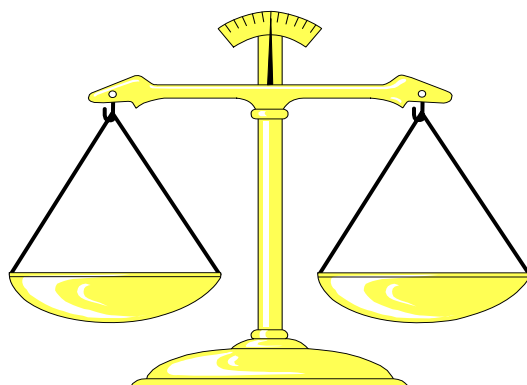


**THE 2005 GULF COAST HURRICANES AND  
VULNERABLE POPULATIONS –  
RECOMMENDATIONS FOR FUTURE DISASTER  
PREPAREDNESS/RESPONSE**



August 2006

**A Report  
prepared by the**

**National Environmental Justice Advisory Council**

*a Federal Advisory Committee to the U.S. Environmental Protection Agency*

## **Acknowledgements**

The National Environmental Justice Advisory Council (NEJAC) wishes to express its appreciation to the members of the Gulf Coast Hurricanes Work Group (Work Group), who worked under extremely difficult circumstances to produce draft recommendations for the NEJAC's consideration. Most Work Group members came from devastated Gulf Coast areas, and were themselves struggling to rebuild their own lives and communities. The NEJAC especially wishes to acknowledge Ms. Wilma Subra, Work Group Chair, for the leadership, hard work, and dedication she provided to producing this report.

### **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).

This report has not been reviewed for approval by the 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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**NATIONAL  
ENVIRONMENTAL JUSTICE  
ADVISORY COUNCIL**



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August 11, 2006

The Honorable Stephen L. Johnson  
Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Dear Administrator Johnson:

We are pleased to submit the report, *The 2005 Gulf Coast Hurricanes and Vulnerable Populations: Recommendations for Future Disaster Preparedness/Response*, August 2006, for the Agency's review. The report provides the advice and recommendations of the National Environmental Justice Advisory Council (NEJAC) in response to the following EPA charge question:

*How can EPA effectively address the vulnerabilities of all communities to public health and environmental risks and harms, including minority and low-income communities, in EPA's response and rebuilding, and preparedness and prevention efforts, in the aftermath of natural disasters similar to Hurricanes Katrina and Rita, pursuant to the National Response Plan and applicable statutory authorities and their implementing regulations, as well as Executive Order 12898?*

We deeply appreciate the opportunity to provide advice and recommendations regarding this important question. It is everyone's collective hope that, in the aftermath of disasters such as Hurricanes Katrina and Rita in 2005, we as a Nation not only will be able to rebuild healthier, more sustainable communities, but also will be better prepared both to respond to future such events and to prevent their negative consequences. Therefore, the NEJAC has worked earnestly to provide cogent, relevant, and timely advice and recommendations.

To your credit, EPA proactively sought input from representatives of communities devastated by Hurricanes Katrina and Rita about ways in which the Agency can improve its disaster preparedness and response activities in vulnerable communities. EPA convened a multi-stakeholder group from the Gulf Coast region, in the form of the NEJAC Gulf Coast Hurricanes Work Group (Work Group), to formulate initial draft recommendations for the NEJAC to deliberate and act upon. The Work Group met twice, in New Orleans, Louisiana (February 1-2, 2006) and Biloxi, Mississippi (April 11-12, 2006). In addition, the NEJAC Executive Council deliberated on the Work Group's draft recommendations, and received public comments regarding them, at a NEJAC Public Meeting in Washington, DC (June 20-22, 2006).

We wholeheartedly affirm EPA's concern for groups which may be more vulnerable to the environmental impacts of natural disasters because of physical, biological, socio-economic, cultural, historical, or other factors. In its *Framework for Cumulative Risk Assessment*, EPA defined vulnerability as: (1) susceptibility or sensitivity; (2) differential exposure; (3) differential preparedness, and/or (4) differential ability to recover. We urge EPA to foster disaster research, policy, planning, and program implementation which is more historically, socially, and geographically informed. Indeed, experts agree that pre-disaster discrimination—be it economic, educational or social—will exacerbate the impact of a disaster on a community. We also urge EPA, where appropriate, to take a broad view of the environment and consider the environmental and/or public health impacts related to housing, transportation, the interrelationship between the built and natural environments, and other issues. Indeed, greater use of vulnerability analyses and application of environmental justice principles can significantly enrich disaster policy-making.

Representatives of Gulf Coast communities identified fourteen issues of concern. The report grouped these issues and their associated recommendations into the following three areas:

1. Enhance EPA's disaster preparedness and response procedures;
2. Facilitate risk communications and environmental health response; and
3. Foster environmentally sound redevelopment.

We will highlight the most prominent recommendations. With respect to enhancing EPA disaster preparedness and response procedures, we recommend that EPA consider revising its disaster management procedures. Such revisions may include:

- Identify vulnerable populations and their environmental and/or public health needs through use of tools such as the *Environmental Justice Geographic Assessment Tool*;
- Ensure communications with, and input from, vulnerable populations in both the development and implementation of new disaster response procedures;
- Facilitate greater inter- and intra-governmental coordination to protect vulnerable populations;
- Incorporate an environmental justice function and staffing support in the Incident Command System structure; and
- Develop public participation guidelines for disaster response situations, and promote their adoption and use by relevant emergency response organizations in both the public and private sectors.

Other recommendations in this area involve: (1) strengthening state, tribal and local government preparedness; (2) ensuring that disaster communications delivery mechanisms reach all populations; and (3) developing guidelines for residents who may come in contact with floodwater, sediments, and hazardous materials in the future.

