

**Draft – For Task Force Use Only – Not for Circulation**

# **Post-Hurricane CRS Activity Evaluation**

## **A Report to the CRS Task Force**

**ISO/CRS Project Team**

**October 29, 2006**



**Post-Hurricane CRS Activity Evaluation**

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## **Executive Summary**

**Background:** The 2004 and 2005 hurricanes that hit Florida and the Gulf Coast tested local hazard mapping, regulatory, mitigation, response and public information activities. Accordingly, FEMA initiated analyses of their impact and the effectiveness of floodplain management programs that prepared for and responded to them. As part of this effort, a special evaluation was conducted of activities credited under the Community Rating System (CRS).

The CRS project team collected information and reports on the performance of certain activities before, during and after the hurricanes, interviewed state and local officials, and analyzed the findings. This work included visits to Gulf Coast communities, interviews of 26 people who were directly involved in hurricane preparation, recovery and mitigation activities, and a review of more than 50 papers, reports, and other research documents that related to the hurricanes.

Certain topics were not researched because they were not related to local activities credited by the CRS, such as the response of federal agencies and handling displaced people. The project also did not look at levees because there was another evaluation of the FEMA's levee policy underway at the same time. The findings are organized under five general headings.

- Floodplain mapping
- Public information
- Development regulations
- Emergency response
- Recovery operations

The discussion of the findings is followed by a summary of the evaluation's specific recommendations for one or more of the 18 CRS activities. These findings are organized under three categories, according to how quickly they can be implemented.

### **Recommendations that can be implemented immediately through administrative changes**

*(Requires CRS Task Force evaluation)*

### **Recommendations that can be implemented with the next CRS Coordinator's Manual**

*(Requires CRS Task Force evaluation)*

### **Recommendations that should be pursued but require more research and evaluation**

*(Requires CRS Task Force evaluation)*

## **Background**

The 2004 and 2005 hurricanes that hit Florida and the Gulf Coast caused extensive wind and water damage and affected areas outside the regulatory floodplain. The hurricanes and their aftermath tested local hazard mapping, regulatory, mitigation, response and public information activities. Hurricane Katrina, in particular, challenged local emergency response programs and levee systems in ways not seen before.

There was no shortage of experiences and people willing to share their lessons learned. Given the magnitude and scope of the recent hurricanes, FEMA initiated a systematic analysis of their impact and the effectiveness of Federal, state, and local programs that prepared for and responded to them.

The Community Rating System (CRS) is one of the FEMA programs that guides and supports local hazard mitigation activities. It provides flood insurance premium credits based on the effectiveness of state and local floodplain and emergency management programs. Of the 1,000 communities in the CRS, over one-fourth were affected by the hurricanes of 2004 and 2005. Accordingly, the situation offered a particularly opportune time to evaluate activities credited by the Community Rating System.

From January through September 2006, members of the CRS project team collected information and reports on the performance of certain activities before, during and after the hurricanes, interviewed state and local officials, and analyzed the findings. The work focused on those CRS activities that had an impact on public safety and property damage. This paper presents those findings.

## **Methodology**

Three approaches were used to collect information about local activities affected by the hurricanes: interviews, review of reports and research, and a national request for input.

A series of interviews was conducted by Berry Williams of the CRS project team with the mitigation staff from the Joint and Area Field Offices in Louisiana and Mississippi. Berry gave a short talk on the project at relevant conferences and invited people to meet with him separately. This was done at:

- Florida Floodplain Management Association (February 28 – March 4, Gainesville)
- Louisiana Floodplain Management Association (April 19 – 21, Natchez)
- Mississippi Floodplain Management Association (April 19 – 21, Natchez)
- Association of State Floodplain Managers (June 11 – 16, Albuquerque)
- Natural Hazards Conference (July, Boulder)

Berry also scheduled interviews with several key state and local floodplain managers and visited the stricken Mississippi communities of Waveland, Bay St. Louis, Pass Christian, Long Beach, Gulfport, and Biloxi. Project team member French Wetmore talked to additional FEMA, state, and local officials as part of his work in the New Orleans area after Hurricane Katrina.

