Questions for Consideration and Discussion:

1) **In your view, where is the current system closest to fulfilling the vision and principles summarized above? Specifically, looking at the diagram of the AQM system (the AQM "wheel"), which portion(s) of the process align most closely with the vision/principles? Why/how has the system achieved success in these areas?**

Response 1-1: The system has been most effective when the goal/expectation is clearly defined, e.g. NAAQS, acid deposition, and toxic emissions reductions.

Response 1-2:

- The framework for Setting NAAQS seems to be adequate.
- Federal mobile sources and fuels control strategies are good if they are enforced as written.
- The air quality monitoring program seems to be working well in monitored areas.
- Expanding the areas required to have monitors could help to confirm the regional impact of emissions.
- Approval of local and state SIPs is generally good, at least from the perspective of the local and state agencies in Region 4.

Response 1-3: Establishing goals and setting standards (NAAQS, regional haze, etc.) through research and data collection.

Response 1-4:

- Use of NAAQS
- Generally shared responsibilities; Fed and states
- National standards for mobile sources

Response 1-5: EPA is good at implementing regulations. The greatest success is regulating the smog forming emissions of the auto industry. With Tier 2, these emissions are now reduced by 99 percent compared to uncontrolled levels.

Response 1-6: In my opinion the overall vision and principles of the AQM which are being fulfilled are the designing of control strategies and implementation of them. Across the board these two categories have been carried out in a manner most compatible with the AQM's principles and vision.

Response 1-7: The fourth and fifth steps of the cycle appear to me to come closest to fulfilling the vision and principles, or at least many of the principles. In designing control strategies and implementing air quality plans and other regulatory programs, it is necessary to select and implement both proven and untried strategies that will work best for meeting the goals, and to develop and implement them on local, regional and national scales. There is also a focus now on looking at control strategies from a multi-pollutant perspective, and to share information and responsibility across many entities and sectors.

Because the control strategies are laid out in an implementable plan that is approved by government officials, it provides a reasonable amount of certainty to the regulated community as to what actions,

and what level of actions, will be taken to address the problem. To the extent allowed by EPA, these processes can consider other factors, such as land use, energy and transportation, but that aspect is fairly limited. And there is not much flexibility to deviate from or make additions/changes to the plan without going through another full, regulatory process.

Response 1-8: Certain market-based programs developed under the current AQM system have done a good job of achieving many of the draft principles. These programs, such as the Acid Rain and NOx SIP Call programs, have achieved significant improvements in air quality without jeopardizing health or economic interests. The programs have been successful because, among other things, they establish emissions caps that ensure air quality improvements within specified timeframes, they are relatively simple to implement and administer, they promote new and innovative pollution reduction approaches by rewarding early reductions, and they foster economic efficiency through utilization of market trading approaches that provide flexibility and accommodate least-cost emission reductions.

Response 1-9: Significant emission reductions have occurred over the last 30 years that are not widely recognized by the public. We need to brag more about what we have all done. However, this is not to say that the approaches that have gotten us to this point should continue without serious examination. That is the challenge for the next 25 years.

Response 1-10: CLOSEST TO FULFILLING…

The system works very well in how it sets the NAAQS, in that the process is rooted in the science and public health impacts in developing the staff paper.

The system has worked very well in achieving significant reductions to protect public health. For example, CO, lead, NO2 and SO2 nonattainment problems have been, for the most part, mitigated. While we are still addressing ozone, PM, acid rain, and toxics, we have made strides in public health and environmental protection over the past few decades.

The system works well in requiring useful environmental indicators/results through monitoring networks. We have real-time data that can be used, e.g., through the AQI and with forecasting tools, to provide critical and timely public health protection.

The system works generally well in the delineation of federal and state roles.

The system works generally well in delineating states' responsibilities with respect to implementing CAA goals through a SIP and in giving the SIP the force of federal law. The structure provides a good system of checks and balances when operating well.

The system has fostered significant improvements in our ability to quantify and predict air quality through inventory and modeling efforts. While there is still room for improvement, we have come a long way over the past decade.

The system works generally well and effectively in its permitting structures, e.g., PSD. In areas of the country where the program has been implemented well, increment analysis has met the program goal of preventing significant deterioration of air quality.

The system works reasonably well in driving control technology innovation through RACT, BACT, LAER, and (until recently) NSR.

The system works generally well in permitting and compliance – e.g., Title V. The facility-level permits with all applicable conditions provide a complete overview of what's needed for compliance.

The system works generally well its enforcement systems – e.g. the data reporting to AIRS for enforcement generally provides a good overview of state permitting programs.

Response 1-11: Implementation – from a mobile source perspective, there is a fairly well established/effective system for implementing control strategies once they are established.

Response 1-12: Also, please see Attachment 12-B.

Features set up well in the Act include the following:

- **Establishment of NAAQS and requirement that they be revisited over time; provision that costs are not to be considered in determining air quality standards.**

  Although there have been problems with timeliness with respect to setting the NAAQS (which means that efforts to address the public health issues lag behind), the process for reviewing available information, using outside experts as well as internal EPA scientists, the requirement that costs of meeting the standards not be considered in determining those standards, and the requirement that standards be reviewed and revised periodically are good. Also, the requirement that air quality standards be set to protect sensitive populations is important.

  Of course, one issue with the NAAQS is that they cover only a very few pollutants. Given the historical difficulties with setting health standards for hazardous air pollutants (science and health information not sufficiently demonstrative and ubiquitous legal challenges), an approach of reducing pollutants to the greatest extent technically feasible (in an ever improving fashion) makes sense. Touching back to health is important, though the residual risk program currently required by the Act seems to be proving difficult to implement

- **The Concept of New Source Performance Standards is good.**

  It makes sense for EPA to set national standards for industries that are pervasive around the country IF they are revisited regularly and updated where technological advances provide ways for emissions to be reduced, NSPS provide a minimum standard that applies nationwide, provide certainty in the permitting process, and could apply to types of industries that may not need a permit.

  However, in practice, the NSPS have not been updated regularly and are limited to the categories EPA established. There is also overlap between NSPS and NESHAP that are established for the same types of sources. In addition, the NSPS (and to perhaps a lesser extent the NESHAPs) are predominantly command and control types of regulations, and I

believe we should be moving away from that (though I don't have a problem with regulation essentially prohibiting clearly outdated and unnecessarily high emitting technologies).

- **The basic concept of a federal-state partnership is a good one.**

  Unlike some of the other federal environmental legislation, the Clean Air Act built upon an already existing network of state and local agencies working on improving air quality. And, rather than take authority away from those local agencies or limit them to the status of delegates of EPA's authority, the Act takes advantage of this pre-existing system and the web of local legal authorities, resources, and commitment to improve local air quality. The Act also acknowledges that there are interstate and international aspects to air pollution and provides some mechanisms (Section 126, Section 110(a)(2)(D), e.g.) for addressing transported pollution.

  However, as has been much discussed through the Workgroup process, the partnership needs to be more of a real partnership. The system needs to recognize that while there will always be very localized air quality problems that state and local agencies need to address, more and more of the problems are regional, national or international. EPA needs to take more ownership of the planning process and a stronger role in providing regional or national reduction requirements. There is still too much of a disconnect between the national programs that EPA administers and the State/local planning process.

- **Strong federal role for mobile sources and fuels.**

  It makes sense for standard setting for mobile sources and fuels to be essentially centralized because of the nature of the manufacturing and markets (and lack of expertise and clout of most states to do this themselves), but also for there to be exceptions and ways for states to push further. However, there are other federal programs dealing with energy and mobile sources that have impeded improvements in engine efficiency (e.g. CAFÉ standards are set by the National Highway Traffic Safety Administration). Given the large contribution of mobile sources, especially diesels, to current air quality problems, as much focus on setting aggressive standards, providing resources and incentives for reductions in fuel use, and encouraging the development of alternative mobile technologies are critical.

- **AirNow and other tools that have developed to educate citizens about air quality and health risk are positive**

  These tools are good for real-time information and educating citizens, an area where we've made a lot of progress over the decades.

  However, using real data, especially about emissions, to assess the success of the clean air plans and track progress is not as good. Getting good information about actual emissions in a more timely and accurate way is a clear need of the system—very challenging….

