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Hurricane Katrina: How Local Government's Lack of Revenue Impacts Its Financial Recovery

By

Isabelle Afawubo, MPA, San Jose State University
Frances L. Edwards, MUP, Ph.D., CEM, Associate Professor, San Jose State University

Abstract

The United States is unique in its far reaching financial assistance programs for disaster impacted areas. Communities that request and receive Presidential Disaster Declarations are eligible to receive financial assistance through the Federal Emergency Management Agency (FEMA) for specific aspects of community recovery. (Note that there are other post-disaster programs through the Department of Agriculture, the Department of Housing and Urban Development, and other federal entities that are beyond the scope of this paper.) Programs include reimbursement for emergency response costs such as overtime, and extensive financial support for the repair of damaged public infrastructure. In the case of Hurricane Katrina, President Bush provided 100% funding for emergency response costs, but other programs require some matching funds from the local government.

In Part One this paper will review the federal financial assistance programs available to public agencies after Hurricane Katrina, examine the disaster impacts on local government financial resources, and end with suggestions for local government to better prepare for disaster financial recovery. In Part Two it will use two of the most heavily damaged municipalities in Mississippi to demonstrate the impact of a disaster on

the income of the public agencies that must lead infrastructure recovery. Original research into financial records provides examples of loss of tax base and its impact on local government revenues in Biloxi and Waveland, Mississippi.

Part One: Federal Disaster Assistance

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. §5121 et. seq. as amended) provides for a variety of federal programs to assist disaster-damaged communities to recover, collectively called Public Assistance.¹ Following a Presidential declaration of emergency or disaster these programs may be accessed by state and local governments and by non-profits fulfilling governmental functions. These programs provide for grants and loans for specific activities.²

The Stafford Act provides for two types of public assistance: categorical and direct federal assistance, both of which involve a cost share. The federal contribution is considered “supplementary assistance,” so the state and local governments are expected to bear part of the cost of the disaster response and recovery, with the federal share “not less than 75% of eligible costs.”³

There are seven “Categories of Work,” as depicted in Table I, which are eligible for the federal cost share.

¹ Note that there are also programs for Individual Assistance that help the individuals and households impacted by the disaster, and Small Business Administration programs for both households and businesses in the disaster area. See FEMA, Help After A Disaster: Applicant’s Guide to Individuals and Households Program. August 2005. http://www.fema.gov/pdf/assistance/process/help_after_disaster_english.pdf.

² FEMA, Public Assistance Guide, FEMA 322, June 2007. http://www.fema.gov/government/grant/pa/pag07_t.shtm

³ FEMA, Public Assistance Guide, p. 4.

Table I	Public Assistance: Categories of Work	Description
		EMERGENCY WORK
Category A	Debris Removal	Trees; building wreckage; sand/mud/silt/gravel; vehicles from public property
Category B	Emergency Protective Measures	Before, during and after a disaster - to save lives, protect public health and safety, and protect improved public and private property
		PERMANENT WORK
Category C	Roads and Bridges	Repair of roads, bridges, shoulders, ditches, culverts, lighting and signs
Category D	Water Control Facilities	Repair of irrigation systems, drainage channels and pumping facilities. Repair of levees, dams and flood control channels fall under D, but eligibility is restricted.
Category E	Buildings and Equipment	Repair or replacement of buildings, including contents and systems; heavy equipment and vehicles.
Category F	Utilities	Repair of water treatment and delivery systems: power generation facilities and distribution lines; and sewage collection and treatment facilities.
Category G	Parks, Recreational and Other	Repair and restoration of parks, playgrounds, pools, cemeteries and beaches; and other public facilities that do not call under the other categories.

Reference: Public Assistance Guide, FEMA 322, October 1999, pages 44-60.

Category B: Emergency Protective Measures is the most comprehensive category. It includes pre-impact activities undertaken to protect the community and its residents, as well as immediate response to the disaster. Specific actions are in Table II.

Table II: Emergency Protective Measures	
<i>Before and after the event</i>	<i>After the event</i>
Warning devices: barricades, signs, announcements	Search and rescue
Security: police and guards	Bracing/shoring damages structures
Construction of temporary levees	Emergency repairs
Provision of shelter or emergency care	Emergency demolition
Sandbagging	Removal of health and safety hazards
Provision of food, water, ice and essential supplies	

Reference: FEMA. Public Assistance Policy Digest, FEMA 321 - October 2001, p. 42.

These activities are undertaken to respond to an “immediate threat,” and include opening the community’s emergency operations center to coordinate the preparation and response to the imminent disaster, providing emergency medical care, and constructing temporary bridges, or buildings for schools and government offices. The federal regulations define an “immediate threat” as something that “could reasonably occur within 5 years.”⁴ Emergency communications systems, emergency public transportation, post-disaster building inspection and snow removal may also be included in Category B.⁵ Reimbursable costs associated with Category B include employee overtime, materials, equipment, and contracts awarded for eligible work.⁶

Eligible applicants may be governmental entities or private non-profit organizations fulfilling a governmental function. Table III lists examples of potential applicants.

Table III:	Eligible Applicants
Public Facilities	Private Non-Profit
Roads	Classrooms, supplies and equipment
Sewage Treatment Plants	Utilities (gas, water, power)
Airports	Fire stations, rescue squads
Irrigation Channels	Hospitals and outpatient centers
Schools	Custodial care facilities
Buildings	Others: community centers, homeless shelters, libraries,
Bridges and culverts	museums, rehabilitation centers, senior citizen centers,
Utilities	sheltered workshops, zoos, health and safety service

Reference: FEMA. Public Assistance Policy Digest, FEMA 321 - October 2001, p. 37 & 39

Direct Federal Assistance is offered when “the impact of a disaster is so severe that neither the state nor local government can respond, the state may request that certain

⁴ FEMA, Public Assistance Guide, p. 50.

⁵ FEMA, Public Assistance Guide, p. 51-52.

⁶ FEMA. Public Assistance Policy Digest, FEMA 321 - October 2001, p. 38.

emergency work be performed directly by a Federal agency.”⁷ The Federal Emergency Management Agency (FEMA) uses the National Response Framework and the Emergency Support Functions to assign the work to available federal assets. The work is limited to Category A and Category B work. The federal Disaster Recovery Manager coordinates with the Governor’s Authorized Representative to develop an agreement regarding the specific work and cost share. The federal government bills the state for the cost share of this work, which may be performed by federal employees, or through a federal contractor.

Based on the severity of the event the President may raise the federal cost share above 75%, including up to 100%. For example, in the August 29, 2005 supplemental declaration for the State of Louisiana, President George W. Bush ordered higher levels of assistance:

Consistent with the requirement that Federal assistance be supplemental, any Federal funds provided under the Stafford Act for Public Assistance, Hazard Mitigation and the Other Needs Assistance under Section 408 of the Stafford Act will be limited to 75 percent of the total eligible costs. For a period of up to 72 hours, you are authorized to fund assistance for debris removal and emergency protective measures, including direct Federal assistance, at 100 percent of the total eligible costs. Federal funding for debris removal will remain at 75 percent.⁸

The impacted state makes an agreement with the federal government that governs the cost share, called the “FEMA-State Agreement.” The state is considered the grantee, and any local governments are subgrantees.⁹ The state

⁷ FEMA, Public Assistance Guide, p. 60.

⁸ Federal Register Notice, FEMA-1603-DR, <http://www.fema.gov/news/dfrn.fema?id=4506>

⁹ Stafford Act, Sections 403(b), 406 (b), and 503(a), 44CFR §206.65 and §206.203(b)

determines how the remaining non-federal cost share is apportioned between the state and the local governments.¹⁰

Although the Federal assistance is generous, impacted jurisdictions are still required to pay for a significant portion of the cost of response to and recovery from disasters. The President extended 72 hours of Direct Federal Assistance to the State of Louisiana after Hurricane Katrina, but the rest of the response time of the Coast Guard, the logistics support of the Army and similar costs were shared, with the state responsible for 25% of the costs for the services. In Louisiana the state and federal governments disputed the \$1.2 billion state cost share of federally-provided emergency assistance, with the state auditing the federal purchases before agreeing to a cost share amount.¹¹

Finally, except for Direct Federal Assistance, all other work is performed on a cost reimbursement basis. This means that the government making the contract with the vendor, usually the local (municipal/county) government, must pay for all of the costs and then request reimbursement from FEMA. Generally, FEMA pays about 80% of the requested amount pending an audit, at which time the balance owed is paid, based on a determination of “allowable costs.” This means that the local government may have to wait several years to receive the full state and federal share of the cost of the work.