With respect to risk communications, we recommend that EPA:

- Evaluate the effectiveness of current mechanisms for communities to communicate with agencies, such as an over-reliance on the Internet;
- Use focus groups to prepare risk communication materials, both in advance of and during disasters, and ensure that messages are understandable for culturally and educationally diverse populations;
- Ensure that materials are available in needed languages;

- Establish a credible forum for dialogue with affected stakeholders about different ways to improve risk communications, including the use of forums and expert panels;
- Use neutral facilitators, when appropriate;
- Provide technical assistance to communities to access and interpret data, and
- Build partnerships to ensure community outreach and meaningful involvement for populations which historically have had less access to environmental and public health information and/or the decision-making process.

In addition, EPA should work with appropriate agencies to address issues such as mold, debris and sediments, and assess whether a health survey of Gulf Coast residents impacted by the hurricanes is appropriate.

With respect to environmentally sound redevelopment, we recommend that EPA work with appropriate agencies to foster environmentally sustainable redevelopment and the restoration of wetlands and barrier islands. In addition, EPA should work with appropriate agencies to address issues such as Brownfields assessment and cleanup, worker protection, and job training and creation.

In closing, we want to acknowledge the members of the Gulf Coast Hurricanes Work Group for their contributions to this report. In particular, we wish to recognize the leadership, hard work and dedication provided by Ms. Wilma Subra, Work Group Chair. We also want to acknowledge the many EPA offices that worked with the NEJAC to develop meaningful recommendations. These EPA offices include: Region 4; Region 6; Office of Solid Waste and Emergency Response (Office of Emergency Management, Office of Brownfields Cleanup and Redevelopment); Office of Water; Office of Policy, Economics, and Innovation; Office of Radiation and Indoor Air; Office of Research and Development; and the Office of Enforcement and Compliance Assurance (Office of Environmental Justice). We look forward to your response to our advice and recommendations.

Sincerely,

*Richard Moore /s/*

Richard Moore  
Chair

cc: NEJAC Members  
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# **THE 2005 GULF COAST HURRICANES AND VULNERABLE POPULATIONS – RECOMMENDATIONS FOR FUTURE DISASTER PREPAREDNESS/RESPONSE**

## **INTRODUCTION**

The National Environmental Justice Advisory Council (NEJAC) is a formal 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) on matters related to environmental justice. This report responds to EPA’s request for advice and recommendations on the following question:

“How can EPA effectively address the vulnerabilities of all communities to public health and environmental risks and harms, including minority and low-income communities, in EPA’s response and rebuilding, and preparedness and prevention efforts, in the aftermath of natural disasters similar to Hurricanes Katrina and Rita, pursuant to the National Response Plan and applicable statutory authorities and their implementing regulations, as well as Executive Order 12898?”

It is everyone’s collective hope that, in the aftermath of disasters such as Hurricanes Katrina and Rita in 2005, we as a Nation not only will be able to rebuild healthier, more sustainable communities, but also will be better prepared both to respond to future such events and to prevent their negative consequences. Therefore, the NEJAC has worked earnestly to provide advice and recommendations on the important question above. The EPA convened a multi-stakeholder group of individuals from the Gulf Coast region, in the form of the NEJAC Gulf Coast Hurricanes Work Group (Work Group), to formulate a set of initial draft recommendations for the NEJAC to deliberate and act upon. The Work Group met in person twice, in New Orleans, Louisiana (February 1-2, 2006) and Biloxi, Mississippi (April 11-12, 2006). The Work Group also conducted several conference calls. In addition, the NEJAC Executive Council deliberated on the Work Group’s draft recommendations, and received public comments regarding them, at a NEJAC Public Meeting in Washington, DC (June 20-22, 2006).

NEJAC Work Group members, who themselves have been struggling to rebuild and renew their lives and devastated communities, requested that the NEJAC express their appreciation to the EPA Administrator for the selfless, and often heroic, efforts of EPA staff in responding to the recent hurricanes. They recognized the monumental scope of the hurricanes’ impacts, and commended EPA’s rapid and extensive response efforts. In particular, they noted EPA’s sensitivity to the needs of disadvantaged communities. They urged the NEJAC to strongly convey their communities’ sense of tremendous anguish and urgency regarding their current and future challenges, as well as EPA’s important role in addressing them. As Mayor Johnny Dupree of Hattiesburg, Mississippi, a member of that Work Group, poignantly stated on April 12, 2006: “Because of EPA’s past good work in environmental justice, communities in the Gulf Coast have high expectations for EPA to provide leadership in addressing their concerns.”

The NEJAC wholeheartedly affirms EPA's concern for those groups which may be more vulnerable to the environmental impacts of natural disasters because of physical, biological, socio-economic, cultural, historical, or other factors. We concur with the EPA charge's description of the factors which may result in certain groups being more vulnerable to public health and/or environmental impacts:

“Minority and/or low-income populations may reside in areas with polluting facilities and/or other sources of environmental contamination. Such populations may suffer from health conditions and other risk factors that make them more susceptible to environmental risks and harms, particularly the long-term impacts. Minority and/or low-income populations sometimes lack access to environmental information and are unprepared to cope with environmental risks and harms, including proper safeguards for reentry. Lastly, such populations may lack the resources to recover from negative environmental impacts, such as access to health care or the capacity to ensure safe and appropriate reuse of contaminated properties.”

EPA has defined vulnerability as: (1) susceptibility or sensitivity; (2) differential exposure; (3) differential preparedness, and/or (4) differential ability to recover.<sup>1</sup> For the purposes of this report, individuals, communities, groups, or populations affected by any, or a combination, of the above factors are referred to as being “vulnerable.”

