

Evolution of the Ohio River Bridges Project in Kentucky/Indiana

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The Ohio River Bridges Project was planned to be one \$3bn Public/Private Partnership (PPP) project which transformed over time in to two projects, one a PPP and the other Design/Build (D/B). This paper describes how one team successfully won both projects and how the design of two major cable stayed bridges evolved over time.

The Ohio River is the largest tributary of the Mississippi River and forms the border of 6 states. In this instance the border between Indiana and Kentucky is defined by the river. On the South side, in Kentucky, is the city of Louisville, home of the Kentucky Derby, and to the North Jeffersonville, Indiana. Three major interstate highways, I64, I65 and I71, intersect in the middle of downtown Louisville with I65 being the main crossing route to the north. There are two ring roads, I264 and I265, but neither of them cross the Ohio River so they are effectively truncated 2/3rds of the way round.



The project was conceived to rebuild the intersection of the three Interstates in Louisville, adding a new bridge across the Ohio River to double the capacity of the existing downtown bridge, and connecting the outer ring road of the I265 with a second new bridge crossing about 7 miles East of Downtown Louisville.

The downtown project comprises a new I-65 Ohio River Bridge to carry northbound I-65 traffic across the river and extends from the northern end of the Kennedy Interchange from the south in Kentucky to the newly constructed approach spans in Indiana. The new main structure will be a three tower cable stay bridge located upstream of the existing JF Kennedy Memorial Bridge and will carry six 12-foot lanes and two 12-foot shoulders. The existing I-65 JFK Bridge will be re-decked and reconfigured to carry southbound traffic using six 12-foot travel lanes and two 9.5-foot shoulders.

The contract by the Kentucky Transportation Cabinet (KYTC) was awarded as a Design/Build to Walsh Construction with Jacobs as prime designer and Buckland & Taylor as main bridge engineer, with a contract value of \$860m.



The East End Crossing of the Ohio River for the second project was awarded by the Indiana Finance Authority (IFA) as a PPP to a concession company comprising a Walsh Investments/Vinci Concessionaires/Bilfinger Berger joint venture (JV). The concession company awarded a \$763m construction contract as a D/B to a JV of Walsh Construction/Vinci Grand Projects, with Jacobs as prime designer and International Bridge Technologies as a leading sub-consultant.

The project comprises the construction of an approximately 2,500 foot long four-lane bridge (which can be reconfigured to accommodate six lanes) over the Ohio River with a 13-foot wide pathway on the southwesterly side of the bridge, and an approximately 2,000-foot long tunnel beneath US 42 and the historic Drumanard Estate. The twin tunnel bores each carry two lanes with shoulders which can be converted to three lanes with one shoulder in the future.



The border between Kentucky and Indiana runs along the Northern shore of the Ohio River but the two states agreed that KYTC would act as client for the Downtown project and the IFA would act as client for the East End Crossing, including those parts of each project in the other party's state. This has led to the interesting situation of different standards being applied to the design elements depending on which side of the river the part of the project is located. Furthermore, on the East End Crossing the IFA wanted the project to be a PPP with the concession company being responsible for operation and maintenance for a 35 year concession period. However, KYTC wanted to carry out their own maintenance. A compromise was reached where the concession company will maintain the part of the highway which is in Indiana and also the cable stayed bridge, and KYTC will maintain the remainder of the highway in Kentucky including the tunnel.

As stated at the beginning of this paper, the original intention was for the project to be one PPP, with the client being a joint development authority of the two states, including both bridges, toll revenue from both projects, as well as the operation and maintenance of the whole system. However, it quickly became apparent that even with tolling of all the adjacent bridges there would be insufficient revenue for a fully privately financed PPP. Furthermore, the Indiana authorities were much more familiar with PPP projects whereas Kentucky wanted more traditional delivery methods. The compromise was to split the project in two, and Walsh Construction/Jacobs won them both.