

TORNADO AND SEVERE WEATHER GUIDE

Version	Date	Comments
1	March, 2009	Initial <i>Tornado and Severe Weather Guide</i>
2	March, 2012	Update definitions and references
3	February, 2015	Routine review
4	February, 2017	Update hyperlinks and references

A. INTRODUCTION

This Guide is designed to help university departments and employees prepare for a tornado or severe weather event. The Environmental Health and Safety Office (EHS) can assist with completing the *Shelter Preparation Form* (Attachment A). Please contact EHS with questions or to request assistance.

B. SCOPE

Severe weather includes high winds, thunderstorms, lightning storms, hail, floods, hurricanes, extreme heat or cold, and other weather systems that have the potential to create safety hazards or cause property damage.

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. Strong tornadoes can produce wind speeds exceeding 200 mph, and the most extreme can approach 300 mph. Most commonly however, they produce winds between 80-120 mph. Tornadoes are highly unpredictable, appear separately or in clusters, and vary greatly in length, width, direction of travel, and speed. Tornadoes typically appear in the Northern Virginia region from April to October.

C. NOTIFICATION

Notification of an approaching tornado or severe weather system will occur by one or more of the following:

- National Oceanographic and Atmospheric Administration (NOAA) broadcast via AM/FM/Weather radio, TV bulletin, or NOAA web-based streaming radio.
 - Weather radio station KHB36 broadcasting on 162.555 MHz
 - NOAA Weather Radio station WNG-736 broadcasting on 162.450 MHz
- Radio (WTOP 103.5FM) or TV emergency announcement.
- Mason Alert email, text message, or voice mail. To participate visit alert.gmu.edu.
- County emergency alert systems: [Arlington](#); [Fairfax](#); [Prince William](#)
- George Mason University Public Televisions
- Mason homepage, gmU.edu or the Mason Ready homepage ready.gmu.edu

A NOAA weather alert or Mason Alert will contain information regarding the location and severity of the weather system. It is critical to understand the distinction between the types of weather alerts issued by the National Weather Service, NOAA, and Mason Alert.

D. ALERT TERMINOLOGY AND DEFINITIONS

Hazardous Weather Outlook: Is a statement highlighting any potential significant weather systems in the area for the next seven days.

Watch: A “watch” is issued when conditions are favorable for the development of severe weather within or close to the watch/listening area. The impacted area and length of a “watch” can vary depending on the weather situation and is usually issued for a duration of four to eight hours. During a “watch”, you should review severe weather safety guidance and be prepared to move to a shelter if threatening weather approaches.

Warning: A “warning” is issued when severe weather is confirmed by radar or reported by storm spotters. Information in a “warning” will include the location of the storm, the areas that will be affected, and the primary threat associated with the storm (e.g. tornado, high winds, flooding, etc.). If you are in the affected area you should seek safe shelter immediately. Warnings can be issued without a watch already in effect.

Flash Flood: Is a rapid rise in water that occurs with little or no advanced warning, usually as the result of an intense rainfall over a relatively small area in a short amount of time.

Flash Flood Watch: Is issued when a developing hydrologic conditions is favorable for flash flooding in and close to the watch area. When a watch is issued, be aware of potential flood hazards and the topography of your surroundings. Low lying areas such as; basements, streams, and retention ponds should be avoided. Those in the affected area should ready to take quick action if a flash flood warning is issued or flooding is observed.

Flash Flood Warning: Is issued when flash flooding is in progress, imminent, or highly likely. Those in low areas and near small streams should leave for higher ground. Water is expected to rise rapidly. Also, be extremely cautious driving as low areas may be washed out. Information in this warning will include some locations where flooding is expected. Flash Flood Warnings can be issued without a Flash Flood Watch in effect.

Flash Flood Statement: Is issued to provide follow-up information on any flooding that is occurring, including which areas will be affected.

Severe Thunderstorm Watch: Are conditions that are favorable for damaging thunderstorms. Stay tuned to the Mason Alerts, radio, TV, or NOAA weather radio for further information and possible warnings. Consider your shelter options and be prepared to take cover quickly if a warning is issued, or threatening weather approaches.

Severe Thunderstorm Warning: A damaging thunderstorm is expected. This means strong, damaging winds and/or large hail an inch or more in diameter (quarter-size). Tornadoes can sometimes form quickly in severe thunderstorms.

Funnel Cloud: A funnel cloud is a quickly rotating cloud extending down from a thunderstorm that is NOT in contact with the ground.

Tornado Watch: A tornado watch means that conditions are favorable for the formation of a tornado and that tornadoes are possible. When a tornado watch is issued stay tuned to the internet, Mason Alerts, local radio, TV, or NOAA weather radio for further information and possible warnings. Consider your shelter options and be prepared to take cover if necessary.

Tornado Warning: A tornado warning means that a tornado has been sighted or has been identified by National Weather Service radar. When a warning is issued, take cover indoors or in an appropriate shelter immediately.

E. RESPONSE

If a tornado warning or severe weather system with the potential to cause damage has been issued, the following actions should be taken:

- Shelter immediately in the nearest hardened structure.
- Use stairs to reach the lowest level of the building, do NOT use elevators.
- Take shelter in an interior space that has no or few windows.
- Take account of your co-workers and/or students and attempt to locate missing persons if safety permits.
- If severe weather strikes the building in which you are sheltered and begins to produce damage, protect your body from flying debris with any available furniture or sturdy equipment.

