

FINAL

**LOUISVILLE-SOUTHERN INDIANA OHIO RIVER BRIDGES PROJECT:
ADMINISTRATIVE COST ESTIMATES OF IMPLEMENTING
A TOLL DISCOUNT PROGRAM FOR LOW INCOME CUSTOMERS**

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1 PURPOSE

1.1 Introduction

The purpose of this report is to provide a preliminary estimate of **initial capital costs** and near-term **operations and maintenance (O&M) costs** for the implementation of a toll mitigation program for those identified as low-income residents in the Louisville–Southern Indiana Ohio River Bridges (LSIORB) Project area. The information in this report is intended to augment the information contained in the June 27, 2013, *Draft Assessment of Economic Effects of Tolling and Potential Strategies for Mitigating Effects of Tolling on Low-Income and Minority Populations (Draft Economic Effects Assessment)*, and, thereby, to assist the Kentucky Transportation Cabinet (KYTC) and the Indiana Department of Transportation (INDOT) in evaluating the feasibility of implementing measures to help mitigate the potential adverse effects of tolling on Environmental Justice (EJ) populations.

Several toll mitigation programs and enrollment eligibility types were identified, and cost estimates were prepared for two programs that represent the range of potential program development, start-up, and operation and maintenance (O&M) costs. For purposes of developing the cost estimates, this report makes assumptions regarding Business Rules, Toll Policy, and Concept of Operations (ConOps)¹ since none of these are as yet finalized. Finalization of these elements of the tolling process are in part dependent upon the decisions reached regarding measures to mitigate the disproportionately high and adverse impacts of tolling on EJ populations in the Project area, per the commitments made by the Federal Highway Administration (FHWA), KYTC, and INDOT in the *Supplemental Final Environmental Impact Statement (SFEIS)* and *Revised Record of Decision (RROD)* for the Project.

This report also outlines several start-up and operational risks potentially associated with implementing a toll mitigation program, and discusses the types of documentation and review that may be required with the eligibility determination process.

Section 2 of this report describes the mitigation programs and discusses the types of documentation and review that may be required with the eligibility determination process; Section 3 presents the preliminary cost estimates for two mitigation program scenarios; and Section 4 discusses potential risks associated with implementing a toll mitigation program.

1.2 Background

1.2.1 Toll Collection

The LSIORB Project includes construction of a new Downtown Bridge, immediately east of and adjacent to the existing Kennedy Bridge, to carry I-65 northbound traffic; reconstruction of the existing Kennedy Bridge to accommodate I-65 southbound traffic; reconstruction of the Kennedy Interchange (“Spaghetti Junction”) where I-64, I-65, and I-71 converge in Downtown Louisville; and construction of an East End Bridge connecting KY 841 in Kentucky to SR 265 in Indiana approximately six miles upriver from the Downtown I-65 crossings.

¹ **Business Rules** are policies that guide a company or organization in running its day-to-day business. A **Toll Policy** provides the basis for determining toll rates and methods for collection of tolls. For the LSIORB Project, the policy will include adoption of a plan for mitigating the effects of tolling on EJ populations. A **Concept of Operations (ConOps)** document describes the proposed system characteristics from the user organization’s (in this case, Tolling Authority’s) viewpoint. It describes the user organization, mission, and organizational objectives.

It is also important to note that of the five Ohio River bridges that will exist in the Louisville metropolitan area following construction, only the new East End Bridge and the Downtown I-65 bridges (new Downtown Bridge and reconstructed Kennedy Bridge) will be tolled. The Sherman Minton (I-64) and Clark Memorial (US 31) bridges will remain un-tolled following Project completion, providing two free options for cross-river travelers who wish to avoid a toll. Both of these cross-river connections are familiar and readily accessible to most residents of EJ areas in Louisville, Clarksville/Jeffersonville, and New Albany; and, in fact, both are located in close proximity to the largest concentrations of EJ populations in both Jefferson and Clark/Floyd counties. All planning for the Project, including traffic and financial studies, has been based on the Sherman Minton and Clark Memorial bridges remaining un-tolled.

An Open Road Tolling (ORT) system will be implemented for both the Downtown Crossing (I-65) and the East End Crossing. The following toll collection options will be offered:

- **Transponders.** The primary collection method will be with transponders. Toll rates for transponder-equipped vehicles will be based on frequency of use (i.e., one rate for frequent users and another rate for non-frequent users). To encourage the use of transponders, the States propose to provide, at no cost to any user, a transponder that is compatible with the local tolling system.
- **Video Toll.** For vehicles that are not equipped with transponders, the toll will be collected through video collection. For video collection, two options will be offered—pre-registered and standard video toll collection.
 - Pre-Registered Video Toll Collection—Motorists will register their license plate and fund an account which will be drawn from when their license plate image is captured by video equipment installed on the tolling gantries. Because of the greater cost associated with administering an image-capture system (as opposed to the use of transponders), an additional toll amount will be charged, on top of the transponder toll rate, to cover the additional costs of pre-registered video toll collection.
 - Standard Video Toll Collection—This collection method will involve capturing a license plate image, identifying the license plate, identifying the address corresponding to the license plate through Department of Motor Vehicle (DMV) records, and then mailing a bill to the address. Because of the greater costs associated with both administering an image-capture system and collecting tolls by mailed invoice, an additional toll amount will be charged, on top of the transponder rate, and greater than the pre-registered video toll rate, to cover the additional costs of standard video toll collection.

1.2.2 SFEIS/RROD

During the development of the SFEIS, which was signed on April 20, 2012, an evaluation of potential effects on EJ populations (i.e., low-income and minority populations) was conducted, per Executive Order 12898, *Environmental Justice*, FHWA Directive 6640.23, and USDOT Order 5610.2. That analysis reached the following conclusion:

The analysis of the economic effects of tolling took into account both the actual cost of the toll and the non-toll costs incurred by vehicle users in making cross-river trips, including vehicle operating costs and the cost of time spent in traffic.

