



## Severe Weather and Lightning Policy

Due to the significant risks and possibility of fatal injury from lightning and severe weather, it is imperative that the Town of Christiansburg adopt a clear policy on how to deal with inclement weather and its effect on activities held within Town parks, facilities and on other public properties and rights-of-way (sidewalks, streets, etc.). This policy will help to clearly state the Town's position on this issue and help to define roles of certain individuals during the decision making process. The chief concern of the Town, event organizer, or renter of outdoor facilities must be the safety of all participants, attendees, staff and spectators of the activity.

The following plan will be in effect for all Town of Christiansburg sanctioned or sponsored events/activities as well as any person or organization renting any Town property. For purposes of this policy, a Town-sponsored event is defined as an event where all direction and organization of the occasion is overseen by Town officials or administrators. A Town-sanctioned event is defined as an organization hosting a Town-approved activity, whereby an event organizer oversees direction and organization. The Town of Christiansburg provides support and resources for the activity when applicable. Lastly, a rental is described as the occupation of Town property, whereby a renter is utilizing Town property or facilities, which include athletic fields or picnic shelters.

In the event of threatening or inclement weather before or during a Town-sponsored event, a designated Town official or other designee will inform the attendees and participants of impending severe weather through on-site coordination and/or through the Town's electronic messaging system. For any Town-sanctioned events, an appointed representative of the presiding organization is responsible for communicating any severe weather information to attendees. In cases of a facility rental, it is the renter's responsibility to notify attendees and/or spectators of any impending weather-related updates.

**GENERAL POLICY SPECIAL EVENTS:** For a sanctioned or sponsored event, a Town of Christiansburg official or designee may monitor the weather and make the decision to notify the event organizer of dangerous situations and may enforce the suspension or cancelation of the activity in the event of severe weather. The decision to cancel, suspend or continue an event include but are not limited to:

- Any reported lightning strike on the mobile DTN Weather Sentry Lightning/Storm Detector app within the eight-mile caution range regardless of the presence of visible lightning. The decision to cancel, suspend or continue the event during this occurrence will be at the discretion and authority of any two presiding members of the Severe Weather Committee. The committee will confer and make a decision to continue or discontinue the event based upon the information provided by the DTN weather system.

- Utilization of the Flash-to-Bang Method (Count the seconds from the time the lightning is sighted to when the clap of thunder is heard. Divide this number by five to obtain how far away, in miles, the lightning is occurring.) If it reveals lightning to be within the 8-mile caution range, (a 40-second count between the flash of lightning and the bang of thunder) the decision to cancel, suspend or continue the event during this occurrence will be at the discretion of any two presiding members of the Severe Weather Committee.
- Any lightning that is recorded on the mobile weather sentry DTN app within the six mile warning range of a designated Town of Christiansburg mobile user's location will warrant a mandatory shut down of the event
- It shall be the policy that if lightning strikes within a six mile radius of the site, a mandatory suspension of the event will be in effect until 30 minutes have passed without any additional lightning or weather warnings
- Utilization of the Flash-to-Bang Method (Count the seconds from the time lightning is sighted to when the clap of thunder is heard. Divide this number by five to obtain how far away, in miles, the lightning is occurring). If it reveals lightning to be within the 6-mile warning range, (a 30-second count between the flash of lightning and the bang of thunder) the event will shut down and everyone should seek shelter immediately.

GENERAL POLICY ATHLETIC EVENTS AND FACILITY RENTALS: For sanctioned athletic events, activities and facility rentals a Town of Christiansburg official or designee may monitor the weather and make the decision to notify the organization, club or renter of dangerous situations and may enforce the suspension or cancelation of activity in the event of severe weather. The decision to cancel, suspend or postpone an event include but are not limited to:

- Any reported lightning strike on the stationery DTN Weather Sentry Lightning/Storm Detector (100 East Main St. Christiansburg, VA 24073) within the eight-mile range regardless of the presence of visible lightning. If this is to occur, the athletic event, activity or facility rental will be shut down immediately and will not continue until the all clear has been issued by the DTN Weather system
- Utilization of the Flash-to-Bang Method (Count the seconds from the time the lightning is sighted to when the clap of thunder is heard. Divide this number by five to obtain how far away, in miles, the lightning is occurring.) If it reveals lightning to be within 8 miles (a 40 second count between the flash of lightning and the bang of thunder) activity is to be suspended and everyone should seek shelter immediately.

