November 2005

Compilation of Status Reports on the Implementation of Recommendations Made to EPA by the CAAAC on Air Quality Management (Phase 1)

The papers included in this package have been developed by EPA staff in conjunction with, in some cases, stakeholders. They are a report on the activities and plans of the teams working on the 38 Phase 1 recommendations. They should not be read as a final plan for agency action.

1.1 Improved Emissions Measurements and Reporting:

Recommendation: EPA, in conjunction with S/L/T and affected stakeholders, should pursue improving emissions measurements and reporting to enhance emissions databases for more accurate air quality assessments and tracking progress.

AQMWG Priority Level: High

Workgroup Participants:

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Approach:
In an effort to improve emissions reporting, EPA (Emissions Inventory Group) is currently modifying an existing rule regarding air emissions inventory reporting. The amendments would require new State emission reporting provisions needed to verify reductions of particulate matter and ozone required by the Clean Air Interstate Rule (CAIR); change the required content of and schedule for States to report air emissions related data to EPA for use in evaluating the success of air quality management programs; and consolidate and harmonize the new emission reporting requirements with pre-existing requirements. The Emissions Inventory Group is also assessing a plan to re-engineer the current National Emissions Inventory. The goal of the plan is to compile NEI data more quickly while, at the same time, enhancing data quality and providing much broader access to NEI users.

In an effort to improve emissions measurements, EPA (Air Measurements and Quality Assurance Group) is conducting a study to identify (1) relevant existing emissions measurement methodologies, categories to which these methodologies are necessary and appropriate, and protocols for conducting these measurements, (2) identify efforts needed to develop new emissions measurement methodologies and technologies for other source categories (3) identify costs to conduct emission measurements. Currently, the Air Measurements and Quality Assurance Group has ongoing activities that also contribute to measurement improvement (e.g., development of multipollutant performance specifications, enhancement of the mercury CEMS performance specification, revision of method 301 validation procedures, and the development of remote sensing protocols.)

In an effort to evaluate the need and appropriateness of regulations to require emissions measurements, EPA (EFPAG) has developed a monitoring regulation for Title V, and is assessing similar needs for other programs.

Estimated Date for Responding to Recommendation:
Final Products:

Air Emissions Reporting Requirements Rule – Proposal November 2005
Re-engineered National Emissions Inventory – Currently Ongoing (2008)
Study for new emissions measurement methodologies and technologies – December 2005
Title V Monitoring Regulation (Coincides w/ Recommendation 1.2) - Completed

1.2 Emissions Factors and Estimation Methods:

Recommendation: Where emissions measurement-based information is impractical to obtain for air quality assessments, or where improved projections are needed, EPA, in conjunction with S/L/T and affected stakeholders, should improve emissions factors and emission estimation methods**.**

AQMWG Priority Level: High

Workgroup Participants:
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Approach:
In an effort to improve the emissions factors process, the Emissions Factors and Policy Applications Group has over hauled EPA's emissions factors program and developed four main products that should improve the use and development of emission factors. These products are the emission factors and monitoring policy applications guidance, an electronic emissions data reporting protocol, the emission factors and monitoring resource tool, and the Monitoring Knowledge Base Tool.

In an effort to review existing source profiles used in source-based (and receptor-based) modeling to identify the most significant source profile needs, the Emissions Inventory Group and the Office of Research and Development are conducting a joint project to collect, review, and consolidate a number of source profiles. Over 2000 profiles will be added to the electronic data base.

In an effort to address the reconciliation of current emissions inventories with ambient measurements, EPA has an emissions inventory / ambient reconciliation project on inverse modeling of carbon PM, inverse modeling project for NH3, a comparison project of *MOBILE6 Estimates to Findings of Top-Down Ambient/Receptor Analyses*, as well as the utilization of data in the 1999 National Air Toxics Assessment (NATA).

Estimated Date for Responding to Recommendation: FY 2006

Final Products:
Emissions factors and monitoring policy applications case study and final report/options paper – Project Completed
Electronic Reporting Tool – Project Completed
Emissions Factors and Monitoring Resource Tool – Project Completed
Title V Monitoring ANPR – Project Completed
Monitoring Knowledge Base – Project Completed
Addition of over 2000 profiles to the electronic data base – 2006
Reconciliation of current emissions inventories with ambient measurements - 2006

1.3 Uncertainty in Emissions Inventories and Modeling:

Recommendation: EPA, in conjunction with S/L/T and affected stakeholders, should quantify and take actions to reduce uncertainty in emissions inventories and air quality modeling applications, provide guidance for incorporating uncertainty assessments into SIP planning, and improve communication of uncertainty to decision-makers.

AQMWG Priority Level: High

Workgroup Participants:

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Approach:
In an effort to evaluate sources of uncertainty in emissions inventories and modeling analyses for all sources; identify needed data collection activities (and associated costs) to reduce the most significant emissions uncertainties; and identify appropriate methods for incorporating uncertainty in preparing emissions inventories and conducting modeling analyses, EMAD (Air Quality Modeling Group) will coordinate an internal "workshop" with ISEG and ORD to get a background and status update on ongoing work concerning developing taxonomy and conducting an influence analysis focusing on benefit end-points.

EMAD also has a project underway to document alternative "reduced-form modeling" approaches (e.g., EMAD/ISEG response surface modeling, Georgia Tech CMAQ-DDM approach, Source apportionment modeling, etc) and will conduct workshop in early Fall 2005 to review and compare their abilities to address source attribution of impacts and identification of appropriate control strategies to meet ambient targets (i.e., NAAQS for O3 and PM). These approaches allow for insights on the quality and influence of the emissions inventory and meteorological data inputs for modeling.

EMAD's meteorological team is also conducting detailed performance evaluation of modeled meteorological data for use in air quality modeling that should better inform EPA on confidence in those data inputs.

In an effort to provide guidance for incorporating uncertainty assessments in SIP and Tribal Implementation Plan (TIP) planning and improve communication of uncertainty to decision makers and the general public, EMAD / AQSSD will construct a process to take inventory of the various SIP-related guidance provided across technical areas of emissions, modeling, monitoring, and ambient data analysis to better understand how to integrate where appropriate and where to account for uncertainty analyses.

Estimated Date for Responding to Recommendation: FY 2006

Final Products:
EPA “workshop” concerning Agency work pertaining to developing taxonomy and conducting an influence analysis focusing on benefit end-points - Fall 2005

EPA internal workshops and inclusion of uncertainty characterization section in PM/Regional Haze SIP modeling guidance (emissions, modeling, monitoring and ambient data analysis) – Spring 2006

Performance evaluation of modeled meteorological data for use in air quality modeling – 2001 data (Completed) 2002 data (summer 2006)

1.4 Multipollutant Monitoring:

Recommendation: EPA, in conjunction with S/L/T and affected stakeholders, should promote and improve integrated, multi-pollutant monitoring.

AQMWG Priority Level: High

Workgroup Participants:

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Approach:
EPA is currently working to finalize its proposed national ambient monitoring strategy. The existing monitoring networks are top-heavy on determining attainment / nonattainment and light on addressing other monitoring objectives, especially control strategy development and tracking progress. Future actions include changing the monitoring rule with NPRM in December 2005 and FRM in September 2006, working with monitoring program leaders in the states and regions to initiate change, developing an OAR grant and technical guidance to reinforce the change and to shift resources accordingly, and maintaining scientific advisory panel support for recommended changes.

Estimated Date for Responding to Recommendation: FY 2008

Final Response Product:
Complete proposal of Monitoring Strategy Monitoring Rule NPRM - Dec 2005 (Final 2006)
Developed monitoring implementation partnerships w/ program leaders – Ongoing
Scientific Advisory Panel – Ongoing

1.5 Framework for Accountability:

Recommendation: To promote understanding and characterization of the impacts of air quality changes on health and ecological outcomes, and to improve the scientific basis for more informed policy decisions, including the need for and nature of air quality standards, EPA, in partnership with atmospheric scientists, health and ecosystem experts, S/L/T, and affected stakeholders, should undertake a systematic effort to track air quality achievements and evaluate air program results. This effort should begin by focusing on the progression and associations of air emissions as they interact and ultimately affect health and the environment. In order to move beyond the current approach of relying predominately on air quality measurements, we need to further develop and apply the capacity to monitor, assess, and report on how changes in emissions impact air quality, atmospheric deposition, exposure, and effects on human health and ecosystems. Emphasis should be placed on developing and enhancing appropriate health-and ecosystem indicators, benchmarks, and subsequent analyses within this overarching accountability framework.

AQMWG Priority Level: High

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Approach: In an effort to begin strengthening the partnership among atmospheric science, health research, and program accountability efforts, the Office of Air and Radiation and the Office of Research and Development are leading a collection of multi-disciplinary teams across EPA to coordinate and interact across technical areas to understand our current and required capabilities to monitor, assess, and report on how changes in emissions impact air quality, atmospheric deposition, exposure, and effects on human health and ecosystems (i.e., accountability). These teams organized by types of indicators include a coordinating committee which also serves an overall synthesis function for the effort; emissions indicators and measurements; air quality indicators and measurements; human exposure indicators and measurements; ecosystem deposition and effects indicators and measurements; and human health effects indicators and measurements. These teams are responsible for the development of an overarching framework for accountability that integrates the emissions, air quality (including ambient monitoring and modeling), exposure, and economics with the appropriate health and ecosystem indicators and identify the required predictive and observational capabilities. In addition, these teams will work collaboratively in FY06/FY07 to conduct a retrospective accountability assessment in two selected areas to explore impacts of air toxics and mobile source control programs.

In addition, there are several specific accountability efforts currently underway or recently completed. EPA recently completed an assessment of the effects of the NOx SIP Call on tropospheric ozone levels in the Eastern United States, and has published this report as an Agency document. In FY06/FY07, EPA plans to continue the work begun in the assessment of regional NOx control programs by conducting a more in-depth accountability study that is multi-pollutant. As part of the Environmental Public Health Tracking effort, EPA, CDC and three State agencies (NY, WI and ME) are conducting a pilot project, Public Health Air Surveillance Evaluation (PHASE), linking highly spatially-resolved air quality and health information, that will inform future public health tracking activities. EPA, CDC and the State agencies that participated in PHASE are developing a manual for other States that may be interested in trying a

similar approach to linking air quality and health surveillance information. In addition, the current partners are holding a meeting in November to decide how best ot expand this effort to other States through the CDC's next EPHT RFA. In the context of the Environmental Public Health Tracking effort, staff is expanding on-going efforts by communicating with staff of State and local public health agencies at national conferences and meetings about the potential usefulness of public health tracking for EPA's accountability efforts. In addition OAR is currently working with ORD on several accountability research activities, including ORD's Accountability Initiative.

