



**2005 Hurricane  
Emergency Response Report**

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## **COMMITTEE MEMBERSHIP**

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## **PURPOSE**

This report was prepared at the direction of Glenn Brown, Interim City Manager, and is intended to provide a comprehensive review of the emergency response efforts of the City of College Station to the Hurricane Katrina and Hurricane Rita evacuations and related incidents. The report is based upon feedback provided by numerous City employees who were directly or indirectly involved in the various areas of responsibility during these two extended operations.

The information was gathered from approximately 100 individual response forms as well as group discussion. The problems and suggestions have been sorted by categories that correspond with the established Annexes of the Brazos County Interjurisdictional Emergency Operations Plan. This format was chosen to facilitate potential additions or changes in these planning documents.

Finally, this report was prepared as a tool to learn from these two responses and to better prepare the City of College Station work force for future emergencies and disaster situations. Our community was very fortunate to have been spared the direct force of either hurricane. There was no damage to residences, buildings, roads or utility services in the local area. However, there will come a time in the future when our citizens and employees will endure a disaster situation that impacts our homes, businesses and basic community infrastructure.

It is imperative that the City of College Station be prepared to respond to future incidents in a timely, professional and effective manner. The response and recovery efforts will be the primary responsibility of local government. Our citizens will hold the City employees and the local elected officials accountable for the timely and effective results of those efforts to restore the community to normalcy.

November 1, 2005

## **BACKGROUND**

The City of College Station, along with the entire Brazos Valley region, became heavily involved in disaster response relief efforts for two major hurricane events within a few days of each during the last week in August and the first three weeks of September, 2005. The overall efforts of numerous governments, churches, non-profit and volunteer agencies along with countless volunteers and private businesses formed the largest local emergency response effort in the history of our community.

The evacuation response for each of these two powerful hurricanes was distinctive in many ways. Hurricane Katrina posed no threat to the local area and the number of evacuees housed locally was a small fraction of those housed in relation to Hurricane Rita. However, the Hurricane Katrina evacuees tended to stay longer and required substantially more resources to address individual needs including temporary and permanent housing, medical, basic help with clothing, furniture and social services as well as job placement assistance. Many of these evacuees vowed to never return to their homes in Louisiana and Mississippi and have become new residents of the Brazos Valley.

For Hurricane Rita, our local area was forecast by the weather services to be in the direct path of the storm up until a few hours prior to landfall. This potential storm path posed significantly larger problems for response efforts for our citizens and City of College Station employees. In addition, the vast destruction of Hurricane Katrina was vividly imprinted in the minds of residents in the Houston/Galveston region as the equally powerful Hurricane Rita bore down on the upper Texas coast three weeks later. An intense effort was made at the state and local levels to get residents of the coastal areas to evacuate ahead of the storm. These factors subsequently contributed to the largest mass evacuation in United States history. Many of these evacuees, including countless "special needs" citizens joined this monumental exodus and endured many hours in the resulting gridlock that quickly developed across the entire southeast Texas road system.

## HURRICANE KATRINA

Hurricane Katrina was one of the strongest storms to impact the coast of the United States during the last 100 years. With sustained winds during landfall of 140 mph (a strong category 4 hurricane on the Saffir-Simpson scale) and minimum central pressure the third lowest on record at landfall (920 mb), Katrina caused widespread devastation along the central Gulf Coast states of the US. Cities such as New Orleans, LA, Mobile, AL, and Gulfport, MS bore the brunt of Katrina's force and will need weeks and months of recovery efforts to restore normality.

Hurricane Katrina developed initially as a tropical depression (TD #12 of the season) in the southeastern Bahamas on August 23rd. This tropical depression strengthened into Tropical Storm Katrina the next day. It then moved slowly along a northwesterly then westerly track through the Bahamas, increasing in strength during this time. A few hours before landfall in south Florida at around 6.30 EDT on August 25th, Katrina strengthened to become a category 1 (wind speeds of 75mph or greater) hurricane. Landfall occurred between Hallandale Beach and North Miami Beach, Florida, with wind speeds of approximately 80 mph. Gusts of above 90 mph were measured as Katrina came ashore. As the storm moved southwest across the tip of the Florida peninsula, Katrina's winds decreased slightly before regaining hurricane strength in the Gulf of Mexico. Given that Katrina spent only seven hours over land, its strength was not significantly diminished and it quickly re-intensified shortly after moving over the warm waters of the Gulf.

Katrina moved almost due westward after entering the Gulf of Mexico. A mid-level ridge centered over Texas weakened and moved westward allowing Katrina to gradually turn to the northwest and then north into the weakness in the ridging over the days that followed. Atmospheric and sea-surface conditions (an upper level anticyclone over the Gulf and (warm SSTs) were conducive to cyclone's rapid intensification, which lead to Katrina attaining 'major hurricane' status on the afternoon of the 26th.