Emerging literature on the issues of environmental justice and vulnerable populations, in the wake of Hurricanes Katrina and Rita, speaks to the need for disaster research, policy, planning, and program implementation to be more historically, socially, and geographically informed. This literature argues for taking a broad view of the environment, which includes issues such as air quality, housing, and transportation, and the interrelationship between the built and natural environments. Additionally, this literature advocates for a move away from viewing disasters as acute events merely, concentrated in time and space, and separate from routine, or nondisaster social processes. Indeed, experts agree that pre-disaster discrimination—be it economic, educational or social—will exacerbate the impact of a disaster on a community.<sup>2</sup> In this context, greater use of vulnerability analyses and application of environmental justice principles can significantly enrich disaster policy-making.<sup>3</sup>

To facilitate a much needed dialogue between the environmental justice and disaster preparedness/response fields, NEJAC requests that EPA share with the public their lessons

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<sup>1</sup> U.S. Environmental Protection Agency, *Framework for Cumulative Risk Assessment*, EPA/630/P-02/001F, May 2003, p. 39-42.

<sup>2</sup> Laska, Shirley, “The Role of Social Science Research in Disaster Preparedness and Response,” Testimony to U.S. House of Representatives Science Committee, Subcommittee on Research, November 10, 2005.

<sup>3</sup> Center for Progressive Reform, “An Unnatural Disaster: The Aftermath of Hurricane Katrina,” Washington, DC: CPR Publication #512, September 2005.

Houck, Oliver, “Can We Save New Orleans?” *Tulane Environmental Law Journal* 19(1): 1-68, Spring 2006.

Pastor, Manuel, Robert D. Bullard, James K. Boyce, Alice Fothergill, Rachel Morello-Frosch, and Beverly Wright, “In the Wake of the Storm: Environment, Disaster, and Race After Katrina,” New York: Russell Sage Foundation, May 2006.

learned regarding disaster response, rebuilding, preparedness, and prevention efforts for minority, low-income, and other vulnerable populations. Since Hurricanes Katrina and Rita, various EPA program offices, *e.g.*, the Office of Solid Waste and Emergency Response (OSWER) and the Office of Water (OW), and Regions 4 and 6 have worked to document lessons learned from EPA's response to those natural disasters. Those lessons learned will inform practices by all parties to better address the needs of minority, low-income, and other vulnerable populations in future disaster events.

Additionally, while the NEJAC has restricted its recommendations to actions EPA can take "pursuant to the National Response Plan and applicable statutory authorities and their implementing regulations, as well as Executive Order 12898," many of the identified issues cannot be addressed adequately without significant actions by other federal, state, or local government agencies. For that reason, the NEJAC wishes to impress upon EPA the need to proactively provide leadership to facilitate actions, where appropriate, by those agencies. In addition to being the Co-Lead, with the U.S. Coast Guard, for Emergency Support Function (ESF) #10 (Oil and Hazardous Materials), EPA plays a substantive role in nine other ESFs under the National Response Plan (NRP) in cooperation with other Federal agencies. These include:

- ESF #3 (Public Works and Engineering);
- ESF #8 (Public Health and Medical Services);
- ESF #11 (Agriculture and Natural Resources);
- ESF #12 (Energy);
- ESF #14 (Long-Term Community Recovery; and
- ESF #15 (External Affairs).

The NEJAC urges the EPA Administrator and his leadership team to recognize that issues affecting environmentally and economically distressed communities do not fit neatly within Agency mandates. In this light, the NEJAC urges EPA to aggressively communicate to other agencies the importance of incorporating environmental justice considerations into their decision-making process, and to share EPA's tools for accomplishing this goal. As the lead agency for Executive Order 12898, EPA has a special responsibility to play this role.

## RECOMMENDATIONS

To respond to EPA's charge, the NEJAC makes recommendations in the following three subject areas:

- **Subject Area #1: Enhance EPA's disaster preparedness and response procedures;**
- **Subject Area #2: Facilitate risk communications and environmental health response; and**
- **Subject Area #3: Foster environmentally sound redevelopment.**

For each area, the NEJAC has identified specific issues as well as specific actions, implementation mechanisms, and the official[s] within EPA who should be charged to take those actions.

### **SUBJECT AREA #1: ENHANCE EPA'S DISASTER PREPAREDNESS AND RESPONSE PROCEDURES**

In order to enhance EPA disaster preparedness and response procedures, the NEJAC makes recommendations to address the following issues:

- Revision of disaster management procedures;
- State, tribal, and local government preparedness;
- Disaster communications delivery mechanisms; and
- Contaminated flood water, sediments, and associated hazardous materials.

**ISSUE 1-1: REVISION OF EPA DISASTER MANAGEMENT PROCEDURES** – EPA has played a major role in the assessment and response effort as a result of the Gulf Coast hurricanes. However, concerns have been raised about whether EPA's assessment and response results and procedures have been adequate to address the needs of low income, minority, elderly, and other vulnerable populations. While natural disasters, such as Hurricanes Katrina and Rita, do not discriminate in terms of their impact, certain populations, because of the vulnerability factors identified earlier, may face greater public health and/or environmental risks and harms. It is clear that these vulnerable populations need special attention when natural disasters occur. EPA needs to be aware of where the most vulnerable populations reside in order to focus appropriate resources to address the special needs of such residents. As part of its examination of its current disaster management policies and procedures, EPA needs to also review its procedures for the implementation of environmental waivers. The process for granting of environmental waivers needs to be clearly communicated to affected stakeholders. EPA must explain to stakeholders what considerations were involved (*e.g.*, emergency pre-approved plans) in the issuance of any waivers. In addition, concerns involving hurricane debris removal in New Orleans highlight the current lack of clear and practicable public participation guidelines for disaster response situations.

