

Hurricane Katrina and the Federal Emergency Management Agency Call Centers

A Briefing to Senator Thad Cochran (R-MS)

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EXECUTIVE SUMMARY

The Federal Emergency Management Agency (F.E.M.A.) call center operations had 209 staff on August 26, 2005, just three days before Hurricane Katrina made landfall. By landfall 1285 staffers were available and growing, but not fast enough to meet demand. F.E.M.A. needed over 16,000 call center workers to meet the call demand which was in the millions of calls each week. F.E.M.A. eventually turned to an existing M.O.U. with the I.R.S. to meet the huge call demand and also brought on two private sector call centers to help with the work a few weeks after the disaster. The delay in moving from 209 workers to over 16,000 caused huge stresses on the existing call center network as the public became increasingly angry at the federal government's response to the disaster, including the busy signals that continued for weeks. Given the resources and past knowledge available, the F.E.M.A. call center operations did very well and should be congratulated. However, the new baseline to which all other disaster responses will be compared is Hurricane Katrina. This means that during the next major disaster within the United States, F.E.M.A. and other federal agencies must be prepared to move from a few hundred staff to 16,000 in just a few days.

The threats from both natural and man-made disasters including, but not limited to, nuclear and radiological explosives, cyber terrorism, flu pandemic, hurricanes, floods, earthquakes, fires and blizzards. As the threat level increases, new and creative solutions are needed to meet the objectives of being cost efficient and meeting the increasing demand of the American public looking to the federal government as the first responder. Following the US military's effective use of "live fire" exercises to train combat troops on how to perform during battle, the IT Services Research Lab at Southern Miss recommends the building of a "live fire" laboratory for federal agencies, such as F.E.M.A., to use to train their staff in preparation for the next major disaster. Such training will illuminate needs and issues that can only be brought about during such a high tension event. The lessons from such experiences, including effective means of scaling operations quickly, can then be incorporated back into existing operations, thus ensuring that everyone is at the maximum level of preparedness using Hurricane Katrina as a baseline for research and analysis.

INTRODUCTION

This briefing examines the role of the Federal Emergency Management Agency's (hereafter F.E.M.A.) call centers¹ pre and post Hurricanes Katrina in 2005. In particular, the report seeks to understand how F.E.M.A.'s call centers responded to the hurricane and what can be improved to help F.E.M.A. succeed more fully in future disasters.

F.E.M.A. CALL CENTER BACKGROUND

Call centers are used by most organizations, both public and private, for a simple reason; they are the most efficient means of accessing large numbers of people in many locations at a single time. Call centers house many people in rows of cubicles attached to headsets answering calls. They can range from as small as ten people to over 2000 people in a single site. Call centers, such as F.E.M.A.'s, can locate in a variety of places, dispersed, so that any one emergency or event will not shut down the full F.E.M.A. call center network.

In the early 1990s, F.E.M.A began to experiment with call center operations as a supplement and eventual replacement to the expensive field offices erected after a natural disaster. It was found that it was more effective and cost efficient to offer telephone mediated services year round with a small staff with the ability to scale up operations than it was to set up temporary field offices with computers, phones, tents, and people at each disaster site. This led to F.E.M.A. establishing, in the late 1990s and into 2000, four permanent call centers within the US (TX, VA, MD and Puerto Rico).

2004 AND 2005 HURRICANE SEASONS

The 2004 Atlantic basin hurricane season had a large number of storms, was costly in terms of damage, and Florida was impacted by the majority of these storm (see Table 1).

Table 1: Impacts of the 2004 Hurricane Season

| |
|--|
| Impacts of 2004 Season |
| ●Nine tropical systems affected the US during 2004 |
| ●Damage to the US over \$42 billion (the most costly hurricane for the US at the time). |
| ● Five hurricanes made landfall in the US |
| ●An unprecedented 4 hurricanes (Charley, Frances, Ivan and Jeanne) affecting Florida |
| ●An estimated one in five homes in Florida were damaged by hurricanes during August and September 2004 |
| ●117 people lost their lives in the state from the storms. |

Source: Adapted from NOAA <http://www.ncdc.noaa.gov/oa/climate/research/2004/hurricanes04.html>

In response to the large number of hurricanes in 2004, F.E.M.A. and other federal agencies scaled up operations until all processing was completed. In November 2004 the

¹ The words call center and contact center are used interchangeably within this report. F.E.M.A.'s call center's full title is the National Processing Service Center (NPSC) Contact Center.

