

## Section 8 Capability Assessment

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### 8.1 Overview and Purpose of Capability Assessment

Although not required by Disaster Mitigation Act of 2000 or the Interim Final Rule, a capability assessment adds context to a mitigation plan by providing an inventory of a municipality's programs and policies, and an analysis of its capacity to carry them out. These are essential for developing mitigation strategies and actions.

The capability assessment is a review of the City of Galveston's resources in order to identify, review, and analyze what the City is currently doing to reduce losses, and to identify the framework that is in place for the implementation of new mitigation activities. In addition, this assessment will be useful in gauging whether the current local organizational structures and inter-jurisdictional coordination mechanisms for hazard mitigation could be improved, and how.

This local capability is extremely important, because the municipal officials know their own landscape best. Additionally, many of the most critical and effective hazard mitigation strategies and programs, including enforcement of floodplain management, building codes, and land-use planning, require a strong local role to achieve effective implementation.

### 8.2 Methodology

This capability assessment primarily results from research and interviews with City staff. Relevant documents were reviewed related to hazard mitigation, including especially the State of Texas Hazard Mitigation Plan, as well as state and federal sources related to funding, planning, and regulatory capability. Extensive summary information from these sources can be found in Section 5.

For the municipal capability assessment, interviews were conducted. The interviews were held with the City's Planning and Community Development Staff and Department Heads, the City's Director of Municipal Utilities, and the Emergency Management Coordinator, and was targeted to the primary contacts for this planning process. Other municipal staff and outside agencies with relevant expertise – including those in the departments of planning and public works – were also interviewed.

The interviews generally covered the following topics:

- Staff, personnel, and technical capability
- Knowledge of Federal Emergency Management Agency (FEMA) mitigation programs
- Current/ongoing mitigation efforts
- Intra- and inter-governmental coordination
- Land use and regulation
- Floodplain management
- Building code inspection
- Capital improvement
- Land conservation programs

The text of these interviews can be found in Appendix J.

Additionally, a web-based survey was conducted to assess the knowledge of the general public in matters related to hazard mitigation. This is a key capability issue, as many of the most crucial mitigation decisions are made by members of the public. The questions were vetted by the Hazard Mitigation Plan Stakeholder Committee, and the survey went live in May 20, 2010. As of the completion of the survey period, the survey has drawn more than 100 responses, enough to allow for meaningful conclusions to be drawn. The text of this survey can be found in Appendix J.

## 8.3 Federal and State Regulations, Plans, and Funding Sources

### 8.3.1 Inventory of Regulations, Plans and Funding Sources

This section, including Table 8.3-1, provides summary information regarding selected federal and state regulations, plans, and sources of funding that are relevant to mitigation projects and activities. For additional information regarding funding availability and eligibility, and other details about and evaluations of these regulations, plans, and funding sources, see Section 5.

Also, see Table 8.4.1-1 for further discussion and evaluation of key regulations and minimum standards that are implemented at the municipal level.

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**Table 8.3-1**  
**Summary of Selected State and Federal Regulations, Plans, and Funding Sources**  
**Relevant to Natural Hazard Mitigation**

<b>Summary of Selected State and Federal Regulations, Plans, and Funding Sources</b>					
<b>Relevant to Natural Hazard Mitigation</b>					
<b>Title</b>	<b>Program Type</b>	<b>Federal, State, or Local</b>	<b>Administered By</b>	<b>Eligible Recipient</b>	
				<b>City</b>	<b>Other Agency</b>
FEMA Public Assistance (PA) Grants	Funding	Federal	Texas Division of Emergency Management	X	X
FEMA Hazard Mitigation Grant Program (HMGP)	Funding	Federal	Texas Division of Emergency Management	X	X
FEMA Pre-Disaster Mitigation (PDM) Grants	Funding	Federal	Texas Division of Emergency Management	X	
FEMA/National Flood Insurance Program (NFIP) Repetitive Flood Claims (RFC) Grants	Funding	Federal	Texas Water Development Board	X	
FEMA/NFIP Severe Repetitive Loss (SRL) Grants	Funding	Federal	Texas Water Development Board	X	
FEMA/NFIP Flood Mitigation Assistance (FMA) Grants	Funding	Federal	Texas Water Development Board	X	
Housing and Urban Development Community Development Block Grants (CDBG)	Funding	Federal	Texas Department of Rural Affairs	X	
US Army Corps of Engineers (USACE) Grants	Funding	Federal	USACE	X	
Shore Protection Program	Funding	State	Texas General Land Office	X	X
Farmland Preservation Program	Funding	State	Texas General Land Office	X	X
Beach Maintenance Reimbursement Fund	Funding	State	Texas General Land Office	X	X
Coastal Erosion Planning and Response Program (CERPA)	Funding	State	Texas General Land Office	X	X
Texas Coastal Impact Assistance Program	Funding	Federal	Texas General Land Office	X	X

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Summary of Selected State and Federal Regulations, Plans, and Funding Sources Relevant to Natural Hazard Mitigation					
Title	Program Type	Federal, State, or Local	Administered By	Eligible Recipient	
				City	Other Agency
Texas Coastal Management Program (CMP)	Funding	Federal	Texas General Land Office	X	X
Galveston Bay Estuary Grant Program	Funding	State	Texas Commission on Environmental Quality	X	X
Statewide Transportation Enhancement Program	Funding	Federal, State	Texas Department of Transportation	X	X
Nonpoint Source Grant Program	Funding	State	Texas Commission on Environmental Quality	X	X
Clean Water State Revolving Fund Loan Program	Funding	State	Texas Water Development Board	X	X

For many federal grants, the non-federal share can be borne by the state as *grantee*, the recipient community as *sub-grantee* or in some cases, the property owner who benefits from the project. In the case of property acquisitions intended to remove properties that experience repetitive flood losses, the non-federal share is typically covered by the property owner, who accepts the federal share of 75% and documents the lost equity as the non-federal share. This can serve as a disincentive to participation.