**RECOMMENDATION 1-1:** The EPA Assistant Administrator for OSWER should carefully examine whether significant changes in EPA's response procedures are necessary to deal with future natural disasters, particularly as needed to address the needs of the most vulnerable populations. To enhance the Agency's ability to address environmental justice issues, EPA should:

- Identify vulnerable populations and their environmental and/or public health needs through use of tools such as the *Environmental Justice Geographic Assessment Tool*;<sup>4</sup>
- Ensure communications with, and input from, vulnerable populations in both the development and implementation of new disaster response procedures;

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<sup>4</sup> [www.epa.gov/compliance/environmentaljustice](http://www.epa.gov/compliance/environmentaljustice)

- Facilitate greater inter- and intra-governmental coordination to protect vulnerable populations;
- Incorporate an environmental justice function and staffing support in the Incident Command System structure;
- Develop public participation guidelines for disaster response situations, and promote their adoption and use by relevant emergency response organizations in both the public and private sectors;
- Include a stakeholder communications and implementation plan for the exercise of any environmental waivers;
- Consider whether, when, and how it would be appropriate for EPA to help resolve disputes through use of such options as mediation, collaborative problem-solving models, and other approaches that assure the best information and respect for the needs of the community;
- Review whether or not there needs to be emergency preparedness exercises to identify and involve vulnerable populations;
- Review and revise, if necessary, its procedures for ensuring that waste management facilities used for waste disposition have proper safeguards;
- Analyze and publicize the demographic characteristics of areas where environmental sampling results exceed EPA and/or state agency risk levels;
- Evaluate EPA emergency response activities to ensure that such activities do not result in disparate impacts.

If deemed necessary, EPA should immediately begin to implement these revised response procedures. EPA should work with other federal agencies to modify, as appropriate, ESF #10, the National Contingency Plan, the National Approach for Response and its disaster response procedures, to adequately address the specific needs of the most vulnerable populations. EPA should also incorporate disaster management training into its environmental education program. This disaster management plan evaluation and appropriate revisions should be based upon input from people “on the ground” on how to best implement these changes.

**ISSUE 1-2: STATE, TRIBAL, AND LOCAL GOVERNMENT PREPAREDNESS** – In major disaster events in the future, state, tribal, and local government emergency preparedness organizations in the Gulf Coast region should be better prepared to address the needs of populations which may be disproportionately affected by environmental risk and harm by such events. EPA should work with other federal agencies, and state, tribal, and local governments to create a state of preparedness in the Gulf Coast region for future natural disasters. Advance planning for major disaster events is currently inadequate in the Gulf Coast region, as well as other areas of the country.

**RECOMMENDATION 1-2:** The EPA Assistant Administrator for OSWER should amend EPA’s guidance to State Emergency Response Commissions (SERC), Local Emergency Planning Committees (LEPC), and other state/local emergency management organizations, to improve disaster planning by state, tribal, and local government jurisdictions. This updated guidance should call for items such as the following:

- Better procedures for the evacuation of vulnerable populations, such as low-income and minority residents and hospital and nursing facility patients; and
- Emergency response exercises/drills involving the most vulnerable populations.

In addition, EPA should work with the Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) to strengthen regional disaster management structures. These efforts include government-community forums on disaster management and disaster management guidelines for community organizations and residents.

**ISSUE 1-3: DISASTER COMMUNICATIONS DELIVERY MECHANISMS** – It is clear that the demands for information by affected stakeholders greatly challenged EPA and first responders' ability to communicate with each other and provide information to the public. EPA response personnel had telecommunications problems during the early weeks after the hurricane. In some Gulf Coast region communities, phone and computer systems were severely impacted. A major issue for EPA is ensuring that the communications delivery mechanisms are in place to reach historically disadvantaged and underserved populations.

**RECOMMENDATION 1-3:** The EPA Assistant Administrator for OSWER should develop an improved disaster management communications action plan in anticipation of similar disasters in the future. This action plan should ensure the communications equipment and delivery mechanisms are in place to reach all affected residents, particularly the most vulnerable populations. EPA should address the inadequacies of its own telecommunications equipment to be better prepared for future major natural disasters. EPA also should work in collaboration with communities so that such plans address the cultural, linguistic, and other needs of different groups. In addition, EPA should work with utilities and the private sector to develop a better system for identifying technology to meet community telecommunications needs in the aftermath of future disasters.

**ISSUE 1-4: CONTAMINATED FLOOD WATER, SEDIMENTS, AND ASSOCIATED HAZARDOUS MATERIALS** – During future major hurricanes and rain events, it is probable that there will be floodwater and sediments. These floodwater and sediments will contain various levels of contaminants, such as hazardous substances and sewage sludge. Residents, particularly in minority and low-income communities, will not have easy access to clean water, vaccinations, doctors, or disinfecting soap.

**RECOMMENDATION 1-4:** The EPA Assistant Administrator for OSWER should work with the U.S. Department of Health and Human Services (HHS) to develop guidelines for residents who may come in contact with contaminated flood water, sediments, and associated hazardous materials. Written materials should be culturally appropriate, prepared in advance, and translated into the necessary languages. EPA and other agencies should disseminate these guidelines early to potentially affected stakeholders, and encourage the implementation of these guidelines. EPA should also work with other appropriate federal and state officials to stock emergency shelters with appropriate medical supplies.

**SUBJECT AREA #2: FACILITATE RISK COMMUNICATIONS AND ENVIRONMENTAL HEALTH RESPONSE**

In order to better facilitate risk communications and environmental health response, the NEJAC makes recommendations to address the following issues:

- Risk communications;
- Community partnerships and collaborative problem-solving;
- Mold contamination;
- Waste debris and sediments; and
- Public health concerns.

**ISSUE 2-1: RISK COMMUNICATIONS** – The NEJAC recognizes that EPA, as well as other federal, state, tribal, and local government agencies, have undertaken extensive outreach and community involvement activities in their efforts to communicate with residents affected by the hurricanes. Massive numbers of fact sheets and other information materials have been distributed throughout the Gulf Coast region. Some documents have been translated into Spanish, Vietnamese, and other languages for non-English speaking populations. EPA has recognized, however, that these important information documents do not always reach all individuals, including those affected by factors which make them more vulnerable to environmental and/or public health risks and harms. In addition, an apparent disagreement exists between federal, state, tribal, and local government officials, and community and environmental organizations about the adequacy of environmental assessment and remediation activities to date. Similarly, some environmental and community groups dispute the sufficiency of the testing and contend that some of the Gulf Coast region is still marred by various contaminants. These conflicting messages about environmental conditions have left some displaced residents in a quandary as to whether it is safe to return home. This is particularly the case for the most vulnerable populations.

