

WINTER Safe

Information About Future Winter Storm Prevention

A publication of FEMA and the Washington State Military Department - Emergency Management Division

Helpful Contacts:

Washington Emergency Mgmt. Division
www.emd.wa.gov 800-562-6108

Washington State Insurance Commissioner
800-562-6900

Washington State Department of Health
www.doh.wa.gov

Federal Emergency Management
www.fema.gov

More Information:

National Weather Service (NWS)
www.nws.noaa.gov

For Flood Information:
www.FloodSmart.gov

The National Arbor Day Foundation
www.arborday.org

Environmental Protection Agency (E.P.A.)
www.epa.gov 800-438-4318

FEMA for Kids
www.fema.gov/kids

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WinterSafe

This publication was created by the Federal Emergency Management Agency and the Washington State Military Department - Emergency Management Division



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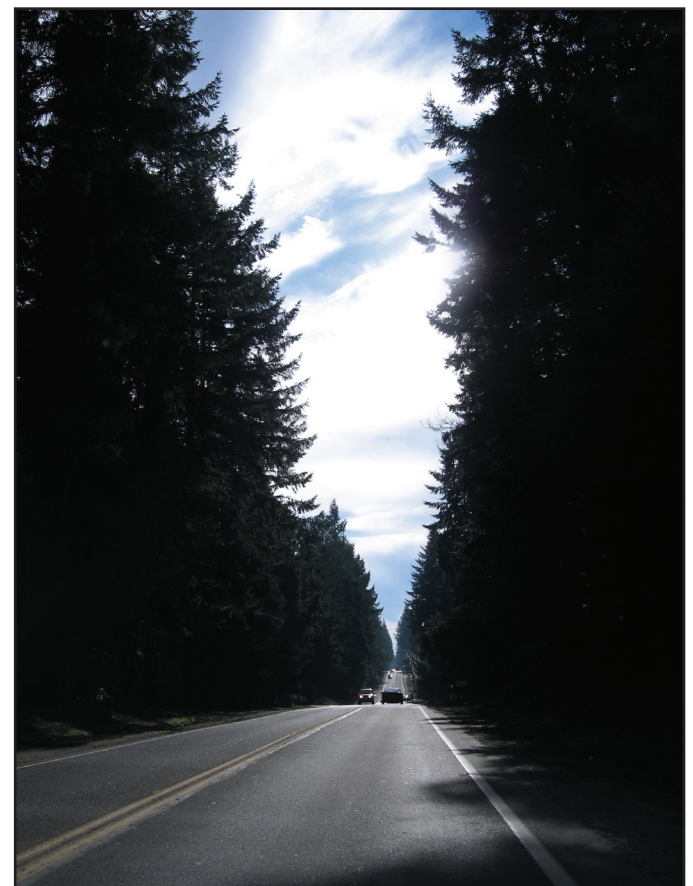
Washington Military Department
Emergency Management Division

The Evergreen State

It is no coincidence that Washington State is nicknamed “The Evergreen State.” The majestic evergreens cover a large portion of the state and play a crucial role in inspiring that “Pacific Northwest” feel that most of us know and love. Unfortunately, winter storms sometimes cause these stately trees to fall, frequently causing damage to life and property. Through evaluation, maintenance and preparedness homeowners can limit both loss of life and property.

It is best to assess your trees before the winter storm season to avoid the post-storm “rush” and inflated tree maintenance cost. When evaluating your trees consider contacting a certified arborist, who can identify hazardous trees. Signs to look for include disease, shallow roots and abnormal leaning or branch damage. Also, consider the tree’s distance and height regarding surrounding buildings and utility lines. It may also be appropriate, to contact your local utility company and ask if they offer any tree maintenance programs. Remember, your tree may be the one that devastates a neighborhood power line, creating a loss of heat during and after the winter storm. Moreover, a falling tree can also damage your home’s roof, structure, gutters, pool or spa, and outdoor furniture.