These costs were identified for “EJ community cars” (defined as car trips that originated from an area identified as an EJ community) and “Non-EJ community cars” (car trips originating outside areas identified as EJ communities). The analysis of average user costs found that non-EJ community cars would experience an 11% (\$0.98) increase in average cost per trip for Ohio River bridge crossings (from \$9.15 to \$10.13), while EJ community cars would experience a 21% (\$1.41) increase in the average cost per trip for bridge crossings (from \$6.75 to \$8.16). The increase in the average cost per trip for EJ community cars is expected to be greater than the increase for non-EJ community cars.

Based on the vehicle user cost data...FHWA has concluded that the Modified Selected Alternative is likely to cause disproportionately high and adverse effect[s] on minority and low-income populations....Therefore, in accordance with FHWA Order 6640.23, it is necessary to consider strategies for minimizing and mitigating the economic effects of tolling on minority and low-income populations. (SFEIS p. 5-43)

The mitigation measures identified in the subsequent Revised Record of Decision (RROD) (pp. 64-65) signed June 20, 2012, include the following, which are applicable to the purpose of this report:

Prior to the implementation of tolling, the states of Indiana and Kentucky will adopt a policy that is sensitive and responsive to low-income and minority (environmental justice) populations (“Tolling Policy”). ... During the development of the Tolling Policy, KYTC and INDOT will:

- *Conduct a detailed assessment of the potential economic effects of tolls on low-income and minority populations, using the latest publicly available population data, traffic forecasts, and community input.*
- *Identify and evaluate a range of measures for mitigating the effects of tolling on low-income and minority populations.*

As part of the Tolling Policy, KYTC and INDOT will adopt a plan for mitigating the effects of tolling on low-income and minority populations (“Tolling Mitigation Plan”). The Tolling Mitigation Plan will:

- *Include practicable measures for minimizing impacts of tolling on low-income and minority communities.*

The Tolling Policy will be completed before tolling is allowed to be initiated on the LSIORB Project.

In determining practicability of measures to mitigate effects on low-income and minority communities, KYTC and INDOT may take into account the financial requirements of the project, the technical and logistical issues associated with toll collection methods, and other needs.

1.2.3 Post-SFEIS/RROD

One of the commitments made in the RROD was to further assess the Project’s potential effects on EJ populations, and to consider measures to minimize and mitigate those effects. Toward that end, the *Draft Economic Effects Assessment* was prepared and provided to the public, for review and comment, on June 27, 2013. The range of public outreach methods employed to obtain comments included posting the report on the Project website (www.kyinbridges.com); conducting three professionally administered public opinion surveys; holding open house meetings (July 22 and 23, 2013); and, prior to the meetings, distributing the report with the meeting notices at libraries,

community centers, and numerous other readily accessible sites throughout the Project area, including the EJ communities.

Section V of the *Draft Economic Effects Assessment* identified and evaluated several potential measures to mitigate the disproportionate and adverse effect of tolling on EJ populations. In addition to the commitment in the RROD to provide \$20 million to the Transit Authority of River City (TARC) to enhance cross-river travel benefiting EJ communities (which was memorialized in a Memorandum of Agreement between TARC, KYTC, and INDOT), the *Draft Economic Effects Assessment* evaluated mitigation measures related to the following:

- Traffic control
- Transponder procurement cost, one-time credits, and methods of obtaining transponders
- User account management (including minimum balance in user's accounts, locations for replenishing funds in a user's account, and on-line account management)
- Cost of multi-system compatible transponders
- Discounted tolls

Toll discounts, both area-based and income-based, were considered but not recommended for further consideration due to then-undefined administration and enforcement challenges and costs, and potential loss of toll revenue.

After the *Draft Economic Effects Assessment* was issued, and after considering public comments on that report, KYTC and INDOT, conducted two additional analyses to consider the costs of toll discounts in greater detail. These additional analyses are intended to:

- Estimate the potential effect of a toll mitigation program on the revenue stream required to finance the Project, which is the subject of the *Toll Discount Analysis* prepared by Steer Davies Gleave (SDG), November 2014.
- Estimate the potential administrative costs of implementing a toll mitigation program, which is the subject of this report.

Section 2 of this report describes the mitigation program scenarios that form the basis for this report's cost estimates.

2 MITIGATION PROGRAMS

For this report, the following enrollment eligibility types and types of mitigation programs were initially selected as a framework for comparing the costs of administering various mitigation measures initially identified in the *Draft Economic Effects Assessment*:

Enrollment eligibility, based on one of following types—

- Individual / family income (*also referred to as "income-based"*)
- Residence in a defined low-income area (*also referred to as "area-based"*)
- Receipt of Federal Earned Income Tax Credit (*also referred to as "FEITC-based"*)

Mitigation program types—

- One-time transponder account credit (*also referred to as "one-time credit"*)

- Ongoing percentage toll rate discount (*also referred to a “ongoing discount”*)
- Ongoing state income tax credit (*also referred to a “ongoing tax credit”*)

For budgetary purposes, this report provides capital and O&M cost estimates for two of the mitigation program scenarios, both of which use income as the basis for determining eligibility: **Scenario 1—One-time transponder account credit** (per person) program, and **Scenario 2—Ongoing percentage toll rate discount** program. The cost estimates consider the initial development and start-up costs as well as staff for the ongoing administration, operation, maintenance, and oversight of both programs, where applicable, for the anticipated eight-year term of the initial Toll System Provider (TSP) contract. It is expected that these represent the range of costs that would be required to develop and implement the various options discussed in the following sections.

Section 2.1 describes the steps that would be taken to establish eligibility for either Scenario 1 or Scenario 2; and, in the case of Scenario 2, the annual process for renewing and re-verifying eligibility. Section 2.2 discusses the other eligibility and program types that were given consideration but for which costs were not estimated (i.e., area-base and FEITC-based eligibility, and the state income tax credit program). Cost estimates for Scenarios 1 and 2 are provided in Section 3, *Preliminary Cost Estimates*.

2.1 Mitigation Programs for which Cost Estimates Have Been Prepared

The **Scenario 1—one-time transponder account credit** and the **Scenario 2—ongoing percentage toll rate discount** are the two programs selected to represent the range of potential costs for a toll mitigation program for low-income populations in the Project area. Both programs would use income-based eligibility criteria, and both would require the use of a transponder. Low-income individuals who choose to use a video toll rate would not be eligible to receive a credit/discount.