Continuing to strengthen and move northwards during the next 48 hours, Katrina reached maximum wind speeds on the morning of Sunday August 28th of 150 kts (category 5), and its minimum central pressure dropped that afternoon to 902 mb - the 4th lowest on record for an Atlantic storm. Although Katrina, at its peak strength was comparable to Camille's intensity, it was a significantly larger storm and impacted a broader area of the Gulf coast.

Although tropical cyclones of category 5 strength are rarely sustained for long durations (due to internal dynamics), Katrina remained a strong category 4 strength hurricane despite the entrainment of dryer air and an opening of the eyewall to the south and southwest before landfall on the morning of the 29<sup>th</sup> (go to NCDC's NEXRAD viewer site for additional radar imagery and animations of Katrina). Landfalling wind speeds at Grand Isle, LA were approximately 140 mph with a central pressure of 920mb - the 3<sup>rd</sup> lowest on record for a landfalling Atlantic storm in the US.

*National Oceanic and Atmospheric Administration, National Climate Data Center, US Department of Commerce*

The involvement of the local community began on August 29<sup>th</sup> with the notification from the Texas Department of Public Safety to begin preparations to establish shelters for evacuees from Hurricane Katrina. The Brazos County Emergency Operations Center located in the Verizon Building in Bryan became operational on August 30, 2005. This EOC remained in operation throughout the response until September 12, 2005. Staffing was provided by both Cities, Brazos County, TAMU and numerous volunteer agencies.

The response to Katrina was a measured, planned and executed operation at most levels. The four shelters that were established were well organized and housed approximately 500 people. An additional 1,700 stayed in local hotels and an undetermined number were housed with friends and family members. Coordination was fairly effective throughout the event and most problems were resolved as they occurred. At that time, this was the largest shelter operation ever conducted in the Brazos Valley. Credit for much of the success should go to the emergency planning efforts that had occurred in previous years as well as participation in the annual state-wide hurricane exercise that was conducted in June, 2005.

The City of College Station operated Lincoln Recreation Center as a full scale shelter for a period of 15 days. Approximately 140 people were housed in the facility and support was provided by numerous volunteer and governmental agencies. Mass care included housing, food, medical and counseling services as well as additional social services including permanent housing assistance, transportation and job placement. The City of College is estimated to have spent approximately \$97,000 on this response. Most of these costs were for staff time which is estimated at approximately \$90,600.

A significant action occurred on Friday, September 2<sup>nd</sup> when it was determined that Brazos County would not accept any additional evacuees. This decision was

based upon staffing requirements for shelters along with the related expenses for their continuing operation. Many of the evacuees from Katrina had little more than the clothes on their backs and arrived directly from New Orleans by charter bus. There were numerous health care and social service issues to deal with. Many of these people had lost virtually everything that they owned and had nothing to return to and therefore, required extended stays in shelters followed by placement into temporary or permanent housing. As of October 25<sup>th</sup> it was estimated that approximately 500 of these evacuees were still residing in the local community.

## HURRICANE RITA

Hurricane Rita developed on September 18th from a tropical depression that formed early the same day. The storm increased in intensity over the next 48 hours, becoming a [category 1 hurricane](#) on the 20th and a category 2 hurricane later that afternoon. Tracking through the Florida Straits, Hurricane Rita neared the Florida Keys on the 20th, causing sustained tropical storm force winds on Key West with gusts of up to 76 mph (66 kts).

Rapidly intensifying, Hurricane Rita tracked westward into the Gulf of Mexico and by the afternoon of the 21st, Rita had reached category 5 strength on the Saffir-Simpson scale, with winds of 165 mph (143 kts). Continuing to intensify to reach wind speeds of 175 mph (152 kts), the minimum central pressure of the storm dropped to 897 mb, the third lowest on record for the Atlantic Basin, after Hurricane Gilbert in 1988 (888 mb), and the 1935 Labor Day Hurricane (892 mb). This year marks the first time in recorded history that two hurricanes ([Katrina](#) and [Rita](#)) have reached category 5 strength in the Gulf of Mexico in a single hurricane season.

Weakening during the afternoon of the 22nd, due to an eyewall replacement cycle and perhaps some influence of slightly cooler sea-surface temperatures, Rita's intensity dipped to a sustained wind speed of 145 mph (125 kts) and continued to weaken gradually over the next 36 hours prior to landfall. Rita tracked west-northwest on the 23rd and [made landfall at the Texas/Louisiana border](#) early on the 24th, at category 3 strength with sustained winds of 120 mph (105 kts). Hurricane force winds were observed more than 150 miles inland and tropical storm force winds were felt as far north as the LA-TX-AR border. Rita's pressure as it came ashore was 937 mb. *National Oceanic and Atmospheric Administration, National Climate Data Center, US Department of Commerce*

The Brazos County EOC was activated on September 20<sup>th</sup> and the Gateway operation started on September 21<sup>st</sup>. The local response to this event was much different than the Katrina response. This was due to the operation of the "Gateway" reception center, the opening of 32 "official" shelters throughout the community and the threat of potential storm damage in the local area. Also, it was determined that several other shelters were opened that were not affiliated with the County response effort. Approximately 11,000 people were estimated to have stayed in Brazos County during this response. Local stores were inundated with citizens purchasing food, supplies and equipment in anticipation of the storm tracking through Brazos County.