**RECOMMENDATION 2-1:** The EPA Assistant Administrator for OSWER should work proactively with environmental and health officials and affected stakeholders to improve risk communications with vulnerable populations. Such an effort should:

- Evaluate the effectiveness of current mechanisms for communities to communicate with agencies, such as an over-reliance on the Internet;
- Use focus groups to prepare risk communication materials, both in advance of and during disasters, and ensure that messages are understandable for culturally and educationally diverse populations;
- Ensure that materials are available in needed languages;
- Establish a credible forum for dialogue with affected stakeholders about different ways to improve risk communications, including the use of forums and expert panels;
- Use neutral facilitators, when appropriate; and
- Provide technical assistance to communities to access and interpret data.

As part of this process, EPA should better communicate how it makes public health risk decisions. EPA and appropriate state agencies should continue to develop a format for future releases of environmental data in order to provide a better, more comprehensive, and understandable explanation of the data.

**ISSUE 2-2: COMMUNITY PARTNERSHIPS AND COLLABORATIVE PROBLEM-SOLVING** – Organizations at the local level throughout the Gulf Coast region have played a critical role in addressing the environmental, public health, and quality of life needs of communities devastated by Hurricanes Katrina and Rita. These organizations include: community-based organizations, academia, civic and faith-based organizations, business and industry, and government. Building partnerships with these organizations is important to EPA's achieving its environmental and public health mission. Such partnerships serve as a platform for delivery of many EPA resources, as well as those of other federal and state agencies. In addition, they are an ideal vehicle for working with non-traditional and difficult-to-reach subpopulations. Examples of the activities of such partnership initiatives in the wake of Hurricanes Katrina and Rita include:

- Distribution of reentry kits (*Louisiana Environmental Action Network, Baton Rouge, Louisiana*);
- Supply of ice, water, and gasoline (*local and tribal governments in Texas, Louisiana, Mississippi, Alabama, Florida, and Arkansas*);
- Environmental health outreach (*University of Texas/Medical Branch, Galveston, Texas*);
- Sponsorship of community cleanup (*Deep South Center for Environmental Justice, New Orleans, Louisiana*); and
- Surveillance and early notification of problems (*electric power suppliers*).

**RECOMMENDATION 2-2:** Appropriate EPA Regional Administrators, including those in Region 4 and Region 6, should work with appropriate federal, state, tribal, and local government agencies to support the creative use of partnerships to ensure community outreach and meaningful involvement for populations which historically have had less access to environmental and public health information and/or the decision-making process. Such community-based partnerships can be effective in at least four important areas:

- Meeting the immediate environmental/public health needs of communities;
- Assisting community residents to participate meaningfully in the many meetings, planning charettes, and community involvement activities being conducted by federal, state, tribal, and local governments;
- Assisting community residents to interpret environmental and public health data through venues such as community workshops and expert forums; and
- Evaluating EPA's current collaborative problem-solving practices in areas such as community outreach, community impact assessment, and risk communication.

**ISSUE 2-3: MOLD CONTAMINATION** – The storm surges of Hurricanes Katrina and Rita caused flood water damage to homes and buildings and resulting mold growth in the Gulf Coast region of Louisiana, Mississippi, Alabama and Southeast Texas. Large sections of the City of



New Orleans (Orleans Parish), and the three surrounding parishes (Jefferson, Plaquemines, and St. Bernard) were flooded for weeks, leading to extensive mold growth in buildings. Flooding associated with hurricanes and large rain events raise concerns about the potential for respiratory health effects from exposure to water-damaged homes. These conditions also raise concerns that vulnerable populations, such as minority and low-income communities, as well as children, pregnant women, and the elderly, may need greater attention to prevent negative health effects from exposure to water-damaged homes.

**RECOMMENDATION 2-3:** The EPA Assistant Administrator for Air and Radiation (OAR), working in conjunction with the EPA Regions, should develop strategies to assist community residents, particularly from vulnerable populations, to better utilize existing guidance and tools about mold. For example, EPA should work with the Centers for Disease Control and Prevention (CDC) to help local governments, universities, and/or community-based organizations to establish community-based environmental education and remediation assistance projects, which have a focus on mold. These community-based projects will provide residents, particularly from vulnerable populations, with guidance on safe mold remediation practices, the necessity of using adequate respiratory protection and other equipment, and appropriate contractor qualifications and capability. Procuring appropriate protective equipment has been a major challenge for residents in the Gulf Coast. As a result, these projects should also help residents identify sources of funding to assist in these efforts.

**ISSUE 2-4: WASTE DEBRIS AND SEDIMENTS** – Large quantities of waste debris and sediments are still located in communities throughout the Gulf Coast region. Sediment, when dried, becomes airborne and poses respiratory hazards to sensitive populations. EPA and State officials indicate that these wastes do not pose a short-term or long-term threat to public health. The presence of asbestos and lead in some of the hurricane waste debris presents special waste management problems. The sources of the asbestos and lead existed prior to hurricanes Katrina and Rita. Many sediments deposited by the storm surges and flood waters contain varying concentrations of toxic heavy metals (arsenic, chromium, lead), polynuclear aromatic hydrocarbons, and diesel range organics. Although the lead for the collection and disposal of these materials is the U.S. Army Corps of Engineers (USACE), EPA plays a role in advising on their activities. Gulf Coast residents want these wastes removed as soon as possible. Long-term build-up of waste materials has particularly negative consequences in already distressed communities. The longer such waste remains, the greater residents' anxiety about potential health concerns grows. In addition to inconsistent pickup of debris and lack of communications about waste removal operations in minority and low-income communities, trucks sometimes operate without the appropriate waste coverings.

