



STUDENT PAPER COMPETITION

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Preparing the People: An Assessment of State Emergency Management Web Sites

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The views, spelling, and grammatical errors expressed in the paper are those of the authors and not necessarily those of the Natural Hazards Center or the University of Colorado.

Abstract

The purpose of this study is to provide a baseline of information available on state emergency management Web sites. State emergency management agencies are chosen as the unit of analysis because these state agencies are the managers of multi-level government responses to disasters (Schneider, 1995). Web sites are selected because they are one of the first places the public goes to obtain information about the government (Horrihan, 2004).

Through a content analysis of all 50 state emergency management Web sites, the paper examines four variables identified in the literature as important markers of effective electronic government communication: democratic outreach, information content, outreach to special needs populations, and intergovernmental relations. The results from this study provide a baseline for future research on state emergency management communication and provide insights into how state emergency management agencies can improve their Web sites.

Effective emergency management has become increasingly important and scrutinized post September 11, and more recently after hurricanes Katrina and Rita. This change in the perception of emergency management's role has

led citizens to expect more protection and information from emergency managers at all levels of government. Despite the fact that it has been over five years since September 11, little is known about how public sector emergency managers communicate with the public.

The purpose of this study is to provide a baseline of information available on state emergency management Web sites.¹ States emergency management agencies (SEMAs) are chosen as the unit of analysis because these state agencies are the managers of multi-level government responses to disasters (Schneider, 1995). Web sites are selected because they are one of the first places the public goes to obtain information about the government (Horrihan, 2004).

Through a content analysis of all 50 state emergency management Web sites, this paper examines four variables identified in the literature as important markers of effective electronic government communication: democratic outreach, information content, outreach to special needs populations, and intergovernmental relations. The results from this study provide a baseline for future research on state emergency management

¹ In some states, emergency management is a division within the state department of homeland security or state department of public safety. For the sake of parsimony, the emergency management function for all states will be called the "state emergency management agency" in this paper.

communication and provide insights into how state emergency management agencies can improve their Web sites.

Literature Review

A primary method of communication with the public for state emergency management agencies is through Web sites, which are an example of electronic government. E-government is the "delivery of government information and services online through the Internet or other digital means" (West, 2001, p. 3). Proponents of e-government champion its potential to offer more and better interactions with citizens, other government units, and the private sector (Moon, 2002; Seifert, 2003).

E-government encourages information and resource sharing among government entities, eliminating unnecessary replication of efforts (Seifert, 2003). E-government also offers the potential for a true democracy in which citizens can more directly participate in government decision making. E-government allows citizens to have more frequent and meaningful interactions with the government and allows the government to provide higher quality and more timely information to the public (Seifert, 2003). Finally, e-government raises the bar for government accountability and responsiveness by making government activity more transparent and providing the opportunity for more speedy interactions (Ho, 2002).

E-government, however, also possesses several limitations. Although e-government enables the government to increase its communication outreach, accountability, and responsiveness, it also raises concerns about security and privacy, disparities in technology access, and technology management and funding (Eschenfelder, 2004; Halchin, 2002; Ho, 2002; Relyea, 2002).

Security and privacy issues associated with e-government have become increasingly significant over the past four years. Post September 11, 2001, concerns for security and privacy have lead to focus on counter-terrorism rather than citizen service (Aldrich, Bertot, & McClure, 2002; Halchin, 2002). On the positive

side, this focus on counter-terrorism has led to increased intergovernmental coordination (Center for Digital Government, 2004). On the downside, the original driving force of e-government, to increase citizen access to government, has been diminished by concerns over security and privacy.

Disparities in access also limit the effectiveness of e-government for citizens with disabilities, language limitations, and technology barriers (Horriagan, 2004). In a content analysis of state legislative Web sites, Fagan and Fagan (2004) concluded that all 50 Web sites displayed accessibility problems for vision and hearing-impaired individuals. Horriagan (2004) notes that at least 14% of the U.S. population has a disability that precludes them from communicating electronically with the government. Also, most government Web sites do not have foreign language access (West, 2004).

The management and funding of e-government often produce obstacles to fully realizing e-government's potential. E-government is expensive to monitor and update. A key component of e-government is evaluation, but such efforts are both costly and difficult to routinize (Eschenfelder, 2004; Aldrich, Bertot, & McClure, 2002). Thus, many government Web sites do not fully utilize the high potential for agency-citizen interactivity offered by e-government.

