

Clean Air and Transportation: Vital Concerns for TEA-21 Reauthorization

**Testimony of Michael Replogle
Transportation Director, Environmental Defense**

**Before the Senate Committee on Environment and Public Works
Subcommittee on Clean Air, Climate Change, and Nuclear Safety
March 13, 2003**

Mr. Chairman, my name is Michael Replogle, and I serve as Transportation Director of Environmental Defense. Environmental Defense is a leading, national, NY-based nonprofit organization, representing 300,000 members, that links science, economics, and law to create innovative, economically viable solutions to today's environmental problems. I serve as Chair of the Energy and Environment Issue Team of the Surface Transportation Policy Project, and today also speak on behalf of the Sierra Club, Natural Resources Defense Council, Defenders of Wildlife, Center for Community Change, America Walks, the Southern Organizing Committee for Economic and Social Justice, Metropolitan Atlanta Transportation Equity Coalition, the Tri-State Transportation Campaign (based in New York), and the Chesapeake Bay Foundation.

I am pleased to have this opportunity to discuss transportation and air quality, especially focusing on transportation conformity and the Congestion Mitigation and Air Quality (CMAQ) Program and to offer our views as the subcommittee begins work in reauthorizing TEA-21. I want to incorporate by reference the extensive testimony I provided on transportation and air quality issues to the full Senate EPW hearing on July 30, 2002. I stand by that testimony.

Transportation Conformity: A Key Element in Timely Attainment of Healthy Air

Conformity is a principal way to keep the transportation system accountable to public health, air quality and the environment. In the 12 years, since TEA-21 was enacted, the science linking emissions from the transportation sector to public health has confirmed, time and again, the powerful link between health and the environment. Conformity is way to balance the checkbook, to keep track of air quality impacts and spur greater efficiency in the transportation system. Without conformity, money will be spent on transportation without this basic accountability.

Clean Air Act (CAA) transportation conformity requires transportation plans that are designed to achieve motor vehicle emission within the pollution limits established in state air pollution implementation plans (SIPs). Conformity was strengthened in the 1990 CAA Amendments to require quantitative emission limits so transportation plans could be held accountable for their performance, and to assure that transportation and air quality planners would coordinate their activities. Conformity was strengthened because, since adoption of the 1970 CAA, growth in the number of vehicle miles traveled and related transportation emissions had been routinely underestimated, leading to repeated failure of many metropolitan areas to attain healthful air quality by established deadlines. Despite the adoption of far cleaner vehicle and fuel technologies, air pollution from motor vehicles – then and now - continues to harm the health of millions of our citizens.

Today, it is clear that, despite setbacks that have delayed and hampered its implementation, transportation conformity has been successful in many ways.

- It has spurred broad support for **timely implementation of cleaner vehicle technologies, fuels, and vehicle maintenance initiatives.**
- It has spurred adoption of strategies to **reduce traffic and related pollution growth by expanding transportation choices and better managing transportation systems.**
- Conformity has made it routine business for transportation planners to consider the air quality implications of alternative policies and investments and fostered much **better interagency coordination.**

Conformity: Like Balancing Your Checkbook. Transportation conformity has been most effective behind the scenes, providing timely information to decision-makers to motivate action to reduce pollution and protect public health. Most conformity success stories have gone unreported and little noticed, while the complaints from some transportation officials about the nuisance of transportation conformity are often recounted.

Conformity is a lot like balancing your checkbook – it’s not a fun way to spend your time, but its vital to the health of your household or business in the long run that it be done. Doing it routinely, frequently, and with the most accurate, up-to-date information available helps avoid surprises, bounced checks, and overdrafts that can result from untimely failure to record an ATM banking transaction, catch checkbook register arithmetic errors, or mis-recording of data, thereby protecting one’s financial health and reputation. So too metropolitan areas doing frequent conformity analysis can catch early errors in forecasting motor vehicle emissions that result from changes in assumptions - such as the share of SUVs and light trucks vs. passenger cars, job and housing patterns, transit fares, parking rates, or improved travel behavior data - or from mistakes in transportation and emissions modeling and analysis. Timely updates to modeling assumptions improve accountability and protect the integrity of transportation and air quality planning.

However, some highway officials argue that there is a “timing mismatch” between the transportation and air quality planning process. They advocate “fixing” this by reducing the frequency of conformity analyses, limiting the future time horizon for air quality analysis, and by allowing use of out-of-date assumptions and data for conformity analysis. Such proposals would greatly weaken transportation conformity and make it likely that regional air quality control strategies will fail for the third time since enactment of the Clean Air Act in 1970. These proposals would put off for another generation the day when all Americans might breathe healthful air. Congress should reject these proposals that threaten public health and the environment.

To explain why, I’d like to recount several conformity success stories, including a recent one here in the Washington, DC-northern Virginia-suburban Maryland area. Successes like these would be imperiled by ill-advised proposals from some highway officials.

Frequent Conformity Checks Deliver Timely Correction of Emission Reduction Shortfalls.

In July 2001, Washington-area officials sought to update the region's transportation plan more than a year before its conformity finding was due to expire, so they could include several new regionally-significant highway projects. The area's Metropolitan Planning Organization (MPO), in a routine update of modeling assumptions, found mobile source emissions exceeding the SIP emission limits by about 8 tons per day of Nitrogen Oxides (NOx) when the growing use of sport utility vehicles (SUVs) and light trucks was accounted for, as these vehicles produce significantly more pollution per mile driven than standard cars. This finding was an early warning that additional emission reduction strategies needed to be adopted before new road projects could be added to the transportation plan. Officials formed a task force to consider reopening the SIP to allow for more motor vehicle pollution by finding offsets from other emission sources or fixing the conformity problem by adopting added emission reduction measures. Over the course of a year, area officials deliberated, and eventually settled on three major types of actions which each contributed significantly to address the conformity problem within the transportation planning process:

- The MPO refined their models to **better account for emissions and for emission reducing measures** already being implemented by the District of Columbia and other jurisdictions, but not previously credited by planners.
- The state of Maryland advanced a \$42 million package of **new transportation emission reduction strategies**, including buying clean buses, improving pedestrian and bicycle access to transit, and supporting transit oriented development and telework.
- The state of Virginia **cut back its proposed short-term road program** for 2005 by 100 lane miles of new road capacity (representing about 0.5% of 2005 modeled road capacity), which the MPO estimated would result in a 1% reduction in regional mobile source NOx, a 0.1% decrease in VOC, a 0.6% reduction in daily VMT, and a 1.3% increase in daily transit trips.¹ And Virginia taxpayers saved \$800 million.

If proposals being pushed by some transportation officials and road lobby groups to reduce the frequency of required conformity analysis of regional transportation plans to every 5 years or to allow the use of obsolete data assumptions for conformity analysis had been in effect, this \$42 million package of emission reduction measures would almost certainly not have been funded. Awareness of the emission benefits of reduced road expansion - driven by fiscal problems more than by the pressures of transportation conformity - would have gone unnoticed. The MPO would have devoted less time and resources to considering strategies to reduce emissions and traffic growth.

If the region had been allowed to use old data for conformity analysis of Transportation Improvement Programs (TIPs) and regional transportation plans, the region's officials would have been able to add major new highway projects to the plan at a time when it was clear that

¹ Kirby, Ronald. F., "Emissions Estimates Associated with the 2002 CLRP And FY2003-08 TIP, and Potential Transportation Emissions Reductions Measures (TERMs), memorandum of June 28, 2002 to Transportation Planning Board, Washington, DC, Attachment 1, "New 2005 Emissions Calculations Reflecting Changes In the Six-Year Plan and Certain Posted Speed Limits in Virginia".

motor vehicle emissions would far exceed the pollution budget established in the SIP, almost guaranteeing that the region would not be able to attain the 1-hour ozone standard by 2005, after it had already missed the 1999 deadline for meeting that standard that was set in the 1990 Clean Air Act.

Our families here in the Washington region would face worse health problems from breathing the air. The “fixes” proposed by some highway officials ostensibly to “align planning horizons and frequency of updates for transportation plans and SIPs” would actually have the effect of reducing the timely alignment of transportation and air quality plans, leading to much dirtier air, more sick kids, more premature deaths from respiratory problems, and more damage to the health of the Chesapeake Bay and other ecosystems caused by excess air pollution from motor vehicles.

Twenty-Year Conformity Planning Horizon: Vital to Considering Long-Term Effects of Transportation Investments. I’d like to recount another relatively unheralded conformity success story that would have been put in peril by the “fixes” proposed by AASHTO and the road lobby. In the mid-1990s, it became clear that Charlotte, North Carolina’s 20-year transportation plan would not stay within the pollution limits set in the region’s air quality plan. This helped prompt local officials to consider and adopt a new 2025 Transit Land/Use plan for Charlotte-Mecklenburg with bus rapid transit and light rail to support the five major transportation and development corridors. Funding for the plan is coming from a combination of local, state, and federal funding, including a half cent local sales tax approved in 1998 by Mecklenburg County voters to expand bus and rapid transit improvements. The requirement that the regional transportation conform 20 years into the future was a vital element in motivating this regional progress and action to curb pollution while expanding transportation choices.

Indeed, the proposal by the road lobby to weaken conformity by having it apply only to the first 10 years of the RTP or to the last horizon year in the SIP threaten to cause a renewed widespread failure of SIP control strategies. Such a proposal would allow major projects, such as new outer beltways, to advance far into planning, development, and construction before accounting more fully for their profound long-term impacts on regional growth and traffic patterns, and related air pollution. The unsophisticated regional traffic models currently in use by most MPOs are already too insensitive to induced traffic and land use effects. This proposal would exacerbate this problem. Some state DOTs complain that they must make up for pollution growth from traffic in the out years of their 20-year transportation plans, without help from SIP control strategies after the attainment year. While SIPs are not required to adopt control strategies beyond the attainment year until the attainment year is reached and requirements for a 10 year maintenance plan are triggered, at least a half dozen states have adopted SIP control strategies that extend beyond or begin after the attainment year, to help transportation agencies deal with this problem.

But this problem would not materialize if metropolitan areas adopted development policies that combine transit oriented development with the implementation of comprehensive regional transit programs. To eliminate the obligation of the transportation agencies to account for the long-range impacts of the choices they make will force other emissions sources to bear the entire cost of future emission reductions.

Adoption of Emission Controls For Years After Attainment Deadline: Ready Solution to Emissions Growth Issues. For example, Denver was faced with a terrible particulate matter (PM) problem in the 1980s. Agencies began taking action against wood burning. There was progress made during this period, but PM was still measuring $185 \mu\text{g}/\text{m}^3$ compared to the NAAQS of $150 \mu\text{g}/\text{m}^3$. Conformity made transportation planning and air quality agencies look at other sources of PM. They started looking at street maintenance practices and implemented street sanding and sweeping strategies in the mid 1990s as a short-term emission reduction measure. Strategies have been implemented beyond the initial strategies adopted as part of the Colorado SIP. Within 2 years PM level dropped to $80 \mu\text{g}/\text{m}^3$. Conformity spurred Denver to also build into regional plans enough maintenance plan measures to meet long-term health standards through 2015. Conformity provided additional incentive for developing light rail in Denver since it would provide long-term help to mitigate the PM problem. Conformity also led to the development of Metro Vision 2020 which includes a commitment by metro area governments to limit growth to a 730-square mile area and has committed the region to transportation alternatives to support this goal. Denver also has a number of travel demand management (TDM) strategies in their long range plan such as a RideArrangers program and a telework program. They do not take credit for TDM system management in the 2025 conformity finding, but they recognized the potential for reduction and retain them as a safety margin in meeting the emissions budget.