Volunteer and governmental resources were quickly exhausted and all available shelter spaces were rapidly filled. All available hotel rooms remained occupied for the duration of the response. It became very apparent that the estimates for shelter capacity for Brazos County were grossly exaggerated in the official emergency plans and annexes. This led to the order to close the Gateway operation on Friday, September 23<sup>rd</sup> and direct any remaining incoming evacuees to Austin.

The City of College Station activated the City EOC on Friday morning, September 23<sup>rd</sup> in anticipation of the hurricane tracking directly over the Brazos Valley. Hurricane force winds were forecast for the local area prompting concerns about potential damage to City buildings, utilities and other infrastructure. The storm track actual made landfall to the east of Houston and the local area did not experience any damage or power outages. The College Station EOC closed operations on the afternoon of September 24<sup>th</sup> once all threat for severe weather had passed.

The orderly response to the Katrina evacuation and the amount of individual attention to the evacuees was not able to be repeated to the same degree with the Rita evacuees. The number of people and the number of shelters were too great to provide that level of service. However, facilities and personnel were activated and the response provided the basic necessities for those in need. Most of these evacuees differed from those evacuees related to Katrina in that they had a place to return to. For the most part, they were able to leave the shelters soon after the storm past and resume their lives as before.

The City of College operated two shelters in City facilities. The Lincoln Recreation Center was again utilized and ultimately housed of 200 evacuees. The Conference Center was also opened and housed approximately 175 evacuees. The City provided food through contract services for these two facilities when the volunteer agencies became overwhelmed with evacuees. The cost for City of College Station

is estimated to be approximately \$396,000 which includes approximately \$324,000 in labor costs.

The return of the evacuees resulted in traffic issues similar to the original evacuation. Also, significant challenges for the local community were experienced in the coordination of commercial bus transportation to get evacuees back to their home counties. The Brazos County EOC remained operational until September 28<sup>th</sup> at which time operations ceased and administrative duties continued from the respective agencies offices.

## FINDINGS

The following information is a summary of the responses obtained through the employee response forms along with discussions of the review panel. These items are grouped according to the subject areas as stated in the Brazos County Emergency Operation Plan. This is intended to provide a straight forward look at the two responses and identify specific areas that function well along with those that need improvement.

**Alert & Warning: More information should have been released to the public and to the evacuees. This would have made them better informed and enable operations to run more efficiently.**

- repair Emergency Alert System equipment so it can be used after hours when radio and television outlets close
- more evacuation phone numbers posted for the public in gas stations, grocery stores, etc.
- establish a standard radio station for City information during a power outage
- the shelter opening process needs improvement to provide better alert to the Gateway personnel
- the implementation of the proposed County -wide AM low band alert radio system would have been extremely beneficial for the evacuees.

**Communications: The EOC received calls meant for other departments or persons and these could not be transferred. This included non-emergency calls which interfered with more important matters.**

- EOC should have one main phone number and an individual to serve as operator who can direct calls to appropriate person
- web-based communications between the EOC and the shelters such as an instant messaging system across the stations (would also help with staffing issues)
- call transfer/forwarding option should be included on phone system

**Radios were not always manned and the EOC staff was not able to get in touch with the shelters.**

- There was a need to assign a person at each shelter and at the EOC as radio operators to monitor communications traffic, relay information to other shelter workers, and get answers from other shelter workers to relay back
- Also, shelter personnel need to be told which EOC to call for certain needs when multiple EOCs are operational.

**Cell phone usage became disrupted during the event and made this form of communication unreliable.**

- reception centers such as the Gateway should be hard-wired with multiple land lines
- issue radios to all personnel who need emergency communications, this is a long term project due to expense
- there is a need to purchase additional radios (at least 15) for an emergency supply to issue to non profit organizations, volunteers or other personnel.
- develop list of existing radios held by City employees which could be recalled during an emergency
- purchase sufficient chargers and spare batteries to support emergency operations

**Radio communications were not always ideal. This arose primarily from a lack of radio protocol. Another issue was too many conversations on a single frequency.**

- all personnel assigned a radio during emergency operations should be trained in proper radio protocol.
- There is a need for a very basic radio "manual" for all radio operators.
- a radio plan utilizing the multiple frequencies available should be set up in order to ease radio traffic; reception centers could be one channel, shelters on another, and coordination would go through the EOC.
- EOC liaisons need specific designations instead of just "EOC"
- amateur radio might be utilized in coordination with Emergency Management to obtain real-time data for the establishment of a wide-area Common Operating Picture
- there was a need for a dedicated communications officer to oversee all systems.