E-government may not have provided the revolution that it initially promised, but research shows that e-government is still alive and thriving (Reddick, 2004). Benefits of e-government include increased efficiency and effectiveness in service and information delivery (Moon, 2003) and improved interactions among multiple governmental levels, between the government and citizens, and between the government and businesses (Seifert, 2003). Limitations of e-government include concerns about security and privacy, disparities in technology access, and management and funding (Eschenfelder, 2004; Gupta & Jana, 2003; Halchin, 2002; Ho, 2002; Relyea, 2002).

The content analysis for this study will test the following research questions and hypothesis:

RQ1: How well do the SEMA Web sites fulfill the vision of e-government in terms of providing opportunities for citizen-agency interactions?

H1: The Web sites will provide limited opportunities for citizen-agency interactions.

Research question one provides a benchmark of the opportunities for citizen-agency interactions available on the Web sites (e.g. live chats, opinion polls, and email updates). Measuring citizen-agency interactions is important because interactivity is one of the primary advantage of electronic communication compared to more traditional forms of communication such as phone calls and office visits. Hypothesis one predicts the Web sites will have limited opportunities for citizen-agency interactions given the expense of maintaining and updating interactive Web sites (Eschenfelder, 2004; Aldrich, Bertot, & McClure, 2002).

RQ2: How well do the SEMA Web sites accommodate the unique needs of special needs populations including children, families, the disabled, the elderly, and foreign language speakers?

H2: The Web sites will not accommodate the unique needs of special needs populations.

Research question two provides a baseline of how well the Web sites accommodate the unique needs of special needs populations. It is important to accommodate special needs populations because these groups are the most vulnerable to the adverse affects of disasters (Bolin & Stanford, 1998). Hypothesis two predicts the Web sites will not adequately accommodate these unique needs given government Web sites typically target only the general public (Horrihan, 2004; Fagan & Fagan, 2004; West, 2004).

RQ3: What types of information are available on the SEMA Web sites?

Research question three provides a benchmark of information available on the Web sites. This information helps identify how useful the Web sites are for various publics (e.g., citizens, journalists, and emergency managers) as well as identify the content focus of the Web sites (e.g., focus on terrorism vs. focus on natural disasters). Because this is the first study to specifically examine SEMA Web sites, it is not possible to predict the types of information available on these Web sites.

RQ4: How much information is available on the SEMA Web sites about other governmental entities and organizations active in emergency management?

Research question four provides a baseline of how much information the Web sites provide about other governmental entities and organizations active in emergency management (e.g., FEMA, local emergency managers, and American Red Cross). This question is important because a significant benefit of e-government is connecting citizens, different levels of government, and organizations active in disasters (West, 2004). It is not possible to develop predictions for this research questions given the exploratory nature of this study.

Method

This study employs a quantitative content analysis with qualitative insights to benchmark information available on state emergency management Web sites. The sample for the content analysis was all 50 state emergency management agencies in the United States. The Web sites for the agencies were located by searching for each state's emergency management agency in Google. For example, to find North Carolina's state emergency management agency the term "North Carolina state emergency management agency" was typed into Google. In most cases, the first link was the Web site of the state emergency management agency. When the desired link was not the first link provided by the Google search, most often the state's emergency management

function was a division within a larger agency rather than a separate agency.

The coding sheet includes four categories to evaluate the Web sites' democratic outreach, information content, outreach to special needs populations, and intergovernmental relations. The literature on e-government identified these categories as important markers of effective e-government. The questions within each category come from previously administered e-government content analyses (e.g. Eschenfelder, 2004; Fagan & Fagan, 2004; West, 2001) and the markers of effective e-government identified in the literature review. Ten percent of the Web sites (n =5) were double coded, achieving an intercoder-reliability score of 94.87 using Holsti's formula. This score is sufficient to demonstrate the reliability of the findings (Wimmer & Dominick, 2003). The coding was conducted during the first two weeks of March 2005.

Findings

Democratic outreach

The literature emphasizes by far the most promising feature of e-government is its potential to enhance relationships with the public (Moon, 2002). The first category on the coding sheet, democratic outreach, measured the agencies' potential for meaningful interactions with the public through the presence of eleven items on their Web sites. The first five items measure citizens' ability to directly access agency employees including presence of phone numbers, nonelectronic addresses, electronic addresses, and directions to the office. The findings for these items are displayed in Table 1. Overall, these findings indicate that citizens can access state emergency management employees through a variety of means. Yet, nonelectronic methods of access are more prominent than electronic methods with more Web sites displaying telephone numbers than email addresses. Also, general rather than specific methods of contact are more prominent. Very few Web sites encourage citizens to travel to their offices by providing directions.

