

Helping Libraries Prepare for the Storm with Web Portal Technology

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Crisis Informatics

The past decade saw heightened hurricane activity in the United States with more than \$150 billion in damage in 2004 and 2005 [1]. In Florida alone there have been 53 hurricanes or other severe storm systems since 2000, resulting in over \$64 billion in damage and 149 related fatalities [2]. Propelled by this history of hurricane damage, the Information Institute has collected data that describe the roles that Florida and Gulf Coast public libraries have played and the services they have provided in hurricane/disaster preparedness and response since 2004. These data come from annual national surveys of technology use and deployment funded by the Bill & Melinda Gates Foundation and the American Library Association [3] and the State Library & Archives of Florida [4], as well as numerous interviews conducted by staff at the Information Institute. These data, as well as other research in LIS, show that libraries have responded to hurricanes and other disasters by taking steps to better prepare for the information needs of libraries and their communities arising from these emergency situations. Libraries have adapted their service roles in support of their communities to manage information services tailored to emergency support and assistance to hurricane victims [5, 6, 7].

In August 2008 the Information Use Management and Policy Institute (Information Institute or Institute) of Florida State University, College of

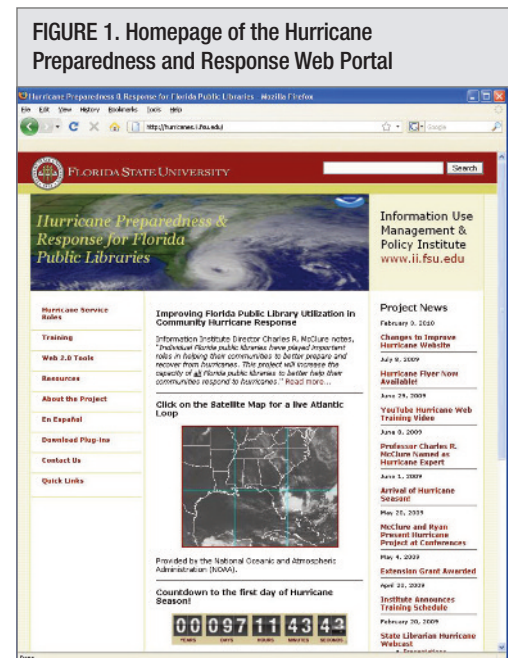
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Communication & Information, School of Library & Information Studies, began work on the grant entitled *Improving Florida Public Libraries Hurricane/Disaster Preparedness and Response*. The grant is funded by the Florida Catastrophic Storm Risk Management Center (www.stormrisk.org) and includes as a key project deliverable a web portal that organizes and disseminates a range of information on how public libraries can assist local communities in preparing for and recovering from hurricanes and other disasters. The focus is on seven critical service roles that libraries play in hurricane/disaster preparedness and response. The portal *Hurricane Preparedness and Response for Florida Public Libraries* is available at <http://hurricanes.ii.fsu.edu/> (see Figure 1 for an image of the portal homepage).

The Value of a Portal Site

A portal gathers together a wide range of information and makes it accessible to users in one place with just a few clicks. Implementation of portal technology is popular in libraries, which already organize a wide range of information to make it accessible to users from one location. Examples of library portals abound, such as the highly localized SkokieNet from the Skokie Public Library (Illinois)



[8] and numerous MyLibrary portals like MyLibrary@NCState from North Carolina State University, BUILDER Hybrid Library Demonstrator at the University of Birmingham (United Kingdom), and MyLibrary@LANL service at the Los Alamos National Laboratory [9], among others.

The existence of library portals coupled with the flexibility of web portal technology encouraged the Institute to implement a web portal approach to organizing and disseminating hurricane/disaster preparedness and response information. At the beginning of the project, the Information Institute conducted a needs assessment that included interviews with over 100 hurricane-experienced librarians, emergency management officials and other experts in the field. Findings from the interviews indicated a need for a one-stop, comprehensive collection of hurricane and other disaster information that would facilitate the services librarians provide their local communities in hurricane/disaster preparedness and response. In addition, the librarians and emergency management officials needed mechanisms to share information, collaborate and communicate with each other. The Institute determined that the need for a comprehensive collection of information and a collaborative communication platform would be met best by the creation of a Hurricane/Disaster Preparedness and Response Web Portal.