**IT personnel need better communication with the County EOC. It was difficult for them to determine when to distribute or retrieve equipment as shelters came online or shut down.**

- a City Liaison Officer should be assigned at the Regional EOC in case the City EOC is not yet operational
- the County EOC needs to have a dedicated IT support officer

**Shelters/Mass Care: Many of the shelters reduced their capacity while refugees were arriving. There was also a problem with the shelters not opening up quickly or when they were supposed to. This resulted in evacuees who had already been on the road for many hours spending more time waiting for shelters to open.**

- accurate shelter capacities need to be determined in advance
- all existing shelters need to be re-evaluated to determine realistic capacities.

- shelters should be capable of becoming operational within 1-3 hours of notification
- shelter sites need to have a plan of action on file with the Emergency Management Coordinator
- the shelter cards need to be revised to reflect accurate capacities.
- A system of opening sequences is needed to determine what order shelters should be opened.

**Shelter volunteers often did not know what to do immediately after arrival because duties were not posted.**

- a Volunteer coordinator should be assigned at each site in order to coordinate the activities of the volunteers to relieve shelter managers of this responsibility
- specific job duties and organizational charts need to be developed for shelter operations.
- a list of specific tasks should be compiled for volunteers which will be assigned by each shelter volunteer coordinator, these should include but are not limited to:

- |                                       |                                 |
|---------------------------------------|---------------------------------|
| 1. register incoming evacuees         | 18. laundry duty                |
| 2. ensure evacuees sign in and out    | 19. set up beds                 |
| 3. monitor radio traffic from the EOC | 20. provide security            |
| 4. answer main phone lines            | 21. keep the television working |
| 5. monitor EOC communications         | 22. make evacuee nametags       |
| 6. input registration information     | 23. make computer signs         |
| 7. assign shower times                | 24. general information spot    |
| 8. entertain children                 | 25. messenger/message board     |
| 9. set up and serve meals             |                                 |
| 10. clean up after meals              |                                 |
| 11. inventory food supplies           |                                 |
| 12. clean & stock restrooms           |                                 |
| 13. serve as interpreter              |                                 |
| 14. serve as medical staff            |                                 |
| 15. empty trash/ monitor dumpster     |                                 |
| 16. clean & vacuum floors             |                                 |
| 17. assign beds                       |                                 |

**There was also an issue with food at the shelters. There were problems of either not enough or too much food at some of the locations. Some shelters were unable to provide food service through its own members because it was not allowed by the Texas Department of Health.**

- better communication between the shelter manager or someone in charge of food services at the shelter would remove some of these problems
- coordination of meals should be the responsibility of a person on site at the shelter; designate a food services coordinator for each shelter.
- provide limited or basic TDH training to shelters as part of an ongoing shelter preparation process
- food delivery should take a higher priority and involve more delivery vehicles
- having a stockpile of water and MREs may be useful since restaurant catering will not be possible in the event of a power outage and is expensive
- obtaining some type of shelter software which has the capacity to track meals/quantity of food received and inventoried after meals

**The software used for evacuee management was a good idea, but the Access database was a little intimidating to volunteers resulting in not entering information or incomplete information. Individuals had to go around to all the shelters to gather the evacuee lists and some commented there must be a way to do this electronically.**

- an Excel database would work the same as MS Access in creating evacuee lists, and it would be more familiar to many of the volunteers resulting in better data quality
- emphasize to volunteers, especially those coming on new shifts, the importance of accurate data information
- a common system should be implemented in our region to register and track evacuees, ideally this should be done by the Red Cross; city may wish to work with shelters to implement a common system and train shelter managers
- buy additional login ID/passwords; additional licenses cost approximately \$25.00 per connection; currently have 75 connections, recommendation is to increase this number to 150
- train additional personnel to use the EOC software since it is so effective
- all shelters should be listed in Web EOC and close the ones not available

- provide interconnectivity to all shelters (ex. old cell phone beside computer, pre-plan and have an electrical and phone outlet nearby, old RF modem to transfer information through the radio system, etc.)

**There was confusion on how the shelters were to be run. In some cases, there was no established leader to take charge at the shelters or at sites such as the Gateway resulting in a lack of direction. There was also an issue tracking evacuees once they left the shelter for medical help or other reasons. Some of them did not know which shelter they came from making it difficult to return them with people they knew.**

- need standard operating procedures manual of how to run city shelters to avoid confusion (includes necessary forms) and each shelter needs a copy
- some type of color coding system should be implemented in order to better track individuals and evacuees could have wristbands made for them in case they need to leave the shelter for any reason.
- There is a need for trained shelter teams for each designated shelter location.

**When shelters began closing, evacuees were not effectively consolidated to minimize volunteer resources at the shelters.**

- need a plan to gather evacuees in as few locations as possible once they begin to leave to maximize volunteer efforts
- need a standardized set of procedures to close a shelter.

**Evacuation: The Gateway system served its purpose, but there were a few problems. Gateway experienced a lot of backed up traffic at times which is not desirable for individuals who had already spent hours on the road. Most evacuees just wanted to get to the shelter as soon as possible.**

- move Gateway location farther in; more lanes of traffic would be moving in one direction, bottle neck on feeder road would be lessened, and evacuees could be moved in and out quicker
- water and snacks should still be handed out
- additional permanent lighting is needed on the frontage road for safety and visibility.
- GIS had difficulty creating and deploying shelter maps to needed locations in a timely manner.

