

2005 Hurricane Related Environmental Health Issues: Joint Cooperation Required

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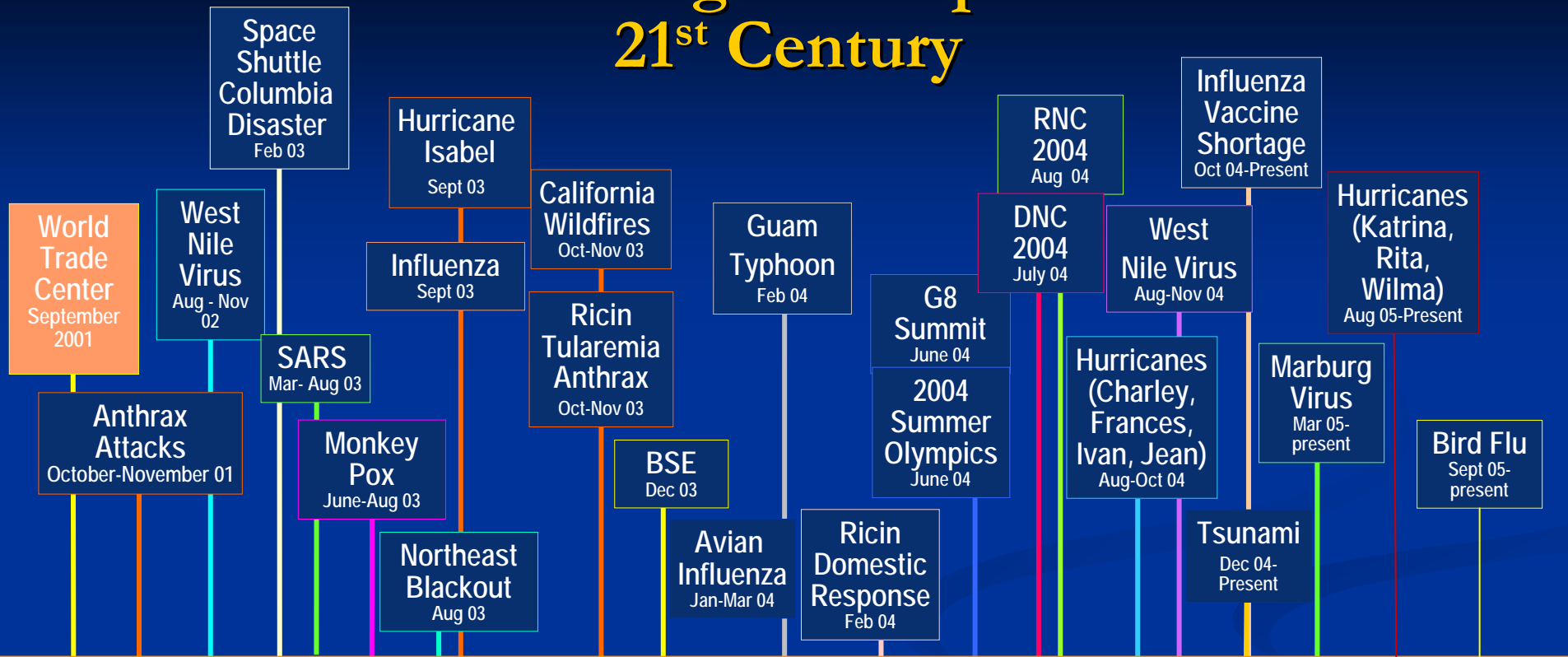
US Public Health Service

Agency for Toxic Substances and Disease Registry



ATSDR

Health Protection - Urgent Responses So Far in the 21st Century



Highlights from the 2005 ASCE Report Card for America's Infrastructure



- Bridges C
- Drinking Water D-
- Energy D
- Hazardous Waste D
- Navigable Waterways D-
- Rail C-
- Roads D
- Solid Waste C+
- Waste Water D-

