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1. Introduction

A snowfall team was created under the National Climate Extremes Committee (NCEC) to address the Local Climatological Data snowfall record. This information is incomplete and/or unrepresentative for frozen precipitation and water equivalent of snow at many of the nation's airports. A compromised LCD has impacted our ability to understand climate variability and change, in addition to meeting customer requirements for socio-economic decision making. LCD's provide the only source to support the nation's real-time snow network.

This problem has received negative publicity as numerous customers have written or contacted National Weather Service, concerned about the accuracy of snowfall observations at many airports during many of the significant snowfalls during the 2002-03 snow season. Additionally, the Federal Aviation Administration has reiterated its "cease and desist" order to FAA funded staff for the 2003-04 snow season in providing snowfall at LCD locations. As a result, if nothing is done, only 50 LCD stations (collocated with WFO's and at the smaller airports) out of 270 will report snowfall in the 2003-04 snow season. (see graphic)

The NCEC assessed the current problem, including several case studies from this past winter season, evaluated options and provided a recommendation to the National Weather Service.

2. Description of Issue and Challenge

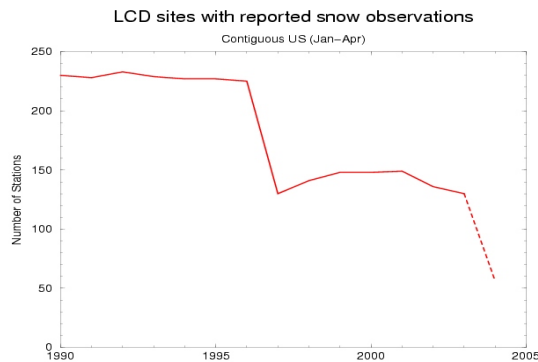
A fundamental mission of The National Weather Service is the observation, collection and dissemination of data. This is occurring at the same time that NOAA is emphasizing the importance of climate monitoring in its Strategic Plan.

- NOAA is stressing the need for increased use and effectiveness of climate observations, and the use of climate data by decision makers – Goal 2 NOAA Strategic Plan
- NOAA is stressing support to the Nation's commerce and transportation – Goal 4 NOAA Strategic Plan

- Snowfall measurements have historically been an important element in observations supporting the understanding of climate change and variability, and provide a real time data base for decision makers involved with the Nation's transportation system's and with commerce in general.
- The National Weather Service has historically provided snowfall measurements at Local Climatological Data (LCD) sites, almost exclusively airports. Airports can be notoriously poor places to measure snowfall. Large open areas with long fetches allow blowing and drifting. Airport operations such as snow removal cause additional blowing and drifting. Access to airport property is frequently restricted, limiting selection of measurement sites. There are also fragility issues with poles if installed near runways. Proper planning and site selection can mitigate many of these problems.

However, as the economic impacts of this data have become better understood, the modernization of the NWS has removed observers from the LCD sites – Weather Service Office (WSO) duties were transitioned into Weather Forecast Offices, and many WFOs were relocated away from airports.

The challenges are; 1) collect accurate 6-hourly and 24-hour total snowfall observations at all LCD locations, and, 2) find suitable airport locations for accurate, representative snowfall measurements.



impacted the ability to understand climate variability and change, in addition to meeting customer requirements for socio-economic decision-making.

The Committee assessed the current problem status, evaluated options, and provided a recommendation to National Weather Service management to ensure accurate and representative snowfall and snow depth observations. At present, the NWS is reviewing the alternatives and recommendation. In early October 2003, the NCEC provided their recommendation to the NWS Operations Committee for their decision to support the NCEC recommendation. Once a decision is reached, an outreach campaign to educate partners will commence on utilizing NWS snowfall/snow depth guidelines to accurately measure this parameter.

3. Observation Standards

After significant snowfall events across the major population centers of the Northeast and Mid-Atlantic, as well as a major snowfall across the Denver area, during the 2002-03 winter season, concerns arose as to the observation siting and reporting standards for measuring snowfall. Important questions were raised by NOAA scientists and customers using NOAA data, including whether an increase in extreme events was occurring or were these events the result of questionable observation practices. The National Climate Extremes Committee Snowfall Team reviewed snowfall observation procedures at the following four locations: Boston, Baltimore, New York Central Park and Denver. The NCEC has provided the National Weather Service their findings and will announce this information once the NWS has reviewed and evaluated the Committee's report.

4. Alternatives Considered and Process

To support NOAA priorities, and provide the important data base and real-time data to the climatological community and to transportation and commerce decision makers, this Team developed and assessed a number of alternate methods for re-establishing this observational network. The NCEC has provided the National Weather Service the options and will announce this information once the NWS has reviewed and evaluated the Committee's report.

5. Summary

The National Climate Extremes Committee Snowfall Team objective is to ensure quality snow observations for climatology, forecasts, and customer service.

The Local Climatological Data (LCD) record is incomplete and/or unrepresentative for frozen precipitation and water equivalent of snow at many of the nation's airports. A compromised LCD record has