Hurricanes on the Alabama Gulf Coast: The Manageable Impacts of Ivan and Katrina

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What choices have Alabamians been forced to make as a result of the most recent hurricanes that have battered the Gulf Coast? The geographic location of the Alabama Gulf Coast requires that government and business officials follow trends in revenue sources, especially those driven by the impact of visitors to the area. This study examines selected economic trends to determine the financial impacts of Hurricanes Ivan and Katrina on Alabama. Data historically tracked in the Mobile area—trends in the collection of sales tax revenues, employment rates, and area attractions—provide a framework for evaluating the hurricanes' potential effects on the local economy. The analysis of these trends is followed by an evaluation of the ways in which the storms have affected the processes of local planning and decision making, along with market effects, land use, and aesthetics. Findings suggest that Alabama coastal communities in Mobile and the surrounding areas take a proactive stance in storm disaster preparation and that the local economies found both Ivan and Katrina to be manageable adversaries.

Natural disasters such as Hurricane Katrina create devastating losses for communities, which often require years of recovery efforts to stabilize their local economies. The flood damage of Katrina, cited as the most destructive natural disaster in U.S. history, "vastly exceeded that of any major disaster, including the Chicago Fire of 1871,

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the San Francisco Earthquake and Fire of 1906, and Hurricane Andrew in 1992" (U.S. White House, 2006, p. 5). Although New Orleans received the greater part of the media spotlight as a result of the devastating damage and financial hardship Katrina caused local residents, many other cities in Louisiana, Mississippi, and Alabama have also been faced with the challenges of hurricane recovery and of balancing their economic base.

HURRICANES IN ALABAMA

Coastal hurricanes are a recurring problem for the states along the Gulf Coast, and the rituals of preparing for the hurricane season and implementing efficient evacuation plans are considered a routine aspect of living near the water. Katrina's visit prompted questions about how well the coastal region in the State of Alabama has performed economically in recent years. In addition to Katrina, which crossed southern Florida and made a second landfall in Louisiana as a Category 3 storm on August 29, 2005, Hurricane Ivan had created an earlier disaster on the Alabama Gulf Coast on September 16, 2004. The direct impact of Ivan in Alabama, followed by the near miss of Katrina, inevitably created a much different economic situation for Alabama than for Louisiana and Mississippi.

Many studies have evaluated the economic, social, and psychological aspects of natural disasters (Bates and Peacock, 1987; Chang, 1983; Church, 1974; Ellson, Milliman, and Roberts, 1984; Gillespie, 1991; Haas et al., 1977; Kimball and Bolton, 1994; Perry and Lindell, 1978; Smith and McCarty, 1996; West and Lenze, 1994). This study provides a closer look at the damage and economic impact of both Ivan and Katrina on the Gulf Coast region in Alabama.

In the months since Katrina, reports have suggested that the national, long-term economic effects will not be as severe as initial accounts suggested. Alabama's experience with Katrina supports this claim, as the storm's damage has proven to cause only temporary setbacks that have not affected the state in terms of its economic trends, business development, and financial markets. The frequency and magnitude of natural disasters, however, including hurricanes and floods within the United States, suggests the importance of following economic trends and of addressing the policy implications that follow such disasters. This study attempts to better understand the effects of the recent hurricanes on the economy of Alabama.

REGIONAL ECONOMIC EFFECTS OF HURRICANE DAMAGE

The literature on natural disasters and hurricane damage generally considers both the short-term economic impact of the event on the community

and the longer term reconstruction period during which efforts are made to evaluate and maintain the stability of the local economic base. Findings vary depending on the magnitude of the storm and the demographic location affected; many communities thrive, but others lose critical operations that inhibit recovery and economic growth.

