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Stacey Cole Mann* and Tanveer Islam

The Roles and Involvement of Local Government Human Resource Professionals in Coastal Cities Emergency Planning

Abstract: Across the US, coastal cities are threatened by many different man-made and natural hazards. From oil spill to hurricanes, tsunamis or coastal flooding, these cities should be prepared for emergency situations and should have well-organized emergency plans for their citizens. As a department that has contact with local government employees, human resource (HR) professionals understand the concepts that are important in times of crisis, including benefits management, training and development, and compensation. From mitigation to recovery, employees are vital to planning and responding to an emergency, and in a time when local government is focused on serving its citizens, local government human resource professionals serve those protecting those citizens – local government employees. The objective of this paper is to assess the roles and involvement of local government human resource professionals in emergency planning in coastal cities nationwide. Using responses collected from HR professionals in coastal cities with populations of 50,000 – 249,999, this paper investigates common HR issues included in emergency plans. Based on the analysis of their responses, gaps are identified and recommendations are made of ways in which human resources can contribute more effectively towards emergency planning for coastal cities.

Keywords: emergency management; emergency planning; emergency preparedness; human resource management; intergovernmental relations; local government.

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1 Introduction

In the last 10–15 years, coastal areas of the US have undergone dramatic population increases. The migration to coastal areas has greatly affected other areas of the US, such as the Great Plains, which is categorized as the fifth largest land area, but has only 4% of the American population (Lind 2003). In fact, in its State of the Coast report, NOAA (2011) reported that “52% of the nation’s total population lived in coastal watershed counties in 2010” and from 1970 to 2010, the population of these counties increased by 45% (NOAA 2011, Communities), and are expecting an increase of 14.9 million residents by 2020 (NOAA 2011).

Like other parts of the US, coastal communities face a variety of hazards. However, because of the exponential growth in population, the numbers and types of risks in these areas also are increasing, which may result in disaster if significant planning has not occurred. Local governments face several significant problems with emergency planning including lack of resources such as money and staff, complacency among citizens about preparedness, and politicians who focus on short-term projects that reflect well when re-election is pending (Mann 2011). Thus, local governments, especially those that face increased vulnerabilities such as those in coastal areas, must include as many departmental employees in emergency planning as possible. Some departments, such as transportation, public works, and human services, are required to participate in local government emergency planning because they are categorized by the federal government as emergency support functions, or functions that are pertinent to disaster response (FEMA 2013).

However, one department that would provide added insight to the planning process, but is often overlooked is human resources. Human resource professionals are responsible for addressing the issues that affect the most important assets in local government, the employees. In times of disaster, like citizens, employees’ lives also are affected. By including HR professionals in emergency planning, local governments can identify procedures and policies that are pertinent to employee management in times of crisis. If employees understand the policies and procedures as well as their specific roles and responsibilities in disaster response and recovery, the stress that often accompanies a disaster may be lessened, especially for those facing the crisis both in the workplace and at home. In the aftermath of Hurricane Katrina, Goodman and Mann (2008) found that most employees along the Mississippi Gulf Coast were unclear about their post-disaster responsibilities at work, which may have heightened the stress in their personal lives.

The purpose of this paper is to investigate the role of human resource professionals in local government emergency planning in coastal cities. Because of the population migration toward these areas, local governments must ensure that all

of their resources are used effectively during times of crisis. The authors will first provide a discussion of coastal cities and the types of vulnerabilities these regions face, which will be followed by a general discussion of emergency planning in state and local governments. The discussion will then focus on HR professionals as emergency planning partners. The results of a survey of local government human resource professionals conducted by Mann (2011) will be used to analyze the involvement of HR professionals in coastal and non-coastal cities, and finally, suggestions of HR practices that should be included in emergency plans will be identified.

2 Coastal Cities and Vulnerabilities

Coastal living, for the most part, is very appealing for many Americans. The Gulf Coast region offers sandy, white beaches and moderate temperatures in the winter. The West Coast offers majestic scenery and the stunning, blue Pacific. The East Coast offers the appeal of major fisheries and nice, warm summers. However, although coastal living has many benefits, residents face numerous risks and vulnerabilities, whose effects can be unforgiving and cruel.

Clark et al. (1998) define vulnerability as “people’s differential incapacity to deal with hazards, based on the position of groups and individuals within both the physical and social worlds” (p. 59). In a 1998 study, the authors examined several factors as determinants of vulnerability, which included “age, disabilities, family structure and social networks, housing and the built environment, income and material resources, lifelines (including transportation, communication, utilities, and other services), occupation, and race and ethnicity” (Clark et al. 1998: p. 67). McEntire (2001) also identified similar areas of vulnerabilities, which include physical, social, cultural, political, economic, and technological factors.

For coastal communities, these vulnerabilities are especially relevant, and although each category is individually defined, they do not operate individually. For instance, Clark et al. (1998) found that certain areas of Revere, Massachusetts are more vulnerable than others when physical and social vulnerabilities, such as race, age, education, and others, are combined. Frazier et al. (2010) found that in Sarasota, Florida, “the addition of a sea-level-rise scenario to hurricane storm-surge hazard zones often results in a doubling of population and asset exposure” (p. 495). This is important to note, especially in terms of the built environment because the “nature and age of the housing stock” (Cutter and Emrich 2006: p. 104) could increase risk. In Florida, homes in the coastal regions are especially

vulnerable as “78% of the houses, excluding mobile homes, were built before 1944 and 88% do not meet current building codes” (Repetto 2012: p. 2).

