



EXECUTIVE SUMMARY

The Louisville-Southern Indiana Ohio River Bridges (LSIORB) project is a construction and reconstruction project being undertaken jointly by the Kentucky Transportation Cabinet (KYTC) and the Indiana Department of Transportation (INDOT). The purpose of the project is to address long-term cross-river transportation needs in the Louisville metropolitan area.

The LSIORB project consists of six highway sections, as shown in **Figure E.1**, including construction of two new bridges. A new 6-lane downtown bridge would carry northbound I-65 traffic from downtown Louisville, and another new 6-lane bridge, the East-End Bridge, would link an extended KY 841 with IN 265. The existing I-65 bridge would be reconfigured to serve southbound traffic. With construction of the two new bridges and reconfiguration of the existing downtown bridge, roadway work will be completed for the approaches to Kentucky and Indiana. In addition to these improvements, the existing Kennedy Interchange, where I-64, I-65 and I-71 converge in downtown Louisville, would be reconstructed south of its current location.

KYTC has contracted with Wilbur Smith Associates (WSA) to conduct a preliminary traffic and revenue options study assuming the tolling of several alternatives for the LSIORB project. In this study, it was assumed that the project would allow for all electronic toll collection, with a gantry located on each toll collection location. Different combinations of tolled and non-tolled bridges were evaluated for four bridges crossing the Ohio River; I-64, US 31, I-65 and East-End bridges. An option of tolling the Kennedy

Interchange was also analyzed. In all, eight tolling alternatives were evaluated as shown in **Table E.1**. For the bridge toll alternatives, bidirectional toll collection was assumed. For the Kennedy Interchange, toll collection was assumed at all exit points, ensuring that all users of the facility would be tolled.



Figure E.1 LSIORB Project

Table E.1 Toll Alternatives

Toll Alternative	Bridge (Ohio River Crossing)				Kennedy Interchange
	I-64	US 31	I-65	East-End	
1	♦	♦	♦	♦	
2		♦	♦	♦	
3	♦		♦	♦	
4		♦	♦		
5			♦	♦	
6			♦		
7				♦	
8					♦

♦ Tolled



LOUISVILLE-SOUTHERN INDIANA OHIO RIVER BRIDGES PROJECT PRELIMINARY TRAFFIC AND REVENUE OPTIONS STUDY

A travel demand modeling application was used to develop traffic and revenue forecasts. At the toll collection locations, annual toll transactions were estimated based on traffic volume forecasts derived from a travel demand model. Toll operations and maintenance (O&M) costs were estimated based on the toll transactions. Annual gross and net toll revenues were estimated from the toll transactions and the toll operations and maintenance costs.

The travel demand model indicates that the LSIORB project would result in significant travel time savings for certain through and local trips as compared to the travel time experienced by motorists in the existing condition without the project. Following are some examples of travel time and travel distance savings in 2030 for toll alternative 1 (tolling all bridges) with the \$2.00 base toll rate for passenger vehicles.

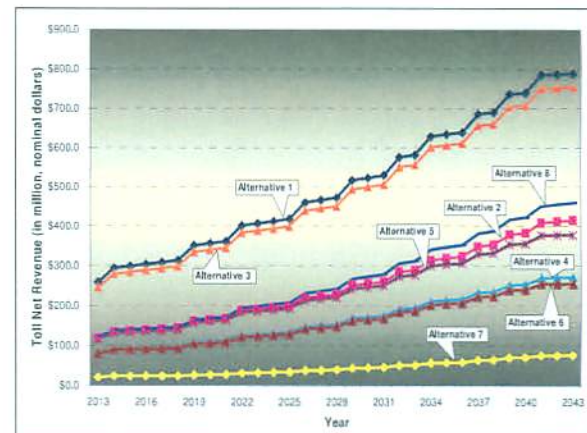
A worker who lives in Jeffersontown commutes to his job at the Clark Maritime Center in Indiana. Taking the new I-65 bridge will save him 14 minutes, which translates to a net saving of approximately \$0.40 after the toll. Another worker commuting from his home in Clarksville to the Ford Truck plant in Louisville will see his commute time reduced by approximately 26 minutes and his travel distance by 4 miles. The net savings after the toll will be about \$2.90.

In another example, a mother from Jeffersontown travels with her daughter to a game at Woerle Field in Jeffersonville, Indiana, after school ends at 3 PM. Taking the new East-End Bridge will result in a 15 minutes time saving. The net savings after the toll will be about \$0.50.

A truck from Scottsburg, Indiana passes through the Louisville area on its way to Cincinnati via I-65 and I-71. Taking the new East-End Bridge will reduce his trip by approximately 5 miles, resulting in a time saving of 31 minutes. The net savings after the toll will be approximately \$14.80.

Overall, the LSIORB project for toll alternative 1 would result in savings of approximately 30 million vehicle hours in 2030 as compared to the no-build condition.

The eight toll alternatives would produce varying toll revenues. For the \$2.00 (2007) base toll rate, **Figure E.2** presents the comparison of net toll revenues by toll alternative in nominal dollars for the 30-year projection period beginning in the opening year of 2013. Alternatives 1 and 3 would result in the highest toll revenues for all toll rates tested. Alternative 7 would record the lowest revenues among toll alternatives. Alternatives 4 and 6 show similar revenues for all toll rates tested.



**Figure E.2 Annual Toll Net Revenues
(\$2.00 (2007) Base Toll Rate)**

In conclusion, this study shows that the LSIORB project is expected to generate travel time benefits for the cross-river traffic. Tolling options for the project would generate new revenues which may assist in partially funding the project. Should KYTC decide to pursue some form of public or private financing for the project, a more detailed comprehensive traffic and revenue study would be required.

TOTAL 30 YEAR NET REVENUE FROM TOLLS (2013-2043)

<u>Alternative</u>	<u>Description</u>	<u>Toll Revenue in Billions</u>			
		<u>Toll Rates</u>			
		<u>\$.50</u>	<u>\$1.00</u>	<u>\$2.00</u>	<u>\$3.00</u>
1	Tolling All Ohio River Bridges I64, I65, US31, East End	\$3.7	\$7.9	\$15.7	\$23.1
2	Tolling US31, I65 and East End Bridges	\$2.3	\$4.6	\$7.6	\$9.8
3	Tolling I64, I65 and East End Bridges	\$3.5	\$7.4	\$15.0	\$22.4
4	Tolling US31 and I65 Bridges	\$1.8	\$3.4	\$5.1	\$5.8
5	Tolling I65 and East End Bridges	\$2.2	\$4.4	\$7.4	\$9.5
6	Tolling I65 Bridge Only	\$1.6	\$3.2	\$5.0	\$5.7
7	Tolling East End Bridge Only	\$0.5	\$0.9	\$1.4	\$1.4
8	Kennedy Interchange	\$3.3	\$6.1	\$8.3	\$8.6

Notes:

1. Toll Collection was assumed for both directions for bridges
2. Toll Collection for Kennedy Interchange was assumed to be all exit ramps
3. Cashless Electronic Toll Collection only
4. Net Toll Revenues are Total Toll Revenues minus Operating and Maintenance Cost for collecting tolls
5. Maintenance and Operations Cost would range from \$657,000 to \$825,000 Annually
6. Toll Revenues assume adjustment every 5 years (2.5% annually)