Strategies to Enhance School Air Toxics Monitoring in Environmental Justice Communities

APRIL 2010

A Report of Recommendations
of the
National Environmental Justice Advisory Council
A Federal Advisory Committee to the U.S. Environmental Protection Agency

ACKNOWLEDGEMENTS

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DISCLAIMER

This Report and recommendations have been written as part of the activities of the National Environmental Justice Advisory Council, a public advisory committee providing independent advice and recommendations on the issue of environmental justice to the Administrator and other officials of the United States Environmental Protection Agency (EPA or the Agency). In addition, the materials, opinions, findings, recommendations, and conclusions expressed herein, and in any study or other source referenced herein, should not be construed as adopted or endorsed by any organization with which any Work Group member is affiliated.

This report has not been reviewed for approval by EPA, and hence, its contents and recommendations do not necessarily represent the views and the policies of the Agency, nor of other agencies in the Executive Branch of the Federal government.

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APRIL 2010

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A Federal Advisory Committee to the U.S. Environmental Protection Agency

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NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL

March 31, 2010

Lisa P. Jackson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW (MC1101A)
Washington, D.C. 20460

Dear Administrator Jackson:

The National Environmental Justice Advisory Council (NEJAC) is pleased to submit the report, *Strategies to Enhance School Air Toxics Monitoring in Environmental Justice Communities* (April 2010), for the Agency's review. This report contains advice and recommendations about how EPA can most effectively promote strategies that would improve EPA's long-term school and community outreach approach in the future.

With the 19 recommendations outlined in this report, the Council seeks to

- Identify ways in which EPA can work with its partners and stakeholders at the national, state, tribal, and local levels to enhance the Agency's engagement with all school communities, but especially with low-income and people of color communities.
- Convey a sense of urgency toward taking action for reducing children's exposure to toxic air contaminants
- Provide a clear focus about the need to aggressively protect children where they live, learn, and play

Key recommendations include:

- Fully employ the strength of EPA's regulatory clout as needed to mitigate pollution sources around schools
- Develop community involvement and outreach plans, supported by adequate funding
- Promote and ensure Federal interagency coordination and effective national strategies to address school environmental health
- Coordinate with EPA's Children's Health Protection Advisory Committee, particularly as monitoring results relate to the siting of schools.
- Expand the research agenda to support the establishment of child safe exposure standards

- Expand the scope of the monitoring initiative to include indoor air monitoring, tribal schools and communities
- Develop and communicate detailed and comprehensive protocols
- Identify areas of uncertainty about the data and analytical results
- Actively engage schools and other community members in decisions about how best to mitigate air quality problems

Sincerely,

John Ridgway
Acting Vice-Chair

cc: NEJAC Members
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A Report of Recommendations of the National Environmental Justice Advisory Council

1.0 INTRODUCTION

The National Environmental Justice Advisory Council (NEJAC) is a Federal advisory committee chartered pursuant to the Federal Advisory Committee Act (FACA) to provide advice and recommendations to the Administrator of the U.S. Environmental Protection Agency (EPA or the Agency) about matters of environmental justice.[1] Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

1.1 Background

Twenty percent of the U.S. population -- nearly 55 million children -- spend their days in our nation's estimated 125,000 public and private elementary and secondary schools. Seven million adult employees, the vast majority of whom are women of child-bearing age, also work as teachers, administrators, and support and custodial staff in these same schools. On March 2, 2009, EPA Administrator Lisa Jackson launched a new Agency initiative to investigate air pollutant levels and, if necessary, remediate any potentially high risks posed by long-term exposure to air toxics outside our nation's schools. As part of this initiative, EPA initially selected 62 schools in 22 states for an initial round of 60- to 90-day monitoring that targeted site-specific pollutants of particular interest; two more schools were later added from two tribal nations[2]. These schools served as an initial effort to learn about the extent of air toxics exposure at the more than 125,000 schools across the country.

This air monitoring effort was intended to yield location-specific air quality data to initially screen for potential impacts from toxic air pollution around some of our nation's schools. In addition, this project was intended to provide a basis for additional actions by EPA, state, and local agencies including but not limited to additional monitoring, enforcement, and other risk and exposure mitigation efforts.