Government Services Administration (hereafter G.S.A.) created a new solution for government agencies. The FirstContact solution was launched to be

a multichannel contact center services contract vehicle that offers a full range of services, including telephone and e-mail inquiry services, automated and interactive voice response services and E-Government solutions as well as customer relationship management strategies to federal agencies. The FirstContact contract now allows federal agencies to get contractor on board quickly²

The G.S.A. solution of fast contracting would come into effect in the 2005 hurricane season.

The 2005 Atlantic basin hurricane season broke most records (see Table 2). In particular Hurricanes Katrina, Rita and Wilma were extremely deadly and costly. Just as in the 2004 hurricane season, F.E.M.A. had to respond to the number of citizens seeking federal disaster assistance following storms hitting the United States.

Table 2: Records of the 2005 Hurricane Season

| RECORDS OF THE 2005 ATLANTIC HURRICANE SEASON (Updated April 13, 2006) |
|--|
| ● Most Numerous: 28 Named Storms |
| ● 15 Hurricanes |
| ● Four major hurricanes hitting the U.S. |
| ● Four Category 5 Hurricanes |
| ● Seven Tropical Storms before August 1 |
| ● Two-Year Consecutive Total of Tropical Storms: 42 |
| ● Two-Year Consecutive Total of Hurricanes: 25 |
| ● Two-Year Consecutive Total of Major Hurricanes: 13 |
| ● Two-Year Consecutive Major Hurricane Landfalls: Seven |
| ● Two -Year Consecutive Florida Major Hurricane Landfalls: Five |
| ● Three-Year Consecutive Total of Tropical Storms: 58 |
| ● Three-Year Consecutive Total of Hurricanes: 30 |
| ● Three-Year Consecutive Total of Major Hurricanes: 16 Costliest |
| ● Hurricane: Katrina (at least \$80 billion) |
| ● Deadliest: Katrina at least 1,300 |
| ● Strongest Hurricane in the Atlantic Basin: Wilma 882 millibars (mb) |
| ● Three of the six strongest hurricanes on record: Wilma 882 mb (1st), Rita 897 mb (4th), Katrina 902 mb (6th) |
| ● July hurricane: Emily (160 mph top sustained winds) |

Source: Adapted from NOAA <http://www.noaanews.noaa.gov/stories2005/s2540b.htm>

² “New Contract Vehicle Emerges as an Innovative Answer to Improve Customer Service,” US General Service Administration press release, 9 November, 2004.

F.E.M.A. CALL CENTER RESPONSE

One of the most obvious challenges of the F.E.M.A. call centers is scalability. In essence, during a time of no emergencies, it does not behoove F.E.M.A. to have thousands of employees waiting in call centers in anticipation of an emergency. F.E.M.A. keeps a minimum level of staff in the call centers year round to respond to annual disasters within the US such as floods, tornadoes, hurricanes, wildfires, blizzards and earthquakes. F.E.M.A. calls in its reserve staff when it sees a large natural disaster on the horizons like Hurricane Katrina that existing staffing levels cannot handle. Public tax dollars are best expended in this manner during a typical disaster year. However, when a disaster of the size and scope of Hurricane Katrina hits, the public desires the federal government to respond with speed and diligence and even with reserves, there is just not enough capacity in the system to handle all of the calls.

F.E.M.A. staff did a stellar job at sharing the toll free numbers to the F.E.M.A. call centers and in sharing the F.E.M.A. URL for people to file claims. Every radio station, television station, websites, and even bank marquees had the F.E.M.A. number and URL listed.

The scale and scope of Hurricane Katrina astonished most people. Following Hurricane Katrina, Hurricanes Rita and Wilma also brought significant damage. This led to an unprecedented number of calls to the F.E.M.A. call/contact centers (see Figure 1).