SEVERE WEATHER COMMITTEE: For any Town sponsored or sanctioned event or activity, a severe weather committee is organized that includes the Town's Emergency Coordinator, Town Manager, Assistant Town Manager, Director of Parks and Recreation, Assistant Director of Parks and Recreation, Highest Ranking Law Enforcement Officer working the event and the Event Manager. For any given event, any two presiding members of the committee have the authority to cancel, shut down or continue the event in question due to severe weather in the area before or during the event or activity. The Committee will monitor the weather through the use of the mobile DTN Weather Sentry Lightning and Storm Detector (if equipped) or by the Flash-to Bang Method.

ANNOUNCEMENT OF CAUTION (SPECIAL EVENTS), SUSPENSION OR CANCELANATION OF ACTIVITY: Once it is determined that there is a danger of inclement weather, a Town official or designee has the authority to cancel any Town-sanctioned event, activity or rental facility at any point up

to and during the event, and immediately request the removal of all vendors, attendees and organizers. In the case of Town-sanctioned activities, it shall be the responsibility of a designated representative of the presiding organization, group or renter to notify and enforce all vendors, attendees or spectators to immediately evacuate the area.

**EVACUATION OF THE AREA:** When communication is made with regard to severe weather and lightning in the warning area, all attendees, spectators and participants are encouraged to seek shelter immediately. All parties will be urged to evacuate to a safe location until conditions improve unless otherwise notified by an appropriate Town official or designee. Prior to the activity, event or rental, an evacuation plan may be required by the Town depending on the nature of the activity, which will be at the discretion of the Town's Emergency Coordinator.

**RETURN TO THE AREA:** An event can resume 30 minutes following the last lightning strike recorded within the warning area. The last lightning strike will be determined by either the detection system or visual confirmation with flash bang method in place. The 30-minute time frame will immediately start over with each additional lightning strike within the warning range.

## Severe Weather Definitions by Type of Weather Condition

### **Hazardous Weather Outlook**

The Hazardous Weather Outlook will describe potential hazardous weather and hydrologic information of concern in Days 1 through 7.

The outlook contains two segments: One segment for the marine zones and adjacent land-based (i.e., coastal) zones and the other segment for the rest of the land-based zones. Each segment of the HWO will contain 3 sections: short term through Day 1, long term for Days 2-7, and spotter information.

### **Winter Storm Watch**

A Winter Storm Watch is issued when there is the potential for significant and hazardous winter weather within 48 hours. It does not mean that significant and hazardous winter weather will occur...it only means it is *possible*.

Significant and hazardous winter weather is defined as a combination of:

1) 5 inches or more of snow/sleet within a 12-hour period **or** 7 inches or more of snow/sleet within a 24-hour period

AND/OR

2) Enough ice accumulation to cause damage to trees or power lines.

AND/OR

3) a life threatening or damaging combination of snow and/or ice accumulation with wind.

The snow/sleet criteria for a Winter Storm Watch for the five westernmost counties (Allegany, Mineral, Grant, Pendleton, and Highland) is higher (6 inches or more within a 12-hour period; 8 inches or more within a 24-hour period).

### **Blizzard Warning**

A Blizzard Warning means that the following conditions are occurring or expected within the next 12 to 18 hours.

1) Snow and/or blowing snow reducing visibility to 1/4 mile or less for 3 hours or longer

AND

2) Sustained winds of 35 mph or greater or frequent gusts to 35 mph or greater.

There is no temperature requirement that must be met to achieve blizzard conditions.

### **Winter Storm Warning**

A Winter Storm Warning is issued when a significant combination of hazardous winter weather is occurring or imminent.