In FY 05, EPA formed a health indicator team with the purpose of understanding health and air quality indicators for accountability. In February, the team held an internal workshop in Research Triangle Park, attended by scientists from EPA to identify relevant research, related activities, tools and databases for accountability work. This team will prepare a report that provides a framework for development of indicators for accountability purposes. The report will also identify important research, related activities (e.g., CDC Environmental Public Health Tracking Program), health databases, and tools that can be used in the development of indicators for accountability.
The team is evaluating the possibility of undertaking four indicator feasibility studies in FY06. The studies would include the feasibility of: relating NATA risk estimates to cancer incidence rates; acquiring and relating de-identified school absence data from the NMMAPS counties to air quality data; using data from syndromic surveillance for accountability purposes; and, relating health care utilization rates, from Federal databases such as Medicare, to regional air quality.

To meet the objective of facilitating communications among health research and program accountability efforts, one step under consideration is to conduct a national accountability workshop that would, among other objectives, provide a forum for external review and enhancement of the health indicator team report as well as a the report on the EPA framework for accountability. In addition to providing feedback on the reports, conducting the workshop could feature accountability research and activities. It would be designed to further relationship building between researchers and Federal, State and local air quality agency stakeholders for expanding on-going efforts for public health and air quality accountability. Further specific accountability efforts will result from the workshop, growing relationships, and multi-agency projects. It should be anticipated that there will be accountability activities for recent national and regional scale reductions in emissions (e.g., diesel requirements and CAIR).

Estimated Date for Responding to Recommendation: Final response products will be completed in FY08. In the interim, key milestones and substantial progress in many areas will be achieved (see below).

Final Response Product:

- EPA workshop on health indicators – COMPLETED
- NOx assessment report – COMPLETED
- Communication at national conferences: National Air Quality Conference (2/2006), Environmental Public Health Tracking Partners Meeting (COMPLETED) and National

Conference (4/2006), and Council of State and Territorial Epidemiologists annual meeting (6/2006)

- Multi-pollutant accountability report – FY06/FY07
- Initial health indicators team report - early FY 06
- Four health indicator feasibility studies – FY06
- Report on retrospective accountability assessment in selected urban areas – FY06/FY07
- Report on EPA framework for accountability – FY07
- Final health indicators team report - FY 07
- National accountability workshop (possible) - FY 07/08

2.1 Industrial, Commercial, and Institutional Boilers:

Recommendation: EPA should complete as soon as possible a review of the contributions from this category and the technical and economic feasibility of further controls, given the high priority assigned to this sector. EPA should then initiate development of a regional or national emissions control regulation for the category, or take alternative action consistent with the results of this analysis.

AQMWG Priority Level: High

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Approach: In coordination with EPA, the Regional Planning Organizations will collect and analyze data concerning industrial, commercial, and institutional boilers to effectively characterize these sources and their environmental impacts. Along with the RPOs, EPA plans to include additional organizations (i.e. STAPPA /ALAPCO) to help with this comprehensive approach. The information will focus on:

1. emissions
2. physical boiler characteristics
3. utilization
4. existing pollution controls
5. performance of pollution controls
6. costs of pollution controls

The information gathered will help characterize emissions from different source sectors.

In conjunction with the aforementioned information collection process, EPA is also developing sector based emission reduction strategies. These sector based approaches will take a comprehensive look at emissions characteristics across all sectors, many which contain industrial, institutional, and commercial boilers.

Final Response Product:
Data inventory - March 2006
Analysis of collected data - June 2006

2.2 Industrial Surface Coatings:

Recommendation: EPA should complete as soon as possible a review of the contributions from this category and the technical and economic feasibility of further controls. EPA should then initiate development of a regional or national emissions control regulation for the category, or take alternative action consistent with the results of its analysis.

AQMWG Priority Level: Medium

Workgroup Participants:

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Approach: The workgroup members agreed to conduct an analysis of the industrial surface coatings category. The analysis would include review of non-attainment contributions from 25 Industrial Surface Coatings source categories, the existing13 NSPS rules, 25 CTGs and existing ACTs, the 11 outstanding categories listed for regulation under 183(e), and identification of new categories, including but not limited to facility maintenance operations and surface coating of miscellaneous wood products. The analysis will include an evaluation of further emission reduction opportunities. In order to evaluate the CTGs, the workgroup anticipates an extensive review of state and local limitations would be performed, followed by data collection to support a feasibility study of adopting tighter state and local limits. The technical and economic feasibility of using low VOC/low HAP coatings and further controls will also be evaluated by the workgroup. Work will then proceed for those categories amenable to updated rules and/or guidance.

Current Status: Members of the workgroup have met four times over the last 2 months. The workgroup has essentially identified a 2 prong approach: 1) analyze the existing regulations and identify gaps, and 2) utilize emission inventory data to identify sources of high VOC emissions.

The work group is in the preliminary stage of identifying all in-house (federal and state) regulatory information to provide a comprehensive overview of the industrial surface coating rules and guidance. Thus far we have compiled a list of (over 43 completed and 20 outstanding) federal rules related to industrial surface coating.

Members of the workgroup from EMAD are updating the current baseline (2002) and future projected (2010) VOC emissions from the industrial surface coating source categories with 2002 emission inventory data. The new data will be used to rank sources of industrial surface coating emissions in ozone non-attainment areas across the country. The new data should be ready for the next meeting scheduled for Nov. 16.

Final Response Product: To be determined by results of analysis.

2.3 Consumer Products (Non-Industrial Solvents):

Recommendation: EPA should initiate rulemaking efforts to establish minimum performance standards (i.e., a national rule) for this category using the VOC content limitations contained in, and regulating the products covered by, the model rule developed by the Ozone Transport Commission.

AQMWG Priority Level: Medium

Workgroup Participants:

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(To be named)	Federal Trade Commission	
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Approach: Working on several possible approaches to respond to this recommendation. Will be having discussions with several stakeholder groups and internally to determine what the best approach is.

Estimated Date for Responding to Recommendations: Will be determined based on approach to be taken.

2.4 Architectural Coatings

Recommendation: EPA should initiate rulemaking efforts to establish minimum performance standards (ie., national rules) for this category using the VOC limitations contained in, and regulating the products covered by, the model rule developed by the Ozone Transport Commision (OTC).

AQMWG Priority Level: Medium

Workgroup Participants:

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Approach: EPA will begin working with stakeholders to determine key issues and ways to address them.

Final Response Product: Dependent on discussions with stakeholders.

2.5 Heavy-duty Diesel Engines:

Recommendation: EPA should reduce emissions from the existing fleet of heavy-duty (HD) diesel engines by employing a multi-pronged approach.

AQMWG Priority Level: High.

Workgroup Participants:

Staffed by OTAQ. Coordinated with the Mobile Source Technical Review Subcommittee. Lead: Jim Blubaugh.

Approach: EPA is continuing its existing efforts to employ a variety of strategies to monitor and reduce emissions from the in-use HD fleet. Building on the successes of EPA's regulatory and voluntary efforts to reduce emissions from diesel engines, EPA has created the National Clean Diesel Campaign (NCDC).

First, EPA is committed to successful implementation of the 2007 Heavy-duty Highway Engine Rule and the Clean Air Nonroad Diesel Rule. These rules will, by 2030, reduce PM by 250,000 tons per year.

Second, EPA is engaged in multiple compliance program strategies, such as continuing to work with manufacturers to ensure compliance with existing and new emission standards, harmonized nationwide OBD diagnostics for HD vehicles, and development of portable emissions capabilities for diesel PM. Engine manufacturers will begin a new in-use testing compliance program over the next two years.

Third, to address engines already in use today, the NCDC is promoting the reduction of emissions, by up to 90 percent, through a variety of cost-effective and innovative strategies, including switching to cleaner fuels, retrofitting, repairing, repowering, replacement, and idle reduction, among others.

In conjunction with state and local governments, public interest groups, and industry partners, EPA has established a goal of reducing emissions from the existing fleet of over 11 million diesel engines by 2014. EPA determined the general sectors that provide the best opportunity to obtain significant reductions are ports, construction, freight, and agriculture. The Agency's SmartWay Transport Partnership program will promote emission reduction strategies in the freight sector. The Agency also identified school buses as an area where diesel control can greatly help a susceptible population. Each program provides technical and financial assistance to stakeholders interested in reducing their fleets' emissions effectively and efficiently.

Over the last five years, EPA has brought forward a number of very successful voluntary programs designed to reduce emissions from the diesel fleet. Retrofit programs are some of the most cost-effective measures for PM control, and provide a health benefit to cost ratio of up to13 to 1. Stakeholder support for these voluntary programs has been overwhelming, evidenced by

our grant solicitations being met by demand ten times greater than available resources. Winning grant programs have leveraged an average of two to four times additional resources. In support of these programs, EPA has developed a number of tools stakeholders are using to support their projects and partnerships. These tools range from technology verification programs to new emissions model development to SIP guidance to facilitating outreach.

Given the clear signal about providing more opportunities for growing these voluntary programs, EPA is working to expand them. Much of this growth will come from focused partnerships and collaborative efforts at the state and local level. Thus, the NCDC will work to further energize interested stakeholders through regional collaborative initiatives, such as the West Coast Diesel Collaborative, the Northeast Diesel Collaborative, the Midwest Clean Diesel Initiative and the Mid-Atlantic Diesel Collaborative.

Estimated Date for Responding to Recommendation: The compliance and voluntary program strategies described above, such as the NCDC, are ongoing.

Final Response Product: Continued effective implementation of compliance programs and of voluntary programs aimed at reducing emissions from in-use HD engines. NCDC sector goals, to address the emissions of the 11 million engines in the existing fleet, include:

School Buses:	Reduce emissions of the entire fleet of school buses by 2010
Ports:	Reduce emissions from all sources at sea ports
Freight:	Eliminate unnecessary idling from trucks and locomotives and create demand for lower emission freight services
Construction:	Reduce emissions from major construction projects in non-attainment areas, initially targeting public projects then the private sector
Ag:	Promote biofuels/renewables and retrofit in farming communities in non-attainment areas

Resource Needs to Address

Recommendation: Substantial resources are needed to provide funding assistance in the form of grants or loans, for retrofit, replacement, and other emission reduction strategies. These funds leverage external resources. EPA's FY06 budget includes $5 million for NCDC grants, and $7 million for school bus grants.