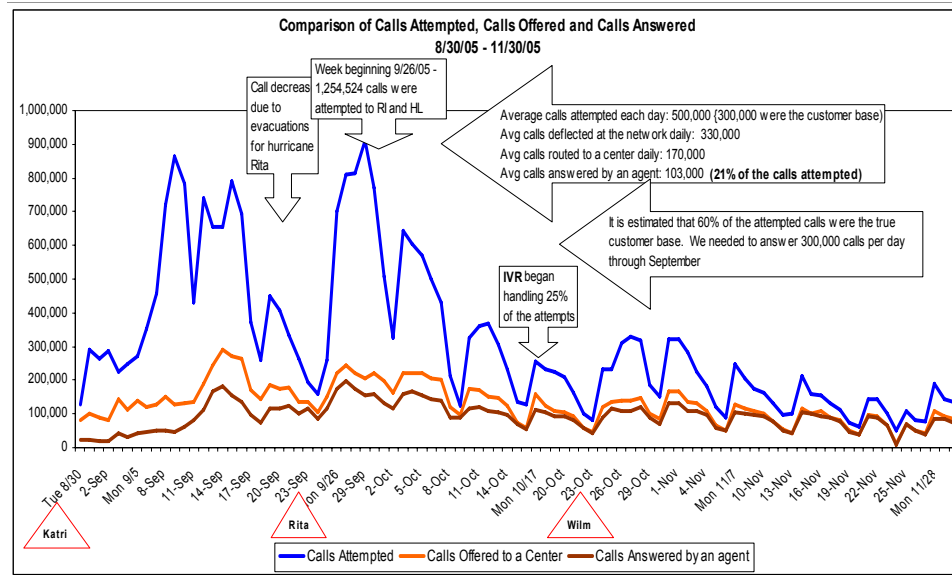
Figure 1: Number of Claims (RI-Registration Intake) and Help Line (HL) calls taken from 2002-2005 by the F.E.M.A. Call Centers.

| | 2002 | 2003 | 2004 | 2005 |
|--------------------------|-----------|-----------|-----------|------------|
| RI and HL Calls Answered | 1,783,626 | 2,067,208 | 4,863,084 | 11,087,256 |

Source: F.E.M.A. National Processing Service Center Contact Center

From 2004 to 2005 the number of calls increased almost three-fold. Scaling up the F.E.M.A. call centers with reserve staff could not even make a small dent into the huge volume of incoming calls. This meant that most calls to F.E.M.A. received a message to call back later for weeks, adding high levels of frustration to the persons affected. Moreover, these persons, with increased aggravation at the federal response to the disaster vented their frustrations to their elected officials, the media, and anyone else who would listen.

Figure 2: Calls Attempted, Offered and Answered to F.E.M.A. Call Centers August-September 2005