### 8.3.2 Implications of TDEM Capabilities on Local Hazard Mitigation Efforts

State capabilities for hazard mitigation have an impact on the efficacy of local planning and implementation. In accordance with the State of Texas Hazard Mitigation Plan (SHMP), the focus of Texas’s statewide hazard mitigation effort is centered in the TDEM, with floodplain management responsibilities located under the authority of the Texas Water Development Board (TWDB).

The SHMT is lead by the Texas Division of Emergency Management (TDEM), and is comprised of representatives from a variety of state agencies. The following table lists the agencies and their responsibilities, as applicable to hazard mitigation.

**Table 8.3.2-1**  
**State Hazard Mitigation Team**  
 (Source: State Hazard Mitigation Plan)

<b>State Hazard Mitigation Team</b>		
<b>Agency</b>	<b>Abbreviation</b>	<b>Hazard Mitigation Responsibilities</b>
Texas Division of Emergency Management	TDEM	To formulate the state’s mitigation policies pursuant to the principles and protocols of the National Incident Management System (NIMS), and to ensure capability for integration with the National Response Framework; to these ends, the state views mitigation in terms of pre-event and post-event mitigation
General Land Office	GLO	Coordinates coastal mitigation issues such as prevention of beach erosion and improvement of the quality of beaches
Railroad Commission of Texas	RRC	Provides expertise regarding the location and movement of crude petroleum products within Texas that could affect mitigation proposals
Texas Department of Rural Affairs	TDRA	Provides policy and possible resources to local governments in an effort to prevent households from locating or relocating into flood-prone areas or zones.  Administers a grant program to assist local governments with the 25% match for approved HMGP projects.

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<b>State Hazard Mitigation Team</b>		
<b>Agency</b>	<b>Abbreviation</b>	<b>Hazard Mitigation Responsibilities</b>
Texas Department of Insurance	TDI	<p>Educates insurance policyholders on methods and types of products to reduce losses, claims, lower insurance premiums, and increase the availability of insurance.</p> <p>Works with the manufacturing industry to develop and promote better construction products (e.g., roofing materials, window protection, storm clips, and other safety products).</p> <p>Works with local governments to develop a windstorm resistant building code and assists those entities in inspecting structures for compliance.</p> <p>Develops and distributes to Texans warning and mitigation brochures that provide key information in response to threats and protection against damage from hurricanes, floods, tornadoes, frozen pipes, thunderstorms, lightning, hail, and wildfires.</p>
Texas Department of Transportation	TxDOT	Provides engineering assistance (i.e. department standards, specifications, or advice on roadway maintenance) to local governments related to the Hazard Mitigation Grant Program (HMGP)
Texas Forest Service	TFS	<p>Provides technical assistance to local governments for fire protection in rural areas.</p> <p>Assists rural communities in wildfire prevention and adoption of mitigation measures such as the use of fire hydrants.</p>
Texas Parks and Wildlife Department	TPWD	Reviews mitigation proposals to assess impact on the environment and wildlife in Texas.
Texas Water Development Board	TWDB	<p>Provides technical assistance to local jurisdictions on floodplain management.</p> <p>Provides matching grants for feasibility level flood protection-planning studies.</p> <p>Provides funding for flood control planning projects</p> <p>Administers the Flood Mitigation Assistance Program and Severe Repetitive Loss Program</p>
Lower Colorado River Authority	LCRA	The sponsoring agency for the Texas Floodplain Managers Association, a private non-profit group with the goal of furthering the education, proficiency, and standing of floodplain managers in Texas, and public knowledge/involvement in floodplain management at the local level.

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State Hazard Mitigation Team		
Agency	Abbreviation	Hazard Mitigation Responsibilities
Texas Municipal League Inter-Governmental Risk Pool (non-voting member)	TML	Provides Texas municipalities and other units of local government with a stable source of risk financing and loss prevention services at the lowest cost consistent with sound business practices.
Emergency Management Association of Texas	EMAT	Provides local government input through a rotating member assignment
Texas Geographical Society	TGS	A membership-based non-profit corporation created to unite public, private, and nonprofit resources to improve government services and education through collaborative development and use of digital geographic data and related technologies. The TxGS uses geographic data and Geographic Information System (GIS) technologies to help improve government services and education in and around Texas
Texas Tech University Wind Science and Engineering Research Center	TTU WISE	The WISE Research Center at Texas Tech University is focused on wind research, education and information outreach. The Center develops information on windstorm disaster mitigation and other wind-related subjects.
National Storm Shelter Association	NSSA	The National Wind Storm Association determines the quality of manufactured and constructed storm shelters for protecting people from injury or loss of life from the effects of tornadoes, hurricanes and other devastating natural disasters.

“The GDEM Mitigation Section provides plan development assistance to local jurisdictions upon request. Providing planning assistance is a daily affair as much of it is done via telephone calls and emails. GDEM Mitigation Section developed the *DEM 21-Mitigation Handbook*. *DEM 21* provides information and guidance on the hazard mitigation process and mitigation program activities in Texas to include participation in state and federally funded mitigation opportunities. The handbook also serves as a guide for developing hazard analysis, how to develop local mitigation action plans, how to establish and maintain a viable, and effective mitigation program to reduce vulnerabilities, risks, and human suffering caused by hazards. The *DEM 21* discusses the following topics: (1) why mitigation is important; (2) building partnerships to include establishing a hazard mitigation team; (3) the hazard analysis process; (4) developing mitigation goals and strategies; and (5) developing a comprehensive MAP. It is an excellent one of a kind mitigation handbook design for Texans. The *DEM 21* is available for download from the GDEM website:

<http://www.txdps.state.tx.us/dem/pages/index.htm>.”

Historically, TDEM has had limited staffing to address the hazard mitigation needs of the state. Additional staff is needed to expand the ability of the state to support local and county mitigation planning needs. This additional staffing should have the necessary expertise for the timely

development of hazard mitigation plans and to facilitate the implementation of risk reduction projects statewide.

