

DNR will present written testimony to the Natural Resources Committee for use in the hearings in North Platte on July 31. This request is specific to LR 198:

Introduced by Loudon, 49;

PURPOSE: To examine the benefits, costs, and data collection from flow meters installed to measure ground water use and surface water use, and to determine whether use of flow meters should be mandated in all river basins.

DNR has authority over the administration and measurement of surface water. Statutory authority under §46-209 (general authority), 46-261, and 46-256 enable the DNR to require installation of a measuring device for surface water uses. NRDs have similar authorities for requiring measuring devices on ground water well.

In general the DNR requires measuring devices on diversions from the stream as needed for water administration. In determining whether to require a measuring device, the state looks at the frequency of water administration on a given stream reach and the amount of flow being diverted. The need for the measuring device and the type of measuring device that will need to be installed in order to provide the necessary data is then weighed against the cost of installing, maintaining and reading the measuring device.

When deciding whether to require a measuring device on a surface water diversion, it is important to be aware that the costs associated with measuring do not stop with the actual installation of the measuring device. In addition to the cost of the measuring device itself, there must be someone available to ensure that the device is correctly installed. Once installed, there must be an on-going monitoring and maintenance program to ensure that the device continues to operate correctly. Finally, there is little point in requiring a measuring device if there is no one available to correctly read the meter. Once the meter is read, if the data will be needed for future use, the data needs to be correctly entered into a database and the database needs to be properly maintained for future use. Without any one of these components, the value of installing a measuring device could be negated. In essence, a proper measuring program requires regular checks of the device to ensure it is operating properly and a quality control program to ensure the data is properly collected and stored.

The DNR does not believe it is beneficial to require a measuring device unless the device can be properly maintained and will be used by the department. For example, in the western part of the state where supplemental irrigation water is needed the most, most surface water irrigated acres divert water through irrigation canals, some as long as 120 miles. If water is available, water is diverted on a daily basis throughout the summer irrigation season. The state requires measuring devices on all canal diversions from the stream. Some types of permits (such as "conduct water" permits) always require a measuring device as a condition of receiving a permit. In areas where records are needed for compliance with the Republican River Compact, measuring devices are also required on all canals and pumps. (See Table 1). In contrast, the state does not require a measuring device on a pump if the permit is shut-off for most of the summer and thus rarely diverts

administered (closed)

Fix plan

water or if there is rarely a need to administer water in the section. The measuring device does not necessarily need to be a flow meter. On canals the device is generally a weir or flume, or may be as simple as a staff gage. In many cases it is more efficient to do a pump capacity measurement than to try to maintain a properly installed and calibrated flow meter.

Of course, there are other reasons to use a measuring device, particularly to gather data for technical studies of water use and to assist the irrigator in managing their irrigation water. In a given basin measuring devices may be beneficial to assess water supplies and use. If a device is to be installed for use by an individual irrigator, the requirement should be accompanied by an education program and proper tools to ensure the irrigator can make proper use of the device.

Statewide there are approximately 6,000 surface water diversions from the stream and approximately 80% of these are pump diversions. If the committee would like to pursue the requiring measuring devices on all stream diversions, the department will assist in any way to provide a benefit cost analysis of the program.

Table 1: Standing Orders to Install Measuring Device

1. Dec. 1, 1981, Keya Paha R.; Ord Field Office
2. Sept. 4, 1981, Big Blue R. above the mouth of the West Fork (for irrigation only, not storage, during water administration for the Blue Compact,)
- ~~3.~~ Remove ~~(date),~~ Division 2-C (Niobrara R., WY to Sheridan Co. line) Bridgeport F. O., includes approximately 20 appropriations
4. Feb. 8, 1993, Platte R. below McConaughy and above the mouth of the Loup R.. Agreement was reached with natural resources districts to allow timing devices once the NRD certified the maximum pumping of the facility. However, DNR reserved the right to require meters if the timing devices were unsatisfactory
5. May 23, 1991, Republican R. (Harlan Lake to Guide Rock diversion) Cambridge F.O., on all individual diversions for administration purposes
6. May 1, 2000, entire Republican R., Cambridge F.O., for RRCA purposes