Sometimes healthy trees can be just as hazardous as diseased or leaning ones. Homeowners may be concerned about healthy trees because of their proximity to their house or a neighbor’s home. Tree removal companies can quote several hundred to a few



ANNE WALKER - FEMA

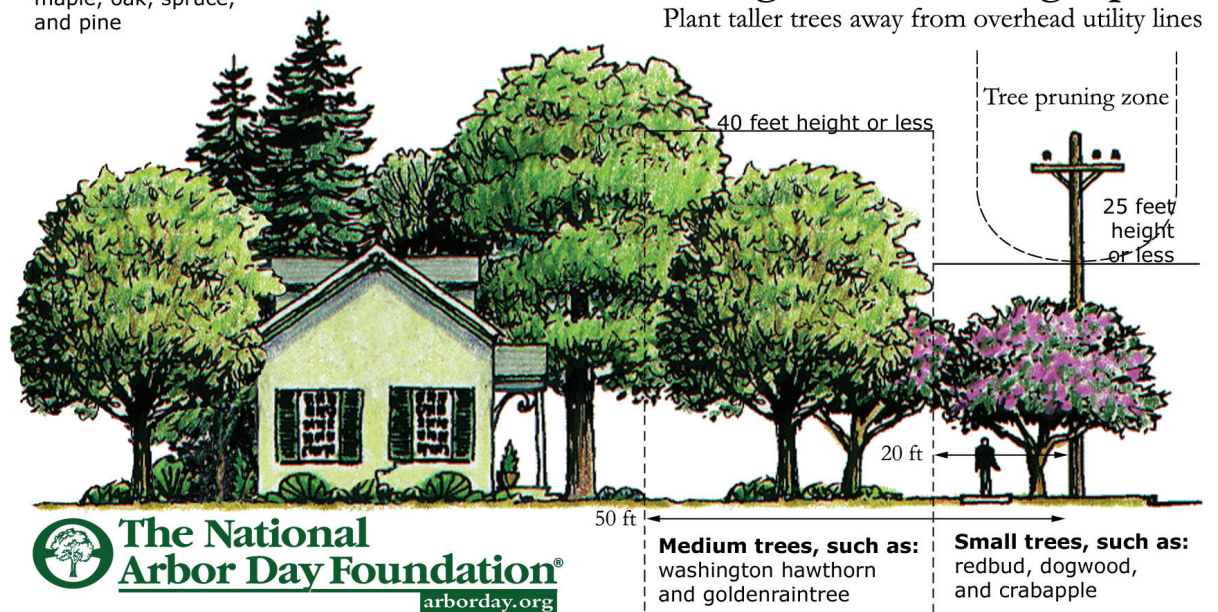
thousand dollars depending on size, location and other factors. One of the “other factors” is whether a crane is needed to remove the tree. Removing a tree after a storm can be much more costly than pre-storm preventative maintenance.

During the December 2006 Hanukkah Eve Wind Storm, thousands of trees fell throughout the Olympic Peninsula with four incidents resulting in fatalities. Many of those trees were healthy but because the soil was already saturated from rain, the excessive winds were disastrous. Taking steps before the storm to limit your exposure to tree-related hazards will lessen potential risk and damage to your family and home.

Tall trees, such as:
maple, oak, spruce,
and pine

Plant the right tree in the right place

Plant taller trees away from overhead utility lines

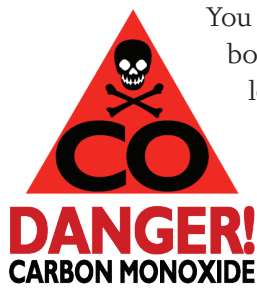


COURTESY OF THE NATIONAL ARBOR DAY FOUNDATION

 **The National Arbor Day Foundation**
arborday.org

SAFETY

Carbon Monoxide Can Be Deadly



You can't see or smell carbon monoxide, but at high levels it can kill a person in minutes. Carbon monoxide (CO) is produced whenever any fuel such as gas, oil, kerosene, wood, or charcoal is burned without enough air for complete combustion. If appliances that burn fuel are maintained and used properly, the amount of CO produced is usually not hazardous. However, if appliances are not working properly or are used incorrectly, dangerous levels of CO can result. Hundreds of people die accidentally every year from CO poisoning caused by malfunctioning or improperly used fuel-burning appliances.