Berry and French visited Gulf Coast communities as part of another special CRS project – an analysis of whether communities hit by Katrina and Rita could recertify on October 1, 2006, that they were still doing the activities that they had been receiving credit for. As a result of all of these meetings, team members interviewed 26 people who were directly involved in hurricane preparation, recovery and mitigation activities. These include representatives of 13 CRS communities. The names of those interviewed are listed in Appendix A.

It should be noted that a consistent set of questions was used for most of these interviewees, but only three of those interviewed responded to all of the questions. Most responded to only those questions where they had direct recent experience. Others, especially local officials, were only interested in responding to questions related to their job responsibilities. Further, many of those interviewed didn't want to take time away from the conference or other activities to answer all of the questions.

Accordingly, there were not very many interview respondents to each question and often there was no consensus in their responses. Where no respondents provided a concrete answer (e.g., they all said they did not know), the question is not repeated in this report.

The second approach to collecting information was to review reports, testimony and research related to the types of floodplain management, emergency management, and public information activities credited by the CRS. There was no shortage of publications and other documents by academics, government agencies, and other experts following the hurricanes of 2005 and 2006.

The publications reviewed are listed in Appendix B. Many more documents were looked at, but not reviewed in depth because they were about activities not directly related to the CRS. These include reports on Federal agencies, disaster assistance, housing, crime, displaced people, homeland security, non-flood insurance, photographs, or the management aspects of flood insurance (such as rate setting).

The third information collection approach was a series of requests for input. Notices were published in several professional newsletters and handouts were made for conferences and meetings. An example of a notice and the handout are in Appendix C. Special invitations for input were sent to selected groups, such as the National Emergency Management Association.

All of these requests invited people to submit comments or request that a project team member contact them. The submission was through the Association of State Floodplain Managers' website, which also included a description of the project. It should be noted that the project team received no submittals from this system, so this report is based on data collected from the first two approaches.

## **Subjects reviewed**

The objective of the Community Rating System is to reward communities that are doing more than meeting the minimum NFIP requirements to help their citizens prevent or reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance.

Activities that work toward these goals are organized under four series and 18 activities, as shown to the right. There are over 50 subactivities or “elements.” Each element has prerequisites, credit criteria, and a range of points. Communities are visited by an ISO/CRS Specialist who verifies that the prerequisites and credit criteria are met and determines how many points each element is worth. The programs details, criteria and scoring formulas can be found in the *CRS Coordinator’s Manual*.

While the four series and 18 CRS activities have become a standard way of organizing flood loss reduction activities, some of these are not related to hurricane preparedness, response, recovery or mitigation. More importantly, the research and reports were not prepared with the CRS in mind and had different perspectives.

Accordingly, this paper is organized under five general headings.

- Floodplain mapping
- Public information
- Development regulations
- Emergency response
- Recovery operations

| <b>CRS Credited Activities</b>     |
|------------------------------------|
| Public Information Activities      |
| 310 Elevation Certificates         |
| 320 Map Information Service        |
| 330 Outreach Projects              |
| 340 Hazard Disclosure              |
| 350 Flood Protection Information   |
| 360 Flood Protection Assistance    |
| Mapping and Regulations Activities |
| 410 Additional Flood Data          |
| 420 Open Space Preservation        |
| 430 Higher Regulatory Standards    |
| 440 Flood Data Maintenance         |
| 450 Stormwater Management          |
| Flood Loss Reduction Activities    |
| 510 Floodplain Management Planning |
| 520 Acquisition and Relocation     |
| 530 Flood Protection               |
| 540 Drainage System Maintenance    |
| Flood Preparedness Activities      |
| 610 Flood Warning Program          |
| 620 Levee Safety                   |
| 630 Dam Safety                     |

The main findings are listed and quotes from the interviews and research reports follow. At the end of main finding are specific recommendations for one or more of the 18 CRS activities.