The priority school list was initially developed using results from a December 2008 *USA Today* analysis (which was based on EPA's Risk Screening Environmental Indicators (RSEI) Model and the 2005 Toxics Release Inventory) and EPA's 2002 National-scale Air Toxics Assessment (NATA). The list of schools to be monitored under the project was subsequently refined using additional and updated relevant information, largely provided by local and state air quality agencies.

1.2 EPA Charge

To ensure that EPA's communication materials about the monitoring effort appropriately addressed the concerns of environmental justice communities and were accessible to those communities, EPA charged the NEJAC to advise the Agency about: (1) the type of information that communities, particularly environmental justice communities, would need about this initiative; and (2) additional steps, if any, EPA should take to assure that its communication materials are accessible to residents of environmental justice communities.

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[1] See www.epa.gov/environmentaljustice/nejac/

[2] Information about the selection of schools and pollutants can be found on EPA's Web site at www.epa.gov/schoolair/about.html (selection of schools) and www.epa.gov/schoolair/schools.html (selection of pollutants).

In response to EPA's charge, the NEJAC established the School Air Toxics Monitoring Work Group (Work Group) to research and identify potential recommendations that the NEJAC could use to advise the EPA Administrator about best practices for communicating its project objectives, data collection methodologies, and air monitoring results to the public. The Work Group was comprised of a diverse group of stakeholders representing a wide range of expertise. A list of members is shown behind the title page of this report.

Beginning in March 2009, the Work Group responded to its charge by convening semi-monthly teleconference meetings[3] to review and discuss the monitoring efforts with EPA staff. Several of the Work Group's initial discussions focused on clarifying the scope of the charge. As requested by EPA, ongoing specific recommendations were provided about:

- Uniform, easy-to-understand materials from the top-down through the state and local agencies engaged with local schools
- Informing federal, state, and local education officials
- Designing the features and content of the project Web site that has been EPA's primary means of disseminating information to the general public
- Clarifying and rephrasing certain concepts, critical information, and links that needed to be added to the Web site
- Presenting information in easy-to-understand language and formats.

This intensive process gave the Agency an opportunity to obtain quick and ongoing advice from about the Agency's monitoring initiative and associated communications efforts. EPA has also benefited from interim advice about "best practices" that would improve EPA's long-term school and community outreach approach in the future. Exhibit 1 summarizes the accomplishments of this process. During this time, the Work Group reviewed community outreach materials developed by EPA with the following questions in mind:

- What questions are environmental justice communities, parents, educators, schools, and communities in general likely to have about this initiative?
- What steps should EPA take to ensure that the information it disseminates about this initiative is understood by and accessible to environmental justice communities and school members?
- Is EPA taking sufficient steps to work with the affected communities?
- What potential barriers could affect how environmental justice community members and schools receive or access EPA's communication materials about this initiative?
- Is EPA adequately protecting environmental justice communities, especially children, based on the project's short-term goal of gathering a snapshot of how the places where children learn and play are affected by air pollutants?
- Is the project yielding results that will be credible to both scientists and the communities?

Discussions about EPA's project Web site and how the Agency could effectively communicate and engage environmental justice communities and schools raised questions about the scope and methods of the project, as well as the analysis and interpretation of the data from the first schools to be sampled. Specifically, EPA was asked:

- Whether the Agency, in fact, had child-sensitive air exposure standards for the monitored pollutants and, if not, how EPA would determine risks to children's health
- How EPA would determine and then communicate its decision that no more monitoring was deemed necessary

[3] Work Group meetings were held March 18, March 23, April 6, May 6, May 20, June 9, June 17, July 1, July 15, August 12, August 17, August 26, September 10, September 23, October 14, October 30, November 5, November 30, December 8, December 11, December 16, 2009; and January 6, 2010. A face-to-face meeting was held January 25-26, 2010.

- How EPA would track the monitored pollutants indoors, given that pollutants are at higher levels indoors than out and that some pollutants may accumulate indoors.

Several of the findings and recommendations, therefore, concern these broader issues.