**Communication from the EOC concerning the Gateway was not always passed on. For example, Public Works and the Police were not aware the Gateway was coming up until they were called by the Parks and Recreation Department. Concern was also expressed the Gateway**

**closed too early. This may have resulted from a communication mishap.**

- communication needs to go all the way down the chain of command if a site is going to be made operational or closed down
- floating reception areas were an inconvenience and could have been avoided if the Gateway had remained open
- before a site becomes operational or is closed, verification from upper management needs to be received in addition to upper management consulting with field personnel to confirm the situation.
- Better briefings for volunteers and staff at shift changes are needed.
- Medical triage team is needed at the Gateway area to handle emergencies.
- Provide more permanent facilities to operate from.

**Law Enforcement: The overall trend is law enforcement did a great job. There was one concern raised by an officer stating they had no idea what kind of persons they were dealing with.**

- run criminal histories after check-in
- relocate individuals deemed high risk to the designated shelters
- briefings to officers going on shift from those going off shift at each site

**Another concern is the assignment of shifts and the welfare of officers while working those shifts.**

- each shelter needs to have an officer present per request of the Chief
- better process needs to be implemented to assign and notify officers when their services are needed and inform them when a shelter has closed and their presence is no longer necessary
- shelters need to have some type of relief or support for their designated officers
- 12-hour schedules splitting the department into two teams should be developed in advance so the rotation can be implemented quickly
- the Texas State Guard resources were helpful in establishing a "presence" at the shelters

**A more long term issue is the interoperability, or communications, between officers around the country.**

- interoperability has started in different regions of the country, but it is moving slowly; College Station needs to be at the front of this effort since it is so important in emergency situations

**Health/Medical: Various concerns were raised with the sheltering of special needs evacuees. The identification and assigning of special needs individuals seems to have been the biggest issue.**

- assign a person at the reception center to do medical triage and that individual will evaluate whether someone goes to a special needs or general population shelter
- develop criteria for evaluating special needs (ventilators, dialysis, contagious disease, etc.)

**Special needs individuals should not have to wait for transport to a special needs shelter, and some family members should be able to accompany them at all times.**

- develop a few shelters which can accommodate both special needs and the general population so special needs evacuees do not have to wait for transportation
- establish a set number of family members who can accompany a special needs patient to a special needs shelter; if possible, locate them in one of the shelters which can accommodate both special needs and the general population
- all special needs spaces should not be pre-assigned
- develop a training program to provide volunteers some assistance in working at special needs shelters

**Special needs evacuees received consideration, but individuals with established mental health needs were not provided their own shelter.**

- establish a mental health special needs shelter staffed with qualified mental health professionals

**Public Information: There were some problems with the spread of information to the public and the relaying of information to the necessary personnel.**

- stations throughout city where evacuees can receive information (instead of going back to the Gateway and causing more traffic); these stations can also serve as roadside assistance units handing out water or other basic needs or assisting motorists if they become disabled (mechanical and lack of gas)
- workers need to be constantly briefed of situation to answer evacuees' questions especially those answering the phones
- maintain a supply of shelters maps to have ready for emergencies (include addresses and phone numbers)
- also need preprinted registration forms and shelter tickets
- regularly scheduled media updates

- utilize a local radio station to transmit information (notify evacuees of station using signs on the bypass)

**There was no clear individual in charge of the public information duties resulting in confusion over responsibilities. Conflicting oversight depending on who was present, and decisions were made and not communicated.**

- responsibility must be assigned for the overall public information officer position
- essential equipment and media list is needed for continuity between shifts
- better phone system, coordination between areas and a more efficient work space is needed to direct the public communications operation
- the Joint Information Center (JIC) needs to disseminate information on a timely basis at regular intervals

**Public Works: Shelters generated a lot of waste which had to be picked up, often after business hours.**

- EOC should notify Sanitation Dept. of every operational shelter so they can schedule service at the appropriate time.
- waste pick up at shelters needs to expand and increase in frequency during an emergency (include weekends and after hours)
- landfill should stay open longer to accommodate the extended hours

**There was also a comment on lack of communication between the Public Works departments immediately before the event and suggestions for emergency procedures during a power outage.**

- more communication between the departments preparing for particular disaster effects such as long-term power outages and how it would be handled
- placing an officer and/or fireman in the electric dispatch area during a known widespread electric outage
- the operation of the Gateway was very successful due to the support from Public Works and the emergency response equipment trailer.

**Resource Management: There were some concerns raised with not knowing which individuals have particular equipment and a lack of an inventory system.**

- have a master list of personnel, where they are staged, the equipment they have on hand, and their training
- items which need to be accurately inventoried include but are not limited to vehicles, radios, shelter supplies, etc.