Table 1: Direct Access to Employees

General Phone Number	90%
Address	86%
Specific Phone Number	66%
Specific Email	60%
General Email	32%
Directions to Office	20%

The remaining six items measuring democratic outreach evaluate the level of agency-citizen interactivity available on the Web sites including real-time interactions with staff and community members, a comment function, surveys, email updates, and citizen volunteer opportunities. The findings for these items are displayed in Table 2.

Table 2: Agency-Citizen Interactivity

Citizen Volunteer Opportunities	76%
Comment Function	46%
Email Updates	10%
Survey	8%
Real-time Interactions	6%

Overall, these findings indicate that the Web sites rely on more traditional forms of interaction, such as recruiting citizen volunteers. The Web sites offer only limited opportunities for citizens to instantaneously interact with agency staff, with only 6% of the Web sites offering real-time interactions with agency staff. These interactions include online forums, conferences, and chat options. For example, Virginia's Web site provides StargazerNET™, a secure personal electronic place to communicate with the agency and the public during emergencies. Options for delayed communication are more plentiful and include a comment function (present on 46% on the Web sites), surveys (present on 8% of the Web sites), and email updates such as weather information (present on 10% of the Web sites).

Information content

The coding sheet's second category measures the information content on the Web sites including types of disasters discussed and the variety of public relations outputs available.

The Web sites provide information about a wide range of disaster types with an average of eight different disaster types discussed per Web page. A list of the disaster types and the relevant percentages are displayed in Table 3. The most commonly discussed disaster type is terrorism with 90% of the Web sites having information about terrorism. The next two most commonly discussed disaster types are hazardous/radiological materials (present on 88% of the Web sites) and floods (present on 80% of the Web sites). Most of the other disaster types are unique to certain climates, such as hurricanes. It makes sense that not all Web sites have information about these disasters. Two disaster types, political/civil disturbances (present on 12% of the Web sites) and technological failures (present on 38% of the Web sites), however, are not unique to certain environments, but still appear only on a minority of the Web sites.

The Web sites provide a wide range of public relations outputs to enhance citizen preparation for and understanding of disasters. Table 4 summarizes the public relations outputs present on the Web sites and the relevant percentages. On average, the Web sites display six different types of public relations outputs.

The most common public relations output is reports, with 84% of the Web sites including at least one report about topics such as analyses of agency performance, in-depth explications of specific disasters, and guidelines for response measures. The second and third most common public relations outputs are news releases (present on 80% of the Web sites) and fact sheets (present on 78% of the Web sites), which is not surprising since these are the bread and butter of public relations.

Only slightly more than half of the Web sites (56%) include crisis communication/emergency management plans, indicating a less than open environment that may be a result of the post September 11 climate. The Web sites display a much greater emphasis on print rather than electronic public relations outputs, with only 12% providing public service announcements and 18% providing video archives. Only 56% of

the Web sites contain a direct link from the homepage to a media page, indicating that while the Web sites include a wide range of public relations outputs they are not necessarily media friendly since journalists often have to search for relevant information.

Table 3: Information by Disaster Type

Terrorism	90%
Hazardous/Radiological Materials	88%
Floods	80%
Winter Weather	74%
Earthquakes	60%
Fires	60%
Lightning/Thunder Storms	52%
Tornados	50%
Hurricanes	44%
Technological Failures	38%
Diseases	36%
Droughts	32%
Excessive Heat	28%
Avalanche, Landslide, and/or Mudslide	16%
Tsunami	16%
Volcano	16%
Political/Civil Disturbances	12%
Hail	8%

Table 4: Presence of Public Relations Outputs

Reports	84%
News Releases	80%
Fact Sheets	78%
Newsletters	62%
Emergency Plans	56%
Media Link	56%
Calendar of Events	54%
Brochures	44%
Library	34%
Photos Archive	22%
Video Archive	18%
Media Clips	12%
Public Service Announcements	12%

Special needs publics

The third category measures how well the Web sites target special needs publics including language minorities, people with disabilities, children, families, and the elderly. Special needs publics are more likely to be negatively affected by disasters than the general public. Table 5 summarizes how well the Web sites are

targeting special needs publics. Information for pet owners is included in the table to highlight the disparity between the inclusion of information for special needs publics and for pet owners, who are not considered special needs publics.