In Louisiana, New Orleans’ Lower Ninth Ward was one of the last areas of development, which was “due to the swampy, flood prone nature of the area” (Dessauer and Armstrong 2006: p. 4). This area also faced increased risk and vulnerability to flooding when it was divided by the construction of the industrial canal in 1923. Finally, although this district had the largest number of homeowners in Orleans Parish prior to Katrina, the houses were “in poor physical condition” (Dessauer and Armstrong 2006: p. 4) because the level of poverty made home maintenance difficult. These physical vulnerabilities as well as social and economic vulnerabilities became especially apparent during the storm. Although Norris-Raynbird (2005) argued that in recovery, the social elements affected by disaster may “be more responsible for how a community recovers than physical and technological elements” (p. 38–39), it may be that it is the socio-economic characteristics that have the largest impact on individuals. In planning for crises, all local governments must focus their planning efforts not only on the hazards that affect their jurisdictions, but also the residents.

Because many coastal cities often rely on tourism dollars, economic vulnerabilities are far-reaching in times of crisis. Not only do cities and states rely on the income brought in by visitors, but also do individuals who work in the tourism industry. In 2011, both domestic and international tourists spent over \$807 billion in the US, with \$102.3 billion spent in California (Dean Runyan Associates 2012) and \$67.2 billion in Florida. The total sales tax revenue from tourism in Florida reached \$4.0 billion in 2011 (VISIT FLORIDA Research 2011), and according to the not-for-profit tourism promotion company established by the Florida Legislature in 1996, Visit Florida, every 85 visitors to the state supports one Florida job (Office of the Governor 2012). In California, total state tax dollars generated by tourism was over \$11 billion, and at the local level, approximately \$2.3 billion, which is significant revenue for some local governments. Although Florida’s tax revenue was significantly lower, it seems that the total number of persons directly employed by the tourism industry, 1,013,100 000 (VISIT FLORIDA Research 2011), is higher than in California, which is estimated at 893,000 (Dean Runyan Associates 2011). Following the 2004 hurricanes, Visit Florida estimated the potential losses to the state from decreased tourism was approximately \$160 million in tax revenues, and it was the coastal areas, which makes up 80% of the personal income of residents in Florida and 79% of the earnings for the state payroll, that helped Florida survive after the economy took a downturn following 2001 terrorist attacks (Cantanese Center 2005). Thus, in states like Florida and California who depend on tourism, when disaster strikes, revenues are often impacted, meaning that state and local governments must find creative, efficient, and effective methods for response and recovery.

While this discussion highlights only a few of the vulnerabilities faced by coastal communities, clearly these areas of the nation have some considerations in planning. Because local governments often do not have, or believe to have, the resources needed for addressing hazards in their communities, many states require action through legislation. According to Burby (2005), for many years, researchers concluded that although some state governments mandate local governments “to prepare plans and attend to hazards in plans, many local governments fail to plan, fail to update plans so that they are current, and fail to give hazards adequate attention” (p. 68). The next section will offer a brief discussion of some emergency planning mandates found throughout the nation.

2.1 State and Local Government Emergency Planning

Many states implement planning mandates to address hazards. As early as the 1970s, California, North Carolina, Oregon, Florida, Maine, Maryland, and South Carolina began including preparedness elements for earthquakes (Burby 2005). Several states with coastal communities have “stringent state oversight” regarding their comprehensive plans and identification of natural hazards, some of which include Oregon, Florida, North Carolina, and California. States with weaker mandates included Arizona, Colorado, Idaho, Maine, South Carolina, and Maryland (Burby 2005: p. 69). In addition, several states with coastal cities also provide some level of financial or planning assistance.

As one of the nation’s leaders in emergency planning, Florida imposes hefty fines and sanctions for local governments that do not implement planning mandates (Deyle and Smith 1998). The 1985 Local Government Comprehensive Planning Act requires that local governments in Florida address several important areas in their plans, including intergovernmental coordination, conservation of natural resources, and housing, among others. The Florida Department of Community Affairs (DCA) was given the task of overseeing the process and assisting local governments with compliance. Although local governments did not fully comply with every mandate, many met the DCA’s priorities, which led to negotiation of compliance by allowing some “communities to exclude certain issues from their plans where those issues were considered to be less crucial” (Deyle and Smith 1998, conclusion section, ¶ 6).

Some states also have specific guidelines for coastal counties. For example, in North Carolina, 20 coastal counties must create and approve a 10-year local land use plan (Schwab 2011). In Alabama, local governments who potentially face hurricanes are required to create a hurricane evacuation plan. In Virginia, local governments are required to appoint a local hazardous materials coordinator,

and for those local governments with populations of 50,000 or greater, an alert plan for information dissemination must be implemented (Code of Virginia, §44-146.38; Code of Virginia, §44-146.19).

In Oregon, natural hazards must be included in the land use portion of the local emergency plan (Schwab 2011), and in Oregon, local governments must follow specific guidelines to preserve ecosystems and ensure they are not altered (Goal 17 1999). Finally, many of Oregon's coastal counties lie in seismic regions, and in 2001, the state passed Senate Bill 13, requiring both state and local agencies in these zones and have 250 or more employees to "develop seismic preparation procedures and inform their employees about the procedures" (Douglas County 2009: p. 12). The agencies also must conduct drills that follow state guidelines, for evacuation and protection in place (Douglas County 2009).

