



Determining Snow Assistance Eligibility Under FEMA Policy

9523.1 Snow Assistance Policy

http://www.fema.gov/government/grant/pa/9523_1.shtm

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Snow Policy Overview

- Scope of the Policy
 - Public Assistance Cat B Snow Removal Expenses
- FEMA Methodology
- Current and Historical Snowfall Data
 - National Climate Data Center (NCDC) Cooperative Observer Network (COOP) Stations
- NCDC US Snow Climatology for FEMA Analysis
- Recommendations

Current and Historical COOP Stations Within the Commonwealth

- Approximate Station Inventory
 - Current / Active Stations
 - Nearly 100
 - Stations on FEMA Historical Snowfall Listing
 - Nearly 150
 - All Historical COOP Stations
 - Nearly 500



Determining Record and Near Record Snowfall

1. Current snowfall amounts under paragraph (D)(1) of this policy will be compared with the historical record snowfall amounts under paragraph (D)(2) of this policy for a like number of days without regard for the month in which the record snowfall or current event occurred.

Determining Record and Near Record Snowfall

2. For multiple day snowstorms, a county that meets the 1-day record or near record requirement on any one day, OR the 2-day record or near record over two consecutive days, OR the 3-day record or near record over three consecutive days, etc., will have met the record or near-record criteria for that county.

Determining Record and Near Record Snowfall

3. When data from multiple NWS Cooperative Network Stations exist within a county, the highest current event snowfall reported by the NWS within that county will be compared to the highest historical snowfall record for that county.

Determining Record and Near Record Snowfall

4. For counties that do not have NCDC or NWS historical record snowfall data, the historical record from the nearest NWS Cooperative Network Station in an adjacent county, even if located in an adjacent State, may be used for determining historical snowfall records.

Determining Record and Near Record Snowfall

5. If current event snowfall data under paragraph (D)(1) of this policy are not available from the NWS for a county, the nearest NWS Cooperative Network Station data from an adjacent county, even if located in an adjacent State, may be used.

Determining Record and Near Record Snowfall

6. A county that does not receive a record or near record snowfall, but is contiguous to a county that does receive a record or near record snowfall, may be designated for snow assistance if the county has current event snowfall that meets or exceeds the current event snowfall of a county, to which it is contiguous, that has record or near record snowfall. This comparison is based on the highest current event snowfall received by each county as reported by the NWS under paragraph (D)(1) of this policy.

NCDC US Snow Climatology for FEMA Analysis (Historical)

- <http://www.ncdc.noaa.gov/ussc/>

snowclim-fema-sep2006.txt - Notepad

ST	COUNTY-NAME	COOPID	STATION-NAME	ELEV (FT)	MAX	SNOWFALL	BEG- YEAR	END- YEAR	NUM- YEARS	
					1-DAY	2-DAY	3-DAY			
VA	ACCOMACK	446475	PAINTER 2 W	30	11.0	15.0	15.0	1956	2006	51
VA	ACCOMACK	448323	TANGIER ISLAND	10	10.0	12.0	12.0	1952	2001	49
VA	ALBEMARLE	441598	CHARLOTTESVILLE 1 SW	541	13.2	17.0	17.0	1930	1971	40
VA	ALBEMARLE	441593	CHARLOTTESVILLE 2 W	870	20.7	22.5	23.8	1893	2006	111
VA	ALBEMARLE	443213	FREE UNION	570	14.0	22.0	22.0	1955	2005	51
VA	ALLEGHANY	441801	CLIFTON FORGE 2 NW	1400	14.0	14.0	14.0	1896	1983	57
VA	ALLEGHANY	442041	COVINGTON	1250	18.0	29.0	30.0	1943	1999	57
VA	ALLEGHANY	442044	COVINGTON FILTER PLANT	1230	10.0	14.0	14.0	1960	2006	40
VA	ALLEGHANY	443310	GATHRIGHT DAM	1770	22.0	22.0	28.5	1980	2006	27
VA	AMELIA	440187	AMELIA COURT HOUSE	360	11.0	15.0	16.0	1970	2003	34
VA	AMHERST	446593	PEDLAR DAM	1010	21.8	25.3	28.3	1928	2006	69
VA	APPOMATTOX	440243	APPOMATTOX	910	18.0	18.0	18.0	1937	2006	69
VA	ARLINGTON	448906	WASHINGTON NATL WSCMO AP	10	16.4	16.6	16.6	1949	2006	58
VA	ARLINGTON	448938	WAVERLY HILLS	341	18.0	20.0	20.0	1945	1970	26
VA	AUGUSTA	442064	CRAIGSVILLE 2 S	1779	15.0	25.2	25.4	1963	2006	44
VA	AUGUSTA	442315	DEERFIELD 1 S	1722	25.0	25.0	25.0	1927	1980	52
VA	AUGUSTA	446199	NORTH RIVER DAM	2402	22.0	24.0	24.0	1930	1979	50
VA	AUGUSTA	448062	STAUNTON SEWAGE PLANT	1389	22.0	26.0	26.0	1893	2006	111
VA	BATH	444128	HOT SPRINGS	2236	18.0	20.0	21.0	1893	2006	111
VA	BEDFORD	440551	BEDFORD	975	18.0	25.0	25.0	1893	2006	86
VA	BEDFORD	444148	HUDDLESTON 4 SW	1050	13.0	15.0	15.9	1950	2006	57
VA	BLAND	440792	BLAND	2000	18.0	21.0	22.0	1951	2006	56
VA	BOTETOURT	441121	BUCHANAN	880	20.0	22.5	22.5	1894	2006	89
VA	BRUNSWICK	444768	LAWRENCEVILLE 5 W	325	14.5	20.0	20.0	1919	2006	59

