Ground Snow Loads for Idaho: 2015

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PREFACE

The American National Standards Institute and subsequently, the American Society of Civil Engineers mapped the ground snow loads for the nation, but deferred to local knowledge and case studies in the western U.S As a result many of the western States have written reports to describe the ground snow loads produced by the varied terrain and complex weather patterns. In 1976 we published the first comprehensive report of ground snow loads for Idaho, which was updated in 1986 with an expanded data base and loads associated with a two percent chance that the value will be exceeded in a given year (also known as a 50-year mean recurrence interval); we used a three percent chance in the 1976 study.

The database for this 2015 study contains 31 additional years of record from the National Weather Service (NWS) and the National Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS). We used a total of 408 stations within Idaho and 260 additional stations located in bordering states. As in the 1986 study we used the Rocky Mountain Conversion Density (RMCD) to obtain loads from the snow depths recorded by the NWS Coop stations, and mapped the Normalized Ground Snow Loads (NGSL). Appendix 1 lists the ground snow loads for Idaho towns and cities by county. Several areas exhibited exceptions to the mapped values; consequently we have provided Appendix 2 that compares the 1976, 1986 and 2015 loads, and it includes notes to aid in interpreting any mapping exceptions and/or values that have changed significantly from previous studies. We envision that the notes will be useful to the user in interpreting loads for sites that are not specifically documented.

The 31 years of additional data, plus new Idaho stations and also stations from bordering states produced results slightly different from those of our previous studies as shown in Appendix 2. For this study, the counties of Ada, Bannock, Benewah, Bingham, Butte, Clark, Clearwater, Jefferson, Jerome, Minidoka, and Payette did not show significant changes from the 1986 report. The Washington-Idaho State line shows improved agreement for towns near the state border. Also, there are generally small differences in the studies for neighboring States at the Idaho-Oregon and Idaho-Montana borders. Since this study focuses only on the ground snow loads, we have not included information on the ground-to-roof conversion factors, which can be found in the ASCE/SEI 7 Standard.

We urge our readers to use the information with care. The uncertainties associated with snow should suggest that the scatter in the data could be large in spite of our many efforts. For unusual structures or siting we suggest that all available information be considered in determining the snow loads. Finally, we remind the user that the design snow loads are the ultimate responsibility of the person in charge of the project.

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By

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1.0 Introduction

Snow loading can constitute the most severe test of structural integrity for structures that are constructed in areas where large accumulations of snow are encountered. Economical structural design in these areas requires an accurate prediction of the ground snow, plus an understanding of how the snow is distributed on the structures. The Natural Resources Conservation Service (NRCS) and the National Weather Service (NWS) are the two principal agencies gathering ground snow data in the western U.S. (the *West).* The American Society of Civil Engineers (ASCE) has mapped the ground snow loads for the U.S. (ASCE/SEI 7-10 2010) but has not defined ground snow loads in most of the *West*, where the national standard defers to local knowledge and case studies. The varied terrain and complex weather patterns in the *West* result in extreme variations in ground snow between the valleys, plains and mountains; it is insufficient to rely on simplified measures such as using a standard lapse rate.

2.0 The First Idaho Study--1976

The first comprehensive study of ground snow for Idaho (Sack and Rusten 1976) and (Rusten, Sack and Molnau 1980) used data from 279 snow course stations of the Soil Conservation Service (SCS), which is now the NRCS. All of these stations were in Idaho with the exception of 28 in Montana and seven in Wyoming. Each snow course had seven or more years of record. Maximum-recorded weights of snow on the ground were selected from records taken during the seasons from 1927 to 1975. The annual maximum values of snow-water equivalent for each station were analyzed for a 30-year mean recurrence interval (MRI, i.e., an annual probability of 0.033 that the ground snow is exceeded) using a log Pearson type III frequency analysis. Additionally snow depth data were used from 126 National Weather Service (NWS) stations within the state. These data were also analyzed for a 30-year MRI. But these data can only yield useful results if a specific gravity is assigned to the depths. Canada initially adopted a constant specific gravity of 0.192 for all locations and added the maximum 24-hour rain occurring during the winter months. The 1976 Idaho study used a value of 0.385 to convert the NWS depths to loads. The value of 0.385 was obtained from the mean specific gravity of the 270 SCS stations within the region. The NWS depth data were used only if the SCS data were sparse in a particular location. The station-specific extreme values were spatially extrapolated using normalized ground snow loads (NGSL). Normalized ground snow load (NGSL) contours are used by Idaho, Montana, and Washington. For this technique the snow load at each measurement site (in units of force per area) is divided by the

elevation of the station in feet to give a quasi-normalized quantity in units of psf/ft. These quantities appear to have no obvious physical significance, but the process in effect reduces the entire area to a common base elevation. This procedure masks out the effect of the environment on the snowmaking mechanism and gives single-valued contours that are impossible to obtain without normalization. The ground-to-roof conversion factors recommended in the 1976 study were those obtained by the National Research Council of Canada and published in the American National Standards Institute A58.1-1972 (ANSI 1972).

3.0 The Second Idaho Study--1986

Various factors prompted updating the 1976 Idaho study. This was an opportunity to: (a) update all annual maxima for the Idaho SCS and NWS stations; (b) include more stations from surrounding states and (c) examine the issue of an appropriate specific gravity for the NWS snow depth data. We used a total of 514 stations from both SCS and NWS for the 1986 study. The 375 SCS stations were composed of 234 from Idaho, 93 from Montana, 30 from Oregon and 18 from Washington. All Idaho snow courses included in the study had a minimum of 10 years of record. The maximum-recorded weights of snow on the ground were selected from records taken during the following snow seasons: Idaho (1927-1983); Montana (1922-1974); Oregon (1928-1972); and Washington (1915-1969). Additionally, snow depth data were available from 138 NWS stations in Idaho (1927-1981) plus the first-order station in Spokane, Washington. The Idaho NWS first-order stations in Boise, Lewiston, and Pocatello are included in the total NWS Idaho stations.