1.3 Report Organization

This report is organized into four primary sections. This section provides an overview of the EPA charge and the effort undertaken by the Work Group. Section 2, Findings, summarizes specific findings from the

Exhibit 1
Major Accomplishments of the Work Group

The intensive process used by the Work Group provided EPA with ongoing advice about communication issues, including input into the Agency's community involvement plan, the design and content of its Web site, and outreach materials. EPA has also benefited from interim advice about "best practices" that would improve the Agency's long-term school and community outreach approach in the future. Key outcomes included:

- Encouraged EPA to revise its community involvement plan to focus on communities as well as school personnel and parents; emphasize opportunities for students and community members to engage with the effort; stress continued communications with the schools and communities; and address concerns of school officials about engaging communities.
- Urged EPA to communicate directly with appropriate federal and state education agencies to ensure they were aware of the project's goals.
- Advised EPA about alternate means of communications other than electronic and the need to assure community involvement in decisions to take action based on problems identified by the monitoring.
- Urged EPA to ensure that regulatory actions were part of community solutions where appropriate, and to consider the importance of seeking input on how to address communities not chosen for this initial monitoring effort.
- Identified specific criteria to be factored into the template EPA used for presenting initial monitoring data on-line, as well as the template for documenting summary data on pollutants of concern.
- Identified criteria to be factored into the presentation developed for use during the initial meetings with schools and communities, EPA's Web page design, and FAQs to make the project more understandable to the public.
- Suggested areas where additional information and explanation was needed on the Web Page--for example, different start dates for monitoring; a summary of actions taken by EPA at the completion of each school's monitoring period; a more prominent public input portion of the Web site; clear explanations of data collection and air monitoring methodology; goals of the project; selection criteria for schools; and the rationale for a 60-day monitoring period.
- Urged that EPA's Office of Children's Health Protection review the findings of this report and that the analysis of monitoring data acknowledge that children are more vulnerable than most adults to pollutants, consistent with Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks.
- Provided opportunities for EPA staff to update its national Coalition for Healthier Schools partners about the project through two national conference calls hosted by a Work Group member who also staffs the national Healthy Schools Network. Questions and suggestions from the Coalition were forwarded to EPA staff, including questions about tracking pollutants indoors, indoor air in schools, measuring and interpreting cumulative exposures, offering enhanced access to EPA's various voluntary programs on school environments, and other steps.

initial phase of air monitoring conducted by EPA at selected schools. These findings serve as the basis for the recommendations, which are presented in Section 3. Section 4, Conclusions, outlines next steps.

2.0 FINDINGS

The following findings (and associated recommendations) are grouped into five broad categories:

1. Community Collaborations and Education
2. Coordination Among Government Agencies and Non-Governmental Organizations (NGOs)
3. Project Scope and Methods
4. Data Analysis, Interpretation, and Conclusions
5. Potential Mitigation Measures to Reduce Exposure to Air Toxics at Schools

2.1 Community Collaborations and Education

This section highlights findings related to EPA's dissemination of information and efforts to involve affected communities and related school personnel in the monitoring initiative.

- **Lack of early and sustained involvement or communication with the affected communities**. Because of the speed at which this project was initiated, community partners, teachers and students were not informed early and, therefore, were not actively engaged in monitoring projects that affected their communities. The collaborative approach takes advantage of community expertise, promotes understanding and acceptance of the projects, and encourages people to work collaboratively to solve problems that are identified.

- **Opportunities exist to involve students in hands-on scientific research**. There are numerous examples of school-based research projects that actively engage students, which could be used as a starting point for designing effective classroom- and field-based curricula to accompany monitoring projects of this type. For example, the Work Group heard two presentations from academic leaders who have conducted successful public health data monitoring projects that actively involved young people. These researchers included Dr. Pat Kinney at Columbia University's Mailman School of Public Health, and Dr. Virginia Guidry of the University of North Carolina's School of Public Health.

- **Opportunities exist to collaborate with other stakeholders.** EPA has funded many efforts that involve collaborative problem solving and community-based approaches to solving local environmental problems. These approaches should be used in future monitoring initiatives.

- **Lack of budgeted resources for community involvement and outreach.** Despite the fact that EPA allocated more than $2 million of existing funds for the initial monitoring project, no funds were allocated for the actual community involvement and public outreach efforts.

- **Lack of any ongoing effort(s) to evaluate the effectiveness of the outreach efforts to inform and engage affected communities**. The Work Group asked for and did not receive information about the actual questions being asked about the monitoring projects at the local level. EPA was advised to ask communities how they wanted to be involved in the monitoring process and to provide communities with some examples or ideas on how this could happen, such as periodic conference calls.