Because of the constant risk of earthquakes, California has required or encouraged local governments to take protective measures. Following the 1971 San Fernando Earthquake, the state passed the Alquist-Priolo Earthquake Faulting Zone Act to limit development in areas that may face extensive surface fault ruptures, which results "when movement on a fault deep below the earth breaks through to the surface" (California Geological Survey 2012, "What is surface rupture?"). In 1990, the Seismic Hazards Mapping Act was passed to address other possible earthquake effects such as landslides and liquefaction (California Geological Survey 2012). Although local governments must enforce established development policies, they can choose to be more restrictive (Department of Conservation 2012). The city of Los Angeles, for example, instituted a grading system that has reduced landslide damage by 90% (OAS 1991).

Other local governments also create their own mandates. For example, in 2004, the New York City Council adopted Local Law 26, which increased preparedness efforts by requiring sprinkler systems in all buildings by 2019, photoluminescent markings on all exits by July 2006, and a battery or generator for all exit signs. In addition, all new buildings are required to include impact-resistant enclosures for stairs and elevators, an evacuation emergency action plan, and additional specifics for smoke barriers and outdoor air intakes (NYC LL26 2006; Weissman 2010).

The local government of Pensacola Beach, Florida, a small barrier island off the coast of the Florida Panhandle, adopted a building code that forced homes in A-Zones, which are not considered beachside, to be built at V-Zone standards, which are homes that often are pummeled by waves during a flood. This more stringent code proved successful after the 1995 hurricane, Opal, flooded the island, and V-Zone structures remained standing. Residents, also, benefitted from this building code when the National Flood Insurance Program decreased premiums (DeKorne 2004).

However, actions taken by states and local governments are not all required. For example, Hurricane Katrina provided valuable lessons to the local and state governments in Louisiana, and as a result, many policies regarding planning were enacted. Because flooding is a major issue in New Orleans, the city wanted to ensure that everyone could evacuate. As Hurricane Gustav approached Louisiana in 2008, several new policies were exercised including transporting residents to shelters, releasing evacuation information earlier, and announcing registration for special-needs patients (Parish getting ready 2008).

While the risks of coastal cities may vary, the goal of planning remains the same. As the population increases, more resources to address the risks will be needed. At the local government level, resources may sometimes be limited (Perry and Mankin 2005; Caruson and MacManus 2011; Mann 2011). Therefore, identifying all departments and their employees that can play a significant role in planning is a necessity.

2.2 HR Professionals as Emergency Planning Partners

As disasters become more frequent and more extensive, the development in hazard-prone areas and disintegrating environmental barriers result in an increase in recovery spending. Thus, local governments should identify all accessible resources prior to a disaster. Human resource management departments play an instrumental role in the daily functions of local government, and therefore, also have significant roles in times of disaster. The functions that HR departments are responsible for during normal operations also are important in times of crisis, if not more so. According to Fegley and Victor (2005):

Identifying employee perceptions of disaster preparedness helps HR professionals better comprehend employee awareness and knowledge of their organizations' plans. This information is helpful to HR professionals in forming, revising and communicating their organizations' disaster preparedness plans. (v)

The authors concluded that the 9/11 terrorist attacks and the effects of Hurricane Katrina revealed that HR departments play an important role in disaster preparedness, and that “whatever the extent of HR involvement in this process, there is a need to continuously modify, evaluate and communicate disaster preparedness plans” (Fegley and Victor 2005: p. 21).

The Society for Human Resource Management (SHRM) has investigated disaster preparedness in various organizations nationwide. In 2005, approximately 314 HR professionals completed the survey, generating a 16% response rate, with

80% of respondents employed in the private sector and 20% in the public sector. Over 75% of respondents participated in some aspect of their organization's emergency planning, and the two functions that were most common included "communicating plans and procedures to employees and communicating information about available assistance programs:" (Fegley and Victor 2005: p. 4). The report also revealed that over 30% had equal input in the planning process, 29% advised the departments responsible for emergency planning, 18% were "primarily responsible for forming all disaster preparedness plans and procedures"; and finally, 22% did not participate in preparedness planning (7–8). Other important findings included that many have plans for shelter-in-place, communication, employee assistance, and response training for employees. In 2011, 10 years after the 9/11 terrorist attacks, SHRM conducted a similar study and found that 76% of respondents reported that their organizations had a formal disaster preparedness plan, an increase from the 2001 findings.

In a nationwide survey of local government HR professionals in mid-size cities, Mann (2011) found that approximately 65% regularly participate in emergency planning meetings, but only about 25% reported being very involved with emergency planning. Although most respondents reported some participation in emergency planning with their local government, the study also reported that the number of HR functions addressed in emergency plans was correlated with the number of years the individual had worked in HR. In other words, the number of HR-related issues addressed in emergency plans such as compensation and hiring practices were greater in those cities where respondents had worked in HR for more than 10 years. Along with the knowledge of HR practices, these respondents also bring other valuable characteristics to emergency planning, including the ability to handle conflict, experience with adapting to changing environments, and skills that lead to quick decision-making (Mann 2011). Also, HR professionals have contact with employees and are knowledgeable about the human capital available to the organization, giving them a unique ability to assist with the identification of important resources that could be valuable in times of crisis.