The 1982 countrywide ANSI map is based on an annual probability of being exceeded equal to 0.02 (50-year MRI), and we envisioned that the Idaho map should use this same MRI. Annual probabilities of being exceeded ranging from 0.01 to 0.04 have been used in the United States, but the trend is to standardize on the single value of 0.02. The MRI is the reciprocal of the annual probability of being exceeded. Thus, a 50-year MRI corresponds to an annual probability of being exceeded of 2 percent. It is important to note, for example, that during a 50-year period, there is a 63.6 percent chance of exceeding the value designated by the 2 percent annual probability of exceedance. In order to conform to the value used in the *West* and also in the standard for this report the annual maximum values of snow-water equivalent for each station were analyzed for a 50-year MRI using a log Pearson type III frequency analysis. Additionally snow depth data were used from 126 NWS stations within the state. These data were also analyzed for a 50-year MRI, as were the depths and snow-water equivalent for the first-order Spokane station and the three Idaho first-order stations,

The snow depths recorded for the majority of the NWS stations, that is for the Cooperative Observation Network (i.e., NWS Coop stations) constitute a potentially useful set of information, but their use requires an estimate of the specific gravity of the snow at each station to convert the NWS depths to loads. The methodology used by

ANSI for the United States involved plotting the 50-year MRI ground snow depths against the 50-year MRI ground snow loads for the 184 first-order NWS stations. The resulting nonlinear regression curve relating these extreme values was used to predict ground snow loads for the NWS Coop stations nationwide.

It was envisioned that the value of the specific gravity of 0.385 used in the 1976 Idaho study is probably accurate for mountainous locations where the snow compacts throughout the winter, but it is probably not representative for sites in valleys and plains where the snow remains on the ground for only a short period. Therefore, for the 1986 study of Idaho we fit a bilinear distribution to data from 3,000 Western SCS stations with over five years of record. The relationships developed were dubbed the Rocky Mountain Conversion Density (RMCD) and are expressed as follows and shown in Fig. 1:

$$p_g = 0.90\, h_g \qquad \text{for } h_g \leq 22 \text{ in.}$$

and (3.1)

$$p_g = 2.36 h_g - 31.9 \qquad \text{for } h_g \geq 22 \text{ in.}$$

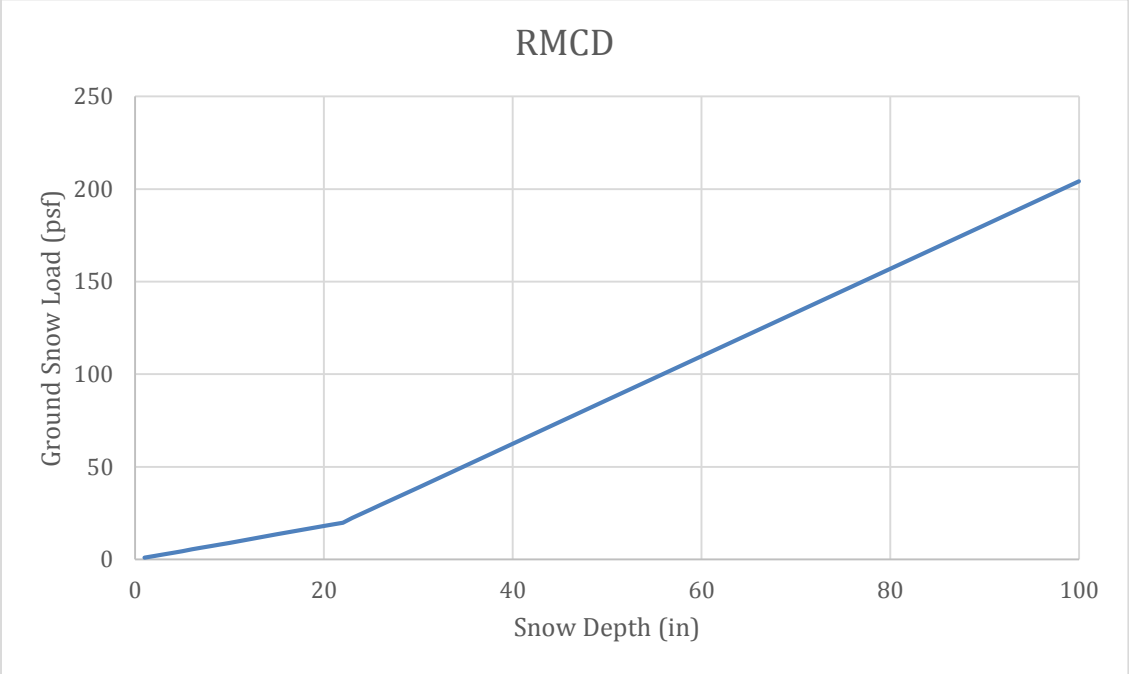

Figure 3.1: The Rocky Mountain Conversion Density

Where p_g is the ground snow load in lb/ft^2 and h_g is the snow depth in inches. For depths less than 22 in. this gives a specific gravity of 0.175 and for depths greater than 22 in. the specific gravity is variable, but if the line started from the origin it would give a value of 0.444. See Fig. 2 for a comparison of densities.

For the 1986 study we mapped the NGSL using the computer program SURFACE II to generate a contour map of NGSL (Sheikh-Taheri 1985).

3.1 Exceptions for the 1986 Idaho Report

Some exceptions to the contour lines were noted during the mapping process. The map produced ground snow loads for cities and towns; these loads were compared to the input data to check the accuracy of the mapping. We checked the areas that were not represented accurately by the contours and studied these in more detail. One such area was Coeur d'Alene where the RMCD proved to be inadequate for predicting snow loads from the snow depths of the NWS. Therefore, we obtained a factor to convert the maximum depth to the maximum load at this station. The maximum annual water equivalents were selected from the Spokane first-order NWS station for the past 28 years and the 50-year MRI value was calculated. Similarly, maximum annual snow depths were analyzed and the 50-year MRI snow depth was obtained. Both extreme values were computed using the log Pearson type III frequency analysis. A conversion factor of 0.233 was calculated for Spokane by dividing the extreme value of water equivalent by the extreme value of depth. This value was applied to the NWS depth at the Coeur d'Alene station. Snow-water equivalents for Boise, Lewiston and Pocatello were used at these first-order stations and the NWS values were disregarded.

Another type of exception was noted for locations where the NGSL was known and could not be represented by a contour line. One of these exceptions occurred at Riggins (an NWS Coop station) and another at Bear Mountain (an SCS station). The NGSL for Riggins is 0.005, and the contour lines around this town were between 0.025 and 0.030. Similarly, the value of NGSL for Bear Mountain is 0.120, and the contours around it have a value of 0.055. Since the contour interval is 0.005, this difference in values cannot be shown without adding more contours, which is untenable. Therefore, the value of the NGSL for such locations were noted as exceptions, and these are represented on the map by a + sign accompanied by the NGSL value. The map and report are available online (Sack and Sheikh-Taheri 1986).

4.0 The 2015 Idaho Study

The 1986 study included the records up to 1983 and excluded stations with fewer than ten years of data; whereas this 2015 study includes 31 more years of record from the NWS and NRCS, plus it incorporates stations introduced since 1983 and also the SNOTEL stations. This study also includes 260 stations from the neighboring States of Montana, Nevada, Oregon, Utah and Washington. Details of this study and all the metadata for Idaho are contained in a M.S. thesis (Hussain Al Hatailah 2015).