- **Opportunity for the EPA School Air Toxics Monitoring web site to serve as an example of how EPA can organize a lot of information in a way that is fairly accessible to the public.** The school air toxics monitoring Web site has many excellent features. It is organized in a way that makes it easy for parents and community members to find real-time information about their school. It has a map from which users can find their school and link to school-specific data. It is easy for users to link to school-specific analytical reports. There is background data on pollutants of concern. The

Web site is clearly organized and information is easily accessible.

- **EPA's demonstrated commitment to transparency and openness in conducting EPA programs.** Rather than waiting until all monitoring was complete, EPA loaded sampling data onto the web site after the data was quality assured, which provided communities with an ongoing way to track monitoring data collected at their schools.

2.2 Coordination among Government Agencies and NGOs

This section highlights findings related to efforts to coordinate among and between government agencies and non-governmental organizations (NGO).

- **Lack of clear communication between EPA, the U.S. Department of Education, and the U.S. Department of Health and Human Services/Centers for Disease Control and Prevention (HHS/CDC) about the project at the onset.** Newly appointed staff at the U.S. Department of Education were not familiar with this high profile EPA project and requested additional inputs in Fall 2009, indicating that with a change in Administration and with a fast-tracked project, there is a demonstrated need for a federal interagency work group focused on schools through which a range of general and project-specific information can be easily shared. A previous federal interagency task force (co-chaired by EPA and HHS) on risks to children's health (1998-) had included a work group on schools.

- **Opportunities exist for regular reviews of project data assessments from the EPA Office of Children's Health, the Children's Health Protection Advisory Committee, and the EPA- and CDC-co-funded Pediatric Environmental Health Specialty Units (PEHSU) in each EPA region.** The core question of this project is not whether air toxics physically corrode or erode school facility steel, bricks and mortar, but whether the air toxics near schools put children at greater risk of health and/or learning problems. This is, therefore, not just an environmental justice project, but a children's environmental health project, a new top priority at EPA which has an Office of Children's Health Protection (OCHP) and a federal advisory committee focused on children's health. The Children's Health Protection Advisory Committee (CHPAC) has made many recommendations for improving outdoor air quality standards during the previous Administration, most of which were not acted upon. It would be very appropriate and potentially very useful to have the final monitoring data and EPA statements of findings or interpretations reviewed by CHPAC and its recommendations then shared with NEJAC.

- **Opportunities exist for EPA to form collaborative partnerships with stakeholders in the community and at all levels of government.** EPA can benefit from coordinating efforts with other agencies, such as the National Institute of Occupational Safety and Health (NIOSH) and PEHSUs, which could assist EPA with child-sensitive "health hazard evaluations" on-site at schools, as part of its mandate to develop and issue voluntary new guidelines for use in developing and implementing an environmental health program for schools that takes into account the special vulnerability of children in low-income and minority communities to exposures from contaminants, hazardous substances, and pollutant emissions.[4] Coordination with other decision-makers would allow EPA to advocate in partnership with them and advance its commitment to achieving environmental justice and to "protect children where they live, learn and play," as well as to successfully advocate with the White House and Congress for the resources necessary to carry out and to develop both voluntary and regulatory programs to prevent environmental threats to children.

[4] Toxic Substances Control Act, 2007, Title V, section 504 (a)(7), Public law 100-140

2.3 Project Scope and Methods

NEJAC was not charged to review EPA's data or findings before the information was posted to the Web site. Once data emerged, however, the Work Group expressed concern and disagreement with EPA about some of the Agency's assessments of risks to children's environmental health. The Work Group also cautioned EPA, given the limited scope of the study, against using language that in any way implied that "the air was safe to breathe." This section highlights findings related to the scope of the school air toxics monitoring program.

- **Lack of indoor air monitoring.** Indoor air exposure to key pollutants measured at elevated levels outside schools are not currently part of the School Air Toxics Monitoring Program. Consequently, the full impact of potential exposures of school children to outdoor pollutants is only roughly estimated, and levels of indoor pollutants are unknown, likely resulting in an underestimation of true exposures and risks to children from pollution sources outside schools. A more direct way to measure impacts on children is to place monitors on children as they learn and play indoors and outdoors.

