

### How have dams in our state changed through time?

Settlers arriving in Kansas sought water to control for personal use and economic development. Through dam construction, Kansans could stockpile needed water to produce renewable energy, irrigate crops, and provide livestock water. Later Kansas dams would change in construction based on use, engineering knowledge, and legislation to supplement public water supply, control flooding, easier navigate rivers, offer reservoir recreation, reduce erosion, and retain wastes.

**Importance of dams to Kansas industry.** Kansas settlers brought a need for ground grain to eat and lumber for building. In response, entrepreneurs and town settlement companies built grist mills and sawmills along with dams that raised stream levels with “falls” that powered mill machinery. Kansas territorial legislation addressed dams, specifically their destruction, proclaiming that anyone inflicting harm to a dam would be charged with misdemeanor crime.



**Importance of dams to Kansas farmers.** Today dam construction allows many farmers in former flood-prone areas to more timely till, plant, and harvest; use more land; and avoid floodplain scour and sediment damage. Almost all of Kansas’ more than one hundred forty thousand dams are earthen embankments with the vast majority built for irrigation and stockwater reservoirs. At Kansas’ origin, because of millowners’ and western Kansas farmers’ strong need for reservoirs, the 1876 Kansas Legislature established the rule of priority that protected depletion of water supplies by those who had “any milling or irrigating improvements already constructed or located along or upon any stream of water.” This ruling would shape later “first in time, first in right” water rights legislation. Public alarm regarding 1920s national dam disasters, 1927 Mississippi River flooding in 10 states, and many farm dams’ poor design and construction methods prompted formation of a governmental committee. Its findings led to the 1929 legislation now K.S.A. 82a-301 requiring application of approved engineering standards to stream obstructions.



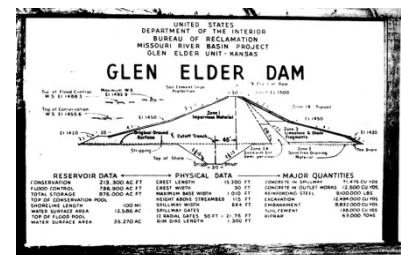
**Importance of dams to Kansas transportation.** To service trains with water needed every 40 miles or so, Kansas railroads used available streams or ponds. When needed, railroads built water tanks and often dams for reservoirs used by steam locomotives similar to today’s reservoir use as a water source for Kansas rural fire fighters. Several railroad dams remain today, e.g., in Edgerton, Chanute, Moline, Olathe, and are now part of city parks. In addition, the Kansas Department of Transportation maintains several dams associated with roadways, including those channeling overflow water. State roads and bridges, too, benefit from flood-control dams that reduce costly road upgrading after flooding events.

**Importance of dams to Kansas green energy and environment.** By the twentieth century’s start, Kansas towns such as Iola, Manhattan, Cottonwood Falls, Beloit, and Lowell generated electricity from hydroelectric dams similar to the Bowersock Dam in Lawrence that produces 33 million kilowatt hours annually. These obstructions, too, can retain phosphorus, nitrogen, and other farming run-off chemicals especially when confined animal feeding facilities are located within the drainage area of a flood control structure.

**Importance of dams to public water supply.** The 1932 presidential election of Franklin D. Roosevelt launched agencies and programs created primarily to provide paid work for the great numbers of unemployed during the Great Depression. Kansas Emergency Relief Committee personnel by 1936 constructed dozens of public dams for reservoirs, for example, Paola City Lake to augment city water supply, as well as Bourbon County Lake, Atchison County Lake, Whiting City Lake, Wellington City Lake, Jetmore State Lake, Pleasanton City Lake, Anthony City Lake, Graham County Lake, Decatur County Lake, Yates Center City Reservoir, Augusta Lake, Lone Star Lake, Lake Idlewood, Lake Afton, Lake Herrington, Mission Lake, and others.



**Importance of dams to Kansas flood control.** Record flooding in 1903 resulted in local flood control measures that expanded with the 1917 authorization of cities to construct flood control projects and Kansas Water Commission creation. National dam and levee failures kept the public clamoring for improved dam oversight and state water control. Flooding in the early 1940s on the upper Missouri River, too, again brought the concept of major flood control projects to national and Kansas attention resulting in the 1944 Flood Control Act and large reservoir construction starting with the 131' high Kanopolis Dam. Other federally-built dams in Kansas by the Corps of Engineer for flood control and navigation purposes are Fall River (1949); Cedar Bluff (1950); Kirwin (1955); Webster (1956); Lovewell (1957); Toronto (1960); Pomona (1962); Tuttle Creek (1963); John Redmond, Council Grove, Milford, (1964); Wilson (1965); Perry, Elk City (1966); Marion (1968); Melvern (1970); Clinton (1977); and Hillsdale, Big Hill, El Dorado (1981). The U.S. Bureau of Reclamation did its part to create multipurpose dams in Kansas, all of them in western Kansas: Cedar Bluff (1950); Kirwin (1955); Webster (1956); Lovewell (1957); Norton, Cheney (1964); and Glen Elder (1967).



A jurisdictional dam in Kansas is subject to state laws. For instance, Kansas in 1915 required plans by a licensed engineer for irrigation dams 10' or higher and added the impoundment of 15 acre feet in the 1929 landmark legislation K.S.A. 82a-301. Later legislation disregarded height opting only for the capacity of impounding 30 acre feet. State jurisdictional definition changed in 2002 to align with national standards that defined a jurisdictional dam as 25' high or 6 feet high with 50 acre feet capacity or more. Legislators in 2013 re-defined a state jurisdictional dam to be 25' or more in height, or six feet or more in height with the ability to store 50 acre-feet or more of water from the auxiliary spillway.

This kickoff of intense federal dam building in Kansas began at the same time the U.S. Congress passed Public Law 83-566 (P.L. 566), the Watershed Protection and Flood Prevention Act that authorizes the United States Department of Agriculture to provide local groups financial and technical assistance for flood prevention. In response, Kansas enacted the Watershed District Act that formed watershed districts tasked with providing flood protection as well as better conserving, developing, using, and disposing of water. These districts have taxing power and have built more than 1,400 P.L. 566 small floodwater-retarding dams in Kansas.

Understanding the history of dams in this state helps us understand how to deal with past actions that shape our future and also value the impact of these quiet engineering triumphs.