## **Floodplain Mapping Findings**

**Floodplain maps must be kept updated.**

**Flood recovery maps should be used.**

**Coastal A Zones should be shown on regulatory maps.**

**Coastal areas should be mapped showing future conditions.**

**Prepare maps that show alternative scenarios.**

*Interview question: Should CRS credit be provided for including SLOSH or hurricane evacuation zones as a GIS layer?*

## Public Information Findings

### Post-disaster public information programs are important.

*Interview question: Should the CRS credit public information activities immediately before a hurricane hits (e.g., move valuables upstairs)?*

### It is not clear if local pre-storm outreach projects were effective.

*Interview question: Did people in flood hazard areas know they were subject to flooding?*

*Interview question: How can we encourage communities to explain the true risk of flooding (in X*

### 320 should provide more flood information.

*Interview question: Should the map information service advise people of past floods that are higher than the 100-year flood?*

*Interview question: Should the map information service advise people if a property is in the floodway?*

### 320 should provide known property information.

*Interview question: Should a local government advise people if a property is a submit-to-rate or a 1316?*

### 330 and 350 should cover more than 10 topics.

*Interview question: Should outreach projects advise people of areas subject to storm surge?*

*Interview question: Should a local government advise people what hurricane evacuation zone the property is in?*

*Interview question: Should local governments advise people in areas protected by levees of the potential flood hazard?*

*Interview question: Should CRS credit or mandate that the flood hazard map displayed in outreach projects include the SLOSH model map?*

*Interview question: Should CRS credit putting hurricane evacuation zones/SLOSH model maps on the community's website?*

*Interview question: Should a community advise people that properties outside the SFHA can still flood and can be insured?*

*Interview question: Should there be credit for promoting the message that people in hazardous areas should assume responsibility for their own protection?*

**340 credit should not be limited to the mapped floodplain.**

*Interview question: Should we credit disclosure of whether a property for sale is in a hurricane evacuation zone?*

*Interview question: Should sellers or real estate agents advise people in areas protected by levees of the potential flood hazard?*

**Public information research findings**

**Public information activities should follow core principles**

**Public information activities should reach people who are missed by many programs**

**Some new topics should be included to credited public information activities**

**Designers of public information projects need to know how people make decisions.**

## Development Regulation Findings

### **Adopt the latest model building codes.**

*Interview question: Should CRS tighten up or strengthen the ties between floodplain management and building codes?*

### **Build to higher than the published base flood elevation.**

### **Set higher standards for coastal construction.**

### **Use the latest FEMA construction guidance.**

### **Set higher standards for critical facilities.**

### **Preserve wetlands, dunes, and beaches.**

## Emergency Response Findings

### **Special attention is needed for critical facilities.**

### **Flood emergency plans should include backing up records.**

*Interview question: Should there be credit or requirements for off-site storage or digital back up of permit records?*

### **Evacuation plans need to be improved.**

*Interview question: Should this activity mandate or increase the credit for a flood response plan addressing evacuation and shelters?*

*Interview question: Should the evacuation section of a credited plan address what to do with people who don't have their own transportation or who refuse to evacuate?*

## Evacuation research findings

## **Communities should have post-disaster recovery plans.**

*Interview question: Can communities trace any benefits to having prepared a floodplain management or hazard mitigation plan?*

*Interview question: Did any communities' plans have post-disaster mitigation procedures? If so, did, the Mississippi Gulf coast now faces the same set of challenges it did after Camille: there is a widespread appreciation for the need for rebuilding to be done carefully and safely, but such time-consuming planning processes are fighting a losing battle of time against the greater need to provide*