- **Technology-based approach for toxics**

  It is not likely that EPA will be able to set health based standards for all toxic pollutants, therefore a technology based approach that, at least initially, requires as much reduction as is feasible in chemicals known or suspected to be harmful makes sense. In principle, the

residual risk requirement makes sense, but in practice I'm not sure it's turning out all that successful. Frequent revisiting of the NESHAPS to ensure that they are keeping up with technology is essential.

Response 1-13: As a whole, the current AQM system comes closest to fulfilling principles 1, 2, and 8 with regard to criteria pollutants. This is particularly true in terms of goal setting, sharing responsibilities with other federal agencies, as well as with tribal, state and local stakeholders. We should continue to build capacity in tribal programs and improve the delegation process / sharing of responsibilities.

Response 1-14: There are strengths and weaknesses in the different parts of the AQM process depending on which part of the air quality program. For instance, the NAAQS program is closer to the Vision and Principles in establishing the goals, and determining the necessary reductions, because of the structure of the Act controlling this part of the program. The NAAQS are designed to set an ambient level for assuring clean air to protect public health, welfare and state reporting of emissions inventories and ambient monitoring are required. The toxics program follows the model but doesn't have as clear a direct environmental target to reach. However, the toxics program is stronger at determining necessary reductions from individual source categories and sectors, and setting nationally and regionally consistent requirements, because these actions are required in the statute.

The NAAQS program, with its ambient air quality levels is definitely performance based; one aspect of the Air Toxics program that also is performance based is the urban air toxics strategy, which also has performance-based targets—e.g., a 75% reducing in cancer, and a "substantial" reduction in non-cancer risk. Both the NAAQS program and the area source program also explicitly consider cost effectiveness; the major source air toxic program does not. As stated above, this is really related to each statute.

Response 1-15: In practice the AQM system has been implemented on a pollutant-by-pollutant basis. Given this "limitation," it has been quite successful in cutting levels of criteria pollutants, for the most part.

Response 1-16: The current system has been effective at providing information to the public. The advent of the internet has definitely facilitated the movement of this information. Programs like AIRNow and EnergyStar are two flagship examples. By delivering air quality information to a larger audience, more people are able to make informed decisions - whether it is through their purchase power, or taking part in activities to reduce air pollution on ozone action days.

Response 1-17: The most successful areas were establishing goals, determining necessary reductions, and designing control strategies. However they noted that there were successes and shortcomings in each area. The establishment of goals is limited by the available science;. the design of the strategies is limited by lack of data and tools to evaluate the data (e.g., uncertainty in models); The implementation and enforcement of the strategy also works in most cases, but is limited by available resources and the public acceptance of the control measures.

The processes of establishing goals, determining necessary reductions, and designing control strategies have come closest to the vision in part because they generally garner the most attention and interest from stakeholders, partners and decision makers. Also, there are new resources to be

had in defining new problems and building new programs to address them. The remaining steps receive less attention and interest. An evaluation or implementation aspect to a program generally results in less resources since no on wants to admit the program was poorly designed, focused on the wrong end points or was victimized by bad information.

The success of the AQM "wheel" depends on whether you are talking about criteria or hazardous air pollutants. For HAP's, the evaluation component is significantly less well developed, but the implementation has been more straightforward.

Response 1-18: Title IV. Successful because it applies to an industry that is easily defined and easily regulated and can easily pass on its costs and because it applies to a well understood pollutant.

Response 1-19: Establish Goals

*Current Program**:*** As currently designed, the system does a good job of establishing the goals for the individual criteria pollutants and regional haze. In addition, based on the performance standard requirements of the CAA, the acid rain and air toxic programs meet the design requirements of the Act.

Future Program: Based on the vision and principles, the future goals would be established in an integrated fashion. The goals would not be set independently; but, would be established after considering criteria, toxic and environmental impact issues. Can the science community (similar to a CAPAC or NAS process) working with policy makers and other stakeholder go through a process that reviews the current health and environmental data to determine a set of environmental goals for the various programs (criteria, toxic, haze, acid rain) considering the inter-relationships between the programs? The process should evaluate the benefits of reductions occurring at the various levels of the program (international, national, regional and local) and the impact on the goals of the program.

Determine Necessary Reductions

Current Program: The criteria and haze programs make use of inventories, models and monitoring data to establish reduction targets. The reduction targets associated with the acid rain and air toxic program do not use these data or tools because of the way the programs are prescribed by the CAA. The environmental reduction targets are established to meet the associated goal and little, if any, work is done to evaluate the effectiveness of these targets after they are established. Arguably, the urban air toxic programs would use toxic inventory information and models to determine what HAPs needed to be reduced to address risk in these urban areas.

Future Program: The future program should target the most effective reductions in terms of air quality improvement. The future program should not only identify a reduction target but also indicate the geographic scale which would be most effective. Data suggest that highly populated urban areas will represent the difficult residual criteria and air toxic pollutant problems. Given these difficult urban problems, the technical tools must be used to identify those reductions that will have the greatest impact in urban areas. In evaluating the reductions that will have the greatest effect, EPA should consider using a process that brings together regulators, scientist and industry representative to identify the combination of national, regional and local reductions that will be most effective in addressing the residual problem. During the same process, the committee might

advice the regulators what key environmental indicators should be tracked during program implementation.

Design Control Strategies

Current Program: The current control strategy programs and associated environmental improvements, as a general matter, have largely occurred as a result of the application of national and regional control strategies (MACT Standards, SIP Call, Acid Rain Program, Mobile Source Standards). During the 90s, EPA increased the scope of control programs from the historical command and control approach to a variety of market based and voluntary reduction programs.

Future Program: Because of the residual non attainment and urban toxic issues the nation faces, future programs will have to be targeted to those source categories that have the greatest benefit. Future programs should encourage the industrial sector to continue to develop and foster manufacturing processes that utilitize more pollution prevention practices and changes to the process that allow for a economically sound manufacturing sector while continuing a downward trend in pollution. Innovative programs that create incentives for the industrial sector to continue cost effective emission reduction programs (TRI type of programs, trading, banking etc.) will be critical. Industrial sectors that already been heavily regulated during the 90s should be permitted to adopt a continuous improvement model. To the extent that national or regional measures are required, they should contain banking and trading provisions. On the other hand, control strategies that cover area sources and existing mobile source will be needed to address the residual air quality problems. This will probably require greater use of voluntary measures and other creative programs to address this difficult sector. Of course there will be need to ensure the future mobile sector and fuel emission reduction programs continue; however, long term success will be dependent on addressing area source and the existing mobile (on and off road) fleet. Finally, the future programs need to address growth management issues. Future programs must foster change in the behavior of the general public and the associated planning organizations.

Implementation

Current Program: The current program is implemented through the adoption of federal or state rules and the subsequent incorporation of these requirements to state of federal operating permits. These permits and rules are the basis of the federal and state and federal enforcement programs. The rules and permits take a significant amount of time to implement and making adjustments to the rules or permits is often complex and time consuming.

Future Program: The phase I report discussed a number of issues associated with the current implementation programs. Most of the suggestions dealt with making changes to the program that would simplify the programs and serve to make them more responsive to need for innovation and regulatory flexibility while continuing to ensure a program that can be enforced by the general public and environmental community. To the extent the control programs are designed as envisioned in the previous discussion, they must have clear means of accountability to demonstrate to the public that the reductions are in fact occurring. As discussed in the Phase I report the future programs must foster innovative measures and be able to respond to changes that may be required as result of review of the environmental data. In order for the program to make these changes, a number of the recommendations in the phase I report must be implemented. The SIP process is not responsive to timely adjustments that may required to the program. EPA and the

stakeholders need to develop model rules or programs that allow adjustments without going through a 12 month to 24 month process prior to the reductions being realized. Adjustments need to made that result in reductions occurring in a timely fashion in order to realize air quality improvements quickly. The adjustments to these programs must be transparent to the public and associated accountability measures implemented to verify the reductions.