## 8.4 Capability Assessment for the City of Galveston

Texas has 254 counties— the most nationwide. Each county runs on Commissioners' Court system consisting of four elected commissioners (one from each of four precincts in the county, roughly divided according to population) and a county judge elected at large from the entire county. County government runs similar to a "weak" mayor-council system; the county judge has no veto authority, but votes along with the other commissioners.

Although Texas permits cities and counties to enter inter-local agreements to share services, the state does not allow consolidated city-county governments, nor does it have metropolitan governments. Counties are not granted home rule status; their powers are strictly defined by state law. The state does not have townships— areas within a county are either incorporated or unincorporated. Incorporated areas are part of a municipality. The county provides limited services to unincorporated areas. Municipalities are classified either "general law" cities or "home rule". A municipality may elect home rule status once it exceeds a population of 5,000 with voter approval. Municipal elections are nonpartisan, as are elections for school boards and community college districts.

Municipal home rule originated in the United States during the Progressive Era of the early twentieth century. It enables voters to adopt a home rule charter that acts as the city's basic governing document over local issues; however, state law continues to prevail over statewide concerns. The goal of municipal home rule is to facilitate local control and minimize state intervention into municipal affairs.

After the 1900 Hurricane, Galveston originated the city commission form of city government (which became known as the "Galveston Plan"), although the City has since adopted the council-manager form of government. Galveston's City Council serves as the City's legislative branch, while the city manager works as the chief executive officer and the municipal court system serves as the city's judicial branch. The City Council and Mayor promote ordinances to establish municipal policies. The Galveston City Council consists of six elected positions, each derived from a specified electoral district. Each City Council member is elected to a two year term, as is the Mayor. The City Council appoints the city manager, the city secretary, the city auditor, the city attorney, and the municipal judge. The City's tax collector is determined by the City Council and is outsourced to Galveston County. The city manager hires employees, promotes development, presents and administers the budget, and implements City Council policies.

The following language is from the City of Galveston's municipal charter:

Section 4. General Powers of the City. The City is and shall continue to be a Home Rule City, with full power of local self-government, including the right to amend this Charter, as provided by the Constitution and laws of this State. It shall have all the powers granted to cities by the Constitution and laws of the State of Texas, together with all the implied powers necessary to carry into execution such granted powers. It may use a corporate seal; may sue and be sued; may contract and be contracted with; may cooperate with the government of the State of Texas or any agency or political subdivision thereof, or with the Federal government or any agency thereof, to accomplish

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any lawful purpose for the advancement of the interest, welfare, health, morals, comfort, safety, and convenience of the City and its inhabitants; may acquire property within or without its corporate limits for any municipal purposes in fee simple, or in any lesser interest or estate, by purchase, gift, devise, lease or condemnation, and subject to the provisions of this Charter, may sell, lease, mortgage, hold, manage, and control such property as may now or hereafter be owned by it; may pass ordinances and enact such regulations as may be expedient for the maintenance of the good government, order, and peace of the City, and the welfare, health, morals, comfort, safety and convenience of its inhabitants; and shall have and may exercise all municipal powers, functions, rights, privileges and immunities of every kind and nature whatsoever, subject only to the limitations imposed by the State Constitution, the State Laws, and this Charter. The enumeration of particular powers by this Charter shall not be deemed to be exclusive and, in addition to the powers enumerated or implied herein, it is intended that the City shall have and may exercise all powers that, under the Constitution and Laws of this State, it would be competent for this Charter specifically to enumerate.

Based on the above excerpt from the City’s charter, the City has the authority to enact policies and ordinances within their jurisdiction.

### 8.4.1 Relevant Ordinances and Policies

This section, as illustrated in Table 8.4.1-1, provides a list of City of Galveston ordinances and policies that have the potential to affect and/or promote mitigation within the City. Understanding which ordinances and policies affect mitigation in the City is a helpful component to mitigation activities. These include zoning, floodplain management, and building code enforcement.

**Table 8.4.1-1**  
**City of Galveston Ordinances, Plans and Policies Relevant to Hazard Mitigation**  
(Source: Galveston Planning and Community Development Department)

<b>Galveston Ordinances, Plans and Policies Relevant to Hazard Mitigation</b>		
<b>Ordinance/Plan/Policy</b>	<b>Description</b>	<b>Enforcement</b>
Zoning Ordinances	The means by which land use is controlled and public health, welfare and safety is protected. Allows the municipal government to control and limit the type and density of development	Department of Planning and Community Development
Subdivision Ordinance	Regulates the development of housing, commercial, industrial and other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development	Department of Planning and Community Development
Building Codes, Permitting and Inspections	Regulates construction standards and ensures enforcement of City’s adopted standards. Galveston currently enforces the International Building Code (IBC) from 2006. The 2009 Update has been adopted, and enforcement will begin in August 2010.	Department of Planning and Community Development