Individual Income-Based Eligibility. The SFEIS defined “low-income” individuals as those living in households with a total income below the federal poverty threshold. The analysis did not address the administrative issue of how to determine each individual’s low-income status. In practice, it would be time-consuming and intrusive to set up a low-income toll mitigation program that would involve individually verifying the income of each person who applies for the program. Therefore, for purposes of estimating administrative costs, this report assumes the following for initially determining and for re-evaluating eligibility:

- A minimal low-income eligibility verification process, such as requiring proof of an individual’s participation in one or more existing, state/federal assistance programs that provide benefits to low-income individuals. Under this approach, the TSP would identify which specific state/federal assistance program (or programs) would be used. For example, eligibility for the low-income toll discount could be based on participation in programs such as Medicaid; Supplemental Security Income (SSI); Supplemental Nutrition Assistance Program (SNAP/Food Stamps); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); Temporary Assistance to Needy Families (TANF); and/or Low-Income Home Energy Assistance Program (LIHEAP).

This approach would be more efficient and less intrusive because it would avoid the need for the Tolling Body to collect information regarding income from each person who applies for a toll discount. However, eligibility prerequisites for these programs are not all the same—the programs include different income levels for eligibility, and the thresholds for some programs are higher than the federal poverty levels established by the U.S.

Department of Health and Human Services (HHS). Therefore, if the Tolling Body were to align with a program with an eligibility threshold higher than the HHS poverty level, it would result in greater revenue loss than would be expected were eligibility based upon the federal poverty threshold.

- Quality control checks on randomly selected accounts to validate applicants' eligibility. Due to the potential for long-term revenue loss, the process for an on-going program would be more robust than that for a one-time credit (Scenario 1). Furthermore, for an on-going program, recognizing that a person's circumstances are not constant, monitoring to identify changes in eligibility would be required. Enforcement and audit capabilities to verify eligibility would require staff and programs dedicated to those tasks.

With either Scenario 1 or Scenario 2, it would also be necessary to develop and incorporate into the enrollment process for either scenario, and the renewal process for Scenario 2, methods of handling exceptions to the processes that would be likely to occur because of system or human errors, some customers' atypical situations, or other circumstances. The administering agency would need leeway to exercise discretion and use judgment in determining each customer's eligibility within the general framework of the mitigation program's policies.

2.1.1 Scenario 1: One-Time Transponder Account Credit Program

The one-time credit program would provide a fixed dollar amount that would only be available to those who are identified as low-income under the income-based eligibility criteria and who establish and maintain a transponder account.

Enrollment. If the one-time transponder account credit program is chosen for implementation, an enrollment process will be required of those wishing to receive the credit. The process could involve the following steps:

- Step 1. Customer would obtain an application on-line, by visiting a staffed Walk-up Center, or by visiting another readily available governmental service location. If on-line, the customer could submit questions and receive information about the program, including instructions on how to complete the application. If at a Walk-up Center, a Customer Service Representative (CSR), dedicated to the task of implementing the low-income toll program, would be available to answer questions and provide assistance.
- Step 2. Customer would complete an application and bring it to the Walk-up Center, together with a valid driver's license and verification of eligibility, which could consist of proof of participation in a specified state/federal government financial assistance program (SSI, SNAP, etc.).
- Step 3. At the Walk-up Center, a CSR would assess eligibility by reviewing with the customer the low-income application and other required documents. Those determined eligible would be asked to sign a statement attesting to the truth and accuracy of the information provided by the customer. Non-eligible customers would be directed to either provide additional information to qualify for the discount, or establish an account through the process established for the general public.
- Step 4. The CSR would enter into the LSIORB Toll Collection System the eligible low-income customer's account information that reflects eligibility for the one-time credit, and file the applicant's paperwork.

Step 5. The CSR would provide a transponder associated with the new low-income account or link an existing transponder already held by the person to the new low-income account.

The customers would then be able to sign up for a transponder account, either on-line or at the Walk-up Center, prior to or after the commencement of tolling. The credit would be applied to a user's transponder account and would be used to offset tolls incurred by the user during the 90-day period following the date that toll collections begin on the Project. Any unused credit would expire at the conclusion of that 90-day period.

Because this scenario would provide a one-time credit, there would be no renewal/re-verification process.

2.1.2 Scenario 2: Ongoing Percentage Toll Rate Discount Program

This cost estimate scenario is based on an ongoing percentage toll rate discount, whereby the toll rates would be discounted by a fixed percentage of the applicable transponder toll rate established for frequent users or non-frequent users of the tolled bridges.

Enrollment. For Scenario 2, initial eligibility would be determined through enrollment Steps 1–5 identified for Scenario 1. If the enrollment created a new account, the individual would be required to deposit a minimum balance into the account.

Renewal. The expected administrative process to renew existing account holders in this program is summarized as follows:

Step 1. Two months prior to the date of the expiration of the customer's enrollment in the discount program (i.e., 10 months after the initial acceptance or 10 months after each subsequent acceptance), the existing customer would be sent a renewal letter, accompanied by a renewal form, to (1) notify the customer that enrollment will expire at the 1-year anniversary, and (2) determine the customer's interest in, and eligibility for, continued enrollment. The letter would explain the renewal process, noting that customers wishing to remain in the program must submit the renewal form, by mail or in person, by a given deadline. The renewal form would require the customer to:

- State the customer's wishes to remain in the program.
- Provide an updated copy of proof of enrollment in previously identified, qualifying state/federal program or proof of residency, depending on the eligibility criterion chosen.
- Sign and date the form, which includes a statement regarding the veracity and accuracy of the information provided.

Step 2. Prior to the deadline stated in the letter, the customer would be required to return the completed renewal form and supporting information.

Step 3. If the deadline is met, the CSR would review the customer's renewal form and assess whether the customer's eligibility in the program had been maintained. The renewal of eligibility would be approved or denied and notification is sent to the customer. The CSR would then update the account by entering the determination into the toll discount program.