The NRCS records data consisting of snow-water equivalent through the snow course monthly measurements and the SNOTEL stations, which are continuously monitored remotely. The NWS maintains the Coop stations where only snow depths are measured daily; they also support the first-order stations, which measure daily snow depth and weight. For this study we used the snow records with ten years or more of data shown in Table 4.1.

Table 4.1: Snow Stations for 2015 Idaho Report

State	NWS	NRCS	Total
Idaho	138*	270	408
Montana	3	92	95
Nevada	2	38	40
Oregon	0	33	33
Utah	2	17	19
Wyoming	0	44	44
Washington	8**	21	29

260 Stations for Border States.
Notes:
*Includes 3 NWS First-Order Stations.
**Includes 1 NWS First-Order Station.

Annual NWS maximum snow depths (converted to snow loads using the RMCD) and annual NRCS maximum snow-water equivalent were analyzed using the log Pearson type III extreme-value distribution to yield the 50-year MRI ground snow loads. The 50-year MRI ground snow loads were divided by the station elevation in feet to yield the NGSL in psf/ft.

ArcGIS for Desktop (ESRI 2014) was used to develop a geoprocessing model to produce a map showing NGSL for the State of Idaho. Metadata for each weather station, including longitude, latitude, elevation, and the 50-year MRI NGSL were imported into ArcGIS to create two point feature layers: one containing station elevations less than or equal to 4,000 feet and one containing station elevations greater than 4,000 feet. The Inverse Distance Weighting (IDW) surface interpolation tool was used to interpolate a 10-meter^2 raster surface from each station point feature layer. The IDW algorithm uses a weighting function to interpolate the value of the NGSL at gridded locations between stations. The weighting function is the inverse of the average distance (D) between the snow stations and the grid location raised to a power value p (i.e., $1/D^p$). A weighting factor of $1/D^2$ was employed for relatively flat areas (elevations less than or equal to 4,000 ft) and $1/D^6$ was used for regions with highly varying terrain (elevations greater than 4,000 ft). The weighting factor $1/D^6$ reduces the weight of more distant stations on the NGSL at a grid location, which is appropriate for highly variable terrain in mountainous areas. Digital elevation data (USGS 2014) having a 10-meter^2 grid size were then utilized to select the appropriate grid cells from each IDW interpolated raster surface. The two layers were subsequently combined to produce a single map showing NGSL for the State of Idaho.

4.1 Exceptions for the 2015 Study

Just as in the 1986 study, we noted several exceptions to the values obtained from a strict adherence to the map values. The NWS Coop station for the City of Coeur d'Alene, which is located 35 miles east of the first-order Spokane station, registers a 50-year MRI snow depth of 42 in. Using the RMCD we calculate a ground load of 67 psf, which gives a specific gravity of 0.308. The Spokane NWS first-order station gives a 50-year MRI depth of 30 in, with a snow-water equivalent (SWE) of 7.55 in, which translates to a specific gravity of 0.2517. We can conclude that the RMCD gives a specific gravity that

is not appropriate for Coeur d'Alene because it is derived using data from SCS stations, which are located primarily in the mountainous areas. Using the specific gravity of 0.2517 and a depth of 42 in for Coeur d'Alene gives a ground snow load of 40 psf. To resolve this anomaly we mapped the area in Kootenai County using the snow depths from the East Ragged Saddle Station, using the specific gravity for Spokane. These two approaches both gave a ground snow load of 43 psf for Coeur d'Alene. But the two approaches gave slightly differing values for other towns in the county (see Appendix 1). We encountered an additional anomaly in Bannock County for the cities of Pocatello, which has a NWS first-order station, and Chubbuck, which is four miles north of Pocatello. The mapping gave ground snow loads of 45 psf for both towns. But with the depth and snow-water equivalent values at the Pocatello Regional airport we calculated a 50-year MRI snow load of 31 psf, which we prescribed for both cities.

Since ground snow loads differ from our current calculations and those done in 1976 and 1986, we have annotated the listing of ground snow loads for Idaho cities and towns in Appendix 1. For many locations we have provided notes with rationale for these values by noting the location of NWS and SCS stations near the town/city. The results from the three Idaho studies are documented In Appendix 2.

5.0 Summary and Conclusions

The 31 years of additional data, plus new Idaho stations and also stations from the neighboring states produced results slightly different from those of the 1986 study. In Appendix 2 we have included the values from the 1976 report, but since the 30-year MRI value was used in that early study, we have multiplied the ground loads by 1.15 to approximately convert them to 50-year MRI values. For this 2015 study the counties of Ada, Bannock, Benewah, Bingham, Butte, Clark, Clearwater, Jefferson, Jerome, Minidoka, and Payette did not experience great changes from the 1986 study. Adams County had an approximate average decrease of 30% in their snow loads, and Bear Lake County experienced a 25% decrease in the snow loads, with the exception of Georgetown and Saint Charles. The Washington-Idaho State line shows improved agreement for towns near the state border. Also, there generally are small differences in the studies for neighboring States at the Idaho-Oregon and Idaho-Montana borders. The ground snow loads for towns/cities for all Idaho counties are tabulated in Appendix 1.

Since this 2015 Idaho report focuses only on the ground snow loads, we have not included the ground-to-roof conversion factors. We refer the user of this report to the ASCE/SEI 7 *Standard* (ASCE/SEI 7-10) to obtain roof design snow loads where factors such as exposure, thermal properties, and importance are defined and quantified. Also ASCE/SEI 7 offers design information for myriad effects such as roof slope, unbalanced loads, drifting, roof projections, sliding snow, rain on snow, ponding, and others.

We conclude that the 2015 Idaho ground snow load study provides engineers, architects, contractors and building officials with the most current and accurate information

available to ensure the health and welfare of the public. But we acknowledge that the uncertainties associated with snow suggest that the scatter in the data may be large in spite of our best efforts. Also, the authority having jurisdiction must approve ground snow loads for sites that are not specifically defined in this report. Ground snow load determination for such sites must be based on an extreme value statistical analysis of data available in the vicinity of the site using a value with a 2 percent annual probability of being exceeded (i.e., 50-year MRI). And finally we remind the user of this report that the design snow loads are the ultimate responsibility of the person in charge of the project.

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Appendix 1. Ground Snow Loads for Idaho Cities and Towns--2015

Appendix 2. Ground Snow Loads for Idaho Cities and Towns—1976; 1986; 2015.