Transportation Control Measures (TCMs) are recognized in the Clean Air Act as a key part of attaining and maintaining healthful air quality. Some regions have used them extensively to help assure progress on clean air, including them in their plans even well beyond the attainment year of the SIP. For example, TCMs represent nearly 5 percent of total emission reductions in the San Joaquin region of California. The MPO projects that TCMs will deliver as much as 10 percent reduction in emissions by 2020. In San Joaquin County rideshare, vanpool, and commuter rail provide significant emissions reductions, with a large percentage of San Joaquin County residents facing long distance commutes into the San Francisco Bay Area.

Conformity: A Key to Coordination Between Transportation and Air Quality Agencies. Since the 1990 Clean Air Act Amendments, conformity has been a significant factor fostering local, regional, and national political support for cleaner fuels and vehicles and inspection and maintenance programs that have helped produce more timely progress towards attainment of healthful air quality. In that period, conformity has been the single greatest factor promoting interagency cooperation between transportation and air quality agencies at the state, local, and federal levels. Prior to 1990, transportation agencies paid no attention to the air quality consequences of transportation investments and plans. But in recent years, many metropolitan areas have adopted changes to their transportation plans and programs to help reduce traffic growth and emissions. Consideration of air quality impacts of investments has become a routine matter in many metropolitan areas where pollution problems are more severe. In most regions with serious air quality problems, officials and staff of air agencies and transportation agencies routinely meet and work together to help foster effective program administration that delivers progress on both mobility and air quality goals.

For example, Atlanta's conformity problems led the Governor to create a new regional authority responsible for better planning and funding transportation, air quality, and growth management

in Georgia's non-attainment areas in an effort to fix a broken interagency cooperation process. The political impetus to accomplish this was obtained only once the transportation plan conformity finding expired. Had the road builder's proposal for a once in five year conformity review been in force, informed observers can have little doubt this governance reform would have faced insurmountable obstacles.

And while road builders have often raised the spectre of transportation conformity causing major disruptions to transportation programs, there have been no such disruptions. Even in Atlanta, where the longest conformity lapse of consequence to date took place, the region lost no transportation funding but instead redirected several hundred million dollars of funds from sprawl-inducing, pollution-generating roads into projects that reduced pollution and into safety and system improvements that would not increase emissions.

Proposals to reduce the frequency and time horizon for conformity analysis and to allow use of obsolete assumptions for conformity will not make the system work better. Instead, by reducing incentives for agency coordination they will make the system less efficient. Conformity works well when transportation and air quality experts work closely together on a routine basis, to plan and implement highway and transit investments and air pollution reduction strategies. Conformity, and the current schedule of deadlines, gives these agencies a powerful incentive to work together. The deadlines are also spaced just far enough apart to allow problems to be identified early – before they become crises that threaten air quality targets.

If the minimum frequency of conformity determinations for transportation plans is set at five years, and if the life of a short-term transportation funding program conformity finding is extended beyond the current two years, as some propose, this will likely be too far apart to detect and correct significant increases in emissions, especially in fast-growing metropolitan areas where vehicle miles traveled or the use of SUVs and light trucks grows, or to account in a timely way for important new data on housing, employment, and travel patterns produced periodically by the U.S. Census and other sources.

Conformity Time Frames Must Be Keyed to Attainment Schedules. The ultimate purpose of conformity is to ensure that motor vehicle emissions are reduced to the levels required by the States in the SIPs to attain the national health standards. For the Clean Air Act to work, all emissions in an area must be reduced to the allowable levels established in the SIP by the deadline for attainment, and kept within those levels thereafter.

Updates of motor vehicle emissions must be coordinated with the Act's attainment deadline. In areas where the deadline has been extended, emissions updates must also be coordinated with the milestones set for making interim progress toward attainment. If the motor vehicle emissions analyses required for conformity are not coordinated with important CAA deadlines, then there is no possibility for taking corrective action to reduce motor vehicle emissions to meet the emission-reduction targets that must be met to attain the national standards.

The key points when emissions targets must be met are the attainment date, and the 3-year interim milestones that are required to ensure progress toward attainment. All the intervals between these dates are three years, or less.

For example, the Act's default schedule for nonattainment areas allows less than three years between the time the limit on motor vehicle emissions, i.e., the "motor vehicle emissions budget," established in the SIP by the State, and the date when the area is required to attain the NAAQS. Unless EPA grants an extension, States are required to submit a SIP for each nonattainment area within three years after designation as nonattainment, and the SIP is required to provide for attainment within 5 years after designation. See CAA section 172(b). That means an area is only allowed two years from the time the motor vehicle emissions budget is established in the SIP until the attainment date when motor vehicle emissions must meet the budget.

If the conformity analysis is not required for 5 years, the conformity process would be disconnected from moving an area toward attainment of the NAAQS because the transportation agencies would not have to analyze emissions, or take corrective action to revise their transportation plans and TIPs, during the period when emissions must be reduced. This entire process would become irrelevant. Then the transportation agencies would come back five years from now and ask for repeal because conformity had become a paper exercise that no longer served any air quality purpose. To ensure that conformity continues to play a very important role in attaining the NAAQS, the schedule for conformity reviews must remain closely coordinated with statutory time frames for achieving emissions reductions.

Another set of important emissions reduction targets mandated by the Act are the 3-year milestones established for areas that have extended attainment dates. The Act allows EPA to set later attainment dates than the 5-year deadline required by section 172(b), but also requires interim reductions to achieve "reasonable further progress." See sections 171(1), 172(c)(2) generally. Section 182(c)(2)(B) requires the adoption of measures to achieve at least 9% reductions in emissions every three years, and 182(g) requires the states to determine if actual emissions comply with the milestones at the end of each 3-year period.

To establish milestones for total emissions in an area, motor vehicle emissions must be determined for the area as well as stationary source emissions. To determine compliance at the end of a milestone, motor vehicle emissions must again be analyzed. The 3-year schedule for conformity was intended to ensure that the transportation agencies would be determining motor vehicle emissions around the time that milestone compliance demonstrations are required by the Act. If conformity is determined every 5 years, the emissions estimates will not be available for the states to make their compliance demonstrations. More importantly, the transportation agencies will have no obligation to take corrective action when a milestone is violated as a result of motor vehicle emissions that exceed the budgets in the SIP. Corrective action will not be required until a new conformity determination is required, which could be as much as four years later.

In short, the Act can't work as intended if the conformity schedule is not coordinated with the key statutory deadlines for emissions reductions. Nor will the transportation agencies be as likely to receive cooperation from the state in the development of additional emissions to solve excess motor vehicle emissions. Under current law, sections 182(c)(5) and 182(g)(3), when motor vehicle emissions exceed SIP levels, the state is required to submit additional measures to reduce

motor vehicle emissions back down to the levels used to demonstrate attainment in the SIP. If these State obligations are not coordinated with conformity determinations, the transportation agencies may not get timely help to prevent or resolve a conformity lapse.

Transportation agencies and others, such as the authors of the misguided January 2003 Resources for the Future (RFF) Report, *Exhausting Options*, who propose to relax the current conformity schedule do not discuss any of these coordination issues, or the potential adverse impacts on implementation of the Act if the schedules are no longer coordinated. They only consider the burdens on transportation agencies that result from the obligation to keep transportation emissions within the limits required by the States' air quality plans. A balanced approach to these issues is required to ensure that the Act remains an effective tool for achieving a safe air supply for every American. The evidence in the RFF Report demonstrates that while significant efforts are required to keep motor vehicle emissions within bounds, the cooperative efforts of air and transportation agencies has produced effective solutions to these challenges. This kind of effective partnership was a goal of the Act, and is working. Emissions are being kept in bounds and the public is being well served.

Air Agency Performance Needs to Be Enhanced. Rather than disconnecting the schedule for conformity determinations from the other schedules in the Act, the committee should require effective implementation of the corrective measures required of the state air agencies and EPA. EPA supplied this committee with responses to questions transmitted at the hearing last summer which indicate that, aside from California, almost all states with serious and severe ozone nonattainment areas have not submitted the milestone compliance demonstrations for 1999 required by section 182(g). Even more disturbing, EPA states in its response to Question 16: "We sent no correspondence addressing State failures to submit milestone compliance demonstrations." EPA has been derelict in not taking action to require emissions updates needed to determine if the states are on track toward attainment, and to require corrective action if they are not.

Implementing this requirement of the Act would go a long way toward resolving the complaints from the transportation agencies that the states are not updating their SIPs to overcome shortfalls in achieving the emissions reductions needed for conformity, milestone compliance and attainment.

Effects of Conformity Fix on New NAAQS Attainment and on Use of 2000 Census Data. Let's look at how the road builder's package of conformity "deadline mismatch fixes" might affect the timeliness of considering new information, data, and control strategy requirements.

- Data from the 2000 Census journey-to-work survey is expected to become available in late 2003. Many MPOs continue to use inadequate transportation analysis models that were calibrated on travel data from the early or mid-1990s on 1990 Census data. Many MPOs are anticipating revisions to their travel forecasting models using 2000 Census data so they can better reflect current travel patterns and behavior. It is not uncommon for a major MPO model update to take 18-24 months, which means improved analysis methods and data to support conformity analysis may become available in late 2005. But a new conformity analysis of a 10-year regional transportation plan, based on a deficient

travel model based on obsolete 1990 travel data, might be adopted in the fall of 2005 and, under the road lobby's proposal, this analysis would continue to be valid until late 2010, after the expenditure of all the funds authorized in a new six-year transportation bill. In the meantime, major pollution-increasing transportation projects could proceed to be approved and funded for construction without any consideration of their emissions impacts, even if the revised travel data and model shows that the previous 1990-data based model significantly underestimated emissions.

- The MOVES model, which will update the Mobile 6 emission factor model for mobile sources, is anticipated to be made available by EPA in the fall of 2005, and will become mandatory for use in SIPs and conformity analysis by 2007. A conformity analysis made in 2006 might rely on by then out-of-date Mobile 6 emission estimates, but would not need to be updated and replaced with a new regional plan conformity finding until 2011, six years after the issuance of the improved MOVES model, which is likely to lead to significant changes in the estimation of mobile source emissions. In the meantime, major pollution-increasing transportation projects could proceed to be approved and funded for construction without any consideration of their emissions impacts, even if the MOVES model shows that the Mobile 6 emission estimates were significantly underestimated.
- The 8-hour ozone designations to be made by EPA in April 2004 are not anticipated to require adoption of SIPs and motor vehicle emission budgets until 2007. The first conformity analysis will be required for newly designated areas 1 year after designation in 2005. The SIP for such areas will be required to provide for attainment by 2009 (see section 172(b)), but the next conformity demonstration would not be required until 2010. Thus, if the transportation plan is not adequate to reduce motor vehicle emissions to the level required for attainment, there would be no requirement to change the plan before the attainment deadline. As a result, the area would fail to attain and another SIP would be required. Thus, a new conformity finding made in early 2007 for a 10-year regional transportation plan might continue to be valid until 2012, allowing a network of new outer beltways to be approved for construction in 2010 or 2011 which would result in massive sprawl, traffic growth, and pollution without considering the impact on the region's capacity to meet the deadline for attainment of the 8-hour ozone standard in 2012. The burden for emissions reduction required for attainment would fall on stationary and area sources, small businesses, and consumers, while giving the road construction industry a free pass to build new roads that cause substantially greater pollution at taxpayer expense. All the funds authorized in a new six-year transportation bill would be spent before considering the impacts of 8-hour ozone and PM-2.5 air quality standards on the road building industry, even if it was clear that the transportation plan approved in 2007 would make it impossible to attain the new NAAQS by an extended 2010 or 2012 deadline.

Helping Conformity Work Better. Instead of the statutory "fixes" sought by the road lobby, schedule coordination should come from better interagency coordination and by ensuring that EPA carries out its obligations to review the adequacy of SIPs every three years, not through relaxing the frequency of accounting system checks and balances.