Know the symptoms of CO poisoning:

Headaches, fatigue, dizziness, weakness, confusion and nausea

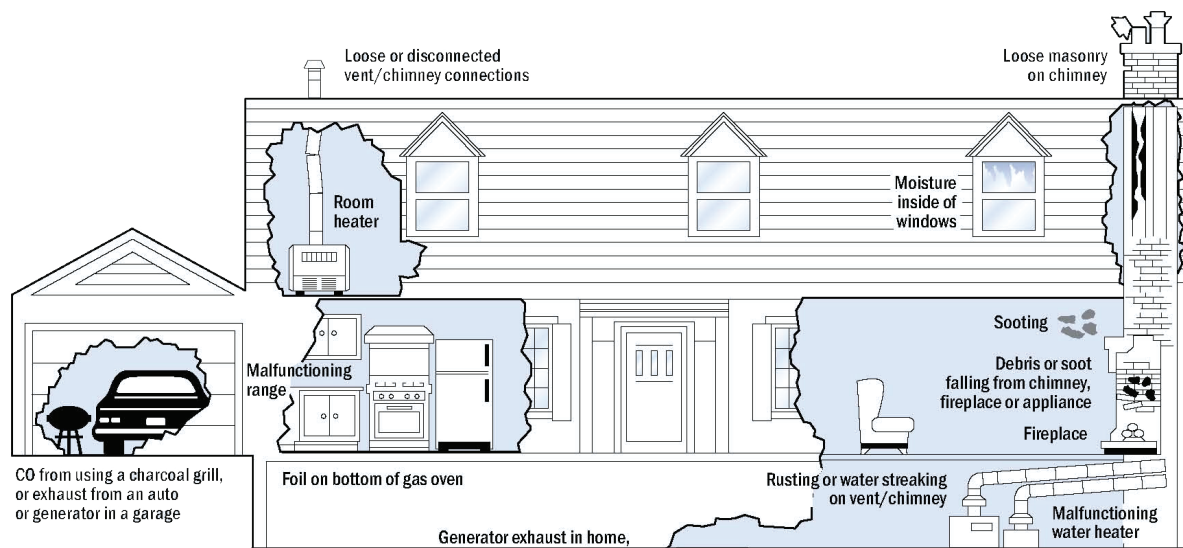
Many of these symptoms are similar to those of the flu, food poisoning, or other illnesses.

If you experience symptoms that you think could be from CO poisoning:

- Get fresh air immediately. Open doors and windows, turn off combustion appliances and leave the house.
- Go to an emergency room and tell the physician you suspect CO poisoning.

If CO poisoning has occurred, it can often be diagnosed by a blood test done soon after exposure.

Information from "Protect your family and yourself from Carbon Monoxide Poisoning", available in Spanish, Vietnamese, Chinese and Korean from the E.P.A. Indoor Air Quality at www.epa.gov or by calling 800-438-4318.



Sources of and Clues to a Possible Carbon Monoxide (CO) Problem

Using Your Generator Safely

Power outages can cause a number of safety concerns, as residents seek heat from alternatives sources.

A generator can be an effective energy source during a power outage, but using it safely requires your attention. **Always read the directions that come with the device.**

NEVER use a portable generator indoors

- NEVER use a portable generator in a garage, carport, basement, crawlspace or other enclosed or partially-enclosed area, even with ventilation. Opening doors and windows or using fans will not prevent carbon monoxide (CO) buildup in the home.
- Incorrect generator use can lead to CO poisoning from the toxic engine exhaust, electric shock or electrocution and fire.

- Install home CO alarms that are battery-operated or have battery back-up. Test batteries frequently and replace when needed.

Using your generator outdoors

- Place the generator away from windows, doors, and vents that could allow carbon monoxide to travel indoors.
- To avoid electrocution, keep the generator dry. Do not use in rain or wet conditions. Operate it on a dry surface under an open canopy-like structure. Make sure your hands are dry before touching the generator.