Significant and hazardous winter weather is defined as a combination of:

1) 5 inches or more of snow/sleet within a 12-hour period **or** 7 inches or more of snow/sleet within a 24-hour period

AND/OR

2) Enough ice accumulation to cause damage to trees or power lines.

AND/OR

3) a life threatening or damaging combination of snow and/or ice accumulation with wind.

The snow/sleet criteria for a Winter Storm Warning for the five westernmost counties (Allegany, Mineral, Grant, Pendleton, and Highland) is higher (6 inches or more within a 12-hour period; 8 inches or more within a 24-hour period).

### **Ice Storm Warning**

¼ inch or more of ice accumulation.

### **Winter Weather Advisory**

A Winter Weather Advisory will be issued for any amount of freezing rain, or when 2 to 4 inches of snow (alone or in combination with sleet and freezing rain), is expected to cause a significant inconvenience, but not serious enough to warrant a warning.

If the event is expected to impact the Baltimore/Washington metro areas during rush hours (4-9 am or 2-7 pm on weekdays) forecasted snow totals of one inch will necessitate the issuance of a winter weather advisory. The snow/sleet criteria for a Winter Weather Advisory for the five westernmost counties (Allegany, Mineral, Grant, Pendleton, and Highland) is higher (3-5 inches).

### **Freeze Watch**

A Freeze Watch is issued when there is a potential for significant, widespread freezing temperatures within the next 24-36 hours.

A Freeze Watch is issued in the autumn until the end of the growing season (marked by the occurrence of first widespread freeze). The normal end of the growing season is mid to late October west of the Blue Ridge and early November east of the Blue Ridge. However, during anomalously warm autumns, the growing season may be extended past the normal end of the growing season.

A Freeze Watch is issued in the spring at the start of the growing season (when it is late enough to cause damage to new plants and crops).

### **Freeze Warning**

A Freeze Warning is issued when significant, widespread freezing temperatures are expected.

A Freeze Warning is issued in the autumn until the end of the growing season (marked by the occurrence of first widespread freeze). The normal end of the growing season is mid to late October west of the Blue Ridge and early November east of the Blue Ridge. However, during anomalously warm autumns, the growing season may be extended past the normal end of the growing season.

A Freeze Warning is issued in the spring at the start of the growing season (when it is late enough to cause damage to new plants and crops).

### **Frost Advisory**

A Frost Advisory is issued when the minimum temperature is forecast to be 33 to 36 degrees on clear and calm nights during the growing season.

A Frost Advisory is issued in the autumn until the end of the growing season (marked by the occurrence of first widespread freeze). The normal end of the growing season is mid to late October west of the Blue Ridge and early November east of the Blue Ridge. However, during anomalously warm autumns, the growing season may be extended past the normal end of the growing season.

A Frost Advisory is issued in the spring at the start of the growing season (when it is late enough to cause damage to new plants and crops).

### **Wind Chill Advisory**

A Wind Chill Advisory is issued when wind chills of -5F to -19F are expected east of the Blue Ridge Mountains, and when wind chills of -10 to -24F are expected along and west of the Blue Ridge Mountains and in Frederick and Carroll Counties in Maryland.

### **Wind Chill Warning**

A Wind Chill Warning is issued when wind chills of -20F or lower are expected east of the Blue Ridge Mountains, and when wind chills of -25F or lower are expected along and west of the Blue Ridge Mountains and in Frederick and Carroll Counties in Maryland.

### **Dense Fog Advisory**

A Dense Fog Advisory is issued when widespread fog is expected to reduce visibilities to 1/4 mile or less over a large area for an extended period of time (2 or more hours).

### **High Wind Watch**

A High Wind Watch is issued when the following conditions are *possible*:

1) sustained winds of 40 mph or higher for one hour or more

OR

2) wind gusts of 58 mph or higher for any duration.

### **High Wind Warning**

A High Wind Warning is issued when the following conditions are expected:

1) sustained winds of 40 mph or higher for one hour or more

OR

2) wind gusts of 58 mph or higher for any duration.