**RECOMMENDATION 2-4:** The EPA Assistant Administrator for the OSWER should work with the USACE and applicable state and local agencies to ensure that waste debris and sediments are collected, transported, and disposed in an environmentally-acceptable manner. EPA should:

- Ensure disposal of this waste debris and sediments in appropriate facilities, implementation of applicable air monitoring of emissions from incinerators and open burn operations, and updating of waste management guidelines as appropriate;
- Ensure that appropriate planning is in place to identify disposal facilities that can handle waste debris and sediment in an environmentally-acceptable manner;
- Encourage applicable agencies to create incentives to encourage contractors to conduct activities, such as disposal, in an environmentally-acceptable manner;
- Conduct environmental justice assessments of areas near proposed facilities using tools such as the *Environmental Justice Geographic Assessment Tool*; and
- Work with its partner agencies to ensure that unnecessary impediments to debris and sediment removal are expeditiously addressed.

**ISSUE 2-5: PUBLIC HEALTH CONCERNS** – The 2005 hurricanes may have created or exacerbated health issues for minority and low-income populations. Direct exposure to flood water, air pollutants, mold, and debris have created hazards that increased the risk of respiratory disease, infections (*e.g.*, dermal, gastrointestinal, pulmonary), physical injury (*e.g.*, lacerations, fractures, other musculoskeletal injuries), and adverse effects of toxicant exposures (*e.g.*, organ system injuries, exacerbation of preexisting conditions such as asthma). In addition, disruption of normal health care systems and psychosocial stresses related to storm damage, evacuation, and recovery exacerbated chronic health problems and probably resulted in to new health problems as well. In such post-disaster situations, cumulative environmental and/or public health risks and impacts can be a pressing issue. While public health agencies are primarily responsible for addressing these issues, EPA can provide significant assistance by providing information on environmental health hazards to health care providers in a timely manner and by moving quickly to reduce the impacts of environmental pollutants.

**RECOMMENDATION 2-5:** The EPA Assistant Administrator for the Office of Research and Development should work with appropriate federal health agencies such as the CDC, particularly the National Center for Environmental Health/Agency for Toxic Substances and Disease Registry (NCEH/ATSDR), to assess whether a health survey of Gulf Coast residents impacted by the hurricanes is appropriate. A useful initial approach would be to determine the types and frequencies of health issues that were encountered by care providers in the aftermath of the hurricanes. While the care provided in New Orleans and Mississippi coast communities occurred under chaotic circumstances, care provided to evacuees to Houston was delivered at large evacuation centers and in local hospitals. A study, entitled “The Impact of Health Care Safety Net Policies and Programs on the Continuity of Medical Care: A Hurricane Katrina Evacuee Community Case Study,” is currently being conducted under the direction of Sondip Mathur, Ph.D., at Texas Southern University in Houston, Texas. EPA should obtain the results of this study to use in determining how environmental factors impacted public health following the hurricanes, whether future studies may be needed and/or feasible, and how to set priorities to assist public health agencies in future disasters.

**SUBJECT AREA #3: FOSTER ENVIRONMENTALLY SOUND REDEVELOPMENT**

In order to foster environmentally sound redevelopment, the NEJAC makes recommendations to address the following issues:

- Sustainable redevelopment;
  - Coastal wetlands and barrier islands;
  - Brownfields assessment and cleanup;
  - Worker protection; and
  - Job training and creation.

**ISSUE 3-1: SUSTAINABLE REDEVELOPMENT** – The rebuilding process in the wake of Hurricanes Katrina and Rita presents an opportunity for EPA, other federal agencies, local, state and tribal governments, business and industry, academics, non-governmental organizations, and, most importantly, the affected communities themselves, to promote sustainable development approaches throughout the affected region. Such sustainable redevelopment approaches should address environmental, public health, economic, and social equity concerns, both short-term and long-term, in the design and construction of housing, transportation, health care, education, green space, energy, and other critical systems. Although EPA may not have primary jurisdiction in a number of areas important to rebuilding, it does have a support role in Public Works and Engineering (ESF #3), Public Health (ESF #8), Energy (ESF #12) and Long Term Community Recovery (ESF #14). In addition, EPA has a number of programs and initiatives that can provide scientific input to an environmentally sustainable rebuilding process, such as Clean Energy/Energy Efficiency, Sustainability, Environmental Stewardship, and Smart Growth. Moreover, impacted community residents, many of whom are displaced, should be meaningfully involved in decisions regarding future redevelopment of their affected region.

**RECOMMENDATION 3-1:** The EPA Administrator, in conjunction with other relevant agencies, should initiate an effort to promote coordination internally and across agencies that would begin to address the reconstruction of infrastructure. Because infrastructure is so important to those affected by environmental injustice, EPA should work proactively with the USACE and FEMA on the need to give priority to the restoration of infrastructure in minority, low-income, and other vulnerable communities. Use of geographic information system platforms, such as the *Environmental Justice Geographic Assessment Tool*, by the USACE and FEMA is essential to identifying minority, low-income, and vulnerable communities. EPA should also promote processes that consider the views of community residents in the rebuilding process. The EPA Administrator should designate one individual to ensure that EPA's contributions to the sustainable redevelopment effort are effectively implemented in a timely manner.

**ISSUE 3-2: COASTAL WETLANDS AND BARRIER ISLANDS** – Many Gulf Coast wetlands and barrier islands have been depleted. Hurricanes Katrina and Rita have destroyed or damaged more than several hundred square miles of coastal wetlands and barrier islands. These natural barriers traditionally provide a buffer to the storm surge from hurricanes and also help protect the levees around New Orleans. Due to the location of their communities in low-lying areas, many environmental and economically distressed communities were disproportionately

affected by the storm surge and the breach and overtopping of the levee system. Environmental justice communities in Gulf coastal areas, including numerous tribal communities, have been negatively impacted due to the loss of homes and the destruction of natural resources on which they depend for their subsistence. The impact of future hurricanes will be greatest in the areas where the most vulnerable populations live. Restoration of coastal wetlands and the barrier islands can help minimize this impact.