Appendix 1. Ground Snow Loads for Idaho Cities and Towns--2015

County	City	Elevation (ft)	GSL (psf)
ADA			
	Boise	2740	**13**
	Eagle	2555	**18**
	Garden City	2660	**14**
	Kuna	2960	**16**
	Meridian	2605	**16**
ADAMS			
	Council	2913	**55**
	New Meadows	3868	**89**
BANNOCK			
	Arimo	4736	**78**
	Chubbuck	4470	**31**
	Downey	4855	**79**
	Inkom	4525	**111**
	Lava Hot Spring	5000	**101**
	McCammon	4750	**96**
	Pocatello	4460	**31**
BEAR LAKE			
	Bloomington	5969	**67**
	Georgetown	6006	**116**
	Montpelier	5945	**45**
	Paris	5966	**67**
	St. Charles	5985	**35**
BENEWAH			
	Chatcolet	2136	**60**
	Plummer	2557	**59**
	St. Maries	2216	**60**
	Tensed	2250	**32**

County	City	Elevation (ft)	GSL (psf)
BINGHAM			
	Aberdeen	4404	**22**
	Basalt	4585	**47**
	Blackfoot	4504	**29**
	Firth	4555	**46**
	Shelley	4625	**36**
BLAINE			
	Bellevue	5190	**80**
	Hailey	5330	**82**
	Ketchum	5890	**83**
	Sun Valley	5920	**84**
BOISE			
	Crouch	3021	**45**
	Horseshoe Bend	2604	**27**
	Idaho City	3906	**99**
	Placerville	4320	**103**
BONNER			
	Clark Fork	2085	**72**
	Hope	2063	**66**
	Kootenai	2120	**57**
	Old Town	2160	**77**
	Ponderay	2120	**56**
	Priest River	2080	**71**
	Sandpoint	2085	**60**
BONNEVILLE			
	Ammon	4714	**22**
	Idaho Falls	4710	**36**
	Iona	4875	**23**
	Irwin	5326	**77**
	Swan Valley	5277	**67**
	Ucon	4808	**24**
BOUNDARY			
	Bonners Ferry	1787	**64**
	Moyie Springs	2204	**72**

County	City	Elevation (ft)	GSL (psf)
BUTTE			
	Arco	5328	**71**
CAMAS			
	Fairfield	5056	**71**
CANYON			
	Caldwell	2365	**18**
	Melba	2659	**14**
	Middleton	2400	**18**
	Nampa	2480	**14**
	Notus	2315	**17**
	Parma	2225	**23**
	Wilder	2424	**20**
CARIBOU			
	Bancroft	5423	**100**
	Grace	5533	**62**
	Soda Springs	5773	**70**
CASSIA			
	Albion	4750	**24**
	Burley	4165	**19**
	Declo	4201	**22**
	Malta	4540	**15**
	Oakley	4585	**16**
CLARK			
	Dubois	5150	**45**
	Spencer	5883	**90**
CLEARWATER			
	Elk River	2918	**143**
	Orofino	1027	**17**
	Pierce	3087	**113**
	Weippe	3029	**90**

County	City	Elevation (ft)	GSL (psf)
CUSTER			
	Clayton	5471	**112**
	Challis	5283	**13**
	Lost River	6167	**101**
	Mackay	5900	**89**
	Stanley	6260	**128**
ELMORE			
	Mountain Home	3140	**14**
	Glenns Ferry	2555	**18**
FRANKLIN			
	Clifton	4849	**76**
	Dayton	4818	**80**
	Franklin	4504	**51**
	Oxford	4798	**74**
	Preston	4720	**87**
	Weston	4605	**70**
FREMONT			
	Ashton	5260	**104**
	Drummond	5607	**114**
	Island Park	6280	**175**
	Newdale	5069	**50**
	Parker	4924	**50**
	St. Anthony	4970	**37**
	Teton	4949	**43**
	Warm River	5302	**107**
GEM			
	Emmett	2397	**15**
GOODING			
	Bliss	3262	**29**
	Gooding	3570	**26**
	Hagerman	2959	**24**
	Wendell	3467	**22**

County	City	Elevation (ft)	GSL (psf)
IDAHO			
	Cottonwood	3410	**56**
	Ferdinand	3728	**59**
	Grangeville	3390	**19**
	Kooskia	1260	**24**
	Riggins	1800	**18**
	Stites	1245	**23**
	Whitebird	1560	**22**
JEFFERSON			
	Hamer	4814	**33**
	Lewisville	4795	**30**
	Menan	4795	**32**
	Mud Lake	4785	**33**
	Rigby	4855	**35**
	Ririe	4960	**53**
	Roberts	4755	**33**
JEROME			
	Eden	3950	**17**
	Hazelton	4063	**17**
	Jerome	3781	**12**
KOOTENAI			
	Athol	2391	**69**
	Coeur D'Alene	2187	**65**
	Dalton Gardens	2440	**65**
	Harrison	2125	**55**
	Hauser	2130	**70**
	Hayden	2283	**65**
	Post Falls	2172	**56**
	Rathdrum	2196	**72**
	Spirit Lake	2567	**87**
	State Line	2120	**56**
	Worley	2654	**59**

County	City	Elevation (ft)	GSL (psf)
LATAH			
	Bovill	2874	**110**
	Deary	2960	**90**
	Genesee	2675	**39**
	Juliaetta	1085	**23**
	Kendrick	1220	**29**
	Moscow	2575	**39**
	Potlatch	2519	**37**
	Troy	2460	**47**
LEMHI			
	Leadore	5989	**65**
	Patterson	6000	**50**
	Salmon	4004	**16**
LEWIS			
	Craigmont	3727	**65**
	Kamiah	1195	**22**
	Nezperce	3150	**19**
	Reubens	3498	**61**
	Winchester	4000	**71**
LINCOLN			
	Dietrich	4065	**57**
	Richfield	4306	**61**
	Shoshone	3970	**49**
MADISON			
	Rexburg	4856	**50**
	Sugar	4894	**50**
MINIDOKA			
	Acequia	4165	**18**
	Heyburn	4150	**18**
	Minidoka	4280	**19**
	Paul	4145	**18**
	Rupert	4158	**18**

County	City	Elevation (ft)	GSL (psf)
NEZ PERCE			
	Culdesac	1689	**30**
	Lapwai	964	**15**
	Lewiston	739	**7**
	Peck	1080	**40**
ONEIDA			
	Malad City	4700	**108**
OWYHEE			
	Homedale	2237	**15**
	Marsing	2249	**11**
	Grand View	2365	**11**
PAYETTE			
	Fruitland	2226	**18**
	New Plymouth	2255	**20**
	Payette	2150	**17**
POWER			
	American Falls	4404	**24**
	Rockland	4660	**71**
SHOSHONE			
	Kellogg	2308	**36**
	Mullan	3277	**121**
	Osburn	2530	**82**
	Pinehurst	2240	**57**
	Smelterville	2219	**42**
	Wallace	2744	**118**
	Wardner	2637	**42**
TETON			
	Driggs	6116	**50**
	Tetonia	6050	**52**
	Victor	6207	**110**

