Village of Lake Delton

Severe Weather Plan

VLD-EM 2016

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SECTION A - INTRODUCTION

The purpose of this Severe Weather Plan is to provide a course of action to be used during a severe weather event to minimize the potential for injury and loss of life that can result during severe weather. This plan also identifies the most tornado-resistant areas in your building. These areas are not necessarily to be considered tornado safe; but, in our judgment, they are the "best available" for locating people during tornado warnings. This plan should be reviewed at least annually by all employees in your area to ensure that everyone knows where the severe weather shelter area is and what to do when the severe weather siren activates. Tornadoes develop from high winds associated with thunderstorm activity or in conjunction with hurricanes. Typically spring and late summer thru early fall seasons provide the best conditions conducive to tornado formation, although, a tornado can form during any season.

SECTION B - SEVERE WEATHER DEFINITIONS

TORNADO

A violently rotating column of air, usually pendant to a cumulonimbus, with circulation reaching the ground. It nearly always starts as a funnel cloud and may be accompanied by a loud roaring noise. On a local scale, it is the most destructive of all atmospheric phenomena.

TORNADO WARNING

This is issued when a tornado is indicated by radar or sighted by spotters; therefore, people in the affected area should seek shelter immediately. They can be issued without a Tornado Watch being already in effect. They are usually issued for a duration of around 30 minutes.

TORNADO WATCH

This is issued by the National Weather Service when conditions are favorable for the development of tornadoes in and close to the watch area. Their size can vary depending on the weather situation. They are usually issued for a duration of 4 to 8 hours. They normally are issued well in advance of the actual occurrence of severe weather. During the watch, people should review tornado safety rules and be prepared to move to a place of safety if threatening weather approaches.

SEVERE THUNDERSTORMS

A thunderstorm that produces a tornado, winds of at least 58 mph and/or hail at least 1” in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm. A thunderstorm wind equal to or greater than 40 mph and/or hail of at least ½” is defined as approaching severe.

Guide for determined hail sizes:

- Less than 0.50” Pea
- 0.50” – marble/mothball
- 0.75” – dime/penny

- 0.88” – Nickel
- 1.00” – quarter
- 1.25” – half-dollar
- 1.50” – walnut/ ping pong
- 1.75” – Golf Ball
- 2.00” – Hen Egg
- 2.50” – Tennis Ball
- 2.75” – Baseball
- 3.00” – Tea Cup
- 4.00” – Grapefruit
- 4.50” – Softball

SEVERE THUNDERSTORM WARNING

This is issued when either a severe thunderstorm is indicated by radar or a spotter reports a thunderstorm producing hail one inch or larger in diameter and/or winds equal or exceed 58 mph, therefore, people in the affected area should seek safe shelter immediately. Severe thunderstorms can produce tornadoes with little or no advance warning. Lightning frequency is not a criteria for issuing a severe thunderstorm warning. They are usually issued for a duration or one hour. They can be issued without a Severe Thunderstorm Watch being already in effect.

SEVERE THUNDERSTORM WATCH

This is issued by the National Weather Service when conditions are favorable for the development of severe thunderstorms in and close to the watch area. A severe thunderstorm by definition is a thunderstorm that produces one inch hail or larger in diameter and/or winds equal or exceed 58 mph. The size of the watch can vary depending on the weather situation. They are usually issued for a duration of 4 to 8 hours. They are normally issued well in advance of the actual occurrence of severe weather. During the watch, people should review severe thunderstorm safety rules and be prepared to move to a place of safety if threatening weather approaches.

SEVERE WEATHER STATEMENT

A National Weather Service product which provides follow up information on severe weather conditions which have occurred or are currently occurring.

FLASH FLOOD

A flood which is caused by heavy or excessive rainfall in a short period of time, generally less than 6 hours. Also, at times a dam failure can cause a flash flood, depending on the type of dam and time period during which the break occurs.

FLASH FLOOD WARNING

Issued to inform the public, emergency management, and other cooperating agencies that flash flooding is in progress, imminent, or highly likely.

FLASH FLOOD WATCH

Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent.