¹⁰ For a complete explanation of the federal financial assistance programs, see FEMA, Public Assistance Guide, FEMA 322, October 1999, and FEMA Public Assistance Grant Program Homepage, December 2007, <http://www.fema.gov/government/grant/pa/index.shtm>

¹¹ LATimes ONLINE, 2/24/06

Disaster Impact on Local Government Financial Resources

Local governments in the United States rely on several sources of income. The most common are real estate taxes, sales and use taxes, and the local share of state income taxes. They are required to balance their budgets, and they generally have little or no extra funding for disaster-related expenses. This means that as soon as personnel are placed on unexpected overtime, or an emergency contract is made, the local government's budget is out of balance. Although the typical cost-share of disaster-response expenses is 75% federal, 18% state, 7% local, the local government must find the 7% in its existing budget by eliminating some other service or activity that was in the original budget plan.

Moreover, disasters often take revenue away from local governments. Areas that rely on tourism will see a decline in visitors immediately after a disaster, thereby reducing tourism-related revenues, such as transient occupancy tax collected for hotel stays, and sales tax generated through restaurants and shops. Even though FEMA employees may flood the area after a disaster, the federal government pays neither the local sales tax nor the transient occupancy tax for the hotel rooms.

Even communities without tourism as an economic engine will see changes in the revenue profile. Severe disasters may force businesses to close for a time, further reducing retail and business-to-business taxes. Real property may have to be reassessed downward based on severe damage from the disaster. For example, if the building is destroyed by 50% or more the property assessment may be reduced to the value of the land.

In addition, the local government may have costs that are not covered by the federal assistance programs, so they will have to pay all the expenses. This may include activities such as replacement of lost trees, or clean-up of office spaces that were not properly mitigated against the hazard.

Even when work is part of one of the eligible categories of work, the local government will have to find its 7% share from its disaster-depleted revenue, while at the same time trying to keep its employees paid. For a small community with little excess income this may be devastating. Even New Orleans, with normal revenue of \$39 million per month in taxes and fees, with \$13 million per month in sales taxes alone, was forced to lay off a substantial percentage of its employees in the immediate aftermath of Hurricane Katrina because of the significant loss of revenue. In fact, at one point its only revenue was \$2 million per month from Harrah's Casino, which had a contractual obligation to pay its taxes to the city whether or not it was open.¹²

Community Disaster Loans

Another type of federal assistance is the Community Disaster Loan Program. This loan is available to a community that has “suffered a substantial loss (generally in excess of 5%) of tax or other revenues as a result of a major disaster, and must demonstrate the need for Federal assistance to perform its government functions.” However, this assistance is limited to no more than 25% of the annual operating budget, and to no more than \$5,000,000. While under some circumstances the loan may be converted to a grant after 3 years, in the

¹² New York Times, 10/22/05, B1.

immediate recovery period the loan remains part of the local government's financial portfolio and will impact the ability to borrow from other sources.¹³

Katrina created “the worst municipal finance crisis in U.S. history,” according to the New York Times.¹⁴ While the disaster may not have been preventable, there are steps that local governments can take to lessen the impact of similar future events.

Prepare for Disaster Financial Recovery

Disaster mitigation is a keystone of emergency preparedness. As one of the “four phases of emergency management” it offers agencies the opportunity to take steps in advance of known threats that will lessen the impact on the residents and infrastructure of a community.¹⁵ Mitigation may include strengthening building codes, changing land use and zoning regulations, and infrastructure development.

Financial mitigation is as important as physical mitigation to the well-being of the residents and the ability to recover community functions. While few communities can afford to develop an adequate “rainy day” fund to protect themselves there are reasonable steps that can be taken to mitigate the financial impact of a disaster.

Threat Analysis

Every community should undertake a thorough threat analysis. Understanding the probabilities of various hazards impacting the community will

¹³ FEMA. Public Assistance Policy Digest, p. 19 and FEMA, Community Disaster Loan Program, March 2006, http://www.fema.gov/government/grant/fs_cdl.shtml

¹⁴ Frances L. Edwards, “Businesses Prepare Their Employees for Disaster Recovery,” *The Public Manager*, Winter 2006-2007, vol 35, no 4, p. 8.

¹⁵ For a comprehensive discussion of hazard mitigation see *Disaster by Design* by Dennis Mileti.

guide the level of expenditure on mitigation activities. First, a community should inventory the hazards in the area: hurricane, earthquake, flood, wildland urban interface fire, tornado or human-caused disruptions. Second, the community should determine the likelihood and frequency of the hazard occurring. Third, it should inventory the impacts of the hazard to people and property. The community should then develop its emergency plan based on those hazards with a high frequency and significant impact.

Emergency Management

Communities should invest in professional emergency management. An emergency management staff should be hired, or developed, with the skills to create a meaningful emergency plan for the community, and a functional emergency operations center. The staff should be empowered to train local government staff members in their emergency response roles. Annual exercises of the emergency plan will keep the plan up to date and the staff knowledgeable.¹⁶

In the post disaster environment the professional emergency manager will be able to negotiate with the state and FEMA on behalf of the local community to ensure that appropriate assistance is received. Development of the agreement with the state on cost-share, and the creation of the initial Project Worksheet,¹⁷ are both crucial in obtaining the greatest federal assistance for disaster recovery.

Public Education

Another important step is bringing community members into the preparedness process. The community should offer educational programs to

¹⁶ For a complete description of emergency management's four phases see Kathleen Tierney and William Waugh, *Emergency Management*, Washington, D.C.: ICMA 2007.

¹⁷ For a complete description of the disaster assistance process see FEMA, Public Assistance Guide, pages 69-80 http://www.fema.gov/government/grant/pa/pag07_t.shtm; and Public Assistance Applicant Handbook, FEMA 323, pages 17-33.

encourage every community member to be self-sufficient for at least 72 hours. Community conditions may dictate a longer self-sufficiency period. Emergency management staff should ensure that community members are familiar with the threats to the community, and knowledgeable about evacuation routes, probable shelter locations (at least by category, such as high school gyms), and have out of area phone contacts and a family emergency response plan. FEMA's Community Emergency Response Training provides excellent resources for community training and preparedness.¹⁸

Community members can take private mitigation steps to protect their own property before the disaster. This is especially important for revenue generating members of the business community. Their ability to stay in business is an important part of community recovery. The jobs they support will help to keep the community intact, allowing employees to recover and keep their bills paid. The flow of tax revenue will support the disaster recovery. However, small businesses are inevitably hard hit by disaster. "Nearly 7,900 businesses in southeast Louisiana — including New Orleans — shut down between the second quarter of 2005 and the fourth quarter of 2006. The smaller the company, the higher the failure rate. Those that remain open are struggling with rising insurance and difficulty finding employees, customers and supplies."¹⁹ Even larger businesses suffer when employees are forced from their communities. "The Public Entity Risk Institute studied small and medium sized businesses to determine how

¹⁸ www.citizencorps.gov

¹⁹ Kathy Chu, "Small businesses struggle to recover from Katrina, *USA Today*, 8/28/07.

disasters impact their business resumption, and found that ‘management mitigations’ in place before a disaster are a good predictor of staying in business.”²⁰

Insurance

Insurance offers the best opportunity for rapid financial recovery. Communities should review their property insurance policies regularly to ensure that they are appropriate to the threat level and hazard type within the community. For example, FEMA Flood Insurance provides resources to quickly rebuild damaged facilities at a reasonable premium. If a public facility has once been flood damaged in excess of \$5,000 value, and received federal financial assistance for repair, flood insurance is required for that property.²¹ Workers compensation and liability insurance policies should be written to include disaster clauses. The Risk Management Unit should be an active partner in emergency planning in every community.