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<b>Galveston Ordinances, Plans and Policies Relevant to Hazard Mitigation</b>		
<b>Ordinance/Plan/Policy</b>	<b>Description</b>	<b>Enforcement</b>
Flood Damage Prevention Ordinance	Provides the framework for action regarding the corrective and preventative measures in place to reduce flood-related impacts. Revisions to the ordinance are under consideration, and could go into effect later in 2010.	Department of Planning and Community Development, Certified Floodplain Manager
Stormwater Management Plan	Designed to address flooding associated with stormwater runoff, and is focused on design and construction measures that are intended to reduce urban flooding	Public Works Department, Municipal Utilities Department
Water and Sewer Master Plans	The blueprints for future development of the City's water and sewer systems, and considers prevention of failures to function of both systems	Municipal Utilities Department
Hazard Mitigation Plan	The blueprint for how the City intends to reduce the impact of natural and human-caused hazards on residents and assets in the City	Departments of Planning and Community Development and Emergency Management
Emergency Management / Operations Plan	Outlines the responsibilities of those responding to an emergency or disaster and the means by which resources are deployed	Emergency Management Coordinator, Mayor's Office, City Manager's Office
Continuity of Operations / Government Plan	Establishes a clear chain of commence, line of succession and plans for backup or alternate facilities in case of an extreme emergency or disaster	Emergency Management Coordinator, Mayor's Office, City Manager's Office
Evacuation / Re-entry Plan	Establishes the process by which the City will evacuate citizens and allow for re-entry after a hazard event (particularly a tropical event)	Emergency Management Coordinator, Mayor's Office, City Manager's Office
Comprehensive Plan	Establishes the overall vision for the City, and helps to guide municipal decision-making	Department Planning and Community Development
Capital Improvement Plan	Guides the scheduling of spending on Capital Improvement Projects (CIP), and serves as a mechanism to guide future development. <i>Note: This planning effort has lapsed in the aftermath of Hurricane Ike, but will be re-instituted as soon as possible.</i>	Public Works Department, Municipal Utilities Department

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<b>Galveston Ordinances, Plans and Policies Relevant to Hazard Mitigation</b>		
<b>Ordinance/Plan/Policy</b>	<b>Description</b>	<b>Enforcement</b>
Historic Preservation Plan	Guides the City's efforts to preserve historic assets throughout the City	Department of Planning and Community Development, Historic Preservation Officer
Historic Structure Disaster Response Plan	Provides information on how the City's historic assets will be cared for in the aftermath of a disaster, and provides information to property owners for ways to protect and repair their historic properties	Department of Planning and Community Development, Historic Preservation Officer
Coastal Zone Management Plan	As part of the State's plan, provides information for the preservation and protection of coastal zones; works in conjunction with the City's beach/dune preservation ordinances	Department of Planning and Community Development, Texas General Land Office

In the aftermath of Hurricane Ike, the City's Planning and Community Development department determined that more stringent building codes and more stringent provisions to the City's flood damage prevention ordinance would serve to mitigate Ike-type damages to future structures. Having experienced flood-related damages to more than 75% of the City's building stock, the City learned first-hand the value of codes and ordinances towards effective community mitigation. To that end, the department recommended that the City adopt the most recent version of the IBC, and that modifications be made to the flood damage prevention ordinance that would mandate freeboard for all new construction. The IBC-09 will be enforced beginning in 2010, as should any modifications to the flood damage prevent ordinance.

### 8.4.2 Fiscal Capacity

This section, as illustrated in Table 8.4.2-1, provides a list of local funding sources generally available to the City, with proper approvals, and determines if that funding source can be used to affect or promote mitigation within the jurisdiction. Understanding where potential funding sources are available to the City is a helpful component to mitigation activities.

**Table 8.4.2-1**  
**City of Galveston Funding/Financing Sources Relevant to Hazard Mitigation**  
(Source: City of Galveston)

<b>Galveston Funding/Financing Sources Relevant to Hazard Mitigation</b>	
<b>Financial Resources</b>	<b>Accessible or Eligible to Use</b>
General Fund	Yes
Development Fees	Yes
CDBG	Yes
Capital Improvements Project Funding	Yes
Authority to Levy taxes for Specific Purposes	Yes

<b>Galveston Funding/Financing Sources Relevant to Hazard Mitigation</b>	
<b>Financial Resources</b>	<b>Accessible or Eligible to Use</b>
Fees for Water and Sewer Service	Yes
Impact Fees for Homebuyers or Developers for New Developments/Homes	Yes
Federal Hazard Mitigation Grants	Yes (once the plan is adopted and approved by FEMA)

In order for a department to implement a project, the project's costs must be compatible with the City Finance Department's purchasing and procurement policies. One of the policies is that the project's funding source(s) must be identified. In general, City departments can apply for grants without seeking director City Council approval to apply, unless the grant itself dictates otherwise. City Council must approve acceptance of the grant, however, and has final approval over all funding sources, including donations and in-kind contributions.

Generally, the following conditions must be met in order for a project to be considered for City funding: Projects must have grant funding available that has a cost share that may be satisfied by in-kind donations or services, or the department must have funding in their approved budget available for use towards the cost share. Additionally, the City may participate in projects that affect county, state or federal infrastructure, including roads and drainage infrastructure.

NOTE: As this plan was being developed, the City was preparing its annual budget for FY-11. As of July 2010, the City is facing an estimated general fund shortfall of at least \$5M. There is no doubt that this shortfall will negatively impact the City's ability to perform any mitigation project that requires use of general funds, or for which the nonfederal cost share could not be satisfied through in-kind contributions.

### 8.4.3 Technical, Administrative, and Regulatory Capacity

This section provides a review of the administrative and technical resources within the City's departments to determine if all of the necessary resources are available to Galveston to engage in mitigation planning processes. Table 8.4.3-1 indicates potential resource needs, and indicates whether the City currently has staff with that expertise or available outside contractors.

**Table 8.4.3-1**  
**City of Galveston Administrative and Technical Capacity**  
(Source: City of Galveston)

<b>Galveston Administrative and Technical Capacity</b>		
<b>Staff/Personnel Resources</b>	<b>On Staff</b>	<b>Department/Agency</b>
Planner(s) or engineer with knowledge of land development and land management practices	Yes	Public Works Department /Department of Planning and Community Development
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Public Works Department / City Manager's Office

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<b>Galveston Administrative and Technical Capacity</b>		
<b>Staff/Personnel Resources</b>	<b>On Staff</b>	<b>Department/Agency</b>
Planners or engineer(s) with an understanding of natural and/or human-caused hazards	Yes	Public Works Department / Department of Planning and Community Development
Certified Floodplain Manager	Yes	Department of Planning and Community Development
Surveyors	No	Outsourced when services required
Staff with education or expertise to assess the community's vulnerability to hazards	Yes	Public Works Department / Department of Planning and Community / Fire Marshal's Office
Personnel skilled in GIS and/or Hazards US	Yes	Public Works Department / Department of Planning and Community Development
Historic Preservation Specialists	Yes	Department of Planning and Community Development
Emergency Management Coordinator	Yes	City Manager's Office (when no declared state of emergency declaration is in effect) Mayor's Office (when state of emergency is declared)
Emergency Response Team	Yes	Core City Staff, as identified in EOP