Table 5: Awareness of Special needs Publics

Information for Children	68%
Information for Families	62%
Information for Pet Owners	52%
Information for People with Disabilities	38%
Foreign Language Access	30%
Web site Accessibility Policy	30%
Information for the Elderly	16%
TTY/TTD Phone Access	8%

By far the largest amount of information is provided for children and families, with 68% of the Web sites having information specifically for children and 62% of the Web sites having information specifically for families. Information specifically for children includes interactive games, coloring books, and story books to help children better understand disasters. Information specifically for families includes disaster preparation check lists and plans to help parents better prepare for disasters.

A third of the Web sites have foreign language access. Three of these 15 Web sites are translated into as many as eight languages by AltaVista. The other 12 sites provide information in Spanish, and a few sites provide information in African dialects and Russian. Overall the foreign-language information is not easy to find.

Three measures indicate awareness of unique needs of people with disabilities: TTY/TTD phone access, information specifically for this population, and a Web site accessibility policy. Only 38% of the Web sites include information specifically for the disabled, such as how to let the agency know about a disabled person's unique needs. Thirty percent of the Web sites display a Web site accessibility policy, but this policy is meaningless without specific information about how the disabled should prepare for and respond to a disaster. Only 8% of the Web sites allow people with hearing or

speech impediments to call the agencies by having TTYT/TTD phone access, making it difficult for this population to contact the agencies if they are not Internet savvy.

The elderly are the least targeted special needs population. Only 16% of the Web sites have information specific for this population's unique needs including preparation measures such as stocking up on necessary medications. Most disturbing is the fact that more than half (52%) of the Web sites include information for pet owners, which is more than the number of Web sites that include information for the disabled, elderly, and non-English speakers. This figure does not include information for seeing eye dog owners.

Intergovernmental relations

The fourth category on the coding sheet measures how much information about governmental entities and organizations active in emergency management is available on the SEMA Web sites. Table 6 presents the frequency of links to the three levels of government: national, state, and local.

Table 6: Links to Agencies/Departments Active in Disasters at All Levels of Government

Links to National Agencies	96%
Links to State Agencies	94%
Links to Local Departments	76%

Almost all of the Web sites have links to national (96%) and state (94%) agencies active in disasters. Most of the Web sites have links to local departments active in disasters (76%), but local government clearly is less esteemed by the state emergency management agencies than national and other state agencies.

Specifically examining the links to national agencies active in disasters, a large majority (88%) of the Web sites contain a link to FEMA, which would be expected since this is the major national play in disaster planning and relief. Table 7 summarizes the percentages of links to national agencies active in disasters

Table 7: Links to National Agencies Active in Disasters

Federal Emergency Management Agency	88%
National Weather Service	72%
U.S. Department of Homeland Security	66%
Centers for Disease Control	44%
Small Business Administration	26%
Disasterhelp.gov	12%

The National Weather Service also is present on the majority of the Web sites (72%), which makes sense given that climatological disasters are the most frequent disasters experienced by states. Considering that terrorism is the disaster for which information is provided most frequently on the Web sites, it is surprising that only 66% of the Web sites contain a link to the U.S. Department of Homeland Security. Also surprising is that a minority of Web sites (12%) include a link to disasterhelp.gov, the federal electronic library about disaster preparation, response, and mitigation. Likewise, only about a fourth (26%) of the Web sites include a link to the Small Business Administration, indicating a lack of awareness of the needs of business owners during disasters. Less than half of the Web sites (44%) have a link to the Centers for Disease Control, which parallels the finding that only 36% of the Web sites have information about diseases.

An examination of the links to state agencies active in disasters, displayed in Table 8, demonstrates there is less emphasis on state relationships compared to national relationships. A majority of the Web sites have links to the two major state players in disaster responses: state departments of homeland security (68%) and the public safety agencies (60%). A significant portion of states, however, do not have links to these agencies. The other state agencies, such as the department of transportation, that are linked to the Web pages only appear on a minority of the sites. Interestingly, slightly less than half (45%) of the Web sites include links to other states' emergency management agency Web sites, indicating a strong presence of cross-state cooperation in emergency planning and response.