## **Recovery planning needs stakeholder participation.**

## **Recovery activities should incorporate sustainability concepts.**

## **Summary of Recommended Changes to the CRS**

### **Immediate Actions**

340 Hazard Disclosure

350 Flood Protection Information

410 Additional Flood Data

### **Next Coordinator's Manual**

310 Elevation Certificate

340 Hazard Disclosure

410 Additional Flood Data

430 Higher Regulatory Standards

530 Flood Protection

610 Flood Warning program

**Changes that Need Further Evaluation**

320 Map Information Service

330 Outreach Projects

350 Flood Protection Information

360 Flood Protection Assistance

420 Open Space Preservation

430 Higher Regulatory Standards

510 Floodplain Management Planning

610 Flood Warning program

## **Appendix A. Interviews**

The following people were met with during the project. In some cases, they were asked a series of questions and in others, there was a general discussion about their activities during and after the hurricanes.

- Gene Altman, Engineering Section, Resource Management Department, Southwest Florida Management District
- Linda Bell, FL Department of Community Affairs, Bureau of Recovery and Mitigation.
- Martin E. Best, State Hazard Mitigation Officer, Washington Emergency Management Division
- Martin Bruno, Director of Planning, Slidell, LA
- Mike Centennio, Direct of Safety and Permits, New Orleans, LA
- Keith Chiro, Director of Inspection and Code Enforcement, Kenner, LA
- David Clukie, CFM, FEMA Mississippi Recovery Office
- Robert Durrin, CFM, FEMA Region IV, Atlanta
- Mike Gambino, CFM, Miami/Dade County, FL
- David Garcia, Fire Chief, Waveland, Mississippi
- Al Goodman, CFM, State NFIP Coordinator, Mississippi Emergency Management
- Patrick Gordon, Director of Planning and Zoning, Terrebonne Parish, LA
- Eugene Henry, CFM, Hillsborough County, FL
- Millicent Hocking, PE, California Dept. of Water Resources, Division of Planning and Local Assistance
- Dr. M. Krishna Krishnamurthy, PE, CFM, Stormwater Management, Orange County, FL
- John LaBrune, CFM, FEMA Mississippi Recovery Office
- Joel Lanier, Hydrologist, National Weather Service, Tallahassee, FL
- James Linkogle, CFM, Public Works Manager, Town of Longboat Key, FL
- Michael Metcalf, Building Official, Gretna, Louisiana
- Steve Mitchell, CFM Building Official, Pascagoula, Mississippi
- Rhonda Montgomery, CFM, State NFIP Coordinator, Kansas Dept. of Agriculture
- Jerry Murphy, Community Development Director, Fort Myers Beach, FL.
- Cindy O’Neal, CFM, State NFIP Coordinator, Louisiana Department of Transportation and Development
- Tommy Rodrique, CFM, Floodplain Manager, Jefferson Parish, Louisiana
- Randy Scrivner, FM&M Branch Manager, Missouri Emergency Management Agency
- Mark Slauter, CFM, Virginia Dept. of Emergency Management

## **Appendix B. Research Reports**

### Government Accountability Office Papers and Testimony

- Better Plans and Exercises Needed to Guide the Military’s Response to Catastrophic Natural Disasters, GAO-06-643 Hurricane Katrina, May 2006
- Challenges Facing the National Flood Insurance Program, October 18, 2005, GAO-06-174T
- Disaster Preparedness: Preliminary Observations on the Evacuation of Hospitals and Nursing Homes Due to Hurricanes, [GAO-06-443R](#), February 16, 2006
- Emergency Preparedness and Response: Some Issues and Challenges Associated with Major Emergency Incidents, [GAO-06-467T](#), February 23, 2006
- Federal Emergency Management Agency: Challenges for the National Flood Insurance Program, [GAO-06-335T](#), January 25, 2006
- Federal Emergency Management Agency: Oversight and Management of the National Flood Insurance Program, [GAO-06-183T](#), October 20, 2005
- Hurricane Katrina: GAO’s Preliminary Observations Regarding Preparedness, Response, and Recovery, [GAO-06-442T](#), March 8, 2006.
- Hurricane Protection: Statutory and Regulatory Framework for Levee Maintenance and Emergency Response for the Lake Pontchartrain Project, [GAO-06-322T](#), December 15, 2005
- Lessons Learned for Protecting and Educating Children after the Gulf Coast Hurricanes, GAO-06-680R, May 11, 2006
- Preliminary Observations on the Evacuation of Vulnerable Populations due to Hurricanes and Other Disasters, GAO-06-790T, May 18, 2006
- Statement by Comptroller General David M. Walker on GAO’s Preliminary Observations Regarding Preparedness and Response to Hurricanes Katrina and Rita, [GAO-06-365R](#), February 1, 2006