CDC's Ten Greatest Health Achievements Last Century

1. Vaccination
2. Motor Vehicle Safety
3. Safer Workplaces
4. Control of Infectious Diseases
5. Decline in deaths from Coronary Heart Attacks
6. Safer and Healthier Foods
7. Healthier Mothers and Babies
8. Family Planning
9. Fluoridation of Drinking Water
10. Recognition of Tobacco as a Health Hazard

Source: CDC MMWR 1999;48:241-3



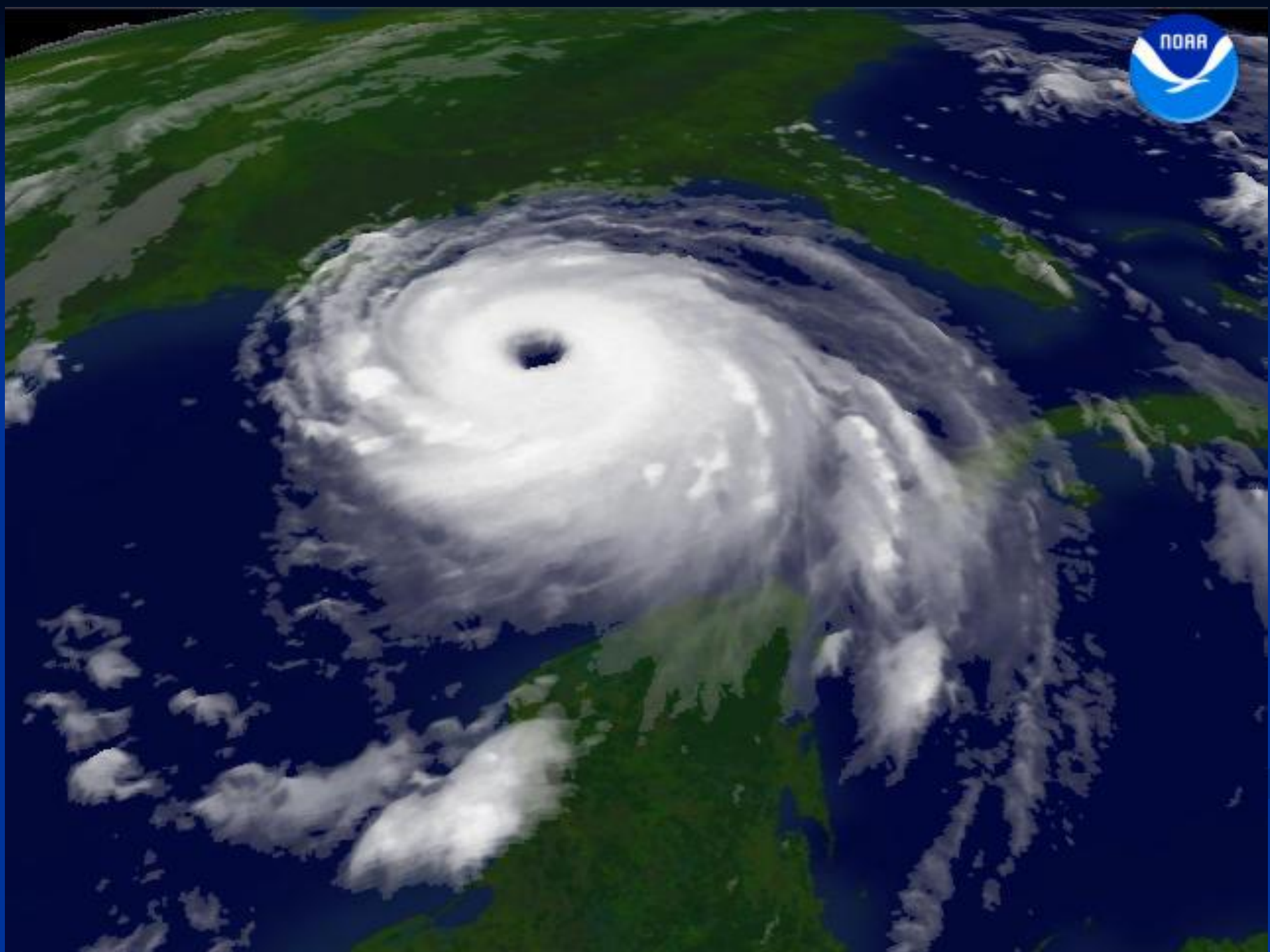
Examples of Combining ASCE & CDC Evaluations