SECTION C - THUNDERSTORMS

Thunderstorms may develop at any time of the year. Although thunderstorms can occur during any month, the more violent storms occur in the spring and summer months. Thunderstorms can be single cell, multicell cluster, multicell line, and super cell. Supercells always form severe thunderstorms. Thunderstorms typically consist of very high winds, rain, lightning, and in many cases hail. Typically the larger the hail is, the stronger the thunderstorm is. Hail one inch in diameter or more with winds in excess of 58 mph indicate a severe thunderstorm where tornados are likely to be spawned. Tornado formation is most likely to occur where the hail falls. Another dangerous aspect of a thunderstorm is lightning. The best protection from lightning is to seek shelter in a nearby building. Flooding can also occur in low areas and in areas where storm drains are blocked. It is also no surprise that severe thunderstorms can produce damaging winds with or without forming tornados.

SECTION D - ANATOMY OF A TORNADO

Tornadoes form under a certain set of weather conditions in which three very different types of air come together in a certain way. Near the ground lies a layer of warm and humid air along with strong south winds. Colder air and strong west or southwest winds lie in the upper atmosphere. Temperature and moisture differences between the surface and the upper levels create what is called instability, while the change in wind with height is known as wind shear. This shear is linked to the eventual development of rotation from which a tornado may form.

A third layer of very warm dry air becomes established between the warm moist air at low levels and the cool dry air aloft. This very warm layer acts as a cap and allows the atmosphere to warm further making the air even more unstable. Things start to happen when a storm system aloft moves east and begins to lift the various layers. Through this lifting process the cap is removed thereby setting the stage for explosive thunderstorm development as strong updrafts develop. Complex interactions between the updraft and the surrounding winds, both at storm level and near the surface, may cause the updraft to begin rotating and a tornado is born.

A tornado is a violently rotating column of air in contact with the ground with speeds of 60-300 mph. It is only visible due to water droplets mixed with dust and debris. Doppler radar will not "see" tornados. The radar only detects precipitation and light rain in the center of heavy rain indicates tornado potential. Contrary to popular belief, tornados do not leave the ground, only the intensity changes and they appear to "jump". Tornados can be categorized into three groups based on the "Fujita" scale.

• Weak - 80% of all tornados, 60-110 mph winds, path 3 miles long lasting 1-10 minutes. Cause less than 5% of all deaths.
• Strong - 19% of all tornados, 110-205 mph winds, path less than 5 miles, lasting 10-20 minutes. Cause 30% of all deaths,
• Violent - 1% of all tornados, winds greater than 205 mph, can have a 50 mile path lasting up to 60 minutes. Cause 70% of all deaths.

The most common direction of a tornado path is from the southwest to the northeast but they can come from any direction. Tornadoes are most likely to occur during the afternoon and evening. The most violent storms occur in April through September. The peak hours are from 12:00 noon until 7:00 P.M.

SECTION E - EFFECTS OF HIGH WINDS

The causes of damage to buildings by a tornado may be classified in one of three categories which include: extreme winds, missiles, collapse. All buildings have at least one undesirable structural feature relating to the effects of a tornado. Examples are: large areas of glass, long roof/ceiling spans, wind tunnels, and load-bearing wall construction. The areas designated in this report are not to be considered "tornado-proof", but rather the best available areas for sheltering during tornado and severe thunderstorm warnings.

As much as possible, the shelters were selected to:

- Avoid glass
- Avoid interior and exterior doors
- Utilize interior spaces with short spans
- Keep occupants as far away as possible from entrances
- Avoid areas expected to become wind tunnels
- Distribute locations throughout the building to facilitate rapid access
- Avoid areas where chemicals are stored
- Put as many walls as possible between you and the exterior of the building

SECTION F - EMERGENCY NOTIFICATION SYSTEM

Severe weather alerts are transmitted by two means: via pole-mounted outdoor sirens stationed at five specific locations around the Village and via severe weather radios located within Village buildings. The sirens are tested audibly on the 1st Wednesday of the month at noon (this will not occur if it is storming to prevent confusion).

Watches and warnings are broadcast via the severe weather radios. Minimum actions that should be taken based on specific alerts are detailed in the next section.

Sirens will not sound for a tornado watch, only for a tornado warning which means one has been sighted in our area. The sirens will activate for three minutes when a tornado has been sighted. The primary activation location for the sirens is from the Sauk County Sheriff's Department Communications Center. A secondary activation location is from the Lake Delton Fire/EMS Facility Radio Room.

The NWS will activate Wireless Emergency Alerts (WEA) for tornado warnings. The Village of Lake Delton is a registered user of the Integrated Public Alerts and Warning System (IPAWS) and may use the WEA feature post tornado or severe weather event to broadcast life safety messages.