If the deadline is missed, the CSR would notify the delinquent customer, by letter, that the customer will be removed from the program upon expiration of the current 12-month

eligibility period unless the customer responds within a predetermined number of days to submit a renewal form and supporting documentation. The letter would also notify the customer that their account would convert to a general (i.e., non-discounted) account.

Step 4. Additional interviews may be scheduled if more details about changes were needed to assess a customer’s continued eligibility, or if the customer wished to appeal a rejected eligibility application or discuss the case with the CSR.

Verification for Quality Control. Under Scenario 2, recurring due diligence would be performed for randomly selected accounts on an on-going basis to validate customers’ eligibility for this program. Through the duration of the low-income discount program, on a frequent and consistent basis, low-income accounts would be selected at random for verification of information provided by the customers. The sample size, confidence level, and confidence interval² would be determined once the program is underway and adjusted as needed throughout the life of the program. This verification process would apply only to the ongoing discount program (Scenario 2), not the one-time discount type (Scenario 1). This quality control approach would result in a higher confidence level than the one-time quality control check proposed with Scenario 1.

The verification process would consist of contacting the office of the state or federal program that was used to demonstrate low-income eligibility in order to validate the individual’s current eligibility for that program. Agreements with these other government programs would likely be required for sharing of this information. If the individual’s low-income status is not validated by the applicable office, the applicant would be notified that additional verification of low-income status is needed or the low-income discount would be discontinued. Throughout the low-income discount program, samples would be recorded and evaluated to identify possible program errors.

2.2 Other Eligibility Types and Mitigation Programs Considered

2.2.1 Area-Based Enrollment Eligibility

An alternative enrollment approach could be based on residency within a geographic area identified as low-income (see Figure 1). Census Block Groups based on current American Community Survey (ACS) income data would be used as the base geographic unit for determining residency in a low-income area. The low-income status of individual Block Groups would be determined based on the percentage of residents living in a Block Group in households with a total income below the federal poverty threshold. Block Groups would be deemed to be low-income if they meet any of the following criteria used in the 2012 SFEIS:

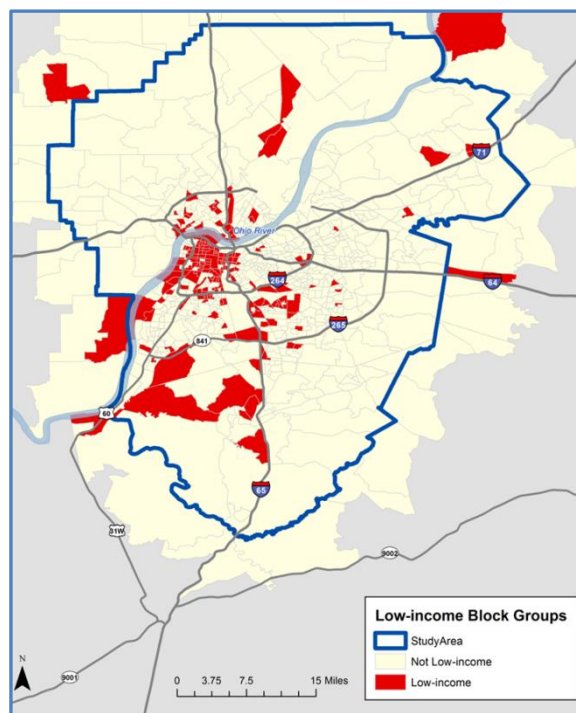


Figure 1— Low-Income Block Groups
(Source: Toll Discount Analysis, October 2014)

² For definitions and calculations of these variables see <http://www.surveysystem.com/sscalc.htm>

- The poverty rate of the Block Group is greater than 50%.
- The poverty rate of the Block Group is at least 10% higher than the poverty rate of the Louisville Metropolitan Planning Area (LMPA).
- The poverty rate of the Block Group is at least 10% higher than the poverty rate of the county in which the Block Group is located.

Under this enrollment approach, anyone living within a Census Block Group defined as low-income according to any of the foregoing criteria would be eligible for a low-income toll discount. According to the 2008-2012 ACS, 20.7% of the LMPA population lives in a Block Group that qualifies as low-income according to the criteria listed above. The figure illustrates the locations of the low-income Block Groups identified through this methodology.

An administrative cost estimate for this scenario has not been calculated, as the requirements (and therefore the cost) to administer the program would not be less than that of Scenario 1 or greater than that of Scenario 2. This approach could require a more robust verification method compared to Scenario 1, but not necessarily as robust as that of Scenario 2. To ensure that a customer is residing within the boundary of the area identified as low-income, validation methods could include review of a customer’s documents identifying residency (e.g., utility bills, driver’s license, rental agreement, etc.). Eligibility would be reviewed and validated through the initial enrollment steps identified in Section 5.1. A quality control check of randomly selected accounts would also be conducted to validate an applicant’s eligibility.

2.2.2 FEITC-Based Enrollment Eligibility and Ongoing State Income Tax Credit Program

Another alternative enrollment approach could be to provide a state tax credit that would reimburse a percentage of tolls paid in the tax year by an individual filing a state income tax return. Eligibility for the tax credit would ultimately be defined through each state’s legislative process. For the purpose of this analysis, it has been assumed that eligibility might be aligned with that of the Federal Earned Income Tax Credit (FEITC). It has been further assumed that only individuals taking the FEITC on their federal tax return would be eligible to claim the state tax credit.

To be eligible for the FEITC, a person must have earned income from employment, self-employment, or another source; meet rules for workers without a qualifying child or have a child that meets all the qualifying-child rules; meet other requirements such as having a Social Security Number; and file a federal income tax return. The 2011 income limits for FEITC eligibility are shown in Table 1, below.

Table 1: Income Limits for FEITC in 2011

Children	Maximum Income (Earned or Gross Adjusted)	
	Single filing	Joint filing
3 or more	\$43,998	\$49,078
2	\$40,964	\$46,044
1	\$36,052	\$41,132
0	\$13,660	\$18,740

Source: IRS.gov

Persons who meet these low-income eligibility criteria could receive toll relief in the form of a mitigation program that would offer a state income tax credit. The eligibility type associated with the receipt of the FEITC would apply only to this ongoing tax credit program. An individual seeking a tax credit would also be required to file a state income tax return. The state tax return would be

needed because the credit would be a state-provided credit on the income reported on the state tax forms. It is anticipated that most individuals who are eligible for the FEITC would be able to establish eligibility for a state income tax credit.