### **Intra- and Inter-Jurisdictional Coordination**

In general, the City has good working relationships with on-island and off-island partners. In particular, the City works often and well with the following entities:

- The Texas Historic Commission, who aids in the identification and preservation of the City's historic assets
- The Texas Commission on Environmental Quality, who works with the City's Municipal Utilities Department to ensure the City maintains regulatory compliance
- The US Environmental Protection Agency, who – in conjunction with the TCEQ – also aids the City in ensuring maintenance of regulatory compliance
- Galveston County, who works with the City to provide support and resources wherever possible, including by providing EMS services to the City

### **Regionalization**

As a barrier island community, the City works closely with its mainland partners for regional activities. For example, all evacuation activities are planned and coordinated at the regional level. Without regional coordination, evacuation of the Island would be almost impossible to do with any effectiveness.

The City also joins with its regional partners to form the Beach Erosion Task Force, which seeks to ensure that activities are coordinated to limit the possibility of erosion from man-made activities wherever possible, and that erosion-control activities are coordinated. The City also participates in regional funding of lobbyist and engineering studies, as these activities are more effective at a regional level than at the municipal level.

Regarding utilities, the City's potable water supply is purchased from an off-island regional provider. The City also works with the Harris-Galveston Subsidence District, and the Region H Water Planning Group under the Texas Water Conservation Task Force.

Finally, the City belongs to the Houston-Galveston Area Council, which provides services and funding to local member governments.

### **Land Use Planning and Regulation**

The City maintains and enforces stringent zoning codes and regulations. The following excerpt is from the City's adopted and enforced zoning regulations:

The Zoning Regulations and the Districts as herein established have been made in accordance with a Comprehensive Plan for the purpose of promoting the health, safety, morals, for the protection and preservation of places and areas of historical and cultural importance and significance, and for the general welfare of the public and mainly the residents of the City. They have been designed to regulate and restrict the height, number of stories and size of buildings and other structures, the percentage of lot that may be occupied, the size of the yards, courts and other open spaces, the density of population and the location and use of buildings, structures and land for business, residence and other purposes; and in case of designated places and areas of historical and cultural importance, to regulate and restrict the construction, alteration, reconstruction, or razing of buildings and other structures.

### **Floodplain Management**

As a participant in the National flood Insurance Program, the City is required to adopt and enforce the minimum floodplain management standards put forth by the NFIP, which it does. In the aftermath of Hurricane Ike, the City is seeking ways to aggressively enforce the current ordinance and is considering ways to strengthen the ordinance. In addition, they are preparing to receive revised FIRMs from FEMA, which should be issued in 2011.

The City's last Community Assistance Visit occurred just prior to Ike's landfall. As of the development of this plan, information from that visit was still pending.

### **Building Code Enforcement**

The City has a trained code enforcement staff, knowledgeable in the codes and ordinances they are charged with enforcing. The City staff actively enforces the applicable codes and ordinances.

### **Economic Development Planning**

The City does not maintain a separate economic development staff or plan, though economic development is addressed in the Comprehensive Plan. Instead, economic development is handled primarily through two on-island partners – The Galveston Chamber of Commerce and the Galveston Economic Development Partnership. These two non-profit entities provide economic development planning and services City-wide to both large and small businesses.

### **Capital Improvements Planning**

While the City’s Public Works Department is responsible for Capital Improvement (CIP) planning and projects, projects and plans for all departments are considered and contained within the plan. Projects are determined based on municipal need, with prioritization based on recommendations by City Staff and City Council approval. Throughout the project identification and implementation process, consideration is given to hazard issues. In the aftermath of Hurricane Ike, many of the identified CIP projects were reconsidered or redesigned, to ensure that the project would provide the best possible protection from future hurricanes. For example, Lift Station #1, which had been identified for rehabilitation prior to Ike, was reconsidered and redesigned to ensure protection to the 500-year flood elevation.

### Land Conservation

There is no formal land conservation effort in the City at this time. Land use is addressed as part of the City’s Comprehensive Plan, but no effort specifically addresses land conservation.

## 8.4.4 Overview of Relevant Statewide Mandatory Minimum Standards Related to Local Ordinances and Policies

Texas practices home rule municipal government, meaning that much authority is given to municipalities regarding policies and ordinances. The State does have some policies that impact municipalities, however. These are listed in Table 8.4.4-1 below.

**Table 8.4.4-1**  
**State of Texas Policies that Impact Municipal Hazard Mitigation Efforts**  
(Source: State of Texas Hazard Mitigation Plan)

<b>State of Texas Policies that Impact Municipal Hazard Mitigation Efforts</b>	
<b>Policy</b>	<b>Floodplain Management</b>
Description	House Bill 1018 requires Texas cities and counties to join the NFIP. The 77th Legislature of the State of Texas amended Subchapter I, Chapter 16, Water Code, by adding Section 16.3145 to read as follows: “The governing body of each city and county shall adopt ordinances or orders, as appropriate, necessary for the city or county to be eligible to participate in the National Flood Insurance Program...not later than January 1, 2001.”  The State has charged the Texas Water Development Board as the state agency responsible for enforcement of this provision.
<b>Policy</b>	<b>Building Codes</b>
Description	The State has no formal mandate to adopt building codes, but does strongly recommend that municipalities adopt IBC.
<b>Policy</b>	<b>Critical Area Protection</b>
Description	The Texas Water Code, which is part of the Texas Administrative Code, requires that municipal utilities consider critical area protection in all infrastructure projects.