Designing the Portal

The Information Institute took a user-centric approach to designing the hurricane web portal. The Institute followed an iterative design process, including the suggestions of librarians, emergency management officials and other experts throughout the process. This approach began with the needs assessment and included interviews and focus groups, as well as exploration of other library-related portals. The Institute constantly sought feedback and assistance from interested parties, specifically during the web portal evaluation phase, but also throughout the process. Experts interviewed during the first round of the needs assessment were enlisted to watch the web portal as it developed to provide feedback, suggestions and changes so the portal could be improved throughout the design and development process. Due to this iterative feedback, the web portal evolved through four beta versions exploring a variety of content and ways to present it that led to an increased

use of graphics over text, including maps and Web 2.0 social networking tools, such as the project blog and wiki.

In the fall of 2009 the Institute embarked on a comprehensive evaluation effort of the beta version of the hurricane/disaster preparedness web portal. The evaluation employed additional interviews and focus groups, as well as usability, functionality and accessibility testing. Overall, the evaluation found that navigation through the web portal via the navigation toolbar is intuitive through both Internet Explorer and Mozilla Firefox and that the site is effective and efficient for users navigating through the site to desired content.

The website does a good job of meeting accessibility standards; for example, text, links, tables and text boxes, HTML code and CSS all readily accommodate screen enlargement; the web portal provides clear context and orientation information; and web portal documents are consistent, clear, organized and readily accommodate screen enlargement.

A web portal requires continuous updating and improvements, and this hurricane/disaster preparedness and response web portal is no exception. The web portal evaluation found several areas that require alterations/improvements, such as problems navigating via the search tool, so this area will be improved during the remainder of the project period (August 2010). Other areas identified as needing minor improvements include addressing consistency issues in presented content areas linked from the navigation toolbar, making the webmaster and Information Institute addresses in the footer more noticeable, and fixing some broken links in various areas of the Resources. Issues related to accessibility include the use of static colors that do not readily change as users adjust contrast settings to meet accessibility color needs, so a change in the site design to usage of non-static colors will allow users to better view pages with alternate contrast settings. The site may not adequately accommodate screen-reading software (e.g., for audio), but creating dialogue boxes will help alleviate this issue and facilitate the use of screen readers.

What the Portal Offers the Practicing Librarian

A key purpose behind the creation of the project web portal is assuring that the information, resources and best practices are available to all public

libraries. With that in mind, the portal is designed to serve as an easy-to-use resource for librarians and contains valuable information on all aspects of hurricane preparedness, such as guidance on developing effective hurricane plans, integrating efforts with governmental agencies and identifying best practices for public librarians. The portal is dynamic, content-rich and delivers timely and relevant information to librarians, including emergency information, web-based resources and informative web links across multiple resources. In addition, interactive features – like the project blog and wiki – promote collaboration and information exchange as libraries prepare for and react to emergencies, as well as more effective communication with the emergency response organizations that serve local communities.

As mentioned above, the web portal is currently available at <http://hurricanes.ii.fsu.edu> and provides a wealth of information for practicing librarians, including the following:

- A consolidated set of resources that provides everything librarians need in one place, including plans, workbooks, over 300 resources and success stories from libraries that have experienced hurricanes and other disasters,
- Best practices for response and recovery that detail how libraries can prepare for and respond to disasters, and
- Detailed service roles that explain how libraries can function as integral parts of the emergency response network.

Employing the web portal approach provides the capability to consolidate and organize numerous resources in an easy structure while providing timely and relevant content.

Many libraries already provide a range of useful information management services and activities in preparing for a hurricane or disaster, yet there have been no guidelines, recommendations or best practices available to assist libraries with these roles. Libraries involved in the provision of disaster-related information services have learned by doing. This project is the first systematic effort to share what was learned at these individual libraries across libraries and other government agencies. The coordination, management and integration of information resources through the project web portal are important contributions. In addition, the portal offers fast searching for

resources on a variety of topics and best resources selected for each of the service roles identified through other project data collection and analysis.

Part of the original project plan was to evaluate the use of the portal before, during and after a major hurricane. However, the 2009 hurricane season was a quiet one for Florida and the Gulf Coast region, so this evaluation under storm conditions was not possible. If a storm occurs during the 2010 hurricane season, the project team will continue efforts to evaluate the portal's use during a storm, but in the meantime, it is not possible to include any examples of real use of the portal during a hurricane.