Verification Procedures—For a state income tax credit, verification of eligibility would potentially be much more involved than for the other methods. The sharing of FEITC information would require the approval of the Internal Revenue Service (IRS). Adherence to security standards and requirements of the IRS would be necessary. Modification of the tax forms, instructions, software, database, etc., would be required to manage this new tax credit. If the state taxing authorities were not responsible for verifying whether individuals claiming the state tax credit had also claimed the FEITC credit,³ this responsibility would fall to the TSP. Upon receipt of a statement identifying the person claiming the credit and the amount claimed, the TSP would need to verify the amounts claimed by reconciling with toll system records. Persons found to have claimed a credit without having claimed the FEITC on their federal return or who claimed more credit than that for which they were eligible would be reported to the state tax agency for appropriate action.

Data Security—Securing and properly handling sensitive and confidential income data would be essential, as any breach in this security could have a significant financial and non-financial cost. This would be especially true for the state tax credit approach if FEITC data is shared with the TSP. Sharing of this data would demand that all servers and storage systems meet IRS standards. Additional controls and possibly additional staff to provide for proper handling of this data may be required. (See Section 3.1, “Data Security,” for additional information.)

While providing an ongoing income tax credit program would be a potential method of mitigating the financial effect of tolling on low-income populations, the cost of implementing and maintaining this type of program has not yet been calculated. Evaluating the program requirements on which a cost estimate would be based—including making statutory changes in state tax laws within the two states, and working within the established policies and procedures of the two states’ taxing agencies, as well as the IRS—are beyond the expertise of the authors of this report.

3 PRELIMINARY COST ESTIMATES

This section presents the preliminary cost estimates for the administrative and oversight functions related to low-income discount programs based on the eligibility and discount types described above. The two cost scenarios presented to represent the range of potential costs for a low-income toll discount program are based on the one-time account credit and an ongoing percentage toll rate discount program (Scenarios 1 and 2, respectively, described in Section 2). Note that the costs are in 2014 dollars and include initial capital investments, annual operations, and, in the case of the ongoing percentage toll rate discount program, lifecycle upgrades to the system. Adjustment for inflation would be needed to estimate program costs at the time tolling is initiated (anticipated

³ Toward the goal of improving Indiana’s state income tax structure, in September 2014 the State published *Tax Competitiveness and Simplification Report: Recommendations from the Indiana Tax Competitiveness and Simplification Conference*. Identifying the state’s income tax return forms as “unwieldy and burdensome,” the report noted this complexity “creates a perception of unfairness...and imposes a high administrative burden on both taxpayers and the state....An ideal remedy would eliminate nearly all of the modifications, deductions, and [tax] credits,” including the FEITC. (p.30) Neither the likelihood nor effects of modifying/eliminating tax credit programs in Indiana can be known at present. However, it is probable that any changes to tax credits in general by the State would affect a tolling-related tax credit program.

2016). Table 2 (p. 14) lists anticipated critical path milestones for implementing a low-income discount program. Tables 3 and 4 (pp. 15–16) provide the estimated nominal costs for each scenario’s administrative and oversight functions.

Scenario 1: One-Time Transponder Account Credit Program. This cost estimate for the one-time account credit is based on the enrollment steps described in Section 2.1.1, plus minimal quality control check for income eligibility verification. The estimated capital cost for this scenario is \$1,713,450 and the one-year operation cost estimate is \$487,000 for a total cost of approximately \$2,100,000. This one-year operations cost includes approximately six months to plan the program and begin enrollments prior to the commencement of toll collections on the bridge, and another six months to implement and support the program.

Scenario 2: Ongoing Percentage Toll Rate Discount Program. This cost estimate scenario is based on an ongoing percentage toll rate discount. Eligibility would be reviewed and validated through the initial enrollment steps identified in Section 2.1.1, and recurring quality control checks, with a higher confidence level, for randomly selected accounts to validate a customer’s eligibility for this program. The estimated initial capital cost for this scenario is \$2,522,000 and the on-going annual operation cost estimate is \$737,500.

Tolling will continue until the project’s financing requirements have been met and the public private agreement between Indiana and its developer is terminated, approximately 35 years. It is assumed the capital investments for the ongoing percentage toll rate discount program would have an average of an eight-year life span as more efficient methods, Business Rules, and CONOPS are developed and new technology advancements are employed to realize efficiencies and cost savings. It is, therefore, anticipated that there would be approximately five life cycles during the expected 35-year tolling process. Table 5 (p. 16) provides a “low” and a “high” life-cycle cost estimate of \$716,250 and \$1,247,000, respectively. For budgetary purposes, an average eight-year capital investment life-cycle cost estimate of \$1,000,000 is used (i.e., a mid-point of the range between the high and the low estimates). Assuming there would be five life cycles, the total estimated capital investment cost would be approximately \$7,500,000 for Scenario 2 (i.e., an initial capital cost of approximately \$2,500,000, plus approximately \$5,000,000 in additional capital costs over the 35-year period). The total nominal cost over the 35-year period—including annual operating costs of approximately \$737,000 and capital cost of approximately \$7,500,000—would be approximately \$33,000,000.

3.1 Cost Estimate Breakdown

Cost estimates are presented for both the one-time transponder account credit and ongoing percentage toll rate discount mitigation programs. The costs below are budgetary level costs as Business Rules, Toll Policy, and Concept of Operations (CONOPS) are not yet available. The major elements of work assumed for both cost estimates are listed below by categories identified on Tables 2 and 3.