Evaluate Results

Current Program: As a general rule, the environmental data is used to determine if an area has attained the NAAAQS, to evaluate visibility impacts and to determine acidification of streams etc. Only recently, has there been increased effort (1 hour ozone mid course review) to use the data to make adjustments to the various control programs.

Future Program: As discussed above, the future program should use all of the environmental data to 1) determine the general range and type of reductions (NOx, VOC, toxic) required; 2) the most effective programs (national, regional & local); and 3) to evaluate and adjust the various environmental programs during implementation. The Phase I report made a number of suggestions concerning the increased use of monitoring data and expanding the collections of such data. EPA, in coordination with the scientific community, must develop guidelines on how to increase the collection of environmental data and how to use this data to make adjustments to the programs. The recent "mid course review" elements in the one hour ozone SIPs start to move the environmental programs in the direction of making better use of the environmental data.

2) Where is the current AQM system farthest from fulfilling the vision and principles summarized above? Again, with reference to the AQM "wheel," identify the areas in which the problem is most acute. In each case, what is the specific source/nature of the problem?

Response 2-1: Where goals are poorly defined, the system fails e.g. regional haze, toxics exposure criteria/& associated risk reduction, ecosystem effects. Thus, it is important to "establish goals" that are clear, and preferably measurable, even if some are qualitative.

Response 2-2:

- It appears that scientific research, even when peer reviewed and deemed to confirm health impacts, sometimes takes a back seat to non-scientific decision-making.
- There seem to be limited means of estimating toxic air pollutants and ambient monitoring for toxic air pollutants.
- $PM_{2.5}$ and precursor emission factors and emissions estimating tools are very weak and inadequately support local and state agency mandates to generate accurate, comprehensive emissions inventories for these pollutants.
- The acid rain trading program has long been touted as a great success and the mechanics and enforceability of it apparently are so. However, emissions were never controlled as well in the Southeast as a result of the flexibilities of the program. This has resulted in less significant reductions of acid precipitation in the Smokies and the transfer of more air emissions to the Southeast as a proportion of the national total. It has also resulted in slower

improvements in fine particle and visibility parameters due to the ability to avoid installing scrubbers at the same rate as other parts of the country.

- Local and state agencies are severely hampered in their SIP development efforts by continued delays in receipt of implementation guidance for major air quality programs. There are recent examples of EPA requiring modifications to work plans to incorporate commitments to conform with implementation guidance that likely will not be available until grant work plan projects are already completed. This is a major and historic deficiency that needs correction.
- Continued enhancement of models is going to be required as further assessment of regional haze, fine particles, and ozone continues. The level of federal support appears to be diminishing in this area but the requirement to improve analytical tools continues to be a stress on local and state agencies. There appears to be a gradual leaning towards local and state agencies to fund this work but the availability of grant funds to continue the process is uncertain.
- The system is not always economically efficient. This is related also to a failure to consider multipollutant strategies. At this time, while there has been considerable discussion about comprehensive planning but no legal accommodation of that concept. All that has been offered at this time is that agencies will not be penalized by EPA if regional haze SIPs are not submitted on time but are submitted by the deadline for fine particle SIPs. While this attempt at flexibility by EPA is appreciated, it does not relieve the legal obligation for compliance with the earlier SIP submittal deadline. Agencies with concerns about missing this deadline will be faced with the likelihood of having to prepare multiple SIP revisions, hold multiple public hearings, and make multiple submittals.
- Providing certainty to the regulated community is a laudable goal, but it conflicts with understandings that are sometimes carved out by the non-environmental community. When that happens, prime contributors to local and regional air quality problems can be exempted from doing all that is needed through national measures, resulting in insulation from additional obligations while problems the facilities create may continue.

Response 2-3: No one area is particularly deficient. Good progress has been made in all areas, while more progress is also possible in all areas.

Response 2-4:

- Too complex and cumbersome
- Lack of cost equity between sources or categories when emission limits are prescribed; not all sources in all states have the same requirements
- EPA guidance and rules often take too long to be developed and issued
- Programs are not well integrated across pollutants
- National rules tend to be of a “lowest common denominator” nature- not technology forcing; e.g., NSPS
- Modeling often used to avoid control or minimize control

Response 2-5: AQM system could do a better job of evaluating all regulations across all industries….regulating those emissions that are the "biggest bang for the buck." EPA should not continue regulating the same industries over and over.

Response 2-6: With respect to parties which I represent (Tribes), I feel that the establishment of goals has fallen short for the development of tribal air programs and the work to improving the quality of tribal air sheds. However, determination of necessary reductions and the evaluation of results have fallen short with respect to tribe's ability to carry these functions out. This is due to lack of resources (mostly federal funds available) both for tribes and the federal regulatory agency. Essentially the goals which are created, more often than not, do not represent a tribal value or goal. A prime example is EPA's strategic plan goals. Within respect to determination of necessary reductions, tribes no longer can rely or anticipate federal CAA dollars to carry out monitoring, inventories, and data analysis/modeling for potential tribal air shed pollution. Because these two goals are limited, the evaluation of results is often difficult to achieve (on can not assess if one can not acquire data).

Response 2-7: None of the process steps in the cycle is currently as performance-based as it should be. To accomplish this, the process itself and the goals/outcomes for each of the steps would have to be geared toward achieving some specific health or environmental metric, such as a certain level of health improvement or reaching a particular environmental/ecological outcome. While the overall goal is to achieve good air quality, defining that in ppb or ppm of pollutants in the atmosphere doesn't really give anyone a good idea if that level means the air quality is good or if the public health will be improved as the result of achieving it.

It is also not simple, and therefore not economically efficient; but given the complexities involved in air quality management, we may only be able to go so far in achieving either of these principles in any step of the process. For example, even a well-designed cap and trade program, which gets at the most economically efficient emission reductions, does not necessarily get at the most geographically beneficial reductions in term of reducing transport and achieving attainment.

Response 2-8: The current AQM system regulates emissions sources on an air-quality centric pollutant-bypollutant basis without significant regard to the impact such regulation has on other national policies and objectives. For example, under the current AQM system, NAAQS, NSPS and BACT/LAER are all addressed on a pollutant-by-pollutant basis without regard to the impact regulation of one air pollutant has on other air pollutants, on other environmental values (e.g., water quality), or on other national policies and objectives (e.g., energy or transportation). This approach results in a patchwork of requirements that are duplicative in some cases and conflicting in other cases. It results in regulations that or inconsistent with or undermine national policies and objectives, such as national water quality, land-use, energy and transportation policies. This problem impacts all stages of the AQM management cycle. However, it is most acute in the areas of goal setting, determining necessary reductions, and determining design control strategies. This piecemeal approach fails to achieve several of the draft principles, including the desires for economic efficiency; integrated multipollutant approaches; new and innovative pollution reduction approaches; simplicity; and a system that considers other factors such as energy, land use and transportation.

Response 2-9: In the Establish Goals and Determine Reductions areas of the "wheel", the current AQM does not place enough emphasis on the cost of reductions relative to the health gains purchased. As the low hanging fruit is gone, it is more important to prioritize efforts where you get

the biggest bang for the buck. This should, for example, shift efforts away from HAP programs to the criteria program. Many MACT rules imposed costs far in excess of benefits which should be an important lesson as the residual risk and other air toxic programs are designed and implemented. In addition, we need to embrace a wider variety of Control Strategies than in the current tool box. We need to look at voluntary, sector-based, market-based, and risk-based approaches as alternatives to technology and command and control strategies. Finally, approaches should be tailored to those sources (broadly defined) contributing to the problem which may not be major stationary sources as we have been regulated already. This suggests localized strategies rather than national or even regional approaches. If a facility in the middle of the woods and far away from any ozone non-attainment area is emitting VOCs in a VOC rich environment, why does it need to consider controls? In fact, the likely controls might make the situation worse as incinerators generate NOx which lead to ozone formation. If greater emphasis is placed on understanding the environmental results, then better decisions can be reached upfront.

Response 2-10: FARTHEST FROM FULFILLING …

The system does not work as well in linking public health indicators/results as well as it does monitoring results.

The monitoring system, as currently designed, provides disincentives for not monitoring. That needs to change. We need to fund/support/requirements for monitoring networks that provide for the timely public health protection. Current trends in the monitoring program appear to favor funding decisions towards toxics support while minimizing the ozone network. We need to maintain the integrity of all of our networks while improving toxics monitoring.