**The large number of evacuees required a large number of supplies and various items which need to be available on short notice and stored away afterwards.**

- an adequate number of supplies such as cots, blankets, pillows, and other basics should be stored in advance and should be readily available
- there was a suggestion to retrofit the old maintenance offices at the Lincoln Center West District Shop for the purpose of storing the necessary supplies
- provide training for people to do specific jobs related to the emergency response.
- Provide "cross training" for as many people as possible.

**Direction and Control: Some of the staff working in the EOC expressed concern with its layout and efficiency. Other concerns were raised with the staff assigned to work in the EOC as well as the equipment located within.**

- seating arrangement does not match who is there (more personnel present than assigned seats)
- some of the personnel should not be in the EOC if their expertise would be more useful elsewhere (ex. electric and water utilities during a hurricane)
- EOC staff roster should be updated regularly (quarterly?)
- more functional facility is needed at Brazos County (very crowded at times and inefficient)
- laptops and phones should be provided for all personnel located in the Brazos County EOC
- regular supplies such as phone books, etc. should also be included
- need better control of access to the College Station EOC.

**Some situations need a concrete set of guidelines, but other situations demand a certain amount of flexibility. Different emergencies necessitate different responses, and emergency plans should be flexible enough to address various situations.**

- need to be flexible in order to address different situations and unplanned events
- the start and stop of EOC operations should be communicated definitively
- the City EOC should have been brought up sooner, and it should be clearly defined which EOC is responsible for particular tasks

**There were too many people giving orders and no clear chain of command.**

- each site and shelter must have a designated person in charge who everyone else can report to
- set teams of individuals with certain skills should be assigned to each site; these teams may include but are not limited to:

1 shelter manager

1 volunteer manager

1 facilities familiar staff person

1 food service manager

1 technical person (cable/phone/tv/computer)

1 nurse/medical person

1 interpreter

1-2 security

- same team approach could be used at other sites such as the Gateway
- teams would rotate shifts and untrained volunteers used where needed

**Human Services: Some city employees expressed concerns about being informed of what to do with their families in the case of an emergency. Another concern is stress resulting from the event.**

- alphabetic phone list of all City employees for notification of emergency situation
- list of places where employees' families can go during an emergency
- counseling and discussions on stress set up by Human Resources before the event is over so counseling can begin immediately

**Safety of employees should be imperative during emergency operations.**

- same policies and procedures which exist during normal operation should continue during emergencies
- employees should be reminded of circumstances at various sites such as shelters (ex. signs in restrooms reminding to wash hands, wearing rubber gloves when taking out trash, mopping, cleaning, etc.)

**Volunteer Resources: Staffing problems included shelters sometimes being understaffed and at other times overstaffed. The Parks and Recreation Department assumed the majority of the duties, and this could have been expanded to include all employees relieving some of the strain on that department.**

- annual emergency training should be required for public employees

- train other personnel besides supervisors and superintendents so they can relieve one another; let other people be involved
- maintain a list of employees and what they are trained in
- utilize all trained individuals and include members of city organizations (ex. homeowners' associations, Lions' clubs, Rotary club, etc.)
- BVCOG was not a reliable source of volunteers so train more city personnel to fill in these roles
- volunteers can be gathered from the evacuees able to work
- train several people from each of the non-Public Safety Departments within the City to act as shelter managers

**The area of Volunteer Agencies falls under Community Programs in the 2001 Emergency Operations plan. Mike Mullen will assume the role of Volunteer Coordinator if this plan is used in the future, but this role needs to be better defined with regard to internal and external resources and organizations.**

- the Emergency Operations Plan needs to include a better definition of the responsibilities and duties of the Volunteer Coordinator
- develop base teams for response similar to CSEOC Red, White, and Blue teams

**Long shifts are not effective since situations like this are stressful. Fatigue from stress can cause accidents compounding the situation. Short briefing sessions for personnel beginning a shift would be extremely beneficial.**

- reduce the shift lengths from 8-12 hours to 6 hours each
- a quick briefing going over everyone's duties would benefit entire operation and allow a smoother transition between shifts

**The Salvation Army was praised for its contribution to the operations, but some issues were raised with the Red Cross. Some of the shelters had to be brought online by Gateway liaisons rather than Red Cross officials.**

- analyze the role of outside organizations during emergency operations in order to maximize the efforts of the organizations
- Red Cross was not able to operate the shelters in accordance with the plan

**Transportation: An accurate inventory of who has what vehicle and what vehicles were available were the only concerns in this area.**

- develop a master list containing each vehicle and who it is assigned to in order to provide greater coordination

- perhaps the Brazos Transit could have a representative in the EOC to inform personnel about their availability to transport people/supplies

**Donations Management: Donations centers were overloaded with supplies and there was no place to take them. There was also a slow response when requesting supplies from the EOC.**

- donations management needs to have larger holding areas and expanded hauling capabilities to cope with the large amount of goods coming in
- shelters should not be collection sites for donations, it only adds to the work
- non-emergency requests should not go through the EOC

## RECOMMENDATIONS

To improve our capabilities for future emergency response efforts, we must learn from the past. The key is to anticipate future events and determine needs to meet those challenges. Also, it is imperative that mistakes not be repeated. If we do not provide an honest assessment of past operations and determine ways to fix problems that have been identified, we are assured that we will repeat them. This is not acceptable for our employees or our citizens.

