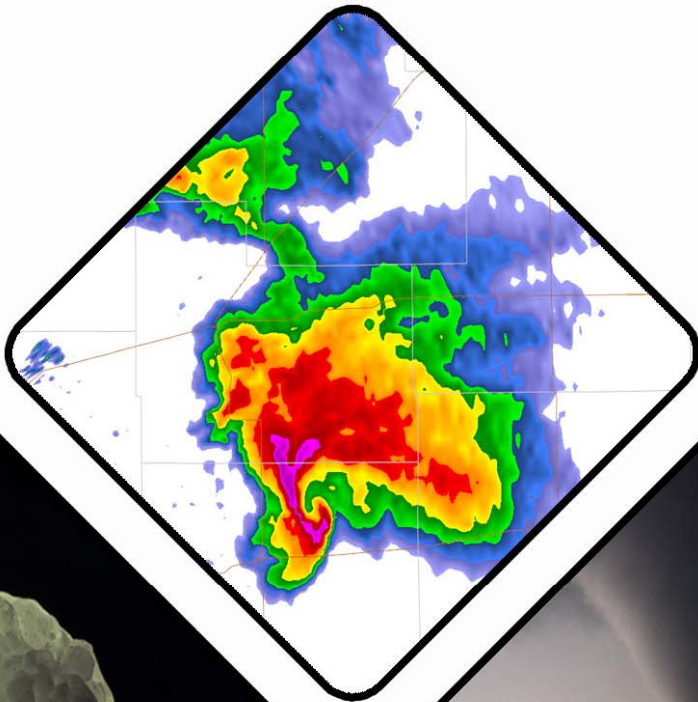


Outdoor Warning Sirens

Guidelines for Operation and Testing in Georgia



GEMA

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Introduction

Outdoor warning systems in Georgia have become a common method for alerting people about the existence of ongoing or approaching life-threatening hazards. Outdoor warning systems include a broad spectrum of components that have various capabilities to warn people of impending hazards including, but not limited to, outdoor warning sirens, speakers or PA systems, variable message boards, etc. This document offers guidance on the operation and testing of outdoor warning sirens.

Activation criteria and testing procedures of outdoor warning sirens vary across jurisdictions leading to confusion by the general public. The goal of these guidelines is to create common practices for activating and testing outdoor warning systems throughout Georgia. Standardizing outdoor warning system practices elevates their overall effectiveness through increased confidence by the public and provides jurisdictions an opportunity to leverage externally developed public awareness and outreach materials for the purpose of raising awareness about these systems within their communities.

The guidance presented herein only pertains to outdoor warning sirens. Outdoor warning sirens should not be relied upon as the sole source of alert information for persons within a given jurisdiction; rather, they should be one component of a multifaceted alerting strategy that alerts people who are outdoors and indoors. Additionally, emergency management practitioners should conduct extensive outreach and educational efforts so that the public understands why these systems are used and what protective actions to take when they are activated. These guidelines pertain solely to the operation of outdoor warning sirens during threats of hazardous weather and not for other types of hazards.

Outdoor Warning Siren Testing Guidance

Many types of outdoor warning sirens are available on the open market and are in use throughout the U.S. Older outdoor warning sirens allow system operators to only conduct audible tests while newer ones offer the additional ability for conducting inaudible (silent) tests. For systems that have a silent testing capability, outdoor warning system tests should include both test types: silent tests as often as desired or as recommended by the manufacturer and audible tests as recommended below.

Audible outdoor warning siren tests should be conducted regularly. It is recommended that jurisdictions conduct audible tests of all outdoor warning sirens once monthly on the first Wednesday of the month between 11:00 am and noon in conjunction with the weekly NOAA Weather Radio test. If more frequent tests are desired or required, then a frequency of no more than once weekly should be adopted; however, once monthly is the official recommendation offered here. If a jurisdiction resides in areas where NOAA Weather Radio broadcasts are unavailable, then testing at noon is recommended.

It is common for the skies to be mostly clear or minimally cloudy before the onset of severe weather. If severe weather is anticipated on a regularly scheduled test day which may include being under a Severe Thunderstorm Watch or Tornado Watch, the test should be postponed until the following week on the same day and time.

Outdoor warning siren tests should always be conducted during “clear sky conditions” (a sky that is clear to mostly clear with few visible clouds). Should weather conditions not meet this criterion during the normally scheduled test, it should be postponed until the next Wednesday that possesses these conditions. Tests during cloudy conditions may lead to misperceptions by the public which undermines public trust in the outdoor warning system.