### Congressional Research Service Papers

- Cleanup after Hurricane Katrina: Environmental Considerations, RL33115, 13-Oct-2005
- Disaster Debris Removal After Hurricane Katrina: Status and Associated Issues, RL33477, June 16, 2006
- Education and Training Issues Related to Major Disasters, RL33089, 4-Nov-2005
- Flood Risk Management: Federal Role in Infrastructure, RL33129, 26-Oct-2005
- The Impact of Hurricane Katrina on Biological Resources, RL33117, 4-Nov-2005

#### FEMA Mitigation Assessment Team Reports

- Hurricane Charley in Florida, FEMA 488, April 2005
- Hurricane Ivan in Alabama and Florida, FEMA 489, August 2005
- Summary Report on Building Performance 2004 Hurricane Season, FEMA 490 / March 2005
- Summary Report on Building Performance, Hurricane Katrina, FEMA 548, April 2006

#### Other Federal Papers

- “Lessons Learned: Preparing for the Next Big One,” in NOAA’s Coastal Services, May/June 2006
- A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, U.S. House of Representatives, February, 2006
- A Performance Review of FEMA’s Disaster Management Activities in Response to Hurricane Katrina, FEMA IG, March 2006
- How Did Shore Protection Projects Perform During 2004 Hurricanes?, US Army Corps of Engineers, February 2006
- Hurricane Katrina: A Nation Still Unprepared, Report of the Senate Committee and Homeland Security and Governmental Affairs, May 2006
- Katrina and Rita Impacts on Gulf Coast Populations: First Census Findings, US Census Bureau, June 2006,
- Lessons Learned Between Hurricanes, National Academy Press, 2005
- Performance of Physical Structures in Hurricane Katrina and Hurricane Rita: A Reconnaissance Report, National Institute of Standards and Technology, NIST Technical Note 1476, June 2006
- Public Health Response to Hurricanes Katrina and Rita, Center for Disease Control, March 10, 2006
- Rapid Needs Assessment of Two Rural Communities After Hurricane Wilma, Center for Disease Control, April 21, 2006
- Summary of 3 Katrina Reports, 2006 Association of State and Territorial Health Officials, March 27, 2006
- The Federal Response to Hurricane Katrina – Lessons Learned, the White House, February, 2006

#### Other Government Agency Papers

- Flood: Post-Disaster Community Responsibilities, Mississippi Emergency Management Agency, 2005

- Lessons Learned Report for Hurricane Rita Evacuation, Texas Task Force on Evacuation, Transportation and Logistics, February 14, 2006
- Lessons Learned – Hurricanes Katrina and Rita, Louisiana Office of Homeland Security and Emergency Preparedness, undated
- Structural Performance of the New Orleans Hurricane Protection System During Hurricane Katrina, Committee on New Orleans Regional Hurricane Protection Projects, National Research Council, February 2006

#### Natural Hazards Center Quick Response Reports

- Disaster Realities in the Aftermath of Hurricane Katrina: Revisiting the Looting Myth, Quick Response 184, 2006
- Examination of the American Red Cross and FEMA Following Hurricanes Charley and Ivan, Quick Response 179, 2005.
- Hurricane Katrina: GIS Response for a Major Metropolitan Area, Quick Response 180, 2005
- Reconstructing Childhood: An Exploratory Study of Children in Hurricane Katrina, Quick Response 186, 2006