If there is any statutory adjustment to conformity, it should assure that areas in a conformity lapse will be able to add new emission-reducing transportation projects to non-conforming short-term Transportation Improvement Programs (TIP) and long-range transportation plans, even if those projects were not previously contained in a conforming, fiscally-constrained TIP or plan. This is discussed in greater detail in *Attachment 1* to this testimony, which is the response I offered to this Committee to follow-up questions after the July 30, 2002 hearing on transportation and air quality.

Promote Performance-Oriented Planning Systems. Better interagency coordination and air quality and transportation planning, and more timely project delivery, could also result from a requirement that all state and metropolitan areas develop and periodically update, with public involvement, coordinated transportation, natural resource protection, and growth management plans that consider alternative scenarios that considerably reduce traffic growth and enhance environmental performance through better system management. Such an activity would fit naturally within a new environmental management system for transportation agencies. Such a system should be supported by annual reports on the current and projected performance of transportation system management, investment, and proposed programs and plans, accounting for cumulative and secondary impacts on growth patterns, public health, greenhouse gas emissions, the achievement of natural resource planning goals for air, water, and habitat protection, and the provision of equal access to jobs and public facilities for all residents, including those without cars, without undue time and cost burdens. Short of a mandate for such activities, the Congress could offer a 100 percent federal funding share for these activities to encourage their voluntary adoption by states and MPOs.

Enforce Fiscal Constraint and Travel Modeling Requirements. Congress should also take steps to assure that EPA and FHWA will better comply with the Clean Air Act and transportation planning laws. Traffic and emission forecasts often rely on unsupportable assumptions that go unquestioned in the interagency review process. FHWA and EPA have failed to enforce key Clean Air Act and TEA-21 planning requirements that transportation plans and programs must be fiscally constrained and show the sources of funding that can be relied upon to implement and operate them. They have also failed to enforce regulatory requirements that the effects of congestion and new transportation capacity on travel time and cost appropriately be “fed-back” through the travel behavior analysis process and reflected in emission and traffic estimates.

Many MPOs continue to rely on unrealistic and questionable financial and technical forecasts as they determine the quality and performance of regional transportation systems in future years, including the level and price of transit services, the characteristics of motor vehicles being driven, and the amount of traffic and emissions. Poor accounting often leads to underestimation of motor vehicle emissions, making it more likely that State Implementation Plan (SIP) air pollution control strategies will again fail to deliver on the promise of healthful air for all Americans, more than 35 years after the first Clean Air Act. These problems were detailed in my testimony to the full Senate Environment and Public Works Committee on July 30, 2002.

The failure to reflect “induced” traffic often leads to underestimation of emissions. EPA and FHWA should assure that MPO traffic models used for conformity and project impact analysis appropriately reflect scientifically established relationships between travel time, travel cost, and

traveler behavior, as reflected in numerous induced traffic studies. If MPO models do not reflect these relationships adequately, immediate corrective action should be required to assure honest accounting for traffic and emissions growth, with a timely investment in developing best practice analysis methods, regionally and nationally. These empirical relationships are well reviewed in a paper by two former EPA scientists, which I attach to this testimony by reference. Their survey of the literature found that in general for every 10 percent increase in road lane miles, it is typical to find a 3 to 11 percent increase in vehicle miles traveled, with 8 percent being a typical median value. As this paper notes,

Regional transportation planning agencies (or the states) generally maintain a system of models to forecast and evaluate the impact of transportation projects and plans. These models are usually deficient in accurately forecasting emissions (Transportation Research Board 1995) partially because they do not adequately account for both short and long run induced travel effects. This can be partially corrected by building feedback mechanisms into the models to at least account for some of the short run impacts (Johnson and Ceerla, 1996 a). Air quality regulations already require this step for conformity analysis, though actual practice has generally not kept up with the regulatory requirement.

Some EPA regions are working with metropolitan planning organizations to improve the state of the practice in the modeling of transportation impacts, in particular the impacts of transportation on land development. Various modeling packages (none of which are ideal) are available to provide estimates of land development changes induced by transportation and accessibility changes. Improved modeling of these impacts would provide decision-makers with far better information on the short-run and long-run emission impact of alternative transportation plans and are critical for development of State Implementation Plans that will actually help bring a region into attainment of the NAAQS. Project selection criteria would also be vastly improved.²

Notable improvements to models used for transportation and air quality planning are being made in many regions, including Portland, Oregon and Sacramento, California. And other states are making progress.

Mr. Chairman, the Ohio Department of Transportation has launched a \$6 million program to develop an integrated transportation and land use model. This work follows the example of Oregon, which has pioneered a similar state-wide model and which is sharing it with its metro area planning agencies. And the Columbus Mid-Ohio Regional Planning Commission is developing an activity-based travel micro-simulation model which offers the promise of bringing that area's analysis tools up to best practice standards. These kinds of tools are vital to making performance-based planning a reality rather than an ill-supported pipe-dream.

Ensure the Integrity of SIP Attainment Strategies. EPA has issued guidance that encourages submission of Attainment SIPs that sound science suggests are unlikely to provide for the attainment of the National Ambient Air Quality Standards (NAAQS) as they are required to do.

² Robert Noland and Lewison Lem, "A review of induced travel and changes in transportation and environmental policy in the US and the UK," *Transportation Research Part D*, Vol. 7, 2002.

Moreover, EPA has been finding such SIPs adequate and granting them full approval. Conformity to the emission budgets in these SIPs is unlikely to result in attainment by the statutory deadlines.

In January 2002, EPA released a new Mobile 6 emission factor model that metropolitan areas and states must use this year or next year to update their SIPs. In nearly all metropolitan areas, this improved model is showing that mobile source emissions of NO_x and VOC are significantly higher than previously estimated for years prior to 2007. Thus, emissions will be higher than previously thought in the attainment deadline years that have been established for serious and severe 1-hour ozone nonattainment areas. These substantial excess emissions in the attainment year are likely to cause the attainment SIPs to fail unless these emissions are offset by added emission reductions.

Before accepting new Mobile 6 SIPs as adequate for purposes of conformity, or as new attainment demonstrations, EPA should require states to either offset these increased emissions or to use a regional airshed model to evaluate whether their SIP strategies will be adequate to demonstrate attainment by the statutory deadlines. However, EPA has offered states guidance that would allow them to use scientifically unsupported “rollback” methods in lieu of new modeled demonstrations of attainment with the latest emission inventories and forecasts.

Congress should ask EPA in what areas and by how much emissions will increase in each SIP milestone and attainment year using Mobile 6, compared to the emissions estimated using the older Mobile 5 model, and ask EPA or the states to evaluate with regional airshed models the effect these increased emissions will have on forecast ozone levels in various attainment years. Congress should ask EPA to explain the science behind its assumption of a linear relationship between NO_x and VOC emissions and ozone levels that is at the heart of the EPA weight-of-evidence and rollback methods for appraising the adequacy of attainment SIPs, in light of a National Academy of Sciences study finding that:

Nonlinearities in the response of ozone concentrations to emission changes generally result in smaller ozone reductions than might be expected or desired from reducing emissions. For example, by the year 2000, mobile sources in Los Angeles are expected to account for about 30% of total VOC emissions. Airshed model calculations indicate that removing this fraction of VOCs would decrease peak ozone 16% from 270 to 230 ppb for the particular set of episode conditions studied (Russell et al., 1989)...

Several recent studies have shown that ozone in rural areas of the eastern United States is limited by the availability of NO_x rather than hydrocarbons, and that reductions in NO_x probably will be necessary to reduce rural ozone values.³

Assure Progress in Dealing With Local Health Impacts of Transportation Projects

Recent scientific research shows that there are many adverse local health impacts experienced by those who live close to major highways carrying large volumes of traffic, including high cancer

³ National Research Council, *Rethinking the Ozone Problem in Urban and Regional Air Pollution*, National Academy Press, Washington, DC, 1991, page 361-363.

risk and multiple adverse health effects related to the exposure to small particle air toxics. While diesel exhaust is implicated as the largest contributor to these toxic exposures, all motor vehicles make a contribution. The South Coast Air Quality Management District's Multiple Air Toxics Exposure Study (MATES-II), a Colorado study of leukemia risk factors, and a California Air Resources Board study of the Barrio Logan in San Diego have all found that mobile sources contribute as much as 90 percent to the excess cancer risk people experience due to exposure to hazardous air pollutants. At a January 2003 panel of the Transportation Research Board annual meeting in Washington, DC, several US DOT and EPA officials agreed that this was a serious problem that both agencies are working to develop new policies to address it. Panelists agreed that hot spot exposures near major roads and bus terminals represent a significant health threat that warrants further study.

However, the Federal Highway Administration has thus far resisted calls to evaluate and take steps to mitigate or avoid these health effects in relation to major highway expansion environmental review studies, as required by law. This issue is currently in litigation in relation to the US-95 highway widening project in Las Vegas, Nevada, and has been raised in transportation plan and project reviews in several other regions.

Congress should assure timely EPA action to regulate air toxics and assure that FHWA accounts for and avoids or mitigates the adverse health impacts of exposure of communities to hazardous air pollutants caused by expansion of major highways. Appendix 1 provides more information on this subject.

Assuring Adequate Resources for the CMAQ Program

The Congestion Mitigation Air Quality Program (CMAQ), which helps local communities and states reduce traffic and transportation pollution, should be reauthorized at a substantially higher level, recognizing the much larger population living in non-attainment areas and exposed to hazardous air pollutants. CMAQ funds should be targeted to innovative strategies that produce lasting traffic and pollution reduction, rather than to short-term one-time emission reduction strategies or traffic flow improvements,

Health studies have shown air pollution is more widespread and hazardous at lower levels than previously thought, with major health threats from fine particulate matter and air toxics. There is widespread consensus that CMAQ funds should be made available to help the hundreds of additional counties that face new requirements to address their previously unrecognized air quality problems. We join in that consensus. There is also wide support for allowing CMAQ funds to be used to help reduce emissions and exposures to air toxics. We agree with this as well. But this means that CMAQ funding must rise by about half over current levels in the next transportation authorization just to sustain the current level of effort in non-attainment areas on a per capita per pollutant basis.

CMAQ is the key source of transportation funding dedicated to improving transportation related air quality. Failure to boost CMAQ funding levels is likely to hamper the ability of existing non-attainment areas to sustain ongoing pollution-reduction transportation investments or limit funds available to newly designated non-attainment areas that need similar access to resources.

TEA-21's CMAQ obligation formula currently recognizes only the population living in ozone and carbon monoxide non-attainment areas, even though funds can be spent on project that help reduce particulate matter. In 1999, nearly 54 million people live in areas that do not meet the 1-hour ozone standard. According to the latest available monitoring data from EPA, more than double this number - 123 million people - live in the 333 counties violating the new 8-hour ozone standard. Some 82 million live in 173 counties that violate the PM fine National Ambient Air Quality Standards (NAAQS), with some overlap with ozone non-attainment areas. If contiguous counties that make up metropolitan areas are included, as is usual in designating non-attainment areas, these numbers will grow significantly. Additional millions live in areas that violate the CO standards.

The Federal Highway Administration counts 172 million people living in 1-hour ozone and CO non-attainment or maintenance areas and has used this figure for FY03 CMAQ apportionments to states. Initial estimates suggest that this apportionment population number will increase by about one-fourth when non-attainment area designations are made under the new 8-hour ozone and fine particulate NAAQS in 2004 and 2005. But this increased apportionment estimate does not include the population living in areas affected by air toxics that are outside of what will likely be designated as non-attainment areas under the new NAAQS, nor does it take into account the increased scope of air pollution control efforts that will be needed by existing non-attainment areas to attain the new 8-hour ozone and PM fine air quality standards.