2.6 Emissions from Ships, Locomotives, and Aircraft, and Mobile Source Air Toxics:

Recommendation: EPA should address emissions from ships, locomotives, and aircraft, and mobile source air toxics through national emission standards.

AQMWG Priority Level: High.

Workgroup Participants:

Staffed by OTAQ and EPA regulatory development workgroups.
Coordinated with the Mobile Source Technical Review Subcommittee.
Leads: Locomotives and ships - Bill Charmley, OTAQ. Aircraft - Glenn Passavant, OTAQ. Air toxics - Kathryn Sargeant, OTAQ.

Approach:

Ships, locomotives, and aircraft. EPA will promulgate national standards under Clean Air Act section 213 that will reduce air pollution emissions from diesel locomotives and from Category 1 and 2 diesel powered marine vessels (does not include ocean-going marine vessels). The program will focus on:

The opportunity to apply advanced aftertreatment technologies being used for on-highway and land-based nonroad diesel engines to diesel locomotives and diesel marine engines, to reduce PM and NOx.

The potential for encouraging or requiring improvements to existing diesel locomotives and diesel marine engines.

All seven major U.S. freight railroads joined EPA's voluntary SmartWay Transport Partnership in May 2005. Each railroad will develop a plan to identify fuel savings and emission reduction strategies. Strategies include reducing idling, improving aerodynamics, applying new fuel-saving technologies, and installing emission control devices.

EPA will also be working on national and international standards for ocean-going vessels (Category 3 diesel marine engines). EPA will pursue more stringent standards for PM and NOx, both through the International Maritime Organization as well as an EPA-initiated rulemaking.

EPA is also exploring the possibility of designating one or more U.S. coastal regions as a Sulfur Emission Control Area (SECA) under provisions specified by the International Maritime Organization (IMO). A SECA designation could result in substantial reductions in SOx emissions from ocean-going vessels when operated in designated U.S. waters.

Mobile source air toxics. EPA will promulgate national standards under Clean Air Act section 202(l) that will reduce air toxic emissions from fuels, vehicles, and (under section 183(e)) portable fuel containers. This is known as the "MSAT rule."

Fuel control options will focus on gasoline.

Vehicle control options will consider both evaporative and exhaust emissions.

National standards for portable fuel containers will consider emissions from evaporation, permeation, and spillage.

National standards to reduce hydrocarbons from small gasoline engines (including lawn and garden and recreational marine) will also reduce air toxic emissions.

Estimated Date for Responding to Recommendation:

An advanced notice of proposed rulemaking on locomotives and category 1 and 2 marine engines was published in June 2004. Notice of proposed rulemaking is currently being developed. A proposal is expected in 2006.

EPA will work within the International Maritime Organization (IMO) over the next several years for more stringent international standards for Category 3 marine engines and their fuels. EPA will also work toward the development of a Federal rule for Category 3 marine engines during 2006.

EPA's work on a potential SECA designation cannot begin in earnest until the U.S. has ratified the IMO Annex VI treaty. We are hopeful ratification will occur during 2006.

A final rule adopting the existing International Civil Aviation Organization NOx standard for aircraft engines is expected in 2005.

Proposed MSAT rule by February 28, 2006. Final rule by February 9, 2007.

Proposal for small gasoline engines is expected by Spring 2006; final rule by Spring 2007.

Final Response Product: Proposed and final rules.

Resource Needs to Address Recommendation: Existing efforts will continue.

2.7 Evaluation of Additional Emissions Reduction Potential and Cost Effectiveness for Cement Manufacturing, Petroleum Refining, and Pulp and Paper:

Recommendation: The cement manufacturing, petroleum refining, and pulp and paper industrial source categories are already under substantial regulation, but continue to be significant sources of pollutants and warrant further consideration by EPA. EPA should evaluate potential national or regional emissions reduction strategies for criteria pollutants and air toxics in these categories. This should include improving emissions inventories if necessary and assessing their impacts on nonattainment areas or other sensitive areas. EPA should carefully consider the cost-effectiveness of imposing additional controls as it determines whether additional emissions reductions are justified and should take action consistent with the results of this analysis.

AQMWG Priority Level: Medium

Workgroup Participants:

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Others, as appropriate

Approach: In response to the recommendation, a cross-divisional team within OAR, with assistance from participants in Region 5, has taken the lead in evaluating the potential for additional emissions reductions for these three industrial sectors. The approach for conducting the evaluation of the three industries is outlined in the paragraphs below. Following the evaluation, a decision will be made on what actions are appropriate to take.

The evaluation comprises 3 components that were also identified by the AQMWG: first, refining the base and future year inventories, where appropriate; second, evaluating control strategies and identifying measures that would provide greater or more optimal reductions in air toxics and criteria pollutants than the current regulatory framework; third, conducting modeling to assess the impacts of these sectors on risk, nonattainment and/or sensitive areas, and in evaluating the effects of proposed compliance strategies. Each of these areas is discussed in

greater detail below:

1. Refining Base and Future Year Emissions Inventories - The approach entails reviewing our current year inventories with additional data sources as available to refine our estimates; we have not at this time conducted additional information collection activities but instead have relied on our National Emissions Inventory, Toxics Release Inventory, and other available sources of information to provide comprehensive estimates of all emitted pollutants; for example, the National Council of the Paper Industry for Air and Stream Improvement (NCASI) has documented on a routine basis, nationwide SO2 and NOx emissions from U.S. pulp and paper mills since 1980; likewise, we have been working with the petroleum industry to generate emission estimates for refinery risk analyses. We also propose to evaluate our growth and emissions projections for future years, and consider implementation of existing control measures such as the NOx SIP call, BART, CAIR, NSPS and MACT regulations, or other case-specific control measures; for example, a significant percentage of US refinery capacity will be implementing additional controls as a result of settlements resulting from NSR enforcement cases. We will quantify the effects of these actions on future emissions projections.

2. Review and Identification of Optimal Control Strategies - We propose to review available and emerging control technology information for various emission sources within these sectors to determine their effects on all types of pollutants, and their costs; additionally, we propose to identify and review any proposed national or regional measures for implementation of these control technologies. Information resulting from this analysis will allow us to identify optimum strategies, considering feasibility, costs, and benefits across all pollutant types.

3. Conducting Modeling to Assess the Impacts of Sectors - Using emissions projections, we propose to assess the contribution of these sectors to risk and on nonattainment or sensitive areas, noting that some preliminary analyses have been initiated on these sectors as part of our residual risk efforts; where appropriate, we will also model or estimate the effects of any proposed control strategies.

Estimated Date for Responding to Recommendation: To date, emission inventories and projections have been updated for all three sectors; modeling for screening level risk assessments and for effects on the NAAQS for PM2.5 have been conducted for all three sectors; and evaluation of emission reduction strategies is ongoing for all three sectors. We envision completing the reviews for all three sectors in the summer 2006.

Final Response Product: Multipollutant Emission Reduction Strategy Reviews for all three sectors.

2.9 Guidance for Local Measures for Additional Key Sectors:

Recommendation: EPA, in conjunction with S/L/T and affected stakeholders, should prepare guidance for local (urban-scale) control measures to support the upcoming round of ozone and PM2.5 SIPs, and, if possible, optimize multipollutant control benefits and opportunities for reducing criteria and toxic air pollutants.

AQMWG Priority Level: High

Workgroup Participants:

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Approach:

EPA has formed a workgroup to implement this recommendation. The group views this as a two-fold problem:

(1) Identification of any significantly-emitting source categories for PM2.5, and for PM2.5 and ozone precursors in PM2.5 and ozone nonattainment areas, which are not addressed by other CAAAC recommendations, and

(2) Identification of the EPA actions and guidance which can address these source categories to help with the SIP development process, and to address ways to optimize multipollutant concerns where possible.

Regarding item (1) above, we have reviewed projected 2010 emissions for a 41 category breakdown for 16 Eastern nonattainment areas which are projected to exceed the PM2.5 NAAQS in 2010 after implementation of the CAIR rule. Many of these areas are also projected to exceed the ozone standards in 2010. The results of this analysis appear to suggest that most significant categories are already addressed by existing CAAAC recommendations. We have identified a few categories, including industrial metals processing facilities, commercial cooking, and a few others, which are not addressed by current CAAAC recommendations.

Regarding item (2), we have already undertaken work for two of the categories. For metals processing, we are funding a steel mill case study in cooperation with the State of Michigan and EPA region 5. For commercial cooking, we are funding an innovations case study project to assess the feasibility of voluntary programs for commercial charbroilers, for which control technology is available. For some of the source categories, it appears that ample guidance may already be available. For example, the WRAP has developed a comprehensive guidance document for fugitive dust sources. Final, we have identified categories which will be addressed by area source hazardous air pollutant emissions standards.

Estimated date for Responding to Recommendation: Actions being taken on two categories: commercial cooking (evaluating feasibility of voluntary program) and steel mills (pilot project to evaluate emissions and additional controls).

For the restaurant case study EPA/OAQPS working with regional offices and states to identify city for pilot project. We expect selection of pilot project city in near future, and have written contract work assignment to assist in outreach effort.

Steel mill case study in Detroit is underway to assess sources and potential controls. EPA/OAQPS has funded contract study and is working closely with the State of Michigan and EPA Region 5 staff in conducting this technical evaluation. Results of this contract report are expected in January 2006.

In addition to these two case studies, EPA is providing considerable technical input to STAPPA/ALAPCO "menu of options" document which is expected to be completed in the near future.

Final Response Product: Guidance documents or other approaches for categories identified.