#### Private organization papers

- Charting the Course for Rebuilding a Great American City, American Planning Association New Orleans Planning Assessment Team, Draft report, October 28, 2005
- Disasters, Death, and Destruction: Accounting for Recent Calamities, Roger Pielke, 2006
- Federal Flood Insurance After Katrina, Center on Federal Financial Institutions, October 16, 2005
- Federalism after Hurricane Katrina: How Can Social Programs Respond to a Major Disaster? The Urban Institute, June 2006
- Hurricanes Katrina & Rita Using Mitigation to Rebuild a Safer Gulf Coast, ASFPM, September 2005
- South Louisiana Recovery Survey: Citizen and Civic Leader Research Summary of Findings Project, Louisiana Recovery Authority Support Foundation, undated
- The Imminent Storm 2006: Vulnerable Emergency Communications in Eight Hurricane Prone States, First Response Coalition, April 2006
- The Importance of Evidence-Based Disaster Planning, Erik Auf der Heide, MD, January 2006
- The Role of Social Science Research in Disaster Preparedness and Response, testimony by Dr. Shirley Laska, University of New Orleans, November 10, 2005
- We can do Better: Lessons Learned for Protecting Older Persons in Disasters, The AARP Public Policy Institute, 2006

## Books

- *On Risk and Disaster Lessons from Hurricane Katrina*, University of Pennsylvania, 2006

## Reports Quoted

The following reports were quoted in the “Research Findings” sections. At the beginning of each listing is the reference used following the quote.

AARP – *We can do Better: Lessons Learned for Protecting Older Persons in Disasters*, The AARP Public Policy Institute, 2006

Coastal Services – “Lessons Learned: Preparing for the Next Big One,” in NOAA’s *Coastal Services*, May/June 2006

Disasters Roundtable – *Lessons Learned Between Hurricanes: From Hugo to Charley, Frances, Ivan, and Jeanne - Summary of the March 8, 2005 Workshop of the Disasters Roundtable*, National Research Council, National Academy Press, 2005, p 5

Failure of Initiative – *A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*, Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, U.S. House of Representatives, February, 2006

FEMA 488 – *Hurricane Charley in Florida*, FEMA 488, April 2005

FEMA 489 – *Hurricane Ivan in Alabama and Florida*, FEMA 489, August 2005

FEMA 490 – *Summary Report on Building Performance 2004 Hurricane Season*, FEMA 490, March 2005

FEMA 548 – *Summary Report on Building Performance, Hurricane Katrina*, FEMA 548, April 2006

[GAO-06-335T](#) – *Federal Emergency Management Agency: Challenges for the National Flood Insurance Program*, [GAO-06-335T](#), January 25, 2006

[GAO-06-442T](#) – *Hurricane Katrina: GAO’s Preliminary Observations Regarding Preparedness, Response, and Recovery*, [GAO-06-442T](#), March 8, 2006.

[GAO-06-443R](#) – *Disaster Preparedness: Preliminary Observations on the Evacuation of Hospitals and Nursing Homes Due to Hurricanes*, [GAO-06-443R](#), February 16, 2006

[GAO-06-467T](#) – *Emergency Preparedness and Response: Some Issues and Challenges Associated with Major Emergency Incidents*, [GAO-06-467T](#), February 23, 2006

Imminent Storm – *The Imminent Storm 2006: Vulnerable Emergency Communications in Eight Hurricane Prone States*, First Response Coalition, April 2006

Laska – *The Role of Social Science Research in Disaster Preparedness and Response*, testimony by Dr. Shirley Laska, University of New Orleans, November 10, 2005

Nation Still Unprepared – *Hurricane Katrina: A Nation Still Unprepared*, Report of the Senate Committee and Homeland Security and Governmental Affairs, May 2006

NIST – *Performance of Physical Structures in Hurricane Katrina and Hurricane Rita: A Reconnaissance Report*, National Institute of Standards and Technology, NIST Technical Note 1476, June 2006

Public Health Response – *Public Health Response to Hurricanes Katrina and Rita*, Center for Disease Control, March 10, 2006

QR 179 – *Examination of the American Red Cross and FEMA Following Hurricanes Charley and Ivan*, Quick Response 179, 2005.

