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***Safety and Environment
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ALASKA REGION ICE MEASUREMENT SAFETY***

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SUMMARY OF REVISIONS: This supplement supersedes Alaska Region Supplement 10-2003, Alaska Region Ice Measurement Safety, dated December 16, 2003. Removed "two blankets in the car" and replaced with "full change of clothes", added hand held ice grippers to the safety list, specified that personnel should not drive onto frozen water bodies modernized the ice safety presentation, specified ice thickness guidelines, and general clean up and redundancy reduction.

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Alaska Region Ice Measurement Safety

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1. Introduction

This supplement defines the NWS safety requirements when performing activities on ice, such as ice thickness and snow depth measurements on lakes and rivers. Safety must be the first consideration in deciding if, when, where, and how to take a measurement. The team should have a planned response for an emergency before going out on the ice, everyone must use extreme caution and good judgment to carefully evaluate site conditions and ice strength. Simply stated: If in Doubt, Don't Go Out!

2. Safety Precautions

Each member of an ice measurement team must take the following safety precautions when working on ice-covered rivers and lakes:

- a. Do not attempt an ice measurement if there is any doubt that the ice will not support the weight of the employees and equipment or if it is believed there is significant overflow that could overtop footwear. Guidelines for ice loading published by the [Minnesota DNR](#) are: 4" for activities on foot, 5-7" for snowmobiles or ATVs, 8-12" for cars and 12-15" for medium trucks.
- b. Bring the appropriate equipment, see sections 3 and 4 for mandatory and optional equipment.
- c. When crossing an ice-covered water body, only one employee will walk out on the ice to the site location. The employee will test the ice continuously at each step using solid blows of a sharp ice chisel. The remaining employee(s) will stand in a location where they can toss a throw bag to the other employee in the event of an ice breakthrough. Once it is determined that the ice will support another employee, the second employee can go to the test site, if the measurement requires both employees.
- d. Personnel should not drive vehicles onto frozen water bodies.
- e. At least two employees must be present. One of the two employees present must be experienced in working on ice-covered water bodies.

- f. The ice measurement team must follow local office communication protocol.
- g. If acting as a rescuer, do not tie the rope from a throw bag to anything, either a swimmer, a rescuer or anything on the bank. Moving water on a rescue rope can hold a swimmer under the water or pull the person on the bank into the water.

3. **Mandatory Safety Equipment**

The following safety equipment is required when making an ice measurement. Each office that has ice measurement teams will purchase and maintain the required mandatory safety equipment. Equipment should be obtained using the standard regional procurement process.

- a. Each team member must wear appropriate clothing to protect against hypothermia.
- b. A cell phone, satellite phone or two-way radio for notifying emergency services personnel.
- c. Ice chisel or auger to test the thickness of the ice.
- d. Handheld ice safety picks.
- e. A throw bag.
- f. Additional full change of clothes for all field members, ideally in a dry but close location (such as in a dry bag or in the vehicle if close).
- g. Personal Flotation Device (PFD).

4. **Additional Equipment**

The following equipment is optional and could be helpful depending on the situation.

- a. Ice cleats for foot traction, especially on bare ice.
- b. Chemical hand warmers to aid in the prevention of frostbite.
- c. Snowshoes can be used to help travel across deep snow to the edge of the water. Snowshoes should then be removed before walking out on the ice because they can hinder rescue attempts if a person breaks through the ice.

5. **Training**

All staff performing ice measurements must complete the following training on an annual basis.

- a. Watch this [video](#) (or a similar one demonstrating how a person would self-rescue after falling through the ice).
- b. Review the NWS Alaska Region Ice Safety Training [presentation](#).
- c. Practice throwing the throw bag.