2.10 Residential Wood Smoke Reduction Initiative:

Recommendation: EPA should further develop the Residential Wood Smoke initiative that includes working with S/L/T, industry, non-governmental organizations and others to support and facilitate the changeout of dirty, inefficient "conventional" (pre-New Source Performance Standard or NSPS) woodstoves with new, cleaner and more efficient heating appliances (e.g., EPA certified woodstoves and gas appliances). Concurrent with the development and implementation of changeout programs, EPA should commence efforts to revise the NSPS**.**

AQMWG Priority Level: High

Workgroup Participants:
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Approach:

Woodstove Changeout Pilots – "Great American Woodstove Changeout"

Building on the momentum from the Libby, MT woodstove changeout kick-off event in June, EPA, working with the Southwest Pennsylvania Air Quality Partnership (SPAQP), the hearth industry, Allegheny County Health Department and other partners, kicked off an 11 county woodstove changeout campaign on Sept. 29 in Pittsburgh. The timing for this event could not have been any better given the rising energy prices and interest from the public in using more affordable fuels like wood to heat their homes.

The EPA awarded a $100,000 grant to the SPAQP for funding low-income households that changeout their old, dirty inefficient woodstoves with a clean burning, more efficient hearth appliances (e.g., gas, pellet or EPA-Certified woodstove). Allegheny County contributed $80,000 toward the low-income households. The hearth industry provided rebates (~10%) for any person that changeout their old stove with a clean burning technology. If the 40,000 woodstoves in the Pittsburgh area could be replaced, this would yield about $470 million in health benefits in 2008. In addition to the pilots, EPA is providing technical support to the greater Dayton, Ohio area's Regional Air Pollution Control Agency in implementing their

planned woodstove changeout. There are another 10 or so areas throughout the country EPA is in communications with about implementing their own woodstove changeouts over the next year.

We plan to support additional woodstove changeouts in FY 06 and beyond and hope to grow the initiative similar to the diesel retrofit program. Finally, we will likely continue to target our efforts in PM2.5 nonattainment areas, locations where there are short term PM2.5 spikes due to wood burning, and in community-based air toxics program locations.

Guidance for Quantifying and Using Wood Stove Changeout Emission Reductions in State Implementation Plans – This document is intended to provide agencies with guidance on quantifying emission reductions for replacing or "changing out" dirty, inefficient pre- NSPS woodstoves with cleaner burning technologies (e.g., gas, pellet or EPA-Certified stoves). EPA expects that air quality officials may wish to use the emission reductions resulting from implementing a wood stove changeout campaign to help meet the goal of attaining the $PM_{2.5}$ NAAQS. EPA plans to have a final of this guidance document available by November 2005.

New "How To" Guide on Fireplace/Wood Stove Website (www.epa.gov/woodstoves) - By the end of November EPA plans to have a user-friendly, comprehensive "How To" guide for implementing a woodstove changeout campaign available on our website. This guide, along with the current information on the website is intended to provide air pollution control officials with the necessary tools to more easily implement their own changeout campaigns and otherwise address residential wood smoke.

Fireplaces
EPA continues to work with the HPBA, individual fireplace and wood stoves manufacturers, NSPS-accredited wood stoves testing laboratories, and others by participating in an ASTM (American Society for Testing and Materials) committee to develop a consensus test method for testing fireplace emissions. This effort was requested by the HPBA. Significant progress is being made towards a consensus test method. EPA foresees that this effort would allow the potential development of a consensus emission standard and/or a National building code for fireplaces within the next 3 years.

Outdoor Wood-fired Hydronic Heaters (OWHH) – EPA has initiated a review of the recently received petition from northeastern states to regulate outdoor wood-fired hydronic heaters and we expect to make on decision by next spring on how to address this source category.

Woodstove NSPS – EPA is working with Hearth Industry to gather data on the percentage of stoves that meet the more stringent Washington State standard. Review of this data will help determine priority of NSPS.

Estimated Date for Responding to Recommendation:

- Final woodstove changeout SIP guidance: November 2005
- Final woodstove changeout "How To" Guide: November 2005
- Determine priority for reviewing woodstove NSPS: December 2005

- Determine outdoor wood boiler federal strategy : Spring 2006

Final Response Product: We will continue implementation of the initiative and develop associated products as needed.

2.11 Open Burning:

Recommendation: EPA should work with S/L/T to encourage more vigorous control of open burning, especially in, and adjacent to, counties with Class I areas and counties classified as nonattainment for fine particles or ozone.

AQMWG Priority Level: Medium

Workgroup Participants:

Tribal:
John Cox – Confederate Tribes
Tamera Dawes – ITCA
Patricia Mariella – Gila River Indian Community

State/Local
Tom Atkinson – Georgia
Tammy Medlen – Tennessee
Bob Habeck – Montana
Debra Wolfe – Montana
Corky Martinkovic – Arizona
John Lyons – Kentucky
Rick Boddicker – South Dakota
Coleen Campbell - Colorado
Tina Suarez-Murias – California
Mike Ziolko - Oregon
Troy Perry – Jefferson County Dept. of Health (Alabama)
Mel Cummings – Hillsborough County Env. Protection Commission
John Hornback – Metro 4/Vistas
Rita Truillo – NM
Adele Malone – Nevada
Brad Musick - NM

FLM
Brian Mitchell – National Park Service
Lisa Bye - BLM

EPA
Bill Beal – OAQPS
Larry Elmore- OAQPS
Julie McClintock - OAQPS
Kenneth Fradkin – Region 2
Raymond Forde – Region 2
Steve Scofield – Region 4
Joe Kordzi – Region 6
Susan Klein – Region 7

Amy Algoe-Eakin – Region 7
Alan Banwart – Region 7

Laurel Dygowski – Region 8
Libby Faulk – Region 8
Al Petersen – Region 9
Anne Dalrymple – Region 10
Steve Body – Region 10

Approach: In response to the recommendation, the open burning workgroup participants will take the lead in developing ways to encourage more stringent controls on open burning where it affects Class I and nonattainment areas and work towards educating stakeholders about the effects of open burning on air quality. The first step in this process was to decide on the types of open burning the workgroup would concentrate on. After coordination and consensus between stakeholders to ensure everyone's concerns are met, the workgroup developed a list of the types of open burning they are addressing. The initiation of this workgroup has provided an additional benefit of being a forum for discussion between stakeholders on issues they are facing concerning open burning.

The next step in the process was to gather existing information on open burning emissions, controls, and emission reduction techniques in each state, as well as existing informational and educational materials. The workgroup would take advantage of existing information and data that has been collected on open burning by States, Tribes, Locals, and RPOs. Once existing data is collected, the workgroup and EPA would work cooperatively with stakeholders to update and gap-fill the information as necessary. From initial conversations within the workgroup, it appeared that this task will be quite formidable, as many states have very little if any information that has been collected on open burning emissions or emission reduction techniques. The outcome of this was that it was determined that states involved in the workgroup represent many states across the country and they have very little information on open burning emission inventories or reduction techniques.

Further research by the workgroup revealed that EPA has very recently done some extensive work on updating and expanding open burning emission quantification factors and emission inventory information. The EPA data was presented to the workgroup and members' feedback determined that this was the type of information that we needed for open burning emission inventories and emission factors to determine quantification for emission reduction techniques. In addition, it was discovered that EPA's MSW office has a backyard burning website that already contains a centralized location for each state's open burning control information. The workgroup will look at updating the website information and also at a way to centralize the emission inventory and emission quantification information. In addition, the next step will be to gather pertinent and updated outreach materials for stakeholders to use and place in a centralized location with the emission inventory and emission quantification information.

In order to make it easier for States, Tribes, and Locals to take advantage of benefits from stricter open burning controls, the workgroup will develop outreach SIP guidance and a model rule. The

workgroup will apply data collected on emission reduction strategies to developing SIP guidance that provides procedures and calculation methodologies to facilitate the determination of emission reduction credits. Information collected on existing open burning controls will form the basis for the development of a model open burning rule to be used by States, Locals, and Tribes. In addition to SIP guidance and a model open burning rule, the workgroup will utilize input from workgroup members and stakeholders to determine what other things would encourage States, Locals, and Tribes to adopt more stringent controls on open burning. The SIP guidance, model rule and informational materials will be gathered into a website that is easy to use. In order to make stakeholders aware of these products, the workgroup will coordinate with outreach staff from different agencies.

Based on an assessment of the data pertaining to emissions and control measures, and the impact of open burning on nonattainment areas, the workgroup will determine whether open burning strategies should be a component of nonattainment SIPs. If open burning only has an impact on a few nonattainment areas, it may be determined that specific control measures at a more local level are more effective. The workgroup has also been tasked with working with EPA's Office of Solid Waste to determine whether a national open burning rule is worthwhile. Based on the data collected, input from EPA's Office of Solid Waste, and input from stakeholders, the workgroup will determine whether a national open burning rule would be useful and effective.

Because of the correlation with Class I and nonattainment areas, the workgroup will coordinate with any projects or measures that are being developed to address the requirements in 40 CFR 51.308 and 51.309 (Regional Haze SIPs), or nonattainment area SIPs.

Estimated Date for Responding to Recommendation: May 2006. If it is determined that a national open burning rule would be beneficial, the response to this portion of the recommendation would be May 2007 or later to allow for development and implementation of such rule.

Final Response Product: The final response product will be a SIP guidance document, a model rule, and informational and outreach materials. A national rule pertaining to open burning is also a possible product.

Resource Needs to Address Recommendation: Region 8, Region 4, other EPA Regional Offices, Headquarters, Tribal staff time, State staff time, and Federal Land Manager Staff time.

2.12 High-emitting Gasoline Vehicles:

Recommendation: EPA and States/Locals/Tribes should reduce emissions from high-emitting gasoline vehicles that are believed to contribute a high fraction of mobile source emissions.

AQMWG Priority Level: Variable (depends on the impact of high-emitters on a particular inventory).

Workgroup Participants: Staffed by OTAQ. Coordinated with the Mobile Source Technical Review Subcommittee. Lead: Gene Tierney.

Approach: EPA is working on an ongoing basis to reduce emissions from high-emitting light-duty gasoline vehicles through implementation of on-board diagnostic (OBD) requirements, vehicle inspection and maintenance (I/M) programs, and federal compliance programs. In addition, EPA continues to investigate emissions from light-duty vehicles through various test programs and through analysis of data generated by I/M programs, remote sensing, and other laboratory tests. EPA plans to continue acquiring and assessing new data to evaluate the effectiveness of vehicle controls including OBD, enhanced evaporative systems, and new emission standards.

In 2005 and 2006, EPA will analyze and report on new data collected for the now-complete Kansas City Study. This study collected, for the first time, a random, representative, stratified sample of the entire light-duty gasoline fleet and measured all criteria pollutants, along with PM and toxics. Criteria pollutants were measured both in the lab and on the road using portable emission measurement systems (PEMS), providing comprehensive real world data on vehicle performance under a wide array of operating conditions. The statistical approach in this study will allow us to characterize the distribution of all emitters and, in particular, high emitters.

