Meramec Region Emergency Notification Platform Survey

A Disaster Supplemental Statewide Planning Initiative

Prepared By

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Responsible Entity

Missouri Association of Council of Governments

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Introduction

During natural or man-made hazardous events, it is critical to alert the general public as quickly as possible. The preservation of the public's health, safety, and welfare can be considerably improved by rapidly disseminated information and guidance. The Meramec Regional Planning Commission (MRPC), in accordance with Major Disaster Declaration 1749[1] and Hazard Mitigation Plan actions items[2], surveyed its eight county region concerning emergency notification platforms utilized to monitor and disseminate alerts, as well as those platforms promoted to the public. In addition, each municipality and school district reported each platform's capabilities, targeting features, costs, benefits, and shortfalls.

Meramec Region

The Meramec Region is made up of eight rural counties (Crawford, Dent, Gasconade, Maries, Osage, Phelps,

Pulaski, and Washington), 37 municipalities, and 30 school districts. Located in the southeast-central portion of Missouri, the region covers 5,131 square miles. Furthermore, the region is currently home to some 201,555 people, according to 2011-2015 ACS 5-Year Estimates. Residing within the Ozark Mountains, the region is subdivided amongst the Salem Plateau and St. Francois Mountains. The region contains 13,000 miles of road including Interstate 44, U.S. 63, and the historic Route 66. The region is home to 10 publicly owned airports, and three operating rail services (Burlington Northern Santa Fe, Union Pacific, and Missouri Pacific).
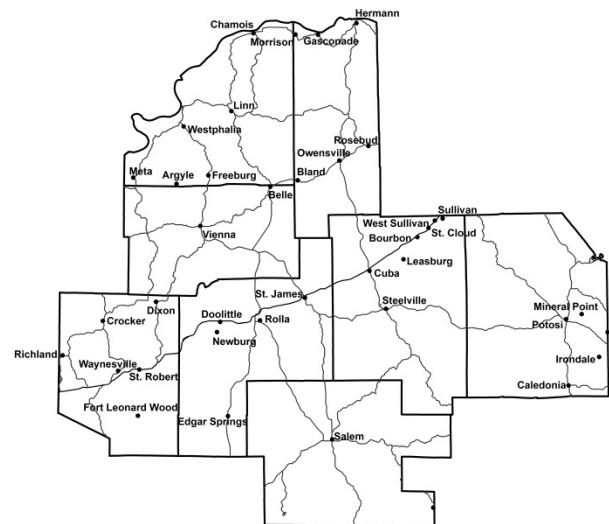
Emergency Notification History

The first emergency broadcasting system, Control of Electromagnetic Radiation (CONELRAD), was established in 1951. The system was intended to inform the public of enemy attack during the Cold War through radio and television stations. CONELRAD was replaced by the Emergency Broadcast System (EBS) in

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[1] https://www.fema.gov/pdf/news/pda/1749.pdf
[2] Encourage jurisdictions and school districts to obtain, improve, and budget for enhanced warning and communication systems.

1963. The EBS was designed to allow the President of the United States to notify the general public of war related, impending dangers through television and radio announcements. However, the system was utilized regularly for civil emergency messages and severe weather hazards. In 1997, the Federal Communications Commission (FCC) developed the Emergency Alert System (EAS), replacing the EBS. This system is capable of transmitting messages via AM, FM, broadcast TV, cable TV, satellite TV, digital TV, satellite radio, and smart phones. Today, the EAS is jointly managed by the Federal Emergency Management Agency (FEMA), FCC, and National Weather Service (NOAA/NWS).

Overtime, local officials recognized the importance of reaching citizens during civil and hazardous events through emergency notification platforms. It wasn't until the 1980s, when the first mass notification systems (MNS) were commercially available to state and local offices. Before Sept. 11, 2001, the few systems available were specialized and not commonly employed. However, in the past decade MNS demand and solutions have increased, fueling the vendor market. It has been estimated that 75 percent of cities with a population of 150,000 currently utilize some form of mass notification system[3]. However, little data is available regarding MNS in rural areas of Missouri.