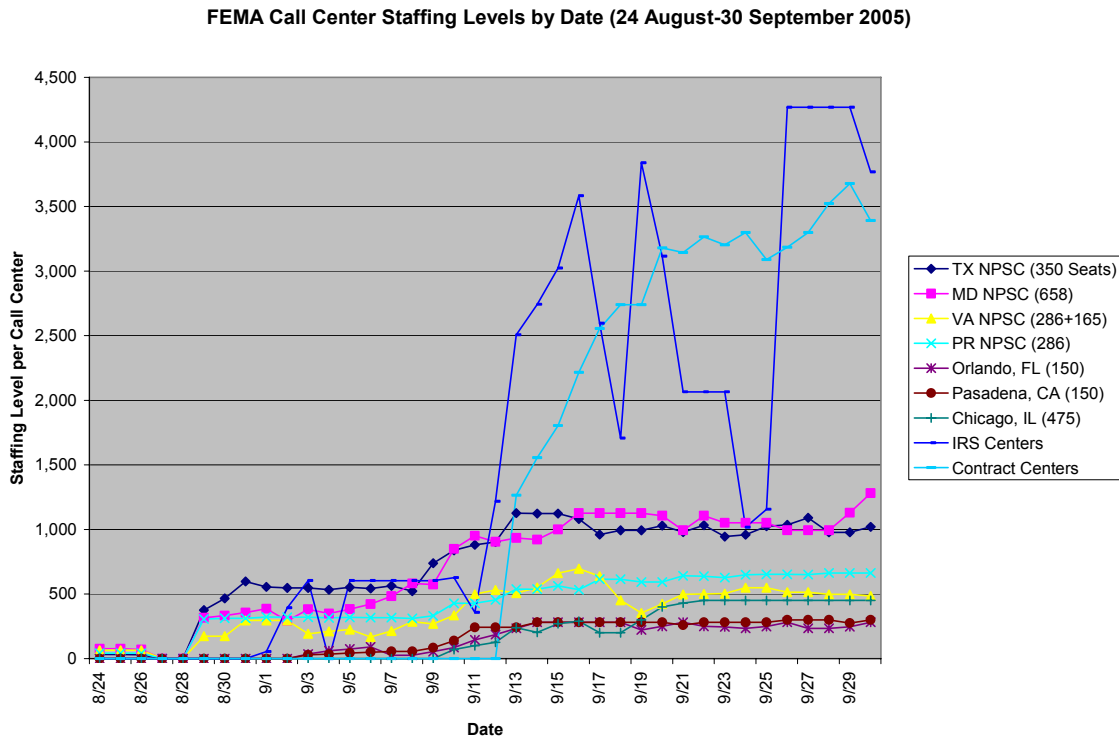


Source: F.E.M.A. National Processing Service Center Contact Center

Figure 2 illustrates the challenge. The orange line (in the middle) represents the number of calls that made it into the F.E.M.A. call centers. The maroon line (bottom) represents the number of calls that were answered by F.E.M.A.. The difference between the orange (middle) and maroon (bottom) lines are those calls that went unprocessed. However, the bigger issue is that of the blue line (top) which represents the number of calls that attempted to reach F.E.M.A. but never made it to the system and were rejected with a busy signal at the telephone switch. The large area separating the blue line and the maroon line represents the unmet demand by the public. Everyone had the number and the webpage, but few could get through. Within the first two days, call volume was over 200,000 calls per day attempted and over 2,000,000 calls within the first eight days. For the next six months the calls to reach the F.E.M.A. call centers were in excess of 33,000,000. F.E.M.A. had in place service quality metrics from previous disasters of answering 80% of the calls within 20 seconds and an answer rate of 95%. In September, with an average of 300,000 calls a day, F.E.M.A. needed 18,633 people on the phones to answer all of the calls with a seventeen minute wait time. There were not enough trained staff available to meet this demand.

During September 2005, F.E.M.A. was able to scale up their operations from 1613 agents on 1 September to 11,639 on 30 September (starting with only 209 agents at the end of August). Though an amazing feat of scalability, the numbers neither met the demand (18,633) nor did it stem the large scale resentment towards the federal government's response to the hurricane since scaling up operations took multiple weeks to achieve. As Figure 3 illustrates, F.E.M.A. was not able to organically grow its call center

Figure 3: Total F.E.M.A. Call Center Staffing from August-September 2005 by Call Center



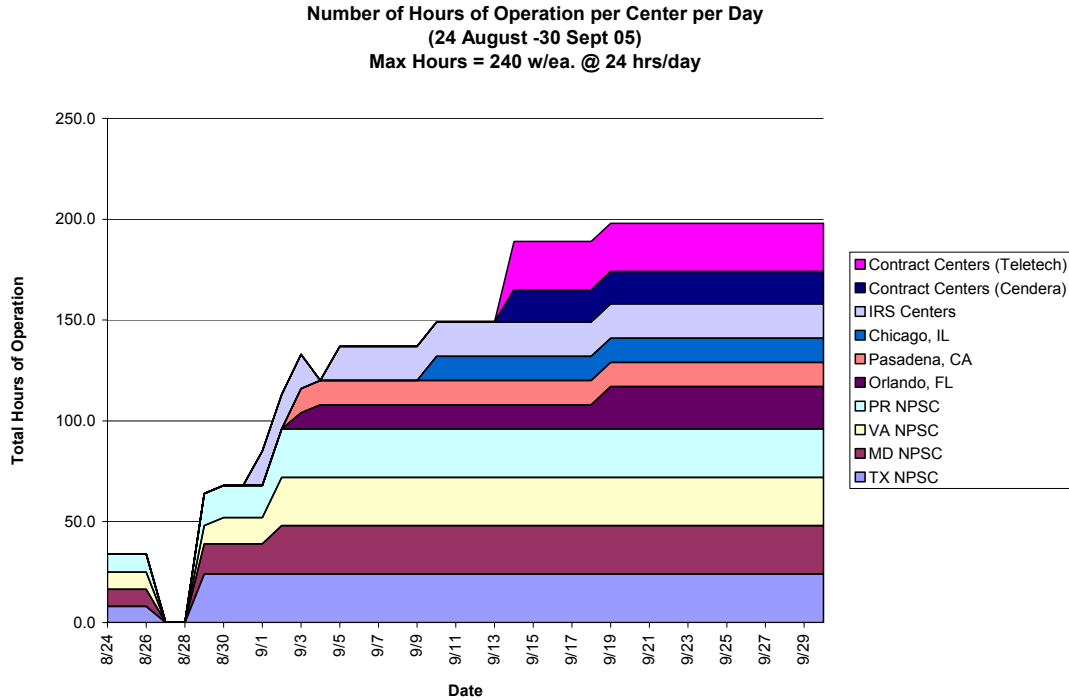
Source: Author from F.E.M.A. National Processing Service Center Contact Center Data

