Tennessee-Tombigee Waterway: Planning History

Floyd L. Currie
Civil Engineer
Planning Division
Mobile District
Corps of Engineers

The idea of a navigable waterway connecting the Tennessee River and the Gulf of Mexico at the Port of Mobile has been a topic of discussion and the dream of many since the days of the early explorers. Records of the early 1700's contain a map drawn by Bienville, founder of Mobile, to show the King of France the advantages of a canal connecting the Tennessee and Tombigbee Rivers.

American settlers moving southwestward from the Atlantic seaboard along the roundabout route via the Tennessee and Mississippi Rivers also realized the potential value of a short cut to the Gulf of Mexico. As early as 1810, the citizens of Knox County in eastern Tennessee petitioned Congress to provide a short waterway route to Mobile Bay.

In 1819 the first legislature of the State of Alabama passed an act requesting the hiring of a skilled engineer to survey Alabama's rivers, both for improving them and to secure a connection to the Tennessee River. Most of these early efforts to provide a connection were via the Alabama-Coosa River System. In 1821, the same year Tennessee's Governor McMinn suggested such a route, **The Montgomery Republican** announced the arrival at Montgomery of the "Tennessee Patriot" from east Tennessee with a load of flour and whiskey. To accomplish the trip the 50-foot long keel boat was transported 10 miles overland from the Ocoee River to the Connusaga. In 1823 the Tennessee Legislature called upon Alabama and Georgia to assist in getting action toward a canal. In May of that year a meeting was held at the State House in Cahawba to support such a proposal. Finally in 1826 the Hiwassee Canal Company was chartered by Tennessee to construct the canal. However, the Cherokee Indians refused to grant a right-of-way across their lands in northwest Georgia. The efforts to secure this route continued, but with the arrival of the railroad in the area to partially relieve the barriers to east Tennessee, the efforts were less persistent.

Another route from the Tennessee River to the Gulf via Bear Creek and the Tombigbee River had also been advocated since the time of Bienville. However, it was not until the 1870's when the construction by the Federal Government of a canal around the mussel shoals in the Tennessee River was going to become a reality that this route would be of any value to eastern Tennessee.

In 1874 Congress authorized a survey to determine whether it was possible to open a navigable waterline between the Tennessee and Tombigbee Rivers. A field party was organized in December 1874 and began survey work in January 1875 near Eastport, Mississippi in Tishomingo County at the mouth of Big Bear Creek. The survey was under the leadership of Mr. Powhaton Robinson who had previously been engaged in the improvement of Tombigbee River and the examination of the river between Columbus and Fulton. Although several routes were surveyed across the divide between the two river watersheds, the selected route followed Big Bear Creek from its mouth upstream for approximately 23 miles to Big Crippled Deer Creek, thence up this 9 miles to the divide. A 3-mile summit canal would have run to Spring Creek, thence down Mackeys Creek to Bay Springs where, in order to avoid bottomlands subject to flooding, the valley was abandoned and a canal constructed directly to the ferry across the Tombigbee near Fulton.

The dimensions of the proposed canal were 4 feet deep, 40 feet wide at the surface and 28 feet at the bottom with locks 80 feet long, 20 feet wide and 4-½ feet deep across the miter sills. The canal would permit the passage of canal boats 70 feet long and 19 feet beam and about 100 tons burden. The project would have required 19 locks from the Tennessee River to the summit canal and 25 additional locks from there to the Tombigbee River at Fulton. In addition, a reservoir and feeder canal for water to supply the summit canal would have been needed. It should be noted that this route would still have been usable only during the flood seasons, for, as the report states:

> "It would be entirely useless during the low water seasons, as it is impossible then even for a skiff to pass down from Fulton without being dragged over the obstructions, consisting of sand bars and sunken logs which everywhere occupy the river bed."

The report went on:

> "This improvement would not be worth undertaking unless it should provide for the passage of such steamers as now ply the Tennessee and Alabama Rivers; and this would require such an increase of dimensions of canal and locks in the part already surveyed, that the expense, supposing the scheme might then be found practicable, would be enormously increased, and when this is added to the cost of permanently improving the Tombigbee River for the same class of boats from Fulton to Demopolis, a distance of three hundred and twenty miles, it is apparent that the cost would be too great to justify any further serious consideration of the project until the increase of the population and products of the country to be benefited by its execution shall have furnished some reasonable economic ground for doing so."