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[3] GALAIN Solutions, INC. Mass Notification Practices in U.S. Local Government, Findings from a Comprehensive Study of Notification Practices across America. May 2010

"However, little data is available regarding MNS in rural areas of Missouri."

Today, a wide range of emergency notification platforms are being utilized throughout the Meramec Region. These platforms enable administrators to monitor for emergency notifications, as well as disseminate notifications to the public. Known platforms include the EAS, television, radio, social media, single/dual band radios, MNS, apps, sirens, and text/email.

Survey

A total of 75 surveys were distributed to regional municipalities and school districts (jurisdictions). Surveys were sent on May 26, 2017 and collected through June 16, 2017. Surveys were divided into three sections regarding monitoring, dissemination and promotion. Under each section, subsequent questions followed (**Appendix**). A total of 31 surveys were returned (41.3 percent). The following list includes the municipalities and school districts that participated in the survey by county.

Crawford County
- City of Bourbon
- City of Cuba
- City of Steelville
- City of Sullivan
- Crawford County R-I School District
- Steelville R-III School District
- Sullivan School District

Dent County

- City of Salem
- Green Forest R-II School District
- Salem R-80 School District

Gasconade County
- City of Bland
- City of Owensville
- Gasconade County
- Gasconade County R-I School District

Maries County
- City of Belle
- Maries County R-II Schools

Phelps County
- City of Newburg
- City of St. James
- Phelps County
- St. James R-I School District

Pulaski County
- City of Richland
- Crocker R-II School District
- Waynesville R-VI School District

Osage County
- City of Westphalia
- Osage County
- Osage County R-I School District
- Osage County R-II School District
- Osage County R-III School District

Washington County
- Kingston K-14 School District
- Potosi R-III School District
- Richwoods R-VII School District

Monitoring for Emergency Alerts

The first portion of the survey asked participants how their municipality or school district monitors for emergency alerts in order to provide warning to residents. Participants chose from the following: local/cable TV, AM/FM radio, social media (Facebook, Twitter, other), single/dual band radios, MNS, text/email alerts, apps, NOAA weather radios, and other. **Figure 1** is a summary of the results as a percent of total responses.

Figure 1
Monitoring Platforms used as a Percent of Total Responses

Monitoring Platform	Percent
Local/Cable TV	*74.19%*
AM/FM Radio	*74.19%*
Facebook	*58.06%*
Twitter	*22.58%*
Single/Dual Band Radios	*32.25%*
MNS	*64.51%*
Text/Email Alerts	*22.58%*
Apps	*48.38%*
NOAA Weather Radios	*41.93%*
Other	*9.67%*

According to the survey results, 74.19 percent of municipalities and school districts utilize local/cable TV and radio as a method to monitor for emergency notifications (severe weather, civil notifications, etc.). The second most utilized monitoring platform includes mass notification systems (64.51 percent). Municipalities reported using Nixle, Phonevite, Rave Alert, Everbridge, and Smart911. School districts reported using School Messenger, BlackBoard Connect, and Signal Kit. Many jurisdictions reported utilizing their own MNS as a way to monitor for emergency alerts. MNS are typically tied to the National Weather Service. Eight of the jurisdictions reported the use of an external MNS for monitoring purposes.

The third most utilized monitoring platform was Facebook (58.06 percent). Interestingly, Twitter is only used by 22.58 percent of respondents.

Only 22.58 percent of respondents reported the use of text/email alerts. Those texts and emails were reported as

originating from KMOV, Weather Channel, Schneider Electric, and TextCaster.

Apps reported for monitoring include FEMA, NOAA, Weather Channel, KY3, Weather Underground, and BlackBoard Connect App. Other systems utilized to monitor for emergency notifications include Missouri State Emergency Management Agency (SEMA) WebEOC, National Weather Service (NWS) Chat Live, Ham Radio, and MULES.