## 8.4.5 Local Capacity

As previously described, capability at the municipal level was assessed through the use of interviews, augmented by research into other sources. The interviews were targeted to the primary contacts for this Hazard Mitigation Plan (those who comprise the HMPSC). Others with relevant knowledge were questioned as well, including those in the departments of planning, public works, and emergency management.

The full text of the interview questions are contained in Appendix J

### **Staffing and Personnel Capability for Hazard Mitigation**

Overall staff is well-versed in hazard mitigation and efforts to prevent future damages. Department heads indicated that this was particularly as a result of Ike, where a great many staff members learned a great deal about mitigation, most out of necessity. City Staff currently has the knowledge to apply to prevention of future damages, regardless of enforcement ability. Ike contributed to staff's ability to manage and apply for federal assistance, and staff has learned how to better manage the federal assistance process and to recognize mitigation opportunities.

### **Building Code Enforcement**

Department heads reported that new construction is better monitored and enforced than existing construction, as the requirements are easier to apply to new construction and fewer opportunities for exemptions exist. Many of the City's structures (commercial and residential) are grandfathered, and so enforcement is to previous standards until the structure is substantially damaged or improved.

### **Floodplain Management**

Department heads reported confidence in the City's floodplain management activities. All revisions to the ordinance and requests for variance are heard by the Building Board of Adjustment, which is comprised of builders, contractors, engineers, architects and City staff. The board has granted a single variance since the flood damage prevention ordinance went into effect, and is currently considering revisions to the ordinance that would result in better flood protection.

### **Coordination with Partners**

Department heads reported successful partnerships, long-term with island partners. Among the partners cited were

- Galveston Alliance of Island Neighborhoods
- Texas A&M University – Galveston
- Galveston Historic Foundation
- Galveston Economic Development Partnership
- Galveston Chamber of Commerce
- Galveston Housing Authority

## 8.4.6 Resident Survey

To assess the public's knowledge of hazard mitigation and mitigation opportunities, and to gather information regarding the public's mitigation priorities, a web-based survey was made available to the public. This survey was introduced to the public at the City's annual Hurricane Open House and through posting on the City's website, inviting participation through a link. In addition, paper copies of the survey were made available at the Open House. Following is a summation of the results of that survey.

The full text of the survey can be found in Appendix J.

### **Survey Results Summary**

A total of 116 people completed the survey, between May and July 2010. The majority of respondents were over aged 60, were female homeowners who reside in Galveston year-round, and who have at least some post-graduate education.

Of the 116 respondents, 98% reported that they have either experienced or been impacted by a disaster. The most common disaster reported was hurricanes and/or flooding. The overwhelming majority of respondents describe themselves as either "concerned", "very concerned", or "extremely concerned" about the possibility of Galveston being impacted by a disaster.

### **Greatest Hazard Threat to Galveston**

Figure 8.4.6-1 shows the hazards that respondents consider to be the greatest threat to Galveston.

**Figure 8.4.6-1**  
**Resident Survey – Greatest Threat to Galveston**  
 (Source: Galveston Resident Survey, 2010)

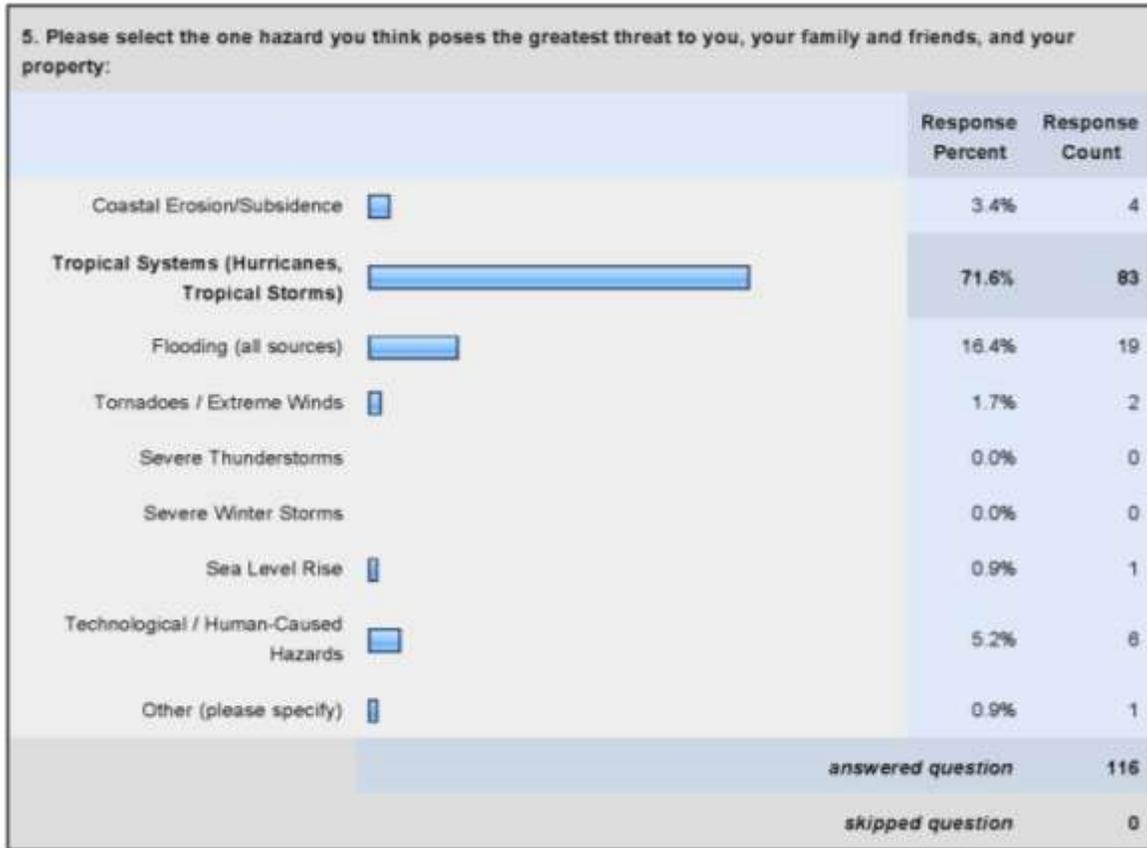


As is evident in the graph, the vast majority of respondents consider tropical systems and flooding to be the most significant threats to Galveston. Coastal erosion/subsidence ranked third, with sea level rise and technological/human caused hazards tying for fourth place. Despite Galveston’s famous Seawall, the majority of respondents believe that hurricanes and flooding remain a significant threat to the City.