In 2005 and 2006, EPA will complete an interim report on the current OBD high mileage study and analyze that data with respect to high emitters. This effort will then be expanded to include high mileage Tier 2 vehicles, and employ PEMS to characterize real world emissions of these vehicles.

EPA is currently in the process of acquiring state I/M modal (second-by-second) data and remote sensing data for use in MOVES (Motor Vehicle Emissions Simulator) to characterize the impact of high emitters on the emission inventory. We are also updating information on the national fleet and its activity patterns to better characterize the nation's fleet. Data from all sources, including the California Air Resources Board, are being sought and used.

EPA also implements a strong compliance program to ensure that vehicles continue to meet emission standards as they age. In January 2006, EPA will have the first complete set of data from the manufacturer-run In-use Verification Program (IUVP). This will include both low mileage data (one year old, and 10,000 miles and higher) and high mileage data (four years old, and 50,000 miles and higher). EPA will analyze and evaluate this data for use in determining the impact of high emitters.

In 2006, EPA plans to conduct a study of high-emitting light-duty vehicles using PEMS. The purpose of this study is to better understand the emission patterns from high emitters under real world driving conditions. Such patterns are known to be highly variable and better characterization of this behavior will improve both inventory modeling and our ability to detect and repair such problems. High emitters will be identified in I/M lanes and equipped with PEMS for 1-3 days of owner operation.

At this time, EPA is discussing with the Coordinating Research Council a new test program to evaluate the effectiveness of enhanced evaporative systems. These systems are now as much as nine years old, and data are needed to understand evaporative emissions from these vehicles and the occurrence of high emitters. It is hoped that a cooperative program can be launched in 2006 to look at these questions.

Estimated Date for Responding to Recommendation: EPA implements or oversees programs to address high emitters on an ongoing basis through state I/M programs, emission factor testing, and compliance programs.

We will continue to improve our understanding of the contribution of high-emitting vehicles in the vehicle fleet through analysis of recently collected data from Kansas City and the high mileage program, through on-going programs to collect data such as our compliance programs, and through special studies like the upcoming Tier 2 high mileage OBD study and the I/M high emitter study. The results of these data collection and analysis efforts will culminate in populating the emission factors in MOVES2006.

In the longer term, EPA plans to continue collecting emission factor data, compliance data, I/M data, and remote sensing data, and using that data to continuously improve our inventories and assessment of the impact of high emitters on air quality.

Final Response Product: Characterization of the impact of high emitters on today's mobile source vehicle inventory. MOVES2006. Recommendations for program changes to further reduce emissions from high emitting vehicles.

Resource Needs to Address Recommendations: Existing resources are being used for work already underway.

2.13 Conformity:

Recommendation: Conformity should be retained as part of the nation's AQM system.

AQMWG Priority Level: Low. Priority is low because there is an effective program in place.

Workgroup Participants: Staffed by OTAQ. Coordinated with the Mobile Source Technical Review Subcommittee.
Lead: Lee Cook.

Approach: Transportation conformity requires that air pollution levels from motor vehicles in a Metropolitan area, including emissions from planned transportation projects, be consistent with levels necessary to assure timely attainment and maintenance of NAAQSs. The workgroup recommended that conformity's 20 year transportation planning horizon, and the requirement to revise transportation conformity analyses every three years, be maintained.

Estimated Date for Responding to Recommendation: SAFETEA-LU: On August 10, 2005 SAFETEA-LU was signed into law. SAFETEA-LU made the following changes to the existing conformity program:

- changing the minimum frequency for conformity determinations from 3 years to 4 years;

- allowing areas to shorten the time period covered by conformity determinations after consultation with the air agency and public comment
- providing 24 months instead of the current 18 months to determine conformity after new budgets become available;
- adding a 1-year grace period for conformity lapses;
- streamlining requirements for conformity SIPs; and
- providing a mechanism to allow all areas to change or add transportation control measures to approved SIPs without a full SIP revision.

EPA plans to issue interim guidance by the end of the year. We will then work as expeditiously as possible to incorporate these changes into the conformity regulations by SAFETEA-LU's deadline of August 2007.

Conformity Rulemakings: EPA is currently working on a rulemaking that will address "hot-spot" requirements for transportation projects in areas that do not meet the National Ambient Air Quality Standards for $PM_{2.5}$ and PM_{10}. Hot-spots are localized pollutant concentrations that exceed the federal emission standards.

On December 13, 2004, EPA issued a supplemental proposal that detailed additional options for addressing PM2.5 and PM10 hot-spot requirements (69 FR 72140). The supplemental proposal included the original options proposed by EPA in November 2003 (68 FR 62690), as well as new options. EPA is currently reviewing the comments received on the supplemental proposal and plans to finalize PM2.5 hotspot requirements for projects by March 2006.

Final Response Product: Retention of the transportation conformity program. Changes to the 20-year conformity horizon and 3-year minimum frequency requirement resulted from the legislation.

Resource Needs to Address Recommendations: Implementing changes to the program that result from SAFETEA-LU can be accomplished with existing resources.

3.1 Align SIP Submittal Dates:

Recommendation: Because ozone, PM2.5, and regional haze SIPs have similar elements and are likely to contain similar control strategies, EPA, S/L/T and other stakeholders should strive to align the submittal dates of the three SIPs. This recommendation is not intended to suggest changes to any deadlines for attainment or implementation of control strategies, or to imply that a single SIP should be required for ozone, PM2.5, and regional haze. It is further recommended that, in the future, EPA should align designation dates as appropriate to promote multipollutant SIP development

AQMWG Priority Level: High

Workgroup Participants:

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Approach: The workgroup first acknowledged that in order to officially align the SIP submittal dates the Clean Air Act would need to be changed. Current timing requirements including those caused by litigation, court ordered deadlines, etc make it difficult to align submittal dates. In addition, most states are already developing their ozone SIPS for 2007 which makes timing critical to affect the next round of SIPs. On-going activities to address this issue are to continue to encourage States to integrate ozone, PM2.5 and regional haze planning through language in Ozone and PM Implementation Rulemaking. Work with team, and stakeholders to determine what incentives might be available to encourage States to submit their PM SIPs early.

Estimated Date for Responding to Recommendation: PM rule proposed in September 2005; Ozone Phase 2 Rule final possibly by end of December 2005; PM incentives by Jan 30, 2005 if determined feasible.

Final Response Product: Language in on-going rulemaking encouraging integration of SIP work and submittals. Incentives for States to provide PM SIPs early if determined feasible.

3.2 Protocol For SIP Development:

Recommendation: Each State should work with the appropriate EPA Regional Office to develop and implement a protocol for SIP development and processing that would lay out responsibilities, expectations, and timelines for all parties. While a model protocol should be developed, the EPA Regional Office and each State should have the flexibility to design a protocol tailored to their specific needs.

AQMWG Priority Level: High

Workgroup Participants:

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Pat Troth, Indiana Department of Environmental Management, (317) 233-5681, PTROTH@idem.in.gov

Approach: Region 5 will work with Indiana to develop a protocol for SIP development and processing that could serve as an example protocol for use by other states. The most important part of this protocol is fostering the development of effective communication between EPA and the State to avoid late hits in the rule adoption process. Informing EPA at an early stage is important so that the State can be made aware of all relevant and up to date EPA guidance and any important precedents. This will allow needed changes to a draft rule or the requirement for additional technical support to be identified as early as possible in the SIP process. In addition to communication on specific SIP actions, there should be periodic, e.g. monthly, communication between EPA and the State that provides an overview of all pending SIP actions. This will enable the proper allocation of resources.

This protocol will detail the necessary communication between Indiana and EPA Region 5 from the time that a draft SIP revision is first envisioned until final rulemaking. Indiana will provide Region 5 with sufficient time to comment during its comment period and identify the appropriate State contacts. The time required for EPA's review as well as the EPA staff performing the review will be identified. All reasonable efforts will be made by EPA to identify significant issues in draft SIP revisions. EPA and Indiana will consider developing a spreadsheet that identifies each proposed SIP revision, the expected time (for both Indiana and EPA) for each step and the status of each step in the review. This is needed to flag any potential bottlenecks before they can cause a delay.

Indiana's SIP/Rules tracking and monthly calls should greatly facilitate development of this protocol. Also, the monthly calls are a convenient time to discuss any issues that come to light.

- By the end of July we will have discussed the project background and general approach.
- By the end of August we should have all the elements of the SIP Protocol worked out, including specific timing and tracking issues.
- By mid-November we should have a draft protocol prepared for review by OAR, ORC and OGC.
- By mid-December we should have a final SIP Protocol document prepared for signature by Commissioner Easterly and the Regional Administrator.

Estimated Date for Responding to Recommendation: December 2005

Final Response Product: A SIP Protocol developed with Indiana that will establish guidelines to improve communication between EPA and the State and result in expedited and high quality SIP revisions. This SIP Protocol will be intended to serve as an example for use by other states.

Resource Needs to Address Recommendation: Region 5, Headquarters and Indiana staff time.

3.4 Streamline Minor SIP Revisions:

Recommendation: For the SIP approval/disapproval phase of the air quality management process, EPA should establish a *de minimis* level for SIP revisions and streamline the processing of these revisions by the use of "letter approvals" or similar expedited procedures signed by the Regional Administrator. EPA should, in consultation with S/L/T and other stakeholders, develop a listing of the types of SIP actions that are eligible for streamlined processing.

AQMWG Priority Level: High

Workgroup Participants:

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Approach:
Currently the Agency's On-line SIP Processing Manual contains the following information regarding use of Letter Notices:

"**Letter Notice Actions**
Under the letter notice procedure, EPA sends a letter to the affected states and parties rather than a notice-and-comment rulemaking to approve truly insignificant SIP actions. No notice will be published in the Federal Register prior to sending final letter notice approvals to the state and affected parties. The letter to the state will be EPA's final action approving such minor SIP revisions. The Agency will periodically publish a summary list of all letter notice actions in the Federal Register to keep the general public informed of SIP matters. The effective date of the letter notice approvals will be the date of the letter to the state, not the date of the subsequent summary Federal Register notice. Letter notices approvals will, however, remain subject to the potential judicial review until sixty days after the date of the summary Federal Register notice.