Use and store generator fuel safely

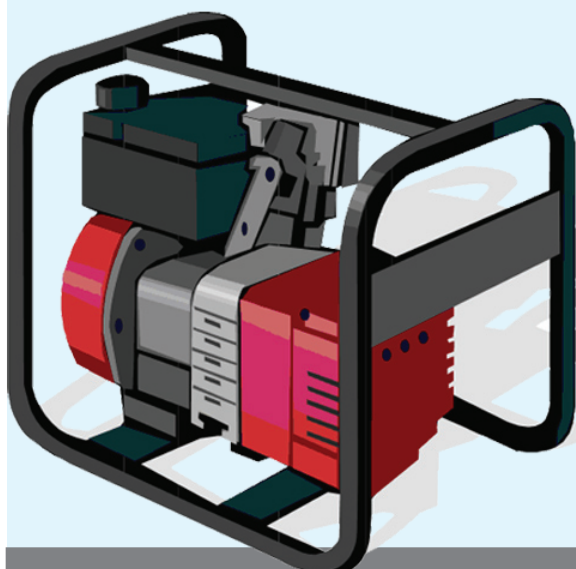
- Turn the generator off and let it cool before refueling. Gasoline spilled on hot engine parts could ignite.
- Store generator fuel in an approved safety can outside of living areas. Local laws may restrict use or storage of fuel. Ask your local fire department for information.
- If you spill fuel, or do not seal its container properly, invisible vapors can travel along the ground and be ignited by an appliance's pilot light or arcs from electric switches in the appliance.
 - Use only the type of fuel recommended in the generator instructions or on its label.

Don't overload your generator

- Determine the amount of power you will need. Light bulb wattage indicates the power needed. Appliance and equipment labels indicate their power requirements. If you can't determine the amount of power you will need, ask an electrician.
- Make sure your generator produces more power than will be drawn by the objects you connect to the generator including the initial surge when it is turned on.
- If your equipment draws more power than the generator can produce, you may blow a fuse on the generator or worse yet, damage the connected equipment!

Connect your generator correctly

- Plug appliances directly into the generator, or use a heavy duty, outdoor-rated extension cord that is rated (in watts or amps) at least equal to the sum of the connected appliance loads.
- Never try to power your house by plugging the generator into a wall outlet, a practice known as "back feeding." It can lead to the electrocution of utility workers or neighbors served by the same utility transformer.
- The only safe way to connect a generator to house wiring is to have a qualified electrician install a power transfer switch.



How to Protect Your Family during a Winter Storm

A major winter storm can last for several days, even weeks. People can become trapped at home, without power and other utilities for some time. Having emergency supplies, especially enough food and water, is necessary for survival.

Protect your Household

- Prepare your Disaster Kit.
- Dress in several layers of lightweight clothing, covering the head, feet and hands.
- Use hot water sparingly. Most water heaters are insulated and will keep water hot for up to three days, depending on how much you use.
- In most cases, food should be safe for a short period of time if refrigerators and freezers remain closed while the power is out. When in doubt, throw it out.
- To avoid damage, unplug your computer and other electronic devices to avoid power surges.
- Remember that cordless phones do not work without power; keep a corded phone available for emergencies.

Protect Your Property

- Maintain smoke alarms.
- If your power goes out, check your main switch for a blown fuse or an open breaker. Learn how to reset the circuit breaker or safely change a fuse, and keep proper spares.
- Install storm windows or cover windows with plastic from the inside.

- Drain outside faucets and protect them by insulating them with rags or foam covers.
- Open kitchen and bathroom cabinets to keep water pipes warm.
- Pipes in exposed or unheated areas (attics, basements and garages) should be wrapped with tape and insulating materials, available at local hardware stores.
- Wrap water pipes in insulation or layers of old newspapers. Cover the newspapers with plastic to keep out moisture.
- Let inside faucets drip a little to avoid freezing.

If the pipes freeze:

- Remove any insulation or layers of newspapers and wrap pipes in rags. Completely open all faucets and pour hot water over the pipes.
- A hand-held hair dryer, used with caution to prevent overheating, also works well.
- Apply heat until full water pressure is restored.
- Check all other faucets in your home to find out if you have additional frozen pipes.
- If you are unable to locate the frozen area, if it is not accessible, or you can not thaw the pipe, call a licensed plumber.
- If a water pipe breaks, immediately close the main shut-off valve to stop excessive flooding.



Hanukkah Eve Wind Storm of 2006

In the winter season of 2006-2007, Washington State suffered the effects of damaging wind. Beginning the night of December 14, 2006, a strong Pacific Ocean rain and wind storm struck the state and continued through the morning of December 15, 2006. The National Weather Service recorded a new single-day record rain amount for the city of Seattle at 2.17 inches.