operations to meet even a significant percentage of the demand (TX, MD, VA, and Puerto Rico). Instead, the US Internal Revenue Service (I.R.S. Centers) and private sector contractors (Contract Centers) absorbed the majority of the calls from September 12, 2005, onward. Organically, F.E.M.A. could neither hire nor had the space available for the necessary people to handle the volume of calls in a reasonable period of time. If not for the existing memorandum of understanding (M.O.U.) between F.E.M.A. and the I.R.S., calls would have been delayed even longer. It is worth noting that even the private sector through the G.S.A. “FirstContact solution” contract mentioned earlier in this report, scaled up slower than even other federal agencies such as the I.R.S., clearly not meeting the goal of speedy scalability.

Figure 4 (below) illustrates that within a week, most pre-existing F.E.M.A. call centers were up and running at or near 24 hours a day, 7 days a week. The other federal agency centers (both F.E.M.A. and I.R.S.) took longer to open and move close to a 24/7 schedule. The latecomers to opening and scaling were the private-sector 3rd party call centers Teletech (GSA fast track contract) and Cendera (direct F.E.M.A. contract). Once opened and fully operational, the private sector contractors received a large number of calls; however, the speed of movement to receive a contract, hire the necessary people

and train them was slow compared to both promises made by elected officials and the expected service level demanded by the affected populations.

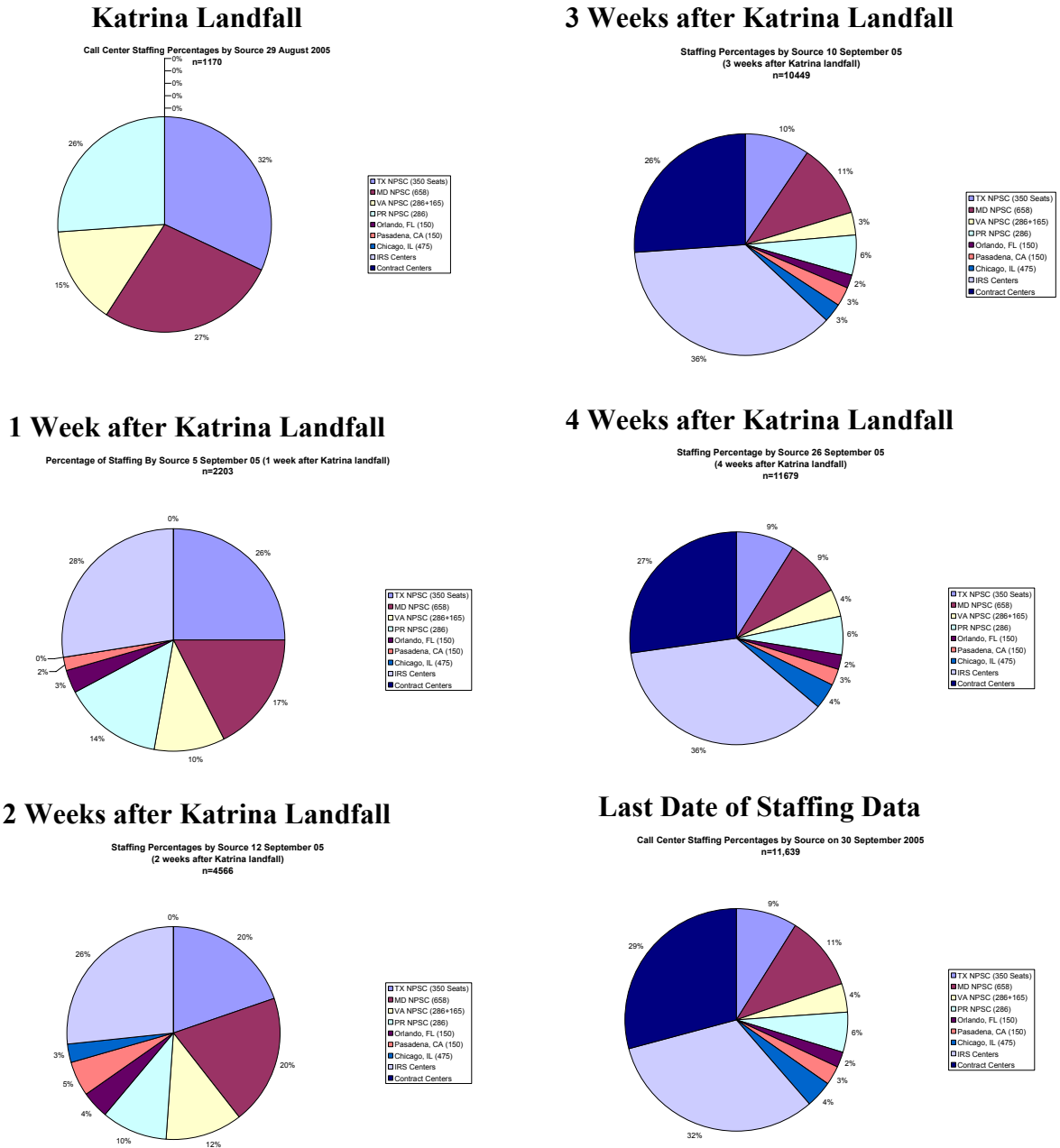
Figure 4: Total F.E.M.A. Call Center Staffing by Hours of Operation August-September 2005