Most studies that evaluate the economic impact of hurricanes tend to consider high-intensity storms, defined by the Saffir-Simpson scale (Simpson, 1974) as Categories 3 to 5 storms (Burrus et al., 2002, p. 118). In many cases, the communities and states affected have the ability to meet pre-hurricane productivity levels within months; others are affected by trends such as out-migrations of population that change the economic landscape. In the aftermath of Hurricane Hugo in South Carolina, total economic activity in the state "suffered little . . . as reconstruction funded by disaster relief programs compensated for output, wealth, jobs, and state tax revenues lost during the storm [and the] post-Hugo growth trend of state-wide income returned to the pre-Hugo trend" (Burrus et al., 2002, p. 118; Guimaraes, Hefner, and Woodward, 1993). By contrast, Smith and McCarty (1996, p. 270) found that the "magnitude and intensity of Hurricane Andrew were largely unexpected" in Florida, and the decline in population based on the out-migration of labor and capital had a negative effect on the Dade County economic base.

Historical storm damages within the State of Alabama provide additional evidence supporting claims that the short-term regional or state economy benefits from disasters, although the problems incurred by long-term damages are unlikely to benefit the region. The aftermath of Hurricane Frederic in 1979 "led to a $2,525,516 increase in revenues for the City of Mobile for the next twelve months" based on recovery dollars issued to the municipality (Chang, 1983, p. 521). However, flooding problems as a result of Hugo's damages cost the city more than $10 million to temporarily alleviate the problem, providing a more negative picture of hurricane outcomes (Chang 1983, p. 521). This case demonstrates a crucial aspect of storm relief—it is important to note that increases in federal funding for disaster recovery often provide local governments with a bridge in funding relief that prevents drastic economic slowdowns in the short run.

CHOICES AND DISASTER FINANCING FOR LOCAL GOVERNMENTS

Emergency management responsibilities in a natural disaster initially fall to the local government, which in turn asks the state for assistance. Filling gaps in assistance is then seen as the responsibility of the governor, who applies for federal emergency assistance in order to prevent government agencies or divisions from neglecting their duties (Peterson,

1957, pp. 52–54). In order to make fiscally sound choices in the case of an emergency, Settle (1985, p. 102) suggests that local governments need to consider four factors in approaching "the financial consequences of a disaster and use of various funding alternatives:

- Loss of tax base;
- Loss of business affecting the source of sales taxes;
- Amount of money the local government has borrowed in relationship to taxable property (debt ratio); and
- The number of income sources such as service charges."

Local Tax Base

The local tax base is the primary source of income for the municipality. If a disaster affects this economic base, it will be difficult for a city to recover without asking for assistance. The fires that ensued as a result of the 1906 San Francisco earthquake made recovery of property damage very difficult. However, a community that has "rich revenue producing industries, such as oil refineries and industrial-commercial property, may [if those industries are not destroyed in the disaster] have greater cash reserves and tax revenues to borrow money and not be as concerned about financing recovery" (Settle, 1985, p. 102).

Loss of Business

The loss of business and associated sales taxes in the immediate wake of a disaster can have a significant impact on the short-term economic stability of a city's revenue base. Tourism-driven coastal communities are especially at risk when storms and/or flooding prompt days of interrupted service in which no sales taxes are garnered. In the case of Hurricane Ivan, the Alabama Gulf Coast reportedly closed for approximately seven days, incurring a potentially devastating short-term loss in revenues during the peak season.

Ability to Borrow

In addition, a municipality's credit rating and the size of the local debt are factors that will determine the city's ability to borrow funding and at what interest rate (Settle, 1985, p. 103). The Government Finance Officers Association (2002) recommends that local governments maintain a debt policy that addresses four main components:

- Types of debt: The policy should categorize debt into direct debt, revenue debt, and conduit debt;
- Debt limits: The policy should define limits or acceptable ranges for each type of debt that the city encumbers;

- Debt structuring practices: The policy should address practices such as the maximum term of bonds for each type of debt based on either absolute terms or other limits; and
- Debt issuance and management practices: These will vary based on the city's various types of debt.