At the federal level, FEMA's Comprehensive Preparedness Guidelines (CPG) (2009) serves as a guide for state and local governments in creating and updating their emergency preparedness plans. While the guidelines address many areas of planning, some aspects of personnel planning are included. For example, the CPG suggests identifying "preparedness gaps in available personnel, equipment, and training" as well as providing "training to their personnel that is relevant to all-hazards training" (p. 26). Specifically, FEMA (2009) states: "Training helps emergency personnel become familiar with their responsibilities and acquire the skills necessary to perform assigned tasks" (p. 90). Training should also be included that allows personnel the ability to understand how to organize and use

volunteers. However, the creation of plan is only the initial phase of preparedness; the effect of specific hazards on “existing resources, equipment, training, and personnel” must also be examined (p. 28).

In addition to guidelines offered by the federal government, some states have also identified important human resources issues that are important in times of disaster. As the nation’s most disaster-affected state, the Texas government has identified some aspects of human resource management that are crucial during disasters. The Texas State Emergency Management Statutes document includes the Texas Labor Code, which addresses issues such as compensation and medical benefits. In addition, the Texas Emergency Management Executive Guide specifically states that temporary personnel may be hired to assist with carrying out the functions that are required to “providing financial aid to individuals or families qualified for disaster relief” (Texas Emergency Management Executive Guide 2013: p. 37).

In California, the 2009 California Emergency Services Act addresses several human resource issues, such as training, compensation, and benefits, in both the preparedness and response phases. For example, in the preparedness phase, the act states that personnel, either from the private sector or from voluntary organizations, should be identified for use in the case of a marine oil spill, and for hazardous materials spills, management personnel should undergo training and education to better respond if an incident occurs. In response to a crisis, the act states that the governor can “commandeer or utilize” any personnel necessary to fulfill the duties needed in a state of emergency. The act also addresses compensation and benefits of personnel working during response to a crisis (California Disaster Assistance Act 2006).

At the local level, many cities, counties, and regions address personnel issues in their preparedness plans. For instance, the San Francisco Bay Area Regional Emergency Coordination Plan (2008) states that in the event of a disaster and the emergency operations center is activated, three staff members must be present in the emergency operations center. In addition, the Logistics Section is responsible for staffing the operations center, both from within the affected jurisdiction and from outside, unaffected regions. In addition, Mann (2011) found that in some cities, such as Novi, Michigan; Federal Way, Washington; and Lake Havasu City, Arizona, human resource professionals assist with identifying pre- and post-disaster roles of both essential and non-essential personnel, transportation needs, and outside organizations or support services that could assist with mandatory important functions in times of disaster. In addition, cities such as Kalamazoo, Michigan and Grand Forks, Michigan include policies in their emergency plans that allow for the immediate hiring of temporary workers, address overtime and comp pay during states of emergency, and explain how employee furloughs during states of emergency will be handled (Mann 2011).

Thus, because cities, counties, regions, and states could not prepare, respond, nor recover from disasters without employees, it is important to include certain personnel issues in emergency plans. And, since coastal areas are more vulnerable than non-coastal areas, this paper investigates if the human resource professionals in coastal local government emergency planning are more prepared than their non-coastal counterparts.

3 Methods and Results

Local government emergency plans must address multiple elements for effective and efficient response. However, local governments often have limited staff and financial resources, especially during struggling economic times, so administrators and officials must include as many individuals from departments within their organization to address potential issues.

To investigate their involvement or lack thereof, Mann (2011), in a study funded by the John C. Stennis Institute of Government at Mississippi State University, conducted a survey of local government human resource professionals in US cities with populations of 50,000 – 249,999 in January and February 2011. The 2007 Census identified approximately 19,495 cities and towns in the US, and a total of 608 of those were cities with populations of 50,000 – 249,999. The names and contact information for the HR director, manager, or other appropriate representative was retrieved via the local government website or through direct contact either by email or phone. However, after several attempts to contact three cities, identification of the appropriate representative could not be identified, resulting in a population of 605 potential respondents.

Potential respondents were mailed a letter introducing the research project along with a hard copy of the survey. Respondents could either complete the hard copy and fax the survey to the researcher, or complete the survey electronically after receiving the link to the survey, which was included in three follow-up emails. Of the 605 potential respondents contacted, 209 completed the survey, yielding a response rate of 35%, which is comparable to other HR surveys (Hays and Kearney 2001). While the project as a whole focused on HR professionals' level of involvement in emergency planning and the types of human resource issues included in local government emergency plans, this particular study sought to compare the local government emergency plans of coastal vs. non-coastal cities.

To ensure equal distribution among the respondents, the data was examined based on the 10 FEMA regions. The response rate per region ranged from 22% to

48%, with the largest response rate from FEMA Region VIII, which includes six states. Region VI followed with a response rate of 47%, which included Texas, which, as mentioned previously, is the state that leads the nation as experiencing the most disasters. Overall, the response from the 10 regions was normally distributed with no extreme response rates from any region.

3.1 Discussion of Variables

The authors identified and tested five hypotheses in which the independent variable was city location (coastal v. non-coastal) and the dependent variables included participation in local government planning meetings, perception of preparedness, pre- and post-disaster HR activities, inclusion of emergency preparedness information in orientation programs, and implementation of HR policies for times of disaster.

The independent variable was the location of the city, either non-coastal or coastal. For the purposes of this study, a coastal city is one that “has at least 15% of their land area in the coastal watershed” (United States Department of Commerce, n.d., paragraph 3), or a city that is located within 30 miles of a coastline. The cities within the dataset were identified by the authors and were coded as 0 for non-coastal and 1 for coastal. Sixty-three individuals from coastal cities and 146 individuals from non-coastal cities completed the survey, resulting in a response rate of 35%.

