Background

After the mass shooting at Virginia Tech on April 16, 2007, in which 33 people were killed, including the shooter, efforts to improve emergency mass notification systems on university campuses increased significantly. In support of this effort, IHL’s Office of Risk Management hosted an emergency mass notification symposium, sponsored by Cellular South on April 30, 2008. All public and private universities and colleges within the state of Mississippi were invited. At this time, IHL’s institutions were at various stages of developing comprehensive emergency mass notification systems.

Mass text messaging became an important medium to reach large numbers of campus communities nationwide. As an emerging technology, many vendors offered an array of services at varying costs. Some universities contracted for services based on experience, needs, nature of the campus, and budget. Some universities developed in-house methods and others chose not to include mass text messaging as part of their system.

In August of 2008, the Higher Education Opportunity Act included timely warning and emergency notification standards as well as emergency response and evacuation procedures as part of the federal statute. The goal of both sections is for institutions of higher learning to be able to “immediately notify the campus community upon the confirmation of a significant emergency or dangerous situation involving an immediate threat to the health of safety of students or employees occurring on the campus.” The Act provides guidance toward meeting that goal and establishes national minimum policy and procedural standards.

A preliminary survey was sent to University Police Chiefs in August of 2009 to ascertain the status of emergency mass notification systems and procedures at all IHL institutions. Results indicated a variety of media used to notify people on campus and off campus in the event of an emergency (see appendix A). Most institutions had established contracts with third party providers for mass text messaging capability. Each institution handles mass notification independently based on a given situation. No policies and few standard procedures were noted.

In an effort to establish a degree of uniformity within the IHL system, comply with established standards and identify opportunities for cost savings, the Emergency Mass Notification Task Force was established on October 1, 2009.
Efficiency Task Force Methods

Members of the task force were selected based on level of experience with emergency mass notification. A range from those with years of experience with fully functional systems to those currently in the selection process was included. Members were also selected to represent a cross section of potential users and subject matter experts such as law enforcement, information technology, procurement, and emergency coordination.

The Task Force organized the project into phases

- Information Gathering Phase: current practices, standards, regulations, recommendations, available resources, costs.
- Analysis Phase: choices vs. mandates, pros vs. cons, identification of best practices.
- Development Phase: policies, procedures, recommended standards, potential cost savings based on information gathered.

An all hazards approach was taken with regard to potential events in which an emergency mass notification would be warranted. Depending on a given situation, all or parts of the system may be called upon to warn all or parts of the campus community. Recognized hazards include: bomb threat, fire, active shooter, hostage situation, hazardous / toxic material spill, weapon of mass destruction, severe weather, disease outbreak, or any need for partial or full evacuation of campus.

Findings

Common Practices

While knowledge of mass notification methods and procedures within the IHL system was established, the task force felt it would be wise to inquire about the experiences gained from institutions nation-wide. A survey was distributed through the University Risk Management and Insurance Association (URMIA) in which ten universities responded (see appendix B). The survey indicated that the methods used by IHL institutions were generally aligned with institutions that responded. Depending on the type of emergency, sirens, text messaging, and email were identified as the most used and most effective means of notifying the campus community regarding an emergency. The ten respondents used nine different vendors for text messaging.

Research indicated that campus emergency mass notification systems are best when multiple media are available and selected according to a specific situation. Generally accepted media were identified as: bullhorns, call boxes, digital displays, e-mails, intercoms, loudspeakers, phone trees / telephony, pop-up message on computer screens, posters, radio announcements, sirens, social media, text messaging, TV announcements, voice evacuation, weather radios,
web announcements, and 800 numbers (see appendix C). Pros and cons of each were researched and discussed. The following were considered by the group, based on their experience, to be the best media to include as minimum standards for IHL institutions: sirens, text messaging, e-mails, pop-up messages on computer screens, digital displays, intercoms, loudspeakers, and radio announcements (see appendix D).

These forms of media can be established by each institution with the exception of sirens and mass text messaging. Sirens are installed and maintained by county emergency management personnel and can be coordinated through the Mississippi Emergency Management Agency (MEMA). Partial funding is also available through MEMA from the hazard mitigation program. IHL institutions can gain partial control of some sirens upon coordination with the respective county emergency management agencies.

Mass text messaging requires a third party aggregator and higher priority SMS/SMPP technology (not SMTP) to enable thousands of messages to be sent nearly simultaneously and within seconds. A database of user telephone numbers must be established and maintained. An off-site operation is required to insure the ability to send messages is not jeopardized by the emergency itself. Dozens of potential vendors were identified and researched with regard to effectiveness, services and customer satisfaction. Four vendors are currently used by IHL institutions: MIR3, SchoolCast, Connect Ed, and Everbridge.

National Standards

National Standards for emergency mass notification systems on campuses of institutions of higher learning were identified as:

- The Higher Education Opportunity Act
- The National Fire Protection Association Standard # 72

Any recommended system should meet these standards. The Higher Education Opportunity Act is the most specific for university campuses and contains the most detailed guidance with regard to policies and procedures. These standards can be found in appendix E.
Current Situation

The following table summarizes emergency mass notification systems currently in use by Mississippi's institutions of higher learning.