Following the Hanukkah Eve Wind Storm of 2006, there was damage to 19 counties with falling trees causing power outages for more than 3 million people lasting from one to eleven days, and costing millions in damage to structures and homes. As a result of this storm there were fourteen fatalities. Four deaths resulted from wind debris, one drowning from urban flooding and one electrocution from downed power lines. Eight deaths occurred from carbon monoxide (CO) poisoning and one house fire caused by improper candle usage. In addition, over 300 people were hospitalized for carbon monoxide poisoning.

The National Weather Service conducted a "Name the Wind Storm" contest with over 6,000 submissions from the NWS Seattle web

site. The wind storm name "Hanukkah Eve Wind Storm of 2006" was chosen since it best met the date of the event and reflected the major impact of the storm.

The primary purpose of selecting a name for this storm was so residents would more easily remember this storm for years and decades to come, much like other major wind storms such as the Columbus Day Storm of 1962, the Hood Canal Bridge Wind Storm of 1979 and the 1993 Inauguration Day Wind Storm. Remembering these storms helps people better prepare for future events.

Windstorms usually occur in the Pacific Northwest each fall and winter season, producing strong winds to 60 mph and causing power outages and property damage. Approximately once every 10 years, storms with winds of 70 mph or more pound the region and cause significant damage. These storms last an average of three to six hours of prolonged winds in one area before the storm moves on.

Because a storm with winds in excess of 70 mph can happen often, preparedness and awareness are needed to avoid its disastrous effects.

FAMILY Scavenger Hunt

Disaster Preparedness Kit for a Winter Storm



KIDS-see how many points you can get by putting a check in the box next to each item you find in your house or garage.

- Dry or canned food for each person for 14 days (10 points)
- High energy foods like peanut butter, crackers and trail mix (5 points)
- Stored drinking water for each person for 14 days (10 points)
- A warm coat, gloves or mittens, hat, and water-resistant boots for each person (5 points)
- Extra blankets and extra changes of warm clothing (5 points)
- A family disaster plan (15 points)
- Can opener (1 point)
- First aid supplies and first aid book (5 points)
- Copies of important documents, such as birth certificates, licenses and insurance policies (Ask your parents for help on this one!) (10 points)
- Battery-powered radio or television and extra batteries (1 point)
- Flashlight and extra batteries (1 point)
- Wind-up clock (1 point)
- Whistle (1 point)
- Waterproof matches (1 point)
- Extra house keys and car keys (3 points)
- List of contact names and phone numbers (Ask your parents for help on this one!) (1 point)
- Food, water and supplies for pets (5 points)
- Pliers (1 point)
- Duct tape (1 point)
- Needle and thread (1 point)
- Toilet paper (1 point)
- Soap (1 point)
- Chlorine bleach for disinfecting (1 point)
- Plastic bucket with a tight lid (1 point)

Total:

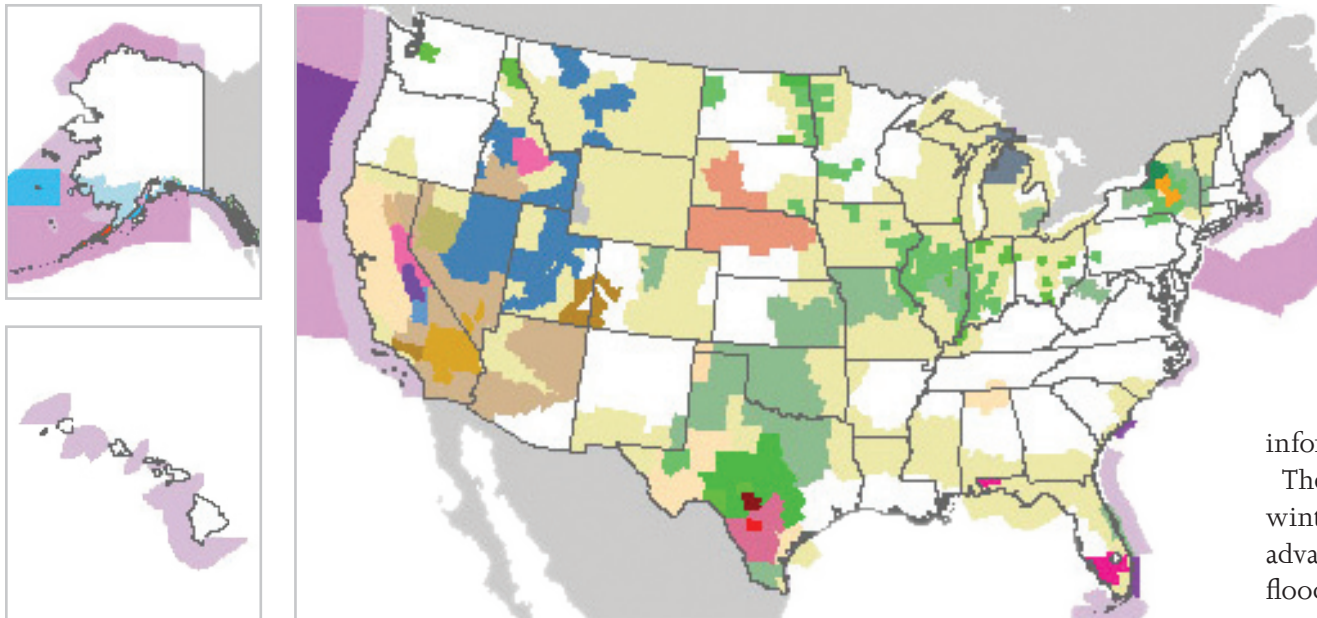
More Fun and Games:

FEMA for Kids: <http://www.fema.gov/kids/>

Ready Kids: <http://www.ready.gov/kids/>



STEVEN VELAZQUEZ - FEMA



Tracking a Winter Storm online

Check the National Weather Service (NWS) for forecasts by weather radio or online at

<http://www.nws.noaa.gov/> to stay informed of severe weather phenomena. The local offices issue other watches (flood, winter weather, etc.) 12 to 36 hours in advance of possible hazardous weather or flooding event.

Urban Flooding: It Can Happen in a Flash!

In Washington, flooding is generally the result of excessive precipitation coupled with snow melt and river flooding. Urban flooding happens quickly and without warning. Streets can become swift moving rivers and basements death traps as they fill with water.

Public awareness was increased after an urban flooding-related death in Seattle in December 2006.

The worst flooding occurs after prolonged rainfall when the soil is saturated and the water levels in the creeks elevated. During an urban flood, the land's capacity to carry water is reduced while drainage systems and sewers may become blocked with rubbish. If there is intense rain, flooding may occur with little or no warning.

Here is what you can do:

- Install and maintain "check" valves for sewer traps to prevent flood water from backing up into the drains of your home.
- Maintain drainage systems. Don't put grass clippings, leaves or other debris into drains, ditches, creeks, culverts, gutters or ravines.
- Maintain gutters and downspouts. Clean your gutters and the drainage downspouts attached to your roof twice a year. Direct downspouts away from your home, without discharging flows to adjacent properties.
- Check the condition of drainage and retaining walls if you live at the base of a hill or a cliff.
- Inspect your roof for leaks or damage to rain gutters that could cause a flat roof to flood.
- Assess your yard. The area within 10 feet of your home should slope away from your house
 - Know where your shut offs are. If flooding occurs, you'll need to know how to shut off electricity, gas and water at main switches and valves.

Information obtained from www.seattle.gov

Preventative planting

Preventative planting can also reduce the chance of flooding. According to Jeanne McNeil, horticulturist and Executive Director of the Washington State Nursery & Landscape Association, "Both evergreen plants and some mulches can help prevent flooding." Evergreen plants capture precipitation in their numerous leaves, needles, or scales before the moisture reaches the soil. They prevent erosion of the soil and the more completely they cover it, the more they can protect it. Evergreen plants may also help prevent certain types of slides if the plants are deep rooted and form a protective mat over the soil.

Trees, shrubs, groundcovers, and grassy plants may all be used successfully if they are selected for hardiness in their location. Plants with non-invasive characteristics re-charge the groundwater with the precipitation they capture and can help reduce slides and flooding.

Low Impact Development

Urban flooding can be reduced, or mitigated, by using techniques referred to as low-impact development. Such techniques include diverting water from the foundations of buildings, constructing small retention ponds, and taking advantage of natural absorption in vegetated swales to reduce the amount of water handled by storm drains and sewer systems.

For more information about Low Impact Development (LID) visit:

<http://www.psat.wa.gov/Programs/LID.htm>