The system does not work well in addressing interstate transport, and is not being implemented in a manner that addresses transport up-front. EPA's responses to transport, with the NOx SIP call and now CAIR, have been slow in coming; each in turn have been viewed as "the answer" to transport. No structure, per se, has been developed to address transport up-front and within the context of designing and approving attainment SIPs. There is no timely look-back built in to see if SIP call rules have achieved their goals. The system needs to be modified to be more responsive and timely, more integrated into attainment planning, and to incorporate a process similar to the mid-course review (to assess whether transport is addressed).

The system does not work well in protecting public health during "peaking" days. Control strategies and the AQM system are generally and currently not designed to address anything other than average emissions over the selected time period (e.g., average summer day). As peaking days often coincide with bad air days, there is a need to ensure that air quality programs are designed to mitigate this public health concern.

The system is not being implemented effectively in addressing the emissions sources that warrant national rules. Federal rules take a long time to promulgate and often reflect outdated control technologies. EPA needs to consider programs developed by states that cost-effectively achieve emission reductions when developing national rules (e.g., AIM, consumer products). In addition, NSPS is not being effectively implemented. Those standards should be updated every 5 years, but that has not happened, and has thus undermined the effectiveness of the program.

The system is not designed to adequately address the broad spectrum of off-road mobile source emissions e.g., aviation emissions including aircraft, marine, locomotive and small non-road engines.

The federal-state partnership could be improved by upholding both parties to similar standards and repercussions for failing to meet mandates and requirements.

The system is not as effective as it could be with its SIP process, e.g., (1) the structure is so onerous and labor-intensive that states are expending too many resources on administration and not enough on ensuring emissions reductions; (2) EPA takes too long to review and comment on (and approve) SIPs (e.g., some general permitting regs were submitted in 1996 and are still pending without comment); and (3) SIP review and approval process is not consistently applied throughout the country. More streamlined and creative approaches could be better integrated into the SIP structure while not compromising accountability, environmental results, and public health protection.

The system could be improved considerably in compliance, enforcement, and inventories by considering emissions from breakdowns, upsets, and malfunctions. By not considering such emissions, inventories may not be accurate, possibly by an order of magnitude.

The system could be improved with respect to the RACT BACT LAER clearinghouse. The clearinghouse is overly complicated and there is inconsistent application of RACT/BACT/LAER in permitting. The system needs to be revisited to make it simpler and more consistent.

The system could be improved in the PSD permitting process by training engineers so that they can evaluate the section 167 alternatives analysis. Currently, the permitting mindset tends to be narrow-minded, and by moving the program to thinking about innovation and environmental results could facilitate use of other control technologies and more efficient processes.

The system could be improved in the PSD permitting process and in implementing RACT/BACT/LAER by implementing these programs within the framework of encouraging more efficient processes, e.g., setting environmental standards on an output- or efficiency-basis.

Response 2-11:

- Determining necessary reductions – regulations are not evaluated comprehensively or across all sources. There is a tendency to keep going back to same sources (based on ease of regulation/enforcement and political expediency).

- Determining necessary reductions/emissions inventories: Emissions inventories are laden with uncertainties, which are not properly accounted for when determining which pollutants/sources to control. The AQM system should provide for evaluation of uncertainty in emissions inventory estimates for all source categories and data should be collected to address the most significant sources of uncertainties.

- Determining necessary reductions/emission factors: Emission factors/inventories are also in need of improvement for poorly understood sources. The AQM system should concentrate on identifying emissions from these sources, which often include disperse or area sources (and which also are often un-regulated or under-regulated).

- Evaluate results: There is a need to add evaluation of health effects to this portion of the wheel. The health effects predicted from regulation and/or air quality improvements are never verified. This issue is not specific to verification of whether a reduction was made – but rather if the emission reduction resulted in the ambient air quality benefit predicted as well as the health benefit predicted.

- Evaluate results: SIP compliance/planning should use a weight-of-evidence approach. Progress should be evaluated/tracked throughout the process, with opportunity for course correction.

- Evaluate results/modeling: Modeling of effectiveness of controls should rely on actual measurements where possible. Often programs are given too much/not enough credit based on "guesses" (modeling assumptions/predictions).

- Design of control strategies: National, Regional, v. Local controls: Risk based programs (especially for residual non-attainment areas) should be implemented at the local level and may vary by location. This is true for specific point or area source controls. However, national programs are appropriate for controls such as new mobile source regulations. These types of considerations, which are dependent upon market-place drivers and sector-specific economic considerations, should be included in design of control strategies.

- Design of control programs: When evaluating need for control from specific sectors there should be an evaluation of future contributions from each source and the amount of current regulatory control.

Response 2-12: Also, see Attachment 12-B

- **New Source Permitting.**

  This system is unwieldy and in practice far from its original, sensible intent (major stuff being built should be very clean). The approach of allowing incremental changes to a source that is considered minor (under 250 tpy, e.g.) as long as they are under 40 tpy (e.g.) to a source has lead to the result that some huge sources expanded over time still are not considered major. Real, probably drastic, reform is needed here.

- **Modeling**

  There is too much reliance on predictive models that are based on imperfect information. I mentioned above the need to improve information on quantifying emissions from various sources.

- **Transportation Conformity**

  I know that some stakeholders feel that conformity has worked to keep mobile source emissions in check, but some feel just the opposite—that it is a paper exercise, which takes immense resources for little or no actual air quality effect. My personal experience is that the models are adjusted until conformity can be demonstrated—projects have not been changed, delayed or denied as a result of potential conformity problem.

* **Regulations take too long to promulgate and litigation is rife.**

  I know that one of the original 38 recommendations was that EPA issue guidance and regulations on time. That will not be easy, but is really critical. It will require a culture change at EPA itself, as well as working with agencies external to EPA who also get involved in EPA policy. It is essential for the parties to develop real trust of one another, however, that all parties meet their deadlines.

* **The nonattainment boundary process is out of date and an impediment to progress.**

  Drawing arbitrary lines around counties, townships or in some cases individual facilities is in many cases not connected to the existence of or contribution to air quality problems. It provides a major disincentive to states and locals to locate additional monitors, thus exacerbating a system where substantive decisions are made using predictive tools. The constraints on economic development inside these boundaries are also no longer the right way to address the air quality issues and provide further disincentive for communities to participate in the process. The approach in fact provides a major distraction to the work of actually determining where the reductions are needed and pursuing them.

Response 2-13: Stage five of the wheel – Evaluate Results: In order to adequately improve our current ability for determining the necessary reductions required during stage 2 of the AQM wheel (Determine Necessary Reductions), stage 5 (Evaluate Results) must be improved over all. Better tracking systems, assessments, and communication strategies of significant results of emission control programs, including changes in source/emissions, air quality/atmospheric deposition, exposures, and effects could improve our understanding of the impact current programs have on pollution reduction. To improve upon the use of regional, national or international reduction strategies where appropriate and the continued use of proven pollution reduction strategies, as well as the promotion of new and innovative pollution reductions programs, EPA needs an accurate assessment of the existing programs.

Stage two of the wheel – Determining Necessary Reductions: With the information gathered from stage five, the AQM System should emphasize the importance of designing a more effective system for collecting and managing air quality data as part of the "establishing goals stage" which feeds stage 2, "Determining Necessary Reductions." This will allow for a more accurate assessment to determine which reductions are most important, as well as where and when those identified reductions should occur. Jointly, these are very important steps for developing the proper framework to move towards a more performance based approach, as well as providing the strongest scientific basis for enhancing current programs as well as designing new pollution reduction approaches for persistent problems / pollutants. Additionally, Air Toxics should become a more integral part of the AQM system. MACT and Residual Risk programs are isolated from population exposure based programs and are not well integrated into the criteria pollutant programs.

Response 2-14: The weakest area is in evaluating results, particularly for the toxics program. This is a result of not having the appropriate data (for instance, EI's for toxics are not required, there isn't an extensive, consistent monitoring network for air toxics) and the risk goals for health protections are not yet clearly established. This means that it is difficult to communicate both progress in the program, but also the true nature of the health and environmental concerns from air toxics.

