

## NEBRASKA ADMINISTRATIVE CODE

Title 457 - DEPARTMENT OF NATURAL RESOURCES  
RULES FOR SURFACE WATERChapter 24 - DETERMINATION OF FULLY APPROPRIATED BASINS,  
SUBBASINS OR REACHES001 DEFINITIONS.

Basin Water Supply- The Basin Water Supply (BWS) is the streamflow water supply estimated to be available without the initiation of groundwater pumping from high capacity wells and surface water uses of natural flow and storage. The BWS will utilize the Most Recently Available Data and is calculated by combining the following for each sub-period: gaged streamflows truncated at the 5% exceedence flow probability value plus streamflow depletions due to high capacity (greater than 50 gallons per minute) well groundwater pumping plus consumptive surface water uses minus the BWS originating upstream of the basin, subbasin, or reach.

Most Recently Available Data- The most recent period of years of best available data that will be utilized in an annual evaluation to represent long-term water supplies for a basin, sub-basin, or reach. The data shall be updated at least once every five years.

Representative Period- The number of years utilized to capture both wet and dry components of precipitation variability. The period will be determined through time series statistical analyses of the annual Basin Water Supply using the Most Recently Available Data.

Near-Term Total Demand- The then-current uses of hydrologically connected surface water and groundwater in a river basin, sub-basin, or reach that will be utilized to evaluate whether those uses cause the conditions set forth in *Neb. Rev. Stat. § 46-713(3) (a)(b)(c)*.

Long-Term Total Demand- The then-current uses of hydrologically connected surface water and groundwater in a river basin, sub-basin, or reach that will be utilized to evaluate whether those uses will in the reasonable foreseeable future cause the conditions set forth in *Neb. Rev. Stat. § 46-713(3) (a)(b)(c)*.

Non-Tributary Downstream Demand- The then-current uses of surface water capable of making use of streamflow that exits an upstream basin, sub-basin, or reach through streams located in a basin, sub-basin, or reach downstream. Additionally, this includes groundwater consumption that is hydrologically connected to those same streams located downstream.

002 FULLY APPROPRIATED. Pursuant to *Neb. Rev. Stat. § 46-713(3)* a river basin, subbasin, or reach shall be deemed fully appropriated if the Department of Natural Resources (Department) determines based upon its annual evaluation and information presented at hearings subsequent to a preliminary determination of fully appropriated that then-current uses of hydrologically connected surface water and groundwater in the river basin, subbasin, or reach cause or will in the reasonably foreseeable future cause (a) the surface water supply to be insufficient to sustain over the long term the beneficial or useful purposes for which existing natural flow or storage appropriations were granted and the beneficial or useful purposes for which, at the time of approval, any existing instream appropriation was granted, (b) the streamflow to be insufficient to sustain over the long term the beneficial uses from wells constructed in aquifers dependent on recharge from the river or stream involved, or (c) reduction in the flow of a river or stream sufficient to cause noncompliance by Nebraska with an interstate compact or decree, other formal state contract or agreement, or applicable state or federal laws.

002.01A For purposes of *Neb. Rev. Stat. § 46-713(1)(b)*, the Department shall reach a preliminary conclusion that a river basin, subbasin, or reach is fully appropriated if based on the Department's annual evaluation, it is determined that the cumulative Near-Term Total Demand and/or the cumulative Long-Term Total Demand of hydrologically connected groundwater and surface water exceeds the cumulative Basin Water Supplies (BWSs) that occur in either of the two sub-periods within the year when summed over the Representative Period of record used in the annual evaluation. The two sub-periods within the year are June 1 through August 31, inclusive and September 1 through May 31, inclusive. The length of the representative period of record will be determined through statistical analyses of the annual BWS as the set of years, extending back in time from the Most Recently Available Data, which captures long-term wet and dry cycles that may exist.

002.01B For purposes of 001.01A, the cumulative Near-Term Total Demand of groundwater and surface water is calculated by summing the water demands associated with the following activities for each sub-period within a basin, subbasin, or reach: (1) streamflow depletions due to high capacity (greater than 50 gallons per minute) well groundwater pumping; (2) consumptive water demands for surface water uses, inclusive of consumptive uses associated with storage appropriations and the use of such stored water; (3) any additional water (accounting for return flows) determined to be necessary to deliver streamflows to meet consumptive surface water demands; (4) streamflow available to meet instream flow appropriations (accounting for all development in place at such time the appropriation was granted); (5) any additional streamflow demands for hydropower operations not accounted for in the instream flow water demands; and (6) the BWS necessary to meet the proportionate amount of Non-Tributary Downstream Demands. The Non-Tributary Downstream Demands of a subbasin or reach will be proportioned in accordance with the BWS of that subbasin or reach relative to the BWS of the total basin. In calculating the cumulative Near-Term Total Demand no water uses developed subsequent to a fully appropriated designation or overappropriated designation shall be assigned to those fully appropriated or overappropriated basins as Non-Tributary

Downstream Demands. Demands for non-consumptive uses (i.e., instream flow demands and hydropower demands) will be truncated when those demands overlap in the same basin, sub-basin, or reach. This truncation will occur to the extent necessary to ensure that those overlapping demands able to utilize the same BWS are only included once in the Near-Term Total Demand.