Disseminating Emergency Alerts

The second portion of the survey asked participants what platforms their jurisdiction used to disseminate notifications to the public. Participants chose from the following: sirens, local/cable TV, AM/FM radio, social media (Facebook, Twitter, other), and MNS. Subsequent questions were asked about MNS capabilities, targeting features, costs, benefits, and shortfalls. **Figure 2** is a summary of the results as a percent of total responses.

Figure 2
Platforms used to Disseminate Notifications as a Percent of Total Responses

Dissemination Platform	Percent
Sirens	*100.00%
Local/Cable TV	45.16%
AM/FM Radio	61.29%
Facebook	67.74%
Twitter	29.03%
MNS	77.41%

*Municipalities only

According to the results, all municipalities reported the use of storm warning sirens. 77.41 percent of survey respondents utilize a MNS to disseminate notifications to the public. Additionally, all respondents stated that the service is utilized not only for weather-related events, but civil notifications as well. Mass notification systems operated by municipalities within the region include IPAWS, Nixle, Phonevite, Rave Alert, Everbridge, and Smart911. School districts reported operating BrightArrow, School Messenger, BlackBoard Connect, Signal Kit, and TextCaster. The third most utilized platform to disseminate notifications is Facebook (67.74 percent). The fourth platform was AM/FM Radio (61.29 percent).

Figure 3 summarizes mass notification system subscription fees as reported by municipalities and school districts. **Figure 4** summarizes the reported capabilities and targeting features per platform. It should be noted that platform administrators were not necessarily the preparer of the survey. A non-user may not be privy to detailed or accurate information regarding the platforms capabilities and targeting features.

"Three school districts have platforms sponsored by local banks."

Survey Summary of Mass Notification Systems utilized to Disseminate Notifications

Platform	Jurisdiction	Fee	Website
Municipalities			
Everbridge	City of St. James	-	Everbridge
	Phelps County	$14,950 Annually	-
IPAWS	City of Cuba	None	IPAWS
Nixle	City of Sullivan	None	Nixle
Phonevite	City of Salem	Yes	Phonevite
Rave Alert	Gasconade County	$4,500 Annually	Rave Alert
Smart911	Osage County	Yes	Smart911
School Districts			
BlackBoard Connect	Green Forest R-II	$300 Annually	BlackBoard Connect
	St. James R-I	$3,000 Annually	-
	Kingston K-14	$1,200 Annually	-
	Potosi R-III	*Sponsored by Belgrade State Bank	-
BrightArrow	Crawford Co. R-I	$1,089 Annually	BrightArrow
Signal Kit	Maries Co. R-II	$2,500 Annually	Signal Kit
School Messenger	Steelville R-III	$2,000 Annually	School Messenger
	Sullivan School District	Yes	-
	Salem R-80	No	-
	Gasconade Co. R-I	$2,000 Annually	-
	Crocker R-II	Yes	-
	Waynesville R-VI	$14,250	-
	Osage Co. R-I	$1,500 Annually	-
TextCaster	Osage Co. R-II	*Sponsored by Maries Co. Bank	TextCaster
	Osage Co. R-III	*Sponsored by Maries Co. Bank	-
	Richwoods R-VII	-	-

According to the results in terms of fees, Everbridge is the most expensive MNS. However, it should be noted that the City of Rolla and City of St. James, along with various departments within those jurisdictions, utilize the system and pay the county for the use. Gasconade County estimated Rave Alert's service fee at approximately $4,500 annually. Both Sullivan and Cuba do not pay for their platforms. Two municipalities did not disclose their service fees.

School districts reported paying between $300 and $14,250 annually for MNS services. Three school districts have their platforms sponsored by local banks, including Maries County Bank and Belgrade State Bank.