3.2 Hypotheses and Findings

Specifically, the hypotheses are:

- H1: As HR professionals’ years of experience increases so does the likelihood of participation in emergency planning.
- H2: Local government HR professionals in coastal cities are more likely to participate in local government emergency planning meetings than local government HR professionals in non-coastal cities.
- H3: HR professionals in coastal cities are more likely to rank their cities as more prepared than HR professionals in non-coastal cities.
- H4: Local governments in coastal cities are more likely to include pre- and post-disaster HR activities in their emergency plans than local governments in non-coastal cities.
- H5: Local governments in coastal cities are more likely to implement HR policies for times of disaster than local governments in non-coastal cities.

3.2.1 Hypothesis 1: Years of Experience and Participation in Emergency Planning

The authors first were interested in investigating whether years of experience in the field of HR increased the likelihood of an HR professional's involvement in emergency planning. In most careers, the longer one stays in a field, the more experience and knowledge gained. With this in mind, the authors hypothesized that those who have worked in HR for many years had a greater chance of experiencing a disaster. From each disaster, lessons are learned, and as Goodman and Mann (2008) found, human resource professionals are no exception to this rule. In examining the survey data, approximately 130 respondents stated that their city had faced at least one disaster in the last 5 years and more than 45% said they had worked in the field of human resource management for more than 20 years. Mann (2011) found that the level of involvement of HR professionals in emergency planning was positively correlated to the number of HR functions in local government emergency plans. Thus, the authors hypothesized that as years of experience of local government human resource professionals increase so does the likelihood that they participate in emergency planning meetings.

For this hypothesis, the survey question, "How many years have you worked in the field of human resource management?" to which respondents could answer <1 year, 1–3 years, 4–10 years, 11–15 years, 16–20 years, and more than 20 years. The variable was then coded into 6 variables from 0 to 5, with <1 year as 0 and more than 20 years as 5. The variable was labeled Years of Experience and served as the independent variable.

HR professionals were also asked, "Do you or a member of the human resources department for your city government regularly participate in emergency planning meetings?" to which they could respond do not know, no, or yes. The variable was labeled Participation, and, was coded as a 0-1 dependent variable, with 0 being do not participate and 1 being participate because the analysis focuses only on positive or negative answers. However, One-Way ANOVA did not indicate a positive relationship between the years of experience of HR professionals and their participation in emergency planning meetings ($F=2.395$, $df=5/206$, $p<0.05$) (Table 1). Although the relationship is significant at the 0.05 level, years of experience does not impact participation in emergency planning meetings. Thus, the hypothesis that as HR professionals' years of experience increases so does the likelihood of participation in emergency planning is rejected.

Table 1 Analysis of Variance (ANOVA) Years of Experience and Participation.

Years of Experience	<i>n</i>	Mean	F
<1 year	4	1.50	2.395; 0.039
1–3 years	6	1.00	
4–10 years	25	1.68	
11–15 years	42	1.71	
16–20 years	33	1.64	
More than 20 years	97	1.67	
Total	207	1.65	

3.2.2 Hypothesis 2: City Location and Participation of HR professionals in Emergency Planning Meetings

Because coastal cities are subject to many similar vulnerabilities, the authors hypothesized that local government HR professionals in coastal cities are more likely to participate in emergency planning meetings than local government HR professionals not in coastal cities. Again, the dependent variable, Participation, described above, was coded as a 0-1 variable. Of the 62 HR professionals in coastal cities who answered yes or no, 48, or 77.4%, reported that they regularly participate in local government emergency planning meetings. Of the 145 HR professionals in non-coastal cities who answered yes or no, 90, or 62.1%, said they regularly participate in emergency planning meetings. The independent variable, City Location, also was coded as a 0-1 variable with 0 being a non-coastal city and 1 being a coastal city, based on the definition described above.

Cross-tabulations revealed the χ^2 statistic, 0.032, which is significant at the 0.05 level, indicating that the relationship between participation of HR professionals in emergency planning and the location of the city in which they work is generalizable to the entire population (see Table 2). Based on

Table 2 City Location and Participation in Emergency Planning Meetings.

Participation	Non-Coastal	Coastal
Do not participate	37.9%	22.6%
Participate	62.1%	77.4%
N size	145	62

Chi-square <0.05.

Note: Percentages total 100% down each column.

these results, the null hypothesis, The null hypothesis that HR professionals in coastal cities are no more likely to participate in emergency planning meetings than those in non-coastal cities can be rejected and the hypothesis that local government HR professionals in coastal cities are more likely to participate in local government emergency planning meetings than local government HR professionals in non-coastal cities indicates that the relationship is accepted.

3.2.3 Hypothesis 3: Perception of Preparedness

Because coastal cities face hazards that have increased awareness during certain times of the year, such as media coverage on preparedness for hurricanes, the authors hypothesized that HR professionals in coastal cities are more likely to rank their cities as more prepared than HR professionals in non-coastal cities. In the survey, HR professionals were asked about their perception of the preparedness of the city. Specifically, the question asked, “On a scale of 1–10 with 1 being not at all prepared and 10 being very prepared, how prepared do you believe your city is if a disaster hit your area right now?” This variable was labeled Preparedness Ranking, and was coded 0 to 10, with 0 being not at all prepared and 10 being very prepared. The independent variable, City Location, described above, served as the independent variable, and was coded 0-1.