- **Potentially inadequate monitoring duration.** The length of time of the monitoring (only 60 to 90 days, with 10 data points each, collected primarily during the summer and fall seasons) raises questions as to the adequacy of this monitoring period to extrapolate year-round annual averages. Uncertainties also exist regarding the effect of monitoring in the summer (during conditions of lower traffic, higher heat), the methodology used to develop the screening levels used in data interpretation, and the effect of activities, such as school renovation projects, on monitoring results. A question was also raised regarding the variability of the data from at least one of the schools.

- **Lack of involvement by tribal stakeholders.** In a response to a request from a tribal member of the NEJAC, EPA took immediate action by adding two tribal schools to the monitoring project. The monitoring data collected for these schools will begin to fill a significant data gap about air quality in Indian country.

- **Prevalence of schools impacted by air toxics in any community.** Air toxics can pose hazards in all communities, not just environmental justice or low-income communities. Nevertheless, given the limited sample (62 schools) in this study, future evaluations should determine the extent that air toxic risks fall disproportionately on schools that have large numbers of poor and minority students or are located in poor or minority neighborhoods.

2.4 Data Analysis, Interpretation, and Conclusions

This section highlights findings related to the EPA's interpretation of the monitoring data and how the data will be used.

- **Lack of child-safe standards.** EPA's analysis and reporting of the data raises questions about whether EPA has current child-sensitive standards for air toxics exposure, as well as about the use of adult-safe levels instead of child-safe levels to evaluate exposure to specific air pollutants (in commercial, industrial, and agricultural use). As a result, the differential harm from toxic exposures for children is unknown. The issue of children's health should be factored into the analysis and reporting of data as well as the decisions predicated on the findings.

- **Need for cautionary interpretation of data.** Given the above unknowns, and given that our concerns are focused on the nation's children, it would be prudent to employ the upper bound of 99% confidence intervals rather than 95% confidence intervals when estimating air toxic concentrations around schools.

- **Need for evaluation of cumulative exposures.** As stated in our report, "Ensuring Risk Reduction in

Communities with Multiple Stressors: Environmental Justice and Cumulative Risks/Impacts" (NEJAC, December 2004), "… the impressive array of [cumulative risk] tools now available to ensure pollution prevention and risk reduction can be brought together and applied in new, innovative, and more effective ways." However, the current school air toxics monitoring model and protocol do not address cumulative exposures to air emissions.

- **Need for consideration of potential factors of children's health, learning and behavior.** Because asthma and learning disability rates tend to be higher in environmental justice and low-income communities, EPA needs to assess how these rates and morbidity among children, as well as school absenteeism and achievement, are impacted by exposure to air toxics at schools where children spend extensive periods of time.

- **Need for clarification of NEJAC's role in this project.** The Work Group's disagreements with EPA's data interpretation and the limited scope of the project led to a request that EPA post a disclaimer on the Agency school monitoring web site that would have made it clear that NEJAC, or its work group never was charged with the review of EPA's protocols for data collection, analysis or interpretation. The Work Group also asked EPA to post caveats on the Web site when the first two school-specific reports were posted, a practice that would have had application as other data became available. Despite repeated discussions, EPA did not agree to these requests.

2.5 Potential Mitigation Measures to Reduce Exposure to Air Toxics at Schools

This section highlights findings related to potential efforts to mitigate contamination and reduce exposure to air toxics at schools.

- **Lack of detail regarding regulatory response to pollution violations.** Questions were raised about the steps EPA would take when the monitoring project identified serious air quality problems. The Work Group stated that, as part of this project, EPA should have explicitly addressed this issue, including outlining specific conditions under which permits of polluting facilities should be revoked as a result of monitoring.

- **Opportunities to leverage Supplemental Environmental Projects.** EPA programs, such as Supplemental Environmental Projects (SEP), could serve as a means to assist affected communities, local schools, and industries in mitigating contamination in their communities. SEPs often are part of an enforcement settlement in which a polluter is allowed to redirect all or portion of a penalty to environmentally-beneficial projects related to the specific violation in the communities directly affected by exposure to the pollution.