<table>
<thead>
<tr>
<th>University</th>
<th>On Campus</th>
<th>Off Campus</th>
<th>System</th>
<th>Auxiliary Groups?</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASU</td>
<td>Voice message to phones &amp; email. Text messages. Message to TTY/TTD.</td>
<td>ASU Website. ASU radio station.</td>
<td>Connect-ED from Blackboard Connect Inc.</td>
<td>Leadership has access in most cases.</td>
<td>Frank Davis, Chief of Police; Felicia Harried, University Relations; Desmond Steward, I.T. Director</td>
</tr>
<tr>
<td>DSU</td>
<td>Text messages. E-mail.</td>
<td>Cleveland P.D., F.D., Bolivar E.O.C.</td>
<td>SchoolCast from High Ground Solutions</td>
<td>Requires &quot;sign-up&quot;</td>
<td>Lynn Buford, Chief of Police</td>
</tr>
<tr>
<td>MSU</td>
<td>Maroon Alert Text Messages. Web page. Chapel P.A. Bull Horn.</td>
<td>MSU website. Telephone. MSU radio station.</td>
<td>MIR3</td>
<td>Rely on leadership to keep apprised.</td>
<td>Mike Rackley, Director of Information Systems</td>
</tr>
<tr>
<td>MUW</td>
<td>Text message. Tornado siren (voice capability pending)</td>
<td>Tornado siren. Phone tree.</td>
<td>Banner Web</td>
<td>Partial</td>
<td>Kennedy Meaders, Chief of Police; Sam Wise, Director of Facilities; Jody Kennedy, Assistant Director of Facilities</td>
</tr>
<tr>
<td>MVSU</td>
<td>Emergency Alert Siren</td>
<td>Siren covers 1-mile radius</td>
<td>Under advisement</td>
<td>Will be part of future system</td>
<td>Tommy Verdell, Director of Facilities</td>
</tr>
</tbody>
</table>

Emergency Mass Notification Systems
<table>
<thead>
<tr>
<th>University</th>
<th>On Campus</th>
<th>Off Campus</th>
<th>System</th>
<th>Auxiliary Groups?</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM</td>
<td>Rebel Alert, Reverse 911, Broadcast voicemail, Campus cable emergency channel 69, NOAA link, Emergency hotline, Group email, Web page, Voice message via siren, Blast email.</td>
<td>UM website, Emergency sirens</td>
<td>MIR3</td>
<td>Rely on leadership to keep apprised.</td>
<td>Jim Windham, Director of Procurement Services</td>
</tr>
<tr>
<td>UMMC</td>
<td>Blast email, Text message, Broadcast voice mail.</td>
<td>Public Affairs Office</td>
<td>SchoolCast from High Ground Solutions</td>
<td>NA</td>
<td>Jerry Clark, Asst. V.P. Student Affairs, Tom Fortner, Dir. Public Affairs, Bobbie Simon, ENS Project Manager</td>
</tr>
<tr>
<td>USM</td>
<td>Eagle Alert, Text message, Broadcast Voice mail, Blast email, P.A. system, Campus blogs, Phone trees.</td>
<td>Voice message via sirens</td>
<td>SchoolCast from High Ground Solutions</td>
<td>Rely on leadership to keep apprised.</td>
<td>Bob Hopkins, Chief of Police</td>
</tr>
</tbody>
</table>

Third party mass text messaging capabilities account for the bulk of annual expenditures. The system-wide cost for these services was about $135,700.00 for the past year for the six institutions with contracts.

**Recommendations**

**Board Policy**

In order to comply with the Higher Education Opportunity Act and provide clear direction to all institutions, the following policy is recommended for adoption by the Mississippi Board of Trustees of State Institutions of Higher Learning.
Timely Warning and Emergency Notification

In compliance with the Higher Education Opportunity Act, each of Mississippi’s institutions of higher learning must have a written policy detailing how they will respond to an immediate threat to the health or safety of students or employees occurring on campus. Each institution will have a policy with regard to:

(1) The procedures the institution will use to immediately notify the campus community upon the confirmation of a significant emergency or dangerous situation involving an immediate threat to the health or safety of students or employees occurring on the campus;

(2) A description of the process the institution will use to:
   
   (i) Confirm that there is a significant emergency or dangerous situation as described in paragraph (g)(1) of this section;
   
   (ii) Determine the appropriate segment or segments of the campus community to receive a notification;
   
   (iii) Determine the content of the notification; and
   
   (iv) Initiate the notification system.

(3) A statement that the institution will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system, unless issuing a notification will, in the professional judgment of responsible authorities, compromise efforts to assist a victim or to contain, respond to, or otherwise mitigate the emergency;

(4) A list of the titles of the person or persons or organization or organizations responsible for carrying out the actions described in this policy statement;

(5) The institution’s procedures for disseminating emergency information to the larger community; and

(6) The institution’s procedures to test the emergency response and evacuation procedures on at least an annual basis, including:

   (i) Tests that may be announced or unannounced;

   (ii) Publicizing its emergency response and evacuation procedures in conjunction with at least one test per calendar year; and
(iii) Documenting, for each test, a description of the exercise, the date, time, and whether it was announced or unannounced.

Each of Mississippi’s institutions of higher learning will follow its emergency notification procedures if there is an immediate threat to the health or safety of students, employees or visitors occurring on its campus.

University Policy and Procedures

Once a Board policy is in place, the task force recommends that each university establish policy and procedures to ensure compliance with the Higher Education Opportunity Act. These should address all known risks and include various applicable media such as sirens, text messaging, e-mails, pop-up messages on computer screens, digital displays, intercoms, loudspeakers, and radio announcements (see appendix D).

Contractual Saving Options

Mass notification providers have only recently developed applications to address the needs of an ongoing emergency. As such, they offer a myriad of applications for a variety of mass messaging needs that are not emergency related, such as planned event news. Some providers offer emergency messaging, but use the slower SMTP technology that is acceptable for non-emergencies. For the purpose of this study, true emergency mass text messaging was the only application studied.

Significant savings can be achieved by bundling institutions into common contracts. All providers offer decreasing rates for increasing number of users. Potential saving range from .25% to 10% for each increase of 1,000 registered users.

Length of contract is another avenue to realize savings. All providers offer decreasing rates for longer contract periods. Potential savings for contracting for more than one year ranges from 10% to 30% per registered user for each additional year up to three years total.

