	\$86 - 331 million, according to Environ/LADCO
Cost per ton	\$700 - 1,600

Note: Only capital construction costs are included, not operating and maintenance, which the Task Force notes may be high, according to the EGU industry. The Task Force also notes that the EGU industry states that additional SCRs cannot be manufactured, purchased, or installed before 2011, which would be too late to affect the 8-Hour Ozone attainment deadline of June 2010.

PT-16 - Enhancement of underground **gasoline storage tank pressure-valve vents** at gas stations **statewide** by adopting the CARB (California Air Resources Board) EVR (Enhanced Vapor Recovery) Stage I requirements.

Northeast Ohio air pollution reductions:

VOCs reduced: 2 tpd

NOx reduced: 0 tpd

Cost: \$0 - 2 million

Cost per ton \$0 - 2,100

Ohio EPA rule? Under consideration - statewide.

Note: Northeast Ohio, but not the state, already has Stage I. However, even Northeast Ohio does not have the CARB enhanced tank vents.

PT-17 - Enhancement of **Stage II vapor recovery nozzles** at gasoline distribution facilities by adopting the CARB EVR Stage II requirements.

Northeast Ohio air pollution reductions:

VOCs reduced: 2 tpd

NOx reduced: 0 tpd

Cost: \$0.5 - 10 million

Cost per ton \$840 - 13,400

Ohio EPA rule? No.

Note: Northeast Ohio, but not the state, already has Stage II. However, even Northeast Ohio does not have the California-design nozzles.

PT-15 - High Volume Low Pressure (HVL) spray guns for **auto body paint sprayers** by adopting more stringent RACT requirements **statewide** based on South Coast Air Quality Management District, California, regulations.

Northeast Ohio air pollution reductions:

VOCs reduced: 4 tpd

NOx reduced: 0 tpd

Cost: \$11 million

Cost per ton \$7,200

Ohio EPA rule? Under consideration - statewide.

PT-21 - Seeking of grant funding for **energy efficiency projects** in Northeast Ohio by applying for the possible categories listed in the federal Energy Policy Act of 2005.

Northeast Ohio air pollution reductions:

VOCs reduced:	Unknown
NOx reduced:	Unknown
Cost:	Receipt of grant funds
Cost per ton	Receipt of grant funds

PT-8 - More stringent limits for formulation of **industrial surface coatings for point sources** by adopting more stringent RACT regulations, lowering the applicability thresholds, and extending the geographic coverage to **statewide**.

Northeast Ohio air pollution reductions:

VOCs reduced:	2 tpd
NOx reduced:	0 tpd
Cost:	\$0.07 - 3.5 million
Cost per ton	\$100 - 5,000
Ohio EPA rule?	Under consideration - statewide.

PT-10 - More stringent limits for formulation of **paints and varnishes (architectural and industrial maintenance coatings)** by adopting the Ozone Transport Commission model rule **statewide** for a 21% reduction beyond current federal requirements.

Northeast Ohio air pollution reductions:

VOCs reduced:	4 tpd
NOx reduced:	0 tpd
Cost:	\$37 million
Cost per ton	\$6,500
Ohio EPA rule?	Under consideration - statewide.

PT-30 - **NOx Credit Trading Bank**. Such a state-operated program would make the tracking of NOx allowances, offsets, and retirements transparent so that businesses needing NOx offsets could find them. Such a program would also create a monetary value for NOx allowances, encouraging NOx reductions by industry. The program would have to be created by state law and housed in the Ohio EPA offices.

The Task Force **expresses no comment** on other new **VOC and NOx rules requiring Reasonably Available Control Technology (RACT)** at industries in Northeast Ohio, to be determined by the Ohio EPA after study, because the Task Force has seen no drafts of such rules, could not study their air impacts or their costs, and did not study the categories independently. The categories might include the following:

Additional NOx RACT - Ohio EPA possibilities

- 1.) Process heaters, e.g., for chemical or steel processes
- 2.) Large stationary internal combustion engines, either gasoline or diesel
- 3.) Combustion turbines, often at electric generating units, requiring either a change in operating practices or a change in fuels
- 4.) Asphalt batch plants, possibly statewide
- 5.) Other sources, after top-down RACT study -- glass furnaces, etc.

Additional VOC RACT - Ohio EPA possibilities

- 1.) Synthetic organic compound manufacturing - Northeast Ohio only
- 2.) Organic compound batch processes - Northeast Ohio only
- 3.) Wood manufacturing - Northeast Ohio only
- 4.) Industrial wastewater (to capture petroleum, etc.) - Northeast Ohio only
- 5.) Aerospace industry, including repair facilities - Northeast Ohio only
- 6.) Shipbuilding and boat building and repair - Northeast Ohio only
- 7.) Bakeries (large), with extended compliance deadline - Northeast Ohio only
- 8.) Plastic parts coating (often auto subcontractors) - Northeast Ohio only
- 9.) Volatile organic liquid storage tanks (large) - Northeast Ohio only
- 10.) Industrial solvent cleaning - Northeast Ohio only
- 11.) Offset lithography - Northeast Ohio only
- 12.) Other sources, after top-down RACT study - case by case