The mean for the variable Preparedness Ranking was 7.31, with a mean of 7.13 for non-coastal cities and 7.77 for coastal cities. Thus, those cities labeled as coastal cities have higher scores than their counterparts, indicating a positive relationship between Preparedness Ranking and City Location. In addition, One-Way ANOVA indicated a significant relationship at the 0.01 level between HR professionals in coastal cities and the likelihood that they rank their cities as more prepared ($F=6.84$, $df+1/207$, $p<0.010$) (see Table 3). Thus, this result confirms the hypothesis that HR professionals in coastal cities are more likely to rank their cities as more prepared than HR professionals in non-coastal cities.

Table 3 Analysis of Variance (ANOVA) City Location and Preparedness Ranking.

City Location	<i>n</i>	Mean	F
Non-coastal	146	7.11	6.84; $p=0.010$
Coastal	62	7.77	
Total	208	7.31	

3.2.4 Hypothesis 4: City Location and HR Activities in Emergency Plans

Because Goodman and Mann (2008) found that many important human resource management activities were not included in local government emergency plans on the Mississippi Gulf Coast, the authors were interested in further investigating the issue nationwide. Based on the literature review and previous findings, the authors hypothesized that local governments in coastal cities are more likely to implement HR policies for times of disaster than local governments in non-coastal cities.

Respondents were asked to rank their level of agreement to a list of 28 common HR activities in areas such as workforce management, compensation, and communication that are important tasks in HR departments of local government (see Table 4). Respondents were asked to choose from highly disagree, disagree, neither agree nor disagree, agree, or highly agree, which were then coded 0-4, respectively. For each city, the sum of the 28 answers was calculated and transformed into the variable HR Activities that ranged from 0 to 112.

Of the 28 activities included in the list, the activity that was most common among all local governments, or had the highest mean, was “procedures to report facility problems such as physical damage that could increase risk and harm during a disaster” (see Table 4). This particular activity was also the most common when examining only non-coastal cities. Among coastal cities only, the activity that ranked as the most common, or having the highest mean among only these cities, was procedures to report facility problems such as physical damage that could increase risk and harm during a disaster.

The hypothesis was tested using one-way ANOVA, which indicated a significant difference in the number of pre- and post-disaster HR activities included in the emergency plans of coastal cities compared to that of non-coastal cities ($F=5.34$, $df=1/208$, $p=0.022$). The overall mean for the variable HR activities was 64.88, while the mean for HR activities in coastal cities was 70.08 and the mean for HR activities in non-coastal cities was 62.64 (see Table 5). Thus, in the case, higher scores found on the variable for coastal cities indicate that these cities are more likely to include more pre- and post-disaster HR activities in their emergency plans compared to that of non-coastal cities. Thus, because the relationship is also significant at the 0.05 level, the hypothesis is upheld.

3.2.5 Hypothesis 5: Implementation of HR Disaster Policies

In the aftermath of Hurricane Katrina, many Mississippi local governments faced issues with hiring, discipline, termination, payroll, among others. Goodman

Table 4 Descriptives of HR Activities.

HR Activities n=209	The following list contains specific pre-disaster and post-disaster activities that some cities have incorporated as part of their emergency preparedness plans. Please indicate your level of agreement with the following statements regarding human resource management and emergency planning. Please choose: 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, and 5=strongly disagree. (Combined following 28 variables.)	
Activity	Means	Activity Description/Survey Question
Availability	Overall: 2.60 Non-coastal: 2.53 Coastal: 2.76	My human resources office continually assesses internal workforce availability.
Secure Equipment	Overall: 2.05 Non-coastal: 1.92 Coastal: 2.37	My human resources office has procedures regarding the securing of office equipment to lessen risk of physical harm in the event of a disaster.
Protect Info	Overall: 2.34 Non-coastal: 2.29 Coastal: 2.44	My human resources office has procedures regarding securing office equipment such as electronic equipment and furniture to protect organizational information and property.
Facility Problems	Overall: 2.72 Non-coastal: 2.74 Coastal: 2.68	My human resources office has procedures to report facility problems such as physical damage that could increase risk and harm during a disaster.
Org Structure	Overall: 2.56 Non-coastal: 2.50 Coastal: 2.70	My human resources office helps develop the organizational structure in times of disaster.
Building Maps	Overall: 1.75 Non-coastal: 1.71 Coastal: 1.83	My human resources office distributes building maps upon hiring that identify evacuation routes.
Response Resources	Overall: 2.35 Non-coastal: 2.28 Coastal: 2.52	My human resources office has identified essential resources needed for disaster response and where they can be acquired.
Recovery Resources	Overall: 2.32 Non-coastal: 2.23 Coastal: 2.51	My human resources office has identified essential resources needed for disaster recovery and where they can be acquired.
Worker Resources	Overall: 2.36 Non-coastal: 2.25 Coastal: 2.62	My human resources office has identified essential resources for response workers.
Transport Needs	Overall: 2.01 Non-coastal: 1.90 Coastal: 2.27	My human resources office has identified transportation needs and resources.
Essential Roles	Overall: 2.57 Non-coastal: 2.47 Coastal: 2.83	My human resources office assists in identifying pre- and post-disaster roles of essential personnel (beyond regular duties).