The follow recommendations are key areas that this committee has identified and strongly recommends that corrective measures be implemented. They have been grouped into three categories: short term (within 6 months); mid term (12 months); long term (3 years).

### SHORT TERM

**Complete by July, 2006**

**1. Revise ANNEX C: Shelter & Mass Care**

This will include developing a more realistic estimate for shelter capacities as well as establishing a suggested order for activation of these shelters. All shelters need to be thoroughly evaluated according to their capabilities for housing, restrooms, feeding, parking, structural condition and staffing issues.

**2. Web EOC Training**

Conduct training for City, County and TAMU staff as well as selected volunteers. This can be a big asset, if properly utilized, to provide accurate and timely information regarding the incident at hand.

**3. Revise Gateway Plan**

Develop an improved plan for the physical set up as well as the operational procedures and staff training. The plan needs to look at the full aspects of both start-up procedures as well as for the termination of operations.

**4. All agencies National Incident Management System (NIMS) compliant**

Completion of 26 tasks outlined in NIMS legislation. This is a national mandate that must be complied with by all Departments.

**5. Designate the creation of the Department of Emergency Management**

Establish Emergency Management as a Department level function for the City of College Station. This must be recognized as an important basic function and the appropriate level of authority is required to make it work properly.

**6. Complete a proposal for a new County-wide EOC facility for local agencies**

This facility needs to be designed specifically for long-term emergency operations involving multiple agencies. The integration of all forms of communications systems and redundant power supply is essential. In addition, physical security of the facilities and structural hardiness are required.

**MID TERM  
Complete by January, 2007**

**1. Conduct Shelter Operations Training**

Establish a standardized shelter training program and conduct it for all recognized shelters as identified in the revised ANNEX C. This is critical to achieve a successful mass shelter operation. The training must be delivered to all organizations and agencies that have designated shelters and it must be done on an annual basis to stay current.

**2. Provide Adequate Staffing for Emergency Management**

The Department of Emergency Management needs to have 2 additional full time staff members to effectively plan, prepare, respond and recover from disaster situations. Just as we no longer rely on volunteer fire fighters or reserve police officers, we can no longer afford to conduct emergency management on a part-time or volunteer basis.

**3. Repair the Emergency Alert System (EAS) at the Brazos County EOC**

The computer operated system at the Brazos County EOC is not operational and was not available for the past two emergencies. This must be corrected as soon as possible and be ready for the next response.

**4. Acquire a County-wide AM Low Band radio alert system**

This project has been delayed and would have been very valuable during the recent evacuations. The project has been funded, however, proposals have not been requested and reviewed at this time.

**5. Identify the requirements to adapt Web EOC for the Shelter locations**

This is needed to provide a better system to track shelter status and location of evacuees.

**6. Create, staff and train for a Joint Information Center (JIC)**

The joint information center needs to organize and operate on a coordinated and proactive basis. The dissemination of information to the public needs to occur early in the incident and continue throughout the event. Regular press briefings should take place a predetermined scheduled times on a daily basis. Specific training is needed in this area.

**7. Acquire additional 800mz radios for emergency management operations**

Acquire a minimum of 20 additional 800mz radios dedicated for emergency management response and recovery. These radios could be issued to shelter managers, volunteer agencies and agency employees as needed. This would assist in establishing a better communications network with all responders. In addition, a comprehensive communications plan is needed for the EOC, shelters, Gateway and any other operational component. There must also be an on-going communications training program that involves shelter staff, volunteers agencies and governmental staff.

**8. Reconfigure existing 800mz radios to enhance interoperable capabilities**

All existing local agency radios need to be reconfigured to provide at least 1 common talk group. In addition, agency radios should be reconfigured to provide common talk group settings within those agencies.

**9. Conduct disaster recovery training for City staff.**

This training should include post-disaster issues such as damage assessment, cost accounting procedures, recovery operations and debris removal. These topics are extremely important for the long-term reimbursement process as well as for the short term recovery of the community.

**10. Conduct an annual review of emergency plans**

This review should be done by every Department and should include all internal emergency procedures, City-wide emergency guidelines, and Brazos County plans and annexes.

**LONG TERM**  
**Complete by January, 2009**

- 1. Develop a new county-wide EOC for all local agencies**  
Coordinate the legal agreements, budget requirements and design criteria for the facility. This includes the detailed planning for construction, equipping and staffing the facility.
  
- 2. Continue to "harden" the utility system with concrete poles, underground electric service and standby generators at essential facilities and provide on-going maintenance and tree trimming to mitigate storm damage.**

The City of College Station utility system is not guaranteed to withstand the effects of a hurricane or severe weather event without massive outages. The outages will occur regardless of the amount of underground electric lines we have or how many steel/concrete poles we have. However, College Station Utilities does take a proactive approach to building and maintaining a reliable and storm resistant utility system.