Broad consensus exists that CMAQ eligibility should be expanded to help counties, cities, and states deal with fine particulates and air toxics in addition to ozone and CO. Reauthorization apportionments should recognize the expanded scope of funding needs by proportionate expansion of CMAQ funding based on both population and the degree of pollution remediation needed. Otherwise existing non-attainment areas will face cut-backs in funds for air pollution reduction programs while being asked to take additional steps to further cut pollution to protect public health.

If the eligibility of the CMAQ program is expanded to include air toxics and fine particulates and all newly designated non-attainment areas without cutting the per capita allocation of CMAQ funds to existing non-attainment areas, an increase of at least 50 percent in CMAQ funding will be needed in TEA-3. This will require growing the program from its FY02 program obligation level⁴ of \$1.435 billion in FY03 to an average of \$2.15 billion a year over the upcoming authorization period.

⁴ estimated: <http://www.whitehouse.gov/omb/budget/fy2004/pdf/appendix/DOT.pdf>, page 721

Attachment 1:
Response to Questions for the Record Concerning Transportation and Air Quality

Michael Replogle, Transportation Director
Environmental Defense, Washington, DC
September 17, 2002

Questions from Senator Jeffords:

- 1. In general would you agree that conformity is spurring investments in transportation strategies and technologies that reduce air pollution and create better interagency cooperation?**

Yes. Since the 1990 Clean Air Act Amendments, conformity has been a significant factor fostering local, regional, and national political support for cleaner fuels and vehicles and inspection and maintenance programs that have helped produce more timely progress towards attainment of healthful air quality. In that period, conformity has been the single greatest factor promoting interagency cooperation between transportation and air quality agencies at the state, local, and federal levels. Prior to 1990, transportation agencies paid no attention to the air quality consequences of transportation investments and plans. But in recent years, many metropolitan areas have adopted changes to their transportation plans and programs to help reduce traffic growth and emissions. Consideration of air quality impacts of investments has become a routine matter in many metropolitan areas where pollution problems are more severe. In most regions with serious air quality problems, officials and staff of air agencies and transportation agencies routinely meet and work together to help foster effective program administration that delivers progress on both mobility and air quality goals.

Atlanta's conformity problems led the Governor to create a new regional authority responsible for better planning and funding transportation, air quality, and growth management in Georgia's non-attainment areas in an effort to fix a broken interagency cooperation process. While road builders have often raised the spectre of transportation conformity causing major disruptions to transportation programs, there have been no such disruptions. Even in Atlanta, where the longest conformity lapse of consequence to date took place, the region lost no transportation funding but instead redirected several hundred million dollars of funds from sprawl-inducing, pollution-generating roads into projects that would reduce pollution and into safety and system improvements that would not increase emissions.

After conformity analysis led Charlotte, North Carolina, to see that its transportation plan would lead to emission problems 20 years in the future, local officials developed, considered, and adopted a new 2025 Transit Land/Use plan for Charlotte-Mecklenburg with a new rapid transit system to support the five major transportation and development corridors identified in the 1994 Centers and Corridors Plan as well as connections to key development hubs between these corridors. The plan seeks to concentrate jobs around stations, provide residential multi-family housing at stations, and develop rail and bus rapid transit. Capital costs, plus operation, maintenance and other expenditures will cost \$1.085 billion over 25 years and quantifiable

benefits such as travel time savings and vehicle operating cost savings total \$72 million a year, generating a benefit cost ratio of 1.6. There are also numerous benefits of the plan that are not quantifiable such as improved access to jobs and revitalization of the core center. Funding for the plan will come from a combination of local, state, and federal funding. Mecklenburg County Voters approved a half-cent local sales tax in 1998 to fund expansion of bus service and rapid transit improvements in major corridors. The requirement that the RTP conform 20 years into the future was a vital element in motivating this regional progress and action. Limiting conformity determinations to a 10-year time horizon – as some propose - might reduce the incentive for other regions to take the kind of leadership initiatives seen in Charlotte.

Conformity helped Denver develop cost-effective strategies to reduce particulate matter (PM) problems. Agencies began taking action against wood burning in the 1980s, but PM was still measuring $185 \mu\text{g}/\text{m}^3$ compared to the NAAQS of $150 \mu\text{g}/\text{m}^3$. Conformity made transportation planning and air quality agencies look at other sources of PM. They found that street sanding and sweeping strategies was a very effective measure and implemented controls beyond what was federally mandated, reducing PM levels to $80 \mu\text{g}/\text{m}^3$. Conformity also provided an incentive for developing light rail in Denver and the Metro Vision 2020 Plan, which seeks to limit growth to a 700 square mile area with supportive transportation strategies. Denver also has a number of travel demand management (TDM) strategies in their long-range plan such as a Ride Arrangers program and a telework program. While Denver does not take credit for TDM system management in the 2025 conformity finding, the region recognizes TDM emission benefits as a safety margin in meeting their emissions budget.

To deal with emissions problems recognized through the conformity process, many other regions have adopted transportation control measures (TCMs). These represent nearly 5 percent of total emission reductions, for example, in the San Joaquin region of California. The San Joaquin Council of Governments projects that TCMs, including rideshare, vanpool, and commuter rail, will deliver as much as a 10 percent reduction in emissions by 2020.

Conformity has also been valuable in helping to win adoption of new short-term emission reduction strategies in the metropolitan Washington, DC region. In July 2001, the DC metropolitan planning organization updated its modeling assumptions to reflect the growing use of sport utility vehicles (SUVs) and light trucks, which produce more pollution per mile driven than standard cars. As a result, they observed that that they could no longer add new road projects to their transportation improvement program (TIP) and regional transportation plan (RTP) and still conform with the NO_x motor vehicle emission budget in their adopted SIP. Officials formed a task force to consider reopening the SIP to allow for more motor vehicle pollution by finding offsets from other emission sources or fixing the conformity problem by adopting added emission reduction measures. With adjustments for some refinements to their model estimates and for emission reducing measures already being implemented but not previously credited, the MPO found that the 8 tpd NO_x excess emissions over budget was reduced to about 3 tpd.

Following further meetings and analysis, Maryland proposed a \$42 million package of transportation emission reduction strategies, including buying clean buses, improving pedestrian and bicycle access to transit, and supporting transit oriented development. Along with measures

advanced by other jurisdictions, this package provides sufficient reductions to offset this emission budget shortfall and the region in July 2002 adopted them as part of a new TIP and RTP. If proposals made by some parties to lengthen the life of TIP conformity findings to 3 or 5 years had been in effect, this \$42 million package of emission reduction measures would almost certainly not have been funded.

2. If Congress does make any changes in the conformity process as part of the next transportation bill, what would be your number one suggestion and please be specific?

Congress should make one change to the conformity process as part of the next transportation bill. It should adopt the bill introduced in the 106th Congress, 2nd Session as H.R.3686, the “Road Back to Clean Air Act,” by Rep. John Lewis and as S.2088 by Senator Max Cleland. This bill would put into law the EPA and DOT guidance that helped get Atlanta more focused on solving the city’s transportation and air quality problems. It would increase flexibility so other areas of the country could continue to receive federal funds for transit, safety improvements, road rehabilitation, and other projects even during a lapse in the conformity of their transportation plans. Without this legislative change, because of the way that DOT has at times in the past administered conformity and planning requirements, regions in a conformity lapse can face difficulty adding air quality improving projects to their transportation spending plans unless those projects had been part of a previously conforming fiscally-constrained TIP and regional transportation plan.

The text of this bill follows:

A BILL

To amend the Clean Air Act and titles 23 and 49, United States Code, to provide for continued authorization of funding of transportation projects after a lapse in transportation conformity.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Section 1. Continued Authorization of Funding of Transportation Projects After Lapse in Transportation Conformity

Section 176(c)(2) of the Clean Air Act (42 U.S.C 7506(c)(2)) is amended by adding at the end the following:

“(E) Notwithstanding subparagraphs (C) and (D), any transportation project identified for funding in a transportation plan and transportation improvement program adopted under section 134 of title 23 or sections 5303 through 5306 of title 49, United States Code, shall remain eligible for funding under title 23 or chapter 53 of title 49, United States Code, as applicable, after the long-range transportation plan or transportation improvement program no longer conforms as required by subparagraphs (2)(C)(i) or (2)(D), if –

“(i) the long-range transportation plan and transportation program met the requirements of subsection (c) at the time at which a project agreement for the transportation project was approved under section 106 (a)(2) of title 23 United States Code, or the project was otherwise approved for assistance under chapter 53 of title 49, United States Code, as applicable;

“(ii) the transportation project is a transportation control measure (as defined in section 93.101 of title 40 of the Code of Federal Regulations (as in effect on March 1, 1999);

“(iii) the transportation project qualifies for an exemption from the requirement that the transportation project come from a conforming metropolitan long range transportation plan and transportation improvement program under section 93.126 or 93.127 of title 40, Code of Federal Regulations (as in effect on March 1, 1999); or

“(iv) the transportation project is exempt from a prohibition on approval under section 179(b)(1), except that this paragraph shall not apply to a transportation project described in section 179(b)(1)(B)(iv).”

Section 2. Amendment of Long-Range Transportation Plans and Transportation Improvement Programs Not Conforming to Applicable Implementation Plans.

(a)Transportation Plans – Section 134 of title 23, United States Code, is amended by adding at the end of the following:

“(p) Amendments to Plans and Programs Not Conforming to Applicable Implementation Plans– Notwithstanding any other provisions of law, a long-range transportation plan or transportation improvement program under this section that no longer conforms to the applicable implementation plan under section 176(c) of the Clean Air Act (42 U.S.C. 7506(c)) and part 93 of title 40, Code of Federal Regulations (or a successor regulation), may be amended without a demonstration of conformity if the amendment is solely for the purpose of adding transportation project –

“(1) for which that State submits a revision of the applicable implementation plan to the Administrator of the Environmental Protection Agency requesting approval of the project as a transportation control measure (as defined in section 93.101 of title 40, Code of Federal Regulations (as in effect on March 1, 1999)); or

“(2) that qualifies for an exemption from the requirement that the transportation project come from a conforming metropolitan long-range transportation improvement program under section 93.126 or 93.127 of title 40, Code of Federal Regulations (as in effect on March 1, 1999)”

(b) Mass Transportation Plans – Section 5303 of title 49, United States Code, is amended by adding at the end the following:

“(i) Amendments of Plans and Programs not Conforming to Applicable Implementation Plans – Notwithstanding any other provision of law, a long-range transportation plan under this section or a transportation improvement program under section 5304 that no longer conforms to the applicable implementation plan under section 176(c) of the Clean Air Act (42 U.S.C. 7506(c)) and part 93 of title 40, Code of Federal Regulations (or a successor regulation), may be amended without a demonstration of conformity if the amendment is solely for the purpose of adding a transportation project –

“(1) for which the State submits to the Administrator of the Environmental Protection Agency a request for approval as a transportation control measure (as defined in section 93.101 of title 40, Code of Federal Regulations (as in effect on March 1, 1999)) under section 110 of the Clean Air Act (42 U.S.C. 7410); or

“(2) that qualifies for an exemption from the requirement that the transportation project come from a conforming metropolitan long-range transportation plan under and transportation improvement program under section 93.126 and 93.127 of title 40, Code of Federal Regulations (as in effect on March 1, 1999).”

* * *

Questions from Senator Voinovich

- 1. During the hearing, several witnesses talked about how the coordination of the frequency of submittals for the State Implementation Plan (SIP), the Transportation Plan, and the Transportation Improvement Program (TIP) is an important and necessary reform. Among other things, such a reform would lessen the confusion of those involved, reduce costs, and help states meet air quality goals. In your testimony, you reject any proposal to reduce the frequency of conformity analyses. Do you see value in better coordinating the transportation and air quality planning processes?**

Environmental Defense and other environmental groups strongly support better coordination of transportation and air quality planning processes. However, we strongly object to proposals currently being put forward under the misleading name of “streamlining.” By extending deadlines and creating overly long gaps between conformity analyses, these proposals will threaten air quality, threaten public health and reduce information available to the public about the air they breathe.