County	City	Elevation (ft)	GSL (psf)
TWIN FALLS			
	Buhl	3793	**28**
	Castleford	3866	**35**
	Filer	3965	**19**
	Hansen	4012	**14**
	Hollister	4515	**12**
	Kimberly	3930	**14**
	Murtaugh	4082	**18**
	Twin Falls	3745	**16**
VALLEY			
	Cascade	4790	**77**
	Donnelly	4875	**77**
	Mccall	5030	**153**
WASHINGTON			
	Cambridge	2651	**73**
	Midvale	2552	**57**
	Weiser	2115	**17**
SKI AREAS			
	Bogus Basin Lodge	6200	**152**
	Brundage Mt. Lodge	6040	**207**
	Schweitzer Basin Lodge	4700	**273**
	Silverhorn Lodge	5040	**173**
	Sun Valley Mt. Baldy	9000	**197**

Appendix 2. Ground Snow Loads for Idaho Cities and Towns—1976; 1986; 2015

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
ADA							
	Boise	2740	19	27	14	13	
	Eagle	2555	16	23	13	18	
	Garden City	2660	19	27	13	14	
	Kuna	2960	17	24	15	16	
	Meridian	2605	16	23	13	16	
ADAMS							
	Council	2913	86	124	87	55	1
	New Meadows	3868	93	134	126	89	2
bannock							
	Arimo	4736	64	92	95	78	3
	Chubbuck	4470	36	52	37	31	
	Downey	4855	58	83	70	79	
	Inkom	4525	72	104	91	111	
	Lava Hot Springs	5000	64	92	93	101	
	McCammon	4750	72	104	95	96	
	Pocatello	4460	39	56	45	31	
Bear Lake							
	Bloomington	5969	57	82	90	67	4
	Georgetown	6006	67	96	102	116	5
	Montpelier	5945	48	69	59	45	6
	Paris	5966	57	82	90	67	7
	St. Charles	5985	48	69	90	35	8
Benewah							
	Chatcolet	2136	34	49	66	60	
	Plummer	2557	31	45	51	59	
	St. Maries	2216	54	78	82	60	9
	Tensed	2250	31	45	38	32	
Bingham							
	Aberdeen	4404	35	50	22	22	
	Basalt	4585	18	26	55	47	
	Blackfoot	4504	29	42	23	29	
	Firth	4555	22	32	46	46	
	Shelley	4625	26	37	49	36	10

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
Blaine							
	Bellevue	5190	62	89	88	80	
	Hailey	5330	64	92	107	82	11
	Ketchum	5890	94	135	118	83	12
	Sun Valley	5920	95	137	118	84	13
Boise							
	Crouch	3021	48	69	70	45	14
	Horseshoe Bend	2604	37	53	51	27	15
	Idaho City	3906	91	131	104	99	
	Placerville	4320	86	124	108	103	
Bonner							
	Clark Fork	2085	83	119	115	72	16
	Hope	2063	81	116	113	66	17
	Kootenai	2120	85	122	111	57	18
	Old Town	2160	52	75	76	77	
	Ponderay	2120	83	119	108	56	19
	Priest River	2080	50	72	73	71	
	Sandpoint	2085	75	108	104	60	20
Bonneville							
	Ammon	4714	26	37	50	22	21
	Idaho Falls	4710	30	43	47	36	22
	Iona	4875	27	39	49	23	23
	Irwin	5326	68	98	76	77	
	Swan Valley	5277	68	98	73	67	
	Ucon	4808	23	33	43	24	24
Boundary							
	Bonners Ferry	1787	71	102	89	64	25
	Moyie Springs	2204	88	127	110	72	26
Butte							
	Arco	5328	43	62	75	71	
Camas							
	Fairfield	5056	61	88	101	71	27

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
Canyon							
	Caldwell	2365	13	19	12	18	28
	Melba	2659	11	16	13	14	
	Middleton	2400	15	22	12	18	29
	Nampa	2480	14	20	12	14	
	Notus	2315	13	19	12	17	30
	Parma	2225	12	17	11	23	31
	Wilder	2424	12	17	12	20	32
Caribou							
	Bancroft	5423	43	62	81	100	33
	Grace	5533	44	63	83	62	34
	Soda Springs	5773	69	99	87	70	35
Cassia							
	Albion	4750	23	33	24	24	
	Burley	4165	23	33	21	19	36
	Declo	4201	20	29	21	22	
	Malta	4540	33	47	33	15	37
	Oakley	4585	37	53	23	16	
Clark							
	Dubois	5150	41	59	52	45	
	Spencer	5883	61	88	88	90	
Clearwater							
	Elk River	2918	103	148	143	143	
	Orofino	1027	25	36	23	17	
	Pierce	3087	72	104	108	113	
	Weippe	3029	39	56	91	90	
Custer							
	Clayton	5471	66	95	82	112	38
	Challis	5283	59	85	26	13	39
	Lost River	6167	74	106	93	101	
	Mackay	5900	61	88	75	89	40
	Stanley	6260	80	115	94	128	41
Elmore							
	Mountain Home	3140	25	36	31	14	42
	Glenns Ferry	2555	22	32	20	18	

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
Franklin							
	Clifton	4849	39	56	53	76	43
	Dayton	4818	39	56	48	80	44
	Franklin	4504	36	52	56	51	
	Oxford	4798	38	55	58	74	45
	Preston	4720	38	55	47	87	46
	Weston	4605	37	53	51	70	47
Fremont							
	Ashton	5260	76	109	85	104	48
	Drummond	5607	83	119	92	114	49
	Island Park	6280	146	210	171	175	
	Newdale	5069	53	76	51	50	50
	Parker	4924	47	68	44	50	
	St. Anthony	4970	50	72	50	37	51
	Teton	4949	48	69	45	43	
	Warm River	5302	89	128	106	107	
Gem							
	Emmett	2397	19	27	20	15	52
Gooding							
	Bliss	3262	29	42	24	29	
	Gooding	3570	34	49	29	26	
	Hagerman	2959	24	35	18	24	
	Wendell	3467	28	40	17	22	
Idaho							
	Cottonwood	3410	49	70	55	56	
	Ferdinand	3728	54	78	65	59	
	Grangeville	3390	62	89	34	19	53
	Kooskia	1260	24	35	25	24	
	Riggins	1800	29	42	9	18	54
	Stites	1245	25	36	25	23	
	Whitebird	1560	19	27	26	22	
Jefferson							
	Hamer	4814	23	33	29	33	
	Lewisville	4795	19	27	37	30	
	Menan	4795	19	27	37	32	
	Mud Lake	4785	31	45	24	33	55
	Rigby	4855	19	27	41	35	
	Ririe	4960	24	35	50	53	56
	Roberts	4755	23	33	32	33	