As existing contracts expire, multiple institutions could bundle their core emergency text messaging to achieve these savings. Three-year contracts should be considered. Each institution could then add other applications as desired separately from the bundled contract. Using just one provider’s figures as an example, all institutions could combine to register 100,000 users for a three-year contract with unlimited SMS/SMPP messaging at a cost of $45,000.00 per year (text messaging only) rather than the estimated $135,700.00 currently spent annually for only six institutions. In
addition to saving money, this would also improve the timeliness of notifications system-wide.

Members of the task force are willing to coordinate this process as directed.

**Possible Source of Revenue**

Additional non-emergency applications can be purchased and sold to interested parties. For example, a "Game-Day" application that would provide information on game-day activities, news or results may be of interest to athletic booster club members who could purchase access for a nominal fee that would more than pay for the emergency function. This varies by provider, and is relatively new to the market.

**Task Force Members**

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<tbody>
<tr>
<td>Rodney Fowlkes</td>
<td>Chief Information Officer</td>
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<td></td>
<td>ASU</td>
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<tr>
<td>Desmond Stewart</td>
<td>EA, CITS</td>
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<td></td>
<td>ASU</td>
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<tr>
<td>Curtis Johnson</td>
<td>Director of Accountability and</td>
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<td></td>
<td>Coordination</td>
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<td></td>
<td>JSU</td>
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<tr>
<td>Mike Rackley</td>
<td>Head of Information Technology</td>
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<td></td>
<td>MSU</td>
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<tr>
<td>Tom Ritter</td>
<td>Security and Compliance Officer</td>
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<td>MSU</td>
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<td>Sam Wise</td>
<td>Director of Facilities</td>
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<td></td>
<td>MUW</td>
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<tr>
<td>Jim Windham</td>
<td>Director of Procurement / Emergency Services</td>
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<td></td>
<td>UM</td>
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<tr>
<td>Bruce Coleman</td>
<td>Chief Public Affairs Officer</td>
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<tr>
<td></td>
<td>UMMC</td>
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<tr>
<td>Bob Hopkins</td>
<td>Chief of Police</td>
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<td></td>
<td>USM</td>
</tr>
<tr>
<td>Cliff Tucker</td>
<td>Director of Risk Management</td>
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<td></td>
<td>IHL – Risk Management</td>
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<tr>
<td>Bob Neal</td>
<td>Emergency and Fire Safety Coordinator</td>
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<td></td>
<td>IHL – Risk Management</td>
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<tr>
<td>Andy Taylor</td>
<td>Safety and Loss Control Director</td>
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<td></td>
<td>IHL – Risk Management</td>
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</table>
Appendix A
Mississippi Institutions of Higher Learning
Preliminary Survey of Campus Mass Emergency Notification Systems

1. Briefly describe the system your university uses to alert the campus community of an ongoing incident. If several methods are used, please list.

ASU

Alcorn State uses Connect-ED® communication service from Blackboard Connect Inc. (formerly known as The NTI Group, Inc.), a wholly-owned subsidiary of Blackboard Inc. (NASDAQ: BBBB), to provide leadership with the ability to reach students, faculty and staff with time-sensitive information within minutes. The service enables campus leaders to schedule, send, and track personalized voice messages at up to six phone numbers and two e-mail addresses per student and staff member. In all, the multi-modal service helps officials reach out to students and staff via:

- Voice messages to home phones, work phones, cell phones, and even e-mail addresses
- Text messages to cell phones, PDAs, networked digital signage, and other text-based devices
- Text messages to e-mail accounts
- Messages to TTY/TDD receiving devices for the hearing impaired

In addition, depending on the nature of the emergency, a message will appear prominently on the Alcorn home page or the home page can be temporarily replaced with the emergency information.

Alcorn email list serves; campus radio and cable channel stations are also used.

DSU

We are using School Cast and the campus e-mail system to send out mass messages.

JSU

Outdoor siren/pre recorded messages and voice activated
Text messaging (opt in or out)
Phone Tree
Mass E-Mail Blasts
JSU Web Page
WJSU Radio Station
JSU TV Station
MSU
We have several methods, the "maroon alert" being the most widely used. People have to voluntarily put their cell phone in our banner system, then our campus ITS can send all a text message. We also have an "Emergency" tab on our main page that gives info as to what is going on, what conditions, what numbers to call, etc. We can make announcements from our campus chapel, our patrol cars, and have two "bull horns" for large areas. We open our "Command Center" for any events that are likely to cause mass notifications and the VP's and most dept. directors are in there in direct communication with their departments. We display a time line in this room so that all can read what is going on.

MUW
The systems we have in place are text messaging, tornado siren, phone tree.

MVSU
The Campus currently uses a early warning siren system that is tied into the County's system. It is tested and routinely serviced by the County under a Joint Agreement.
At present, we do not have an active mass notification system in place.

UM
Telecommunications

Reverse 911
Telecommunications utilizes "The Communicator!" software from DCC, often referred to as "Reverse 911". It can call campus extensions in the event of an emergency. We currently maintain configured destination extension groupings to allow us to speak a message to a building, a particular floor of a building, multiple buildings and/or multiple floors. The current system we have has 24 lines to dial out to deliver messages. The restrictions on this system are the length of the message and the total number of destination stations. The system works best when the total number of destinations are small (only 24 concurrent calls can be placed) and the message is short (The length of the message determines the length of time lines are used for each answering station.

Campus Voicemail
A broadcast message can be left on all telephones on campus that have voicemail. This will also turn the telephone message light on to indicate there is a message. Note, this only applies to campus telephones that have voice mail.

Channel 69
Campus Cable system maintains emergency channel to disseminate emergency information.
Emergency Alert System
The Campus Cable system has an Emergency Alert System that receives alerts from NOAA and amber alerts via 2 stations. Currently these stations are in Batesville and the local Oxford PBS feed. We also have installed the capability of receiving alerts directly via NOAA radio. This system gives the University the additional capability of injecting a voice warning directly on all campus cable television channels.