Although development of the Tennessee and Tombigbee Rivers continued throughout the latter part of the 1800's and into the beginning of the 20th century, no further studies of the canal connecting these waterways were made until 1912 when a special study was authorized by the Rivers and Harbors Act of July 25, 1912. The Chief of Engineers convened a special board "for the purpose of making preliminary examination and report thereon for a waterway to connect Tennessee River with Tombigbee River, in the State of Mississippi, by way of Big Bear Creek or other practicable route." The special board reported that the Tennessee River was under improvement by open channel

methods up to the mouth of Big Bear Creek near Riverton, Alabama, and would provide a 6-foot navigation channel at ordinary low water. The Tombigbee River was being improved to provide a year round 6-foot navigation channel between Mobile and Demopolis by the construction of locks and dams as part of the BWT development. It was further reported that a 6-foot navigation channel had been provided from Demopolis to Columbus by snagging, tree cutting, bank revetment and for improvement but that no funds had been provided by Congress for slack-water navigation by the construction of locks and dams. Above Columbus a high water channel by the removal of obstructions was authorized upstream to Walkers Bridge but only the section below Aberdeen was being maintained.

The Board determined that a project connecting the Tennessee and Tombigbee Rivers would not be warranted unless the canal could be utilized the entire year and accommodate boats of 6-foot draft. This would necessitate the improvement of the Tombigbee above Demopolis utilizing locks and dams and, therefore, these costs should be considered when evaluating the connecting project.

The Big Bear Creek route investigated in 1875 was again considered. However, because the costs of the project, including the improvements to the Tombigbee River above Demopolis, appeared to be in excess of any benefits that could be derived, the construction of such a project via Big Bear Creek was not recommended.

During the course of the examination, a public meeting was held in Columbus. At this meeting Dr. E. N. Lowe, Geologist of the State of Mississippi, first proposed a waterway by way of Yellow Creek and Mackeys Creek as a method of relieving floods on the Mississippi River by diverting Tennessee River floods down the Tombigbee.

To provide for the diversion, a channel 29 miles long would have been required. This channel was estimated to require the excavation of over 100 million yards of earth with a maximum depth of cut of 208.8 feet. The special board found this plan would not have diverted sufficient water to affect the flooding on the Tennessee River, much less the Lower Mississippi, and would have required levees along the Tombigbee to protect from the increased flood stages. This plan was rejected as being completely impractical.

The Yellow Creek route was also considered for navigation. It was shorter by a few miles than the Big Bear Creek route, had the same length summit canal, and required a similar water supply reservoir. However, the excavation required was more than double, the lift greater, and it probably would have required two or more additional locks on each side. The Board therefore rejected this route as being more practicable than the previously discussed Big Bear Creek route.

The dream of a connecting waterway once again faded into the background until the early 1930's when it was again considered as part of the first comprehensive survey by the Corps of Engineers of the entire Warrior and Tombigbee River System. The report submitted in 1932 included an investigation of plans for the complete development of both river systems via the previously investigated Big Bear Creek route. The plan presented for the development of the Tombigbee River consisted of modifications and new construction to replace the existing facilities below Demopolis to provide a dependable 9-foot deep navigation channel with locks being 95 feet wide and 460 feet long. Above Demopolis the plan provided for 20 locks and dams, 4 impounding dams on tributary streams and a 3-mile long divide cut canal connecting Mackeys Creek with Cripple Deer Creek. Nine-foot-deep navigation was planned with locks being 65 feet wide and 310 feet long. Hydropower installation was included in the structures from Lock and Dam G on the East Fork near the Itawamba-Monroe County Line to the mouth of the Tombigbee including the impoundment dams on the Noxubee, Tibbee, and Buttahatchee Rivers. The report found the plan on the Tombigbee below Demopolis to be economically justified. However the benefits were considerably less than the costs for the plan above Demopolis and no project was recommended for this portion of the Tombigbee River.

This time the dream was kept alive. In February 1934, the Committee on Rivers and Harbors, House of Representatives, passed a resolution requesting reexamination of the proposed waterway including a review of the 1932 report discussed previously.

A review of the previous reports was made by the Mobile District and submitted in December 1935 recommending a survey of two routes, one by the Warrior River, the principal tributary of the Tombigbee, in north central Alabama. The Board of Engineers for Rivers and Harbors completed the survey of the Tombigbee route in late 1938 and it was submitted by the Chief of Engineers to the Committee Chairman in February 1939.