Standby generators are in place at key facilities such as electric substations, water wells, pumping stations and key waste water treatment components. These will provide assistance during power outages resulting from minor emergencies or major storm events.

The older parts of the City have numerous backyard wooden poles throughout those areas and they will probably stay overhead with wood poles in the future. Also, even though steel and concrete poles are in place elsewhere does not preclude trees falling into lines and taking down wires, insulators and other equipment. There are many pictures from hurricane hit areas that show concrete/steel lines blown over at 45 degree angles with lines on the ground.

The normal tree trimming process only takes care of our easement area and will not totally protect the lines from falling trees, debris and other debris from getting into them and resulting in burning circuits out.

In addition, there are potential problems with the transmission system bringing electric service into this area. If that part of the system is damaged or destroyed, the local community will lose power. The transmission system in the BCS area is weak at best and there is not enough generation to bring the City of College Station up in the event of a transmission outage (we own no generation). College Station could be out of electric power for weeks because of the transmission situation in the event of a direct hit by a hurricane.

The College Station Electric system has the following characteristics:

**Distribution System: Currently 40% underground and 60% overhead.**

**Overhead System: Wood poles - 5,241. Concrete/Steel - 1,117**

**Tree Trimming: Approximately one-third of the system is trimmed each year. Entire system is trimmed every three years.**

We have no formal wood replacement program in place and don't plan to have one other than replacing poles that are rotten. Wood is still an important option to use on the system - especially in the backyards of the older parts of town where equipment access is limited and poles must be climbed. Wood poles will only now be converted to concrete or steel if a line is rebuilt and it makes sense to do so.

The installation of underground electric utilities will continue where mandated by ordinance inside new subdivisions and in areas where it makes economic sense to use underground. Overhead lines will always be the choice for main power lines out of substations and lines at the perimeters of subdivisions.

### **3. Review and revise ANNEX E: Evacuation.**

The plan for local evacuation needs to be thoroughly reviewed and revised. This includes the plans for large scale evacuation of local residents including schools, nursing homes and medical facilities.

## **APPENDIX 1 COLLEGE STATION EMERGENCY RESPONSE HISTORY**

The following list represents a brief history of major incidents that required activation of the Emergency Operations Center, evacuations, operation of temporary shelters or other large scale, multi-agency response. The purpose of this list is to illustrate the on-going threat to the community in terms of emergency response.

The City of College Station has been very fortunate during this period in that no major damage to local infrastructure has occurred. The community has not experienced a direct hit from a major incident such as a tornado, hurricane or explosion. However, those threats and other hazards exist in this area. In addition, as the population continues to grow, the response to large scale emergencies becomes more complicated.

<b>1983 August</b>	<b>Hurricane Alicia</b>
<b>1991 December</b>	<b>Floods</b>
<b>1992 October</b>	<b>Floods</b>
<b>1994 October</b>	<b>Severe Thunderstorms / Floods</b>
<b>1995 September</b>	<b>Encephalitis Mosquito Control</b>
<b>1997 November</b>	<b>Bush Presidential Library Dedication</b>
<b>1999 May</b>	<b>Seminole LPG Pipeline Rupture</b>
<b>1999 November</b>	<b>Aggie Bonfire Collapse</b>
<b>1999 December</b>	<b>Y2K Precautions</b>
<b>2000 August</b>	<b>Shenandoah Pipeline Rupture</b>
<b>2003 April</b>	<b>Region-wide Electric Outage</b>
<b>2003 July</b>	<b>West Nile Mosquito Control</b>

<b>2004 May</b>	<b>Floods</b>
<b>2005 August</b>	<b>Hurricane Katrina</b>
<b>2005 September</b>	<b>Hurricane Rita</b>

**APPENDIX 2**  
**2005 Hurricanes Katrina & Rita**  
**Emergency Response Assessment Form**

We are seeking your assistance in determining areas to improve our emergency planning, preparedness and response efforts in future incidents. Please provide brief and concise information about specific topics. Use a separate page for each topic.

**Subject Area**

Check one of these categories that correspond to the Emergency Plan Annexes:

ALERT & WARNING	_____	PUBLIC WORKS	_____
COMMUNICATIONS	_____	RESOURCE MGMT	_____
SHELTER/MASS CARE	_____	DIRECTION & CONTROL	_____
EVACUATION	_____	HUMAN SERVICES	_____
LAW ENFORCEMENT	_____	VOLUNTEER RESOURCES	_____
HEALTH/MEDICAL	_____	TRANSPORTATION	_____
PUBLIC INFORMATION	_____	DONATIONS MGMT	_____

**Subject Topic**

Briefly describe the topic of discussion i.e.: "communications for shelters")

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**Subject Description**

Briefly describe the problem area or topic that you are concerned about. Provide enough basic information about who, what, where, when, etc for us to understand the item that you have identified as something that needs to be addressed.

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**Recommended Solution**

Please provide your recommendation for making this particular topic better in the future. Please be specific, brief and to the point.

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NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_ DEPT: \_\_\_\_\_

*Thank you for your time, support and assistance!!!!*