Emergency Hotline: 1040
An emergency hotline, 662-915-1040, has been established to allow for recorded messages that provide information on emergencies, class cancellations, and so on.

Information Technology

Email to Groups
Authorized users can send e-mail messages to groups of students and employees based on demographics such as classification, EEO category, or gender. This application was developed in-house using a Java-based mail API running on a UNIX system under the Tomcat Web application server. It accesses UM's SAP ERP system, specifically Human Resources and Campus Management, to determine who should receive the messages.

MIR3 Text Messaging
UM has contracted with MIR3 (see http://www.mir3.com/) for emergency text messaging services. This allows authorized users to initiate the delivery of a text message to students and employees who have provided their cell phone numbers — currently about 8500 individuals. Once the text message is initiated, delivery to all of these numbers takes about 10-20 minutes.

UM Web
The UM Publications department has provided a standard template for the Ole Miss Web site to be used in emergencies. This template can be updated quickly and is eye-catching, providing one more way to reach campus users with emergency alerts.

Physical Plant

Sirens
The University PPD Dispatch has the capability to make emergency notifications using the siren system that has been installed around campus. Presently, there are twelve sirens that can provide a tone signal as well as being digital whereby a voice announcement can be made. These voice announcements can be in the form of ‘canned’ messages or the voice may be ‘live’. The sirens are only used in the event of an actual emergency or drill; therefore University Administrators must approve
any announcement made over the siren system. The unfortunate drawback of the sirens is the inability to hear them from inside a building.

**Student Housing and Residence Life**

**Blast Email**
We have the capability of sending blast e-mail to all students in the residence halls. If there were eminent danger in the building, we would not send student staff door to door. However, if the emergency were weather related or an emergency outside the building, student staff would go door to door instructing students to take shelter in hallways and/or lower floors if they are in high rise buildings. In addition, there are emergency instructions for all types emergencies permanently placed on the back of every bedroom door. We do not have PA systems in the buildings, but are investigating installing them when the fire alarm systems are upgraded.

**UMMC**

GroupWise Email and SchoolCast’s Emergency Notification System

**USM**

Currently utilize as back-bone of our system a text messaging system that has several capabilities to include text messaging, phone messages to land lines/cell phone, and e-mails. In addition to this we have your typical campus e-mail system, several campus blogs, phone trees, etc.

2. **Briefly describe the system your university uses to alert the off-campus community of an ongoing incident. If several methods are used, please list.**

**ASU**

The primary communication sources regarding an emergency for the off campus community are the Alcorn website and the campus radio station.

**DSU**

We would work with the Cleveland Police Department, Fire Department, or Emergency Operations Center as required.

**JSU**

Phone Tree
Email Blast
Radio and TV station
Text Messaging (opt in or out)
MSU

We notify off campus agencies through telephone or radio, or they can log into our web site as well.

MUW

Tornado with no voice over, but working on voice over.

MVSU

The Campus currently uses a early warning siren system that is tied into the County's system. It is tested and routinely serviced by the County under a Joint Agreement.
The same Siren System is designed to cover a 1mile radius around the campus.

UM

THE SIRENS WE HAVE ARE "TRIGGERED" BY THE CITY / COUNTY EMERGENCY COORDINATOR AND THE LOCAL 911 DISPATCH AND ALL GO OFF AT THE SAME TIME. WE CAN OPERATE INDEPENDENTLY, BUT HAVE AGREED TO ALLOW 911 TO SET OFF WHEN THE COUNTY GOES UNDER A TORNADO WARNING.

UMMC

Typically handled through our Public Affairs Office....and institutional Website

USM

There is also a voice notification system that was added to buildings who had a working PA system and a variation of the PA system was put into all other buildings that had nothing. This allows us to use an existing system that we already had in-house to send voice notification to buildings. It is operated from UPD via radio system or from in the field using a handheld radio. Our weather siren also has voice capabilities if needed.

3. If an emergency alert system was purchased, what is it called and from whom did you purchase it?

ASU

Connect-ED® communication service from Blackboard Connect Inc.
DSU

School Cast from High Ground Solutions, Inc.

JSU

Purchased through Everbridge
Name for system is "Tiger Alert"

MSU

We use the "Maroon Alert" which is a system internal to MSU

MUW

Banner Web

MVSU

We are in the process of purchasing a system, purchasing decisions have not been made final.

UM

MIR3

UMMC

SchoolCast - High Ground Solutions

USM

Our system for text messaging is third party vendor called SchoolCast and our voice notification system is in-house supported by Motorola equipment.

4. Does your mass notification system reach the various “camps” and other auxiliary groups that take place during the summer?

ASU

Registration to our mass notification system is voluntary, although all students and employees are strongly encouraged to sign up. In most cases, the leadership of such groups would have access to the Connect-ED system as well as the website, radio station, and cable channel.
DSU

Only those who are already signed up in the program.

JSU

It will reach all groups on the campus property

MSU

We rely on cell phones, radios, housing or camp directors keep camps apprised of what is occurring on campus.

MUW

The system we have needs to be upgraded. I am currently looking for money to fund our voice capabilities.

MVSU

This would be developed upon purchase of the system.

UM

NOT DIRECTLY, BUT IT DOES REACH THE UNIVERSITY EMPLOYEES / STUDENTS IN CHARGE OF THE CAMPS.

UMMC

Not such an applicable question for a Health Science Campus...but in general, No. Reaching current Students, Faculty and Staff members.

USM

5. Who is the best person to contact regarding any follow-up questions we may have?

ASU

Frank Davis, Alcorn Police, 601.877.3000 Felicia Harried, University Relations, 601.877.3977

DSU

Lynn Buford, Chief of Police
Dr. Curtis Johnson

Mike Rackley, head of our ITS (Information Technology System) would be the best person to ask further questions.