Figure 4
Mass Notification System Capabilities and Targeting Feature Summary

Platform	Capabilities			Targeting Features					
	Text	Email	Call/ Voicemail	Zip Code	Street Address	Radius from point	Lat/Long	Shapefile	Specific Contact Types
Everbridge	✓	✓	✓	✓	✓	✓	✓	✓	✓
IPAWS	-	-	-	-	-	✓	-	-	-
Nixle	✓	✓	-	✓	-	-	-	-	-
Phonevite	-	-	✓	-	-	-	-	-	-
Rave Alert	✓	✓	✓	-	✓	✓	-	✓	-
Smart911	✓	✓	✓	✓	✓	✓	-	-	-
BlackBoard Connect	✓	✓	✓	-	✓	-	-	-	-
BrightArrow	✓	✓	✓	-	-	-	-	-	-
Signal Kit	✓	✓	✓	-	-	-	-	-	-
School Messenger	✓	✓	✓	✓	✓	-	-	-	-
TextCaster	✓	✓	✓	-	-	-	-	-	-

According to respondents, the Everbridge platform is the only system that has text, email, and call/voicemail capabilities and is able to target individuals by zip code, street address, radius from point, latitude/longitude, shapefile, and specific contact type features. Smart911 and Rave Alert are the platforms with the second most capabilities and targeting features. For school districts, School Messenger appears to be the most versatile in terms of capabilities and targeting features. It should be noted that platforms may encompass additional capabilities and targeting features than reported. Preparers of the survey may have only reported capabilities and targeting features routinely used. Also, some platforms might have limited access to such capabilities and features dependent upon level of subscription.

Furthermore, respondents were asked to provide each MNS's greatest benefits and shortfalls. **Figure 5** provides a summary for each.

Everbridge

- Dissemination of information to targeted mass
- Specific target notification
- Weather and other public information can be shared

- Only works if resident is enrolled

IPAWS

- Receive extreme weather warnings or other type of emergencies

- Anyone can opt-in or out from using this service
- No texting

Nixle

- Optional for public to receive messages
- Free
- Simple to use

- Not everyone follows or subscribes

Rave Alert

- You can target areas or people in call zones

- Cost of system

Smart911

- Extremely few benefits

- There are no shortfalls with the system itself only that not enough people have registered to receive alerts

BlackBoard Connect

+
- Communication with population instantly
- Early Notification
- Instant mass notification of parents

–
- Expensive
- Limit of characters that can be sent at one time via text (300)

BrightArrow

+
- Quick, clear, and consistent messages

–
- Dependent upon telephone and internet services

Signal Kit

+
- Getting information out quickly

–
- Setting up groups is time consuming
- Parents do not take time to enroll for select groups

School Messenger

+
- Reaches a large number of people quickly
- Primary notices concerning school closings, bus routes, etc.
- Timing
- Quick contacts in emergency
- Messages can be scheduled
- Quick way to notify community that shelter is open
- Easy access to communicate with patrons and staff
- Delivery options
- Easy to use

–
- Very limited in rural setting.
- Technology malfunction
- Connectivity
- Only reaches students and family
- Information not updated in database
- Inaccurate messaging

- Communication to patrons

Platform Promotion

The third portion of the survey asked participants what platforms they promote to the public (**Figure 6**). In addition, jurisdictions were asked to describe the methods used to promote the platforms (**Figure 7**).

Figure 6
Platforms Promoted to the Public as a Percent of Total Responses

Platforms Promoted	Percent
Sirens	**100.00%*
Local/Cable TV	*38.70%*
AM/FM Radio	*41.93%*
Facebook	*64.51%*
Twitter	*29.03%*
MNS	*61.29%*
Text/Email Alerts	*22.58%*
Apps	*16.12%*
NOAA Weather Radios	*16.12%*
Other	*9.67%*

*Municipalities only

According to the survey results, every municipality reported promoting storm warning sirens to the public. Additional platforms promoted include Facebook (64.51 percent), MNS (61.29 percent), and AM/FM Radio (41.93 percent). NOAA weather radios and apps are the least likely to be promoted at 16.12 percent.

Figure 7
Method of Platform Promotion as a Percent of Total Responses

Method of Promotion	Percent
Press Release	*35.48%*
Social Media	*64.51%*
Direct Mail	*12.90%*
Displays	*32.25%*
Fliers, Posters, Brochures	*35.48%*
Free Giveaways	*6.45%*

For methods or avenues used to promote alert messaging systems/platforms, social media (Facebook, Twitter, and website) is the most utilized at 64.51 percent. Press release, fliers, posters, and brochures are the second most utilized methods of promotion at 35.48 percent. The third most utilized method of promotion is by displays at 32.25 percent.