F. SHELTER AREAS

An appropriate shelter area capable of providing protection from severe weather should have the following characteristics:

- Be located in an interior space of a hardened structure (e.g. conference room, classroom, hallway, bathroom, or office). Seek shelter in a hardened structure if you are located in a modular, prefabricated, or temporary structure.
- Not possess any windows or skylights.
- Have ample space for everyone that is expected to occupy the shelter to sit comfortably.
- Be at the lowest point in the building however, consider potential flood risks and modify shelter areas locations accordingly.
- Be equipped with a phone.
- Be identified by signage within the room or immediately adjacent to the entrance(s).
- Remain unlocked during work hours and accessible to persons with special needs.
- Have furniture or features that can be used to protect occupants from falling debris.

- Preferably have more than one entrance and exit.
- Be centrally located to all persons expected to use the shelter area.

Please use the *Shelter Preparation Form* (Attachment A) to identify an appropriate shelter area(s) for your work area.

G. CONTINGENCY PLANS

Automobiles: If you are in an automobile when severe weather approaches, get out of your vehicle and find shelter inside a hardened structure. For non-severe thunderstorms, hard topped vehicles provide good protection from lightning.

Outdoors: If you are outdoors try to find shelter immediately in the nearest hardened structure or building. If a tornado or severe weather forces you to abandon your vehicle or you are outdoors and are unable to find a hardened structure, take cover in a culvert, ditch, or depression and protect your head with your hands.

Prolonged Event/Entrapment: If severe weather prevents you from exiting your work area, entraps you within a building or debris, or otherwise causes you to remain in place for an extended period of time conduct the following:

1. Remain calm.
2. Notify emergency personnel of your location and condition by dialing 9-1-1.
3. Ask for assistance or provide assistance to people who are injured or trapped by debris.
4. Provide First Aid and CPR if trained.
5. Attempt to locate an alternate safe exit. Do NOT attempt to navigate hazards
6. Identify or be aware of live power lines, falling debris, hazardous materials, and unstable structures that may be hazardous.
7. Exit the area if it is safe to do so, otherwise remain calm and in place until emergency personnel arrive.

H. PREPARATION

Work: Use the attached *Shelter Preparation Form* (Attachment A) to identify an appropriate shelter area and office/department specific procedures and resources. In addition to completing and reviewing a severe weather plan with employees, you may consider maintaining basic supplies in your work area that can be used in the event of an extended or severe emergency situation, such as:

- First aid kit and essential medications
- Battery-powered or hand crank radio, preferably a NOAA weather radio
- Flashlight(s) and extra batteries or hand crank flashlight
- A small supply of non-perishables that can sustain you for up to eight hours
- A small supply of bottled water

Home and Family: The *Shelter Preparation Form* (Attachment A) can be used to create a home and family severe weather plan. In addition to identifying a shelter area and maintaining emergency supplies, a communications plan should be developed and discussed with your family members in the event that phone service fails or family members are separated by a severe weather event. A pre-determined meeting location and alternate method for contacting family members (e.g., out-of-town contacts) should be agreed upon in advance.

Your community may have an evacuation plan, if so become familiar with the plan and understand its direction and impact on your family. Lastly, review your plan with your family to ensure that everyone knows the location of emergency supplies, evacuation plans, and is able to exercise the communications plan. For additional information and a family plan template please visit: ReadyVirginia.gov or Ready.gov.

I. ADDITIONAL RESOURCES

Additional resources to help you plan for severe weather at work or at home can be found on the following websites:

Preparedness:

- **NOAA:** <http://www.nws.noaa.gov/os/thunderstorm/>
- **Federal Emergency Management Agency (FEMA):** <https://www.fema.gov/hazard-mitigation-planning>
- **Centers for Disease Control and Prevention (CDC):** <https://www.cdc.gov/disasters/>
- **Ready Virginia:** <http://www.vaemergency.gov/readyvirginia>
- **National Geographic:** <http://environment.nationalgeographic.com/environment/natural-disasters/>

Weather Resources:

- **Weather.com:** <http://www.weather.com/>
- **Accuweather.com:** <http://www.accuweather.com/>
- **Weatherunderground.com:** <http://www.wunderground.com/>
- **NOAA/National Weather Service:** <http://www.weather.gov/washington>
- **Streaming NOAA Radio:** <http://www.nws.noaa.gov/cgi-bin/nwsexit.pl?url=http://audioplayer.wunderground.com/pgde/leesburg.mp3.m3u>

Mobile Phone Weather Resources: Many applications and software are available from companies such as AccuWeather and The Weather Channel to view and receive emergency and general weather information (including radar) on your mobile phone.

Shelter Preparation Form

Unit: Building:

SECTION 1 - EMERGENCY CONTACTS

UNIT SAFETY LIAISON

Name (Last, First)

Phone Number

BUILDING COORDINATOR

Name (Last, First)

Phone Number

NEAREST HOSPITAL

Name

Phone Number

Street Address

City, State, Zip Code

UNIVERSITY POLICE

Dial 911 from a University Phone or
703-993-2810 from a Cell or Off-Campus

SECTION 2 - SHELTER AREA

	Building	Room Number
Shelter Area 1		
Shelter Area 2		
Shelter Area 3		
Shelter Area 4		

SECTION 3 - SAFETY SUPPLIES

	Location 1	Location 2
First Aid Kit		
Radio/NOAA Weather Radio		
Flashlight and Spare Batteries		
Non-Perishable Food		
Bottled Water		
Other:		

COMMENTS

Completion Date: _____ Review Date: _____