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
Jerome							
	Eden	3950	25	36	20	17	
	Hazelton	4063	26	37	20	17	
	Jerome	3781	30	43	19	12	57
Kootenai							
	Athol	2391	57	82	68	69	
	Coeur d'Alene	2187	49	70	60	65	
	Dalton Gardens	2440	55	79	67	65	
	Harrison	2125	32	46	64	55	
	Hauser	2130	34	49	55	70	
	Hayden	2283	55	79	63	65	
	Post Falls	2172	35	50	56	56	
	Rathdrum	2196	39	56	58	72	
	Spirit Lake	2567	51	73	72	87	
	State Line	2120	31	45	53	56	
	Worley	2654	34	49	62	59	
Latah							
	Bovill	2874	90	129	137	110	58
	Deary	2960	85	122	111	90	59
	Genesee	2675	32	46	54	39	60
	Juliaetta	1085	23	33	24	23	
	Kendrick	1220	30	43	31	29	
	Moscow	2575	31	45	64	39	61
	Potlatch	2519	48	69	50	37	62
	Troy	2460	61	88	70	47	63
Lemhi							
	Leadore	5989	48	69	60	65	
	Patterson	6000	48	69	60	50	
	Salmon	4004	45	65	40	16	64
Lewis							
	Craigmont	3727	54	78	61	65	
	Kamiah	1195	20	29	24	22	
	Nezperce	3150	50	72	57	19	65
	Reubens	3498	42	60	56	61	
	Winchester	4000	56	81	60	71	66
Lincoln							
	Dietrich	4065	36	52	29	57	67
	Richfield	4306	41	59	39	61	68
	Shoshone	3970	38	55	32	49	49

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
Madison							
	Rexburg	4856	35	50	40	50	70
	Sugar	4894	43	62	42	50	71
Minidoka							
	Acequia	4165	30	43	21	18	
	Heyburn	4150	23	33	21	18	
	Minidoka	4280	34	49	21	19	
	Paul	4145	27	39	21	18	
	Rupert	4158	27	39	21	18	
Nez Perce							
	Culdesac	1689	20	29	22	30	
	Lapwai	964	12	17	12	15	
	Lewiston	739	10	14	7	7	
	Peck	1080	22	32	24	40	72
Oneida							
	Malad City	4700	38	55	47	108	73
Owyhee							
	Homedale	2237	11	16	11	15	
	Marsing	2249	11	16	11	11	
	Grand View	2365	13	19	21	11	74
Payette							
	Fruitland	2226	18	26	18	18	
	New Plymouth	2255	16	23	17	20	
	Payette	2150	19	27	19	17	
Power							
	American Falls	4404	25	36	22	24	
	Rockland	4660	30	43	42	71	75
Shoshone							
	Kellogg	2308	55	79	95	36	76
	Mullan	3277	105	151	164	121	77
	Osburn	2530	61	88	118	82	78
	Pinehurst	2240	71	102	90	57	79
	Smelterville	2219	88	127	91	42	80
	Wallace	2744	74	106	137	118	
	Wardner	2637	90	129	113	42	81
Teton							
	Driggs	6116	98	141	104	50	82
	Tetonia	6050	97	139	97	52	83
	Victor	6207	99	142	99	110	

County	City	Elev. ft	Roof 1976	Ground 1976	Ground 1986	Ground 2015	Note
Twin Falls							
	Buhl	3793	21	30	19	28	84
	Castleford	3866	19	27	19	35	85
	Filer	3965	22	32	20	19	
	Hansen	4012	22	32	20	14	
	Hollister	4515	25	36	23	12	86
	Kimberly	3930	22	32	20	14	
	Murtaugh	4082	21	30	20	18	
	Twin Falls	3745	24	35	19	16	
Valley							
	Cascade	4790	96	138	110	77	87
	Donnelly	4875	101	145	195	77	88
	McCall	5030	117	168	151	153	89
Washington							
	Cambridge	2651	85	122	83	73	90
	Midvale	2552	39	56	70	57	91
	Weiser	2115	22	32	32	17	92
Ski Areas							
	Bogus Basin Lodge	6200	164	236	93	152	93
	Brundage Mt. Lodge	6040	193	277	194	207	94
	Schweitzer Basin Lodge	4700	188	270	235	273	95
	Silverhorn Lodge	5040	202	290	217	173	96
	Sun Valley Mt. Baldy	9000	158	227	188	197	97

Notes:

1- Council station (NWS) has a 50-yr ground snow load of 55 psf and elevation of 2,943ft

2- New Meadows station (NWS) has a 50-yr ground snow load of 89 psf and elevation of 3,843ft

3- Dempsey Creek station (NRCS) is 6 miles to the east of Arimo, the station has a 50-yr ground snow load of 100 psf and an elevation of 6,100 ft, the NGSL is 0.016393

4- Bloomington is located between two stations, Emigration Canyon Station (NRCS) 13 miles to the northwest of Bloomington and Lifton Pumping Station (NWS) 6 miles to the southeast of Bloomington. They have 50-yr ground snow load of 97 psf and 35 psf and elevations of 6,500 ft and 5,935 ft, respectively.

5- Slug Creek Divide station (NRCS) is located 6 miles to the northeast of Georgetown and has 50-yr ground snow load of 145 psf and elevation of 7,225 ft.