Source: F.E.M.A. data, chart by author

The following Figures (6 pie charts) examine the total number of staff at each F.E.M.A. call center site, whether it is a F.E.M.A. owned, I.R.S. or private sector contractor. Each pie chart is from first landfall in weekly increments until the final data available at the end of September 2005. The key issue to note is that for a small or medium sized disaster existing F.E.M.A. call center can be staffed up to handle claims and concerns. However, a large or giant disaster like the scale of Hurricane Katrina or a terrorist event on US soil cannot be responded to nimbly, instead taking weeks to get all of the assets in place. It is this delay from broadcasting the F.E.M.A. toll free number to the agency being able to handle the huge influx of calls that leads, in part, to citizen anger at the federal government.

Figure 5: F.E.M.A. Call Center staffing by percentage and source from 29 August (Katrina landfall) in one week increments until 30 September 05 (when data source ends).



PUBLIC RESPONSE TO FEDERAL RESPONSE

Stephen Flynn, a senior fellow at the Council on Foreign Relations, recently published the book *The Edge of Disaster* (2007) where he outlines how vulnerable and unprepared the United States government and citizenry are for another disaster the size of Hurricane Katrina or the September 11, 2001, terrorist event. National Public Radio's *Morning Edition* ran a series of interviews with Flynn during the week of February 19th where the author laid out his case for the US being unprepared. On Friday the 23rd of February *Morning Edition* invited a senior official in the Department of Homeland Security, George Foresman, in charge of preparedness in the agency, to respond to Flynn's assertions. Steve Inskeep was the interviewer.

Mr. FORESMAN: ...But part of what we have to understand is the American people are living in a different environment in the post-9/11 era. And we have to recognize that there are going to be, from time to time, inconveniences associated with managing risk in America. But the goal of the federal government working with state and local government and with the private sector is to minimize those inconveniences.

INSKEEP: There seems to be a bit of a theme in a number of remarks you've made in this conversation where you seem to be encouraging people to lower their expectations a little bit, to essentially acknowledge that if a disaster happens, the government will do what it can. There may be some successes, but a lot of people are going to get hurt.

Mr. FORESMAN: Well, and I think that's the nature of a disaster. We don't have warehouses full of material within an hour of every community just waiting to respond to a disaster. The American public have to manage their expectations because a disaster is just that – it's an unexpected event. And part of the solution to resiliency in the 21st century is to make sure not only is the private sector or government ready, but are the citizens ready.

INSKEEP: And just to put a point on this, you're saying that part of the solution to resiliency is to acknowledge you're not all that resilient.

Mr. FORESMAN: That's right. I mean, you know, unless there is a dramatic change in the way people feel, people are not going to be willing to pay for a whole bunch of assets to sit at the ready every moment of everyday - and frankly, we would spend ourselves into oblivion. That's not how you manage risk (NPR Morning Edition Transcript, February 23, 2007).

There are two key elements that require emphasis from the interview transcript. One, the senior homeland security official, Foresman, stated that citizens need to lower their level of expectation of speed of assistance and government response and services following a natural or man-made disaster. Two, that the government is not willing to expend the huge sums of capital necessary for every disaster contingency.