■ Control Infectious Disease

- Drinking Water D-
- Solid Waste C+
- Waste Water D-

■ Safer and Healthier Food

- Drinking Water D-
- Energy D
- Navigable Waterways D-
- Rail C-
- Roads D
- Waste Water D-



Environmental Health Needs & Habitability Assessment

Joint Taskforce

Centers for Disease Control and Prevention &
U.S. Environmental Protection Agency

Hurricane Katrina Response

Initial Assessment

September 17, 2005



CDC/EPA Initial Habitability Assessment: Categorization of Issues

<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>Level 4</u>
<ul style="list-style-type: none">·Unwatering·Power·Natural Gas·Vector, Rodent, & Animal Control·Underground Storage Tanks (e.g., Gasoline)·Food Safety	<ul style="list-style-type: none">·Drinking Water·Wastewater·Road Conditions	<ul style="list-style-type: none">·Solid Waste/Debris·Sediments/Soil Contamination (Toxic Chemicals)	<ul style="list-style-type: none">·Housing

Occupation Safety & Health

Vector Control

- Significant rodent population increase – debris and strewn food.
- ~10,000 swimming pools not maintained – mosquito breeding ground.
- Importance of proper control and health surveillance.



Drinking Water



- Potable water restored to all areas except some portions of the lower 9th Ward.
- Some areas do not have sufficient pressure for fire fighting purposes.
- Important to repair aged equipment – significant damage to distribution system.
- System redesign congruent with redevelopment decisions.

Waste Water

- Sewage collection & treatment system is not fully functioning.
- Treatment plant for most of New Orleans is functional but not at pre-Katrina level.
- Full restoration of system could take several years.
- Important to integrate collection system repair with existing regulatory requirements to upgrade the system.



Solid Waste / Debris

- Over 7 million cubic yards removed.
- Over 1.2 million hazardous waste containers collected.
- 55% completion in non-housing debris removal.
- Landfill capacity concerns.
- Termite quarantine issue.
- Appropriate volume reduction strategies need to be determined.



Toxic Chemicals

- Sampling and analysis of sediments and soil is ongoing.
- Some areas exceed EPA and LDEQ risk-based criteria.
- Safe treatment, transport, and disposal of contaminated materials is important.
- Timeline for clean-up difficult to predict.



Differing Interpretation of Sediment Sampling Results

- Federal and state environmental and health agencies believe only lead is an area wide issue.
- Some NGOs have indicated that arsenic, PAHs, and oil are at unsafe levels.

CONTAMINANTS IN NEW ORLEANS SEDIMENT

An Analysis of EPA Data

*Gina M. Solomon, M.D., M.P.H.
Miriam Rotkin-Ellman*



NATURAL RESOURCES DEFENSE COUNCIL
FEBRUARY 2006

Differing Interpretation of Sediment Sampling Results

“All substances are poisons; there is none which is not a poison. The right dose differentiates a poison from a remedy.”

Paracelsus
(1493-1541)