3.0 RECOMMENDATIONS

Consistent with the charge to the NEJAC from EPA, this section recommends ways in which EPA can work with its Agency partners and stakeholders at the national, state, tribal, and local levels to enhance the Agency's engagement with all school communities, but especially with low-income and environmental justice communities. These recommendations include areas in which EPA has direct authority and influence, such as regulatory and enforcement mechanisms, as well as those areas where EPA may play an indirect role, such as advocating with other agencies or encouraging voluntary implementation of pollution reduction efforts. Recommendations for action are grouped in five different focus areas -- Community Collaborations and Education; Coordination among Government Agencies and NGOs; Project Scope and Methods; Data Analysis, Interpretation and Conclusions; and Potential Mitigation Measures to Reduce Exposure to Air Toxics at Schools -- which are described below.

3.1 Community Collaborations and Education

The following recommendations were developed to enhance EPA's approach to engaging communities through more effective outreach efforts and increasing the user-friendliness of the Agency's Web site.

1. **EPA should develop a community involvement and outreach plan for the next phase of this initiative that engages communities (including school communities) early in the planning process.** EPA should support efforts to actively engage communities in project design, implementation, and evaluation. Communities should be informed and engaged early in the process of the proposed approach and scope of the project and given opportunities to shape decisions about the project design. The Agency should also invest time and thought in developing a method of involving students, and perhaps community members, directly in some aspect of the monitoring. EPA should provide funding to develop a summer program for teachers on engaging students and the community in hands-on environmental education opportunities, e.g., in conjunction with the National Association of Environmental Educators.

2. **EPA should provide adequate funding to support its community involvement and outreach plans.** Outreach and collaborative work with community partners requires expertise and resources that need to be identified and budgeted for during project design through interpretation of findings and implementation of mitigation measures.

3. **EPA should develop a feedback loop to assess the effectiveness of its communications during the implementation of the project and should provide oversight of how outreach activities are implemented.** EPA should identify communities where communication methods appear to be successful, identify what factors contributed to the success, and ways to replicate those efforts in other communities. Similarly, where communications prove ineffective, there should be some effort to collect lessons learned.

4. **EPA should promote the school air toxics monitoring web site as a model for other parts of the Agency to make data available to the public in a timely and accessible fashion.** Although there are issues with how EPA interpreted the monitoring data, the web site's major features (maps and links to school-specific data, links to data on pollutants, and data posted continuously throughout the monitoring project) provide an excellent example of one way the Agency should be communicating with the public.

3.2 Coordination among Government Agencies and NGOs

This section presents recommendations related to maximizing opportunities for EPA to collaborate and coordinate with external stakeholders engaged in environmental justice and environmental health efforts.

5. **EPA should establish Federal Interagency Coordination.** Under Title V - Section 504 of the Toxic Substances Control Act (amended 2007), EPA is directed to seek the advice of the U.S. Department of Education and HHS about developing and issuing federal guidelines about school siting and wider environmental health programs to improve school environments. During the Clinton Administration, under Federal Executive Order 13045 (*Protection of Children From Environmental Health Risks and Safety Risks*), EPA and HHS/CDC co-chaired an Interagency Task Force on Environmental Health Risks and Safety Risks to Children, which convened a Work Group on Schools. These two mechanisms, the Executive Order and an Interagency Task Force, could again be effective tools for this Administration and EPA to promote and ensure interagency coordination and effective national strategies that aggressively "protect children where they live, learn and play."

6. **EPA should form collaborative partnerships with external stakeholders and ensure appropriate funding for such interactions.** Potential partners include NGOs and community partners. Coordination with other decision makers would allow EPA to advocate in partnership with them on efforts to advance its commitment to achieving environmental justice and protecting all children.

7. **EPA should coordinate with other agencies involved in environmental health.** The Agency should request that CDC, NIOSH, and PEHSUs assist EPA by conducting model child "health hazard evaluations" of schools where air toxics have been found at high levels. This would help EPA develop and issue mandated federal guidelines about how these agencies can work with state health agencies for on-site school assessments, as directed in Title V of TSCA (EPA collaborates with federally funded pediatric environmental health specialty centers to assist in on-site school environmental investigations). As noted earlier, EPA efforts must take into account the special vulnerability of children in low-income and minority communities to exposures from contaminants, hazardous substances, and pollutant emissions. It should be noted that while EPA and the public health system generally do not have the authority to enter schools, NIOSH may enter a workplace where hazards are thought to be present. Prevalence of school children's illnesses, absences, disabilities, behavior problems, and relative achievement on standardized tests are of interest in this research, as well as occupational illnesses among school personnel.