Income Sources

In addition, a city's financial strategy may be affected by its financial condition prior to the disaster with respect to its use of service charges and enterprise funds. Settle (1985, p. 103) provides the example of a community's water treatment facility: "If a community water treatment facility worth $20 million is destroyed, both its capital improvement program budget and general funds may not be enough to replace the facility without federal and state aid." In the case in which vital services such as water facilities consist of own-source revenues and are damaged in the storm, the city's strategy to seek assistance will be governed by the need to obtain funds to repair or replace the facility to meet immediate needs.

OTHER POLICY ISSUES IN THE FACE OF DISASTER: QUESTIONS ASKED

In addition to the fiscal policy choices that municipalities must consider when responding to disasters, there are several other organizational policy issues that must be considered in order to have a future impact on the way in which the city responds to natural disasters. Haas et al. (1977, xxvi) maintain that disaster recovery is "ordered, knowable, and predictable." Pre-disaster construction planning, ideally based on broad community consensus, should serve to speed up the process of post-disaster recovery. Many questions follow in the course of planning for disaster recovery, and each relevant issue is inevitably addressed in accordance with the amount of funding that a community has available (see Haas et al., 1977, xxix–xxxi).

Should Normal, as Contrasted to Extraordinary, Decision-Making Mechanisms Be Used in Deciding How, When, and Where to Rebuild the Heavily Damaged City?

This first question is crucial for states and communities; within the hours or days of a disaster's occurrence, the affected region must decide how to respond to the situation. The approach chosen by a municipality will in turn affect its application for state and federal assistance, the extent to which outside consultants and planners will be invited to envision a new community post-event, and the responsibility of the local government in responding to the economic, social, and political issues in the aftermath of the storm.

Should There Be Changes in Land Use (Most Often Asked After Floods and Earthquakes) and/or Changes in the Building Codes?

When land use policies or building codes are considered, changes may result in a plan to prevent the extent of future damages. Mitigation strategies such as implementing land use plans that avoid the hazards while achieving community environmental goals are often found to achieve significant reductions in losses from natural disasters (Board on Natural Disasters, 1999, p. 1945). The enforcement of building codes is also a prevention measure for future events. "More than 25% of the damage from Hurricane Andrew could have been prevented if the existing building codes had been enforced" (Board on Natural Disasters, 1999, p. 1945). Enforcing standard building practices and implementing or upgrading codes are identified as best practices for municipalities in emergency management.

Should a Concerted Effort Be Made to Make the City More Efficient and More Attractive?

Planners and architects are often at the table when the aesthetic components of a community are determined. However, Haas et al. (1977, p. xxxi) argue that appearance can become a major issue "if changes in transportation routes or relocation of a factory in a middle- or upper-income residential area is involved." Usually, smaller changes in the attractiveness of a city are seen as less significant changes that occur over time within a larger community or regional design that emphasizes the city's goals. However, in the case of coastal communities that are dependent on a tourism-driven economy, questions regarding efficiency and appearance concern competitive advantages that must be addressed, especially in the aftermath of a natural disaster.

POLICY CHOICES FOR ALABAMA

What choices have Alabamians been forced to make as a result of the most recent hurricanes that have battered the Gulf Coast? The geographic location of the Alabama Gulf Coast and the Mobile area requires that government and business officials follow trends in revenue sources, especially those driven by the impact of visitors to the area. This study examines several economic trends to determine the financial impacts of Hurricanes Ivan and Katrina. Data that are historically tracked in the Mobile area—the collection of sales tax revenues, employment rates, and area attractions—provide a framework for evaluating the hurricanes' potential effects on the local economy. In addition, the study evaluates the ways in which the storms have affected the processes of local planning and decision making, along with land use and aesthetics. Findings suggest that Alabama coastal

communities in Mobile and surrounding areas take a proactive stance in storm disaster preparation and that these local economies found both Ivan and Katrina to be manageable adversaries.