SECTION G - MINIMUM ACTIONS TO BE TAKEN BASED ON WEATHER ALERTS

SEVERE THUNDERSTORM WATCH

Be aware that conditions may be ripe for the development of a tornado.

SEVERE THUNDERSTORM WARNING

Review your severe weather action plan. Usual activities can continue but be prepared to seek shelter. Avoid going outside if possible. Department supervisors should ensure facilities are in place to respond to storm related emergencies.

TORNADO WATCH

Review your severe weather action plan. Usual activities can continue but be prepared to seek shelter. Department supervisors should maintain situational awareness by continuously monitor weather reports and conditions related to the severe weather, i.e. traffic problems, storm damage, staffing and equipment needs. Police, Fire, EMS, and Public Works supervisors should establish communications and determine the need to institute a Unified Command at an Incident Command Post.

TORNADO WARNING

When a tornado warning is issued, the outdoor sirens will be activated and the NWS will broadcast the warning using Wireless Emergency Alerts (WEA) and NOAA weather radios. All employees should immediately proceed to their building's designated shelter area. Employees near a severe weather radio(s) in the building should unplug them and take them to the shelter area to monitor for additional warnings. All persons located outdoors shall seek shelter indoors immediately.

When a tornado warning is issued, the Sauk County Sheriff's Department Communications Center will activate the pagers of the Delton Fire Department and Dells-Delton EMS and advise of the tornado warning. All available fire personnel will use their best judgment to decide if they can safety respond to the fire/ems facility where they will immediately seek shelter. No emergency services response should occur during a Tornado Warning for any non-emergency call until it expires, is canceled or unless directed by a department supervisor.

Exterior doors should not be opened. Under no circumstances should persons leave buildings during a warning. During a warning, persons should take one of two positions -- The preferred position is kneeling with their head between their knees facing the wall, and the other is, seated on the floor with their backs to the wall. In either case, they should be as low as possible to reduce their potential for injuries from flying missiles or glass or debris. If available, some form of covering should be used to protect heads, arms, and legs.

Building occupants should remain in the shelter area until the National Weather Service issues a release. Listen to your radio for information.

Remember, you typically have only three minutes to reach a shelter so do not delay. Waiting can mean the difference between life and death. Everyone must be familiar with the location of the severe weather shelter area(s) in their buildings and should be briefed on what actions to take when the sirens have sounded. Persons in the shelter should tune to local radio stations, their severe weather radio, and/or a NOAA weather radio for additional information.

SECTION H - SEVERE WEATHER KIT

Every building should have at least one Severe Weather Kit. Some buildings will have more than one. The kit should include at least the following items:

- Flashlight(s), with extra batteries
- Battery-operated Radio, with extra batteries
- NOAA Weather Radio if available
- First-aid Kit
- An A-B-C-type fire extinguisher
- Several Blankets

SECTION I - SHELTER AREA IDENTIFICATION

Shelter locations for the occupants of the following Village owned buildings are as follows:

1. Kay C Mackesey Administration Building
    a. The basement of the Frank Fischer Center
    b. Public bathrooms adjacent to lobby of Kay C Mackesey Admin Building
2. Lake Delton Fire/EMS Facility
    a. Storage rooms under the mezzanine in the apparatus bay
    b. Ground level floor of the training tower
3. Lake Delton Public Works
    a. Lift station on Miller Drive
    b. Pump station at Kaminski Park
4. Frank Fischer Center
    a. Basement
    b. Interior restrooms

5. Lake Delton Ice Arena
    a. Locker room 5
    b. Locker rooms 1 – 4 and referee room

SECTION J - MEASURES TO BE TAKEN WHEN USING A SHELTER AREA

- All doors around shelter areas should be closed and secured during a tornado warning.
- Windows and doors with glass panels should be avoided because of potential missiles propelled by high wind.
- Chemicals and cleaning supplies should be removed from areas designated for shelter use and relocated to a non-shelter area.

SECTION K - ADDITIONAL RESOURCES

The National Weather Service
Current and Forecasted Weather Conditions, Hazardous Weather Outlook and Other Resources
http://www.weather.gov/mkx

Interactive Weather Maps and Forecasting
http://www.wunderground.com/

Tornado Facts and Sheltering Instructions
http://readywisconsin.wi.gov/media/pdf/Tornadoes.pdf

Preparedness Information
http://readywisconsin.wi.gov/

Emergency Alerts and IPAWS Information
https://www.fema.gov/emergency-alert-system