Coverage

The last question of the survey asked participants how much coverage their platforms have. Coverage could be interpreted as number of followers on social media, subscribers, square miles covered, etc. The City of Sullivan reported approximately 2,055 followers on Facebook and Twitter. Sullivan's Nixle platform was reported to contain 291 contacts with 278 signed up for SMS notification and 94 for email. Maries County R-II reported approximately 1,300 likes on their Facebook page. Kingston K-14 reported having 1,075 BlackBoard Connect subscribers. The remaining municipalities and school districts either reported platform coverage as encompassing entire counties, city limits, or populations. Twenty eight jurisdictions did not fill out the coverage section of the survey.

"The MSBA has partnered with CrisisGO, a mass notification app."

Missouri School Board Association

A comment received from one of the school districts within the region disclosed that they will be testing CrisisGO during the 2018-2019 school year. The Missouri School Board Association (MSBA) has partnered with CrisisGO, a mass notification app. Service is provided by the MSBA, however a full version is available at $2,000 annually.

Summary

Limited data is available regarding emergency notification platforms utilized within the Meramec Region. This report helps identify platforms used across the region to monitor and disseminate emergency alerts. Furthermore, platforms promoted, including methods of promotion were identified as well.

The most utilized platforms amongst jurisdictions for alert notification monitoring included Local/Cable TV, AM/FM Radio, MNS, and Facebook. The platforms utilized the most for alert dissemination include sirens, MNS, Facebook, and AM/FM Radio. All municipalities reported the promotion of weather sirens. The second and third most promoted platforms include Facebook and MNS, respectively.

Interestingly, the use of mass notification systems and Facebook across the Meramec Region is abundant. Municipalities reported the use of six different mass notification systems within the region. The systems vary by fees, capabilities, and targeting features. It should be noted again that a few MNS are available at no cost. School districts reported the use of five mass notification systems which range in subscription fees, capabilities and targeting features. Three school districts have their MNS services sponsored by local banks.

"In rural areas, social media use is limited compared to urban and suburban areas"

A re-occurring shortfall reported amongst jurisdictions was the lack of subscribers, followers or enrollees. This shortfall should not be attributed to the platform itself, but to the promotion methods used. In rural areas, social media use is limited compared to urban and suburban areas, as well as amongst the 65+ age group[4]. Moreover, survey results indicate that social media is the most used method to promote emergency notification platforms.

With the region being rural in nature and a large 65+ population, additional notification platforms (TV, AM/FM radio, MNS, and NOAA weather radios) and promotion methods (press release, direct mail, displays, fliers, posters, and brochures) should be investigated to better inform all citizens of available emergency notification platforms.

Storm sirens were reported by all municipalities as a method to disseminate emergency alerts. Also, all municipalities reported the promotion of sirens. Unfortunately a common misconception amongst the general public is that storm sirens are meant to be heard indoors. According to Missouri's StormAware, sirens are only meant to be heard outdoors[5]. The public should be educated to not solely depend upon storm sirens for weather related emergency notifications.

Unfortunately, one of the least promoted emergency notification platforms amongst jurisdictions is NOAA Weather Radios. The National Weather Service still recommends the trusted NOAA Weather Radio as a source to receive weather related alerts. All jurisdictions should continue to promote the use of the radio. Also, school districts should ensure that every building is equipped with at least one radio.

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[4] http://www.pewinternet.org/fact-sheet/social-media/

[5] https://stormaware.mo.gov/

Survey of Alert Messaging Systems in the Meramec Region

MRPC is conducting a study to determine which alert messaging systems currently exist in the Meramec region. The purpose of this study is to determine system coverage; identify gaps and shortfalls; and verify costs.

Please return this survey no later than **June 16, 2017**. If you have questions, please do not hesitate to contact either Tammy Snodgrass or Ryan Dunwoody at (573) 265-2993 or via email at tsnodgrass@meramecregion.org or rdunwoody@meramecregion.org.