SHORT-TERM IMPACTS OF IVAN AND KATRINA ON ALABAMA

Ivan and Katrina caused overwhelming hardship for the coastal states, as many government leaders and business owners revised their local planning and development efforts and countless residents were forced to evacuate their homes and make critical choices about relocating and/or rebuilding. Yet, many economists and coastal residents argue that the damage caused by storms such as Ivan and Katrina create positive economic outcomes for the Gulf Coast. This study examines the effects of both storms on the local economy of Mobile, Alabama, addressing the immediate impacts of each storm and the long-term economic effects. Various short-term economic indicators are examined in order to determine how the economy is faring in the wake of the hurricanes.

Ivan directly struck the Alabama coastal region on September 16, 2004, after making its way through the Caribbean Sea and inflicting damage on Grenada, Jamaica, the Grand Cayman Islands, and the State of Florida (National Hurricane Center, 2006). The tremendous damage caused by the storm registered Ivan as the third most costly hurricane, following Hurricanes Andrew and Charley. Insurers provided an estimated $6 billion for U.S. property losses as a result of Ivan, with $4 billion paid to property owners in Alabama ("Insurers to Pay . . .," 2004). In addition, the Alabama Forestry Commission (2006) reported that the state suffered an estimated loss of $610,227,913 in timber damage. The U.S. Federal Emergency Management Agency (FEMA, 2006) reported an estimated $740 million in emergency assistance funds that were distributed in Alabama as a result of Ivan.

Alabama was not in the direct path of Hurricane Katrina in 2005, although it did experience the effects of the storm. Mandatory evacuations were ordered and floodwaters engulfed downtown buildings in Mobile and surrounding areas. Storm damage to interstate highways and roadways created immediate interruptions in state operations. However, no major damage was reported. The Alabama areas most affected by Katrina were Dauphin Island and Bayou LaBatre, which is known for its seafood processing industry. Although many coastal attractions experienced flood damage, most were spared and were back in operation within a month. Within approximately two weeks, statewide safety hazards and roadways were operational. Estimated state funding assistance from FEMA totaled approximately $570 million six months after the hurricane made landfall.

Sales Tax Revenues

Recovering from a disaster such as Ivan or Katrina is a process in which local communities assess the value of their losses and begin the recovery and reconstruction phase to rebuild capital and infrastructure to meet and/or exceed pre-disaster operation standards. Despite the devastation that often accompanies natural disasters, the immediate economic impact is often positive. After Hurricane Frederic struck the Alabama coast in 1979, one municipal finance director was cited as remarking, "We need one every year" (Chang, 1983, p. 517). Table 1 illustrates why local finance departments along the Gulf Coast may echo this sentiment: Mobile sales tax revenues two months after Katrina were 50% higher than for the previous year (which would have been the month following Hurricane Ivan).

Table 1: City of Mobile Sales Tax Revenues, 2003–2006

Month	2003	2004	Change	2005	Change	2006	Change
January	7,182,948	7,357,951	2%	8,186,131	11%	10,027,329	22%
February	4,981,804	5,264,865	6%	5,996,146	14%	7,063,520	18%
March	5,396,659	5,820,814	8%	6,590,170	13%	7,190,880	9%
April	5,839,255	6,382,297	9%	7,163,045	12%	8,169,428	14%
May	5,717,745	5,796,534	1%	6,091,572	5%	7,313,095	20%
June	5,640,134	5,953,310	6%	6,505,456	9%	n.a.	n.a.
July	5,733,327	5,987,565	4%	6,725,723	12%	n.a.	n.a.
August	5,631,767	6,080,022	8%	6,106,608	0%	n.a.	n.a.
September	5,828,550	5,878,225	1%	6,098,591	4%	n.a.	n.a.
October	5,511,230	5,701,983	3%	8,541,280	50%	n.a.	n.a.
November	5,432,873	6,428,326	18%	8,051,260	25%	n.a.	n.a.
December	5,876,765	6,402,202	9%	6,706,797	5%	n.a.	n.a.

Source: Center for Business and Economic Research, University of South Alabama, 2006.