FEMA assistance does not cover insured property until the proceeds of the policy are used. Communities should select deductibles and extent of coverage with FEMA’s “duplication of benefits” policy in mind. Anticipated insurance proceeds are deducted from the eligible repair costs in determining FEMA’s share.²²

Financial insurance policies are also an important part of the community’s emergency plan. Various instruments are available to insure the community against an inability to repay certain debts and loans. Revenue streams may also be insurable. For example, the state of Mississippi lost \$500,000 per day when

²⁰ Edwards, p. 10. See this article for a discussion of business impacts and lessons learned for government agencies.

²¹ FEMA. Public Assistance Policy Digest, p. 71.

²² Stafford Act Section 312, 44CFR §206.226(a)(1); FEMA Policy 9525.3, October 30, 2000.

Hurricane Katrina destroyed their floating casinos, putting 14,000 people out of work.²³ Because taxes on the gaming industry represented 35% of Biloxi, Mississippi's total revenue,²⁴ they held a \$10 million business interruption insurance policy to protect their gambling revenues in the event the casinos did not operate due to disaster.²⁵ This was a critical element in Biloxi's ability to respond to Hurricane Katrina and rapidly pursue restoration of public services and rebuilding.

Part Two: Impact of a Disaster on the Income of Public Agencies

Part One outlined the causes of financial impacts on local communities, showing that revenue streams are disrupted by both the loss of businesses and residents, and the destruction of real property. Part Two will use Waveland, Mississippi and Biloxi, Mississippi as examples of how local government's post-disaster revenue streams impact financial recovery.

Hurricane Katrina's impact was strongest in Mississippi. While most of the damage in New Orleans was due to flooding caused by levee failures, Mississippi bore the brunt of the hurricane winds and storm surge. Along the Mississippi Gulf Coast businesses were destroyed, taking with them the main source of revenue for the coast's local governments, and a considerable source of income for the states. The economic impact to the Mississippi Gulf Coast alone was estimated at more than \$100 billion, including 400,000 jobs lost.²⁶

²³ Guy Taylor, Gambling looks for safe harbor, *The Washington Times*, October 1, 2005, p. A01.

²⁴ *Ibid.*

²⁵ Shelly Sigo, Mississippi: Casino Insurance, *The Bond Buyer*, October 6, 2005.

²⁶ National Association of Community Health Centers (NACHC) (2006). *Legacy of a Disaster: Health Centers and Hurricane Katrina One Year Later*. Washington D.C.: National Association of Community Health Centers, Inc.

Biloxi

Biloxi is said to be one of the areas hardest hit by Hurricane Katrina. The death toll was more than 53 people for the city. The storm destroyed more than six thousands buildings, or twenty percent of Biloxi's home and business structures, leaving sixty families homeless in the Beauvoir Beach Townhouses community alone.²⁷ Revenue from Biloxi's ten casinos, all damaged or destroyed in the storm, had contributed to the improvement of education, public safety services and other crucial community needs.²⁸ In addition Biloxi lost most of its historic landmarks, and had damage to public facilities, including schools, the library, city hall and the sewage system.²⁹

Restoration of buildings and revenue streams has been impeded by FEMA Flood Insurance changes. As a result of the Katrina-related storm surge and flooding FEMA produced Advisory Base Flood Elevation maps (ABFE) which re-classify most of East Biloxi as being located within the 100-year floodplain. Previously only a relatively small portion of East Biloxi was located within the 100-year floodplain. The ABFE not only expand the Flood Zone but also established standards and guidelines requiring that buildings be raised significantly higher in order to be eligible for flood insurance through the National Flood Insurance Program (NFIP). The ABFE regulations will also play a significant role in defining the type of development that can be undertaken in the rebuilding. For certain people and businesses this means that they would have to move elsewhere in the city in order to rebuild.

²⁷ City of Biloxi (2005). *The Housing Authority of the City of Biloxi, MS*. Retrieved April 12, 2007, from <http://biloxi.ms.us/PDF/BHAsstatus.pdf>

²⁸ E. Boudreaux, Jr. (n.d.). *The Story of Biloxi*. Retrieved April 18, 2007 from <http://www.biloxi.org/tourism.php?id=6>

²⁹ Swartz, N. (2006) Katrina Devastates Gulf Resort. *Information Management Journal*, 39, 24-26. Retrieved February 26, 2007 from the Academic Search Premier Database.

Waveland

Waveland, on the path of the storm's eyewall, took a harder hit from the 140-mile-per-hour wind and related water than any other town along the coast. As can be seen in pictures on Perryton.org and femaforgotwaveland.com, Katrina erased the city of Waveland from the map: the entire downtown core, thousands of homes.³⁰ Fifty lives were lost, and the city lost almost one hundred percent of the infrastructure components. The city's police department cars, fire apparatus, computers, files, and office supplies were all lost in the storm.³¹ Nearly every home, business, and public building was either ripped off its foundation or flooded. Waveland Public Library was a total loss, and the city's only public elementary school was heavily damaged by the storm, leaving students in portable classrooms, and the entire Waveland city hall (police station and fire department included) in nine portable bungalows.³²

How and where do local governments get their incomes?

- ***Biloxi***

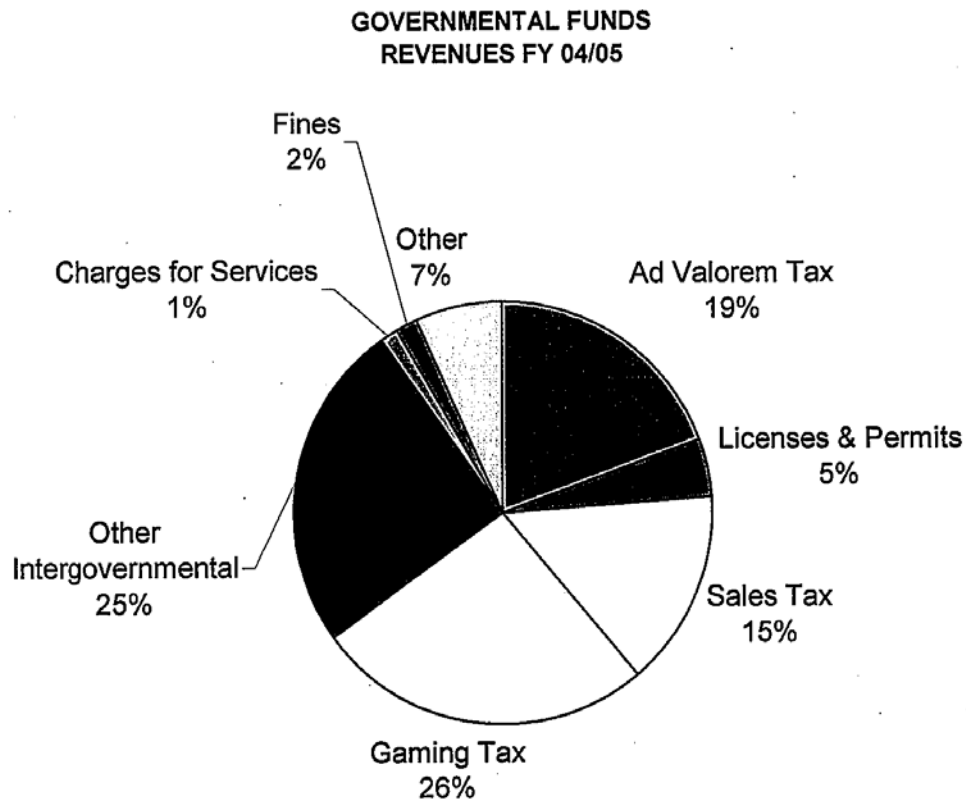
As illustrated in the figure below extracted from the city's financial report of year 2004-2005, the city of Biloxi's three largest sources of revenue are gaming tax, ad valorem tax, and sales tax. The city derives its annual revenue primarily from the 4 percent tax on gaming revenue, which accounts for nearly \$20 million, or more than a third of the annual revenue. Sales tax revenue accounts for almost a quarter of the city's

³⁰ Perryton.org (2005). *Sister City Greetings to Waveland, Mississippi October 2005* Retrieved April 23, 2007 from <http://www.perryton.org/wavelandsistercity2.htm> and Bailey, K. (2005). *Waveland to Wasteland The Mississippi Town that FEMA Forgot*. Retrieved April 10, 2007 from <http://www.femaforgotwaveland.com/beforeandafter.html>

³¹ Larry Copeland, The town that vanished. *USA Today*. 9/15/05, p. 1A.