Chief Meaders, Sam Wise and Jody Kennedy

Tommy Verdell, Director of Facilities

JIM WINDHAM

Jerry Clark, Assistant Vice Chancellor of Student Affairs and Tom Fortner, Director of Public Affairs, or Bobbie Simon, Project Manager, Emergency Notification System

Bob Hopkins
Chief of Police
The University of Southern Mississippi
bob.hopkins@usm.edu
601-266-4947 Office
601-266-6731 Fax.
Appendix B
Results of Survey to University Risk Management and Insurance Association Regarding Mass Notification System Usage  
October 26, 2009 – November 2, 2009

Ten Responders: Auburn University, University of the Pacific, Lipscomb University, University of Nevada Las Vegas, Southern Methodist University, University of Denver, University of Southern California, Oklahoma State University, Texas Tech, University of San Diego

Now that you’ve had some experience in designing and implementing a mass notification system(s):

1. How many times per year (on average) does some aspect of your emergency mass notification system get used for an emergency alert?
   - 1-2
   - 1
   - Approximately 6 times
   - 3-5 x; Plus 3 test messages
   - 1-2, tested monthly
   - None yet, only tests
   - 8-10 times
   - None, test once per semester
   - 25 (mostly tornado warnings; number does not include other weather alerts broadcast via NOAA weather radio)
   - None so far

2. Which elements of your system work best?
   - E-mail
   - Text messaging
   - Messaging
   - All. We use it for text messaging, email, and voice simultaneously and it is much faster than say, email or phone calls
   - Text, e-mail, phone
   - Na
   - Text Messaging is the best system we have in place to get the word out to everyone
   - Na
   - Sirens, NOAA weather radios, mass notification system (voice, text and email)
   - see number 5

3. Which elements experience the most difficulties?
   - Land phone lines
   - Siren
   - Text message delivery by Verizon; spam filters
   - More administrative with the company due to new ownership last year, but it’s better
   - When going campus-wide, text is the slowest... it is carrier dependent.
   - Na
• E-mail and voice over system offers the most challenge for us if there was a large scale disaster
• Getting members of the University community to sign up for the system. It is now part of the new student orientation program to have the new students sign up. The problem is when there are no major emergencies, there is a lot of apathy.
• Voice messaging to campus phones (due to local infrastructure limitations); reception issues with tone alert radios
• Text Messaging

4. Which elements of your system are used most frequently?
   • Equal
   • Text messaging
   • Text and email messaging
   • Each time a campus safety dispatch person logs on—they run a test to see that the system is working. This is the most frequent use.
   • That is, text, e-mail and phone
   • Na
   • We normally use all communication devices to alert faculty/staff/students in an emergency event. For more "informational messages" we typically use e-mail and not text messaging.
   • All aspects of the system are used equally. We have changed our system to have e-mail be the first point of contact with the University community since not everyone has offered their cell or home phone information
   • Sirens, NOAA weather radios, tone alert radios, and mass notification system (all used for tornado warnings)
   • None more than any other

5. Who provides your mass text messaging / email capability? Are you satisfied with their service? If not, can you share why not?
   • NTI – satisfied
   • ConnectEd, for the most part. There is still room for improvement
   • Cooper Notification provides text, email and voice. Somewhat...However, we have an outstanding issue with Cooper’s relationship with Verizon.
   • Blackboard/NTI
   • Send Word Now
   • Send Word Now
   • e2campus is our provider for text messaging. We have been with them 2+ years now and have been satisfied with their service
   • Blackboard Connect. Yes, we are satisfied
   • High Ground Solutions of Birmingham, AL provides our mass voice, text messaging and email services through their product called SchoolCast; however, for email they send to
one central campus email address which is then internally forwarded. (We found this sped up delivery times.) Yes, we are satisfied with their service.

- CodeRed. We have been reviewing our Mass Notification program and services over the past several months. Currently, we are developing a matrix of all our current available Campus services, how they currently work, who is responsible for each one and identified time delivery methods. We discussed to present this to information to our leadership about our current capabilities and present a comparison of additional available services not being used on our campus along with their increased costs. We agree it is extremely critical for us to have one device to work as an complete interface to ALL services without having to move between different input devices. One of our goals is; we want to increase the speed to get messages out to all of our devices, but we have some concern as the complete speed to deliver those messages compared to an emergency or informational use only.

6. Is your university part of a system? If so, is there system-wide coordination of any aspect of mass notification?
   - NO
   - Yes. Yes, except for our smallest campus with which we are working to improve
   - No
   - No, Private
   - No
   - It's on our main and satellite campuses
   - No we are a standalone university.
   - We have coordinated our services to support each other and provide redundancy.
   - I'm not aware of any system-wide coordination of any aspect of mass notification. We do collaborate with emergency management professionals at other IHE within the state when evaluating additional systems and developing bid specifications.
   - We share our system with the other OSU Campuses in Tulsa, Okmulgee, and Oklahoma City. North Eastern University Campus also shares our system.
Appendix C
Your Mass Notification Cheat Sheet - Revised  