Categories of SIP action appropriate for letter notice include: recodification involving no substantive changes; minor technical amendments; typographical corrections; address changes; and similar non-substantive matters. However, the decision to use Letter Notice actions as a rulemaking tool is up to each individual Regional Office."

Members of the Letter Notice work group participated in a conference call with OGC and the RC's on March 31, 2005. The consensus from that meeting was that the use of letter notice should not be expanded. That it should be only used for minimal actions that had already been defined (see below). We plan to upgrade the On-line SIP manual making some minor corrections in the letter notice section but no further actions beyond that are planned. Requested that EPA Regional Offices to survey their States as to need for expanding this approach. Response to the survey indicated that no new additions to the list of eligible SIP actions qualify for "letter notice approval".

The members of the National SIP Processing Work Group which consists of all the Regional SIP contacts will be advised of this action and a discussion of this conclusion discussed during one of their upcoming monthly conference calls.

Identified List of SIP Actions That Could Use Letter Notices :
Typographic corrections
Address changes
Minor wording changes
Recodifications (no substantive changes)
Renumbering previously approved regulations
Minor SIP Actions
Minor or merely technical amendment
Technical amendments
SIP actions little interest to general public (public will have no interest in commenting)
SIP actions that are not substantive or do not have general applicability

Estimated Date for Responding to Recommendation: Follow-up discussions with Regions and States have resulted in no new additions to list of eligible SIP actions which qualify for "letter notice approvals". Response to recommendation determined to be completed.

3.5 Timely EPA Guidance:

Recommendation: EPA guidance should be issued in sufficient time for States to meet their SIP development deadlines. EPA should involve S/L/T and other appropriate parties in its guidance development process. In cases where guidance is delayed, EPA should take into consideration States efforts to meet deadlines without the benefit of the appropriate policy guidance.

AQMWG Priority Level: High

Workgroup Participants:

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Approach: We are evaluating the process for guidance and implementation rules for ozone and PM2.5 to be approved. We are looking at the current process, time it takes for review by different offices in order to determine why the delays in issuing these rules have occurred and what can be done to expedite the process in the future.

Estimated Date for Responding to Recommendation: Evaluate ozone and PM implementation rules by December 2005. Develop list of recommendations for improving the process based on the evaluations by end of January 2006.

Final Response Product: An evaluation of the actual guidance development process and recommendations on how to improve the process.

3.6 Avoid Unnecessary Public Hearings:

Recommendation: EPA should work with States and Tribes to develop a model regulation that would require a public hearing for SIP revisions only if one is requested after public notice. This recommendation is not to restrict public comment in any way, it is meant only to eliminate those hearings that no one attends.

AQMWG Priority Level: High

Workgroup Participants:

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Approach: In response to the recommendation, Region 5, with assistance from other workgroup participants, will take the lead in developing an alternative public hearing process allowed for under 40 CFR 51.102(g) [i.e., a public hearing for State Implementation Plan (SIP) revisions only if one is requested after public notice]. Under 40 CFR 51.102(g) EPA has the authority to approve State procedures for public hearings as long as certain criteria are met. To meet the criteria described in 40 CFR 51.102(g), EPA and Minnesota would identify specific types of SIP revisions where, historically, public interest has been very low and allow these SIP revisions to proceed after opportunity for public hearing. Specifically, the State would publish a notification of the public comment period and note that a hearing would be held if requested. If no hearing is requested, the notice would be considered adequate for SIP purposes. Region 5 plans to pilot this project with the State of Minnesota. Region 5 will prepare a rulemaking in the Federal Register for this alternative process.

Based on the experience with the Minnesota pilot project, EPA will determine whether a national rule change should be pursued. A national rule change could alter the need for an automatic public hearing by amending 40 CFR 51.102 and could offer more global changes to EPA's requirements. It should be clear that the Minnesota pilot project will be conducted under existing provisions found in 40 CFR 51.102(g) that allow for limited alternatives to required public hearings.

A national rule change to 40 CFR 51.102 and what EPA is pursuing with Minnesota are two very different approaches towards addressing the same issue. If Region 5 is successful in addressing Minnesota's concerns over holding unnecessary public hearings by identifying various types of noncontroversial SIP revisions, agreeing that these SIP revisions should not be required to have automatic public hearings, and establishing a model process under 40 CFR 51.102(g) for other States to follow, then it may obviate the need for a national rule change to 40 CFR 51.102.

Estimated Date for Responding to Recommendation: December 2005

Final Response Product: A project piloted with the State of Minnesota to reduce the number of unnecessary public hearings held in that State.

Resource Needs to Address Recommendation: Region 5, Headquarters and Minnesota staff time.

October 2005 Update: Region 5 and the Minnesota Pollution Control Agency have had numerous phone calls and have examined various types of SIP revisions. We have identified a limited number of SIP revisions that we believe to be noncontroversial and have historically generated little or no public interest. Examples of these include: purely administrative changes (e.g. fixing typos), 10-year maintenance plan updates with no substantive changes, and unit/plant permanent shutdowns where SIP requirements are obsolete. We believe that these types of SIP revisions are ideal candidates for allowing the public the opportunity to request a public hearing rather than automatically having one. Under this scenario if anyone requested a public hearing, one would be held.

To establish this alternative process, we believe a SIP revision request will have to be made. This will not require a rule change at the State level but it will require the State to hold a public hearing on the adoption of this alternative process.

We are still on track to complete this process by December 2005. In order for this to occur, Region 5 will parallel process this request.

- Early October 2005 - MPCA will send final draft to EPA; EPA will begin parallel process.
- Mid to late October 2005 - MPCA will hold public comment period and public hearing for SIP revision; EPA will propose approval of alternative public hearing process
- December 2005 - MPCA will make final submittal to EPA; EPA will issue final approval of alternative process

3.7 Facilitate Redesignation Process for Certain Areas:

Recommendation: For those areas that have not pursued and been granted redesignation when initially eligible, and have continued to demonstrate violation-free ambient air quality for several years, EPA should expedite the redesignation process. EPA should ensure that all Regions and Sates are aware of the simplified procedures. This recommendation is not intended to change the requirements for redesignation under the CAA.

AQMWG Priority Level: Low

Workgroup Participants:

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Approach: The workgroup will work to compile existing guidance which would include but may not be limited to:

September 4, 1992 redesignation guidance memo;
May 10, 1995 Clean Data Policy (for ozone);
December 14, 2004 Clean Data Policy for PM2.5;
Limited Maintenance Plan options for PM10 (October 18, 1999), 1-hour ozone (November 16, 1994), and CO (October 6, 1995);
April 16, 1992 Proposed General Preamble;
October 28, 1992 memo regarding SIP actions in response to CAA deadlines;
September 17, 1993 memo regarding SIP requirements for ozone and CO redesignation requests on or after November 15, 1992; and
October 18, 2000 SO2 redesignation guidance memo.

Work with OAQPS to determine the appropriate website where existing and additional guidance documents with respect to redesignation issues would be housed, including any policies developed for the 8-hour ozone and PM2.5 NAAQS.

Region 4 will work with OGC and OAQPS to complete materials to be provided to Regional Offices to assist in their actions on redesignation requests.

Regional Offices will disseminate information to their states that includes a list of the available guidance documents and the website where they can be found as soon as the list is complete and the website location has been determined. Regions will provide assistance to states to help facilitate the redesignation process so that the action on a redesignation request can be completed in an expeditious manner..

Estimated Date for Responding to Recommendation: November 2005

Final Response Product: A website address that provides states and regions a complete list of all available guidance documents. Materials for Regional Offices to use in acting on redesignation requests.

Resource Needs to Address Recommendation: Existing resources at Regional Offices, OAQPS and OGC.

3.9 Co-Benefits of Innovative Measures:

Recommendation: EPA and S/L/T should work collectively to communicate the co-benefits associated with innovative measures.

AQMWG Priority Level: High

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Approach: In response to this recommendation, OAQPS, with assistance from other workgroup participants, will work with States, locals and tribes to define and communicate how proposed strategies and innovations to improve air quality would also improve quality of life in general. EPA plans to use two different pathways to identify and communicate (both directly and collectively the States, local and tribes) the non-air quality benefits, such as improving public health, increasing economic and other societal benefits, to be derived from innovative and voluntary approaches to meeting air quality goals. One is to use the upcoming 2005 Air Innovations Conference as a forum to have State, local and tribal participants highlight and discuss co-benefits, in addition to the air quality impacts of innovative approaches. The other is to acknowledge and recognize non-air quality benefits in the context of EPA policy and guidance documents and materials developed for States, locals and tribes to use in support of innovative and voluntary air quality measures. For example, EPA plans in its forthcoming guidance on bundled SIP measures (see recommendation #3.11) to include a discussion on the importance of providing the public with information on broader, non-air quality benefits, associated with innovative air quality solutions as well as providing some specific examples of co-benefits associated with certain innovative and voluntary measures.

Estimated Date for Responding to Recommendation: August 2005.

Final Response Product: The August 2005 Air Innovations Conference will highlight the benefits of new and innovative air quality projects going on around the United States and encourage dialogue among stakeholders. EPA policy and guidance on innovative and voluntary approaches will include a discussion of the associated co-benefits and the importance of informing the public of how such approaches improve their quality of life beyond reductions in air pollution. Final response product was completed on schedule.

3.10 Innovative and Voluntary Measures:

Recommendation: EPA should encourage States' and Tribes' efforts to implement innovative measures by providing enhanced flexibility, SIP/TIP credit guidance, technical support, and funding for innovative and voluntary programs.

AQMWG Priority Level: High

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Approach: In response to this recommendation EPA plans to:

1) Issue additional enabling policy and guidance on how States and Tribes may gain SIP/TIP credit for innovative measures, including guidance on:

   (A) SIP credit for voluntary mobile diesel retrofits (OTAQ lead),
   (B) SIP credits for voluntary stationary diesel retrofits (OAQPS lead),
   (C) SIP credit for voluntary woodstove retrofit programs (OAQPS lead), and
   (D) SIP credit for bundled measures (OAQPS lead).

   Each lead office, with input from the other Headquarters Offices and the EPA regions, will be responsible to develop and issue a final guidance document. During the guidance development process a draft of the guidance will be provided to the states and a select group of stakeholders for feedback.