In terms of implementation, a challenge exists in compiling and maintaining the vast amount of information reported to implementing agencies (such as monitoring data, source testing data, and compliance notifications) that may useful in evaluating the effectiveness of our existing programs and identifying areas for improvement. We need to move towards better information access for all.

Response 2-15: It is not a problem with the "wheel" per se, but in implementing air quality management in the U.S., we have done a poor job incorporating international solutions in our control design strategies. Also, in many cases we have not effectively reduced emissions from federally controlled sources (military facilities, airplanes, etc.) Also, in many cases, the flexibility sought by states and industry has often resulted in more complex – not more simple – approaches. Also, very little effort has been spent examining new chemicals that have come onto the market. There may be many toxic pollutants beyond the 188 hazardous air pollutants that should be carefully analyzed for inclusion on the list.

Response 2-16: The current AQM system is deficient in evaluating health results and ecosystem improvements. A lot of emphasis is placed on monitoring and assessment (which is indeed valuable), however we also need to regard the impact on the health of individuals and the surrounding environment. In addition, we need clearer more defined goals for maintaining healthy air quality in "good" air quality areas.

Another area which is missing from the current system is collaboration with affected entities, specifically as it applies to the permitting process. We tend to get bogged down in the implementation phase of the AQM cycle. More upfront outreach and communication with industry could open the dialogue for streamlining the process and could ultimately provide more innovative approaches to permitting.

Response 2-17: Evaluations of results is farthest from the ideal. This is particularly true for the evaluations of effectiveness and efficiency. While EPA may report on whether or not an area attained its goal, it does not generally have the "Why did it work?" analysis available to build on for future program design. If it did not work, EPA does not know for sure why it did not work. The implementation phase also has problems. The model of the Acid Rain program with up to date emissions monitoring and reporting data should act as the model with other programs or strategies trying to emulate the design and operation of the program. Instead, there is resistance to improved monitoring techniques which could lead to improved enforcement and accountability.

In many cases there are statutory and practical limits on EPA's ability to improve efficiency based on these evaluations as well.

There is also more work to do in determining the necessary reductions. EPA can monitor the ambient concentrations at specific points in a network, but does not know what the concentrations are between those points. Although it is possible to have an educated guess as to the un-monitored concentrations, EPA does not know the true size and extent of the problem. It would be prohibitively expensive to operated a network which documents ambient concentrations every where. In addition, the emission inventories system may work for routine emissions, there are problems with inventorying and predicting emissions when the emissions are highly variable. Although, EPA reports and evaluates the air quality and emission data, the time delay between the data collection and reported analysis of the data, limits the usefulness of the analysis.

In addition it is important to note that the current system approaches the "wheel" separately for each criteria pollutant, and for HAPs as a whole. Each of these separate programs has its own AQM system, a system which was design recognizing the fundamental nature of the problem being addressed. The general principle of "multipollutant" analysis is by design not met by the current system, and efficiencies may be lost.

Response 2-18: Mobile source emissions.

Combustion of fossil fuels generally and failure to develop a national energy strategy to address the predominant source of all air pollution.

Global warming and CO2 emissions.

Response 2-19: The current system is farthest from fulfilling the vision and principles in the relationship between the identification of needed or effective reductions and control strategy design. As a general rule most reductions targets are not determined in a multi pollutant fashion (relationship of VOCs to HAPs or NOx benefits in area of both ozone and PM). In addition, as discussed in question 1, there needs to be improvement in the balancing of the most effective reductions programs between national, regional and local measures. A national measure that addresses a traditional stationary source may be easy to regulate; however, the reductions from this category may not be the most effective reductions to obtain. If the urban inventory is dominated by existing fleets and area source, the long term air toxic and attainment programs must address these sources. Even where there is an identification of these categories (NAS report and Phase I report), the system does not do a good job developing control strategies to address these emissions.

If the system is going to start to evaluate the goals on a multi pollutant fashion, than the identification of targets reductions should not only be in tons of pollutant but also in terms of the most effective reductions to obtain between the various levels of national, regional etc.

3) What changes to the current air quality system or its components could you envision that would bring us into better alignment with the vision and principles?

Response 3-1: I like the "cycle" approach.

The vision statement and several principles refer to "ecosystems", "other public welfare values", "ecosystem health", "environmental protection" and other terms that embrace protection from undesirable air pollutant effects. A primary "wheel" element, however, entitled "establish goals", fails to embrace ecosystem health except in narrow terms e.g. regional haze, acid rain. Establishing goals is important, and we must retain flexibility, as per "scientific research". It is important; however, that we begin by capturing the full breadth of our vision. Our statements of goals must be expanded.

Control strategies and implementation must include such approaches and land use planning, demand side strategies, and TCMs. Such strategies may not be "rules" per se, but broader strategies with one or more "rules" as components.

Response 3-2:

- When health concerns and emission control benefits clearly indicate a necessary course of action authorized by the CAA, EPA should work with local and state agencies to strengthen the potential success of such efforts. Regional controls such as addressing industrial, commercial, and institutional boilers need to be proposed and finalized at the federal level.
- Better emission inventory tools for air toxics, $PM_{2.5}$ and its precursors are needed, along with more support for designing and operation of air toxics monitoring networks.
- EPA should be prepared to support local and state agencies if/when they propose control levels that are less favorable to trading but a necessity to meeting air quality mandates.
- EPA must evaluate and eliminate the root cause of delayed finalization of implementation guidance for major air quality programs.
- Regional organizations need additional flexibility to use funding such as has been designated for regional haze work to enhance the capabilities of models to analyze not only regional haze but also fine particles and ozone. This would require at a minimum EPA administrative buy-in and transmittal of.
- Replacement and upgrading of the compliance and enforcement reporting database (AFS) is recommended by some agencies. Having a user-friendly and accurate system of tracking compliance would contribute to easier assessments of progress towards strategic goals for cleaner air.
- Once and for all there needs to be a change in the expectations for SIPs, creating windows of opportunity for developing SIPs to address various air quality issues. Certainty and flexibility are just as valuable to regulators as they are to the regulated community. By synchronizing delivery dates for SIPs and other CAAA obligations, more efficiency can be gained. All legislation and reviews of existing and new standards should point towards these periodic SIP updates, occurring perhaps every 5 years.
- Allowing local and state agencies to have access to their emission inventory information stored at the national level would improve their SIP analysis.

Response 3-3: Address CO2 and other greenhouse gas emissions in order to create a truly integrated air quality management system that would have significant multi-media benefits and incorporate energy and transportation planning. Place greater emphasis on pollution prevention (conservation, efficiency, renewable energy, advanced technology). "End of pipe" controls have diminishing returns and will not be adequate to address the coming air quality challenges identified in the NRC report (ecosystem impacts, health effects below the standards, etc.).

Response 3-4:

- Less complex SIP program utilizing less modeling other than national scale by EPA
- Move more to a "technology" based program where controls are applied more equitably across all existing and new sources within source categories
- Be more technology forcing in emissions limits; avoid "lowest common denominator" approach; be more uniform across sources and states to remove inequities
- EPA must be more responsive to state technical and policy guidance needs

- EPA must allow states more latitude in that portion of an implementation program that deals with local or non-national issues; must be less micro-managing

- But, hold states to meeting the objective; i.e. NAAQS

- Reconsider the need for "non-attainment" areas for purposes of SIPs

Response 3-5: There are a whole host of emission reduction programs that are being implemented currently that will not take full effect for 10-15 years. The AQM program should let benefits of these programs happen before setting new requirements.

Response 3-6: Goals need to follow a more regional approach. This may allow tribal goals to be included in the language. In addition, increasing tribal funding for air monitoring, inventories, and modeling would allow tribes to carry out programs under the 1990 CAA amendments and alleviate duties of the federal and state governments. This would comply with sharing duties and team work which the AQM goals speak of. Furthermore, continue the current partnerships between states and tribes with continued developments of SIPs and TIPs. By fostering these partnerships, many of the hardships which tribes and states deal with may cease to exist.