Mitigation Program Business Rules, Development, Integration and Documentation. This task would require the planning, development, and implementation of the mitigation program chosen. This task, which would be directed by a Project Manager, would consist of the following major elements of work:

- Develop Business Rules and Toll Policy (Business Analyst)
- Determine Program and Technical Requirements (Technical Analyst)

- Develop Preliminary and Financial Design Documentation (Documentation Specialist, Technical Architect and Technical Analyst)
- Develop Low-Income Credit/Discount Program (or Modification of Existing to Meet Business Rules) (Technical Architect and Software Developer)
- Integrate Work Flow (and Program) with the Toll Collection System and External Agencies (Software Developer and Test Analyst)
- Document Credit / Discount Program Functionality and Operations Procedures (Business Analyst, Technical Analyst and Documentation Specialist)

The Project Manager would be involved in each of the six tasks outlined above, as well as in managing the schedule, budget, and scope in accordance with the requirements. The Project Manager would also be responsible for quality assurance review.

Vendor Testing. The Toll System Provider (TSP) would plan and test end-to-end functionality to assure the mitigation program and the toll collection system work in accordance with Business Rules, Toll Policy, and technical requirements. This testing would address all functional and performance elements to verify requirements, as outlined in the Business Rules task on Table 3. The major elements of work would include:

- Develop Test Plan (Test Manager Quality Assurance Analyst)
- Develop Test Procedures (Test Analyst)
- Conduct Test Procedures (Test Analyst, Test Manager, and Quality Assurance Analyst)
- Manage Defects and Close Out Issues (Test Analyst, Test Manager, and Quality Assurance Analyst)

Independent Verification and Validation (IV & V) Testing and Certification. An independent verification and validation test would be conducted by a third party to confirm that the toll collection system and toll mitigation program, operations procedures, and approach meet all stakeholder requirements. This test would provide an end-to-end user and program-level verification that all training is in place and the program conforms to the intended requirements, and that the toll collection system and toll mitigation program and processes provide an equitable low-income toll credit or discount (depending on which program is chosen) while safeguarding the states' revenues. The major elements of work for the IV & V program are as follows:

- Training and Discovery (Test Manager and Test Analyst)
- Develop Test Plan (Test Manager Quality Assurance Analyst)
- Develop Test Procedures (Test Analyst)
- Conduct Test Procedures (Test Analyst, Test Manager, and Quality Assurance Analyst)
- Manage Defects and Close Out Issues (Test Analyst, Test Manager, and Quality Assurance Analyst)

All CSRs would attend two weeks of training to ensure consistent service and proper oversight of the program. If an ongoing percentage toll rate discount is chosen, follow-up training through operations would occur on a regular basis and as needed. The major elements of work for training would include:

- Develop Training Materials from Operations Procedures and Discount Program Documentation (Training Specialist, Documentation Specialist)
- Conduct Training Sessions (Test Conductor)

It is estimated that a facility would be rented for this two-week training and, while most of the training materials would be presented online and made available online, some job aids and other materials would be printed for training. An allocation for renting a training facility and nominal printing costs are included in this cost estimate.

Start-up and Support. Additional staff might be required to support the chosen mitigation program during the initial year. Any additional space or facility costs are not covered in this item. This cost includes a fully loaded rate for four (one-time credit program) and eight (ongoing discount program) staff to support the Walk-Up Centers. The additional staff would receive training, which is reflected in the hours allocated for the staff in this line item. For the purpose of this cost estimate, it is assumed that the same materials and facility would be used for all training activities.

Marketing, Communications, and Advertising. A tailored marketing, communications, and advertising plan would be required to identify and engage customers who are eligible to enroll in the selected mitigation program. This program would be designed to effectively reach out to eligible candidates based on the selected program, and provide information about how the program works and how the customers can benefit from such a program. The major elements of work for this program would be as follows:

- Develop Marketing Plan (Project Manager, Communications Specialist)
- Develop Advertising Plan (Project Manager, Communications Specialist, Designer, Graphics Artist, Advertising Specialist)
- Create and Develop Brochures and Other Promotional Materials (Communications Specialist, Designer, Graphics Artist, Advertising Specialist)
- Media Buys for Advertising in Newspapers, TV, Radio or Internet. A unit price savings is expected for a larger number of media buys

To save costs, it is assumed that information to be provided on the website would be added to the existing Customer Website for the LSIORB Project.

Dedicated Customer Service Center Representatives. The selected mitigation program would require a customer service center staff dedicated to the implementation of the program. The specially trained staff would address customers' issues and assure resolution in a timely and appropriate manner. This staff would also research customer inquiries and issues, and determine customer eligibility according to the criteria chosen. It is estimated that a minimum of four staff members (one lead and three CSRs) would be required to provide support at each of two Walk-up Centers (one in each state). The ongoing discount program estimate also contemplates eight staff members who might be required due to the complexity of interactions necessary to do quality control checks to verify eligibility. The hourly loaded rate includes the contractor's cost of supplying each staff member with a laptop computer. For the purpose of this estimate, it is assumed that the Walk-up Centers would be used to administer the selected mitigation program.

Dedicated State Oversight. Due to the unique nature of this program and sensitivity of use of confidential income data that would be required, two dedicated state program administrators are included in this cost estimate. The estimates are based on fully loaded rates that include benefits.

In addition to other duties, these program administrators would prepare an annual audit for each state to ensure the proper administration of the program.

Annual Audit. An external audit would also be required annually to ensure all operations, financial, and program processes are followed and all revenues are protected from fraud or loss. An independent accounting firm would perform the following tasks:

- Review Operations Processes and Procedures (Financial Consultant)
- Report Financial and Operations Reports (Financial Consultant)
- Interview Staff (Financial Consultant)
- Develop Report and Present Findings (Financial Consultant and Principal in Charge)

3.2 Milestones for Implementing a Toll Mitigation Program

The table below lists the critical path milestones for implementing the program, along with their estimated completion timeframes.

