Session #3

THE GRASSROOTS PUBLIC/PRIVATE TOLL MOVEMENT - THE LAKE OF THE OZARKS COMMUNITY BRIDGE

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ABSTRACT

From the 1930's through the 1960's, most of the toll-financed transportation facilities in the U.S. were large, statewide initiatives, such as the New Jersey, Massachusetts, and Kansas Turnpikes. When the toll movement was reborn in the form of innovative financing in the late 1980's and early 1990's, many of the proposed projects were mega-projects, such as the Orange County Tollroads and Denver's E-470. From the mid-1990's into the 21st century, a new type of toll project has emerged – the relatively small, regional project which integrates the strengths of private and public financing to meet community and regional transportation needs. The Lake of the Ozarks Community Bridge, in the State of Missouri, is a successful prototype of this new grassroots public/private toll project.

Construction of the 2,695-foot (821 m), $18.2 million toll bridge began in March, 1996. Opened in May, 1998, the bridge connects the east and west sides of the Lake of the Ozarks, a popular recreation and resort attraction in central Missouri. The bridge is owned and operated by a private, not-for-profit corporation — the Lake of the Ozarks Community Bridge Corporation (LOCBC). The project was financed through the sale of $40.1 million in tax-exempt, toll revenue bonds by the LOCBC.

The LOCBC was Missouri's first transportation corporation, formed under the 1990 Missouri Transportation Corporation Act, which authorized the formation of non-profit corporations to develop and advance transportation projects. The bridge project is a joint effort of the LOCBC and the Missouri Department of Transportation, which funded and constructed the $5.5 million approach roadways to the bridge and provided technical assistance to the LOCBC for the bridge project.

For these grassroots projects to be successful, they must address a *public need*, be driven by *private-sector opportunity*, be authorized by *enabling legislation*, represent a *viable project concept*, and be implemented through a *public/private partnership*. The Lake of the Ozarks Bridge project will be described through each of these factors, and lessons learned which apply to other project opportunities will be discussed.

The author believes that, although such projects may not represent the leading edge of transportation privatization, these small to mid-size projects are more within the "institutional comfort zone" of state DOT's, regulators, designers, contractors, and investors. Therefore, they

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are more implementable and may offer more real opportunities to improve our transportation systems.

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The Public/Private Toll Movement -- The Lake of the Ozarks Community Bridge

From the 1930s through the 1960s, most of the toll-financed transportation facilities in the U.S. were large, statewide initiatives, such as the New Jersey, Massachusetts, and Kansas Turnpikes. When the toll movement was reborn in the form of innovative financing in the late 1980s and early 1990s, many of the proposed projects were mega-projects, such as the Orange County, California Tollroads and Denver's E-470.

In the mid-1990s, a new type of toll project has emerged -- the relatively small, regional project which integrates the strengths of private and public financing to meet community and regional transportation needs. The Lake of the Ozarks Community Bridge, in the state of Missouri, U.S.A., is a successful prototype of this new grassroots public/private toll project. It represents the innovation that will move toll projects well into the 21st century.

PROJECT BACKGROUND

The Lake of the Ozarks is a popular recreation and resort area in the central portion of Missouri. The lake was formed by the construction of Bagnell Dam for power generation, from 1929 through 1932, by the Union Electric utility company, headquartered in St. Louis, Missouri. In addition to its function of power generation, the Lake of the Ozarks became a major regional recreation and tourism attraction. For over 50 years, the lake has drawn visitors, primarily from Missouri, Illinois, Iowa, Kansas, and other midwestern states, for boating, fishing, and golf. Over the last few decades, the lake has become a popular retirement area for midwesterners, as well.

Although the lake has provided significant economic opportunity for central Missouri, it also has been a barrier to travel. Compared to the other major lakes in Missouri, the Lake of the Ozarks has significantly fewer bridges crossing it. Table 1 shows that the Lake of the Ozarks has far fewer bridges per mile of shoreline than the other major Missouri lakes. As a result, highway routes around the lake are circuitous. Routes from the east side to the west side of the lake average about 30 miles around the south and about 54 miles around the north. During the busy summer tourist season, traffic on portions of these routes is often stop-and-go, resulting in lengthy travel times and frustrating delays.

Due to the inconvenient travel from one side of the lake to the other, the lake area has developed into what is often viewed as two, separate tourist areas -- the "St. Louis side" on the east and the "Kansas City side" on the west. There is less economic and social interaction between the two sides of the lake than one would expect based on their proximity. Area business leaders feel that this has impeded the realization of the full economic potential of the Lake of the Ozarks.

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Table 1 - Bridges Over Major Missouri Lakes

Lake	Miles Of Shoreline	Bridges	Ratio (Shoreline-To-Bridges)
Stockton	298	9	33
Bull Shoals	740	16	46
Table Rock	745	8	93
Truman	958	17	56
Lake of the Ozarks	1150	4	288

KEYS TO SUCCESS OF PUBLIC/PRIVATE PARTNERSHIPS IN TRANSPORTATION

The Lake of the Ozarks Community Bridge (LOCB), which opened May 1, 1998, will help overcome these problems. The project is a public/private partnership of a private, not-for-profit corporation — the Lake of the Ozarks Community Bridge Corporation (LOCBC) and the Missouri Department of Transportation (MoDOT). This relatively small, regional project, which integrates the strengths of private and public financing tools and meets community and regional transportation needs, can be viewed as a successful prototype of a new era of grassroots public/private toll projects.

