

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Kevin Houck, Chief, Watershed and Flood Protection

DATE: April 29, 2013

SUBJECT: **Agenda Item 17, May 14-15, 2013 Board Meeting
Precipitation Frequency Atlas**

John W. Hickenlooper
Governor

Mike King
DNR Executive Director

Jennifer L. Gimbel
CWCB Director

Staff Recommendation

This is an informational update only, and Board action is not required. CWCB staff and the State Climatologist will present an update to the Board regarding the new precipitation atlas just released for the Midwestern states, including Colorado.

Background

Many design and planning activities rely heavily on precipitation values for proper consideration of flood protection. This can include floodplain mapping, landuse planning, bridge and culvert design, storm sewer design, and other infrastructure design. For each of these activities, rainfall depths for various frequencies are a key component.

Prior to this year, the most widely accepted and highly used precipitation reference document is the "Precipitation Frequency Atlas of the Western United States, Volume III-Colorado", dated 1973, by the National Oceanic and Atmospheric Administration (NOAA). This document, now forty years old, provides statewide maps with isopluvial rainfall information for 6-hour and 24-hour durations, and return periods ranging from 2-year to 100-year. Equations were provided to convert this mapped information to other durations and to extrapolate to outside frequencies. This document has generally met all pertinent technical needs since 1973. However, its age and format has resulted in a call for an up-to-date and more user-friendly document.

The CWCB partnered with NOAA to prepare an updated precipitation atlas, entitled "NOAA Atlas 14 Volume 8: Precipitation-Frequency Atlas of the United States, Midwestern States", which includes Colorado, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, and Wisconsin. This new document provides an additional 40 years of record in the data regression, and is much more user-friendly through GIS features.

This presentation will demonstrate some of the features and results of the new document and will outline some of the data processes used to develop the information presented. The document can be viewed online at http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=co.