Table 2: Critical Path Milestones

Milestones	Estimated Completion Timeframe
Develop Concept of Operations for Toll Mitigation Program	4 weeks
Develop Business Rules and Toll Policy	2 weeks after completion of CONOPS and must be coordinated with LSIORB TCS Business Rules and Toll Policy
Develop Program and Technical Requirements	4 weeks after completion of Business Rules and Toll Policy
Preliminary and Detail Design Review	12 weeks after the completion of Program and Technical Requirements
Vendor Test Plan and Procedures	8 weeks after Preliminary and Detailed Design Review
Training Materials and Operations Procedures	4 weeks after Test Plan and Procedures
IV & V Test Plan	4 weeks after Training Materials and Operations Procedures
Vendor Testing Complete	4 weeks
IV & V Testing	4 weeks
Marketing and Communications Plan	8 weeks after completion of TCS Business Rules and Toll Policy.
Advertising Plan	4 weeks after Marketing and Communications Plan
Hire Operations Staff	4 weeks after completion of Vendor Testing
Train Operations Staff	2 weeks after completion of Hire Operations Staff
Communicate Program and Begin Enrollment	8 weeks before Revenue Service

Table 3: Estimated Capital Costs

"One-Time Transponder Account Credit Program"				"Ongoing Percentage Toll Rate Discount Program"			
Tasks and Roles	Hours	Hourly Rate	Extended Costs	Role	Hours	Hourly Rate	Extended Costs
Discount Program Business Rules, Policy, Operations Procedures, Development, Integration							
Business Analyst (1)	400	\$250	\$100,000	Business Analyst (2)	800	\$250	\$200,000
Technical Analyst(1)	250	\$200	\$50,000	Technical Analyst (2)	500	\$200	\$100,000
Project Manager (1)	200	\$200	\$40,000	Project Manager(1)	500	\$200	\$100,000
Documentation Specialist (1)	80	\$100	\$8,000	Documentation Specialist (1)	200	\$100	\$20,000
Technical Architect (1)	200	\$250	\$50,000	Technical Architect (1)	250	\$250	\$62,500
Software Developer(1)	500	\$250	\$125,000	Software Developer (2)	1,000	\$250	\$250,000
Test Analyst(1)	650	\$200	\$130,000	Test Analyst (2)	1,300	\$200	\$260,000
		Sub-Total	\$503,000			Sub-Total	\$992,500
Vendor Testing							
Test Manager (1)	150	\$225	\$33,750	Test Manager	300	\$225	\$67,500
Quality Assurance Analyst (1)	100	\$175	\$17,500	Quality Assurance	200	\$175	\$35,000
Test Analyst (1)	500	\$200	\$100,000	Test Analyst (1)	1,000	\$200	\$200,000
		Sub-Total	\$151,250			Sub-Total	\$302,500
IV & V Testing and Certification							
Test Manager (1)	200	\$225	\$45,000	Test Manager (1)	200	\$225	\$45,000
Quality Assurance Analyst (1)	40	\$175	\$7,000	Quality Assurance Analyst (1)	40	\$175	\$7,000
Test Analyst (3)	800	\$200	\$160,000	Test Analyst (3)	1,000	\$200	\$200,000
		Sub-Total	\$212,000			Sub-Total	\$252,000
Training							
Training Specialist (1)	160	\$120	\$19,200	Training Specialist (1)	160	\$120	\$19,200
Documentation Specialist (1)	100	\$100	\$10,000	Documentation Specialist (1)	100	\$100	\$10,000
Test Conductor (4 Operations Staff)	320	\$25	\$8,000	Test Conduct (8 Operations Staff)	640	\$25	\$16,000
Printing / Facility Costs	1	\$10,000	\$10,000	Printing / Facility Costs	1	\$10,000	\$10,000
		Sub-Total	\$47,200			Sub-Total	\$55,200
Startup Support (1 year additional support)							
Customer Training Specialists (2)	4,000	50	\$200,000	Customer Training Specialists (4)	8,000	50	\$400,000
		Sub-Total	\$200,000			Sub-Total	\$400,000
Marketing, Communications and Advertising							
Communications Specialist (1)	500	200	\$100,000	Communications Specialist (1)	500	200	\$100,000
Advertising Specialist (1)	500	200	\$100,000	Advertising Specialist (1)	500	200	\$100,000
Graphics Artist and Designer (1)	500	120	\$60,000	Graphics Artist and Designer (1)	500	120	\$60,000
Marketing Project Manager (1)	200	200	\$40,000	Marketing Project Manager (1)	200	200	\$40,000
Media Buy	20	15,000	\$300,000	Media Buy	40	12,000	\$480,000
		Sub-Total	\$600,000			Sub-Total	\$520,000
Total Capital Delivery Costs			\$1,713,450	Total Capital Delivery Costs			\$2,522,200

Table 4: Estimated Annual Operation and Maintenance Costs

"One-Time Transponder Account Credit Program"				"Ongoing Percentage Toll Rate Discount Program"			
Tasks and Roles	Hours	Hourly Rate	Extended Costs	Role	Hours	Hourly Rate	Extended Costs
Operations and Maintenance Costs (per year)							
Dedicated Call Center							
Customer Service Specialist (3)	6,000	\$25	\$150,000	Customer Service Specialist (7)	16,000	\$25	\$400,000
Lead Customer Service Manager (1)	2,000	\$50	\$100,000	Lead Customer Service Manager (1)	2,000	\$50	\$100,000
		Sub-Total	\$250,000			Sub-Total	\$500,000
State Oversight							
Program Administrator - KY	2,000	35	\$70,000	Program Administrator - KY	2,000	35	\$70,000
Program Administrator - IN	2,000	35	\$70,000	Program Administrator - IN	2,000	35	\$70,000
		Sub-Total	\$140,000			Sub-Total	\$140,000
Annual Audit - Financial Audit of Operations							
Financial Consultant (2)	450	200	\$90,000	Financial Consultant (2)	450	200	\$90,000
Principal In Charge	25	300	\$7,500	Principal In Charge	25	300	\$7,500
		Sub-Total	\$97,500			Sub-Total	\$97,500
Annual Operations and Maintenance Costs			\$487,500				\$737,500