A noticeable trend following both hurricanes was the short-term impact on Mobile's sales tax revenues: Ivan provided increases in revenues for six months, and Katrina has thus far provided even greater increases between the recorded months from October 2006 to February 2006. However, it is too early to determine the longer term positive impact of sales tax revenues on the Mobile area after Hurricane Katrina. As Chang noted in 1983 (p. 518), Hurricane Frederic had a relatively small impact on sales tax revenues, possibly because of a rapid "leakage of recovery dollars out of the disaster area." Therefore, it is logical to predict that the long-term impact of sales tax revenue will not produce significant effects on the Mobile area economy.

Table 2: City of Mobile Sales Tax as Proportion of State Sales Tax Collection, 2003–2005									
Month	2003			2004			2005		
	State of Alabama	City of Mobile		State of Alabama	City of Mobile		State of Alabama	City of Mobile	
			% of State Sales Tax			% of State Sales Tax			% of State Sales Tax
January	155,929,599	7,182,948	4.61%	158,656,926	7,357,951	4.64%	174,601,804	8,186,131	4.69%
February	114,200,597	4,981,804	4.36%	124,186,748	5,264,865	4.24%	126,156,906	5,996,146	4.75%
March	123,038,619	5,396,659	4.39%	130,554,123	5,820,814	4.46%	144,859,663	6,590,170	4.55%
April	135,085,970	5,839,255	4.32%	155,130,371	6,382,297	4.11%	162,537,153	7,163,045	4.41%
May	135,802,110	5,717,745	4.21%	138,499,016	5,796,534	4.19%	145,783,288	6,091,572	4.18%
June	133,300,167	5,640,134	4.23%	143,248,011	5,953,310	4.16%	159,359,008	6,505,456	4.08%
July	138,240,480	5,733,327	4.15%	146,171,708	5,987,565	4.10%	162,805,182	6,725,723	4.13%
August	135,642,906	5,631,767	4.15%	143,398,398	6,080,022	4.24%	148,920,884	6,106,608	4.10%
September	120,358,711	5,828,550	4.84%	138,378,761	5,878,225	4.25%	145,482,718	6,098,591	4.19%
October	149,387,605	5,511,230	3.69%	139,398,064	5,701,983	4.09%	173,681,286	8,541,280	4.92%
November	134,241,676	5,432,873	4.05%	150,500,292	6,428,326	4.27%	149,395,436	8,051,260	5.39%
December	141,297,711	5,876,765	4.16%	146,401,593	6,402,202	4.37%	171,636,947	6,706,797	3.91%

Source: Center for Business and Economic Research, University of South Alabama, 2006.

Further evidence of a more significant impact on Alabama sales tax revenues is shown in Table 2. If we evaluate the City of Mobile sales tax collections in recent years and compare them as a relative proportion of the State of Alabama's sales tax revenues, the results suggest that both Ivan and Katrina had little effect on the state's collections. In recent years, there has been only one instance in which Mobile contributed more than 5% of Alabama's sales tax revenues, in November of 2005 following Katrina. More information is needed to empirically determine to what extent this increase is directly correlated with an increase in population and retail sales in Mobile due to Hurricane Katrina.

Unemployment Rates and State Economic Growth

An evaluation based upon unemployment, job gains, and state economic growth provides further evidence supporting positive gains in the Alabama economy in 2005 and 2006. Table 3 indicates that Hurricane Ivan initiated a drop in unemployment rates that remained low into the spring of 2006 as the coast continued reconstruction activities. However, Katrina had the most significant impact on unemployment in Mobile County, where the rate in December 2005 (3.5%) reached historic lows unmatched within the previous two decades. Due to Ivan's more direct impact on Alabama in 2004, we would have expected to see a more substantial decrease in unemployment rates within the fourth quarter of 2004 and the first quarter of 2005. How-