2) Create an interactive Air Innovations web site which will act as a clearinghouse for information on new technologies, innovative approaches, mentoring resources, and "off-the-shelf" measures, pilot projects, and quantification techniques. OAQPS will have the lead in developing the web site and will coordinate its design and contents with the other Headquarter Offices, Regional Offices and the States.

3) Develop sector-based guidance that would synthesize and clarify innovative technological approaches to reducing pollution in the key sectors. The implementation of this item is covered under the AQM recommendations which target specific sources, for example recommendation 2.1-2.4 for stationary source categories and 2.5 and 2.6 for mobile source categories.

4) Continue to target funding to promote innovation. Specifically, as part of the 2005 Air Innovations Conference, OAQPS plans to make two $50,000 grants available to State and local agencies and tribes to support innovative and voluntary approaches to improving air quality. In addition OAQPS has reserved $295,000 in EPA contract funds to support innovative projects at Headquarters and the Regional Offices.

Estimated Date for Responding to Recommendation: August 2005 for the listed guidances, the Air Innovations web site and Air Innovations Conference; May/June 2005 for awarding of EPA's contract funds for innovative projects; and October 2005 for awarding of the two 50 K state and local grants.

Final Response Product: (1) Listed guidance documents issued, (2) Air Innovations web site online, (3) 2005 Air Innovations conference held, (4) two EPA $50,000 State and local grants awarded to innovative projects and, (5) $295,000 in FY 2005 EPA contract funds awarded to projects supporting innovation. Final response products (1), (2), (3) and (5) were complete. Two 50k State and local grants expected to be awarded during the first calendar quarter of 2006.

3.11 SIP Credits for Bundled Innovative Measures:

Recommendation: EPA should incentivize innovative pollution control strategies by offering SIP/TIP credit for "bundled" and discounted measures.

AQMWG Priority Level: High

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Approach: In response to this recommendation OAQPS, with assistance from other workgroup members, will develop and issue a guidance document on how States and tribes can get SIP/TIP credit upfront for a bundle of small, innovative measures and evaluate the measures in the aggregate by looking at air quality improvements after implementation. The guidance will point out that an appropriate discount factor should be applied to the credit, considering the amount of credit claimed and the level of uncertainty associated with quantifying the actual air quality benefits of the bundled measures. During the guidance development process a draft of the guidance will be provided to the States and a select group of stakeholders for comment.

Estimated Date for Responding to Recommendation: Final product is expected by August 2005

Final Response Product: Guidance document on SIP credit for bundled measures. Final response product was completed on schedule. Final guidance on SIP credit for bundled measures was issued on August 15, 2005.

3.12 Regional Approaches to SIP Planning:

Recommendation: For many areas, planning for new SIPs or major revisions to existing SIPs for two or more separate nonattainment areas that are both part of the same regional-scale air quality problem should be coordinated. If requested by a State, EPA should work with the different nonattainment areas, Tribes and combinations of multistate organizations and other stakeholders, as appropriate, to assist in the development of regional approaches to planning. This could include technical assistance such as modeling, national or regional control strategies, model SIPs, and model rules as templates for S/L/T adoption.

AQMWG Priority Level: High

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Approach: The group has had several conference calls, most recently on October 25. Discussion topics have included the development and use of model rules and templates by Regional Planning Organizations (RPOs) and Multijurisdictional Organizations (MJOs); the experience of the WRAP (Western Regional Air Partnership) which used model rules for the states which elected to submit early regional haze SIPs under section 309; the development of regional technical tools and technical support documents; the OAQPS/EPA grant process; and possible work by the RPOs beyond regional haze. Tighter budgets also frame this subject so the extent to which RPOs or other regional efforts can make better use of resources has been discussed.

The group's next step is to begin drafting discussion of these issues and possible recommendations. This document will be refined in upcoming calls.

Estimated Date for Responding to Recommendation: December 2005

Final Response Product: Short document and briefing(s).

3.14 Weight-of-Evidence Demonstrations:

Recommendation: In order to move beyond the current approach of relying on air quality modeling, EPA, in conjunction with S/L/T and affected stakeholders, should modify its guidance to promote weight-of-evidence (WOE) demonstrations for both planning and implementation efforts. In particular, these demonstrations should reduce reliance on modeling data as the centerpiece for SIP planning, and should increase use of monitoring data (and analyses of monitoring data) especially for tracking progress.

AQMWG Priority Level: High

Workgroup Participants:

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Doug Grano Ozone Policies and Strategies Group (919) 541-3292

Approach: In an initial effort to incorporate a WOE approach in planning efforts to provide the most technically defensible basis for a control plan and to satisfy any statutory requirement for a demonstration of attainment - EPA (Air Quality Modeling Group) has released a draft final guidance for 8-hour O3 SIP demonstrations and will release final version in April 2005 with the O3 implementation rule. This guidance includes modeling and other technical analyses for state demonstrations. AQMG will also release a draft final guidance for PM2.5 SIP demonstrations this Spring / Summer with the upcoming PM2.5 implementation rule.

The Air Quality Modeling Group also plans to develop an integrated guidance document that will merge O3 and PM2.5/Regional Haze documents and coordinate the development of a process and mechanism to make air quality modeling available to States for use as part of their WOE demonstration. This will require coordination across EMAD especially with AQDAG concerning ambient data analysis for the air quality characterization part of demonstrations to strengthen States abilities to understand air quality and the nature of their problem, and coordination with EIG to incorporate the appropriate emissions inventory guidance and possibly expand sections on emissions modeling.

EMAD will also assess the current SIP-related guidance we provide across technical areas of emissions, modeling, monitoring, and ambient data analysis to better understand how to integrate where appropriate to focus areas on identification and solutions to their air quality problems (respecting interactions across pollutants, if appropriate) and where to also account for uncertainty analyses.

Estimated Date for Responding to Recommendation: 2005 - 2006

Final Product:
Final guidance for 8-hour Ozone SIPs –October 2005
Draft guidance for PM 2.5 / Regional Haze SIP demonstrations – End of year 2005
Final guidance for PM2.5/Regional Haze SIP demonstrations – Spring 2006 (integrated document with Ozone also)

3,15 Periodic Assessments to Track Progress:

Recommendation: S/L/T and EPA should conduct periodic assessments to ensure that areas are on track to meet NAAQS, HAP, and visibility goals, and make mid-course adjustments, as necessary.

AQMWG Priority Level: High

Workgroup Participants:

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Approach:
In an effort to lay a foundation for a performance oriented approach, and help build a stronger framework for accountability, EPA is currently assessing the effects of regional NOx reductions (particularly the NOx SIP call) on ambient ozone levels. This effort will provide important insights into periodic assessment of program progress. Expansion and enhancement of the NOx assessment requires planning / discussion, as well as coordination and collaboration within OAQPS.

Estimated Date for Responding to Recommendation: **FY 06**

Final Response Product:
NOx Assessment – COMPLETED
Multi-pollutant accountability report – FY06/FY07
Shared products from Recommendation 1.5

3.16 Evaluation of Averaging, Banking, and Trading in Gasoline Sulfur Program:.

Recommendation: EPA should evaluate the averaging, banking, and trading (ABT) provisions included in the Tier II gasoline sulfur regulation to see if they are effective.

AQMWG Priority Level: Low.

Workgroup Participants:

Staffed by OTAQ. Coordinated with the Mobile Source Technical Review Subcommittee.
Lead: John Holley.

Approach: NAS recommended that the effectiveness of ABT provisions for fuel programs be evaluated. ABT provisions have not been used in fuel programs since the lead phase-down. The evaluation will be phased to include annual analysis of available information and a complete report when the program has been fully implemented and patterns of credit usage are well-established.

Estimated Date for Responding to Recommendation: Some aspects of the evaluation can be addressed in annual analyses beginning in late 2005. The more complete report on this effort cannot be developed until late 2007 at the earliest, the first time data on a fully-implemented program will be available.

EPA has issued a work assignment to a contractor to examine the information that will become available through reporting data and develop a detailed plan for carrying out this evaluation using these data and other information that will have to be developed. We are expecting the contractor to issue a detailed work plan for this effort soon. As the program matures and patterns of credit generation, trading, and usage become established, it is possible that the contractor will be asked to carry out some of the information gathering from sources other than quantitative reporting data in order to implement the plan. In addition to the contracted effort specific to this evaluation, some effort by program database administration contractors will be required to carry out quantitative analyses.

Final Response Product: Report evaluating ABT in the gasoline sulfur program.

Resource Needs to Address Recommendations: The evaluation will require less than one FTE for each report. Some contractor time will be required to program certain analyses.

4.1 SIPs to Address Multipollutant Impacts:

Recommendation: For the SIPs States are required to submit over the next several years, EPA and S/L/Ts should promote the consideration of multipollutant impacts, including the impacts of air toxics, and where there is discretion, select regulatory approaches that maximize benefits from controlling key air toxics, as well as ozone, $PM_{2.5}$, and regional haze.

AQMWG Priority Level: High

Work Group Participants:

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Approach: The work group evaluated the recommendation and decided, based on the timing of current SIP development, with most States currently developing their revised ozone SIPs, to pursue the following actions in the order shown below:
1) Develop a 3-page summary of information which could be provided to States that includes:
a) a working definition of "multipollutant control strategy"; b) an initial list of key air toxic pollutants to consider in developing a multipollutant control strategy; and, c) a summary description of an approach that an area could use to develop its own list of toxic air pollutants of concern to consider in control strategy development.
2) Send a memo to ADDs, with 3-page summary as attachment, with the following purposes:

a) request that the ADDs contact the States in their Region and encourage them to start moving toward a multipollutant approach in developing control strategies for their state implementation plans (SIPs); b) inform ADDs about current efforts to support the development of multipollutant control strategies; and, c) ask ADDs for their thoughts, and those of their States, about the tools/guidance that are needed to support development of multipollutant control strategies.
3) Perform a pilot study in Detroit, in coordination with Region 5 and Michigan DEP, to evaluate multipollutant control strategy development within the ozone and $PM_{2.5}$ SIPs.
4) Develop guidance on multipollutant control strategy development.

Estimated Date for Responding to Recommendation: Memo and 3-page attachment have been developed and were sent to Regional ADDs August 10, 2005. Detroit pilot study, as well as guidance development, will take place through Fall 2006.

Final Response Product: Draft guidance for developing multipollutant control strategies. Guidance will be informed by findings from Detroit pilot study. Tools and resources needed for multipollutant control strategy development will be described and cited.