**Greatest Hazard Threat to Self, Family, Friends, and Property**

Figure 8.4.6-2 shows the hazards that respondents consider to be the greatest threat to themselves, their family, friends and property. (Note: This question did not differentiate between real property and personal property. Respondents were left to make their own interpretation.)

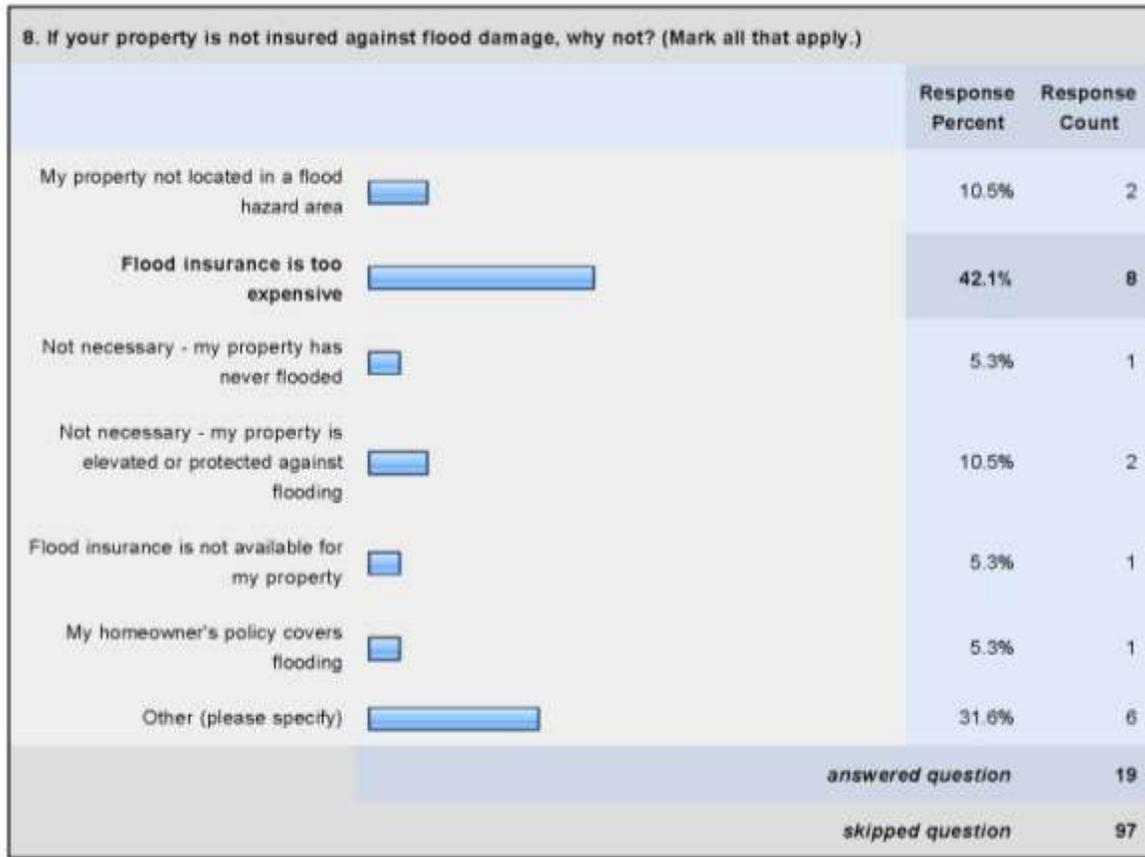
**Figure 8.4.6-2**  
**Resident Survey – Greatest Threat to Self, Family, Friends and Property**  
 (Source: Galveston Resident Survey, 2010)



Once again, an overwhelming number of respondents – 88% - expressed concern about the threat from tropical systems and flooding. In this instance, technological and human caused hazards ranked third, with coastal erosion/subsidence coming in fourth. This indicates that respondents are very aware of their vulnerable location on a barrier island.

72% of respondents reported that their property was located in a Special Flood Hazard Area, while almost 9% stated that they did not know whether or not their property was located in an SFHA. When asked if they had an active flood insurance policy on their property, more than 83% of respondents indicated in the affirmative. Those who do not have flood insurance were asked why they did not. Their answers appear in Figure 8.4.6-3 below.

**Figure 8.4.6-3**  
**Resident Survey – Reasons for Not Having Flood Insurance**  
 (Source: Galveston Resident Survey, 2010)



While the majority of respondents believe that flood insurance is too expensive, a good many indicated that they did not need flood insurance because their property has been mitigated against flooding, making flood insurance unnecessary.

A troubling percentage of respondents believe that flood insurance is not available for their property. These results should be considered in future public information and education efforts.

**Mitigation Efforts**

Respondents were asked about the type of mitigation projects they believe to be most effective. 105 respondents were asked to choose from six categories of actions; those categories and the responses are in Table 8.6.4-1 below.