6- Montpelier RS station (NWS) is located in Montpelier and has 50-yr ground snow load of 45 psf and elevation of 5,960
7- Paris is located between two stations, Emigration Canyon Station (NRCS) 12 miles to the northwest of Bloomington and Lifton Pumping Station (NWS) 7 miles to the southeast of Bloomington. They have 50-yr ground snow load of 97 psf and 35 psf and elevation of 6,500 ft and 5,935 ft, respectively.
8- Lifton Pumping station (NWS) is located 3 miles to the east of St. Charles has a 50-yr ground snow load of 35 psf and an elevation of 5,935 ft.
9- Saint Maries station (NWS) has a 50-yr ground snow load of 58 psf and elevation of 2,151 ft
10- Idaho Falls Fanning FLD station (NWS) and Idaho Falls 2 ESE (NWS) is 7 miles and 8 miles to the north of Shelley and have 50-yr ground snow loads of 37 and 22 psf and elevation of 4,729 ft and 4,742ft, respectively.
11- Hailey 3NNW station (NWS) has 50-yr ground snow load of 84 psf and elevation of 5,424 ft
12- Ketchum RS (NRCS) has 50-yr ground snow load of 74 psf and elevation of 5,890 ft
13- Sun Valley Station (NWS) is located 0.3 miles to the north of Sun Valley and Ketchum RS (NRCS) is located 0.7 miles to the south of Sun Valley. They have 50-yr ground snow loads of 140 psf and 73 psf, respectively. The elevations are 5,820 ft and 5,890 ft respectively.
14- Garden Valley Station (NWS) is located 1 mile to the south of Crouch. It has 50-yr ground snow load of 46 and elevation of 3,100 ft. the NGSL is 0.014931
15- Emmett 2E station (NWS) is located 13 miles to the southwest of Horseshoe Bend and it has a 50-yr ground snow load of 15 psf and elevation of 2,390 ft.
16- Cabinet Gorge station (NWS) is located 7 miles to the southeast of Clark Fork and has a 50-yr ground snow load of 77 psf and elevation of 2,173 ft.
17- Sandpoint Exp station (NRCS) and Sandpoint Exp Station (NWS) are located 12 miles to the west of Hope and they have a 50-yr ground snow load of 49 psf and 61 psf and elevation of 2,100 ft and 2,126 ft, respectively.
18- Sandpoint Exp station (NRCS) and Sandpoint Exp station (NWS) are located 2.5 miles from Kootenai and they have 50-yr ground snow loads of 49 psf and 61 psf, respectively and elevations of 2,100 ft and 2,126 ft, respectively.
19- Sandpoint Exp station (NRCS) and Sandpoint Exp station (NWS) are located 1.5 miles from Ponderay and they have 50-yr ground snow loads of 49 psf, and 61 psf, respectively and elevations of 2,100 ft and 2,126 ft, respectively.
20- Sandpoint Exp station (NRCS) and Sandpoint Exp station (NWS) have 50-yr ground snow loads of 49 psf and 61 psf, respectively and elevations of 2,100 ft and 2,126 ft, respectively.
21- Idaho Falls Fanning FLD station (NWS) is located 4 miles to the northeast of Ammon and has a 50-yr ground snow load of 22 psf and an elevation of 4,729 ft.
22- Idaho Falls Fanning FLD and Idaho Falls 2 ESE (NWS) have 50-yr ground snow loads of 37 and 22 psf, respectively.
23- Idaho Falls Fanning FLD station (NWS) is located 4 miles to the southwest of Iona and has a 50-yr ground snow load of 22 psf and an elevation of 4,729 ft.

24- Idaho Falls Fanning FLD station (NWS) is located 6 miles to the southwest of Ucon and has a 50-yr ground snow load of 22 psf.
25- Bonners Ferry station (NWS) has a 50-yr ground snow load of 75 psf and elevation of 2,075 ft
26- Bonners Ferry station (NWS) is located 7 miles to the southwest of Moyie Springs and has a 50-yr ground snow load of 75 psf and elevation of 2,075 ft
27- Fairfield RS (NWS) has a 50-yr ground snow load of 71 psf and an elevation of 5,565 ft.
28- Caldwell has a station (NWS) with a 50-yr ground snow load of 18.6 psf and an elevation of 2,370 ft.
29- Caldwell station (NWS) is located 4 miles to the southwest of Middleton and has a 50-yr ground snow load of 18.6 psf and an elevation of 2,370 ft.
30- Notus is located between two stations, Parma exp station (NWS) and Caldwell station (NWS). They have a 50-yr ground snow loads of 18 and 25 psf, with elevations of 2,290 ft. and 2,370 ft., respectively
31- Parma has a station (NWS) with 50-yr ground snow load of 25 psf and elevation 2,290 ft.
32- Parma Exp station (NWS) is located 8 miles north of Wilder and has a 50-yr ground snow load of 25 psf with an elevation of 2,290 ft..
33- Lower Pebble Station (NRCS) is located 9 miles to the west of Bancroft and has a 50-yr ground snow load of 113 psf and elevation of 5,780ft.
34- Grace station (NWS) has 50-yr ground snow load of 62 psf and an elevation of 5,500 ft.
35- Conda station (NWS) is located 5 miles to the northeast of Soda Springs and has 50-yr ground snow load of 71 psf and elevation of 6,204. The NGSL is 0.011501
36- Burley Muni Airport Station (NWS) has a 50-yr ground snow load of 19 psf and an elevation of 4,142 ft.
37- Malta 4ESE station (NWS) is located 3 miles to the southeast of Malta and has a 50-yr ground snow load of 15 psf.
38- Bruno Creek Station (NRCS) is located 9 miles to the northwest of Clayton and it has a 50-yr ground snow load of 163 and elevation of 7,920 ft. the NGSL is 0.020581
39- Challis has a station (NWS) in the town that has a 50-yr ground snow load of 13 psf.
40- Mackay Lost River Ranger Station (NWS) has a 50-yr ground snow load of 89 psf and elevation of 5,897 ft.
41- Stanley Station (NWS) has ground snow load of 128 psf
42- Mountain Home has a station (NWS) with a 50-yr ground snow load of 13 psf.
43- Oxford Springs station (NRCS) is located 8 miles to the northwest of Clifton and Preston station (NWS) is located 9 miles to the southeast of Clifton; the stations have 50-yr ground snow loads of 103 psf and 89 psf and elevations of 6,740 and 4,800 ft respectively.
44- Preston station (NWS) is located 6 miles to the east of Dayton and has 50-yr ground snow load of 89 psf and elevation of 4,800 ft.