Table 8: Links to State Agencies Active in Disasters

State Department of Homeland Security ²	68%
State Public Safety Agencies ³	60%
Other States' EM Agencies	45%
State Department of Health	34%
State National Guard	24%
State Department of Transportation	18%

Examining the links to nonprofit organizations active in disasters, by far the largest player is the American Red Cross (present on 76% of the Web sites), which makes sense since the Red Cross has a national mandate to provide shelter and other assistance after state and national emergencies. Table 9 summarizes the links to the nonprofits.

Table 9: Links to Nonprofit Organizations Active in Disasters

American Red Cross	76%
Salvation Army	10%
Humane Society	8%

The Salvation Army is only linked on 10% of the Web sites, which is not very many more Web sites that have a link to the Humane Society.

Only a minority of Web sites have links to private sector organizations active in disasters. Table 10 summarizes these findings, showing that less than a fifth of the Web sites have links to insurance companies (8%) and only slightly more have links to power/utility companies (10%). Media companies are present on slightly less than a fourth of the Web sites, making them the most commonly linked private sector organizations.

² A few state emergency management agencies are part of the state department of homeland security or called the department of homeland security. These states were coded as having a link to the state department of homeland security.

³ Some states have a separate public safety agency which includes law enforcement and firefighters. Other states have separate police and fire departments. A Web site that had a link to the state police department, fire department, or public safety agency was coded as having a link to state public safety agencies.

Table 10: Links to Private Sector Organizations Active in Disasters

Media Companies	24%
Power/Utility Companies	10%
Insurance Companies	8%

Discussion and Conclusions

The findings from this study provide the foundation for future research on state emergency management communication. More importantly, the findings can help state emergency managers evaluate their electronic communication. The findings, however, are limited by several factors. The content analysis does not evaluate quality of the information available on the Web sites or the overall design of the Web sites. Presence and breadth of information are important markers of how effective the Web sites are in communicating disaster information. If this information is poorly produced and designed, however, presence and depth become less important. Also, the content analysis measures results rather than decision-making. Thus, it is not possible to determine why certain information is included in the Web sites and other information is excluded. Knowing more about the decision-making process would help inform who the agencies think the primary audiences are for the Web sites and how important the Web sites are in the agencies overall communication strategy. Despite these limitations, the content analysis does reveal some important findings about the overall effectiveness of the state emergency management Web sites.

The findings about democratic outreach reveal the Web sites are not fully utilizing the potential of e-government, confirming hypothesis one. The most frequently included forms of communication between the public and the agency on the Web sites are telephone and snail mail. Only 6% of the Web sites offer real-time interactions, only 8% include surveys, and less than half include a comment function (46%). E-government offers the opportunity for more direct, frequent, and interactive communication (West 2004), but these Web sites clearly are not

realizing this potential. It is likely that the state emergency management agencies do not have the staff or the finances to produce sophisticated Web sites. Thus, these agencies may be interested in providing more opportunities for democratic outreach on their Web sites, but may currently be unable to offer these opportunities. One indication that the agencies are indeed interested in providing opportunities for democratic outreach is that the majority of the Web sites offer citizen volunteer opportunities (76%), indicating that at least one significant aspect of the e-government revolution, increased citizen participation in government, is being fulfilled.

The findings about information content and public relations outputs indicate that there is a large variety of information available on the Web sites, providing the desired baseline for research question three. By far the most frequent disaster type for which information is provided is terrorism (present on 90% of the sites). Disasters which are likely to occur more often than terrorism, such as fires and lightning/thunder storms (both present on 60% of the sites), receive significantly less attention on the Web sites. It is likely that the hyper-focus on terrorism is a vestigial byproduct of September 11. Down's issue-attention cycle (1972) explains how certain topics, such as terrorism, are more important to the public after critical events, such as September 11. Over time however, the public grows apathetic to these issues as new hot issues arise. Thus, it is likely that as new disasters occur, the Web sites will feature information about these disasters and remove some of the information about terrorism. For example, if this study were conducted a year from now no doubt the Web sites would highlight information on pandemic flu given the current political and media hyperfocus on this public health issue.

Although the Web sites include a wide variety of public relations outputs, the top three most frequently included public relations outputs are reports (present on 84% of the Web sites), media releases (present on 80% of the sites), and fact sheets (present on 78% of the

Web sites). The reports could be targeted toward a wide variety of publics, but both the media releases and fact sheets in the print form typically are targeted at the media rather than the general public. The public relations literature, however, notes Web sites primarily serve as direct-to-the-public communication rather than direct-to-the-media communication (Esrock & Leighty, 1998; Heath, 1998). Thus, media releases and fact sheets posted on Web sites may also be targeted to the public. Most of the other information on the Web sites (such as the brochures and guides) also appears to be targeted to the public. Only slightly more than half of the Web sites (56%) have a media link and this link often is difficult to find. Thus, it appears like the Web sites target both the media and the public. Another likely audience is local emergency managers. It is impossible to know, however, who the true target audiences for the public relations outputs available on the Web sites are without talking with the SEMA staff.