Here's the latest breakdown of some of the pros and cons of the more commonly used emergency alert systems. Deploying multiple modes will help to ensure the strengths of one solution compensate for the weaknesses of others. Also, be certain to test the systems regularly, and account for the hearing and sight impaired.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Application Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullhorns</td>
<td>Inexpensive</td>
<td>Limited to small areas of coverage</td>
<td>Be certain batteries are always charged</td>
</tr>
<tr>
<td></td>
<td>Can operate when there is no power</td>
<td>Challenges with voice intelligibility</td>
<td>Good for evacuations for foreseeable events (hurricanes, tornadoes, etc.)</td>
</tr>
<tr>
<td></td>
<td>Easy to use</td>
<td>Require many personnel to operate when they could be better used to respond to an active shooter or other incident requiring immediate response</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Potential for misuse by unauthorized personnel</td>
<td></td>
</tr>
<tr>
<td>Call Boxes</td>
<td>Since they are already installed on many campuses, the technology can be repurposed to push information out</td>
<td>Challenges with voice intelligibility</td>
<td>Normally deployed in parking lots, intramural fields, bike trails and other remote areas not easily reached by other means of communication. Also deployed around campus (usually outside)</td>
</tr>
<tr>
<td></td>
<td>Individuals located in the area of a call box can communicate with law enforcement, and police/security can pinpoint their location</td>
<td>Depending on the units installed, speakers may not be loud enough for individuals standing away from the devices to hear an announcement</td>
<td>CCTV/security cameras can be installed on them for additional situational awareness</td>
</tr>
<tr>
<td></td>
<td>No sign-up required to receive messages</td>
<td>Normally not designed for communications inside buildings</td>
<td>Speakers can be installed for mass notification</td>
</tr>
<tr>
<td></td>
<td>Campus constituents are familiar with this type of technology</td>
<td>Cost due to hardwiring or maintenance</td>
<td>Wireless units can overcome some cost/installation issues</td>
</tr>
<tr>
<td></td>
<td>Strobes that are normally installed can alert hearing impaired</td>
<td>Designed for 9-1-1 calls and assistance calls, not to be a warning device</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depending on the model, messages may not be able to be catered to specific areas</td>
<td></td>
</tr>
<tr>
<td>Solution</td>
<td>Strengths</td>
<td>Weaknesses</td>
<td>Application Comments</td>
</tr>
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</tr>
<tr>
<td>Digital Displays (changeable message signs,</td>
<td>Many are portable</td>
<td>Can be costly on large campuses with many rooms or due to hardwiring or</td>
<td>Good for traffic control, crowd control and alerts during major events (football games, etc.)</td>
</tr>
<tr>
<td>LED signs, LCD signs, etc.)</td>
<td>No sign-up required to receive messages</td>
<td>maintenance issues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reach hearing impaired</td>
<td>Can be overlooked if not used regularly or placed properly</td>
<td>Can be deployed inside buildings (classrooms, hallways) and public areas (cafeterias, student unions)</td>
</tr>
<tr>
<td></td>
<td>Good return on investment if used regularly for non-emergencies</td>
<td>Portable units can take time to deploy</td>
<td>“One of the things that makes mass notification behavior and systems work well is when you get to exercise them everyday for routine kinds of things. Electronic display signs are a classic example of something you should and could use almost all of the time. People are looking at them, expecting to get useful information from them and learn quickly that if they follow the information, it makes their life better.” — David Lindstrom, chief privacy officer, Penn State</td>
</tr>
<tr>
<td></td>
<td>Intrusive when properly deployed</td>
<td>Not all are CAP compliant</td>
<td></td>
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<tr>
<td></td>
<td>Many can integrate with other emergency alert solutions for a multi-modal</td>
<td></td>
<td>E-mails can be prioritized so they get through faster</td>
</tr>
<tr>
<td></td>
<td>approach</td>
<td></td>
<td>Divide recipient list into appropriate groups (e.g. by campus) and when possible, only send messages to affected individuals</td>
</tr>
<tr>
<td></td>
<td>Some use Power of Ethernet (POE), reducing energy usage</td>
<td></td>
<td>Know how many E-mails per minute your network can handle. Too many could overload the system</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Test the system regularly</td>
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<td></td>
<td></td>
<td></td>
<td>Educate message recipients on how to sign up, what they should expect and how to configure their spam filters</td>
</tr>
<tr>
<td>E-mails</td>
<td>Can leverage pre-existing E-mail system</td>
<td>Not very reliable. Not everyone checks their E-mails immediately (e.g.</td>
<td></td>
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<tr>
<td></td>
<td>Effective for messages going to staff who have computers controlled by the</td>
<td>Message recipients in class, with a patient, or away from their desks</td>
<td></td>
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<tr>
<td></td>
<td>Campus constituents can't opt out of the system</td>
<td>or PDAs for some reason)</td>
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<tr>
<td></td>
<td>Communicates with off-campus constituents</td>
<td>Server overloads may result, causing delays in message receipt</td>
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<tr>
<td></td>
<td>Can be used for non-emergency communications (attendance notification,</td>
<td>Messages may be mistakenly classified as spam by recipients or third-party</td>
<td></td>
</tr>
<tr>
<td></td>
<td>outreach and important reminders)</td>
<td>servers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can integrate with other emergency alert solutions for a multi-modal</td>
<td>Students sometimes configure their E-mails to block institution-initiated</td>
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<tr>
<td></td>
<td>approach</td>
<td>messages</td>
<td></td>
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<td></td>
<td></td>
<td>Often follow-up messages can't be sent until the initial E-mail is</td>
<td></td>
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<tr>
<td>Intercoms</td>
<td>Because they are frequently used in medical centers for regular business,</td>
<td>Many are not CAP compliant</td>
<td>Used frequently in hospitals by employees. Because the campus has more control over its staff (e.g. students on college campuses), a higher level of training can be achieved, making the system very effective for mass communication during emergencies</td>
</tr>
<tr>
<td></td>
<td>they offer a good return on investment</td>
<td>Not as applicable to educational campuses for mass notification purposes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In most hospital cultures, staff are accustomed to using this solution</td>
<td>Many are not supervised, so campus facility personnel might not know when</td>
<td></td>
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<tr>
<td></td>
<td>On many educational campuses, intercomms are already installed and can</td>
<td>speakers/system are in disrepair</td>
<td></td>
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<tr>
<td></td>
<td>communicate emergency alerts</td>
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<tr>
<td>Solution</td>
<td>Strengths</td>
<td>Weaknesses</td>
<td>Application Comments</td>
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</tbody>
</table>
| **Loudspeakers (fixed or portable, aka "Giant Voice")** | Inexpensive  
Cover a large area  
No sign-up required to receive messages  
Highly intrusive | Dead spots  
Challenges with voice intelligibility  
Aesthetics (speakers are very large)  
Portable solutions can be expensive  
Unintended message recipients (e.g. Neighbors in residential areas) | Very useful at athletic events  
Increase effectiveness by combining with strobe lights to alert hearing-impaired (or those listening to their iPods)  
If conducting a test and another area is in earshot but is not the intended recipient, announce the test well in advance to prevent panic and unnecessary alarm  
Consider the topography of the area where the speakers will be deployed to get the maximum output so messages reach their intended targets |
| **Phone trees/telephony** | Location and recipient specific  
Call receipt acknowledgement  
Compatible with major mapping systems  
TTY/TDD calling for the hearing impaired  
Remote launching capability  
Can be used for non-emergency communications (attendance notification, outreach and important reminders) | Cost  
Database management  
Not appropriate for large scale notifications due to limited trunk or cell tower capacity – landlines and cellular providers might experience service failure/saturation during a major incident like 9/11 or Katrina  
For calls going to landlines, recipients may not be where the phone is located, depending on time of day (during class, in surgery, etc.)  
Landlines might not be connected/cell phones might not be turned on  
Requires sign-up  
Relies on customer support for upgrades | Particularly effective for small scale mass notification (e.g. Emergency team members, small communities, hospital staff) and during the evening/overnight hours |
| **Popup message (banners) on computer screens** | Allow messages to be displayed on computer desktops and PowerPoint presentations even if the user has not logged onto E-mail  