Equally important, these proposals won’t make the system work better – they’ll make the system more inefficient. They reduce incentives for agency coordination. Conformity works well when transportation and air quality experts work closely together on a routine basis, to plan and implement highway and transit investments. Conformity, and the current schedule of deadlines, gives these agencies a powerful incentive to work together. The deadlines are also spaced just far enough apart to allow problems to be identified early – before they become crises that threaten air quality targets.

But reducing the frequency of required conformity analysis – currently 2 years for TIPs and 3 years for regional transportation plans (RTPs) - is likely to reduce rather than enhance such coordination. Conformity analysis is rather like balancing one’s checkbook. If done routinely and frequently, problems will be detected when they are small and correctable. If done infrequently, the costs of errors is likely to soar, as unrecorded transactions or errors go undetected, with their impacts compounded over time.

If the minimum frequency of conformity determinations is set at three or five years, this will likely be too far apart to detect and correct the rapid growth in VMT in fast-growing metropolitan areas. Across the country, this rapid growth is causing those areas to fail to attain on time. At a time when our transportation investments are proving to threaten air quality and health, it makes no sense to relax deadlines.

Instead of statutory changes, schedule coordination (if any is needed) should come from better interagency coordination, not through relaxing the frequency of accounting system checks and balances. With wider gaps between reporting deadlines, opportunities for abuses and poor accounting grow larger. Uncertainty about true air quality impacts and benefits would increase.

Today, most metropolitan areas update their TIPs annually and redo their conformity analysis as they do so. Analysis of conformity as TIPs undergo changes to regionally significant projects

provides opportunities for timely improvement of what have often proven to be out-of-date or previously incorrect model assumptions.

Many regions, such as Washington, DC, have recently updated motor vehicle fleet data assumptions to reflect the growing use of SUVs and light trucks, which produce more pollution per mile traveled than light duty cars, with a resulting increase in the estimates of motor vehicle emissions in the attainment year. In the case of Washington, DC, this conformity re-analysis led to increased attention by transportation and air officials and staff to the need for improved interstate and interagency coordination and collaborative data collection to upgrade the regional inventories of motor vehicle pollution factors. It also led local and state officials to add \$42 million in new emission-reducing transportation projects to the region's TIP in July 2002 to offset the increased pollution observed through the conformity re-analysis. This investment would not likely have occurred had the 2-year life of the TIP conformity finding been relaxed to 3 or 5 years. These investments will benefit not just air quality, but they will increase mobility in the region, increase access to jobs, foster better quality of life, and promote economic growth.

Conformity helped catch this problem sooner rather than later, when it was still a manageable problem that could be addressed through transportation measures, without needing to reopen the SIP. Had the problem been left to fester, it is more likely that the region's officials would simply have said the problem was too big to manage, and sought to make it someone else's problem. In fact, fear of this kind of crisis is what may motivate concerns about conformity. But by having tight deadlines and careful coordination among agencies, the challenges can be addressed with incremental measures before they escalate to crisis. The beneficiaries of tight deadlines are the millions of children, elderly people, and other individuals who suffer respiratory distress, premature death, injury, and other impairments every year when federal air quality health standards continue to be unmet. The beneficiaries of relaxed conformity deadlines are primarily polluting industries and other special interests that profit at our society's expense.

In fact, States already have flexibility and discretion in the current system. The current tiered schedule for reappraising TIP and RTP conformity provides appropriate advance notice of conformity problems in a way to encourage timely solutions. For example, many regions first uncover conformity challenges when updating their TIPs to incorporate new projects. Updating these planning factors uncovers previous underestimates in regional vehicle emissions and allows timely corrective measures to be adopted – as they have been in Washington, DC, in the example described above.

At times, this may create what some call a “conformity lockdown,” during which the current two-year TIP conformity finding remains valid, but no new regionally significant transportation projects can be added to the TIP until the region adopts new emissions-reducing measures to offset the incremental increase. At this point, the increment of emissions imbalance is usually still relatively small and manageable, and measures can be taken reasonably easily to offset the impacts of the new projects. In essence, the system provides “early warning” that provides the time to adopt new emission reduction measures to ensure that the TIP stays in conformity.

If the region fails to offset motor vehicle emissions that exceed the adopted SIP motor vehicle emission budget before the expiration of the two-year TIP conformity finding, the region would

likely enter a conformity lapse. In a lapse, there is yet another safety valve: the region can adopt an Interim TIP composed of projects with funding agreements, exempt projects, and transportation control measures drawn from the conforming long-range RTP, relying on its 3-year conformity finding. At any time, a State can choose to reopen its SIP to identify additional emission reduction measures from mobile or non-mobile sources to offset excess emissions from mobile sources that are in violation of the motor vehicle emission budget.

In short, states have discretion at every stage to align the schedule for updating their transportation and air quality plans and where they choose to seek emission reductions. The system works and should be sustained. If any change is warranted, it would be toward *more frequent* reviews of SIPs – but not less.

Better coordination of air quality and transportation planning should take several forms:

- **Interim Milestone Reports.** First, Congress should enhance this interagency coordination by ensuring that EPA adopts regulations to govern State submissions of SIP milestone compliance reports. These reports would track and report regional emissions every three years in nonattainment areas and ensure that remedial measures are implemented immediately when emission reduction targets are not met, as required by Clean Air Act Sections 182(c)(5) and (g). EPA has failed to issue these sorts of regulations, and that failure must be remedied. By ensuring that States meet this required three year cycle of SIP reappraisal, Congress could address the concerns of transportation agencies that SIPs are too infrequently updated, while transportation plans are subject to more frequent updates.
- **Prompt Upgrade of Models.** Secondly, transportation agencies should be required to promptly upgrade their computer models to effectively consider air quality, induced traffic, and fully-up-to-date planning factors. Congress should provide EPA and DOT with a strong mandate to establish best-practice planning model standards and to require timely action by MPOs and other agencies to meet these standards for conformity and SIP planning. A recent report (U.S. General Accounting Office, *Environmental Protection: Federal Incentives Could Help Promote Land Use That Protects Air and Water Quality*, Washington, DC, October 2001, GAO-02-12, page 95) notes that, “DOT and EPA efforts to improve travel-demand-forecasting models may help MPOs and communities determine the effects of transportation improvements on congestion and air quality. However...these efforts currently do not call for integrating land use or environmental components into the travel demand model...Without such integrated models, communities cannot consider the likely effects that their transportation decisions will have on land use, future growth and development, and air quality.” U.S. GAO-02-12, op. cite, page 95.

In regions where transportation models used for conformity and air quality planning have not been upgraded to integrate land use and environmental components, including full sensitivity to induced traffic and growth effects of transportation investments, urban design, and pricing policies, less frequent conformity analysis is likely to impair timely upgrading of analyses.

2. Do you think there are more cost effective options for achieving air quality improvements in the transportation sector than through the current program?

Transportation conformity is not an air quality improvement strategy in and of itself. It is a highly cost effective accounting mechanism that assures the integrity of adopted air quality attainment plans by preventing adoption of transportation plans and programs likely to cause pollution in excess of the levels determined to endanger public health. The Clean Air Act allows states great flexibility in determining how to achieve health-based air quality standards – whether through controls on stationary sources, area sources, or transportation sources, and whether through adoption of cleaner technologies, management and pricing strategies, or growth and demand management.

Without a strong and well-enforced transportation conformity program, experience shows that transportation emissions tend to be underestimated, leading to the failure of air pollution control strategies. That failure – more than three decades after the 1970 Clean Air Act – continues to impose huge costs on our society, with the adverse health costs of motor vehicle air pollution estimated by US DOT in 2000 at \$40 billion to \$65 billion, which pales beside the \$27 billion in annual federal transportation expenditures.

Transportation conformity has played a significant behind-the-scenes role fostering cost-effective air pollution improvements in the transportation sector, including adoption of cleaner vehicle and fuel standards by states and federal agencies, adoption of inspection and maintenance programs, and reallocation of transportation investments from sprawl-inducing, pollution-generating roads into transit, walking, bicycling, and Smart Growth strategies that meet economic and social needs for mobility with less need for travel by single-occupant vehicles.

EPA's own recent analysis shows that proposed air pollution reduction strategies and technology fixes alone are insufficient to deliver healthful air quality for all Americans over the next decade or even two (<http://www.epa.gov/clearskies/maps.pdf>). Thus, conformity is vital to assuring that motor vehicle emissions are properly accounted for as states and regions strive to achieve emission reductions from various sources and avoid having uncontrolled traffic growth undo progress towards healthful air quality.

Questions from Senator Smith

- 1. You testified that before state SIP's had established motor vehicle emission budgets, the transportation agencies were forced to rely on complex and widely criticized transition rules. EPA and DOT may be proposing a return of these transition rules in new non-attainment areas that will have a one-year grace period to make a conformity determination. Would you agree that our air quality goals are better served by coordinating conformity with motor vehicle emissions budgets, rather than returning to these transition rules?**

As designed by Congress in the 1990 Clean Air Act, conformity is intended to focus on comparing forecast motor vehicle emissions in a transportation plan and program with an adopted motor vehicle emission budget (MVEB) established in a SIP designed to enable a region to attain the National Ambient Air Quality Standards (NAAQS) by deadlines established by law. Where such MVEBs exist, they should be used as the fundamental yard-stick to measure conformity of transportation plans and programs with air quality plans.

The problem we see with the “build/no-build” transition rule is principally in how it has been applied, and in the length of the transition to conformity against adopted SIP MVEBs, not in the underlying principal of the build/no-build transition rule. The build/no-build rule, first issued by EPA and DOT in 1991, compares emissions in a base-case no-build future scenario vs. emissions in a build scenario, adding or subtracting the applicable transportation projects changes proposed in any given TIP or RTP amendment. This is a desirable and acceptable conformity test to use in the absence of an adopted SIP MVEB when the evaluation uses analysis methods that properly account for induced land use and traffic effects of transportation investments and policies. However, as applied in many regions, build/no-build analyses have assumed no induced land use change or shift in the time-of-day of traffic caused by transportation system changes. Numerous peer-reviewed studies have demonstrated that induced traffic effects are profound and the addition of 10% more lane miles of roadways can be expected to induce an additional 6 to 10% vehicle miles traveled in a region in a few years time. If induced traffic is unaccounted for, the build/no-build analysis is invalid, and will underestimate motor vehicle emissions growth associated with major highway system expansions, working against the CAA statutory mandate that transportation plans and programs must contribute to timely attainment of the NAAQS.

It is vital that areas expected to be designated as new non-attainment areas should now begin to take steps to prepare to meet conformity analysis requirements. The TEA-21 federal transportation law provides flexible funding to states and regions in the Surface Transportation Program and other funding categories that can be used for planning and data collection. Such funds should be used now to establish sound, up-to-date, local inventories of jobs, housing, highways, transit resources, and travel behavior, to develop locally-applicable transportation planning models that meet best practice standards for appraising travel behavior and induced traffic, to code information on planned transportation investments and forecast job and housing growth expectations, and other information. Outside consultants should be retained to help cultivate local expertise to sustain these analysis systems, which have many cost-effective applications beyond conformity analysis in supporting sound capital program planning, traffic and transit operations planning, transportation equity analysis, growth management, cost-allocation evaluation, and other activities. The cost of establishing such planning and analysis systems is but a tiny fraction of the annual capital facilities investment costs of most states and regions, but can have a payoff far in excess of these costs by assuring more sound decision-making, investment planning, and identification of lower-cost and more optimal strategies for meeting local and national mobility, environmental, economic development, and equity goals. Establishing these planning and analysis tools in a metropolitan area can be accomplished in less than a year, but does require agency commitment and ongoing support.