### **Hurricane Watch**

A Hurricane Watch is issued when a tropical cyclone containing winds of 64 kt (74 mph) or higher poses a possible threat, generally within 48 hours. These winds may be accompanied by storm surge, coastal flooding, and/or river flooding.

The watch does not mean that hurricane conditions will occur. It only means that these conditions are *possible*.

### **Hurricane Warning**

A Hurricane Warning is issued when sustained winds of 64 kt (74 mph) or higher associated with a tropical cyclone are expected in 36 hours or less. These winds may be accompanied by storm surge, coastal flooding, and/or river flooding. A hurricane warning can remain in effect when dangerously high water or a combination of dangerously high water and exceptionally high waves continue, even though winds may be less than hurricane force.

### **Wind Advisory**

A Wind Advisory is issued when the following conditions are expected:

1) sustained winds of 31 to 39 mph for an hour or more.

AND/OR

2) wind gusts of 46 to 57 mph for any duration.

### **Extreme Wind Warning**

An Extreme Wind Warning is issued for surface winds of 100 knots (115 MPH) or greater associated with non-convective, downslope, derecho (NOT associated with a tornado), or sustained hurricane winds are expected to occur within one hour.

### **Small Craft Advisory**

Small Craft Advisories are issued for the Tidal Potomac River and the Chesapeake Bay when one or both of the following conditions is expected to begin within 36 hours:

1) sustained winds of 18 knots to 33 knots

OR

2) frequent gusts (duration of two or more hours) between 18 knots and 33 knots.

OR

3) waves of 4 feet or higher

### **Gale Warning**

Gale Warnings are issued for the Tidal Potomac River and the Chesapeake Bay when one or both of the following conditions is expected to begin within 36 hours and not directly associated with a tropical cyclone:

1) sustained winds of 34 knots to 47 knots

OR

2) frequent gusts (duration of two or more hours) between 34 knots and 47 knots.

### **Storm Warning**

Storm Warnings are issued for the Tidal Potomac River and the Chesapeake Bay when one or both of the following conditions is expected to begin within 36 hours and not directly associated with a tropical cyclone:

1) sustained winds of 48 knots to 63 knots

OR

2) frequent gusts (duration of two or more hours) of 48 knots to 63 knots

#### **Hurricane Force Wind Warning**

Hurricane Force Wind Warnings are issued for the Tidal Potomac River and the Chesapeake Bay when one or both of the following conditions is expected to begin within 36 hours and not directly associated with a tropical cyclone:

1) sustained winds of 64 knots or greater

OR

2) frequent gusts (duration of two or more hours) of 64 knots or greater

#### **Special Marine Warning**

A warning of potentially hazardous weather conditions of short duration (up to 2 hours) affecting areas included in a CWF that are not adequately covered by existing marine warnings and producing one or more of the following:

1) Sustained marine convective winds (showers/thunderstorms) or associated gusts of 34 knots or greater

AND/OR

2) Hail three quarters of an inch or more in diameter

AND/OR

3) Waterspouts

#### **Severe Thunderstorm Watch**

A Severe Thunderstorm Watch is issued when severe thunderstorms are *possible* in and near the watch area. It does not mean that they will occur. It only means they are *possible*.

Severe thunderstorms are defined as follows:

1) Winds of 58 mph or higher

AND/OR

2) Hail 1 inch in diameter or larger.

#### **Severe Thunderstorm Warning**

A Severe Thunderstorm Warning is issued when severe thunderstorms are occurring or imminent in the warning area.

Severe thunderstorms are defined as follows:

1) Winds of 58 mph or higher

AND/OR

2) Hail 1 inch in diameter or larger.

#### **Tornado Watch**

A Tornado Watch is issued when severe thunderstorms and tornadoes are *possible* in and near the watch area. It does not mean that they will occur. It only means they are *possible*.

Severe thunderstorms are defined as follows:

1) Winds of 58 mph or higher

AND/OR

2) Hail 1 inch in diameter or larger.

#### **Tornado Warning**

A Tornado Warning is issued when a tornado is imminent. When a tornado warning is issued, seek safe shelter immediately.