QR 180 – *Hurricane Katrina: GIS Response for a Major Metropolitan Area*, Quick Response 180, 2005

RL33115 – *Cleanup after Hurricane Katrina: Environmental Considerations*, Congressional Research Service, RL33115, 13-Oct-2005

South Louisiana Recovery Survey - *South Louisiana Recovery Survey: Citizen and Civic Leader Research Summary of Findings Project*, Louisiana Recovery Authority Support Foundation, undated

Summary of 3 Katrina Reports – *Summary of 3 Katrina Reports*, 2006 Association of State and Territorial Health Officials, March 27, 2006

Texas Task Force – *Lessons Learned Report for Hurricane Rita Evacuation*, Texas Task Force on Evacuation, Transportation and Logistics, February 14, 2006

Two Rural Communities – *Rapid Needs Assessment of Two Rural Communities After Hurricane Wilma*, Center for Disease Control, April 21, 2006

U Penn – *On Risk and Disaster Lessons from Hurricane Katrina*, University of Pennsylvania, 2006

## Appendix C. Request for Input

### Newsletter article in the ASFPM *Insider*

#### **Summer WAS\*IS: An opportunity to be part of Weather and Society \* Integrated Studies!**

Do you or someone you know want to be part of a vibrant, pioneering community of scientists and practitioners that is working collectively to integrate societal impacts into the national weather enterprise?

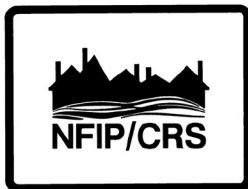
The National Center for Atmospheric Research (NCAR) Societal Impacts Program announces an exciting opportunity: Weather and Society \* Integrated Studies (WAS\*IS). WAS\*IS is a workshop that is going to change from what WAS to what IS the future of integrated weather studies.

We are looking for bright, enthusiastic, innovative people who feel strongly about the need to bring together researchers, practitioners, and stakeholders in order to make weather relevant, but who might not know how to do that, where to begin, or other people with similar interests.

Following on the successful first WAS\*IS, we are pleased to have funding to offer a Summer WAS\*IS in Boulder, Colorado, from July 14-21, 2006. We hope the Summer WAS\*IS will accommodate graduate students and others who were unable to participate during the school year.

See our webpage ([http://www.rap.ucar.edu/was\\_is/](http://www.rap.ucar.edu/was_is/)) to read more about WAS\*IS and to apply for the Summer WAS\*IS workshop. Applications are due Wednesday, March 22. Please contact Eve Gruntfest ([ecg@ucar.edu](mailto:ecg@ucar.edu); 303-497-8116) or Julie Demuth ([jdemuth@ucar.edu](mailto:jdemuth@ucar.edu); 303-497-8112) if you have questions. We'd love to talk with you about WAS\*IS!

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#### **FEMA Seeks CRS Lessons Learned from the Hurricanes**

The recent hurricanes that hit Florida and the Gulf Coast tested flood hazard mapping, regulatory, mitigation, response and public information activities. Of the 1,000 communities in the Community Rating System (CRS), over one-fourth of them were affected by the hurricanes of 2004 and 2005. It is hoped that there will be no shortage of experiences and people willing to share their lessons learned.

Accordingly, FEMA has initiated a post-hurricane CRS evaluation project. The evaluation is looking at general issues as well as suggestions for specific CRS activities. Here are some example issues that will be looked at:

- What public information activities are effective at explaining the true risk of flooding in the mapped floodplain, in X Zones, and in areas protected by levees?
- What can CRS do to encourage the sale of flood insurance, especially in X Zones?
- Did any communities regulate areas outside the regulatory 100-year floodplain? Did they have freeboard or other higher regulatory standards? Did they see any benefits after the hurricanes?
- Did any communities have success with special administrative tools, such as GIS, websites, or off-site storage of records?
- Can communities trace any benefits to having prepared a floodplain management or hazard mitigation plan before the storms?
- What lessons were learned that would improve local flood warning and emergency response programs?