Climatology and

or, Select state from list below and click on Continue:

Virginia

Submit Query

DOWNLOAD a 1.1 MB ASCII text file containing the maximum 1-day, 2-day, and 3-day snowfall for all available stations in the Lower 48 States and Alaska based on data through December 2006.

- [Background Discussion of Snow Climatology Project](#)
- [National Snow Extremes Table](#)
- [State Snow Climatology and Extremes](#)



Current Event Snowfall Data

- <http://www.ncdc.noaa.gov/snow-and-ice/dly-data.php>
 - Table of active stations and reported snowfall (Used By FEMA)

Snowfall/Snow Depth: Year: Month:

Note: The value -9999.000 represents missing data.

- <http://www.ncdc.noaa.gov/oa/mpp/freedata.html#FREE>
 - Individual Station Preliminary Data (Use this to identify potential issues with incorrect or incomplete data)

Free Data B: COOP Data/Record of Climatological Observations, U.S.		
Description: daily temperature & precipitation data for thousands of U.S. locations		
1. Individual Station Original		FREE! Original forms.
2. Individual Station Preliminary		FREE! Preliminary data.
3. Individual Station		\$2 per station month.
4. Annual Sub. (1 Station)		Online annual subscription: \$50 per station.
5. Annual Sub. (All Stations)		Online annual subscription: \$300 for all stations.

Original Station Data Sheets

Use this to Verify Historical Impacts

- <http://www7.ncdc.noaa.gov/IPS/coop/coop.html>

COOP Select Station

User	State	Stations Available
Your Access is Free (166.61.206.63)	Virginia	ABINGDON 3S 1887-08 - 2010-08 (440021)
		ABINGDON 7 WSW 1950-01 - 1950-12 (440013)
		AFTON 1931-01 - 1940-09 (440050)
		AFTON BOXWOOD GARDENS 1940-10 - 1957-09 (440055)
		ALBERTA 5N 1974-02 - 2010-08 (440079)
		ALEXANDRIA CITY GARAGE 1958-03 - 1975-09 (440090)
		ALEXANDRIA POTOMAC YARDS 1893-04 - 1962-10 (440097)

User	State	Station	Forms
Your Access is Free (166.61.206.63)	Virginia	ABINGDON 3S	2010-08
			2010-07
			2010-06
			2010-05
			2010-04
			2010-03
			2010-02
			2010-01
			2009-12
			2009-11

Raw Data Access

- <http://www7.ncdc.noaa.gov/CDO/dataproduct>
 - You can download data from here for use in spreadsheets and databases

The screenshot shows the 'NND Climate Data Online' website. At the top, the title 'NND CLIMATE DATA ONLINE' is displayed in blue. Below the title, there are two main sections: 'Climate Data Online' on the left and 'DataSet/Product Options' on the right. Under 'Climate Data Online', there is a 'Sample Output:' section with several links: [ASCII Space Delimited](#), [Printable Web Form](#), [Hourly Summary](#), [Inventory](#), [Map Analysis](#), and [Info / Help](#). The 'DataSet/Product Options' section features a list of data products in a scrollable menu. The selected product is 'Surface Data, Daily (Over 19,000 U.S. some non-US sites)'. Other products include 'Satellite Data', 'Surface Data, Annual Summary (Over 18,000 U.S., some non-U.S. sites)', 'Surface Data, Global Summary of the Day *', 'Surface Data, Hourly Global (Over 10,000 worldwide sites)', and 'Surface Data, Marine (1660-2007 ICOADS v. 2.5, NCD 2008-current) *'. Below the list is a button labeled 'Access Data/Products'. At the bottom right, there is a note: '* Free Product'.

Charge for non-government users. See NCD Free Data Access policy for procedures on obtaining free access to the data

Free Data Access

- Coordinate with your IT staff to work through technical requirements to obtain free data access.
 - Online access is free for .gov, .edu, .mil, .k12, .us and other selected domains. See the Free Access section of the NCDC Help page for detailed information.
 - <http://www.ncdc.noaa.gov/oa/about/ncdchelp.html#FREE>
- Identify other entities that may have free access (ie. Libraries, colleges/universities, etc).

Example – Library of Virginia Wireless Network allows you to have free access to the data.

Recommendations

- Follow-up webinars can be scheduled for more information if there is interest.
- When possible, document snowfall with photographs (date/time stamp) and forward snowfall reports to local NWS Forecast Offices.
- When updating Regional Hazard Mitigation Plans, incorporate historical NCDC COOP Station data.
 - Document major events (ie. Top 5-10) extreme snowfall and extreme cold events into your Hazard Identification and Risk Assessment (HIRA).