In 1964 William Avery won the Republican party primary as a candidate for governor. He defeated his Democratic opponent, Harry G. Wiles, by 432,667 votes to 400,264, while the Prohibition and Conservative candidates collected 17,483 votes. Avery entered the governorship in an era of rapid change, inflation, and expanding government. His decade of service in Congress, where budgets mounted into the hundreds of billions of dollars, made him unafraid to ask for increased revenues to improve state services. However, his push for more taxes to improve schools and his suggestion to use withholding on income taxes were effective but unpopular. International attention during the mid-1960s was focused on the Vietnam War; at home civil rights demonstrations erupted. Avery was widely supported as he remained calm about violent protest in
the state. Avery was renominated in 1966, but he lost the general election race to Robert Docking, Democrat, by a vote of 304,325 to 380,030, with 4,742 going to the Prohibition candidate and 3,858 to the Conservative candidate.

William Avery returned to his home in Wakefield after college to raise crops and livestock on the family farm. He was on the local school board and served as a Republican in the state house of representatives from 1951 to 1955. In 1954 he gained the Republican nomination from a field of five for the United States House of Representatives; his anti-big dam platform opposed the Tuttle Creek project under construction on the Blue River. Although he defeated the in-
cumbent congressman, who also opposed the dam, Avery was unable to halt completion of the Tuttle Creek dam. However, he continued to be reelected and served five terms in Congress (1955–65).

After his term as governor, Avery moved to Wichita, since most of his farm and ranch near Wakefield was now under Milford Reservoir. He was associated with Garvey Enterprises (1967–68) and Clinton Oil Company (1969–71); then he became president of the Real Oil Company. In 1968 he sought the Republican nomination for the United States Senate but lost to Cong. Robert Dole. He was a member of a fact-finding tour of Africa for the Agency for International Development, followed by service as a congressional liaison for the assistant secretary of the Department of Interior. In 1977 he returned to Wakefield to resume a role in the Farmers and Merchants Bank.