Intrusive for those at their computers or sitting in class watching presentations  
Relatively inexpensive  
Messages can be discreetly specified for individuals or groups of persons | Currently not effective on computers that are not controlled by the campus, unless the institution sets up a process whereby message recipients can enroll to receive alerts on their computers  
Messages do not reach those campus constituents who are not logged onto their computers | Effective for messages going to staff and faculty who have computers controlled by the campus  
Future technology might enable pop-up messages to reach students and other visitors on their personal computers who are logged onto the campus wireless network |
<table>
<thead>
<tr>
<th>Solution</th>
<th>Strengths</th>
<th>Weakness</th>
<th>Application Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters</td>
<td>Placed in common areas</td>
<td>Can be overlooked</td>
<td>Create templates before incident occurs to increase deployment speed</td>
</tr>
<tr>
<td></td>
<td>Inexpensive</td>
<td>Can be slow to create and deploy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy to create and deploy</td>
<td>Require many personnel to deploy when they could possibly be better used</td>
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<td></td>
<td></td>
<td>to respond to an active shooter or other incident requiring immediate</td>
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<td></td>
<td></td>
<td>response</td>
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<tr>
<td>Radio announcements</td>
<td>Can connect with campus and local police departments</td>
<td>AM coverage can be a challenge inside buildings</td>
<td>Create text for announcements beforehand. Be certain public information/communications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Messages usually cannot be catered to a specific area, must be general</td>
<td>department reviews verbiage</td>
</tr>
<tr>
<td>Sirens</td>
<td>Inexpensive</td>
<td>Dead spots</td>
<td>Good for alerts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inability to communicate specific messages</td>
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<td></td>
<td></td>
<td>Limited indoor use</td>
<td>A network of sirens can be deployed to overcome some dead spot issues</td>
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<td></td>
<td></td>
<td>Frequent tests required</td>
<td>Can be mixed with voice instruction and strobes for improved communication of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>specific information</td>
</tr>
<tr>
<td>Social media</td>
<td>Free: Does not require any equipment purchase</td>
<td>Usually, unauthorized individuals have created unofficial college pages,</td>
<td>Campuses can visit <a href="http://www.namechk.com">www.namechk.com</a> to determine if their</td>
</tr>
<tr>
<td>(Facebook, MySpace,</td>
<td></td>
<td>so it is difficult for visitors to identify the institution’s official</td>
<td>sites have been spoofed or their names have been taken</td>
</tr>
<tr>
<td>Twitter, etc.)</td>
<td></td>
<td>site. Visitors signed up on the unofficial sites might receive inaccurate</td>
<td>Fad factor: Although social media appears to be here to stay, it has yet to be</td>
</tr>
<tr>
<td></td>
<td></td>
<td>information.</td>
<td>determined how viable specific sites will be in a few years</td>
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<tr>
<td></td>
<td></td>
<td>Potential for hacking, denial of service attacks</td>
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<td></td>
<td>Another mass notification portal to manage, which requires additional</td>
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<td>staffing.</td>
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<td>Solution</td>
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<tr>
<td>Text (SMS) messaging</td>
<td>Most college students pay attention to text messages they receive on their cell phones</td>
<td>Messages may be considered spam by some systems and/or recipients</td>
<td>Develop credibility of system and institution by only using it when appropriate; avoid overuse</td>
</tr>
<tr>
<td></td>
<td>Effective way of communicating with parents of K-12 students (via cell phones, PDAs, etc.) and off-campus constituents</td>
<td>Cost</td>
<td>Test the system regularly</td>
</tr>
<tr>
<td></td>
<td>Text delivered via a separate control channel that is reserved for data only on cell networks. Solution uses much less bandwidth than voice</td>
<td>Registration required</td>
<td>Educate message recipients on how to sign up and what they should expect from the solution</td>
</tr>
<tr>
<td></td>
<td>Can be used for non-emergency communications (attendance notification, outreach and important reminders)</td>
<td>Database management challenges</td>
<td>Database of intended recipients can be broken down by distribution groups to increase delivery speed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited by trunk capacity, which may slow delivery of message</td>
<td>Inform those who sign-up to verify they have an SMS messaging plan, otherwise messages might not be delivered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Many K-12 schools/districts do not allow students to carry or use cell phones while on campus. College professors may require students to turn off cell phones during class</td>
<td>If using a third-party vendor, make sure they have made the appropriate arrangements with aggregators and cell carriers so their emergency messages won't be delayed or blocked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Messages cannot be catered to a specific area; must be general</td>
<td>Have the message originate from a campus rather than a vendor. This increases the likelihood that the message will be prioritized correctly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some smaller, regional carriers don't have agreements with major carriers, which prevents the messages from being delivered</td>
<td></td>
</tr>
<tr>
<td>TV announcements</td>
<td>Inexpensive</td>
<td>Messages cannot be catered to a specific area; must be general</td>
<td>Messages can be scrolled across screens, can interrupt regular programming if campus has control of cable system</td>
</tr>
<tr>
<td></td>
<td>Can be fast to implement if campus already has a TV station or controls the campus cable network</td>
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</tr>
<tr>
<td></td>
<td>No sign-up required to receive messages</td>
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<tr>
<td>Voice evacuation (connected to the fire system)</td>
<td>Since they have been in place on campuses for years, the technology can be repurposed for mass notification, increasing the system's return on investment</td>
<td>Mainly deployed indoors</td>
<td>&quot;For very tight applications, you can put external speakers off of a fire alarm voice evacuation system on the exterior of a building so people just leaving or approaching the building can be made aware that something is going on inside.&quot; — Pete Tately, mass notification program manager, Siemens Building Technologies</td>
</tr>
<tr>
<td></td>
<td>Highly regulated by industry codes</td>
<td>Voice intelligibility issues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are fully supervised so campus personnel are informed immediately when system or portions of system are not functioning</td>
<td>Does not reach hearing impaired</td>
<td>Combine with strobes to reach hearing impaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Watch for 2010 NFPA code changes</td>
</tr>
<tr>
<td>Solution</td>
<td>Strengths</td>
<td>Weaknesses</td>
<td>Application Comments</td>
</tr>
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</tr>
<tr>
<td>Weather radios</td>
<td>Preprogrammed to activate during weather warnings</td>
<td>Announcements are usually not site or campus specific</td>
<td>Counties might eventually become subdivided so a campus can receive its own designation for alerts</td>
</tr>
<tr>
<td></td>
<td>Can also send civil emergency messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web announcements</td>
<td>Information can be updated quickly</td>
<td>Sites can become overloaded when there is a lot of traffic due to limited server capacity</td>
<td>Explore catastrophic bandwidth options</td>
</tr>
<tr>
<td></td>
<td>Can leverage pre-existing campus Web site at no additional cost</td>
<td>Web sites may not be regularly checked by campus constituents</td>
<td>Temporarily water down site (limit use of graphics and scripting) during emergencies so more people can access site without it crashing</td>
</tr>
<tr>
<td></td>
<td>Good for communicating information to those outside of campus (parents, media, etc.)</td>
<td>Is a passive information delivery mechanism, is not intrusive</td>
<td>In hazard-prone areas, Web sites should be redundant, being hosted (as back-up) in an off-site area where there are no (or fewer) hazards</td>
</tr>
<tr>
<td></td>
<td>RSS feeds can automatically populate social networking portals (Facebook, MySpace, Twitter, etc.)</td>
<td></td>
<td>Other mass notification systems often direct campus community to check Web site for additional information</td>
</tr>
<tr>
<td>800 numbers (hotlines)</td>
<td>Inexpensive</td>
<td>Is a passive information delivery mechanism, is not intrusive</td>
<td>Particularly appropriate for providing information to those outside of affected area (parents, media, etc.)</td>
</tr>
<tr>
<td></td>
<td>Message center usually located away from area where disaster is occurring so the line remains functional</td>
<td>Can be limited by local cell tower and other capacity issues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not limited by number of landlines on campus</td>
<td>Messages cannot be catered to a specific area; must be general</td>
<td></td>
</tr>
</tbody>
</table>

