

## DIFFERENCES BETWEEN SURFACE WATER PHYSICAL AND LEGAL AVAILABILITY

A reliable water source is contingent upon having the water physically present for diversion and use (physical supply or "wet water"), possessing the necessary water rights to divert water (legal supply or "paper water"), adequate water quality for intended use, and sufficient infrastructure to divert, treat, and convey the water for use. The Oklahoma Comprehensive Water Plan (OCWP) evaluates supply and demand factors at the region and/or basin level.

The physically available and legally available surface water flows are two separate analyses.

Generally, similarities between physical and legal analysis are:

- Both account for unappropriated dependable yield from reservoirs. The physical analysis used an earlier unappropriated dependable yield database. The values may differ slightly but are generally similar.
- Both account for interstate compact requirements. The physical surface water analysis takes compact water out from water coming into the state (most upstream basin), while the legal analysis takes it out from selected basins. The amount of water removed is similar.

Generally, differences between physical and legal availability are:

- The surface water legal analysis removes domestic use and pending permit application amounts from the available water. These are in addition to factoring in future changes in water demand for the seven use sectors used throughout the OCWP. The pending permit application amounts are a significant driver of the differences between surface and legal water availability in Basins 5, 7, 8, and 27.
- Physical surface water supply analysis uses United States Geological Survey (USGS) stream gage data from October 1949 to September 2021 (water years 1950 to 2020). The surface water legal analysis uses flow data from 1940 to 2007.
- The physical surface water analysis is based on the June 2023 permit database. All in-basin permits are accounted for, while only permitted interbasin transfers greater than 500 acre-feet per year are included in the physical surface water analysis.
- The normal storage volume of Natural Resources Conservation Service (NRCS) reservoirs is not included in the physical surface water analysis but is included in the legal analysis. The presence of the NRCS reservoirs is embedded in the historical USGS gage record that is used for the physical water availability analysis. However, the physical analysis does not account for any additional available firm yield that might still be available for use from the NRCS reservoirs.
- The physical and legal availability analysis assumes that all water from upstream basins is available to downstream basins (Figure 1).

More information on the water supply analyses is available in the *Physical Water Supply Availability Report* and *Legal Availability Analysis Report*.

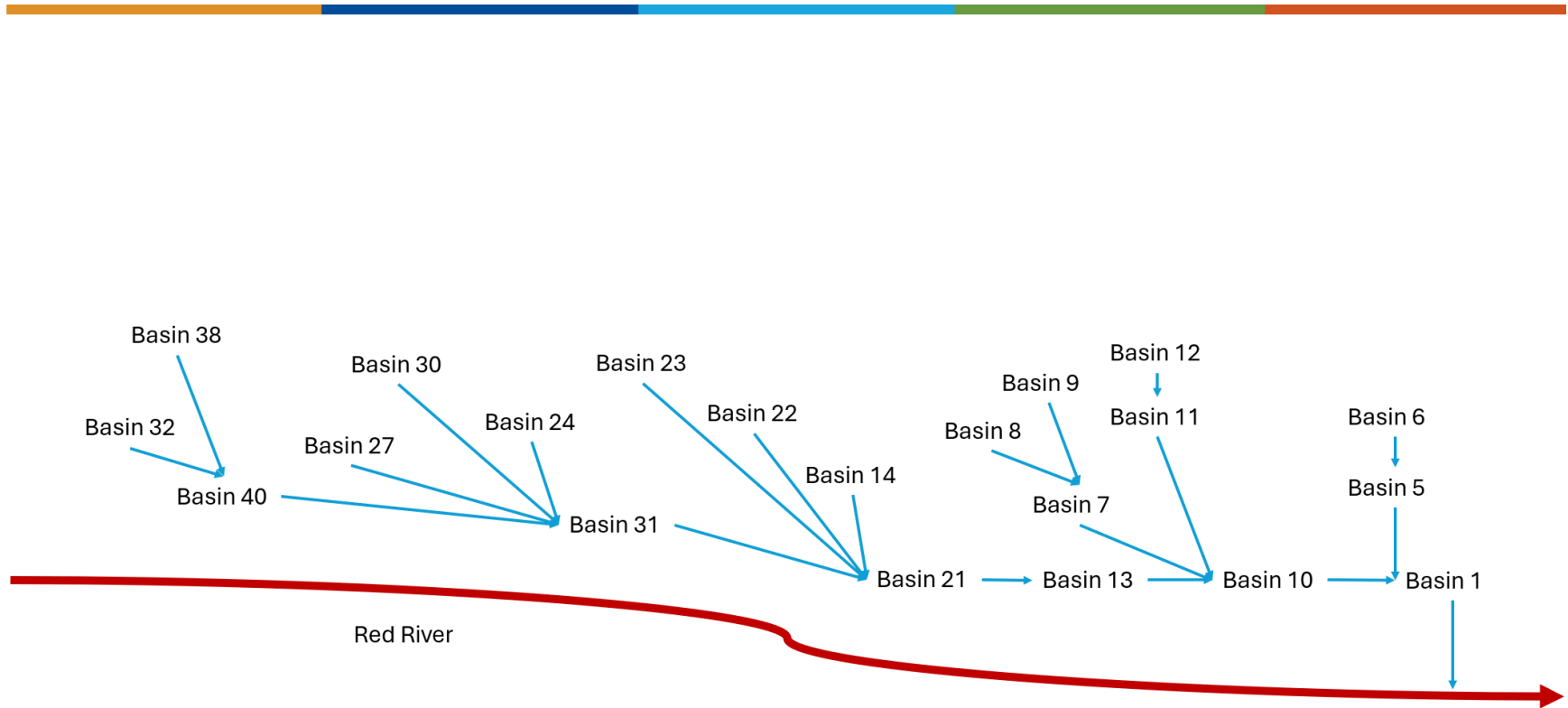


Figure 1 Flow Schematic Used for Physical and Legal Surface Water Availability Analysis