#### **Tropical Storm Watch**

A Tropical Storm Watch is issued when a tropical cyclone containing winds of 34 to 63 kt (39 to 73 mph) or higher poses a possible threat, generally within 48 hours. These winds may be accompanied by storm surge, coastal flooding, and/or river flooding.

The watch does not mean that tropical storm conditions will occur. It only means that these conditions are *possible*.

#### **Tropical Storm Warning**

A Tropical Storm Warning is issued when sustained winds of 34 to 63 kt (39 to 73 mph) or higher associated with a tropical cyclone are expected in 36 hours or less. These winds may be accompanied by storm surge, coastal flooding, and/or river flooding.

#### **Coastal Flood Watch**

A Coastal Flood Watch is issued when moderate to major coastal flooding is possible. Such flooding would potentially pose a serious risk to life and property.

Coastal Flood Watches are issued for coastal areas along the Tidal Potomac River and coastal areas along the Chesapeake Bay.

#### **Coastal Flood Warning**

A Coastal Flood Warning is issued when moderate to major coastal flooding is occurring or imminent. This flooding will pose a serious risk to life and property.

Coastal Flood Warnings are issued for coastal areas along the Tidal Potomac River and areas along the Chesapeake Bay.

#### **Coastal Flood Advisory**

A Coastal Flood Advisory is issued when minor or nuisance coastal flooding is occurring or imminent.

Coastal Flood Advisories are issued for coastal areas along the Tidal Potomac River and areas along the Chesapeake Bay.

#### **Flash Flood Watch**

A Flash Flood Watch is issued when conditions are favorable for flash flooding. It does not mean that flash flooding will occur, but it is *possible*.

#### **Flash Flood Warning**

A Flash Flood Warning is issued when flash flooding is imminent or occurring.

#### **Flood Watch**

A Flood Watch is issued when conditions are favorable for flooding. It does not mean flooding will occur, but it is *possible*.

#### **Flood Warning**

A Flood Warning is issued when flooding is imminent or occurring.

#### **River Flood Watch**

A River Flood Watch is issued when river flooding is possible at one or more forecast points along a river.

#### **River Flood Warning**

A River Flood Warning is issued when river flooding is occurring or imminent at one or more forecast points along a river.

#### **Excessive Heat Watch**

An Excessive Heat Watch is issued when there is a potential for the heat index value to reach or exceed 110 degrees (east of the Blue Ridge) or 105 degrees (west of the Blue Ridge) within the next 24 to 48 hours.

#### **Excessive Heat Warning**

An Excessive Heat Warning is issued when the heat index value is expected to reach or exceed 110 degrees (east of the Blue Ridge) or 105 degrees (west of the Blue Ridge) within the next 12 to 24 hours.

An Excessive Heat Warning may be issued for lower criteria if it is early in the season or during a multi-day heat wave.

#### **Heat Advisory**

A Heat Advisory is issued when the heat index value is expected to reach 105 to 109 degrees (east of the Blue Ridge) or 100 to 104 degrees (west of the Blue Ridge) within the next 12 to 24 hours. A Heat Advisory may be issued for lower criteria if it is early in the season or during a multi-day heat wave.

#### **Fire Weather Watch**

A Fire Weather Watch is issued to alert fire officials and firefighters of potentially dangerous fire weather conditions within the next 24 to 36 hours. They are issued when the following three criteria are met:

- 1) Surface relative humidity (RH) less than 30 % for VA and MD; RH less than or equal to 25% for WV AND
- 2) Sustained surface wind of 20 MPH or greater AND
- 3) 10-hour fuel moisture less than 8% for VA; less than or equal to 8% for MD and WV

#### **Red Flag Warning**

A Red Flag Warning is issued to alert fire officials and firefighters of potentially dangerous fire weather conditions within the next 12 to 24 hours. They are issued when the following three criteria are met:

- 1) Surface relative humidity (RH) less than 30 % for VA and MD; RH less than or equal to 25% for WV AND
- 2) Sustained surface wind of 20 MPH or greater AND
- 3) 10-hour fuel moisture less than 8% for VA; less than or equal to 8% for MD and WV