**RECOMMENDATION 3-2:** The EPA Assistant Administrator for the Office of Water should work proactively with the U.S. Coast Guard, the National Oceanic and Atmospheric Administration (NOAA), USACE, and other federal, state, tribal, and local government agencies to establish a high priority for the creation and restoration of coastal wetlands and barrier islands along the Gulf Coast. These agencies should also identify other areas in the United States that require coastal wetland and barrier island restoration. In addition to protecting the largest number of residents and minimizing the impact on the existing levee system, EPA should also consider potential adverse and disparate impacts on minority, tribal, and low-income populations when undertaking wetlands and barrier islands restoration projects.

**ISSUE 3-3: BROWNFIELDS ASSESSMENT AND CLEANUP** – Many formerly clean properties in the Gulf Coast region may have been contaminated due to hurricane wind damage and/or associated flooding. In the event that such properties, otherwise known as Brownfields, exist, they need to be assessed and remediated prior to reuse. Adequate resources will be needed to conduct these activities to ensure that all communities, including historically disadvantaged and underserved minority and low-income communities, can conduct appropriate assessment, remediation, and reuse activities.

**RECOMMENDATION 3-3:** The EPA Assistant Administrator for OSWER should use EPA's Brownfields program to help address this issue. EPA Headquarters, EPA Regions 4 and 6, and appropriate states should give high priority to the use of targeted brownfields assessment and Brownfields grant funds to assess these properties and determine the extent of contamination. Further, consistent with the governing authority, EPA should continue to give high priority for the award of Brownfields assessment, cleanup, revolving loan fund, and job training grants to vulnerable communities, including those located in the Gulf Coast region impacted by the hurricanes. While legitimate administrative constraints exist, EPA should continue to consider ways to streamline the Brownfields grant application process to make it as easy as possible for affected Gulf Coast communities, to apply for Brownfields grants. In conclusion, EPA should consider the recommendations of the NEJAC report on *Unintended Impacts of Redevelopment and Revitalization in Five Environmental Justice Communities* that promote activities to protect communities against unintended impacts during the course of rebuilding the Gulf Coast.<sup>5</sup>

**ISSUE 3-4: WORKER PROTECTION** – Steps need to be taken to protect the health of all cleanup workers, including minority, low-income, and undocumented workers who work as casual day laborers, and who have been, and are being, exposed to asbestos on roofs, mold indoors, and other contaminants during assessment and remediation activities. Many of these workers are not being equipped with, nor wearing, protective clothing and proper equipment.

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<sup>5</sup> See: [www.epa.gov/compliance/environmentaljustice](http://www.epa.gov/compliance/environmentaljustice)

The same concerns apply to homeowners who conduct their own assessment and remediation activities. The lead for worker protection is the U.S. Occupational Safety and Health Administration (OSHA).

**RECOMMENDATION 3-4:** The EPA Assistant Administrator for OSWER should coordinate with other federal, state, tribal and local government agencies, to develop an outreach strategy toward cleanup workers, in which EPA can offer its special expertise on environmental hazards. The strategy should include appropriate job training, equipment, and public information materials. EPA should work with organizations like OSHA and the National Institute for Occupational Safety and Health (NIOSH) to provide this technical assistance.

**ISSUE 3-5: JOB TRAINING AND CREATION** – Many people in the Gulf Coast region lost jobs, businesses, and homes in the aftermath of the hurricanes. This issue disproportionately affects minority and low-income populations. Much environmental expertise will be necessary, and many environmental job opportunities (assessment, remediation, reuse, etc.) will be available in this major rebuilding program. Further, adequate and affordable housing will be necessary for those affected residents seeking these opportunities.

**RECOMMENDATION 3-5:** The EPA Assistant Administrator for OSWER should redirect as much of EPA's environmental job training resources, both technical and financial, as possible to assist residents in the Gulf Coast region impacted by the hurricanes to rebuild their lives and rebuild their communities. Specifically, these resources include the worker training programs administered by OSWER, the Environmental Response Team, and the Office of Brownfields Cleanup and Redevelopment (OBCR). In addition, EPA should:

- Direct its cleanup contractors to give priority attention to providing opportunities to local area residents, particularly those who lost jobs due to the impact of the hurricanes;
- Partner with worker training organizations like the National Institute for Environmental Health Sciences (NIEHS) (*e.g.*, the Brownfields Minority Worker Training Program) and the Department of Labor (DOL) in this effort;
- Provide training through FEMA disaster recovery centers; and
- Work with other federal agencies (*e.g.*, FEMA and the U.S. Department of Housing and Urban Development) to provide adequate housing for these job trainees and workers

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## **APPENDIX A:**

### **NATIONAL ENVIRONMENTAL JUSTICE ADVISORY COUNCIL EPA CHARGE ENVIRONMENTAL JUSTICE AND HURRICANES KATRINA AND RITA - January 23, 2006 -**

The U.S. Environmental Protection Agency maintains an ongoing commitment to ensure environmental justice for all people, regardless of race, color, national origin, or income. In recognizing that minority and/or low-income communities frequently may be exposed disproportionately to environmental harms and risks, EPA works to protect these and other burdened communities from adverse human health and environmental effects of its programs, consistent with existing environmental and civil rights laws, and their implementing regulations, as well as Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations"(February 11, 1994). Ensuring environmental justice means not only protecting human health and the environment for everyone, but also ensuring that all people are treated fairly and are given the opportunity to participate meaningfully in the development, implementation, and enforcement of environmental laws, regulations, and policies.

*Stephen L. Johnson, Administrator  
Memorandum, "Reaffirming the U.S. Environmental Protection Agency's Commitment to Environmental Justice" (November 4, 2005)*

The recent natural disasters of Hurricanes Katrina and Rita resulted in monumental impacts. The affected region included areas located in Texas, Louisiana, Mississippi, Alabama, and Florida. For Hurricane Katrina, federal disaster declarations encompassed approximately 90,000 square miles. Over one million households have received disaster assistance.<sup>6</sup> More than 72,000 federal personnel were deployed.<sup>7</sup> Environmental damage included flooding, inoperable drinking water and wastewater treatment systems, numerous spills, and massive amounts of debris. The two hurricanes combined rank as one of the largest natural disasters in United States history.