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**Table 8.4.6-1**  
**Resident Survey – Most Effective Mitigation Actions**  
(Source: Galveston Resident Survey, 2010)

<b>Resident Survey – Most Effective Community Mitigation Actions</b>		
<b>Type of Action</b>	<b>Response Percent</b>	<b>Response Number</b>
<b>Prevention</b> – Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open /green space preservation, and floodplain management regulations.	15.2%	16
<b>Property Protection</b> – Actions that involve the modification of existing buildings to protect them from a hazard, or removal from the hazard area. Examples include acquisition, relocation, elevation, structural modifications/retrofits, and storm shutters.	13.3%	14
<b>Natural Resources Protection</b> - Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems. Examples include floodplain management, habitat preservation, slope stabilization, wetlands restoration, and dune restoration and management.	21%	22
<b>Structural Projects</b> – Actions intended to lessen the impact(s) of hazard(s) by modifying the natural progression of the hazard(s). Examples include dams/levees/seawalls, detention/retention basins, retaining walls, and storm sewers.	33.3%	35
<b>Emergency Services</b> - Actions that protect people and property during and immediately after a hazard or disaster event. Examples include warning systems, evacuation planning, emergency response training, and protection of critical facilities or systems.	9.5%	10
<b>Public Education and Outreach</b> - Actions to inform citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach projects, school education programs, handout materials, and demonstration events.	7.6%	8

Finally, respondents were asked for their opinion on the types of mitigation projects that would be most beneficial to both Galveston and to their personal property. Responses included the following suggestions, reprinted here unaltered and unedited:

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- “Less development; protection of wetlands and marshes:
- “Flood gates at Galveston ship channel and San Louis Pass”
- “Re-evaluate building codes or standards. Review Dade County Florida’s regulations for guidance. Become very strict on enforcing codes and regulations affecting vacant buildings. Seriously evaluate the ‘Ike Dike’ concept.”
- “Finding ways to lessen wave action on coastline”
- “Homes need to be elevated. An Ike Dike may make sense. We certainly need to help preserve wetlands.”
- “I live in Galveston. To get away from the threat of natural disasters, I would have to move.”
- “Maintain property according to windstorm standards & developing a citywide emergency response plan for restoration of services are important, as well as wetlands protection and building density in flood areas.”
- “Tear down all unmitigated property now.”
- “See Long-Term Recovery Committee Plan.”
- “Police and 1<sup>st</sup> responders need to be safe 1<sup>st</sup>, then they need to protect our property until we are allowed to see it.”
- “No, you can’t stop hurricane/storm surges, just put things up HIGHER. ALL houses on slabs should be by law RAISED, and CAR PARKING also to mitigate the hundreds/thousands of car insurance claims after flooding. Those vehicle loses raises car insurance costs for everyone here.”
- “Require a free board and elevations.”
- “Remove the debris from the drainage ditches.”
- “Harden power & water sources against storms.”
- “If it means more zoning or inspections from the city – no.”
- “Convincing people that they need to leave when there is a hurricane – the rita evacuations has made many people more afraid of evacuating than of staying.”
- “Seawall improvements.”
- “Plan for aftermath.”
- “Coastal beach nourishment.”

These suggestions were taken into consideration in the development of the Mitigation Goals, Objectives, and Actions detailed in Section 9.

## 8.5 Current and Completed Hazard Mitigation Programs and Projects

This section provides a review of the completed hazard mitigation projects or programs and provides a description of potential or in-process projects or programs and the agency or agencies that the City worked with or is working with to complete the projects.

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**Table 8.5-1**  
**On-going and Completed Hazard Mitigation Programs and Projects**  
(Source: City of Galveston)

<b>On-going and Completed Hazard Mitigation Programs and Projects</b>		
<b>Program or Project</b>	<b>Description</b>	<b>Responsible Department</b>
Hazard Mitigation Plan	The City is currently in the process of completing a single-jurisdiction Multi-Hazard Hazard Mitigation Plan.	City Manager's Office, Department of Planning and Community Development, Emergency Management Coordinator
Public Education	City conducts annual Hurricane Open House for public information and education	Mayor's Office, Department of Planning and Community Development, Emergency Management Coordinator
Install Emergency Generator at Galveston City Hall	Project in process	Public Works Department
Install Emergency Generator at McGuire Dent Recreation Center	Project in process	Public Works Department
Install Emergency Generator at Fire Station #2	Project in process	Public Works Department
Install Emergency Generator at Fire Station #7	Project in process	Public Works Department
Install Emergency Generator at Fire Station #8	Project in process	Public Works Department
Acquisition of 60+ substantially damaged structures on West End	Project in process	Public Works Department
Reconstruction of Main Waste Water Treatment Plant	Project in design phase	Public Works Departments
Rehabilitation of Sewer Lift Station #1	Project in design phase	Public Works Departments
Development of ordinance revisions	Awaiting NEPA coordination activities	Department of Planning and Community Development
Development of Standard Construction Specs and Details	Awaiting NEPA coordination activities	Department of Planning and Community Development

<b>On-going and Completed Hazard Mitigation Programs and Projects</b>		
<b>Program or Project</b>	<b>Description</b>	<b>Responsible Department</b>
Reconstruction of Fire Station #4	Awaiting task order from TDRA	Public Works Department

## 8.6 Summary and Conclusions

In conclusion, capability is an area that needs attention and work within the City of Galveston. The recognition that hazard mitigation is effective is there, and the City has demonstrated its commitment to mitigation through the development of this Plan and through the mitigation projects that it has both completed and identified.

As noted, there is often little to no staffing available at the local level to devote to hazard mitigation related activities. This includes project identification and data gathering; grant writing and application development; and the subsequent project management that follows an award of a grant. Outside assistance or an augmented staff with knowledge in hazard mitigation project management would be beneficial in bolstering Galveston’s efforts in reducing future risks. It would also assist in preparing better project applications that may be selected based on a competitive selection process. Additional staff also creates the ability to improve coordination at all levels of government.

Mitigation has a long history in Galveston. From the 1900 Storm through the present day, the City recognizes that it is vulnerable, and that its survival depends on successful mitigation of the risks and vulnerabilities. The experience of Hurricane Ike seems to have made the City and its residents more determined to embrace mitigation, which can only aid in the recovery of the City and those who call it home.