EPA and DOT should promptly issue long-promised additional model guidance and regulations to assure that non-attainment areas properly account for induced land use and traffic effects in conformity analysis and SIP transportation modeling.

There are no valid reasons why any newly designated non-attainment area cannot establish the requisite transportation and emissions analysis systems well in advance of the expiration of the one-year grace period following designation. Until adopted SIP MVEBs are available to provide a basis for conformity, the build/no-build test (with appropriate consideration of induced land use and traffic effects), along with the Reasonable Further Progress requirements of the CAA, should be the basis for evaluating conformity in non-attainment areas.

- 2. If I am interpreting your testimony correctly, you appear to suggest that one way to judge the success of conformity is by how much it redirects transportation spending away from new highway construction. In Northern Virginia, however, they have delayed over \$800 million in highway projects generating a total of 2 tons reduction in emissions, or \$400 million per ton reduced. By comparison, EPA's vehicle emission standards cost below \$1600 per ton. Stopping new highways does not sound like a very cost-effective strategy to reduce emissions, wouldn't you agree?**

I'm sorry, but you have misinterpreted my testimony and data and I must disagree with your assertion. I noted that a recent analysis by the Metropolitan Washington Transportation Planning Board showed that by deferring 100 lane miles of highway expansion projects in 2002 - a 0.5% reduction in lane-miles of road capacity - Virginia *saves* \$800 million in capital costs while *cutting* NOx emissions by more than 1%, or nearly 2 tons per day, and reducing vehicle miles of traffic by 0.6%. This illustrates how the very expensive expansion of new highways typically produces a growth in air pollution emissions by spurring more traffic, rather than a reduction in emissions as often claimed by the road lobby. It illustrates how reducing expenditures on new roads is often the most cost-effective emission reduction strategy, because it avoids generating both costs and air pollution. By not building additional traffic, sprawl, and pollution-inducing highways, regions like Northern Virginia can avoid the need for additional expenditures of up to \$1600 per ton to reduce emissions because they can prevent the pollution from being emitted in the first place.

A *savings* of nearly \$400 million per ton of NOx reduction for cutting highway expansions is highly competitive when compared to alternative emission reduction *costs* of \$1600 per ton for pollution-control technology investments! More regions faced with missed deadlines for clean air attainment should be protecting public health and the taxpayer's wallet by redirecting public investments from road expansions into other more productive forms of investment, such as transit, the revitalization of walkable neighborhoods, education, affordable housing close to jobs, and public health services.

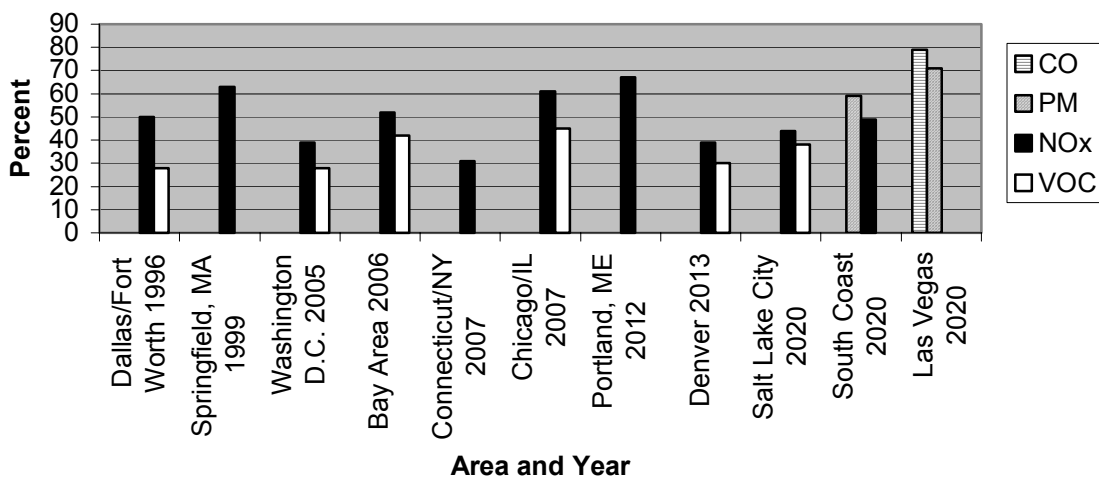
- 3. You have been an advocate of using land use and other "Smart Growth" strategies to reduce air pollution. Yet, we all know that these strategies take a decade or more to change transportation patterns. How do you expect to generate substantial**

pollution reductions from these projects when the emission levels from these vehicles will be 95-99% cleaner than their 1970s counterparts?

Even with significantly cleaner cars and truck technologies, Smart Growth strategies offer the promise of avoiding - at essentially no cost – as much as one-quarter of the potential motor vehicle emissions in 2020, thus helping to achieve more timely attainment at less cost. If Smart Growth strategies are ignored and sprawl and highway building advance without any accountability for impacts on emissions, society will need to invest billions of dollars more in pollution abatement technologies to clean up mobile and non-mobile sources so we can achieve healthful air quality.

The amount of motor vehicle pollution emitted per mile driven has fallen by more than 90 percent since 1970, but today motor vehicles still account for a major share of pollution – from one fourth to three fourths of the NO_x and VOC emissions – in most non-attainment areas. Adopted or submitted SIPs show that in the attainment year and in future years going out as far as 2020, motor vehicle emissions are expected to continue to account for a large share of emissions in many metropolitan areas, as Graph 1 shows. For example, despite adoption of cleaner technologies, motor vehicles are estimated to account for 28 percent of VOC and 39 percent of NO_x emissions in Washington, DC (in 2005), 31 percent of NO_x emissions in Connecticut/NY (in 2007), 45 percent of VOC and 61 percent of NO_x emissions in Chicago/Illinois (in 2007), 67 percent of NO_x emissions for Portland, Maine (in 2012), 30 percent of VOC and 39 percent of NO_x emissions in Denver (in 2013), 79 percent of CO emissions and 71 percent of PM emissions in Las Vegas (in 2020), and 38 percent of VOC and 44 percent of NO_x emissions in Salt Lake City (in 2020). And despite the fact that California leads the nation in adopting cleaner vehicles and fuels, the Bay Area expects motor vehicles to contribute 42 percent of VOC emissions and 52 percent of NO_x emissions (in 2006), and the South Coast non-attainment area expects motor vehicles to contribute 59 percent of PM emissions and 49 percent of NO_x emissions (in 2020).

Graph 1: Share of Selected Criteria Pollutants from highway sources by year and area from adopted or submitted SIPs



The magnitude of emission reductions needed to reach healthful air quality is considerably greater than that now identified through submitted and approved SIPs. EPA’s recent posting of maps of estimated effects of the proposed “Clean Skies” initiative (<http://www.epa.gov/clearskies/maps.pdf>) shows that adopted and proposed measures are together inadequate to bring many of the nation’s largest metropolitan areas into full attainment of the NAAQS even by 2020. Significant further emission controls will be needed also to deal with hazardous air pollutants, greenhouse gas emissions, and other environmental pollution, even with the cleaner motor vehicles produced under the Tier II and heavy-duty diesel engine rules.

A conservative estimate is that Smart Growth strategies have the potential to reduce traffic growth and emissions over the time frame of 20-year regional transportation plans by 15 to 25 percent compared to forecast trends in most metropolitan areas. Over the shorter time frame of a two-year TIP conformity cycle or the several years prior to reaching ozone attainment deadlines, many regions could accomplish reductions in traffic growth and related pollution well of several percent a year relative to trends with a concerted effort combining Smart Growth, pricing, and demand management strategies.

The degree to which Smart Growth can affect emissions and traffic growth is closely related to the pace of job and housing growth in a community. In slow growth communities, the opportunities for Smart Growth to change travel patterns are modest compared to fast-growing communities. Smart Growth is very pro-growth in the areas where it is being implemented while seeking to discourage job and housing growth in other locations where people lack non-driving travel choices. Where fast growth is occurring, there tend to be more opportunities for growth to become smarter.

The effectiveness of Smart Growth strategies in reducing traffic and pollution is also closely linked to how comprehensively these strategies are implemented. Effective Smart Growth means transit-oriented (not just transit proximate) development that is attractive for walking and

cycling, includes a vibrant mix of land uses for various income groups, and highly attractive non-automobile access to other parts of the metropolitan area. It includes pricing policies and incentives that favor transit, walking, bicycling, and alternatives to driving while curbing subsidies for driving. Even in slow growth areas, Smart Growth transportation pricing and urban design incentives, such as Commuter Choice programs where employers pay for transit benefits and offer cash-in-lieu-of-parking benefits can produce substantial shifts in travel behavior and pollution reductions in the span of a year or two, with concerted marketing, promotions, demonstrations, and incentives for rapid adoption of Smart Growth changes. Research and experience cited in my most recent testimony to the Committee shows the magnitude of near-term travel behavior and emission changes that have been achieved in a number of communities with these sorts of strategies.

4. In your written testimony you state, “Because of steep increases in the number of vehicle miles, cuts in the amount of pollutant emitted per mile, particularly for NOx, and small particulates, have been offset by growth in miles driven.” While this has been true in the past, doesn’t EPA’s data clearly show that future vehicle emissions are decreasing, even as vehicle travel increases?

Since the 1970 Clean Air Act, increasingly stringent motor vehicle and fuel standards have significantly reduced vehicle emissions per mile. Federal light duty Tier 1 vehicle emission standards today allow only 4% as much VOC pollution per mile as vehicles emitted in 1969, and 10% as much NOx. Despite this sharp reduction, in 1999 motor vehicles still accounted for 29% of VOC and 34% of NOx emissions nationwide according to EPA. VOC emissions from highway vehicles declined 18% during the past decade, but NOx emissions increased by 19% during the same period. And as a 2002 TRB study, *The CMAQ Program: Assessing 10 Years of Experience*, noted (page 70), “Although tailpipe emissions from highway vehicles are only a small share of directly emitted PM on a national basis, they account for a substantially higher proportion of longer-lived atmospheric concentrations of fine particles in urban areas, for example, up to 40 to 50 percent in the Denver and Los Angeles metropolitan areas.”

With the full phase-in of Tier 2 standards beginning in 2009, light duty vehicle emission standards will allow only 22% as much VOC pollution per mile as Tier 1 standards, and 18% as much NOx. But the slow pace of motor vehicle fleet turnover means that the full benefits of these emission reductions will not take effect until 2020 or later. In the meantime, unless regions adopt strategies to better manage travel demand, sprawl, and subsidies that encourage driving, motor vehicle travel will continue to grow and offset much of these emission reduction benefits. Between 1980 and 1999, vehicle miles traveled grew by 87%. If a similar pattern continues through 2020, NOx and VOC emissions from motor vehicles will decline by 2020 by only little more than half. But much deeper reductions than this will be needed to achieve healthful air quality for all Americans. *In other words, technology alone will not make the amount of driving irrelevant to considerations of pollution control in the foreseeable future.*

The recent adoption of more stringent motor vehicle emissions and fuel standards for light duty trucks and heavy-duty diesel engines will offer important additional contributions towards clean air. Nonetheless, progress towards timely attainment will for the next several decades be

dependent on continued and improved measurement and monitoring of the amount and pattern of motor vehicle use, and greater efforts to avoid pollution by shaping motor vehicle use and travel behavior.