(Table 4 Continued)

HR Activities <i>n</i> =209	The following list contains specific pre-disaster and post-disaster activities that some cities have incorporated as part of their emergency preparedness plans. Please indicate your level of agreement with the following statements regarding human resource management and emergency planning. Please choose: 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, and 5=strongly disagree. (Combined following 28 variables.)	
Activity	Means	Activity Description/Survey Question
Nonessential Roles	Overall: 2.40 Non-coastal: 2.31 Coastal: 2.60	My human resources office assists in identifying pre- and post-disaster roles of non-essential personnel (beyond regular duties).
Support	Overall: 2.29 Non-coastal: 2.15 Coastal: 2.62	My human resources office has identified outside organizations/support services that could assist with mandatory important functions in times of disaster.
Planning Times	Overall: 1.96 Non-coastal: 1.90 Coastal: 2.10	My human resources office established timeframes for disaster planning activities.
Email	Overall: 1.90 Non-coastal: 1.77 Coastal: 2.21	My human resources office regularly communicates with employees by email regarding emergency preparedness.
Software	Overall: 2.64 Non-coastal: 2.64 Coastal: 2.63	My human resources office has critical software and hardware necessary for continuity of operations such as payroll software.
KSAs	Overall: 1.93 Non-coastal: 1.87 Coastal: 2.06	My human resources office conducts regular assessments of employee knowledge, skills, and abilities (KSAs) useful for disaster response and recovery.
CIS Counselors	Overall: 2.68 Non-coastal: 2.67 Coastal: 2.70	My human resources office has procedures that include critical incident stress briefing counselors.
HRMIT	Overall: 2.01 Non-coastal: 1.97 Coastal: 2.13	My human resources office has a partner outside of the region that can help with HRM/IT needs during a disaster.
Disaster Pay	Overall: 2.56 Non-coastal: 2.49 Coastal: 2.75	My human resources office analyzes potential compensation issues that may arise post-disaster such as overtime and disaster pay.
Worker Supply	Overall: 2.16 Non-coastal: 2.14 Coastal: 2.21	My human resources office regularly forecasts internal and external supply of employees.
Contact Lists	Overall: 2.65 Non-coastal: 2.60 Coastal: 2.75	My human resources office regularly updates and distributes employee contact lists to key personnel.

(Table 4 Continued)

HR Activities <i>n</i> =209	The following list contains specific pre-disaster and post-disaster activities that some cities have incorporated as part of their emergency preparedness plans. Please indicate your level of agreement with the following statements regarding human resource management and emergency planning. Please choose: 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, and 5=strongly disagree. (Combined following 28 variables.)	
Activity	Means	Activity Description/Survey Question
Bargaining	Overall: 2.05 Non-coastal: 1.89 Coastal: 2.41	My human resources office has collective bargaining agreement that address employment issues during emergencies or disasters.
Season Email	Overall: 2.64 Non-coastal: 2.57 Coastal: 2.81	My human resources office regularly communicates with employees by email during regionally high-risk times such as flu season or hurricane season.
Locations	Overall: 2.41 Non-coastal: 2.28 Coastal: 2.71	My human resources office has identified primary or secondary meeting locations for employees in the aftermath of a disaster.
Nonessential Schedule	Overall: 2.12 Non-coastal: 1.96 Coastal: 2.51	My human resources office has a timeline for nonessential personnel to report to work post-disaster.
Dissemination	Overall: 2.48 Non-coastal: 2.35 Coastal: 2.78	My human resources office has identified methods of information dissemination before, during, and after a disaster.
Info Equipment	Overall: 2.36 Non-coastal: 2.27 Coastal: 2.59	My human resources office has the equipment needed for post-disaster information dissemination.

Table 5 Analysis of Variance (ANOVA) City Location and HR Activities.

City Location	<i>n</i>	Mean	F
Coastal	63	70.08	5.34; $p < 0.05$
Non-coastal	146	62.64	
Total	209	64.88	

and Mann (2008) reported that many of the respondents said that these typical tasks became incredibly difficult after the Hurricane Katrina. However, several respondents indicated that many of these policies would be included in the revisions of emergency plans and were lessons learned. With this in mind, the authors hypothesized that coastal cities are more likely to include more HR policies in their emergency plans compared to that of non-coastal cities.

In the 2011 survey, HR professionals were asked whether their local government has established HR policies for times of disaster, which included practices pertaining to hiring, discipline, and cross-training (see Table 6). The policy that was most common, or had the highest overall mean among coastal and non-coastal cities, as well as among coastal cities only and non-coastal cities only was the existence of mutual aid agreements with other cities, counties, or states.

Respondents were asked to choose from highly disagree, disagree, neither agree nor disagree, agree, or highly agree, which were then coded 0-4 respectively. For each city, the sum of the 12 answers was calculated and transformed into the variable HR Disaster Policies that ranged from 0 to 48.

The hypothesis was tested using One-Way ANOVA, which indicated a significant difference in the number of HR policies included in the emergency plans of coastal cities compared to that of non-coastal cities ($F=10.28$, $df=1/208$, $p=0.002$). The overall mean for the variable HR Disaster Policies was 24.86, while the mean for HR Disaster Policies in coastal cities was 27.39 and the mean for HR activities in non-coastal cities was 23.78 (see Table 7). The higher scores found on the variable for coastal cities indicate that these cities are more likely to include more HR policies in their emergency plans compared to that of non-coastal cities. Thus, because the relationship is also significant at the 0.01 level, the hypothesis is upheld.