The findings about special needs publics produce mixed results for hypothesis two, the prediction that the Web sites do not provide a lot of information for special needs populations. The majority of the Web sites provide information for families and children, with 68% of the Web sites having information for children and 62% of the Web sites having information for families. Only a minority (16%) of the Web sites, however, provide unique information for the elderly. Awareness of the unique needs of people with disabilities also is lacking, with only 8% of the Web sites displaying a TTY/TTD phone number, 30% displaying a Web site accessibility policy, and only 38% including information for this public. Some may argue that the elderly and disabled are not as likely as other publics to access these Web sites, and the lack of electronic information for these groups is not all that important. These findings, however, are important because the information available online may be reflective of the information available in print. Unless the agencies are producing and distributing information for the disabled and the elderly that is not available

online, the agencies need to seriously enhance their outreach to these special needs publics.

At first glance, it appears like the agencies are aware of the unique communication needs of foreign-language speakers compared to the elderly and the disabled, with 30% of the Web sites including information for foreign-language speakers. This figure, however, is deceptive because most of the foreign-language information is difficult to find on the Web sites and not directly displayed on the homepages. For example, Florida provides a disaster guide for the elderly, hurricane guide, and a fire guide all in Spanish, but citizens must click on the "information" icon on the homepage and then the "library" icon to find these Spanish-language guides among a list of other English-language information. Also, several of the sites with foreign language access merely translate the entire Web site via AltaVista, which only produces about 80% accuracy in translations. Such translation appears to be a catchy feature rather than a targeted decision. Some of the included languages, such as Farsi, are only spoken by a slim minority of the states' populations (if by any). Furthermore, states with large populations of foreign-language speakers, such as Hispanics, do not have commensurate foreign-language access on their sites. For example, New Mexico has the largest number of Hispanic residents out of all of the states with 43% of their population being Hispanic (U.S. Census Bureau, 2005), but the only Spanish-language information on their emergency management Web site is the phone number for the American Red Cross's Spanish-language telephone line.

Most strikingly, more than half of the Web sites (52%) have information for pet owners, which is a larger percentage of Web sites than have information for the disabled, elderly, and foreign-language speakers. The high frequency of information for pet owners may be a response to past media coverage about people not seeking shelter because they could not bring their pets with them. For example, after recent Hurricane Katrina, many New Orleans residents refused to

leave their flooded homes because they did not want to leave their pets behind (Wan, 2006).

The findings about intergovernmental relationships show a high level of awareness about the importance of intergovernmental coordination in disaster management. Almost all of the Web sites have links to national agencies active in disasters (96%) and state agencies active in disasters (94%). A significant majority (76%) have links to local departments active in disasters, but local departments definitely receive less prominence than the national and state agencies. A significant majority (76%) of the Web sites also have a link to the major nonprofit player in disaster planning and response: the American Red Cross. Very few Web sites (10%), however, have a link to another strong nonprofit player, the Salvation Army. Likewise, a minority of Web sites have links to insurance companies (8%) and power/utility companies (10%). These findings indicate that the agencies recognize the importance of government-to-government relationships, but need to focus more attention on government-to-business relationships with important private sector players in disaster response. The agencies also need to foster diverse government-to-nonprofit relationships by including more links to nonprofits other than the American Red Cross, particularly local nonprofits. Because the American Red Cross has received a great deal of criticism for mishandling donations after 9-11 and mishandling the response to Hurricane Katrina it is especially important for the SEMA Web sites to provide links to other nonprofits the public can contact for help (Salmon, 2005).

In the post-Katrina world of emergency management, states must evaluate their role in managing preparation for and response to disasters. A key component of this preparation and response is effective communication with the public, other levels of government, and organizations active in emergency management. This study provides insights into how states could improve their electronic communication. More research needs to be conducted to examine other elements of states' emergency management communication including the

effectiveness of non-electronic methods of communication, the organization of the agencies' public information department, and the state's relationship with other levels of government and organizations active in disasters.

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