Table 3: Mobile County Employment and Unemployment Rates, 2003–2006

	2003		2004		2005		2006	
Month	**EMP**	**UNR**	**EMP**	**UNR**	**EMP**	**UNR**	**EMP**	**UNR**
January	168,783	6.5%	166,336	7.0%	170,944	6.0%	173,719	4.4%
February	169,010	6.6%	166,576	6.7%	170,992	6.0%	174,168	4.2%
March	169,616	6.3%	166,821	6.8%	172,001	5.0%	175,733	3.3%
April	170,174	5.9%	168,158	6.0%	172,755	4.2%	176,492	3.2%
May	169,997	6.3%	168,328	6.0%	172,829	4.2%	176,890	3.2%
June	170,520	7.7%	168,436	6.9%	172,603	5.3%	n.a.	n.a.
July	169,533	7.4%	169,035	7.0%	173,654	4.6%	n.a.	n.a.
August	167,721	7.5%	167,527	7.1%	174,094	4.7%	n.a.	n.a.
September	167,917	6.9%	167,754	6.5%	174,383	5.4%	n.a.	n.a.
October	168,316	7.0%	172,021	6.3%	175,942	5.1%	n.a.	n.a.
November	168,709	7.2%	173,044	6.1%	176,489	3.8%	n.a.	n.a.
December	169,251	6.6%	173,114	5.7%	177,475	3.5%	n.a.	n.a.

Source: Center for Business and Economic Research, University of South Alabama, 2006.

ever, the massive damage Katrina inflicted across the coast increased job opportunities that contributed to an even greater decline in unemployment.

Job gains of more than 21,500 in 2004 (Ijaz, 2005), followed by an approximate 30,000 in 2005 are further evidence that unemployment has been reduced in recent years. Overall economic growth was positively affected in 2005, when there was a 3.5% expansion in the Alabama economy despite the coastal impact of Hurricane Katrina (Center for Business and Economic Research, 2006). Even with anticipated slowdowns in the state economy as a result of the hurricane season, the Alabama coast has substantially recovered and the state economy reports only minimal effects based upon damage attributed to Katrina.

Attractions and Visitor Attendance

The threat of natural disasters is a constant challenge for Gulf Coast cities that depend on the tax dollars brought in through their attractions and the presence of visitors in the area. In the event of a major storm, it follows that tourist destinations will be significantly affected by the interruption in services that are usually available to visitors within the area. In the City of Mobile, sales taxes make up approximately 77% of the city's tax dollars, and taxes are the city's primary funding source, accounting for an estimated 72% of the city's 2005 budget (City of Mobile, 2005). Mobile's tourism industry was negatively affected by both Ivan and Katrina, but the hurricanes did not cause an overwhelming change in revenue trends as compared to the previous year's revenues gained from attendance at Mobile area attractions (see Table 4). An overall decrease in revenues during fall, winter, and early spring 2003 makes the case that although the hurricanes stimulated negative trends in the fourth quarters of 2004 and 2005, the instability of revenues from attractions cannot be attributed solely to these storms. Positive increases in attendance were seen in the months following Hurricane Ivan, and we should expect to see similar trends for the spring and summer of 2006 following the recovery from Hurricane Katrina.

Market Effects

From a market perspective, the nation, in general, experienced negative short-term effects in the immediate aftermath of Hurricane Katrina. However, local events in the Gulf Coast states generally have little long-term direct national impact, and reports indicate that despite an anticipated slowdown in economic growth nationally at the end of 2005, bond yields were expected to trend higher into 2006. The characterization by UBS (2006) of the hurricanes (Ivan, Katrina, Rita, and others) as a "manageable threat to the nation" is thus supported.

In Louisiana and Mississippi, the states directly struck by Katrina, Moody's placed 51 issues on its negative watch list (GKST, 2005a). Later,