³² C. Burdeau, (2005) Waveland practically wiped off map by force of Katrina. *Associated Press*. Retrieved on March 24th 2007 from <http://www.wvlv.com/topstories/stories/wwl083105waveland.11adc324.html>

annual funds, and property tax amounts to less than 20 percent. The remainder of the budget is derived from fees, fines or state and federal grants.³³



Source: Figure-1 is extracted from city of Biloxi's Comprehensive Annual Financial Report FY 2005.

The Gaming Tax - Biloxi is said to be the third-largest gaming market in the nation, behind Las Vegas and Atlantic City. A.J. Holloway, the mayor of Biloxi, characterized gambling as “the engine that’s pulling the train.”³⁴ Based on the provisions of the Gaming Control Act of 1990 there is a tax of 0.8% on casino gross gaming income, and

³³ Administration of the City of Biloxi (2006). *Comprehensive Annual Financial Report (CAFR) City of Biloxi, Mississippi Fiscal Year Ended September 30, 2005*. Retrieved February 6, 2007 and several other dates thereafter from <http://biloxi.ms.us/PDF/CAFR05.pdf>

³⁴ Mayor Speech found on city site at <http://www.biloxi.ms.us/mayor/speeches/speechdetail.asp?log=76>

the act stipulates that this tax revenue be divided between Harrison County and the city in proportion to the population of each.³⁵

Another policy which provides a tax income for the local government is Mississippi House Bill 1504, Regular Session of 1992, which not only collects 3.2% on casino gaming revenues, but also dictates how this tax income is to be used:

20% for public safety

20% for education purposes

10% for Harrison County safety

10% for Harrison County education purposes

This same House Bill 1504 also provides for a \$150-licensing fee on each gaming device.³⁶

In addition, as Mayor Holloway said, the tourism and gaming industry “is important to our city for a number of reasons.” First, the jobs related to tourism and gaming were expected to be at least 10,000 by the end of the year 2006. Prior to the storm, the casinos had helped keep the area’s unemployment levels lower than the state average and provided a thriving service industry that supported casino workers and tourists visiting the region. Tax revenue is crucial to the city as well, and the restoration of gaming will also help revive the sales tax revenue in Biloxi, and the overall impact the resorts have on other businesses in the city, such as restaurants and gas stations.

The Ad Valorem tax is collected in arrears, thus in each fiscal year the city collects the ad valorem tax for the prior tax year. Each year, the City of Biloxi government determines the total assessed value of properties located within the City limits, and prior to October 1st (the beginning of the new fiscal year) they determine the tax rate to be

³⁵ City of Biloxi – Comprehensive Annual Financial Report (CAFR) for fiscal year 2002

³⁶ City of Biloxi – Comprehensive Annual Financial Report (CAFR) for fiscal years 2004 to 2005/06.

charged on the new assessed value. However, these taxes are only collected in the following year. In other words, the ad valorem taxes levied in 2004 are collected in 2005 and considered as part of income revenue of 2005.³⁷

Sales Tax – Every month the state of Mississippi collects 7% on all retail sales of tangible personal property. Of the taxes collected by the state, 18% of the sales revenue on transactions done within its limits is remitted to the City on a monthly basis.³⁸

- ***Waveland***

In Kathy Pinn’s (the city’s former public affairs director), own words, “Waveland is a sales tax based community.” Without the businesses to generate the sales, and thus their taxes, the city of Waveland has limited income.³⁹

Prior to Katrina, the largest business in Waveland was the local Wal-Mart store, which not only provided the sale tax income to the city, but also employed a considerable portion of the city residents. The other sources of sales tax for the city were the “mom-&-pop” businesses as such small hotels, bed-&-breakfast houses, restaurants, and the fishery.

Other sources of income for the city are the property taxes collected on the city’s building stock, the fees collected on historic site visits and fees for services provided by the city.

Impact & Recovery – The first six months after the disaster

- ***Biloxi***

³⁷ City of Biloxi – Comprehensive Annual Financial Reports (any dating from 2002 to current).

³⁸ City of Biloxi – Comprehensive Annual Financial Reports (any dating from 2002 to current).

³⁹ Pinn, K. (2006) – Former PR Director for the City of Waveland, Comment Retrieved on March 15, 2007 from <http://www.gulfcoastnews.com/GCNnewsKatrinaWavelandNeeds.htm>.

Following Hurricane Camille in 1969, the city of Biloxi used a change in state policy to speed their recovery. In 1990 the state of Mississippi Legislature passed the House Bill 2 – Special Legislative Session which legalized casino gambling, but banned it from land. The law required all gambling to take place offshore. This restricted the casino operations to riverboats on the Mississippi or barges docked along the Gulf Coast, and permitted only the non-gambling supportive operations, such as hotels and restaurants, on land. The law made it difficult for casino owners to integrate their gambling sites with other parts of their properties. Nevertheless the law served to create a boom for the economy of Biloxi as the gambling industry, including its hotels and restaurants, became a considerable source of income for the city and provided the jobs for its residents.

In the wake of Katrina, the state of Mississippi enacted legislation that allows location for the new development of gaming operations on land. On October 17, 2005, in a special legislative session, Mississippi lawmakers passed a new onshore gaming law that allowed casinos to move inland and build within 800 feet of the waterfront, not only allowing for recovery but also for expansion. As Biloxi's key economic engine, casinos were made a priority of the city's rebuilding efforts.

The storm hit on August 29, 2005 and since Biloxi's fiscal year runs from October 1st to September 30th, this means that the storm hit about one month before the end of the 2004-2005 fiscal year. The impact of the storm was therefore reflected in the fiscal year 2005-2006 budget. The city of Biloxi's three largest revenue sources- gaming taxes, sales taxes and property taxes - were down 24 percent overall from pre-Katrina levels. Gaming alone was off 45 percent, and sales taxes were down 24 percent. As a result, immediately after Katrina, the city suspended capital projects, put a freeze on hiring, and

implemented an emergency spending policy to decrease the municipal operating expenditures because of the loss of revenue associated with the storm.⁴⁰

Table - IV: the Major Sources of Income for the city of Biloxi in both percentage (%) & (\$) dollars - Comparing previous years and FY 2005 to FY 2006 to show the impacts of Katrina.

Fiscal Years→	FY 2002/03	FY 2003/04	FY 2004/05		FY 2005/06	
Government Revenue Sources ↓						
Ad Valorem	25%	24%	19%	\$15,599,678	12%	\$16,859,108*
Gaming	31%	32%	26%	\$20,896,634	9%	\$-
Sales	18%	19%	15%	\$12,055,750	8%	\$-
Licenses & Permits	6%	6%	5%	\$3,667,843	3%	\$4,059,907
Fines	2%	2%	2%	\$1,241,663	1%	\$1,346,888
Charges for Services	2%	2%	1%	\$1,081,843	1%	\$1,124,939
Other Intergovernmental	8%	7%	25%	\$20,092,916	(73%) 43%	\$83,596,269** (\$48,995,877)
Others	8%	8%	6%	\$5,442,861	23% (6%)	\$6,956,788

Source: Table - IV data in this table were obtained from Biloxi's various financial statements.

* this revenue was not affected by Katrina due to the fact that the Ad Valorem is in arrears - Thus, this is the property tax assessed in FY 2004/05 and collected by February 1st 2005 - meaning well before the storm hit. Storm damage was reflected in the 2005/2006 collections.

** this amount includes \$37,512,974 of grant money received from FEMA for the fiscal year 2005/06⁴¹

Other intergovernmental revenues are taxes collected by other entities, such as Harrison County and the State of Mississippi, and state and federal grants and distributed to the city. As shown in the table above, the Other Intergovernmental for fiscal years

⁴⁰ Vincent Creel, Public Relation Manager for the city of Biloxi. Personal communication. November 2007.