Outdoor warning siren tests should be brief. Each audible outdoor warning siren test should last for one minute and not longer. If multiple tones or voice capability is tested, a brief break between each should be observed.

Outdoor Warning Siren Operation Guidance

The authority to operate outdoor warning systems should reside with public officials or their designees. All outdoor warning system triggering points should reside at each jurisdiction’s 24-hour warning point or a public safety facility that operates 24 hours per day.

Outdoor warning sirens have been developed with the capability to create multiple tones and / or a voice capability. The recommended tone for a weather-related hazard is a steady monotone with non weather-related hazards having an alternating tone.

The activation of an outdoor warning siren network should have a longer duration than the system test. Sounding the outdoor warning sirens for 3 to 5 minutes followed by a brief break, then repeated for as long as the threat remains is recommended. Lessons learned from previous severe weather outbreaks have shown that repeating the siren during the entire severe weather threat has saved lives.

Outdoor warning sirens should be activated when hazardous conditions pose a threat to life-safety or property. During severe weather threats, outdoor warning sirens should be activated for the threat of a tornado, damaging winds, or destructive hail following the criteria outlined below.

Outdoor warning sirens should be activated for the threat of a **TORNADO** when:

- The NWS issues a **Tornado Warning** for any portion of a jurisdiction where outdoor warning sirens are able to provide an alert.
- A public safety official, or trained storm spotter / SKYWARN storm spotter has visually confirmed an approaching tornado or funnel cloud.

Outdoor warning sirens should be activated during a **SEVERE THUNDERSTORM WARNING** when:

- The severe thunderstorm is capable of producing winds in excess of **80 mph** and / or
- The severe thunderstorm is capable of producing **tennis ball-sized hail** (2 ½ inch in diameter) or larger.

Activating outdoor warning sirens when the NWS issues a Severe Thunderstorm Warning while under a Tornado Watch is **NOT** advised, unless the above criteria are met. The NWS Severe Thunderstorm Warnings will include wind speed estimates when winds are 60 mph and greater and when hail sizes are one-inch in diameter and greater.

Activating outdoor warning sirens for the threat of lightning or flooding is not recommended. Lightning poses an obvious threat to persons outdoors and citizens should know to seek shelter. Flooding and flash flooding typically are too localized and offer lead times from the NWS that allow emergency services to implement other mitigation measures.

Severe thunderstorms producing damaging winds in excess of 80 mph causes trees to drop large limbs and potentially fall. A study conducted by the Texas Tech University that provided data for the new Enhanced Fujita Scale (EF-Scale) found that large branches are broken and trees may be uprooted (both softwood and hardwood) at winds near or above 80 mph (EF-Scale damage indicators 27 and 28).

Severe thunderstorms producing damaging winds in excess of 80 mph pose an elevated threat to life-safety and property. In a study conducted by Kent State University on human fatalities due to wind-related tree failures, it was found that during the period from 1995 to 2007 that 52% of all deaths associated with severe thunderstorms were due to falling trees or large branches. Of these deaths, 82% occurred when the person was either outside or in a vehicle (only 18% occurred while indoors); therefore, educating people to move indoors is the most prudent protective action when a severe thunderstorm threatens.

The NWS has increased warning accuracy over the years. Severe Thunderstorm Warnings and Tornado Warnings are now issued as polygons that cover only the area threatened rather than entire counties. It is recommended that public officials activate only the outdoor warning sirens in the threat area rather than the all of their outdoor warning sirens, if possible.

Public officials who operate outdoor warning sirens are recommended to not issue an “all clear” signal when the threat has abated. Because the practice of continually sounding outdoor warning sirens during a threat is recommended, ceasing their use indicates that the threat has passed.

Public Education and Outreach

To maximize the effectiveness of an outdoor warning system, the public needs to know why the outdoor warning sirens are activated and how to appropriately react to them. It is recommended that outdoor warning system operators / emergency management officials conduct regular public education and outreach efforts to inform people about these systems and the appropriate protective actions to take when they are used.

The recommended protective action for citizens to take when severe weather threatens and outdoor warning sirens are activated is take shelter indoors and seek additional information on the radio (local or NOAA Weather Radio) or television. It is important to educate people to remain indoors until the threat has passed because sirens typically cannot be heard indoors.

Additionally, communities are encouraged to participate in the NWS StormReady Program which emphasizes sound practices for preparing for and responding to threats posed by severe weather.

Special Thanks

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