Fax: 573-265-3550

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- -

Jurisdiction (County, City or School District): _____

Prepared by: _____ **Title**: _____

Email: _____ **Phone**: _____

- -

- How does your jurisdiction monitor for emergency alerts in order to provide warning to your residents? Please check the following.

1) Local/Cable TV ☐

2) AM/FM Radio ☐

3) Social Media
   a) Facebook ☐
   b) Twitter ☐
   c) Other_____

4) Single/Dual Band Radios ☐

5) Administrative alert messaging systems ☐ *such as EverBridge, Smart911, Nixle, CodeRED, DialMyCalls, Black Board Mass Notification, School Messenger, etc.*
   a) Please list: _____

b) Operated by: _____

6) Text or email alerts ☐ *from sources such as KOMU 8 Mobile Text Alerts*.

   a) Please list:_____

7) Apps ☐ *such as the FEMA app, The Weather Channel app, Tornado – American Red Cross app, and the NOAA Weather app, etc.*

   a) Please list: _____

8) NOAA weather radio(s) ☐

   a) How many NOAA weather radios are in operation? _____

9) Other: _____

- Please check the alert messaging system(s) and/or platforms utilized by your jurisdiction to ***DISSEMINATE*** mass notifications to the public.

1) Sirens ☐

2) Local/Cable TV ☐

3) Radio ☐

4) Social Media

   a) Facebook ☐

   b) Twitter ☐

   c) Other_____

5) Administrative alert messaging systems ☐ *such as EverBridge, Smart911, Nixle, CodeRED, DialMyCalls, Black Board Mass Notification, School Messenger, etc.*

   a) Please list: _____

   b) What are the system's capabilities?

      i) Text ☐

      ii) Email ☐

      iii) Call/Voicemail ☐

      iv) Other _____

   c) What targeting features are available?

       i) Zip code ☐

       ii) Street Address ☐

       iii) Radius from a specific point ☐

       iv) Latitude/longitude ☐

       v) Shapefiles ☐

       vi) Specific contact types such as vulnerable populations, fire districts, etc. ☐

       vii) Other: _____

d) Do you pay for the service? Yes ☐ No ☐

    i) If yes, please provide approximate costs: _____

e) Who manages the service? _____

f) Is the service utilized only for weather related events? Yes ☐ No ☐

    i) Includes alerts from Public Works, School Announcements, etc. ☐

g) Describe greatest benefits of the system:

_____
_____
_____
_____
_____
_____

h) Describe shortfalls of the system:

_____
_____
_____
_____
_____

6) Other: _____

- -

- Please check the alert messaging system(s) and/or platforms that your jurisdiction ***PROMOTES*** to the public.

1) Sirens ☐

2) Local/Cable TV ☐

3) Radio ☐

4) Social Media
   a) Facebook ☐
   b) Twitter ☐
   c) Other_____

5) Administrative alert messaging systems ☐ *such as EverBridge, Smart911, Nixle, CodeRED, DialMyCalls, Black Board Mass Notification, School Messenger, etc.*
   a) Please list: _____

6) Text or email alerts ☐ *from sources such as KOMU 8 Mobile Text Alerts.*
   a) Please list:_____

7) Apps ☐ *such as the FEMA app, The Weather Channel app, Tornado – American Red Cross app, and the NOAA Weather app, etc.*
   a) Please list: _____

8) NOAA weather radio(s) ☐

9) Other: _____

10) Please describe the methods your jurisdiction uses to promote the warning system(s) your community has in place:
   a) Press releases ☐
   b) Social Media ☐
      i) Facebook
      ii) Twitter
      iii) Website
      iv) Other
   c) Direct Mail ☐
   d) Displays at public buildings and community events ☐
   e) Fliers, posters, brochures ☐
   f) Free giveaways ☐

11) Do you know how much coverage your warning system(s) have? (For instance, number or percent of subscribers, square miles covered, etc.) Please describe:
_____
_____
_____
_____
_____

Comments:

_____
_____
_____