⁴¹ City of Biloxi Comprehensive Annual Financial Report for fiscal year 2005-2006.

2004/05 increased considerably. This is explained in the annual report as, during the last month of the fiscal year 2004/05, the City received \$12,492,171 of FEMA grant money as part of the recovery effort from Katrina.

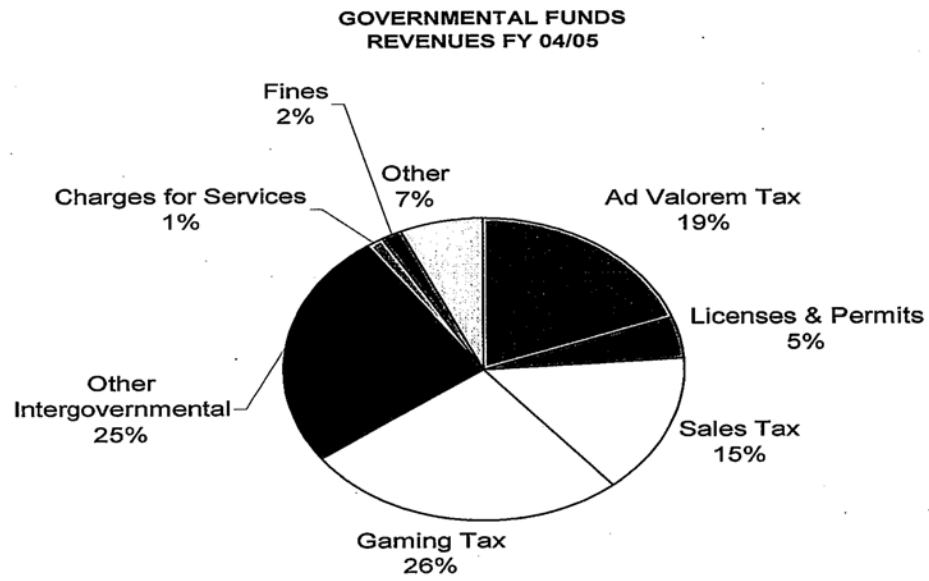
For the fiscal year 2006 the Intergovernmental revenue encompassed both sales tax revenue and total gaming tax revenue, as well as FEMA recovery grants of \$37,512,974. For fiscal year 2007, the Katrina recovery grant amounts are projected to be \$6,445,570.⁴² The increase in the percentage figure of the “Other” revenue for FY 2006 is due to the insurance claims collected by the city.

As stated in the City’s annual report for fiscal year 2004-2005, to recover from the impact of Katrina on Biloxi and restore its revenue sources, the city government is focusing on two primary objectives: 1) repairing and replacing the city’s damaged infrastructure, buildings, facilities and equipment, and 2) ensuring maximum private sector reinvestment.⁴³ In order to speed the recovery from Katrina, Mayor Holloway stopped all funding of capital projects, diverting these projects’ resources and manpower toward the costs of recovery. Although the federal government provides public assistance for the repair of public property under the Stafford Act, the money is provided only on a reimbursement basis, and the local government receiving this assistance must pay 25% of the reconstruction costs.⁴⁴

⁴² Administration of the City of Biloxi (2007). Combined Funds Statement AND Statement of Revenues- All Funds AND Summary of General Fund Departmental Expenditure Budgets Fiscal Year Ending September 30, 2007. Retrieved April 18, 2007 from <http://biloxi.ms.us/PDF/COMFDS2%2006-07.xls.pdf> AND <http://biloxi.ms.us/PDF/RevStmnt%2006-07.pdf> AND <http://biloxi.ms.us/PDF/DEPTSUM%2006-07.xls.pdf> .

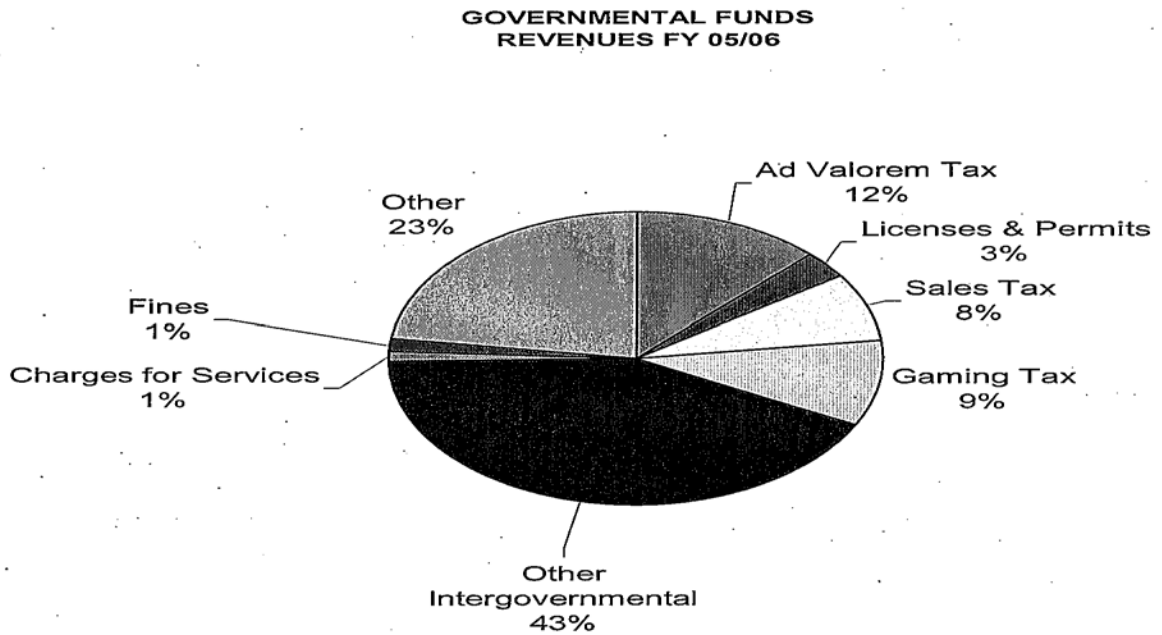
⁴³ Administration, 2006.

⁴⁴ <http://www.fema.gov/government/grant/hmgrp/FAQHowmuchmoney.shtml>



Source: Figure-2 is extracted from city of Biloxi's Comprehensive Annual Financial Report FY

2005



Source: Figure-3 is extracted from city of Biloxi's Comprehensive Annual Financial Report FY

2006

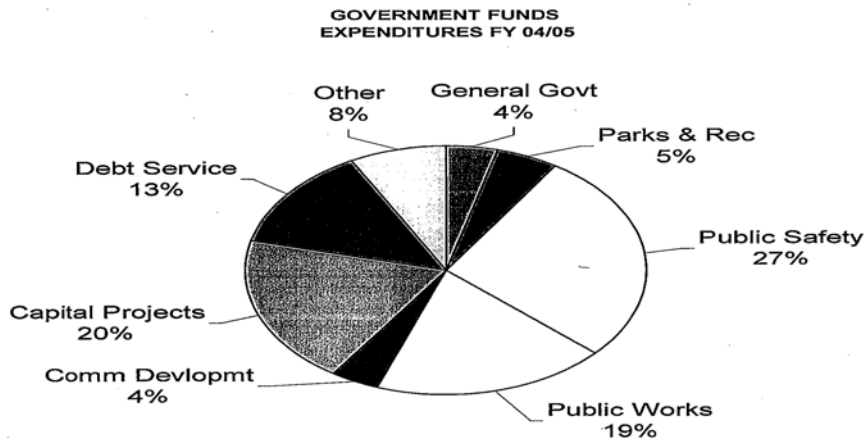
Table - V: the Major Sources of Expenses for the city of Biloxi in both percentage (%) & (\$) dollars - Comparing previous years and FY 2005 to FY 2006 to show the impacts of Katrina.