002.01C For purposes of 001.01A, the cumulative Long-Term Total Demand of groundwater and surface water is calculated by summing the water demands associated with the following activities for each sub-period within a basin, subbasin, or reach: (1) consumptive water demands for hydrologically connected high capacity (greater than 50 gallons per minute) groundwater well pumping; (2) consumptive water demands for surface water uses, inclusive of consumptive uses associated with storage appropriations and the use of such stored water; (3) any additional water (accounting for return flows) determined to be necessary to deliver streamflows to meet consumptive surface water demands; (4) streamflow available to meet instream flow appropriations (accounting for all development in place at such time the appropriation was granted); (5) streamflow demands for hydropower operations; and (6) the BWS necessary to meet the proportionate amount of Non-Tributary Downstream Demands . The Non-Tributary Downstream Demands of a subbasin or reach will be proportioned in accordance with the BWS of that subbasin or reach relative to the BWS of the total basin. In calculating the cumulative Long-Term Total Demand no water uses developed subsequent to a fully appropriated designation or overappropriated designation shall be assigned to those fully appropriated or overappropriated basins as Non-Tributary Downstream Demands. Demands for non-consumptive uses (i.e., instream flow demands and hydropower demands) will be truncated when those demands overlap in the same basin, sub-basin, or reach. This truncation will occur to the extent necessary to ensure that those overlapping demands able to use the same BWS are only included once in the Long-Term Total Demand.

002.01D In the event that water demands are for a beneficial use other than irrigation, municipal, industrial, instream flow, or hydropower, (for example aquifers dependent on recharge from streamflow, induced recharge, flood control, aquaculture, etc.) the Department will evaluate such use and if necessary determine a methodology to incorporate such demand into any relevant analysis.

002.01E Use of the method described in this rule is not intended to express or imply any mandate or requirement that the method used herein must be included in the goals and objectives of any integrated management plan. Further, nothing in this section is intended to express or imply a priority of use between surface water uses and groundwater uses.

002.01F Pursuant to *Neb. Rev. Stat.* §46-713(1)(d) the Department shall rely on the best scientific data, information, and methodologies readily available to ensure that the conclusions and results contained in the annual evaluation are reliable. Prior to June 1<sup>st</sup> of each year, the Department shall provide sufficient documentation of the data, information, and methodologies that will be used to reach its conclusions in that years

evaluation. The documentation will specify the specific data, information, and methodologies utilized in the annual evaluation to represent the BWS, Near-Term Total Demand, and Long-Term Total Demand such that those conclusions could be independently replicated and assessed. Prior to July 1<sup>st</sup> of each year, any person may provide data, information, or suggested methodology changes to incorporate such data or information into that year's evaluation. The Department will determine if such data and information will or will not be utilized. If the Department does not utilize the data or information, a written description as to why the data or information was not utilized will be included in the annual evaluation.

002.02A For purposes of *Neb. Rev. Stat.* § 46-713(3), the Department shall deem a basin, subbasin, or reach as fully appropriated if such preliminary determination is reached pursuant to 001.01A-G and if information provided at a subsequent hearing pursuant to subsection (4) of *Neb. Rev. Stat.* § 46-714 does not indicate that the criteria set forth in 001.02B or 001.02C apply or unless the Director finds based on written or oral testimony and evidence concerning the appropriation status for the river basin, subbasin, or reach, that a final designation of fully appropriated is not warranted at that time.

002.02B For any basin, subbasin, or reach preliminarily determined to be fully appropriated pursuant to 001.01A-G in which integrated management plan(s) have been initiated by all Natural Resources Districts within the hydrologically connected area, the Natural Resources Districts within that same hydrologically connected area have designated a management area for which a purpose is the integrated management of hydrologically connected groundwater and surface water, and the Natural Resources Districts and Department have not taken more than three years to complete such integrated management plan(s) the Department may reach a final determination that such basin, subbasin, or reach is not fully appropriated at that time.

002.02C For any basin, subbasin, or reach preliminarily determined to be fully appropriated pursuant to 001.01A-G in which integrated management plan(s) have been completed by all Natural Resources Districts within the hydrologically connected area, the Department will review the contents of such integrated management plan(s) to ensure that appropriate limitations on new water uses are included in such integrated management plan (s), inclusive of controls on such new uses pursuant to *Neb. Rev. Stat.* § 46-739(6)(b), and such integrated management plan(s) includes a plan to monitor water uses in a manner consistent with 001.01A-G. Upon the Department completing this review the Department may reach a final determination that such basin, subbasin, or reach is not fully appropriated at that time.

002.03 The geographic area within which the Department preliminarily considers surface water and groundwater to be hydrologically connected for the purpose prescribed in *Neb. Rev. Stat.* § 46-713(3) is the area within which pumping of a well for 50 years will deplete the river or a base flow tributary thereof by at least ten (10) percent of the amount pumped in that time.

003 INFORMATION CONSIDERED. For making preliminary determinations required by *Neb. Rev. Stat.* § 46-713 the Department will use the best scientific data and information readily available to the Department at the time of the determination. Information to be considered will include:

1. Department records on the regulation of surface water appropriations;
2. Department databases and maps of surface water appropriations;
3. Department Hydrographic Reports;
4. Department and United States Geologic Survey stream gage records;
5. Department's registered well data base;
6. Technical hydrogeological reports and publications subject to Department peer review;
7. Department reviewed groundwater models and resulting model outputs;
8. Certified irrigated acres provided by the natural resources districts;
9. Water use information provided by other state agencies, natural resources districts, irrigation districts, reclamation districts, public power and irrigation districts, mutual irrigation companies, canal companies, municipalities, and other water users; and
10. Any other information deemed appropriate by the Department for the purpose of conducting the determination

EFFECTIVE DATE: DATE, 2015