8. **EPA should provide findings from its school air toxics monitoring program to the EPA's Child Health Protection Advisory Committee (CHPAC) School Siting Task Group.** Given that the Agency is developing a new federal guideline for the siting of schools, monitoring data being gathered under the School Air Toxics Monitoring Program should inform the recommendations formulated by the CHPAC about key lessons learned. EPA should also allow the CHPAC to review the Agency's final school air toxics monitoring data and findings, and share the CHPAC's recommendations with the NEJAC.

3.3 Project Scope and Methods

The following recommendations pertain to ways that EPA should expand the scope of its school air toxics monitoring program.

9. **EPA should expand the scope of its air toxics monitoring program at schools.** The Agency should include indoor air monitoring of key pollutants at schools where elevated levels of air toxics have been measured. Given that EPA has not necessarily established child-safe levels for exposure to all pollutants (in commercial, industrial, and agricultural use), the Agency should ensure that it is using most current science for all child air toxics exposures and expand its research agenda to investigate more thoroughly the issue of differential harm from toxic exposures for children, including children with asthma and those receiving special education services. Undertaking this avenue of research will add to EPA's credibility, accountability, and effectiveness.

10. **EPA should include Tribal schools or communities within Indian country in future school air toxics monitoring projects.** EPA should increase its efforts to assess air quality in schools in Indian country and work with Tribal governments and staff to expand their capacity to develop air quality monitoring programs and effective mitigation measures.

11. **EPA should include demographic data of the communities around the selected schools in its final report for Phase 1 of the School Air Toxics Monitoring Initiative.** Future evaluations should determine the extent that air toxic risks fall disproportionately on schools that have large numbers of poor and minority students or are located in poor and/or minority neighborhoods. As it moves forward on Phase 2, EPA should consider environmental justice factors (such as race, income, and number of students receiving free and reduced price lunch) as part of its criteria for selecting schools for the study.

3.4 Data Analysis, Interpretation, and Conclusions

This section presents recommendations for EPA to address uncertainties associated with its data analysis, interpretation, and conclusions; develop a method to resolve disputes with NEJAC; and qualify its findings with appropriate caveats and disclaimers.

12. **EPA should identify areas of uncertainty about the data and analytical results.** The Agency should acknowledge issues that may impact air monitoring results, such as the effect of monitoring in the summer (e.g., lower traffic, higher heat) and the length of monitoring. Another area of uncertainty is the impact of activities in or around schools that may result in compounding exposure to air toxics (e.g., school renovation projects, pesticide applications). EPA should also acknowledge the uncertainty associated with evaluating children's exposures, given that children have developing lungs and breathe more air per pound of body weight than adults and therefore may be more vulnerable to adverse effects of air toxics than adults, and given that child-safe health standards have not necessarily been adopted for the Agency's use in evaluating its air monitoring data.

13. **EPA should provide caveats and disclaimers to its findings, interpretations, and conclusions as appropriate.** In presenting its findings to the public, EPA should acknowledge that neither the NEJAC nor its Work Group(s) have reviewed or endorsed the Agency's interpretations of data. EPA should also note the uncertainties described earlier, as appropriate, on this project's web site. In addition, the Agency should acknowledge the implications of the monitoring results on the >100,000 schools in the United States that are not currently being monitored.

14. **EPA should develop and communicate detailed and comprehensive protocols pertinent to future phases of this program.** Such protocols should address the data collection methods, data management and analysis standards, and criteria for interpreting the findings and setting response actions.

15. **EPA should evaluate cumulative exposures in its school air toxics monitoring model.** Future sampling protocols should assess, if not measure, the many other air toxics that communities and schools are exposed to beyond the pollutants of concern screened for in this project.

16. **EPA should clarify NEJAC's role in evaluating any and/or all of the protocols mentioned above.** Methods should be developed to resolve disputes between NEJAC (or its work groups) and EPA regarding the interpretation of the efficacy of these protocols and/or their implementation so that the integrity of individuals serving on the NEJAC and its Work Group(s) are not compromised.

3.5 Potential Mitigation Measures to Reduce Exposure to Air Toxics at Schools

The following recommendations were developed for the Agency's consideration as a means to engage affected communities, local schools, and industries in mitigating contamination in their communities.