Your thoughts would be greatly appreciated on these and all aspects of floodplain mapping, construction and reconstruction standards and procedures, public information, flood response, mitigation, and loss reduction. A CRS feedback page has been set up on the website of the Association of State Floodplain Managers:

- Go to [www.Floods.org](http://www.Floods.org)
- Go to the “Hurricanes Katrina & Rita Information & Resource Page”
- Click on the “CRS Feedback” link.
- Enter your thoughts and hit “submit.”
- If you provide your name and phone number, a member of the evaluation project team will call you to find out more about your lessons learned and suggestions.

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**Nick Winter Memorial Scholarship Fund**  
**Award Competition for Undergraduate and Graduate Students**  
**Deadline: May 31, 2006**

The New England Floodplain and Stormwater Managers Association, Inc. (NEFSMA), together with the Association of State Floodplain Managers (ASFPM) and the ASFPM Foundation, will grant a \$2,000 scholarship for the 2006-2007 academic year to a full-time college junior or senior currently enrolled in an undergraduate program related to floodplain/stormwater management, or a student enrolled in a graduate program in a field related to floodplain/stormwater management.

Eligible applicants include current undergraduates in a four-year college program, applicants to a graduate program, or current graduate students. Applicants must be enrolled in an accredited university or college in the United States and be a citizen of the United States. Eligible fields of discipline include civil or environmental engineering, planning, emergency management, environmental sciences or other disciplines with a demonstrable link to floodplain and stormwater management.

Applicants must complete a 2006-2007 Scholarship Application Form which can be downloaded from NEFSMA’s website at [www.nefsma.org](http://www.nefsma.org). Selection preference will be given to those applicants demonstrating civic or volunteer service, in addition to meeting the basic qualifications.

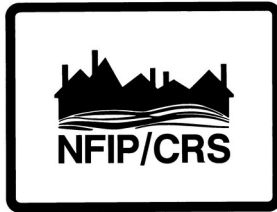
In order to be considered, the Scholarship Review Committee must receive four (4) signed copies of the 2006-2007 Scholarship Application Form and a separate reference letter prior to May 31, 2006. Selection will be made prior to July 31, 2006. Scholarship funds will be paid directly to the recipient’s college or university.

**Applications and reference letters must be mailed to:**

Nick Winter Memorial Scholarship  
Review Committee  
c/o NEFSMA  
P.O. Box 960676  
Boston, MA 02196-0676  
Attn: Peter A. Richardson, P.E., CFM

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## Conference Handout



### **FEMA Seeks CRS Lessons Learned from the Hurricanes**

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- What can CRS do to encourage the sale of flood insurance, especially in X Zones?
- Did any communities regulate areas outside the regulatory 100-year floodplain? Did they have freeboard or other higher regulatory standards? Did they see any benefits after the hurricanes?
- Did any communities have success with special administrative tools, such as GIS, websites, or off-site storage of records?
- Can communities trace any benefits to having prepared a floodplain management or hazard mitigation plan before the storms?
- What lessons were learned that would improve local flood warning and emergency response programs?

Your thoughts would be greatly appreciated on these and all aspects of floodplain mapping, construction and reconstruction standards and procedures, public information, flood response, mitigation, and loss reduction. A CRS feedback page has been set up on the website of the Association of State Floodplain Managers:

- Go to [www.Floods.org](http://www.Floods.org)
- Go to the “Hurricanes Katrina & Rita Information & Resource Page”
- Click on the “CRS Feedback” link.
- Enter your thoughts and hit “submit.”
- If you provide your name and phone number, a member of the evaluation project team will call you to find out more about your lessons learned and suggestions.

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A representative of the evaluation project team is present at this conference to talk to you. Seek out Berry Williams or call him on his cell phone at 919/395-5085 so you can get together.