

Title	Lightning	Date of Issue	August 2008
Location	Parks/Public Works	Review Date	August 2009
Approved By		Signature	

Purpose

To ensure all employees are educated and prepared in the event of a lightning storm.

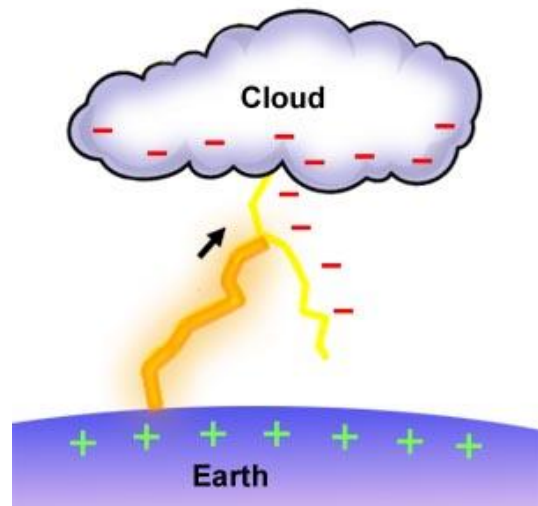
Scope

This applies to all employees for the City of Campbell River.

Standards

Lightning is an electrical discharge caused when static electricity builds up between positively and negatively charged areas such as between thunderclouds, or thunderclouds and the ground. Lightning can occur from cloud-to-cloud, within a cloud, cloud-to-ground, or cloud-to-air.

A cloud-to-ground lightning strike begins as an invisible channel of electrically charged air moving from the cloud towards the ground. When one channel nears an object on the ground, a powerful surge of electricity from the ground moves upwards to the clouds and produces the visible lightning strike. Lightning tends to strike higher ground and prominent objects, especially good conductors of electricity such as metal and water.



- Lightning occurs in all thunderstorms; each year lightning strikes the Earth 20 million times.
- Most lightning fatalities and injuries occur when people are caught outdoors with no shelter.
- Lightning can strike without rain actually falling.
- Lightning may strike several kilometers away. Precautions should be

taken even if the thunderstorm is not directly overhead.

- Do NOT wait for lightning to strike nearby before taking cover.

30-30 Rule

30 Seconds: Count the seconds between seeing the lightning flash and hearing the thunder clap. Each second represents about 300 meters. If this time is 30 seconds or less, then the lightning storm is less than 10km away and there is an 80% chance that the next strike will happen within that 10km. Seek shelter immediately. Preferably in a building, all-metal vehicle (not a convertible) or in a low-lying area.

30 Minutes: After seeing the last lightning flash or thunder clap, wait 30 minutes before leaving shelter. More than half of lightning deaths occur after the thunderstorm has passed. Stay in a safe area until you are sure the threat has passed.

In the event of a lightning and thunderstorm:

1. When a thunderstorm threatens, get inside a home or large building (That's the best choice) or inside an all-metal (hard top) vehicle with the windows rolled up.
2. Stay away from windows, sinks, toilets, tubs, showers, electric boxes, outlets and appliances. Lightning can flow through these systems and "jump" to a person.
3. Do NOT take a shower or bath during a thunder & lightning storm.
4. Unplug appliances if possible and avoid their use.
5. Use telephones ONLY in an emergency.
6. If you are inside a vehicle during lightning avoid parking under trees or power lines that may topple over during a storm. Be aware of downed power lines that may be touching your vehicle. You are safe inside your vehicle however; you may receive a shock if you step outside.



CAUGHT OUTDOORS

7. If outside, with no time to reach a safe shelter (building or vehicle) follow these rules:
 - a. Do NOT stand underneath a natural lightning rod: tall, isolated trees, towers, power lines, telephone poles etc.
 - b. AVIOD all unsafe shelters: metal objects such as power poles, fences, gates, bleachers, small sheds, partial shelters, electrical equipment, mowing and road machinery. Also AVIOD solitary trees, hilltops, water, open fields, high ground and caves.
 - c. Stay away from wire fences, clotheslines, metal pipes, rails and other metallic paths which could carry lightning towards you.
 - d. If you are in a forest, seek shelter in a low area under a thick growth of shorter trees. Crouch down away from tree trunks. In open areas, seek shelter in low places such as a ravine or a valley.
 - e. Get out of and away from open water. Lightning can strike water and travel some distance from its point of contact.
 - f. Get off of and away from motorcycles, scooters, mowing equipment, bicycles and metal machinery.
 - g. Ensure all tools are put down. Holding something can make you the tallest object and a target for lightning.
 - h. DO NOT stand in puddles even if you are wearing rubber boots.
 - i. If with a group ensure there are several meters between individuals to avoid lightning from jumping from person to person.
8. If you feel your skin tingle, your hair stand on end, and/or you hear “crackling noises” a strike may be about to happen. If outdoors, immediately remove metal objects (including baseball cap), and get into the lightning safety crouch.

Lightning Safety Crouch

9. Crouch down on the balls of your feet with your feet close together. Keep your hands on your knees and lower your head. Some people may prefer to wrap their hands over their ears or cover the back of their neck. Make yourself the smallest target possible and minimize

your contact with the ground. **DO NOT LIE DOWN ON THE GROUND!**



side view



front view

**** Remember, if you can hear thunder- you are close enough to be struck by lightning****

Helping Someone Who Is Struck By Lightning

- Get emergency help as soon as possible.
- People who have been struck by lightning do NOT carry an electrical charge and are safe to handle.
- Apply first aid, immediately.
- Common injuries include: burns, wounds and fractures.
- If numerous people have been struck treat those who are unconscious first, they are at the greater risk of dying.

Roles and Responsibilities

Supervisor

It is the responsibility of the Supervisor to ensure:

- All employees know, understand and comply with the safe work procedure.
- The safe work procedure is reviewed annually and amended, if required.
- Any changes that have been made to the safe work procedure must be immediately communicated to all employees. This includes a posted bulletin and verbal notification.

Employee

It is the responsibility of the Employee to:

- Read, understand and comply with the safe work procedure.

Communication

Written safe work procedures can be found on the City of Campbell River's intranet under the Safe Work Procedures.

Training

All employees will be required to read through the safe work procedure as part of their training.

Evaluation

Safe work procedures will be reviewed annually to ensure all information is current and applicable.

Forms

Incident Investigation Report

Reference Materials

www.lightningsafety.noaa.gov

Environmental Canada: Lightning Safety Tips

www.lightningsafety.com