

Snow Loads for Structural Design in Montana Time for a Review and Update

This past year, record breaking snow depths were recorded at some locations around the state of Montana, with the associated structural consequences serving as a vivid reminder of the importance of snow loads in structural design.

Over the years, efforts have been made to continually improve the fundamental basis for the snow loads used in structural design in Montana, i.e., the expected ground snow load with a 50-year mean recurrence interval (MRI). These loads are estimated from historical data available on snow depth and density at National Weather Service and SNOTEL (SNOpack TELelemetry) sites around the state. The estimated values at these sites are then used with various interpolation/extrapolation routines to generate design ground snow loads at any location. This analysis can be challenging due to the sparseness of sites at which such data are available, the nature of the data itself, and the rapid changes that occur in snow conditions across short distances in Montana. Estimates of the design ground snow loads can be improved by periodically updating them to take advantage of a) the additional years of data available since the last update and b) ongoing improvements in data analysis and processing routines. Such updates were completed in 1989 and 2004 at Montana State University (MSU), with the 2004 revision being the currently adopted snow loads guide for the state. This document and the snow load finder may be found by clicking [here](#).

Stakeholders across the building industry and the Montana Department of Labor and Industry agree it's time to chart out a definitive path forward to review the snow loads for structural design in Montana and to revise them as appropriate. The Department is actively investigating updating the snow loads used for structural design in Montana. The estimated cost of analyzing the available data (including the most recent snow pack data) and enhancing the associated software is estimated to be up to \$70,000. The Department of Labor and Industry is seeking input on this important project and help in funding it. This work tentatively would be done at Montana State University (as in the past), with available pooled funds formally administered through MSU's grants and contracts process.

If you are interested in helping to fund this project and/or in attending a stakeholder meeting, contact Tim Lloyd with the Montana Department of Labor of Industry (tlloyd@mt.gov).