Response 3-7:

a. Move to a more regional and multi-pollutant approach to AQM planning and management, which will look at the issue on a more broad basis and better account for the effects of transport. This will require greater use of the regional planning organizations, and allow for better coordination between the states and more efficient use of resources if data analysis, modeling and inventory development can be done more centrally for several states, as is occurring in the MANE-VU process.

b. The AQM system should provide some kinds of mechanisms for incentives for the regulated community to do more/go further than what's required in a SIP. Too many areas remain in non-attainment, even after rules/plans are implemented that are supposed to be sufficient to address the problem. And contingency measures don't seem to be doing enough. Some sort of incentive system that operates prospectively (to get greater than anticipated reductions even before we know if attainment will be achieved) as well as retrospectively (after we have implemented the plans/rules and discover attainment will not be achieved) could be more efficient, timely and effective than having to reinitiate an entire new rulemaking process.

c. A database of control strategies that have been implemented, with some information about their effectiveness and cost, where they have been applied, etc. would be a valuable tool that would help states and tribes with their SIP development. A component that also tracked new strategies under development, and voluntary programs and their use/effectiveness, would also be valuable. EPA seems to be on this track with their AirControlNET system, although it seems focused particularly on cost rather than performance, and doesn't appear to contain some of the other information that would be useful. Perhaps EPA can consider expanding this system, and in so doing also allow for states and tribes to input/provide information on control strategies that they have used/regional information on listings currently in the system to help to make it more comprehensive. Including links to the state rules implementing the control strategies would also provide a useful resource.

d. EPA should develop a policy and guidance on a weight-of-evidence demonstration for air quality planning and implementation efforts, using current state's efforts as a basis and model. This type of approach incorporates more current air quality data and trends, and is subject to public comment. It would provide a better method for tracking progress toward meeting attainment.

e. Development and utilization of health and environmental-based performance metrics. This, coupled with the recommendation "e" above should provide a better bellweather for how well we are meeting our air priorities.

Response 3-8: See Potential Elements for Straw Proposal set forth in Attachment 8-A. In addition to these elements, it is imperative to develop long-term AQM goals and objectives in a manner that reflects and accomplishes national energy, land use and transportation goals and objectives.

Response 3-9: See answer to 2-9 above.

Response 3-10: See answers to 1-10 and 2-10 above.

Response 3-11:

- Need to better incorporate future reductions expected and set timelines realistic with phase-ins. (don't require more reductions before current ones are realized).

- The AQM process needs to more explicitly consider levels of anthropogenic air pollutants. As NAAQS are set closer to background levels and appropriate control strategies are developed, a better understanding is necessary of the controllable and uncontrollable sources.

- The AQM system needs to continuously assess and confirm that the appropriate air pollutants are being regulated and determine whether societal expenditures made are resulting in predicted health and environmental benefits.

Response 3-12: See answers to 1-12 and 2-12 above. Also, see Attachment 12-B.

Response3-13: There must be an improvement in evaluating results and feeding them back into respective management cycles. If we adequately improve the assessment of our programs, we can develop better goals for determining the necessary reductions and then design strategies for implementation. Additionally, we should also tie the accountability and flexibility concept closer together and focus on funding allocations that recognize the disparities in capacity between State and Tribal programs.

Response 3-14: The AQM process is the appropriate model for addressing the visions and principles. We need to better understand the health risks from both toxics and criteria pollutants, recognize the relationships between them and take advantage of the combined authority in the Act to address them. This will require us to change how the air toxics program works to have a more health and environmental goal or target and collect more extensive information to track progress over time. It will also require a better integration of the technology experts in developing

appropriate rules and guidance for sources. Finally, it will require a more proactive coordination of planning and control strategy development between the criteria and toxics program.

Response 3-15: Changing the air quality system itself is not the key question. The important questions are how do we better deal with emerging sources of pollution that are outside of the traditional sources we have addressed in air quality management – how do we begin to address sprawl or intercontinental transport, or other emerging problems for which there may be no regulatory authority in place? Also, how do we address parallel problems like water quality or climate change which may call for an entirely different set of approaches affecting the same sources?
Another way of looking at this problem is: are the vision and principles listed above broad enough to effectively incorporate emerging issues like sprawl, land-use, increased energy prices, sustainability, and global pollution? When the principles state "consider" other factors like energy, etc, -- is that the same as factoring them in to a holistic solution?

Response 3-16: More widespread use of air quality data would make data available to everyone, not just those within EPA. Outside researchers and scientists would have the opportunity to evaluate data and provide objective assessments. They may even present questions enhancing the evaluation component of the AQM cycle.

Response 3-17: -Improved program design and accountability.

-Make multipollutant programs and impacts the norm. Set goals/standards with a recognition that the multipollutant aspects are a significant part of the decision making process.

-Stick with an emphasis on the air pathway as the most significant exposure to environmental pollution but take a look at deposition or other pathways to see if they are worth considering.

-Recognize that the future of air pollution is in the area of transport and that the Federal government needs to continue to take an active and leadership role. Recognize that multistate and regional programs need to work in active partnership with local control efforts to produce the optimal environmental result. Regional trading programs and local attainment planning need to work together instead of trying to avoid each other.

-When a program fails to obtain its objective, don't assume that a completely new program is needed. Insure that accountability data are there so that program designers can decide what went wrong and make a choice between repair and scrappage.

-Enforcement should be viewed as an aid to program design. It should not be regarded as an unnecessary part of the air quality management process. Bad regs can lead to bad compliance patterns. It is very important to see how regs are being met in the real world.

-Reassess EPA's relationship with the States, giving them broader objectives and holding them accountable to meeting those objectives.

-Acknowledge that the system is an iterative system. EPA should test the results and make corrections. If something is not working, drop it and try something new.

-Improve the monitoring system to provide a better definition of the problem. Perhaps use of satellite monitors with using the current network for ground truth.

-Improve the inventory system to capture the variability in the emissions. The models would also have to be designed to account for the variability.

-Rreduce the reporting and analysis time, to allow quicker response to air quality data that shows a problem.

-Increase flexibility

-Move toward a system where the planning process for a given city's issues for all criteria pollutants, and for HAP risk, followed the same periodic schedule.

-Develop a system of accountability for HAPs: Develop accountability criteria, and conduct more ambient, emissions monitoring and/or risk assessments to evaluate against the chosen criteria.

-Recognize uncertainties in the criteria pollutant program. If a city is 2 percent below the standard and another city is 3 percent above, they essentially have the same air quality problem. More programs should be in place depending on the size of a city's population, and fewer should hinge on whether you predict that you barely make the NAAQS.

-Develop a systematic understanding how the fine fraction of direct PM emissions (i.e. PM2.5) is different from the PM we have been dealing with for years. There is not doing nearly enough source testing to understand either the filterable or condensable fractions of stationary source direct PM2.5 emissions.

Response 3-18: A national energy policy that makes profound progress in reducing combustion of fossil fuels. Our existing programs depend far too much on controlling emissions at the end of the pipe. We need to address the processes, particularly combustion, that produces the emissions in the first place. Until we really reduce combustion emissions, we will not make truly meaningful progress on air quality.

Response 3-19: To great extent, this question has been answered in the previous discussion; however, I will list some quick points in an effort to cross reference some of the earlier discussion.

A) Control Programs- Need to be more innovative for existing fleets and area sources. Need be more incentive based for large stationary sources that have been regulated heavily already (Credits, banking, trading). Need to create model rules of programs that provide for quick control adjustments but maintain accountability.

B) Use of Environmental Data- Need to make greater use of the data in the identification of the most effective reductions and what indicators should be tracked to determine if adjustments are required or the program as designed is working.

C) Control Strategy Design- The current system spends too much time with everyone suggesting the other sector needs to control or it is your job to do the rules (feds or states) and there is no good process for discussion of potential control strategies as the various levels of national, regional etc. See question 5

4) Prioritize your recommendations—which changes do you think are most important or most urgent to pursue, and why?

Response 4-1:

- Establish goals that encompass the excellent vision statement and guiding principles.

- Embrace and encourage development and implementation of innovative emissions control strategies.