Fiscal Years → Government Functions ↓	FY 2002/ 03	FY 2003/ 04	FY 2004/05		FY 2005/06	
	Public Safety	27%	28%	27%	\$26,922,427	22%
Public Works	10%	11%	19%	\$18,802,996	54%	\$63,498,853
Capital Projects	33%	28%	20%	\$19,299,416	3%	3,259,444
Community Development	4%	5%	4%	\$3,702,265	3%	\$2,248,326
General Government	5%	5%	4%	\$4,225,009	4%	\$4,221,591
Parks & Recreation	5%	6%	5%	\$4,926,209	3%	\$3,766,106
Debts Services: principal retirement	5%	8%	13%	\$13,141,393	7%	\$7,574,287
Others: Insurance, Bonds, and Notes proceeds	11%	9%	8%	\$7,644,237	4%	\$2,919,036

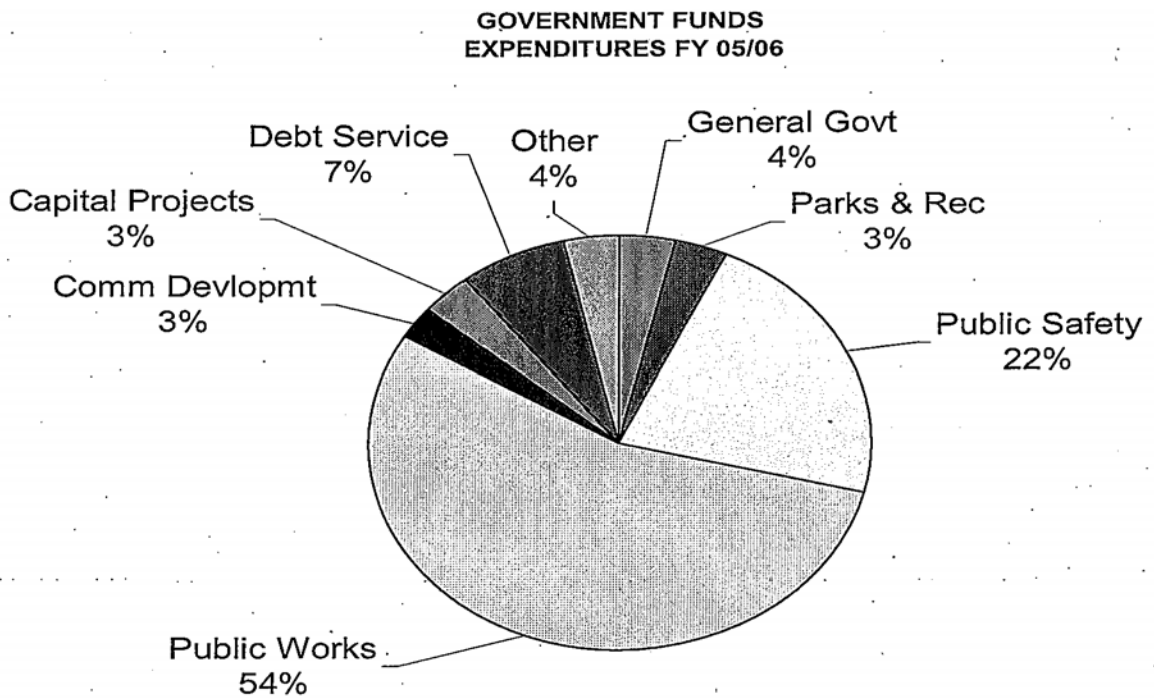
Source: Table - V's figures were obtained from various Biloxi's financial statements.

The increase in Public Works expenses is due to the cost of cleaning the debris left by Hurricane Katrina⁴⁵. The Public Works expenses actual amount went over the approved amount by \$9,643,353 – all of which was paid for with the Category A recovery grant from FEMA. The change from double-digits to a single-digit percentage in expenses for Capital Projects demonstrates the diversion of funds to storm recovery.

⁴⁵ City of Biloxi – Comprehensive Annual Financial Reports fiscal years 2005 & 2006



Source: Figure - 4 is extracted from the "City of Biloxi, Mississippi - Comprehensive Annual Financial Report Fiscal year ended September 30th 2005"



Source: Figure - 5 is extracted from the "City of Biloxi, Mississippi - Comprehensive Annual Financial Report Fiscal year ended September 30th 2006"

By July 2006, the cost of removing the storm’s debris was at \$56 million, which is more than the city’s total operating revenue from gaming, sales, and property taxes for FY 2004.

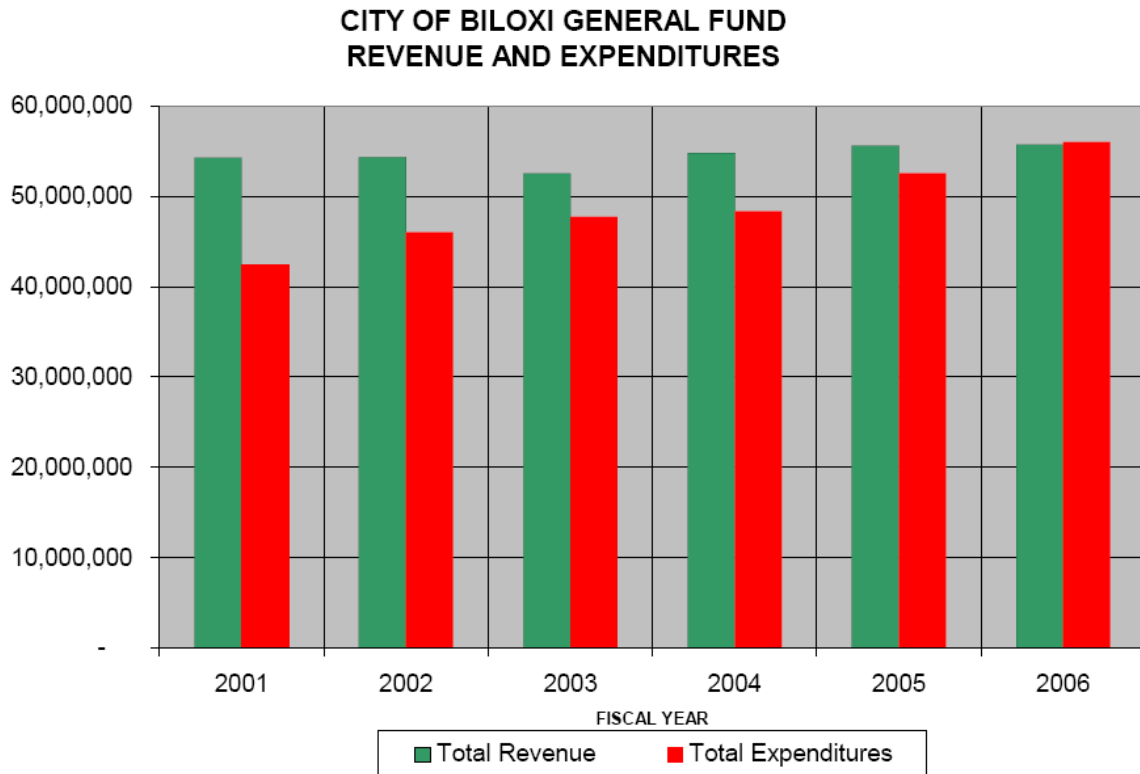


Figure - 6 is extracted from the “City of Biloxi, Mississippi – Comprehensive Annual Financial Report Fiscal year ended September 30th 2005”

As shown in the figure above, in 2006 for the first time in six years, the City’s total expenditures (\$114,627,227)⁴⁶ were higher than the total Revenue (\$113,943,899)⁴⁷.

Another financial effect of Hurricane Katrina on the City of Biloxi was the downgrading of the City’s bond rating, which was “A” pre-Katrina, and became “BBB” post-Katrina.⁴⁸

This means that all the bonds sold to pay for recovery will carry a significantly higher

⁴⁶ City of Biloxi- Comprehensive Annual Financial Report Fiscal year ended September 30th 2006.

⁴⁷ City of Biloxi- Comprehensive Annual Financial Report Fiscal year ended September 30th 2006.