Differing Interpretation of Sediment Sampling Results: Non-Cancer

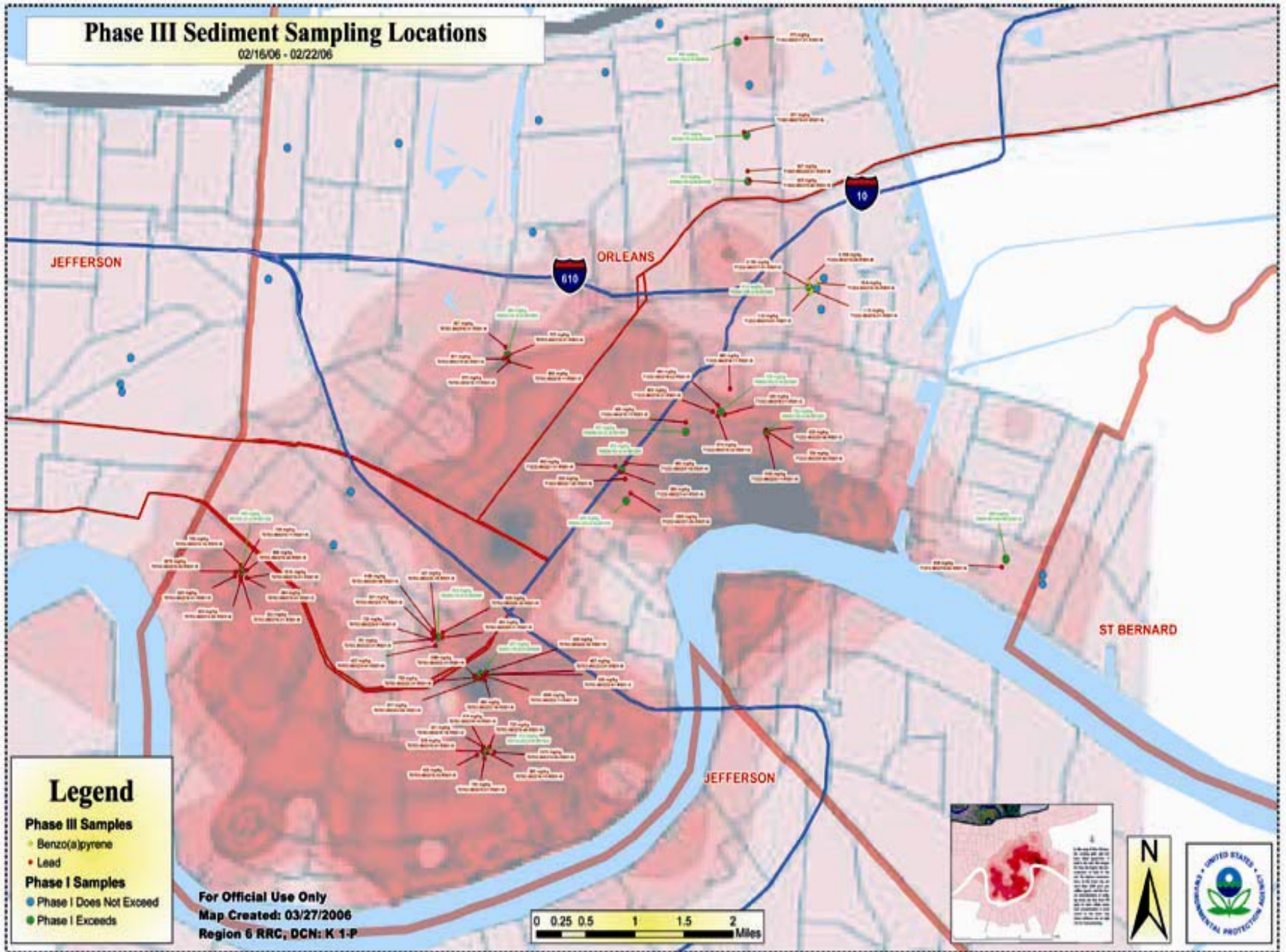
- Screening values (risk-based criteria) are very conservative
 - Most are based on the assumption of continuous exposures for 24 hours/7 days a week/52 weeks a year/30-70 years
- Finding a contaminant above a screening level does NOT mean that adverse health effects will occur
 - Most have built in safety factors of 100 – 10,000

Differing Interpretation of Sediment Sampling Results: Cancer

- For cancer screening levels we assume:
 - Animal carcinogens are human carcinogens
 - That our bodies can not repair themselves and immune system is not on the lookout for changes in our body
 - There is no safe level of exposure to carcinogens (“The No Threshold Assumption”)