This report is especially noteworthy since it provided the basic engineering framework for the project which is being built today. The development of the Tennessee River Basin was underway under the guidance of the Tennessee Valley Authority (TVA) with 9-foot-deep navigation channel authorized and under construction from the mouth to Knoxville. Most importantly, Pickwick Lock and Dam had been completed and raised the elevation of the Tennessee River at the mouth of Yellow Creek so that locks were no longer required on that side of the Divide Cut. Although the elevation of the Yellow Creek divide was 60 feet above the lowest known saddle, the absence of rock in the ridge provided the most favorable location for the proposed waterway. Thus the Yellow Creek - Mackeys Creek route was selected for the first time. Other changes from the 1932 report included reduction of the number of locks and dams above Demopolis to 18, the construction of a lateral canal for navigation above the town of Bigbee, deletion of the dams on the tributaries as well as deletion of provisions for hydropower. The dimensions of the proposed project were given as "a channel of not less than 9 feet in depth and a minimum bottom width of 170 feet in river and canal sections and 115 feet in the Divide Cut, with locks approximately 75 by 450 feet clear inside dimensions."

Although the proposal was found to be economically justified, benefits included National Defense, recreation, and enhancement of land values in the tributary area in addition to transportation savings. In his transmittal letter, Major General Schley, Chief of Engineers, referred to the inclusion of these non-transportation benefits in the project justification when he said: "All these intangible or indirect benefits must be considered in addition to the direct savings in transportation costs in order that the project will show a substantial excess of benefits over costs. They are difficult to evaluate and appear to me to be questions falling within the realm of statesmanship to which the Congress can best assign the proper values."

In Hearings before the House Committee on Rivers and Harbors in 1939, 1941, and 1943, Representative Rankin of Mississippi untiringly supported the project. Although authorization of the Tennessee-Tombigbee Waterway was not obtained, the hope for the project remained alive.

In January 1945, the House Committee on Rivers and Harbors again requested a reexamination of the waterway. The report by the Board of Engineers for Rivers and Harbors was submitted by the Chief of Engineers to the Committee Chairman in February 1946. This report recommended the development of the Tombigbee River above Demopolis including the construction of a waterway to connect the Tombigbee and Tennessee Rivers by way of the East Fork, Mackeys Creek, and Yellow Creek so as to provide a channel not less than 9 feet in depth and a minimum width of 170 feet in river and canal sections and 150 feet in the

Divide Cut with locks 110 by 600 feet clear inside dimensions. This report incorporated the engineering features and general plan presented in the 1939 report except for the changes in width of the Divide Cut and the increase in lock size to the dimensions of those existing on the Tennessee River. The report also assumed that the locks on the Tombigbee River below Demopolis would be enlarged to the same 110 by 600 feet.

Based upon the recommendations contained in this report, the Tennessee-Tombigbee Waterway was authorized in Public Law 525, 79th Congress, on July 24, 1946. Although the construction funds were not forthcoming as many had hoped, preconstruction planning did commerce and continued until 1951 when the project was placed in a "deferred for restudy" category. This action was the result of investigation and hearings held by the Appropriations Committee of the House of Representatives.

In 1957 Congress mandated another restudy of the Tennessee-Tombigbee Waterway. This study resulted in a favorable report, subsequently designated as the General Design Memorandum (GDM) for the TTW, which was submitted to Congress in April 1962. This report is also noteworthy since the waterway was again classified as "active" and therefore was eligible for planning and construction funding. There were also some refinements to the project design including the reduction of the number of locks from 18 to 10 by the use of higher lift structures and the elimination of the impervious lining in the lateral canal. The route was the same as adopted in 1939, namely, the Yellow Creek-Mackey Creek Divide Cut, lateral canal paralleling the East Fork, and then down the Tombigbee River to Demopolis.

In the 1965 Public Works Appropriation Act, funds were provided for yet another reevaluation of the economics of the Tennessee-Tombigbee Waterway project. This study, designated as the 1966 Supplement to the General Design Memorandum, considered the relative merits of constructing a waterway at a 200-foot width and a 300-foot width between Pickwick on the Tennessee River and Demopolis. Although the study found that both widths were economically justified, the study recommended construction of the waterway at the 300-foot width.

In March 1967 Secretary of the Army, Stanley Resor, approved the 300-foot wide navigation channel and notified Congress of the favorable results of the study. As a result of this March 1967 submittal to Congress, funds were allocated to resume the preconstruction planning for the Tennessee-Tombigbee Waterway and led directly to the appropriation of construction funds for 1971.

Although the engineering features have changed dramatically from the first Corps proposal in 1875 to the plan presently being built, the purpose has remained constant during this time—to provide a modern and efficient waterway connecting the north-flowing Tennessee River with the south-flowing Tombigbee River and thereby permit continuous waterway travel from the Tennessee, Upper Mississippi, and Ohio Valleys to the tidewater port of Mobile on the Gulf of Mexico.