The Central Nebraska Public Power and Irrigation District
415 Lincoln St. ⍰ P.O. Box 740 ⍰ Holdrege, NE 68949 ♦ (308) 995-8601

News Release

FOR IMMEDIATE RELEASE
February 3, 2014

Contact: Jeff Buettner
Public Relations Coordinator
Office: (308) 995-8601
Cell: (308) 991-3228
E-mail: jbuettner@cnppid.com

(HOLDREGE, Neb.) -- An engineering firm summarized the results of a study designed to provide a more thorough understanding of the groundwater mound in the vicinity of lands irrigated by The Central Nebraska Public Power and Irrigation District during Central's board meeting on Monday.

Information from the study, conducted by EA Engineering, Science and Technology, Inc., will assist Central in making water resources management decisions in the operation of its hydro-irrigation project. "Groundwater mound" is the term commonly applied to a supply of water that has accumulated beneath land within and adjacent to Central's service area as a result of project operations since 1941.

Dale Schlautman of EA Engineering's office in Lincoln said the study evaluated groundwater data from 1954 -- which is identified as the "predevelopment date" before widespread groundwater well development -- to 2013, and also provided a more detailed evaluation of data since 2000.

Central's Natural Resources Manager Mike Drain said the study led to a conclusion that the area's groundwater supplies currently "are right on the edge of sustainability, a critical point where the mound is no longer rising and some areas are experiencing a slow decline. The eastern part of the irrigated area is perhaps at more risk of future declines."

The general long-term trend up to 2000 was an increasing total groundwater mound volume, with occasional periods of decline. The early 2000s brought six consecutive years of decline followed by a gradual recovery until 2012 when another significant decline occurred. The mound grew most rapidly during the 1970s, before the greatest increase in registered wells and widespread use of center pivots.

In general, the groundwater mound in the western part of Central's service area -- the area surrounding the E65 Canal and Elwood Reservoir -- has risen slightly and at a more constant pace. The area also has the lowest density of groundwater development within the study area. The mound in the middle reach of the Phelps Canal north of Holdrege and east to the Minden area has experienced more fluctuation over the years and is no longer increasing.

Schlautman said the study determined that evapotranspiration (ET), which is the use of water by crops and other vegetation, and diversions of water into the irrigated area are the primary factors in the mound's size, shape and volume.

"The mound is very sensitive to relatively small changes in either of those factors," he said. "The data indicates significant changes occur to the mound when there are even small changes in ET or diversions of water into the area. It appears that even small reductions to current surface water diversions would lead to slow declines in the groundwater mound."

Central civil engineer Cory Steinke said the study reinforced the District's understanding that the mound is a very complex system that is influenced by many factors.

"The study's focus was on what has happened to the mound over time, not necessarily on the reasons why these changes have occurred, Steinke said. "Many factors have an effect on the mound, from our customers' on-farm irrigation efficiency and Central's conservation efforts to allocations of water supplies, precipitation, and groundwater development. In recent years we have diverted significantly less water into the area due to changes in irrigation practices and shortages of storage water in Lake McConaughy. It's not a surprise to see how these changes have affected the mound, but it is useful for management decisions to know more about where those effects occur and how much they affect groundwater supplies."

Also at Monday's board meeting:

The board accepted bids totaling $88,320 from Platte Valley Auto Group of Lexington for the purchase of a sedan, two 1/2-ton pickups, and a 3/4-ton pickup.

The board accepted a $96,444 bid from Van Diest Supply Co., of McCook for weed control chemicals.

The board approved water service agreements with Keith-Lincoln Irrigation District, Paxton-Hershey Water Co., and Platte Valley Irrigation District for supplemental water supplies for 2014.

The board accepted a $762,089 bid from Crane Sales and Service of Omaha for the purchase of a mobile crane.

The board authorized the next phase for construction of the J-2 regulating reservoirs. Steps in what is expected to be a two-year process include planning for engineering, water rights permitting, work with consultants, negotiations for land acquisition, and project management.

The board approved a $122,542 work order for the purchase of substation equipment in the switchyards at the Jeffrey, Johnson No. 1 and Johnson No. 2 hydroplants.

The board approved a contract with Black & Veatch Corp., of Burlington, Mass., to conduct a study of the merits of joining the Southwest Power Pool (SPP). SPP is a regional transmission organization, mandated by the Federal Energy Regulatory Commission to ensure reliable supplies of power, adequate transmission infrastructure, and competitive wholesale prices of electricity.

Steinke reported that Lake McConaughy was at elevation 3235.6 feet (991,500 acre-feet, 56.8 percent of capacity) on Monday. Inflows have been around 800 cubic feet per second, or about 67 percent of normal for this time of year, but ice conditions on the river have made accurate measurements difficult. Early snowpack accumulation in the mountains of Colorado and Wyoming are about average

###