17. **EPA should fully employ the strength of its regulatory clout as needed to mitigate pollution sources around schools.** Where that is not feasible and where school children who must attend school are clearly in harm's way, EPA should consult with the U.S. Department of Education about offering alternative educational placements for children. EPA should also encourage the use of supplemental environmental projects (SEP) as a potential response. SEPs, which are environmentally-beneficial projects that a polluter is not otherwise legally required to perform but agrees to undertake in settlement of an enforcement action, may be appropriate for use in enforcement actions or where elevated levels of air toxics are found. The Agency should engage affected communities in decisions related to using SEPs as a mitigation option in their communities.

18. **EPA should actively engage schools and other community members in decisions about how**

to mitigate identified air quality problems. A full range of options, including permit modification or revocation, should be on the table.

4.0 CONCLUSION

As part of the "next steps" for EPA's School Air Toxics Monitoring Program, the following recommendation is offered:

19. **EPA should seek the advice of the NEJAC (or its work group as delegated) about designing and implementing the next phase of the school air toxics monitoring project.** The Agency should engage the NEJAC in more than just community outreach and communications issues related to this program. For all the aforementioned reasons, we believe that EPA's "Charge" to the NEJAC needs to be revised and expanded to incorporate areas other than effective communications strategies for engaging with the public about EPA's School Air Toxics Monitoring project.

    Additionally, a revised charge from the NEJAC to the Work Group, should delineate the role of that body in interpreting and analyzing air monitoring data that is distinct from that of a formally established Peer Review Committee, yet allows the Work Group to substantively address these areas in a way that is not considered to be going beyond its "chartered" responsibilities and those of the NEJAC itself. The development of protocols that address all aspects of the monitoring project would allow the Work Group to provide expert advice relevant to two key phases of the project, i.e., data collection design and interpretation of findings, both critical to the usefulness and credibility of the program.

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APPENDICES

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APPENDIX A

NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL

CHARGE ON SCHOOL AIR TOXICS MONITORING PROGRAM

Background

Recent media reports have raised critical questions about air quality outside schools near large industrial facilities. On March 2, Lisa Jackson, Administrator of the U.S. Environmental Protection Agency (EPA), announced a new initiative to further measure levels of toxic air pollution near many schools across the country. EPA has pledged to take swift action to investigate and remediate, if necessary, any potentially high-risk from long-term to air toxics at our nation's schools.

EPA is following an aggressive timeline for prioritizing and monitoring schools to determine which are exposed to high levels of toxic air pollution. EPA and its state partners will prioritize schools for more extensive air quality analysis, looking closely at schools located near large industries and in urban areas. EPA anticipates monitoring at some schools could begin quickly, perhaps as early as April 2009 for some schools. The monitoring will be conducted primarily by state and local governments under EPA guidance. Some states have already begun monitoring.

EPA has selected schools based on their exposure to toxic air pollutants. EPA expects that, based on these criteria, many of the schools on the list will be located in communities that have environmental justice concerns. EPA is working with state, local, and tribal governments to verify the data that feed the risk estimates used to develop the list of schools for the monitoring program. EPA also will work with states, tribes, and local communities to ensure that monitors are deployed quickly to get high-quality data and to share results with American families. This partnership will help EPA maximize its monitoring and analytical capabilities to develop a clearer picture of any potential risks to children from toxic air pollution. This action is particularly critical in some low-income areas, which sometimes are impacted disproportionately by environmental degradation.

Once the list of schools is made public, EPA expects that many school officials, communities, and parents will have concerns and questions. EPA is developing communication materials to provide to states, which may choose to use or adapt the materials.

Charge Questions

EPA wants to assure that its communication materials appropriately address the concerns of environmental justice communities and are accessible to those communities. The purpose of this charge is for EPA, as it prepares its communications materials for the school monitoring program, to gain insight from the NEJAC about: (1) the type of information communities, particularly environmental justice communities, will need about this initiative; and (2) what

additional steps, if any, EPA should take to assure that its communications materials are accessible to environmental justice community members. Specifically:

- What questions are environmental justice communities likely to have about this initiative?
- What steps should EPA take to ensure that the information it disseminates about this initiative is accessible to environmental justice community members?
- What potential barriers could affect how environmental justice community members receive or access EPA's communication materials about this initiative?