⁴⁸ Moody’s Investors Service, Moody's Affirms the City Of Biloxi's (Ms) General Obligation Baa1 Rating with a Stable Outlook, August 11, 2006.

interest payment than previous capital improvement bonds. It may also be more difficult to sell as much bonded indebtedness as the city needs to complete repairs.

- *Waveland*

Hurricane Katrina destroyed Waveland's property tax base, as well as the city's sales tax base. Katrina caused more than \$80 million dollars in expenses, including damage to public infrastructure and debris cleanup.⁴⁹ Among the damaged infrastructure was the city's financial accounting system and its computers. Therefore Waveland cannot provide the financial and statistical data to demonstrate the impact of Katrina. All their financial documents are gone. However, the damage is testimony to the needs that nevertheless exist.

Waveland's recovery is being carried out mainly by volunteer effort. The city counts on volunteers and non-profit organizations to rebuild, and assist with the recovery from the storm. From cleaning debris to rebuilding infrastructure, such as main roads to enable people's basic movements, the city had to use volunteer manpower and donated equipment. The current "Official Web Site of the City of Waveland" was created as a donation by the students of St. Stanislaus College – Our Lady Academy Graphic Design Class of Spring 2006.⁵⁰ Public Works personnel from other municipalities went to Waveland to help with the rebuilding of the City's infrastructure.

When Lowes Building and Construction Supply Company called the city's mayor, Tommy Longo, to offer their condolences, he told them that if they really wanted to help,

⁴⁹ Waveland Mayor Office (2006). *Rising Above the Storm*. Retrieved January 22, 2007 from <http://www.wavelandcity.com/>

⁵⁰ Wavelandcity.com (2006). *History of Waveland*. Retrieved March 12, 2007 from <http://www.wavelandcity.com/>

they should open a store in Waveland, which they did. The store will not only provide discounted building materials so much needed by those trying to rebuild, but also serve as a source of employment for the many who lost their jobs when the storm destroyed their workplace, and will provide a source of sale tax for the city, as well. After the storm, the main focus of the city of Waveland is to get people back into their homes. The city employees are housed in a state park at the edge of Waveland near the beach.

More than six months after the storm, Waveland's city hall was made up of nine mobile bungalows where all the functions of the city were assembled. Thus, in the same little structure are the city hall, the city fire department and police department. In a space cleared around the modules are placed shipping containers that are serving as the city's warehouse. Pictures illustrating this can be found at this website:

<http://www.perryton.org/wavelandsistercity2.htm>.

The city's former PR Director, Kathy Pinn, commented that eight months after the storm, the city of Waveland still has the following needs:

- Funds to keep its employees who are needed for the clean up and the recovery.
- Funds to re-build most of the city's infrastructure destroyed by the storm;
- Funds to replace all water, sewage and gas lines.
- Funds for city government supplies, including manila folders, toilet paper, pencils, pens, in sum, just about any office operating supplies.⁵¹

⁵¹ Proulx, M. (2006, April). Waveland – Reaching out from Ground Zero: What Waveland Needs Eight Months After Katrina. *Gulf Coast News*. Retrieved March 25, 2007 from <http://www.gulfcoastnews.com/GCNnewsKatrinaWavelandNeeds.htm>

Impact & Recovery – One year and beyond, after the disaster

- ***Biloxi***

Biloxi’s recovery is well ahead of other coastal cities affected by Katrina, due in large part to the state law allowing casinos to rebuild on land, within 800 feet of the shore. Before the storm Biloxi took in \$20 million a year in gambling revenue -- more than one-third of the city's budget. One year after the storm, seven casinos have re-opened in Biloxi, signaling a dramatic turnaround for the coastal casino industries. On August 29, 2006, in commemorating the one year anniversary of the storm, the new Beau Rivage Casino re-opened its doors, and in doing so, added more than three thousands jobs and provided the city with an additional source of gaming tax revenues.⁵²

Table – VI: the Major Sources of Income for the city of Biloxi in both percentage (%) & (\$) dollars comparing previous years and FY 2006 to FY 2007 – to show the city recovery effort.

Fiscal Years →	FY 2002/03	FY 2003/04	FY 2004/05			FY 2005/06	Projected 2007
Government Revenue Sources ↓							
Ad Valorem	25%	24%	19%	\$15,599,678	12%	\$16,859,108	\$24,321,715
Gaming	31%	32%	26%	\$20,896,634	9%	\$-	
Sales	18%	19%	15%	\$12,055,750	8%	\$-	
Licenses & Permits	6%	6%	5%	\$3,667,843	3%	\$4,059,907	\$4,380,700
Fines	2%	2%	2%	\$1,241,663	1%	\$1,346,888	\$1,330,000
Charges for Services	2%	2%	1%	\$1,081,843	1%	\$1,124,939	\$9,350,062
Other Intergovernmental	8%	7%	25%	\$20,092,916	(73%) 43%	\$83,596,269 (\$48,995,877)	\$42,033,505
Others	8%	8%	6%	\$5,442,861	23% (6%)	\$6,956,788	\$6,332,943

Source: Table-VI is created with data from various financial statements of the City of Biloxi.

In his State of the City address for 2006, Mayor Holloway said that casino tax revenue, which represents more than one third of the city’s operating budget, is at 83 percent of its

⁵² Schaper, D. (2006, August). Casinos’ Rebound Brings Money, Job to Gulf Coast. *NPR Morning Edition*. Retrieved April 19, 2007 from <http://www.npr.org/templates/story/story.php?storyId=5727148>

pre-storm levels.⁵³ The 2007 projected significant increase in the figure of \$9,350,062 in “Charges for Services” revenue can be explained with the 8,500 storm repair permits issued since Katrina; of which 4,871 were building permits with a total valuation of \$478,582,792.

Table - VII: the Major Expenses for the city of Biloxi in both percentage (%) & (\$) dollars comparing previous years and FY 2006 to FY 2007 - to show the city recovery effort.

Fiscal Years ➔	FY 2002/0 3	FY 2003/0 4	FY 2004/05		FY 2006		Projected 2007
Government Functions ↓							
Public Safety	27%	28%	27%	\$26,922,427	22%	\$27,139,584	\$29,093,349*
Public Works	10%	11%	19%	\$18,802,996	54%	\$63,498,853	\$11,167,688
Capital Projects	33%	28%	20%	\$19,299,416	3%	3,259,444	\$53,203,230
Community Development	4%	5%	4%	\$3,702,265	3%	\$2,248,326	\$4,517,606
General Government	5%	5%	4%	\$4,225,009	4%	4,221,591	\$4,391,701**
Parks & Recreation	5%	6%	5%	\$4,926,209	3&	\$3,766,106	\$4,786,584
Debts Services: principal retirement interest &	5%	8%	13%	\$13,141,393	7%	\$7,574,287	\$7,973,297
Others: Insurance, Bonds, and Notes proceeds	11%	9%	8%	\$7,644,237	4%	\$2,919,036	\$5,506,916

Source: Table-VII is created with data from various CAFR (Comprehensive Annual Financial Report) and other financial statements of each year noted of the city of Biloxi

* This amount was obtained by adding the Police & Fire Departments’ expenditures amount in the City’s Combined Funds Statement for fiscal year 2007⁵⁴

** This amount is the sum of Judicial, Legal, Legislative, Executive, Administration, all of which are listed under the General Government’s expenditures.⁵⁵

⁵³ City of Biloxi – State of the City, August 2006 at <http://biloxi.ms.us/pdf/sotepage1.pdf>

⁵⁴ <http://biloxi.ms.us/PDF/COMFDS2%2006-07xls.pdf>

⁵⁵ <http://biloxi.ms.us/PDF/COMFDS2%2006-07xls.pdf>

The significant decrease in Public Works expenses, coupled with the increase in the Capital Projects in the 2007 projected expenses, indicates that Biloxi is almost done with cleaning up after the storm and is returning to a pre-Katrina financial condition.

The Human Resources division of the City has seen a significant decrease in the number of city employees since Hurricane Katrina impacted Biloxi. The city's employment center prior to Hurricane Katrina was 740 employees, while as of December 2006, the number of employees is 627, a loss of 113 people or approximately 15% of the pre-storm employees.