Phase III Sediment Sampling Locations

02/16/06 - 02/22/06



Legend

Phase III Samples

● Benzo(a)pyrene

● Lead

Phase I Samples

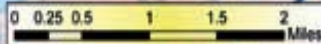
● Phase I Does Not Exceed

● Phase I Exceeds

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Map Created: 03/27/2006

Region 6 RRC, DCN: K 1-P



Public Health System and Clinical Health Services

- Public health and clinical health services capacity not at pre-Katrina levels.
- Significant decrease in the cadre of health professionals in New Orleans.
- Loss of level 1 trauma center – Charity Hospital.



Housing

- Large proportion of New Orleans homes is not viable.
- Lack of consensus on redevelopment plans.
- Explicit linkage of housing plans to long term issues associated with the levees.
- Many uncertainties associated with mold and methods to address the problem.





"When the waters subside, the problem's going to be mold."

Source: New Yorker Magazine

Mold

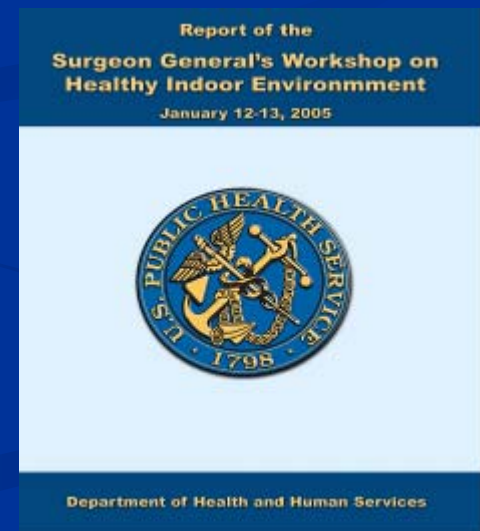
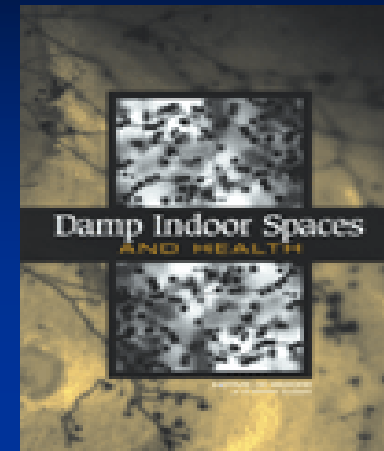
Prevention Strategies and Possible Health Effects in the Aftermath of Hurricanes Katrina and Rita

The CDC Mold Work Group

National Center for Environmental Health
National Center for Infectious Diseases
National Institute for Occupational Safety and Health

Centers for Disease Control and Prevention

October 2005



Rebuilding New Orleans

CONCEPTUAL FRAMEWORK

RESTORATION

Near Term

- Unwatering
- Power/Natural Gas
- Vector Control
- Underground Storage Tanks
- Food Safety
- Drinking Water
- Waste Water
- Transportation
- Solid Waste Debris
- Toxic Chemicals

REDEVELOPMENT

Mid Term

- Health
 - Public Health System
 - Clinical Health Services
- Social Justice
- Housing
- Mold
- Occ Health
- Mental Health
- Built Environment

SUSTAINABILITY

Long Term

- Levees
- Coastal Wetlands
- Global Warming

Preparedness and Emergency Response

Conclusions and Recommendations Specific to Katrina and Rita

- **PUBLIC HEALTH ISSUES**
 - Examples – Vector control, health services, medical care of displaced population, health effects of mold.
- **INTERDISCIPLINARY or COLLABORATIVE**
 - Examples – Safe water, sanitation, toxic chemicals, worker safety, debris removal, tracking and providing services to displaced population.
- **SHARED VISION and DECISION-MAKING**
 - Examples – Emergency preparedness, degree of flood protection and inherent risks, vision for redevelopment, social justice.

Overall Conclusion

Sustainability and Resiliency need to be factored into all of our decisions and planning.