4.2 Multipollutant Benefits and Disbenefits in Standards Setting:

Recommendation: EPA should explicitly outline and quantify multipollutant benefits and disbenefits when setting emissions standards.

AQMWG Priority Level: High

Workgroup Participants:

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Others, to be determined.

Approach: The response to this recommendation will be an ongoing effort to systematically include multipollutant analyses in standards setting processes throughout OAQPS. Besides the obvious benefit of informing our decision-making processes relative to control strategy recommendations, this explicit consideration will also enable us to develop more robust emission projections and will therefore inform planning decisions for future program efforts. In past rulemakings, we have provided some limited assessment of multipollutant benefits and disbenefits. However, these assessments have not been comprehensive and have often occurred on an ad-hoc basis. In response to this recommendation, we propose to develop a protocol for conducting multipollutant analyses in our standard setting process. This protocol should provide us with a framework for making consistent decisions and for recording the results of our analyses for consideration in future efforts.

Final Response Product: Multipollutant Analysis Protocol. Draft for internal EPA review by end of October 2005. Completion of protocol by December 2005 and updated as needed.

5.1 Program Review to Evaluate and Improve Ecosystem Protection:

Recommendation: EPA should, in parallel with recommended scientific and technical work, begin now to examine current and alternative clean air related policies and programs to develop approaches that would advance the protection of ecosystems from the adverse effects of air pollution. Alternatives that should be evaluated include a regional cap-and-trade program, protection of ecosystems based on critical loads, and a State-wide planning program for protecting and enhancing air quality in areas that attain the NAAQS (including National Parks and Wilderness Areas).

AQMWG Priority Level: High

Workgroup Participants:

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Approach: In response to this recommendation, the workgroup will work with staff from other agencies (e.g., USGS, US Forest Service, National Park Service), members of the non-federal scientific research community, and other interested stakeholders to: A) assess current Clean Air Act authorities to determine their effectiveness and feasibility in protecting ecosystems from the adverse effects of air pollution; B) review the state of the science and facilitate development of ecosystem analysis tools for conducting integrated assessments and policy comparisons; and C) evaluate innovative uses of current authorities, as well as potential alternative programs, for their ability to enhance ecosystem protection.

A. Assess Current Programs and Policies for Ecosystem Protection

As an initial step, the working group will undertake a comprehensive review of ecosystem protection successes and limitations under current Clean Air Act authorities. This review will provide material for considering innovative uses of current

policies/programs and potential alternative approaches to advance ecosystem protection under existing authorities. Policy evaluation will involve understanding the geographic scope of the sources and receptors of key environmental concerns, examination of the reliance on monitoring and modeling associated with various Clean Act Authorities, program integration implications, and other related matters. Specifically, the review of current programs will examine aspects such as statutory authority and mandates; program goals, objectives, and details; pollutants controlled, control mechanisms, and spatial/temporal scale; program monitoring and assessment (interface with Goal 1.5 workgroup); and program needs to enhance ecosystem protection. The review will be shared with other Federal Agency staff and stakeholders as material to simulate evaluation of policies and programs to enhance ecosystem protection (see Section C below).

Current Projects and Products

- Comprehensive review of ecosystem protection successes and limitations under current authorities – joint workgroup project
    - Draft report – March 2006

B. Ecosystem Assessment Tools - review and development for policy evaluation

A state-of-the-science review of ecological assessment tools will support efforts to evaluate current and alternative policies and programs from an ecosystem protection perspective. Over the past five years, EPA has worked to enhance its ecosystem assessment tools through cooperative relationships with academic research groups. These relationships have supported development of new dynamic ecological process models (e.g., Pnet-BGC, DayCent-Chem) that may better assess both aquatic and terrestrial ecosystem response to sulfur and nitrogen emissions/deposition. In evaluating critical loads for ecosystem protection, for example, ecological process models (e.g., the Steady State Mass Balance Model, Very Simple Dynamic Model) have been used in the northeastern U.S., Canada, and Europe to understand ecosystem impacts of pollutant emissions and deposition. It is important to compare and evaluate a suite of ecological process models as tools to assess critical loads as a viable ecosystem protection approach in the U.S., as well as examining other policy/program approaches at broad regional scales.

Other models, such as TRIM.FaTE and TRIM.Risk, are being developed under the auspices of the Residual Risk program to assess the fate and transport of emissions and the ensuing risk to ecosystems. In addition, atmospheric transport and deposition models (e.g., CMAQ) and a toxics monitoring strategy are also currently underway, which will eventually supply valuable data and estimates to feed ecosystem models.

Current activities will provide the tools to assess environmental policies and programs in a comprehensive manner:

Current Projects and Products

- EPA-USGS Interagency Agreement – currently supports a project entitled "Ecological and Biogeochemical Responses to Changing Atmospheric Nitrogen and Sulfur Deposition in Diverse US Ecosystems: a cross-site modeling proposal." This effort involves collaboration among scientists at several sites to project ecosystem and biogeochemical response to changing atmospheric deposition of S and N compounds using the DayCent-Chem model and other models. DayCent-Chem has been developed for assessing western ecosystem response to air pollution. This effort supports further development of DayCent-Chem as an assessment tool, including its use in developing critical loads and its application to other regions of the country.
    - Science workshop – January 2006
    - Deposition scenario model runs – June 2006
    - Manuscripts to scientific journals – December 2006

- EPA-US Forest Service Interagency Agreement – currently supports a model comparison project that applies major steady-state and dynamic models to Adirondack Mountain watersheds and compares models as tools for assessing ecosystem response to emissions/deposition changes and developing critical loads.
    - Model comparison workshop – 2006 (date to be determined)
- Multi-media Risk Assessment – The TRIM.FaTE module predicts pollutant concentrations in multiple environmental media and in biota and pollutant intakes for biota, all of which provide both temporal and spatial exposure estimates for ecological receptors (i.e., plants and animals). TRIM.Risk, the risk characterization module, is used to integrate the information on exposure received from TRIM.FaTE for ecological receptors with that on dose-response or hazard assessment and to provide quantitative descriptions of risk or hazard and some of the attendant uncertainties.
    - Ecological Risk/Multimedia Workshop – Fall 2005/Winter 2006

C. Assess innovations and alternative policy approaches

EPA has much experience in evaluating current policies and programs in relation to ecosystem protection concerns, such as its yearly publication of the Acid Rain Progress Report. EPA also has experience with prospective policy/program analysis, including assessments of various legislative proposals since the mid 1990s, numerous analyses of regulatory proposals, and Reports to Congress.

Past policy/program evaluation experience provides a solid foundation for the analyzing innovative and alternative policies and programs. In previous analyses, policy proposals were evaluated using an integrated combination of tools ― the Integrated Planning Model provided an emissions inventory, air quality models (REMSAD/CMAQ) provided regional to national deposition levels, and ecological models (e.g., MAGIC) determined the projected ecosystem response. As described above, current activities will provide additional ecological assessment tools for use in future integrated assessments of

ecological response to changes in sulfur and nitrogen emissions and deposition. In addition, working group members utilizing the ecological risk and multimedia models (see multi-media workshop description above) will explore ways to assess ecosystem effects from air toxics, especially those that are persistent and bioaccumulative.

The working group, in collaboration with other stakeholders, will be responsible for developing and selecting policy/program approaches to be examined qualitatively and quantitatively, including integrated assessment. In cooperation with the Goal 1.5 working group, the policy/program approaches also may be examined in terms of available indicators and monitoring/measurement tools.

To examine whether and how to develop and apply critical loads, in particular, EPA should recognize and build on current efforts in evaluating critical loads (focusing on sulfur and nitrogen deposition, and ozone levels) as a tool for designing and evaluating ecosystem protection policies. The federal land management agencies (e.g., US Forest Service, National Park Service) have current efforts underway focused on defining critical deposition loads for Class I areas, particularly in western states. Similarly, a research group convened under the auspices of the New England Governors-Eastern Canadian Premiers has undertaken a critical deposition loads analysis for northeastern North America. EPA can support and augment these efforts:

<u>Current Projects and Products</u>

- Collaborate with the federal land managers in their critical loads efforts. Both of the interagency agreements described above include significant collaboration (and co-funding) with federal land managers from the U.S. Forest Service and National Park Service. In particular, federal land managers and other stakeholders will be involved in workshops evaluating the state of the science regarding ecological process models (dynamic and steady state models) as tools for developing critical loads at local to regional scales. Subsequent efforts (including workshops) will apply models to areas of the US where data exist to drive both dynamic and steady state models.
    - Workshops planned under auspices of EPA interagency agreements with USGS and U.S. Forest Service (see Section B above)

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- Inter-agency technical workshop, including academic research community and stakeholders, to examine technical and scientific issues involved in using critical loads in the context of policy/program assessment and development.
    - Workshop – Spring 2006

- EPA-US Forest Service Interagency Agreement – to further explore and understand one approach, EPA currently supports development of a critical loads map for Maine using both steady-state and dynamic models in support of the New England Governors-Eastern Canadian Premiers critical loads mapping project
    - Draft critical loads map for Maine – January 2006

Estimated Date for Responding to Recommendation: 2006-2008

Final Response Products:

- Review of Clean Air Act authorities with ecosystem protection component. **(2006)**
- Refined ecological process models to support ecosystem assessment in all policy considerations ─ descriptions of the models and their applications will appear in peer-reviewed journal articles. **(2007-2008)**
- Critical loads mapping and analysis
  - Complete set of critical loads maps (based on S, N deposition) for the northeastern US (using steady state models) to facility evaluation of their utility in the US. **(June 2006)**
  - Critical load estimates for select test sites in regions throughout US using dynamic models, including sensitive areas in western and northeastern US. **(Winter 2007)**
- Inter-agency critical loads technical workshop. **(Spring 2006)**
- Evaluations of dynamic models for use in developing regional critical loads and characterizing broad regional impacts**.(Winter 2007)**
- Integrated assessment reports for alternative approaches identified by working group and stakeholders. **(Fall 2008)**

Resource Needs to Address Recommendation: Substantial resources have already been committed to support air-ecosystem policy assessments and work is proceeding in many areas. Additional resources are needed to complete any new comparative analyses and syntheses of analytical policy results. In addition several focused workshops will be held to provide opportunities for other federal agencies, tribes, states, industry, environmental groups, and academics to participate.