Value of the Portal

The project team conducted interviews with practicing librarians to ascertain their views of the utility of the portal. They indicated that they are pleased to have access to the wiki and blog to communicate directly with one another regarding requests and needs. Many times they have had problems exchanging ideas and sharing information quickly, and the blog provides a solution for that. They also appreciate that they do not have to reinvent the wheel when it comes to creating library policies that would apply during a hurricane/disaster event since the portal includes real-life library policies in the *Resources* section. One librarian said, “It seems that everything you need to set up a plan and execute it is here, and it is great to go to one place and find it all rather than hopping around from library to library and different organizations’ [websites] with less information than is included here” [10].

Many librarians appreciated the Web 2.0 tools section of the portal as a means to communicate amongst librarians and emergency responders, saying things such as “this could be a one-stop-shop for anyone who is a librarian” [11]. Also, one remarked on its usefulness for members of the library's community, saying:

“There's a part for residents? I am curious about that. I can see that being extremely useful to people, they would be thrilled. When you are busy at the desk and you have 20 people asking you can you set them up on a computer so that they can browse and get information. People can get practical information from people who have already done the research. Rather than a

librarian saying ‘maybe you could do this, or maybe you could do that.’ A person could see that this person found groceries here, and they found ice there.” [12]

Although no major hurricanes hit Florida in 2009, the librarians already see the value of the portal to their work in hurricane preparedness and response.

Helen Moeller, director of the Leon County Public Library, sums up the overall librarian viewpoint in her comments to us:

“After disasters people flock to their public libraries for information, computers, a safe place to be with other people, to relax, to read and to borrow materials. Your website will provide much needed information in a standard framework that is not readily available elsewhere. Great job!”

This and similar comments by other librarians suggests that the portal addresses an important service need.

Next Steps/Ongoing Work

As the project continues through August 2010, and possibly beyond, the Information Institute will focus on updating and modifying the web portal, based on the results of the web portal evaluation that occurred in Fall 2009. As noted above, there are several key aspects of the portal that could benefit from modification, such as the search tool and color scheme. These will be altered and improved in response to feedback from practicing librarians who have explained what they feel does and does not work well on the portal and how areas of the portal can be improved. The overall goal is to continually upgrade and improve the portal in preparation for the next hurricane season, as well as other unforeseen disasters.

In addition, the Information Institute is seeking additional funding to expand aspects of the portal, such as the *En Español* and *Resources* sections. The Institute would like to continue translating the portal into Spanish and seeking new and updated resources to add to the portal. Also, the Institute is developing a new module that explains how public libraries can form and maintain partnerships with local emergency management agencies and emergency operations centers. Preliminary meetings with Florida emergency

management officials and public library directors show great support for this module, and it will be developed with their assistance and input. Information Institute staff are also discussing an expansion of the portal to address librarian needs in other Gulf Coast states. Finally, the Information Institute will launch a major promotion campaign to increase librarians’ awareness of the web portal in both Florida and other Gulf Coast states.

Meanwhile, there are several steps librarians can take to help their libraries and communities prepare for and recover from hurricanes and disasters. These include the following:

- *Review the service roles, best practices and aids as outlined on the project portal.* Decide one practice to develop this season. For example, if you want to improve your role as safe haven, a likely best practice to adopt is to have an emergency plan. Decide which components of the plan to work on this year and do them. The underlying message is do not try to do everything all at once. It is easy to get overwhelmed. Pick one small thing, and do it well.
- *Coordinate what librarians do with other responders in advance of a storm.* Key partners are local emergency management and government agencies, but also important are local utilities, police, fire, church groups and local businesses. Learn what these organizations intend to do and acquaint them with the roles your library intends to play. Find ways to strengthen the communities’ ability to respond through collaboration.
- *Prepare the library’s staff.* Communicate with library staff what is expected of them, why their work matters to the community in emergency situations and details of hurricane response roles and responsibilities. Review this information at least once a year prior to hurricane season.
- *Publicize the role of the library in emergency responses.* Public libraries can make certain that community members are aware of the services that the library can provide should a hurricane or other emergency situation occur. This outreach should be done in an ongoing manner so that community members can take advantage of the librarians’ knowledge and skills in an emergency situation.

Librarians and the library community know from experience that public libraries are essential service points in times of crisis, but they need to make the case to federal, state and local agencies to be formally recognized as essential services in disaster recovery. This recognition is necessary for library directors to have quick access to their facilities after a disaster strikes, not only to assess damages but also to provide access and services to the local community the library serves.

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