The Muscle Shoals Canal, affectionately known as the "Big Ditch," cleared a water passageway along the Tennessee River through northwestern Alabama in the first part of this century. The canal project, aimed at taming the river through the Shoals area, was started in the early 1800s and completed in 1911. The project is credited with increasing industrial, recreational, and residential growth in the northwestern part of the state. It made possible the development of fertilizer and nitrate plants in the area, and established north Alabama as a major national resource during the war years.

The Tennessee River, some 650 miles long, begins its course north of Knoxville, Tennessee. It flows southwest to the northeastern part of Alabama, then across the entire northern part of the state. Before the erection of Wilson Dam and the dam along the river that were built later by the Tennessee Valley Authority, the Muscle Shoals in northwestern Alabama posed a serious obstruction on the river, creating, for all practical purposes, two rivers—the Upper and Lower Tennessee. The shoals mark a fall line where the river drops some 140 feet over about a thirty-five-mile stretch. Along this stretch the river was treacherous, with waterfalls, reefs, sandbars, islands, and other impediments making passage too hazardous for commercial traffic. The canal was an early attempt to make the river navigable, and included nine locks and a steel aqueduct, or water bridge, that carried boats over Shoal Creek, which had a fluctuating water level.

In seconding the canal's nomination to the Engineering Hall of Fame, Florence, Alabama, city historian William Lindsey McDonald said, "The gigantic endeavor to conquer the Muscle Shoals during the last century was a monument to the engineering genius of mankind." Mr. McDonald said that the aqueduct, a structure nine hundred feet long and sixty feet wide, was "an engineering wonder of its time, and attracted attention throughout the nation." In Mr. McDonald's words, the canal was "the nineteenth-century seed that became the forerunner of the Tennessee Valley Authority that harnessed and tamed the entire Tennessee River Valley of the twentieth century."

The canal project was completed under the direction of the celebrated American engineer Gen. George Washington Goethals, who later supervised construction of the Panama Canal, using the valuable experience he gained constructing the Shoals waterway to create the great locks of that South American project. The Shoals project was his first major assignment and is said to have had enormous influence on his career and the development of his abilities.

When Wilson Dam was completed in 1925, the greater part of the canal was completely submerged. Today, the walls of the third lock that are visible above the water line at Wheeler Dam are the only parts of the canal that can be seen. The site has been nominated for listing on the National Register of Historic Places.

The Wilson Dam was inducted into the Engineering Hall of Fame in 1989.