# Fact Sheet

## ICE JAM EMERGENCY WORKSHOPS

### PROBLEM

When faced with emergency situations due to ice jam flooding, local, county, state, and even Corps emergency management personnel may not know enough about river ice and ice jam processes to take the most appropriate actions, considering the ice jam location, weather forecasts, and other pertinent characteristics.

### SOLUTION

The Readiness Branch, Headquarters, Corps of Engineers, has supported CRREL's Ice Engineering Research Division (IERD) in developing an Ice Engineering Workshop for Emergency Operations, a technology transfer effort that is more comprehensive and effective than any conducted previously by IERD. This workshop is designed to cover basic information on river ice processes, ice jam formation, and ice problem evolution. It addresses the various types of ice jam mitigation and alleviation measures and the corresponding conditions of application for emergency situations, advanced measures, or long-term measures. The workshop provides three case-study problems dealing with actual ice jam events, to enable attendees working in several independent teams (each with a CRREL facilitator) to apply and test the knowledge conveyed by the workshop. An attractive, informative, well-designed workshop notebook has been developed, and a copy is provided to each attendee to use during the workshop as well as to serve as a reference upon return to his or her home office.

### RESULTS

Two workshops using the modern format have been conducted. In December 1992 in Albany, New York, with the cooperation of the North Atlantic Division Emergency Operations Branch, 107 participants (29 from the Corps of Engineers, 8 from other federal agencies, 49 from New York State agencies, and 21 from counties and towns) participated in a one-and-a-half-day event. In November 1994, in Bloomington, Minnesota, 53 people (31 from the Corps of Engineers, 4 from other federal agencies, and 18 from state and local agencies) participated in a two-day workshop assisted by the St. Paul District Emergency Management Branch. The workshops were very well received by attentive and enthusiastic audiences; a great number of positive comments appeared in the critiques that were provided by each attendee. The approach of using three actual case studies proved to be particularly effective at reinforcing the material given in the lectures and in the reference notebooks provided to the students. As a result of these two presentations under the modern workshop format, there are now 160 persons, 60 of them from the Corps, who have become more informed and better prepared to deal with the threat of ice jams and their associated ill effects.

It is anticipated that similar workshops at other locations in the northern United States will be funded by the OCE Readiness Branch in the future. To effectively reach a larger audience that could benefit from the latest techniques in dealing with river ice problems, support for video productions may be developed.

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