constructed. This procedure ensures that the map is referenced to the NWS observed loads and contains spatial detail provided by snow-depth measurements at about 9,200 other locations.

The maps were generated from data current through the 1991–1992 winter. Where statistical studies using more recent information are available, they may be used to produce improved design guidance.

However, adding a big snow year to data developed from periods of record exceeding 20 years will usually not change 50-yr values much. As examples, the databases for Boston and Chattanooga were updated to include the winters of 1992–1993 and 1993–1994 because record snows occurred there during that period. In Boston, 50-yr loads based on water equivalent measurements only increased from 34 to 35 lb/ft^2 (1.63 to 1.68 kN/m^2) and loads generated from snow depth measurements remained at 25 lb/ft^2 (1.20 kN/m^2). In Chattanooga, loads generated from water equivalent measurements increased from 6 to 7 lb/ft^2 (0.29 to 0.34 kN/m^2) and loads generated from snow depth measurements remained at 6 lb/ft^2 (0.29 kN/m^2).

The following additional information was also considered when establishing the snow load zones on the map of the United States (Fig. 7-1).

1. The number of years of record available at each location.
2. Additional meteorological information available from NWS, Soil Conservation Service (SCS) snow surveys, and other sources.
3. Maximum snow loads observed.
4. Regional topography.
5. The elevation of each location.

The map is an updated version of that in the 1993 edition of this standard and is unchanged since the 1995 edition.

In much of the south, infrequent but severe snowstorms disrupted life in the area to the point that meteorological observations were missed. In these and similar circumstances more value was given to the statistical values for stations with complete records. Year-by-year checks were made to verify the significance of data gaps.

The mapped snow loads cannot be expected to represent all the local differences that may occur within each zone. Because local differences exist, each zone has been positioned so as to encompass essentially all the statistical values associated with normal sites in that zone. Although the zones represent statistical values, not maximum observed values, the maximum observed values were helpful in establishing the position of each zone.

For sites not covered in Fig. 7-1 design values should be established from meteorological information, with consideration given to the orientation, elevation, and records available at each location. The same method can also be used to improve upon the values presented in Fig. 7-1. Detailed study of a specific site may generate a design value lower than that indicated by the generalized national map. It is appropriate in such a situation to use the lower value established by the detailed study. Occasionally a detailed study may indicate that a higher design value should be used than the national map indicates. Again, results of the detailed study should be followed.

Using the database used to establish the ground snow loads in Fig. 7-1, additional meteorological data, and a methodology that meets the requirements of Section 7.2 (Tobiasson and Greatorex 1996), ground snow loads have been determined for every town in New Hampshire (Tobiasson et al. 2000, 2002).

The area covered by a site-specific case study will vary depending on local climate and topography. In some places, a single case study will suffice for an entire community, but in others, varying local conditions limit a “site” to a much smaller area. The area of applicability usually becomes clear as information in the vicinity is examined for the case study.

As suggested by the footnote, it is not appropriate to use only the site-specific information in Table C7-1 for design purposes. It lacks an appreciation for surrounding station information and, in a few cases, is based on rather short periods of record. The map or a site-specific case study provides more valuable information.

The importance of conducting detailed studies for locations not covered in Fig. 7-1 is shown in Table C7-2.

For some locations within the Case Study (CS) areas of the northeast (Fig. 7-1), ground snow loads exceed 100 lb/ft^2 (4.79 kN/m^2). Even in the southern portion of the Appalachian Mountains, not far from sites where a 15-lb/ft^2 (0.72 kN/m^2) ground snow load is appropriate, ground loads exceeding 50 lb/ft^2 (2.39 kN/m^2) may be required. Lake-effect storms create requirements for ground loads in excess of 75 lb/ft^2 (3.59 kN/m^2) along portions of the Great Lakes. In some areas of the Rocky Mountains, ground snow loads exceed 200 lb/ft^2 (9.58 kN/m^2).

Local records and experience should also be considered when establishing design values.