4 Conclusions

As the populations of coastal cities continue to grow and coastal environments change, vulnerabilities are also increasing in these coastal cities. From social and cultural vulnerabilities to technological and physical vulnerabilities, ensuring that all resources to overcome these obstacles are identified and available is important to emergency planning. As evidenced from the analysis, coastal cities are making great strides in ensuring they are prepared for the hazards they face by addressing some of the human resource issues that become increasingly relevant during times of crisis. While non-coastal cities obviously understand the importance of these issues, coastal cities seem to understand that employees also become victims and should be protected when disaster occurs.

Yet, the results indicate that work is still needed in this area. For instance, one of the problems Goodman and Mann (2008) identified was that many computers in Mississippi local governments were destroyed during Katrina because they were left on the floor or were not removed. Many underestimated how far inland the storm surge would travel, thus, important payroll files were destroyed. Only

Table 6 Descriptives of HR Disaster Policies.

HR Disaster Policies <i>n</i> =209	The following list contains specific pre-disaster and post-disaster activities that some cities have incorporated as part of their emergency preparedness plans. Please indicate your level of agreement with the following statements regarding human resource management and emergency planning. Please choose: 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, and 5=strongly disagree. (Combined following 28 variables.)	
Policy	Means	Policy Description/Survey Question
Hiring Practices	Overall: 2.02 Non-coastal: 1.89 Coastal: 2.33	My local government has policies that address hiring practices during states of emergency. For this particular variable, one value was missing.
Temp Workers	Overall: 2.87 Non-coastal: 2.82 Coastal: 2.98	My local government allows for the immediate hiring of temporary workers.
Shortage Pay	Overall: 1.70 Non-coastal: 1.62 Coastal: 1.87	My local government adjusts pay to account for labor shortages during times of disaster.
Pay Differential	Overall: 1.73 Non-coastal: 1.55 Coastal: 2.14	My local government has a pay differential for employees who work during times of declared disasters.
Furloughs	Overall: 1.71 Non-coastal: 1.64 Coastal: 1.87	My local government has policies that address employee furloughs during states of emergency.
Comp Pay	Overall: 2.15 Non-coastal: 1.99 Coastal: 2.54	My local government has separate policies that address overtime/comp pay during states of emergency.
Retention	Overall: 1.64 Non-coastal: 1.53 Coastal: 1.89	My local government has policies that address employee retention during states of emergency.
Discipline	Overall: 1.44 Non-coastal: 1.36 Coastal: 1.63	My local government has streamlined policies for disciplining and terminating employees during states of emergency.
Counseling	Overall: 1.49 Non-coastal: 1.45 Coastal: 1.59	My local government mandates counseling for employees during states of emergency.
Cross Train	Overall: 2.49 Non-coastal: 2.49 Coastal: 2.51	My local government cross-trains employees in preparation for emergencies.
Aid	Overall: 3.18 Non-coastal: 3.10 Coastal: 3.37	My local government has mutual aid agreements with other cities, counties, states.

(Table 6 Continued)

HR Disaster Policies <i>n</i> =209	The following list contains specific pre-disaster and post-disaster activities that some cities have incorporated as part of their emergency preparedness plans. Please indicate your level of agreement with the following statements regarding human resource management and emergency planning. Please choose: 1=strongly agree, 2=agree, 3=neither agree nor disagree, 4=disagree, and 5=strongly disagree. (Combined following 28 variables.)	
Policy	Means	Policy Description/Survey Question
Transportation	Overall: 2.61 Non-coastal: 2.55 Coastal: 2.76	My local government has identified transportation needs and resources.

Table 7 Analysis of Variance (ANOVA) City Location and HR Disaster Policies.

City Location	<i>n</i>	Mean	F
Coastal	61	27.39	10.28; <i>p</i> <0.001
Non-coastal	142	23.78	
Total	203	24.86	

30% of respondents stated that their local government has identified a partner outside of the region that can help with technology needs in the aftermath of disaster. In addition, over 60% of respondents reported that their local government does not have policies in place that address discipline and termination during states of emergency.

In the area of training and exercises, only approximately 30% reported that their local government has regular established timeframes for disaster planning activities. Unfortunately, once an emergency plan has been created, the work is not over. Holding regular exercises and including all departments in these exercises are both important because individuals must know how to execute and implement the outlined procedures.

While the study has given some insight into human resource issues that are and are not being addressed in both coastal and non-coastal cities, some limitations should be discussed. For instance, the survey considers the perspective of only one department in emergency planning. A future study should focus on examining the human resource issues that other departments, such as emergency management, believe to be important in emergency response. In addition, this study has presented a new area of research in emergency planning and little research in this area has been conducted. Thus, analyzing cities of other sizes

located in coastal regions, such as rural local governments and cities with larger populations, may reveal significant differences. However, these results provide a foundation upon which to begin investigating the impact of human resource planning, or lack thereof, on emergency management.

Unfortunately, disasters are inevitable, and as populations increase and environments change, vulnerabilities become more concerning. Following Hurricane Katrina, singer Harry Connick Jr. said, “I have no doubt that the government of this great nation will work with its people to lead New Orleans and the Gulf Coast back to an enlightened, proud, safe part of the world.” And, although the federal government certainly has a role in emergency planning, local governments have the greatest responsibility in ensuring its employees and residents are safe. After all, all disasters are local, and we must plan accordingly.

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