For additional information on this and other healthcare and education safety and security topics, visit [www.CampusSafety Magazine.com](http://www.CampusSafety Magazine.com).
Appendix D
Appendix D

Task Force Ranking of Emergency Mass Notification Media
Appendix E
Higher Education Opportunity Act
Section 688.46

(e) **Timely warning and emergency notification.**

(3) If there is an immediate threat to the health or safety of students or employees occurring on campus, as described in paragraph (g)(1) of this section, an institution must follow its emergency notification procedures. An institution that follows its emergency notification procedures is not required to issue a timely warning based on the same circumstances; however, the institution must provide adequate follow-up information to the community as needed.

(g) **Emergency response and evacuation procedures.**

An institution must include a statement of policy regarding its emergency response and evacuation procedures in the annual security report. This statement must include—

(1) The procedures the institution will use to immediately notify the campus community upon the confirmation of a significant emergency or dangerous situation involving an immediate threat to the health or safety of students or employees occurring on the campus;

(2) A description of the process the institution will use to—

(i) Confirm that there is a significant emergency or dangerous situation as described in paragraph (g)(1) of this section;

(ii) Determine the appropriate segment or segments of the campus community to receive a notification;

(iii) Determine the content of the notification; and
(iv) Initiate the notification system.

(3) A statement that the institution will, without delay, and taking into account the safety of the community, determine the content of the notification and initiate the notification system, unless issuing a notification will, in the professional judgment of responsible authorities, compromise efforts to assist a victim or to contain, respond to, or otherwise mitigate the emergency;

(4) A list of the titles of the person or persons or organization or organizations responsible for carrying out the actions described in paragraph (g)(2) of this section;

(5) The institution’s procedures for disseminating emergency information to the larger community; and

(6) The institution’s procedures to test the emergency response and evacuation procedures on at least an annual basis, including—

(i) Tests that may be announced or unannounced;

(ii) Publicizing its emergency response and evacuation procedures in conjunction with at least one test per calendar year; and

(iii) Documenting, for each test, a description of the exercise, the date, time, and whether it was announced or unannounced.