

## DRAFT REQUIREMENTS STATEMENT

### STORAGE OF 30-YEAR AVERAGES WITHIN THE OPERATIONAL DATABASE

#### GENERAL

Beginning on October 1, 2001, the NWCC, NRCS will be required to produce new 30-year averages, based on the 1971-2000 period, for data used in water supply related activities. The current 30-year averages for these data are stored in ascii files on the CLOUD platform. SNOTEL precipitation and snow water equivalent data averages for the first and fifteenth of each month are located in the /cfs/database/wyfor/snotel/data/averages directory. The monthly (also mid-month) averages for snow, prec, strm, resv, and misc data are located in what we call "WYFOR" files, located in the /cfs/programs/wyfor/data directory. These "WYFOR" files are found in the current water year sub-directory. These averages are used in several software applications to perform analyses and forecast functions. However, they are in formats that were designed to be read by software applications and therefore, not easily read by a person.

There is a need for a location in the "operational database" where all data averages can be stored. The term "operational database" could mean "CDBS" or "AWDB". Defining the "operational database" is not part of this committee's charge. However, it should be pointed out that storage of these data, regardless of the location, would necessitate software modifications to current operational applications. For this reason alone, provisions should be made as soon as possible, in order for existing software to be modified prior to the 2002 water year. It should also be noted that the AWDB schema already allows for storage of the averages.

The following data types would be affected:

- Daily SNOTEL precipitation
- Daily SNOTEL snow water equivalent
- Monthly SNOTEL precipitation
- Monthly SNOTEL snow water equivalent
- Annual SNOTEL precipitation
- Annual SNOTEL snow water equivalent
- Monthly coop site precipitation
- Monthly snow course snow water equivalent
- Mid-month coop site precipitation
- Mid-month snow course snow water equivalent
- Monthly streamflow (adjusted and observed)
- Mid-month streamflow (adjusted and observed)
- Monthly end-of-month reservoir storage
- Mid-month reservoir storage
- Monthly SOI values

#### TIMING

Calculation of new 30-year data averages is done once every ten years, but could be done at any time, as new data and/or new sites are added to the database. From now, until October 1,

2001, there will be a lot of energy put into calculating new averages. It is anticipated that the “compute” software will soon be completed to facilitate this activity. It should be anticipated that site averages could be added to the database at any time.

### **RESPONSIBILITY**

Calculating the new averages and loading them into the appropriate location in the operational database will be the primary responsibility of the Data Collection Offices, in cooperation with the Water Supply Specialist in each state. However, it is only practical to assume that some personnel on the NWCC staff will also be heavily involved in this activity at any time.

### **CONSEQUENCES**

It is anticipated that the results of the “compute” software (i.e., 30-year averages) will be able to put directly into the operational database. This will be a major savings in time and aggravation. Calculating and storing averages in the past has been a chore! Hopefully this process can be made less painful in the future. In the past, the averages have been hand entered (via an editor) into their respective data file place holder. In the case of the monthly data types entered into the WYFOR files, there may be place holders for three different types of data, including the average, on the same line of data. This process takes a lot of time and also leads to possible errors.

### **CONSTRAINTS**

There are many things to consider, even if there is no provision made for storage locations within the operational database for 30-year averages. If this is not accomplished, the averages will still have to be produced and stored in the locations where they have always been stored. This will only delay the inevitable. The possible consequences of this inaction were described above. However, no additional applications for storing the averages or modifications to existing software for accessing the averages will be needed. On the other hand, if provisions for the new 30-year averages are made in the operational database, new software applications will be spawned to store, change, and access the averages. Either way we go, there's a lot of work to be done.