45- Oxford Springs station (NWS) is located 6 miles to the west of Oxford and has a 50-yr ground snow load and elevations of 103 psf and 6,740 ft. The NGSL is 0.015282
46- Preston Station (NWS) has a 50-yr ground snow load of 89 psf.
47- Preston Station (NWS) is located 6 miles to the Northeast of Weston and has a 50-yr ground snow load of 89 psf and elevation of 4,800 ft.
48- Ashton station (NWS) has a 50-yr ground snow load of 106 psf and elevation of 5,212 ft.
49- Ashton Station (NWS) is located 4 miles to the north of Drummond and has a 50-yr ground snow load of 106 psf and elevation of 5,212 ft.
50- Sugar Station (NWS) is located 6 miles to the west of Newdale and has a 50-yr ground snow load of 50 psf and elevation of 4,925 ft.
51- Saint Anthony station (NWS) has a 50-yr ground snow load of 37 psf and elevation of 4,910 ft.
52- Emmett 2E station (NWS) has a 50-yr ground snow load of 15 psf and elevation of 2,390 ft.
53- Grangeville has a station (NWS) with 50-yr ground snow load of 16 psf.
54- Riggins has a station (NWS) with 50-yr ground snow load of 18 psf.
55- Hamer 4NW station (NWS) is 14 miles to the northeast of Mud Lake and it has a 50-yr ground snow load of 33 psf and elevation of 4,790 ft.
56- Sugar Station (NWS) is located 16 miles north of Ririe and has a 50-yr ground snow load of 50 psf and elevation of 4,925 ft.
57- Jerome station (NWS) has a 50-yr ground snow load of 11 psf and elevation of 3,740 ft.
58- Sherwin Station (NRCS) is located 7 miles to the northeast of Bovill and has a 50-yr ground snow load of 125 psf and elevation of 3,200 ft. The NGSL is 0.039063
59- Deary is located in the center of three stations; Moscow U of I (NWS), Sherwin (NRCS) and Elk River 1 S (NWS). The stations have 50-yr ground snow loads of 42 psf, 125 psf and 143 psf, respectively. The station elevations are 2,660 ft, 3,200 ft, and 2,918 ft, respectively.
60- Moscow U of I station (NWS) is located 11 miles to the north of Genesee and it has a 50-yr ground snow load of 42 psf and elevation of 2,660 ft
61- Moscow U of I station (NWS) has a 50-yr ground snow load of 42 psf and elevation of 2,660 ft. the station is located 4 miles to the east of Moscow.
62- Potlatch 3NNE station (NWS) has a 50-yr ground snow load of 39 psf and elevation of 2,760 ft.
63- Moscow U of I station (NWS) is located 9 miles to the west of Troy and has a 50-yr ground snow load of 42 psf and elevation of 2,660 ft.
64- Salmon Lemhi Co AP station (NWS) has a 50-yr ground snow load of 15 psf at an elevation of 4,044 ft.
65- Nez Perce has a station (NWS) with a 50-yr ground snow load of 18 psf.
66- Winchester station (NWS) has snow load of 58 psf and elevation of 3,972 ft.
67- Richfield station (NWS) is 11 miles to the north of Dietrich and has a 50-yr ground snow load of 61 psf and an elevation of 4,282 ft.

68- Richfield station (NWS) has a 50-yr ground snow load of 61 psf and an elevation of 4,282 ft.
69- Richfield station (NWS) is 14 miles to the northeast of Shoshone and has a 50-yr ground snow load of 61 psf and an elevation of 4,282 ft.
70- Sugar station (NWS) is located 4 miles to the northeast of Rexburg and has a 50-yr ground snow load of 50 psf and elevation of 4,925 ft.
71- Sugar station (NWS) has a 50-yr ground snow load of 50 psf and elevation of 4,925 ft.
72- Dworshak Fish Hatchery station (NWS) is 6 mi. to the northeast of Peck and has a 50-yr ground snow load of 51 psf and an elevation of 995.
73- Malad station (NWS) has a 50-yr ground snow load of 111 psf at an elevation of 4,581 ft and Malad City Airport station (NWS) has a 50-yr ground snow load of 35 psf and elevation of 4,482 ft. the stations are three miles apart.
74- Grand View 4 NW (NWS) has a 50-yr ground snow load of 9 psf.
75- Arbon station (NWS) is located 15 miles to the southeast of Rockland and has a 50-yr ground snow load of 81 psf and elevation of 5,210 ft.
76- Kellogg has a station (NWS) with 50-yr ground snow load of 36 psf.
77- Mullan Pass station (NWS) has a 50-yr ground snow load of 140 psf and elevation of 3,586 ft. the NGSL is 0.039107
78- Wallace Woodland Park Station (NWS) is located 4 miles to the southeast of Osburn and has a 50-yr ground snow load of 70 psf and elevation of 2,710 ft.
79- Kellogg station (NWS) is located 5 miles to the east of Pinehurst and Fourth of July Summit is located 14 miles to the west of Pinehurst. The stations have 50-yr ground snow loads of 36 psf and 93 psf and elevations of 2,377ft and 3,200ft, respectively.
80- Smelterville is 2 miles to the west of Kellogg.
81- Wardner is 1 mile from Kellogg.
82- Driggs has a station (NWS) with a 50-yr ground snow load of 50 psf.
83- Driggs station (NWS) is located 6 miles to the south of Tetonia and it has a 50-yr ground snow load of 50 psf and elevation of 6,120 ft.
84- Buhl is located in the center of 3 stations: Twin Falls (NWS), Jerome (NWS), and Castleford (NWS). The 50-yr ground snow loads are 16, 10 and 35 psf, respectively.
85- Castleford has a station (NWS) with a 50-yr ground snow load of 35 psf.
86- Hollister has a station (NWS) with a 50-yr snow load of 12 psf.
87- Cascade station (NWS) has a 50-yr ground snow load of 79 psf and elevation of 4,896 ft.
88- Long Valley Station (NRCS) is located 4 miles north of Donnelly and has a 50-yr ground snow load of 77 psf and elevation of 4,890 ft.
89- McCall has a station (NRCS) with 50-yr ground snow load of 167 psf and elevation of 5,020 ft
90- Cambridge station (NWS) has a 50-yr ground snow load of 74 psf and elevation of 2,650 ft.
91- Cambridge station (NWS) is located 7 miles to the south of Midvale and has a 50-yr ground snow load of 74 psf and elevation of 2,650 ft

92- Weiser has a station (NWS) with a 50-yr ground snow load of 17 psf.
93- Bogus Basin has 3 stations: Bogus Basin (NRCS), Bogus Basin Road (NRCS), and Deer Point (NWS). They have 50-yr ground snow loads of 213, 67 and 161 psf, respectively. The elevations are 6,340, 5,540 and 7,044 ft, respectively.
94- Brundage Mountain has two stations; Brundage Mountain (NRCS) and Brundage Reservoir (NRCS). The stations have 50-yr ground snow loads of 367 psf and 214 psf and elevations of 7,560 ft and 6,250 ft respectively.
95- Schweitzer Basin Lodge has a station with a 50-yr ground snow load of 364 psf and an elevation of 6,200 ft.
96- Kellogg Peak Station (NRCS) is located 1.5 to the west of Silverhorn Lodge and has a 50-yr ground snow load of 191 psf and elevation of 5,560 ft.
97- Mountain Baldy Station (NRCS) has a 50-yr ground snow load of 195 psf and an elevation of 8,920 ft.