Table 4: City of Mobile All Attendance Attractions: Total Visitors, 2001–2005

Month	2001	2002	Change 2001–2002	2003	Change 2002–2003	2004	Change 2003–2004	2005	Change 2004–2005
January	58,977	67502	14%	57,861	–14%	57,249	–1%	63,502	11%
February	78,515	93,549	19%	73,454	–21%	72,638	–1%	97,998	35%
March	135,712	142,575	5%	123,197	–14%	127,877	4%	170,481	33%
April	122,270	132,466	8%	114,182	–14%	112,232	–2%	166,146	48%
May	94,121	121,441	29%	85,890	–29%	93,512	9%	94,640	1%
June	114,892	129,911	13%	115,582	–11%	108,571	–6%	92,264	–15%
July	126,738	131,751	4%	135,445	3%	102,080	–25%	92,668	–9%
August	81,858	88,180	8%	97,715	11%	81,265	–17%	65,759	–19%
September	92,072	64,924	–29%	62,262	–4%	41,221	–34%	27,775	–33%
October	65,813	79,873	21%	79,711	0%	57,805	–27%	51,018	–12%
November	75,017	78,483	5%	76,125	–3%	59,956	–21%	51,069	–15%
December	142,401	106,160	–25%	104,984	–1%	105,763	1%	114,477	8%

Notes: The Mobile Museum of Art closed on May 8, 2000, and reopened on July 21, 2000, at the Mobile Civic Center. The USS Alabama and Dauphin Island Sea Lab/Estuarium closed during September 2005 due to Hurricane Katrina. The Exploreum closed due to Hurricane Katrina on September 1, 2005, and reopened September 17, 2005. The Museum of Mobile closed during September and October 2005 due to Hurricane Katrina.

Source: Center for Business and Economic Research, University of South Alabama, 2006.

in November, Standard and Poor's issued downgrades for both Louisiana and Mississippi. Alabama's bond ratings, however, were not adversely affected by Katrina; the state received no downgrade as a result of the storm (GKST, 2005b), managed to avoid long-term financial distress, and fared relatively well in 2005–2006.

Land Use, Local Aesthetics, and Efficiency

"Like most American cities, Mobile's prevailing development practices have greatly contributed to inefficient land use practices, increased traffic congestion, consumptive development of environmentally sensitive areas, and wasteful use of city infrastructure and resources" (City of Mobile, 2003, p. 1). Such rapid and expansive growth has contributed to the effort in many American cities to achieve "smart growth," whereby municipalities reevaluate their land use and zoning plans and seek to have controlled development in accordance with the community's mission and goals.

Efforts to achieve "smart growth" along the Alabama Gulf Coast have been under way for several years. Coastal communities, such as Mobile and the city of Gulf Shores, have chosen to take a proactive approach to planning and land use that addresses the cyclic nature of the hurricane season and recognizes that hurricane damage is an inevitable occurrence that temporarily disrupts city planning and development. In Mobile, a "Smart Growth Policy" to provide a decision-making framework for local development was implemented in 2003 (City of Mobile, 2003); in 2005, Gulf Shores developed "Envision Gulf Shores," which resulted in amendments to a 1982 city ordinance governing beach development and zoning. Both community efficiency and aesthetics are evident in the Mobile policy statement, which emphasizes:

- Design alternatives;
- Strengthening the existing community (infill strategies);
- Preservation of environmental areas and open space; and
- Investment in multi-modal transportation options (City of Mobile, 2003, pp. 1–4).

This suggests that coastal communities that consistently face the risks of natural disasters do not wait for disasters to happen before initiating community planning. Although Ivan and Katrina did not require Mobile and the surrounding cities to engage in extraordinary decision making as compared to many cities in Louisiana and Mississippi, the reconstruction and recovery after hurricane damage is a constant within the vision of these Alabama cities.

Haas et al. (1977, p. xxx) recommend that hazardous areas be identified and developed so as to reduce potential risks due to natural disasters. In addition, communities should also consider an assessment of existing

building codes. One Gulf Shores official stated that the damage inflicted by Hurricane Ivan served primarily to demolish dilapidated structures that were previously planned for removal, meaning that the storm had little impact on the community's development plan. Research to date, however, suggests that the Alabama coastal cities have not identified hazardous disaster areas outside of nationally recognized flood zones.

FINDINGS AND IMPLICATIONS

When Hurricanes Ivan and Katrina hit the coastal counties of Alabama in September 2004 and August 2005, they caused millions of dollars in losses and property damages. Despite the damage that occurred, however, the Alabama economy has flourished, and the positive outcomes contribute to the following conclusions.