- *Waveland*

For many of Waveland's residents "one year after the storm, the recovery is slow but steady."⁵⁶ If only they can get the insurance money and the disaster grant, many residents believe that they and their city would have been well ahead on the recovery from Katrina. As a resident of Waveland puts it, "there is no waterfront Casino here ..."⁵⁷ to not only provide the city with source of income to help with the recovery, but also to keep the media spotlight on the city and by doing so, expose and help with the financial difficulties the city is facing in its recovery effort.

⁵⁶ S. Phillips. (2006, April). Waveland Recovery Slow but Steady. *WLOX*. Retrieved April 09, 2007 from <http://www.wlox.com/Global/story.asp?s=4802398>.

⁵⁷ C. Brown. (2005, October). Waveland Mayor: We were wiped off the map Mississippi town 60 percent destroyed as residents struggle to start over. *MSNBC News*. Retrieved April 09, 2007 from <http://www.msnbc.msn.com/id/9591971/>

The other sources of income that contributed to the communities' recovery from Hurricane Katrina

- *Waveland*

The Disaster Mitigation Act of 2000, also called the Robert T Stafford Disaster Relief and Emergency Assistance Act of 2000, stipulates that "... the president may contribute up to 90 percent of the total cost of a mitigation activity carried out in a small impoverished community." (United State Senate, 2005)

Like many smaller communities affected by Katrina, Waveland is struggling to find the money to pay for the 5 to 10 percent local match needed in order to access the federal disaster recovery grant. With the city's property tax and sales tax bases gone in the storm, Waveland is struggling to find its 10 percent match to enable it to get the federal recovery funds. Of the 10 percent, Waveland will be receiving 5 percent from the Mississippi Emergency Management Agency (MEMA) and the remaining 5 percent, which is about \$1.2 million, will have to be provided by the city.

The local match is a roadblock and critical to the recovery, as without it, Waveland is unable to access the federal aid, and this is the main reason for the slow recovery of the city. To assist with this roadblock, Congress has passed a bill which would allow communities to use community block grant money to pay their local share.

According to a Congressional Budget Bulletin (United State Senate, 2005) for Public Assistance, FEMA can fund the repair, restoration, reconstruction, or replacement of state or local government public facilities or infrastructure damaged or destroyed by a disaster. There is a 25% matching requirement, "but the President has the authority to waive part or all of it." (United State Senate, 2005). The failure to use this provision to waive all of

the required matching funds poses an interesting public policy problem. What financial or political reason would there be for failing to give 100% Public Assistance grants to financially devastated areas such as Waveland and the other smaller communities that just do not have any financial means to obtain the required local match?

Another thing the city is facing is that FEMA will only replace the 'blue book' value of the city's heavy equipment, office furniture, and vehicles (excluding patrol cars). As a result, the city is left with a considerable gap between FEMA's assistance grant funding and what the city can actually replace with that level of funding. Consequently, Waveland is applying to every identifiable grant funding source for matching and gap money, and to date the city's official website has a link still asking for funding help (Waveland, 2006).

- ***Biloxi***

As a result of strong cooperation among all of the city's departments, the contracted engineers and architects, and a dedicated team of the FEMA Public Assistance Coordination (PAC), Biloxi was able to obtain the following aid for FY 2006:

- \$148.0 Million in Total Projected Funding
- \$75.0 Million Projected Debris Funding
- \$109.6 Million is currently obligated at State level
- \$58.8 Million in Expenditure Processed at State level
- \$52.1 Million in Katrina Expenditure Reimbursement from FEMA and
- 99% of Project Worksheets approved and waiting for obligation and disbursements.

Table - VIII: Projects by Department

<u>Department</u>	<u>Projected FEMA Funding</u>
Administrative	\$ 931,063
Community Development	\$ 10,277,061
Fire Department	\$ 1,296,555
Parks & Recreation	\$ 8,135,505
Police Department	\$ 1,515,348
Port Division	\$ 25,624,641
Public Safety	\$ 104,366
Public Works	\$ 95,987,518

Source: Table-VIII is from financial statement of the city of Biloxi for the FY 2006 estimated.

The \$95,987,518 for the Public Works department includes about \$75,621,385 in cost of debris clearing.

Table - IX: Projects by Category

<u>Category Description</u>	<u>Projected FEMA Funding</u>
Buildings	\$ 24,450,759
Contents	\$ 2,143,720
Debris Related	\$ 75,621,385
Equipment	\$ 542,988
Emergency/Temporary	\$ 2,310,357
Fields & Parks	\$ 1,041,878
Labor (post-Katrina)	\$ 2,852,254
Piers, Harbors & Bridges	\$ 18,737,004
Roads & Signage	\$ 2,344,723
Sidewalks	\$ 131,453
Vehicles	\$ 2,079,911
Water & Sewer	\$ 14,160,052
Other: Fencing, Site amenities, Fountains, ... etc.	\$ 1,096,888

Source: Table-IX is from financial statement of the city of Biloxi for the FY 2006 estimated

Biloxi also received a \$7 million community disaster loan from the state of Mississippi.

Besides the grant from FEMA, other sources of revenue or income that contributed to the city's recovery include the claims from insurance. The city of Biloxi had, pre-Katrina, about \$40,000,000 in insurance coverage on the city's assets. After disputes and justifications, the city collected \$39,700,000 in claims on its insured assets. About two months prior to the storm, the city bought a 'business interruption policy' to insure its flow of gambling revenues. At the time the policy was acquired some residents criticized Mayor Holloway for wasting money. The critics regarded the \$92,000 annual policy premium as a waste of the city's funds. But Mayor Holloway was vindicated after Katrina, because, thanks to this policy, the city was able to recuperate its storm-based loss of the gaming revenue. As Mayor Holloway put it " ... that \$10 million dollar business interruption policy we bought two months before the hurricane meant that our gaming revenue was actually a little above the pre-Katrina levels."⁵⁸

Progress by May, 2007

- *Biloxi*

According to Biloxi's Mayor, 2007 will be a year of unprecedented reconstruction of city assets. The city's gaming revenues have recovered back to their pre-Katrina levels. Sales taxes are also back to about 85 percent of their pre-storm levels, but it is estimated that the Ad Valorem taxes will be down about 27 percent for fiscal year 2006/07.

⁵⁸ Holloway, quoted at City of Biloxi, (n.d.), *City Finances Show Stability, Signs of Encouragement*. Retrieved April 28, 2007 from <http://biloxi.ms.us/mayor/sotc2007/SOTC-0607pg10.pdf>

The suspension of capital projects has been lifted, and as a result construction on all the city's pre-Katrina's projects has resumed. The hiring freeze, installed after the storm in order to reallocate funds to the recovery effort, has now also been lifted.

Consequently, the city's personnel level is almost back to its pre-storm numbers.

As of mid-June 2007, according to the Biloxi's Comprehensive Annual Financial Report, the city's school enrollment is at 78 percent of its pre-Katrina level. The main actors of the city's economy are excelling and employment in the casino industry is at pre-Katrina levels.⁵⁹

- *Waveland*

It will soon be 2 years since Katrina obliterated the city, and from many reports it sounds and looks like Waveland is on a rather slow path to recovery. Unlike its neighbor Biloxi that has the gaming industry to thank for their speedy recovery, Waveland seems to have been forgotten about. The city government is still struggling to come up with the matching local 5% funds in order to access the federal grant for rebuilding. The city's government is still in trailers and many of Waveland's residents are still trying to find a way to rebuild.

Conclusion

The post-hurricane fates of Biloxi and Waveland tell a cautionary tale. Pre-disaster planning and mitigation can result in the ability to recover, even after a catastrophic event. The inability to adequately mitigate against catastrophe can leave a community without revenue on which to base its recovery. Sales and property taxes are directly affected by natural disasters, but so are the basic industries in which a

⁵⁹ City of Biloxi – Comprehensive Annual Financial Report Fiscal Year ending September 30, 2006.

community's prosperity is based. Communities should invest in adequate threat assessment, emergency preparedness and response capabilities in concert with their major industries. They should also undertake both physical and financial mitigation measures to lessen the damage and thereby speed the recovery of the community...after disaster.

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