- 5. In your written testimony, you state, based on the MATES-II study, “that 90% of the total cancer risk is attributable to toxic air pollutants emitted by mobile sources.” But you fail to mention that 70% of that risk is from diesel emissions, and the EPA heavy duty diesel rule will substantially reduce these emissions. Moreover, you also fail to mention that the same study shows that cancer risk has been declining from 700 per million in 1990 to 300 per million in 1997, which suggests progress is being made on non-diesel related toxic emissions. You suggest that less highway construction and more programs to reduce vehicle travel are needed to reduce these risks, yet isn’t technology and better fuels the real answer to reduce most of these risks?**

Less highway construction and improved programs to reduce vehicle travel *should* indeed be evaluated through the planning and project review process to appraise their capacity to avoid or mitigate adverse health risks caused by transportation related air toxics emissions. Travel demand and growth management strategies, pricing incentives, and other actions related to the operation, management, investment in transportation systems and related community systems can often provide very cost-effective approaches to reduce exposure of communities to air toxics and the cancer and other health risks associated with these exposures. Indeed, expansion of highways where unacceptably high air toxic exposure problems already exist will likely increase the scope of the problem by inducing traffic growth and exposures to air toxics. Cleaner technology and better fuels are not the only or best way to reduce most of these health risks, although these are an important part of the solution. While a reduction in cancer risk from 1990 to 1997 is documented in the MATES-II study, the cancer risk in 1997 is *many times higher* than the level at which EPA and FHWA are required to take actions to safeguard public health from such documented risks.

Diesel emissions are indeed the largest source of toxic air pollutants emitted from mobile sources and the EPA heavy duty diesel rule will eventually reduce those emissions substantially. But because of the long-delayed timeframe for implementation of the heavy-duty diesel rule and the very long lifetime of diesel engine equipment, barring major new pollution control initiatives, it will take decades to achieve the substantial emission reductions required to protect public health from toxic air pollutants from these motor vehicles. While technology and fuels will do a lot to reduce these risks, public health will be best protected by a program that combines such initiatives with better strategies to manage the demand and use patterns of motor vehicles – both diesel and non-diesel – and to manage exposure of the public to these emissions. This must include consideration of how changes in transportation investments – such as highway expansions – will affect the amount of traffic emitting toxic air pollutants, and whether alternative investments might better satisfy mobility objectives while avoiding or mitigating these adverse health impacts. As the example in Washington, DC, cited above shows, reducing highway system expansions can – at least at times – produce both cost savings and substantial

reductions in pollution. There are many ways to better manage the system to minimize air toxics while meeting mobility needs, including promotion of faster adoption of cleaner technologies and alternative transportation investment and management strategies. But FHWA is refusing to face core issues related to health impact assessment in its project approval and transportation plan and program approval process.

The health risks from transportation related air toxics remaining after the emission reductions of the last decade far exceed federal criteria for unacceptable health risks, and will continue to be unacceptably high even if further reductions in per-vehicle emissions are achieved in the foreseeable future. The future risks expected due to the traffic volume anticipated in many major highway corridors are not acceptable to the families who are exposed to toxic emissions. Furthermore, proper consideration of strategies that serve mobility needs without increasing single occupant vehicle travel can minimize these risks. FHWA has not given adequate consideration of these harmful health effects and the alternatives that could mitigate them in its process for reviewing and approving transportation plans, programs, highway funding agreements, and project environmental and design documentation.

The National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, requires a review of the harmful effects of exposure to these motor vehicle pollutants generated by highways. FHWA has violated both NEPA and the requirements imposed by 23 USC § 109(a) and (h) and 23 CFR § 771.105 to assess and mitigate the adverse effects of air pollution from highway projects in a number of cases, such as the proposed widening of US 95 in Las Vegas.

It is not acceptable to dismiss the substantial cancer risks that are exacerbated by highway expansions simply because cleaner technologies are likely to be introduced into the marketplace at some future time without considering the health impacts on several generations of children and adults who we know will be harmed by these effects in the decades prior to these cleaner technologies coming into wider use. The evidence of serious health risks is compelling. California's South Coast Air Quality Management District published a study entitled Multiple Air Toxics Exposure Study (MATES-II) in March 2000. In February 2000, the Journal of the Air and Waste Management Association published a study entitled "Distance Weighted Traffic Density in Proximity to Home is a Risk Factor for Leukemia and Other Childhood Cancers" (JAWMA Study). But FHWA routinely fails to even attempt to estimate the concentrations of toxic vehicular emissions likely to result from vehicle travel in high volume traffic corridors proposed for major expansion, or to assess the health risks of public exposure to pollutant concentrations identified by these recent scientific studies as the source of elevated cancer risks and rates. Not performing such an assessment is arbitrary and capricious and inconsistent with NEPA.

EPA has listed 21 toxic air contaminants from mobile sources, including diesel particulate and diesel exhaust organic gases. The EPA concluded that "[t]he current EPA position is that diesel exhaust is a likely human lung carcinogen and that this cancer hazard exists for occupational and environmental levels of exposure." 65 Fed. Reg. 35, 446 (June 2, 2000). The EPA premised this position on findings by the World Health

Organization, National Institute for Occupational Safety and Health, and International Agency for Research on Cancer. Id. Other federal health agencies have listed diesel emissions as containing carcinogens. The National Toxicology Program at NEIHS on May 15, 2000, two months before your letter, listed diesel particulate as a “known human carcinogen.” EPA has published a list of “Mobile Source Air Toxics (MSAT)” which “includes various volatile organic compounds (VOCs) and metals, as well as diesel particulate matter and diesel exhaust organic gases (collectively DPM + DEOG).” 66 FR 17,229 (March 29, 2001). This list clearly defines the hazardous air pollutants from motor vehicles that FHWA should consider in assessing the health effects of air toxic emissions from the major highway expansion projects.

In refusing to prepare environmental analyses, FHWA has cited evidence that toxic emissions from individual automobiles and overall emissions in urban areas had declined from 1990-97. FHWA has failed to explain, however, why this decline justifies a refusal to consider the public health significance of ongoing cancer risks identified in studies that relied on monitored ambient concentrations of toxic contaminants near major highways and other information gathered after 1997. Indeed, the toxic pollutant concentrations reported in MATES-II reflect lower per-vehicle emissions than are occurring in most states, because California vehicles are subject to stricter emission standards.

FHWA’s response to environmental critics does not address the information showing that the health risks remaining after the emission reductions of the last decade far exceed federal criteria for unacceptable health risks, and will continue to be unacceptably high even if further reductions in per-vehicle emissions are achieved in the foreseeable future. The future risks expected due to the traffic volume anticipated in the US-95 Las Vegas corridor and many other areas of the nation subject to highway expansion are not acceptable to the families who are exposed to toxic emissions. Furthermore, proper consideration of strategies that serve mobility needs without increasing single occupant vehicle travel can minimize these risks. Congress should reaffirm FHWA’s obligation to consider as part of project reviews these harmful health effects and the alternatives that could mitigate them.

Emissions per vehicle mile traveled are not relevant to assessing the magnitude of the public health risk associated with motor vehicle emissions. The key issue is total emissions from highway corridors and the impacts total emissions are expected to have on the health of nearby populations. When highway expansion increases the vehicle-carrying capacity of the highway it induces additional traffic volumes, which in turn will contribute to increased total emissions from the highway and exposure to higher concentrations in the ambient air of hazardous pollutants in nearby neighborhoods. Risks to human health increase in proportion to human exposure to pollutants in the ambient air, not emissions per vehicle. These increased exposures create significant public health hazards that must be addressed in environmental reviews, the regional planning process, and the air quality conformity process.

At least one reasonable estimate of the cancer risk attributable to diesel emissions is the estimate developed by the California environmental agencies presented in the MATES-II study. Even if a

careful review of the evidence suggests a better estimate of the cancer risk is only one-half or one-quarter of the risk estimated by California, the risk would still be very high.

Estimates that regional concentrations of criteria pollutants may improve are simply not relevant to assessing the likely public health impacts of toxic contaminants from motor vehicles. The regional modeling assessments performed to satisfy the “conformity” requirements of the CAA address only the direct emissions of CO, PM-10 and ozone precursors from motor vehicles. These pollutants are subject to emissions limitations established by EPA for new motor vehicles, and are expected to decline in the future because future vehicles are required to meet more stringent emissions standards. But no such standards have been established for toxic air contaminants. There is no basis for assuming that comparable reductions will be achieved for toxic air contaminants. Even if emissions from future vehicles are reduced, that reduction would not obviate the need to assess future emissions levels and whether total emissions in a heavily trafficked corridor will cause or contribute to unacceptable health hazards.

In considering whether technology clean up vs. demand management and improved transportation system planning should be preferred strategies for avoiding or mitigating health impacts of transportation, it is vital to consider the health costs of highways. The Department of Transportation has estimated the national aggregate health costs of criteria air pollutants from highways at \$40 to \$68 billion per year. Table 9, Addendum to the 1997 Federal Highway Cost Allocation Study Final Report, U.S. Dep’t of Transportation, Federal Highway Administration (May 2000). The methodology developed in the Addendum to the Highway Cost Allocation Study to estimate the costs of adverse health effects from air pollution provides a basis for estimating the adverse health effects, and costs, attributable to emissions from specific highway corridors. The Addendum assessed only the health effects attributable to pre-1997 criteria pollutants, and did not include the health effects attributable to toxic air contaminants emitted from motor vehicles. If FHWA intends to justify highway expansions by comparing the value of increased travel against the costs of providing that capacity, a fair assessment of the health costs to the community must be part of the calculus. In addition, that kind of cost-benefit calculus must be applied to both the highway option and reasonably available alternatives that can reduce or mitigate the adverse impacts on health.

Recent studies have significantly improved understanding of the linkage between vehicle emissions and the risk and incidence of cancer among people living near major highways. The MATES-II and JAWMA studies demonstrate that projects like the US-95 expansion in Las Vegas will increase cancer risks among exposed populations, a highly significant impact on the human environment that warrants environmental impact review. The most important new information derived from these studies is 1) the magnitude of the cancer risk caused by motor vehicle emissions from a highway corridor of the size of the US-95 project, and 2) the demonstrated increased incidence of cancer among children exposed to higher traffic volumes.

It has been known for nearly two decades that motor vehicles emit toxic pollutants that include known or suspected carcinogens. What had not been firmly established by sound scientific research prior to the MATES-II results is that these pollutants reach concentrations in the ambient air in the vicinity of heavily traveled highways that present cancer risks of *at least 1 in*

1,000 to 1 in 650, i.e., levels far greater than the threshold for mitigation established by EPA's cancer risk policy and federal agency policies generally.

EPA's cancer risk policy requires that pollutants be reduced when risks exceed 1 in 10,000 for the maximally exposed individual. These high cancer risks for nearby residents, and even higher risks for those living adjacent to roadways, far exceed the risk levels adopted by EPA and Congress in setting national health standards, and are unacceptable to the residents of these neighborhoods. EPA has summarized the consensus cancer risk policy of federal agencies as requiring careful assessment of measures to reduce cancer risks when the population risk is greater than 1 in 1 million.

Where the entire U.S. population is exposed to a chemical classified as a probable human carcinogen, the agency consensus appears to be that risks less than 1 in 1 million generally can be found acceptable without consideration of other factors while risks greater than that level require further analysis as to their acceptability.

56 Fed. Reg. 7757 (February 25, 1991). On the other hand, EPA and other federal agencies have generally acted to reduce cancer risks greater than 1 in 10,000. Here, the evidence from MATES-II shows that communities near corridors such as US-95 with traffic volumes in excess of 220,000 vehicles per day will be exposed to cancer risks well above 1 in 10,000.

The MATES-II study derived its estimates of community cancer risks from ambient air monitoring of toxic pollutants in 12 residential neighborhoods during 1998 and 1999. MATES-II also included regional toxic emission data for the Los Angeles Basin and a computer modeling program to estimate exposures for areas of the region where monitors were not located. The conclusions of the MATES-II study are startling: the regional average risk of cancer for residents of the Basin is 1400 in one million (1 cancer for each 714 residents), and 90% of this heightened cancer risk is attributable to air pollution from mobile sources. (MATES-II at ES-3).