The response and rebuilding efforts, and future preparedness and prevention activities, create daunting challenges for local, state, and federal agencies; community groups; academia; business and industry; tribal governments; and others. The "Environmental Health Needs and Habitability

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<sup>6</sup> U.S. Department of Homeland Security, 2005. At <http://www.dhs.gov/interweb/assetlibrary/katrina.htm>

<sup>7</sup> Ibid.

Assessment,” issued jointly by the Centers for Disease Control and Prevention (CDC) and EPA on September 17, 2005, identified 13 key areas that impact the environmental health and habitability of the City of New Orleans. The key areas are: Unwatering, Power, Natural Gas, Vector/Rodent/Animal Control, Underground Storage Tanks (*e.g.*, gasoline), Food Safety, Drinking Water, Wastewater, Road Conditions, Solid Waste/Debris, Sediments/Soil Contamination (Toxic Chemicals), Housing, and Worker Health and Safety.<sup>8</sup> Many of the CDC-EPA assessment findings and recommendations apply to all areas impacted by Hurricanes Katrina and Rita.

Pursuant to the National Response Plan (NRP), the all-discipline, all-hazards plan that establishes a single, comprehensive framework for management of domestic incidents, EPA is the coordinating agency for Emergency Support Function (ESF) #10 (Oil and Hazardous Materials Response). ESF #10 calls for “the appropriate response and recovery actions to prepare for, prevent, minimize, or mitigate a threat to public health, welfare, or the environment caused by actual or potential oil and hazardous materials incidents.”<sup>9</sup> EPA’s assigned missions, under ESF #10 and other applicable statutes and their implementing regulations, include:

- Environmental sampling;
- Drinking water assessment;
- Wastewater assessment;
- Reconnaissance and assessment of industrial facilities and spills;
- Collection of household hazardous waste;
- Removal of orphan drums/hazardous debris; and
- Emergency response for spills and special sampling.

EPA is not the only agency responsible for environmental issues. The U.S. Army Corp of Engineers, the U.S. Coast Guard, or respective States may be charged with a particular assignment, with EPA serving in a support role. EPA also plays a support role for several other ESFs, including ESF #3 (Public Works and Engineering), ESF #8 (Public Health and Medical Services); ESF #11 (Agriculture and Natural Resources); ESF #12 (Energy); ESF # 14 (Long-Term Community Recovery), and ESF #15 (External Affairs).

Hurricanes Katrina and Rita exemplify the vulnerability of certain populations along the Gulf Coast, many of which already faced environmental justice issues. Several factors may result in these populations being disproportionately affected by public health and environmental risks and harms. Minority and/or low-income populations may reside in areas with polluting facilities and/or other sources of environmental contamination. Such populations might suffer from health conditions and other risk factors that make them more susceptible to environmental risks and harms, particularly the long-term impacts. Minority and/or low-income populations sometimes lack access to environmental information and are unprepared to cope with

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<sup>8</sup> Centers for Disease Control and Prevention and U.S. Environmental Protection Agency, “Environmental Health Needs and Habitability Assessment,” September 17, 2005.

<sup>9</sup> National Response Plan, ESF#10-1. December 2004.



environmental risks and harms, including proper safeguards for reentry. Lastly, such populations may lack the resources to recover from negative environmental impacts, such as access to health care or the capacity to ensure safe and appropriate reuse of contaminated properties.<sup>10</sup> Community input is important to assure that government agencies develop and implement effective strategies to address environmental risks and harms.

To this end, EPA requests the National Environmental Justice Advisory Council (NEJAC), through its Gulf Coast Hurricanes Workgroup, to provide advice and recommendations on the environmental justice issues related to EPA's response and rebuilding, and preparedness and prevention efforts in the aftermath of Hurricanes Katrina and Rita, based upon the following question:

How can EPA effectively address the vulnerabilities of all communities to public health and environmental risks and harms, including minority and low-income communities, in EPA's response and rebuilding, and preparedness and prevention efforts, in the aftermath of natural disasters similar to Hurricanes Katrina and Rita, pursuant to the National Response Plan and applicable statutory authorities and their implementing regulations, as well as Executive Order 12898?

For the purposes of this charge, EPA has identified the following four major areas of focus:

- (1) **Community Involvement Issues:** Identify ways in which EPA can address prospective communications needs and ensure the meaningful involvement of all communities, including minority and low-income populations, during the Agency's response, rebuilding, preparedness, and prevention efforts in the aftermath of natural disasters similar to Hurricanes Katrina and Rita.
- (2) **Environmental Health Concerns and Risk Communications:** Identify specific areas of environmental health concern to vulnerable populations, including short-term and long-term, which may emerge during the ongoing response and rebuilding efforts, and provide advice regarding how EPA can address such concerns in the aftermath of natural disasters similar to Hurricanes Katrina and Rita.
- (3) **Environmental Justice in Rebuilding Efforts:** Identify actions that EPA can take, pursuant to its statutory authorities, to ensure that the environmental and/or public health needs of vulnerable population groups are meaningfully addressed in the rebuilding process in the aftermath of natural disasters similar to Hurricanes Katrina and Rita.
- (4) **Future Emergency Planning, Preparedness, and Response:** Identify lessons learned from EPA's disaster response experience, both positive and negative, in the aftermath of Hurricanes Katrina and Rita, for the integration of environmental justice into future emergency planning, preparedness, and response efforts, pursuant to the National Response Plan and applicable statutes and their implementing regulations.

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<sup>10</sup> U.S. Environmental Protection Agency, *Framework for Cumulative Risk Assessment*, EPA/630/P-02/001F, May 2003, p. 39-42.