Existing data support the senior official’s second statement but not the first, that citizens need to lower their expectation level. In fact, just the opposite is true. The American citizen/consumer has increasing expectations from both the public and private sector year after year. If such services are not forthcoming in a speedy and effective manner, they frequently make calls and write letters to their elected officials seeking an immediate resolution which undermines the faith that citizens have in their federal government and their elected leaders (or in the private sector find a competitor to meet this demand).

F.E.M.A. is not the only government agency to run into trouble by not proving timely services post natural disaster. The Small Business Administration (S.B.A.) call center taking claims from local business people after the record snowfall in the upper New York state region in early 2007 did not prepare for and could not handle the influx of calls. The Government Accounting Office (G.A.O.) reported that “the SBA made no arrangements to accommodate the volume of work that landed in Buffalo after the great storm. That was one of the factors that led to the delays of several months on many applications.” Most telling from the G.A.O. report was the following statement

While SBA provided us with planning documents that recognized that the Buffalo office lacked sufficient space in order to expand during an emergency, the agency did not develop a contingency plan to guide its efforts in identifying suitable space to accommodate an expanded work force if a major disaster occurred.

The F.E.M.A. and S.B.A. examples clearly indicate that the American public has high expectations for services from the public sector.

CURRENT THREAT ENVIRONMENT

Though this report examines F.E.M.A. call center activity pre and post Hurricanes Katrina and Rita in 2005, the findings are of particular interest due to the high level of threat the US is exposed to in multiple areas (see Table 3). Each of these events exposes the United States to potentially large scale destruction and devastation, affecting millions of people in all geographies within the United States. These citizens expect the federal government agencies to be speedy and nimble in their response to the needs of the citizens following a disaster.

Table 3: Current US Threat Environment-Natural and Man-Made

| |
|--------------------------------------|
| ●Agricultural |
| ●Chemical |
| ●Biological |
| ●Nuclear and Radiological Explosives |
| ●Cyber terrorism |
| ●Flu Pandemic |
| ●Hurricanes |
| ●Floods |
| ●Earthquakes |
| ●Fires |

Sources: Author, DHS, US State Department

CONCLUSIONS AND RECOMMENDATIONS

F.E.M.A. Customer Service division needs to be applauded for an excellent job in scaling up as fast as they did given the resources available. If not for the existing MOU between F.E.M.A. and IRS, the call center scale up in mid September following Hurricane Katrina, Rita and then Wilma would not have been accomplished.

Despite statements to the contrary, it is clear that Americans expect fast, reliable, and courteous service from their federal agencies and look to the federal government as a first responder and not a resource of last resort. The lack of this speed helped to fuel the fire of citizen discontent in the federal government response following Hurricane Katrina and other major storms of the 2005 hurricane season.

Recommendation 1

Federal, state and local agencies must be prepared for another major disaster, whether natural or man-made. The American public has demonstrated through recent past storms and disasters that it expects a high level of service, speed, efficiency and accountability from these agencies and if not provided, they respond unfavorably to the elected officials who in turn respond back to those agencies. That said, elected officials and the public have indicated an unwillingness to spend the hundreds of billions of dollars necessary to have a reserve of people, equipment and material waiting for the next disaster to strike after a few years of no disasters impacting the US. Therefore, a creative solution to meeting both of these conditions is necessary.

The IT Services Laboratory (formerly the Call Center Research Lab) at the University of Southern Mississippi will build an operational contact service center (demonstration testbed-a.k.a. “Live Fire Laboratory”). This center will be used as a planning and service center to train local, state and federal agency managers and directors on a multitude of contingencies surrounding a disaster. This concept, not unlike war games for the US military or the national hurricane center in Florida with computer modeling, will take these managers through various scenarios of disasters from hurricanes, earthquakes, and snow storms to a flu pandemic and a dirty bomb attack on US soil. Contingencies include issues associated with technology, contracting, and building reserves of both people and capacity. Training, planning, and modeling with these managers and directors allow them to face the anxiety, stress, needed resources and leadership decision making associated with such an event as close as possible allowing maximum performance (and minimum poor performance) when the next disaster occurs. Moreover, the demonstration testbed brings expertise and partners in technology and suppliers that offer solutions for scaling up operations. This project meets both the creative and affordable solution to help federal agencies offer fast and good service to constituents following a disaster while at the same time offering cost effective solutions to achieve this goal, maximizing the fiduciary responsibility.