Response 4-2:

- Regional controls for critical emissions sections, especially industrial, commercial, and institutional boilers.
- Delivery of implementation guidance.
- Better technical tools including model improvements and better emission factors.
- Funding flexibility.
- Synchronization of SIP obligations and certainty to regulatory agencies.

Response 4-3: Addressing CO2, as it will create a fundamentally new organizing principle for addressing air quality, environmental, and energy issues.

Response 4-4:

- Set minimum emission standards for all "significant" sources, new and existing, based on BACT or LAER levels of control

- Program should be simple; reduce complexity and micro-managing of states

Response 4-5: No Response

Response 4-6: Establishing goals which take into account public health and well being over economic viability. Too often programs and regulations are not deemed efficient or effective due to a cost-benefit analysis. Too often public health (and ecosystem health) takes a back seat to profit margins. In addition, explore the potential options of technology. For example, can AQM push a priority of solar and wind as real options for clean energy. Finally, allow the continued development of national strategies which have regional priority in their development. Again this may allow tribal and groups of stakeholders which have been marginalized.

Response 4-7: My recommendations appear in priority order as listed in #3 above, and most of the write-ups above provide a rationale for why I think they are important to pursue.

Response 4-8: An ideal AQM system would achieve air quality goals and objectives without compromising other national goals and objectives (e.g., energy, land use, transportation, water quality, etc.). Therefore, a logical first step is to study and define national air quality, other environmental (e.g., water quality), energy, land use and transportation goals and objectives. Concurrently, EPA should identify and develop any scientific or technological tools that are necessary to design and implement a multi-pollutant approach to air quality management. Once these initial steps are completed, the information can be used to develop new AQM goals and systems.

Response 4-9: Embrace new tools to reducing emissions - market-based, risk-based, and sector-based programs should be fully explored.

Greater role for cost in goal setting.

Response 4-10: See answers to 1-10 and 2-10 above.

Response 4-11: No Response

Response 4-12: Also, see Attachment 12-B.

- Changing the approach to the nonattainment boundaries and planning processto address interstate/regional issues

- Real reform of permitting rules

Response 4-13: Stage five of the wheel; Evaluate Results – We need to assess what is working vs. what is not so that we don't repeat the same shortcomings, or so that we can capitalize on what is working. Learning from the past is a great way to determine what we should emphasize on the future. Stage five will feed stage one, and set a better course for stage two.

Response 4-14: In order for the AQM management cycle to work we have to have consistent environmental goals. Currently the toxics program has source specific risk and emission goals; I believe a cumulative risk goal is needed for this model to work. Once the goal is established, data collection, to support evaluation of the goal are needed, particularly consistent reporting of emissions and air quality analysis. Finally, where at all possible coordination between the Criteria and toxics goals, control strategies and implementation to be proactively pursued.

Response 4-15:
1. What has been most effective way of reducing pollution over the past several years? The acid rain program certainly comes to mind. CAIR has expanded that program, and should have all the upsides of the acid rain program: big reductions, flexibility in control options, cost-effectiveness, etc. How can we expand this approach to other industries and other pollutants over time? Can we effectively pursue multi-pollutant trading? Can we develop declining cap programs to address toxics, PM and other pollutants of concern from other major industries, in exchange for easing the traditional regulatory programs? Do we have to be stuck in the mindset of traditional Clean Air Act legislation and regulation? What about using tax policy to provide incentives for businesses and consumers to take actions to clean up the air (without regulation, litigation, etc.)?
2. We need to develop approaches that target solutions for local and regional governments that are facing massive sprawl and associated problems. Also, we need to help communities with high toxics emissions (and, often, EJ-related issues) from chemical plants, refineries and other sources. These communities need tools and technical support from the federal government to craft effective (not just paper) local solutions to their local problems.
3. We need to develop emission controls programs for problem sources we traditionally have played only lip service to: like airplanes and international sources.

Response 4-16: We need to look at ways of streamlining our current permitting system(s)

Response 4-17: -Program evaluation as a top priority. EPA is in the process of setting goals for PM and ozone.

-Addressing the multipollutant questions is also important right now. No matter where you start, this process is going to take time before results are available.

-Look for approaches to achieve greater flexibility with safe guards.

Response 4-18: That should be clear from my answers above.

Response 4-19: The use of environmental data (including prudent use of models) to identify the most effective reduction targets as well as the design of control strategies that are innovative, incentive based and provide for adjustments.

5) Identify any other areas you have not previously stated that you believe are important for this Subcommittee to consider.

Response 5-1: It is important to recognize the inherent connections of air pollution and air pollution control in the broader context of environmental protection. Neither the Clean Air Act nor EPA's media-specific organizational structure (OAR, OW, OSWER,…) facilitates a comprehensive and efficient approaches to protecting our environment. That is, we should be thinking about "multi-media strategies" as well as "multi-pollutant strategies". Just a few examples include: Forest management practices; Water and wastewater treatment systems; Emissions scrubber systems; Nutrient loadings from the atmosphere; and, Responses to ever-growing energy demands.

Response 5-2: None immediately come to mind. Some of this exercise seemed a bit like what was done months ago in the heart of the AQMWG activities.

Response 5-3: Expand on approaches like CAIR to address existing (grandfathered) sources that are currently under-controlled. There are opportunities to get greater reductions sooner. Programs like NSR and BART are relatively ineffective, too complex, and too contentious (litigation). Clearer requirements for controlling existing sources are needed, including greater use of cap and trade approaches.

Need to ensure that new sources use latest technology to minimize the creation of new problems that someone else will have to solve 20 years down the line.

Raise CAFE standards.

Response 5-4: No Response

Response 5-5: One matter that is important is for the AQM system to make cost-effectiveness a foundation of any regulations. All new regulations should be evaluated on a cost-effectiveness basis before being promulgated.

Response 5-6: None come to mind at this time.

Response 5-7:

- Given that it's no longer possible to simply control EGUs to achieve attainment, it is important for EPA to evaluate the other sectors with potential for regional and national control strategies and provide information on these categories in terms of the technical and economic feasibility of new/further controls on them. This includes the ICI boilers, industrial surface coatings non-industrial solvents, architectural coatings, cement manufacturing and other categories discussed as part of the AQM Work Group process.

- EPA needs to remember the limitations of state and local resources as they are developing new standards and goals. The proximity in timing of all of the SIPs that need to be developed in the next few years (ozone, PM 2.5, regional haze, etc.) are weighing very heavily on the states, and delaying submittals/attainment is not a desirable outcome for public health or the environment. This is part of the reason that regional and multi-pollutant planning is extremely important.

- States' rights and the ability for states to go beyond what EPA and the federal government do on air quality management should not be abridged by any new policy, guidance or program developed to improve the AQM system. Furthermore, it would be helpful if EPA could identify and provide mechanisms within their rules and policies that would help states who are limited to doing no more than what the federal government does to go beyond those parameters, if feasible.

Response 5-8: No Response

Response 5-9: No Response

Response 5-10: See answers to 1-10 and 2-10 above.

Response 5-11: Cost-effectiveness must be an explicit component on decisions for further control.

Response 5-12: No Response

Response 5-13: No response

Response 5-14: In general, it is important to recognize that the entire AQM "cycle" depends on how well emissions data are characterized and analyzed. To that end, we need to focus on improving and expanding the monitoring network and improve the inventories to include more sites and more pollutants, calibrating our predictive ambient concentration models with monitoring data, and comparing resulting emissions inputs with the emissions inventories to improve the inventories.

Response 5-15: No response

Response 5-16: No response

Response 5-17: Develop staff and train the next generation of environmental leaders. How do we get young people interested in the science and technology of air pollution control?

-When and how does the Federal Government get involved in prevention of air quality problems which result from poor local planning and sprawl?

-How do we work to level the international playing field of environmental regulation while maintaining our standards?

Response 5-18: Scrutinize any program that would impose more end of the pipe controls to make sure that they are cost effective at the macro economic level in terms of health impacts.

