

# Section 9: Severe Winter Storm Updates

## Winter Storm Events Since 2002

The County was most recently experienced severe winter weather from December 26, 2003 through January 14, 2004, when Clackamas County, (and Oregon in general) experienced severe winter storms that caused extensive property damage. Transportation networks were significantly affected, as major freeways, railways, and the Portland International Airport were periodically closed.

Downed trees disrupted power to several portions of the county, leaving many residents without heat or water for several days. Residential care facilities, home-bound ill personnel requiring daily treatment, hospital patients, and anyone requiring emergency assistance was affected by this winter storm because obstructed roadways prevented emergency vehicle movement. The damage to fire stations, equipment, roads, and other infrastructure affected the ability to effectively respond, as well as reducing the operating budgets of these facilities.



*Car covered in ice, 2004*

The County utilized emergency work crews to clear snow, ice, and trees, and to restore power lines, poles, and other power delivery equipment. Off-duty personnel were hired, and volunteers were called on. The Emergency Operations Center was activated to assist in welfare calls to residents, and to support field operations. On February 19, 2004, President Bush declared a major disaster for the State of Oregon triggering the release of federal funds to help communities recover. Clackamas County recovered \$182,996.97.

Clackamas County was also affected by freezing temperatures in December 2005 and January 2007, but the damage to life, property, and infrastructure was minimal. The Emergency Operations Center was activated to support the emergency dispatch center in responding to welfare calls.

## Hazard Assessment Updates

### Hazard Identification

**Mapping:** The County does not have adequate data for mapping the winter storm hazards, as Climatic hazards are difficult to portray geographically.

**Geographic Extent:** The primary affects of winter storms are on road and power systems, which cause widespread transportation issues and prolonged power outages over widespread areas.

**Frequency:** According to historical records, there have been an estimated 16 severe winter storm events in the past 100 years, which is about 1 every 6 years.

## **Vulnerability Assessment**

### ***Risk to Life & Property: Moderate to High***

Winter storms are deceptive killers. Many of the deaths that occur are indirectly related to the actual storm, including deaths resulting from traffic accidents on icy roads, heart attacks while shoveling snow, and hypothermia from prolonged exposure to the cold.

### ***Risk to Critical facilities and Infrastructure: Moderate to High***

Trees, power lines, telephone lines, and television and radio antennas can be impacted by ice, wind, snow, and falling trees and limbs. Delay in emergency personnel response may pose a secondary threat to life if police, fire, and medical personnel cannot respond to calls.

## **Risk Assessment**

Factors that should be included in a winter storm risk analysis include: population and property distribution in the hazard area; the frequency of winter storm events; and information on the types of trees and failure rates most susceptible to severe storm events as well as and information on utilities, and infrastructure that may be impacted by severe winter storms. Modeling software is required to predict potential losses from a particular storm event.

Due to insufficient data and modeling capability, Clackamas County is unable to perform a quantitative severe storm risk assessment at this time. The County has addressed this issue in the action items, and will be completing a risk assessment as data and resources become available.

## **Winter Storm Action Items**

### **SWS#1: Develop and implement programs to coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe winter storms.**

#### ***Ideas for Implementation***

1. Partner with responsible agencies and organizations to design and implement programs that reduce risk to life, property, and utility systems;
2. Develop partnerships between utility providers and county and local public works agencies to document known hazard areas;
3. Reduce icy conditions or other hazards at public access public service buildings and ensure public safety by prioritizing critical facilities' parking lots to be cleared before other roads.
  - ✓ Improve traffic management

- ✓ Track progress of road crews.
- ✓ Provide public/staff with info. regarding road closures, sanding and plowing routes, time the roads were plowed, and a safety rating via cable access and website; and
- 4. Enhance County plowing capability
  - ✓ Purchase a residential snow plow and a de-icer machine

**Coordinating Organization:** Hazard Mitigation Advisory Committee  
**Plan Goals Addressed:** Emergency Services, Partnerships and Implementation  
**Priority:** Medium

**SWS#2: Increase public awareness of severe winter storm mitigation activities.**

*Ideas for Implementation*

1. Distribute educational materials to Clackamas residents and public and private sector organizations regarding evacuation routes during road closures;
2. Target the vulnerable populace for disseminating preparedness information; and
3. Reduce freezing pipes and resultant damage by encouraging water providers to put a flyer in November water bills to advise of preventions measures available.

**Coordinating Organization:** Hazard Mitigation Advisory Committee  
**Plan Goals Addressed:** Public Awareness, Protect Life and Property  
**Multi-Jurisdictional:** Canby, Milwaukie, Lake Oswego, Gladstone, West Linn  
**Priority:** Medium

**SWS#3: Enhance weather monitoring to attain earlier severe winter storm warnings.**

*Ideas for Implementation*

1. Coordinate with appropriate organizations to evaluate the need for more weather stations and/or weather instrumentation.

**Coordinating Organization:** Hazard Mitigation Advisory Committee  
**Plan Goals Addressed:** Public Awareness, Protect Life and Property  
**Priority:** Medium