During operations the IT Services Research Lab will create a working model of a typical federal agency call center to model and run “live fire” disaster exercises for federal

agencies. During a real natural disaster, the IT Services Lab will transition from a training center to an active decision support center for federal agencies allowing the agencies to leverage both the knowledge and resources of the lab to meet the agency's objectives. In this way the expertise at the lab is used in a decision management capacity and adds overall capacity to the system responding to a disaster.

An annual conference will be hosted by the lab inviting government agencies to participate and learn from the research and training.

Recommendation 2

F.E.M.A. needs new equipment/technology for efficiency.

Each phone call inquiry to F.E.M.A. requires all new information from the client to be input separately. Software exists that when a social security number is input into a database the total history of the client appears (screen pop). Moreover, by utilizing such software with an Interactive Voice Response (I.V.R.) a customer can punch in their social security number into a phone and when the call goes to an agent the information on that client immediately appears on the screen, having been automatically populated. This saves time for the call agent in terms of input time and saves on frustration time on the part of the caller who cannot understand why they have to keep giving the same information multiple times to the same agency when they have already supplied it once.

If it takes an average of 1 minute per call to input the data from each call into the database, the time and labor savings associated with moving to software that allows automatic database population and screen pops is enormous.

- 10 million calls = 10 million minutes saved
- 10 million minutes = 166,667 hours
- 166,667 hours @ \$15 per hour for agents = \$2,500,000 in labor cost savings alone
- 166,667 hours @ 20 minutes per phone call = 500,000 more people serviced from the savings in time alone.

The call center "Live-Fire" laboratory can help each federal agency to select the appropriate technology for efficiency as outline above. Moreover, the lab can also assist the agency in measuring an effective return on investment of such a purchase and articulating necessary funds for the purchase. The model federal agency call center in the lab will have a "typical" federal call center and one that utilizes the most advanced technologies. Each level of technology will be measured for efficiency and cost to determine the most efficient technology purchase necessary for each agency.

Recommendation 3

F.E.M.A. uses an active reserve of people for its call centers that it calls up in times of emergencies and then lays off as the emergency situation dies down and work load decreases. Though this appears to be efficient on the surface, in reality the F.E.M.A. call centers need to be allowed enough permanent full time employees to establish a baseline number of staff to handle 75% of the activity rather than depending on surging up and down to meet the current volume of calls/casework. This would not only improve

services to the citizens but would also increase morale within F.E.M.A. and ensure that scalability was faster in the next major disaster event.

Recommendation 4

The G.S.A. “FirstContact solution” fast track to contracting does not work with the speed necessary. That the I.R.S. M.O.U. with F.E.M.A. was able to scale up faster and more efficiently than the private sector contracting model is quite telling. F.E.M.A. was in the middle of writing an RFP to contract services for private sector call centers. This would establish a full and open competitive contract that would support call center services at all times with the ability to have them scale up operations faster than the G.S.A. solution. F.E.M.A. should be applauded for this effort which is a step in the right direction.

However, it is unclear if F.E.M.A. needs to contract with 1, 2, or 3 providers.

Additionally, F.E.M.A. and the private sector contractor need to war game out different disaster scenarios to determine if in fact the private sector contractors selected can scale up operations faster and more efficiently than F.E.M.A., making direct hires or working with existing M.O.U.s between other federal agencies. Such analysis is what the “live-fire” lab can offer F.E.M.A. and other federal agencies.

Recommendation 5

A centralized federal agency call center for F.E.M.A., S.B.A., I.R.S., and other federal agencies. According to F.E.M.A. officials, talks along these lines were initiated several years ago but were not carried forward for a host of reasons. A key issue with a single call center network for all federal agencies/services is that of funding. Because each federal agency has its own funding sources and has a fiduciary responsibility with such funding. Though there are clear challenges associated with having a single call center network platform for all federal agencies, there are economic and operational benefits from such a move. A logical step in the direction to explore this concept further is a small scale trial operation. The “live fire” lab could set up a small center that would hire and train people as federal employees and work with each partner agency to train these people in various skills and activities in each agency. The performance would then be measured against the base-line for each agency to determine if such a consolidated center could meet all agencies’ objectives. Moreover, such a trial goes far to build trust and credibility between federal agencies. If successful, then during any disaster the full power of thousands of joint call center federal workers could be brought online to meet the demand of the citizens.