The Alabama Economy Did Not Suffer as a Result of Hurricanes Ivan and Katrina

Emergency funding in the amount of $1.3 billion was injected into the Alabama economy in various forms of emergency assistance to fill gaps in service provision to storm victims and evacuees. Both the cost of property and the reconstruction boom extending from October 2004 into 2006 have maintained adequate property investment levels and low unemployment in Mobile and the surrounding areas. Although there have been slightly negative impacts on the number of area visitors and attendance at local attractions, this dip in the presence of tourists has not affected retail sales in the area. Most likely the visitors associated with the construction industry have provided cities like Mobile with tax revenues that have reduced the losses occurring in other segments of the city's tax base. The bond market has also remained stable, and the storms did not create a negative outcome for Alabama markets or consumer confidence.

Policies and Municipal Planning Have Not Changed in Response to the Hurricanes

It should be noted that, in contrast to the situation in New Orleans, extraordinary decision-making processes were not appropriate for Alabamians in the aftermath of either Ivan or Katrina. Development planning had been established for most Alabama Gulf Coast communities before Ivan's visit in 2004, and those plans have remained intact with minor adjustments as needed. The storms have served primarily as a temporary interruption as the cities continue to develop their visions for updating infrastructure, land use planning, and zoning. Aesthetics and efficiency are important values to these cities, especially with respect to the tourism component of their economies. However, projects to enhance the attractiveness of the

city or to increase transportation opportunities are not seen as reactive or based upon storm damages.

Longer Term Considerations to Watch Include Long-Term Financial Gain, Population Growth, and Attractions

It is evident that the Alabama economy has grown in recent years and has experienced a positive fiscal outcome as a result of the damage inflicted by the hurricanes in Alabama and the other Gulf Coast states. However, the influx of hurricane dollars may, as noted, leak into other communities outside the disaster region in the coming years (Chang, 1983, p. 520). Repeated storm damage in upcoming hurricane seasons may actually continue the trend of increasing revenues gained from an increase in reconstruction productivity and continued emergency assistance from the state and federal governments. Following trends in retaining recovery dollars in assessing local benefits will contribute to further knowledge in coastal planning and budgeting.

Another trend to watch more closely is a gradual decline in population that may result from repeated damage in the coastal area. As noted in Florida, after Hurricane Hugo decimated many areas, communities were encouraged to consider trends in population growth that have an immediate impact on tax dollars. The populations of Mobile and Baldwin counties reported increases between 1990 and 2004, but census data to evaluate potential declines between 2004 and 2006 are not currently available.

A final trend to note includes a community's dependence on tourism and attractions. In the case of Mobile, declining attendance at most local attractions does have a negative impact on business income for the community. After Katrina struck the coast, Alabama invested more than $500,000 in a marketing campaign to spread the word that Alabama beaches were in operation. This strategy indicates the importance of visitors in a tourism-driven economy, and the Gulf Coast communities are inevitably faced with moving on in the aftermath of the storms.

CONCLUSION

Despite the manageable outcomes Alabama experienced as a result of Hurricanes Ivan and Katrina, the impact of these storms on the Gulf Coast cannot be minimized. Katrina has been, "first and foremost, a human disaster—a seemingly endless tale of suffering marked by lives lost, communities dispersed, and families torn asunder" (Benfield et al., 2005, p. 1). The lives of countless individuals and families, especially in Louisiana and Mississippi, will never be the same due to the disasters caused by the hurricane season of 2005.

In consideration of the impacts of both Hurricanes Ivan and Katrina on Alabama residents and businesses, it is important to understand the economic impact for both the coastal communities and the state. To a large extent, the westward shift in Katrina's path spared Alabama from catastrophic damage in 2005, although it had not been so fortunate when Ivan appeared in 2004. Nevertheless, the overall economy has been minimally affected, life has moved on for many state residents and their local government officials, and Alabama is advertising that it is "open for business."

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