Table 5: Estimated Life-Cycle Capital Costs—Ongoing Discount Program

Low Life-Cycle Estimate				High Life-Cycle Estimate			
Task and Role	Hours	Hourly Rate	Extended Costs	Role	Hours	Hourly Rate	Extended Costs
Program Integration with Replacement Toll Collection							
Project Manager (1)	200	\$200	\$40,000	Project Manager(1)	500	\$200	\$100,000
Documentation Specialist (1)	80	\$100	\$8,000	Documentation Specialist (1)	200	\$100	\$20,000
Technical Architect (1)	200	\$250	\$50,000	Technical Architect (1)	250	\$250	\$62,500
Software Developer(1)	500	\$250	\$125,000	Software Developer (2)	1000	\$250	\$250,000
Test Analyst(1)	650	\$200	\$130,000	Test Analyst (2)	1300	\$200	\$260,000
		Sub-Total	\$353,000			Sub -Total	\$692,500
Vendor Testing							
Test Manager (1)	150	\$225	\$33,750	Test Manager	300	\$225	\$67,500
Quality Assurance Analyst (1)	100	\$175	\$17,500	Quality Assurance	200	\$175	\$35,000
Test Analyst (1)	500	\$200	\$100,000	Test Analyst (1)	1,000	\$200	\$200,000
		Sub -Total	\$151,250			Sub-Total	\$302,500
IV & V Testing and Certification							
Test Manager (1)	200	\$225	\$45,000	Test Manager (1)	200	\$225	\$45,000
Quality Assurance Analyst (1)	40	\$175	\$7,000	Quality Assurance Analyst (1)	40	\$175	\$7,000
Test Analyst (3)	800	\$200	\$160,000	Test Analyst (3)	1000	\$200	\$200,000
		Sub -Total	\$212,000			Sub-Total	\$252,000
Total Capital Delivery Cost			\$716,250	Total Capital Delivery Cost			\$1,247,000
<p><i>This table summarizes the expected lifecycle costs to integrate and test the discount program. The life cycle costs are based on the following assumptions:</i></p> <ul style="list-style-type: none"> • <i>Replacement of existing Toll Collection System, and reuse of existing documentation for the Business Rules, policy and user manuals.</i> • <i>Integration to new system with some documentation for Interface Control Documents and any minor updates to operations based on a new Toll Collection System.</i> • <i>Vendor Testing and Independent Verification and Validation Testing and Certification required to integrate this module into the new systems.</i> • <i>Existing Staff and training not needed as the User Interface is the same.</i> <p>*NOTE: Average 8-year Life-Cycle Capital Cost Estimate, for budgetary purposes – \$1,000,000 (approximately the mid-point between the “low” and “high” estimates).</p>							

4 IMPLEMENTATION RISKS

The following is a summary of potential risks associated with implementing a toll mitigation program. This list is an initial draft, and is not intended to be comprehensive. Should this program move forward, potential risks should be investigated further, as well as actions to mitigate the risks.

Non-Standardization among Existing Income-Eligibility Programs. While there are not data readily available in the toll industry regarding income verification processes, there are sufficient data, reports, and audits in other markets that have documented that income eligibility programs are not standardized, have numerous exceptions, and have a high cost of verification. The U.S. General Accountability Office Report, “WIC [Women, Infants, Children] Program Improved Oversight of Income Eligibility Determination Needed” (Appendix A), cites numerous examples in which discretion granted by federal law, regulations, and guidance has resulted in some variation in policy across states and localities. As a result, an individual deemed eligible for assistance in one jurisdiction may not meet eligibility requirements in another.

In the case of the LSIORB Project, two states would be involved in the planning, implementation, and operation of the program. This would require, at a minimum, consultation between the two states to identify differences in the eligibility status and verification process used by each state, and how to address them.

Administrative Cost vs. Revenue. For the one-time transponder account credit program addressed in **Scenario 1**, while the administrative costs may be less, the risk for errors in eligibility approvals may be higher due to limited verification efforts planned for this scenario. Limited verification could create an enforcement challenge for the States whereby persons not intended to receive the benefit of the discounted rate (i.e., those who are not low-income) could seek to acquire transponders that would allow them to enjoy the discount rate. This risk could result in a reduction of collected toll revenue.

For the ongoing percentage toll rate discount program addressed in **Scenario 2**, additional development of a systematic, repeatable, and enforceable eligibility verification is essential to ensure enrollment processes are followed and traceable. Scenario 2 has the higher administrative costs due to more rigorous quality control and auditing to reduce errors and validate eligibility with a higher level of confidence. In addition, it is expected that, for this ongoing discount, more customers would contact CSRs with inquiries about how the discount is applied or questions related to transactions. Although this approach would be expected to increase capital and O&M costs, it would also be expected to minimize the loss of toll revenue that might occur under Scenario 1.

Legal Concerns. Toll discount programs in other jurisdictions have been subject to litigation challenges. In some cases, the lawsuits have taken years to resolve. Implementing a toll discount program may involve litigation costs to defend the program.

Toll Enforcement. For the on-going discount, if large numbers of toll mitigation program customers dispute tolls or notices of violations, this could result in losses in toll fees and increased operational costs while account eligibility is verified through multiple agencies. The invoice, violations, and subsequent collections process would require additional workflows and quality assurance procedures to verify income eligibility prior to issuing notices such as invoices or violations to customers. This would increase operational costs to the program, delay the transfer of money owed to the states’ trustees, and limit timely enforcement actions by the states and the toll system provider.

Data Security. The mitigation program would be required to secure and properly handle sensitive and confidential income data. Any breach in this security could have a significant financial and non-financial cost. Program staff may require additional ongoing security training to protect personal and other confidential data collected for this program. Depending on the requirements, a set of specialized IT systems separate from the LSIORB Toll Collection System may be required to keep this data secure and protected to the applicable standard of care for this data. This would be especially true for the state tax credit approach if FEITC data is shared with the TSP. Sharing of this data would demand that all servers and storage systems meet IRS standards. Additional controls and possibly additional staff to provide for proper handling of this data may be required.

5 REFERENCES

1. Louisville-Southern Indiana Ohio River Bridges *DRAFT Assessment of Economic Effects of Tolling and Potential Strategies for Mitigating Effects of Tolling on Low-Income and Minority Populations*.
2. Louisville-Southern Indiana Ohio River Bridges Traffic & Revenue Study. Last updated October 2013.

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APPENDIX A

General Accountability Office Report:

WIC [Women, Infants, Children] Program

Improved Oversight of Income Eligibility Determination Needed