Response 5-19: In the area of identifying the required reductions, EPA should consider establishing a process that is similar to the one used to establish the NAAAQS to determine how the control programs should be designed to address the environmental issues in an integrated manner. The advisory group or panel should use all available environmental data to determine the likely geographic location of the issues (toxic, criteria, deposition) and develop an advisory document the could evaluate the local and national inventories to determine the most effective control programs that could be implemented to address the problems. The group could identify those urban areas that will continue to have residual problems after all current programs are implemented and than identify those areas of the inventories in the residual area that would have to be controlled to achieve the environmental goals. In examining these residual area inventories, the advisory panel or panels could review the benefits of local, regional and national reductions and establish environ meal indicators that could be used to track progress. By making these recommendations, the panel would be fostering an improvement in the partnerships between the various stakeholders because responsibilities for the various control programs could be established. For instance, if areas like the West Coast and the Houston Ship Channel need reductions from the ships and ports, the federal government should accept responsibility for such reductions. Likewise, if the existing fleets and area sources needed to be controlled, the local authorities and stakeholders should be responsible for these programs. Finally, on a regional level the various regulatory authorities should develop incentive based to foster a continuous reduction type of programs.

In establishing this process, EPA should establish clear time frames for completion of the process and ensure that the process open and transparent to all stake holders. Of course, under the current CAA structure, the recommendations of the group could only be advisory because of the required regulatory process that would have to follow at the federal and state level. However, a process that included the appropriate science, regulatory, environmental and industrial regulators would have tremendous creditability with the various level of government.

ATTACHMENT 8-A
LONG TERM AQM
POTENTIAL ELEMENTS FOR STRAW PROPOSAL
Draft: 10/18/04

Coverage: The program would be national or regional, depending upon the sector and the air quality objective, and would cover criteria pollutants and toxic air contaminants.

EPA v. State/Local Role: The federal government would take the lead in developing national or regional multipollutant performance standards designed collectively to achieve attainment and other appropriate air quality objectives (e.g., visibility, risk reduction) in most parts of the country. The states would be responsible for addressing residual nonattainment.

Applicable Sectors: The program would apply to most sectors, including stationary, mobile and area sources.

Uniformity/Level Playing Field: Most sources would have a multipollutant emissions reduction obligation. The obligation would be defined as an emissions reduction target for each sector based on sector-specific considerations (e.g., technological feasibility, cost-effectiveness, level of economic activity).

Incentives for Technology Development; Trading: EPA would implement the following programs to encourage technology development and transfer:

1. Pre-certified emissions reduction credits for high-priority clean air technologies. Under this program, EPA and the states would identify technologies (e.g., Port electrification; diesel retrofit, truck stop electrification, etc.) that they consider will offer the greatest environmental and health benefits and whose early implementation is desired. Entities investing in such technologies would receive pre-certified credits that could be used within appropriate trading regions to satisfy national and regional program standards.

2. Cap and trade programs. EPA would continue to identify appropriate sectors for establishing cap and trade programs. Cap and trade programs would be considered a preferred model when they are suitable for the sector.

3. Open market trading programs. In addition to the pre-certified emissions reduction credit program described in (1), any source would have the ability to petition EPA (or, in appropriate circumstances, a state or regional entity) to generate or use surplus emissions reductions from any sector to satisfy national and regional performance standards. EPA would approve such proposals if it determined that the proposed reductions were surplus (i.e., based on a lower emissions rate than otherwise required), enforceable through a verifiable quantification method, and otherwise met the conditions of the agency's Economic Incentives Guidelines.

4. Clean air investment fund. As an alternative means of meeting some or, in appropriate cases, all of its program obligations, any source subject to national or regional standards would have the option to pay a predetermined amount into a national or regional clean air investment fund designed to accelerate the development and implementation of high priority technologies or clean air strategies.

5. Intersector trading. All of the above programs would permit intersector trading.

Treatment of Existing and New Sources: EPA would develop national multipollutant emissions reduction targets for each sector, on a sector-by-sector basis. These standards would be designed collectively to achieve air quality objectives (e.g., NAAQS, visibility, risk reduction) in most parts of the country. They would be developed after due consideration of health, ecosystem, energy, technical, economic, market and other considerations.

New sources would be required to install "best integrated control technology." EPA would consider several factors in setting that level, including, in addition to the technology's potential for reducing criteria pollutant emissions, its potential to increase greenhouse gas and toxic air contaminant emissions and any adverse macroeconomic impacts (e.g., whether requiring its installation would chill new investment, cause industry to become noncompetitive internationally or harm national energy objectives). If it determines that one or more of such additional impacts is material, EPA would solicit additional notice and comment and designate new source technology requirements for such sector based upon consideration of all relevant factors.

Timing and Period of Repose: Sources would be required to achieve the applicable emissions reduction targets within 5 years after EPA published the final requirement, provided, however, that existing sources that had installed BACT or LAER within 3 years prior to publication of the final requirement would have 8-10 years following publication to achieve compliance.

Toxic Air Contaminants: To ensure that trading does not interfere with the risk reduction or public health benefits of the national and regional programs, EPA would identify compounds used at stationary sources that are most likely to drive risk from such sources. Except as EPA provides programmatically, any facility that uses credits generated by one or more of the emissions reduction credit programs identified above would be required to conduct an appropriate screening analysis to demonstrate that the risk from such compounds at such facility does not exceed a level considered acceptable under the residual risk provisions of the Act.

Updating: EPA would reevaluate and adjust national and regional multipollutant emissions reduction standards every 8-10 years, to provide sufficient lead times for technology advancement and a high degree of certainty to industry, while providing a mechanism for continuous improvement toward environmental goals.

Replacement of New Source Review Program: This program would replace the current new source review program in recognition that it would require new sources to install best integrated control technology and would achieve significant emissions reductions from existing sources in most sectors through national and regional standards. For areas that have residual nonattainment problems after the implementation of this program, EPA would establish a clean air investment fund that would be used by such states to address any growth-related emissions.

Demand-Side Strategies: EPA would work with the states and other stakeholders to identify a variety of demand-side strategies that could be used to encourage emissions reducing actions on behalf of consumers, including retail choice, transportation mode choice, energy choice, etc. EPA should develop information systems and incentive-based programs to encourage the purchase and use of clean technologies. When appropriate, such programs should be granted SIP credit.

ATTACHMENT 12-B

The system should:

- Be performance-based
- Be economically efficient
- Rely on shared responsibility and partnerships
- Use integrated, multipollutant approaches
- Use regional, national or international reduction strategies where appropriate
- Use proven pollution reduction approaches
- Promote new and innovative pollution reduction approaches
- Maintain and improve research efforts
- Be as simple as possible, but flexible to adapt to changing or unanticipated needs (e.g. new pollutants, new science, new techniques, etc)
- Make information and data accessible to all
- Provide as much certainty as possible to parties over time
- Consider other factors such as energy, land use and transportation
- Incorporate an international perspective

The principles bulleted above all address how to implement our system of air quality management. What principles do we want for protecting and enhancing this country's air resources? I start with the following, and use them to assess our current system in answering the questions below:
--We want air quality that causes neither short nor long-term health problems
--We want air quality that does not cause injury to plants, animals or ecosystems
--We want air quality that protects sensitive populations as well as "average" ones
--We want healthy air quality everywhere in the country, whether urban, suburban or rural areas
--We want to not send American air pollution to other countries, nor do we want our health and environment impaired by pollutants from other countries
--We want better than healthy air quality in certain areas (e.g. wilderness areas)
--We want air quality to continue to improve
--We want to set an aggressive, but not completely impossible, schedule for meeting standards in areas where air quality is unhealthy
--We want to achieve these goals in a way that is consistent with a strong US economy and good quality of life for all citizens

In considering the questions of where the system is and isn't doing a good job of fulfilling the vision, it is important to distinguish between the way the system is set up to work through the Clean Air Act and the way it has been implemented in actuality, primarily by state and federal government. In many cases, some of which I will discuss below, the Act sets up a good system, but implementation has been problematic, either because statutory timelines have not been met (whether reasonably or unreasonably), because of political or other influences, or for other reasons. Of course, we operate in a political system—Clean Air Act implementation by one administration is necessarily going to be different than by another, though there are provisions in the Act intended to counteract those influences—but that is all the more reason for processes to be very open to the public. In other cases, it appears that changes to the approach laid out in the Act may need to be considered.