MATES-II determined that exposure to diesel particulate emissions and other toxics from mobile sources combine to cause 90% of the elevated risks. *Id.* at E-3. Areas with concentrated traffic suffered from increased risks of cancer above the regional average. *Id.* at ES-5. The study found that the highest cancer risk is in neighborhoods nearest highways where modeled risks were as high as 5800 in one million, meaning that one person out of 170 is likely to suffer cancer. *Id.* at Fig. 5-3a, p. 5-10.

The JAWMA study of cancer rates in Denver, also published in 2000, is consistent with the MATES-II findings. That study focused on rates of childhood leukemia among children under 12 living very near highways (within 750 feet). The study found that children with leukemia were 12 times more likely to live close to highways than children without leukemia, and concluded that a "strong association" exists between proximity to high traffic streets and childhood leukemia. JAWMA Study at 2. The study built on established research connecting childhood cancers to benzene and other volatile organic compounds found in automobile emissions. *Id.*

Both the MATES-II and JAWMA studies have broad applicability. While MATES-II examined the L.A. Basin specifically, the general findings establish a clear link between automobile emissions and cancer risk. Even if the relative magnitude of emissions of cancer causing agents differs somewhat between locales, the underlying conclusion remains irrefutable: highways are the largest source of carcinogens emitted into the ambient air in the urban environments, and the pollutant concentrations are highest in neighborhoods near highways. The size of the cancer risk is proportional to daily traffic loads in the corridor. When traffic loads are known, approximations of ambient concentrations of mobile source toxics can be made for neighborhoods located next to highways in other states by comparing the daily traffic loads on those highways with the daily traffic loads on highways for which emissions are modeled in the MATES-II study.

Except for diesel particulate, these risk estimates are derived from well-established risk factors that have been the subject of intensive scrutiny for many years. Although the MATES-II cancer risks are derived from risk factors adopted by the California environmental agencies, those factors do not differ significantly from those reported by EPA. See *Integrated Risk Information System* (EPA, Cincinnati, OH)[<http://www.epa.gov/iris>]. In addition, these risk estimates are *not* for the maximally exposed individual living adjacent to heavily traveled highway corridors, but rather for regional populations. Nearby neighborhood exposures are substantially higher, and may be as much as an order of magnitude higher for the maximally exposed individuals.

With regard to diesel particulate, the cancer risks in MATES-II are estimated based on unit risk factors adopted by California, but not yet by EPA. “The current EPA position is that diesel exhaust is a likely human lung carcinogen and that this cancer hazard exists for occupational and environmental levels of exposure.” 65 FR 35,446 (June 2, 2000). This characterization of DPM as a carcinogen is supported by the National Institute for Occupational Safety and Health (NIOSH), the International Agency for Research on Cancer, and the World Health Organization (WHO). *Id.* The National Toxicology Program at NEIHS on May 15, 2000, also listed diesel particulate as a “known human carcinogen.” Although a risk factor for DPM has not yet been adopted by a federal agency, more than enough data has been accumulated from numerous epidemiological studies to allow a risk factor to be determined for risk assessment purposes. Further, California’s more stringent emissions standards mean that other jurisdictions, like Las Vegas, may suffer from higher concentrations of toxic emissions from mobile sources.

The JAWMA study emphasized the relationship between proximity to highways and childhood cancers. As such, this study has broad application. Nothing in the study indicates that the areas examined were in any way exceptional. Based on the findings in the JAWMA study, one would predict higher rates of childhood leukemia among those living near major highways such as the expanded US-95 in Las Vegas.

In response to this new information, Sierra Club and local civic and environmental interests have sought action by FHWA to assure a Supplemental Environmental Impact Study (SEIS) for the US-95 corridor expansion project in Las Vegas. Similar issues are presented in other corridors around the country where extremely high traffic volumes would be increased by road expansions in an area close to thousands of residents. But FHWA has refused to consider the issues being raised by environmental and health groups. These issues go to the underlying questions posed by

Senator Smith – should such requests for analysis be dismissed because of cleaner technologies are expected to become available in coming years and because emissions are decreasing somewhat in some areas? And are facility investment and transportation system management strategies worth considering as control strategies related to these public health problems?

A significant purpose of an EIS is the involvement and education of the public that the process entails. The United States Supreme Court has held that SEISs are necessary to ensure that this purpose is furthered. Marsh, 490 U.S. at 371 (1989). The cancer studies raise an issue that clearly warrants such public involvement. The US-95 expansion may look dramatically different to residents alerted to the heretofore unconsidered link between highways and cancer. An SEIS would provide an opportunity to inform the public about the issue and the degree of risk involved. The public has an obvious, critical interest in providing input on this issue.

Public involvement in the consideration of alternative modes of meeting travel demand in the US-95 corridor is critical. NEPA not only serves as a vehicle for informing the public of impacts, it also requires that alternatives be considered. Taken together with the requirement of 23 U.S.C. § 109(h) to mitigate the adverse impacts of air pollution from highways, an SEIS should identify the alternatives that can mitigate or eliminate the cancer risk while at the same time meeting the mobility needs of people who live and work in the US-95 corridor or other similar corridors around the U.S.

Federal law requires assessment, reporting, and mitigation of health risks attributable to highway projects. FHWA's failure to assess the adverse health effects, the costs of these health effects, and the alternative transportation facilities and/or services that could prevent or minimize the adverse effects of the project violates NEPA, section 109 of the federal transportation code and the Department of Transportation's ("DOT") environmental regulation at 23 CFR § 771.105.

The United States Supreme Court has affirmed the position adopted by the Council on Environmental Quality (CEQ) that the purpose of the National Environmental Protection Act would be thwarted without an SEIS requirement. 40 C.F.R. § 1502.9(c); Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 370 (1989). Accordingly, CEQ regulations implementing NEPA impose a duty on federal agencies to prepare an SEIS when "[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed actions or its impacts." 40 C.F.R. § 1502.9(c)(ii). As noted above, the CEQ defines "significantly" according to context and intensity. Context includes effects on society generally and the locality in particular, and intensity includes the magnitude of the impacts on public health and the nature of the risks. 40 C.F.R. § 1508.27.

When deciding whether to prepare an SEIS, the agency must apply a "rule of reason," while taking a "hard look" at new information. Marsh, 490 U.S. at 373-74. In weighing the value of new information, the agency must make the decision according to the same NEPA guidelines governing the decision whether to prepare an EIS in the first instance. *Id.* If new information shows that the proposed action will affect the environment in "a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared." *Id.* When new scientific data raise environmental concerns that have not been addressed in a previous EIS, an SEIS is required. Portland Audubon Society v. Babbitt, 998 F.2d 705, 708 (9th Cir. 1993). *New*

concerns that require an SEIS can be either quantitative or qualitative. *Environmental Defense Fund v. Marsh*, 651 F.2d 983, 996 (5th Cir. 1981).

In addition to NEPA, federal highway law requires the consideration of the adverse effects of air pollution prior to approval of the plans and specifications for a highway, 23 U.S.C §109(a), and the adoption of measures that “eliminate or minimize” the adverse effects of “air pollution.” 23 U.S.C. §109(h).

In a case challenging DOT’s approval of a highway project without assessing its impact on air pollution, the court in *D.C. Federation of Civic Associations v. Volpe*, 459 F.2d 1231 (D.C. Cir. 1971), held that 23 U.S.C. § 109(a) required such an analysis:

We can find no basis in the statute's language or purpose for the conclusion that certain hazards are, as a matter of law, immaterial to the Secretary's evaluation of a project's safety. The District Court would surely agree that Congress did not intend to permit construction of a bridge in a situation, however rare, where air pollution would be a significant threat to safety. It does not follow, of course, that air pollution will be a significant hazard in all-or even any-highway projects. And the District Court apparently concluded that no extraordinary dangers are likely to arise from the Three Sisters Bridge. Still, the gathering and evaluation of evidence on potential pollution hazards is the responsibility of the Secretary of Transportation, and he undertook no study of the problem.

DOT’s approval of the highway bridge was remanded.

Federal highway law goes beyond NEPA by requiring that the decision to approve a highway be

—

“made in the best overall public interest taking into consideration the need for fast, safe and efficient transportation, public services, and the costs of eliminating or minimizing such adverse effects and the following: (1) air, noise, and water pollution; (2) destruction or disruption of man-made and natural resources, aesthetic values, community cohesion and the availability of public facilities and services; (3) adverse employment effects, and tax and property value losses; (4) injurious displacement of people, businesses and farms; and (5) disruption of desirable community and regional growth. Such guidelines shall apply to all proposed projects with respect to which plans, specifications, and estimates are approved by the Secretary after the issuance of such guidelines.”

23 USC §109(h). At a minimum, this provision requires DOT to determine the costs of eliminating or minimizing the adverse health effects attributable to air pollution, and then requiring mitigation in the “best overall public interest.”

DOT’s 1987 regulations implementing this requirement and NEPA provide that the analyses required by §109(a) and (h) are to be performed as part of the NEPA review

of the project. 23 CFR Part 771. Thus because both §109(a) and (h) require an analysis of the adverse effects of air pollution and the costs of eliminating or minimizing such effects, a supplemental EIS is required.

Section 109(h) also requires DOT to “eliminate or minimize” the adverse effects attributable to a new or expanded highway. This provision is implemented through DOT regulations in 23 CFR §771.105, but has not been applied by FHWA with regard to the adverse health effects associated with toxic and fine particle air pollutants emitted from this highway project. DOT’s regulation adopts as --

the policy of the [Federal Highway] Administration that:

(b) Alternative courses of action be evaluated and decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic, and environmental impacts of the proposed transportation improvement; and of national, State, and local environmental protection goals.

(c) Public involvement and a systematic interdisciplinary approach be essential parts of the development process for proposed actions.

(d) Measures necessary to mitigate adverse impacts be incorporated into the action.

Measures necessary to mitigate adverse impacts are eligible for Federal funding when the Administration determines that:

(1) The impacts for which the mitigation is proposed actually result from the Administration action; and

(2) The proposed mitigation represents a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures. In making this determination, the Administration will consider, among other factors, the extent to which the proposed measures would assist in complying with a Federal statute, Executive Order, or Administration regulation or policy.

On its face, paragraph (d) requires that measures necessary to mitigate the adverse health effects of hazardous air pollutants and fine particles be incorporated into the plans and specifications for the project. Subparagraphs (1) and (2) then establish criteria for determining whether the costs of mitigation are eligible for federal funding. The rule does not contemplate the approval of a project that would have significant adverse effects on human health without requiring that those effects be mitigated. The project must either include measures to eliminate long-term human exposure to the levels of hazardous air contaminants that are associated with significant risks of adverse health effects, or alternatives must be developed that can prevent these adverse health effects. None of these requirements of DOT’s rule have been addressed in the review of the US-95 project in Las Vegas.

For all of the above reasons, less highway construction and more programs to reduce vehicle travel should indeed be evaluated through the planning and project review process to appraise their capacity to avoid or mitigate adverse health risks caused by transportation related air toxics emissions. While cleaner technology and better fuels are an important part of the solution, they are not the only way or necessarily the best way to reduce most of these risks.

Proposals to streamline NEPA reviews through such actions as imposition of arbitrary deadlines for agency action, limits on public involvement, curbs on the engagement of resource agencies and the public in determinations of project purpose and need or available reasonable alternatives, limitations on judicial review of NEPA decisions threaten to reduce compliance with these important legal requirements and public health safeguards. We urge Congress to oppose such efforts as fundamental assaults on America's core environmental and public health laws.

* * *