For these grassroots projects to be successful, they must:

- address a *public need*,
- be driven by *private-sector opportunity*,
- be authorized by *enabling legislation*,
- represent a *viable project concept*, and
- be implemented through a *public/private partnership*.

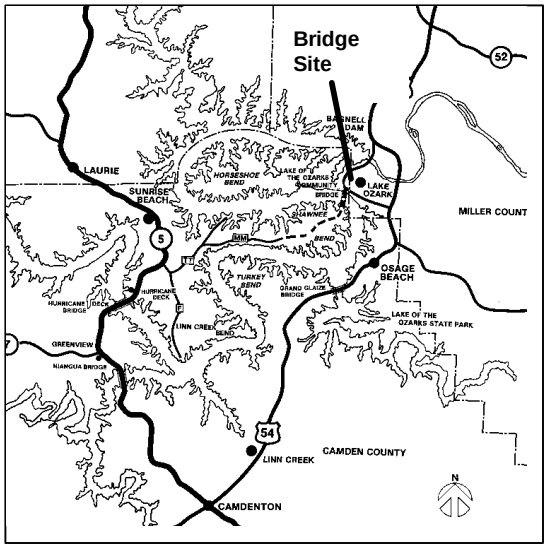
The LOCB project, which has each of these key ingredients, provides several lessons applicable to other public/private project opportunities.

Public Need

For 30 years, residents and business leaders at the Lake of the Ozarks pushed for a bridge across the main channel of the lake. The LOCB provides a 10-mile route from the east side to the west side of the lake, in contrast to the 30- to 50-mile existing routes (Figure 1).

The bridge provides a much-needed transportation *system linkage*, improving route continuity and reducing out-of-direction travel. Traffic models estimate that in its first year of service, the LOCB will save motorists over six million vehicle-miles of travel (VMT) in the lake area. This new link in the

Figure 1 – Project Area Map



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highway network will improve overall transportation *system efficiency*. It is estimated that the bridge will result in over $60 million in highway user costs over the next 20 years. (This estimate includes only vehicle operating costs and delay savings and does not include the significant reduction in accident costs which is anticipated due to the reduction in VMT.)

One of the major problems resulting from the circuitous nature of the lake area highway system is the long response time for emergency services such as law enforcement, fire protection, and emergency medical services. There have been many cases in which the lengthy response times for these services have had tragic results. The bridge will improve *public safety* by reducing the access times for these services.

The LOCB will facilitate *economic development* of the lake area by increasing the economic and social interaction of all parts of the region. The isolated pockets of economic development around the lake will be combined into a three-county, lake area economy. It is believed that this will have a synergistic effect on local economies -- creating greater economic opportunity and activity for the region as a whole than for the sum of its current parts.

For these and other reasons, the LOCB clearly meets a public need in the Lake of the Ozarks region.

Private-Sector Opportunity

Although the Lake of the Ozarks area has enjoyed significant land development over the last half-century, there is still vast development potential in the region. Among the least developed areas is Shawnee Bend. The eastern end of Shawnee Bend includes approximately 3,000 acres of undeveloped land. Most of this undeveloped land is owned by one company -- the owners of the Lodge of the Four Seasons -- one of the major resorts at the Lake of the Ozarks. The owners of the Lodge of the Four Seasons long have recognized that improving the access to Shawnee Bend, particularly from the east side of the lake, would greatly improve the development potential of this holding.

A master plan has been prepared to guide the development of Shawnee Bend. This master plan gives a quantitative indication of the magnitude of the private sector opportunity which the LOCBC will open up. The master plan includes, in part:

- 6,000 residential units
- Several golf courses
- Retail village and other commercial facilities
- Marina
- 700+ acres of open space of the Ozarks environment

The master plan continues to evolve over time as market conditions vary.

Because of this private sector opportunity, the landowners have been the prime movers of the bridge project from its inception. They provided the initiative and tenacity to overcome uncertainties and difficult bottlenecks during the development of the project. Business leaders

supported and actively lobbied for passage of the authorizing legislation. The owners of Shawnee Bend funded the application for and formation of the private, not-for-profit implementing corporation. They also guaranteed a portion of the costs of performing the preliminary and final feasibility studies for the bridge project and of final design and plans. Finally, Four Seasons Lakesites has contributed approximately 90 percent of the land required for right-of-way for the bridge and its approach roadways.

Enabling Legislation

In 1990, the Missouri legislature passed the *Missouri Transportation Corporation Act*. The preamble of the act states:

> "The . . . traffic congestion and limited roadways, . . . And the limited availability of state funds, require as a public purpose the promotion and development of public transportation facilities . . by new and alternative means."

The act provides for the formation of private, not-for-profit "transportation corporations" to fund, promote, plan, design, construct, maintain, and operate eligible transportation projects. Each transportation corporation must be authorized by the Missouri Highway and Transportation Commission (MHTC) -- the governing body of MoDOT. The projects advanced by transportation corporations must serve a public purpose.

The LOCBC, the first transportation corporation in Missouri, was formed in May, 1992, following the required application, hearing, and reviews. The application and review process was accomplished through the volunteer efforts of local supporters, with out-of-pocket expenses borne by the previously mentioned landowners. In November, 1992, the foundation of the public/private partnership was laid when the LOCBC and MHTC entered into a feasibility study agreement. Each partner agreed to pay half of the cost of the comprehensive feasibility study; this study would be needed to advance the project to the financing stage.

Viable Project Concept

In December, 1992, the LOCBC selected HNTB Corporation to conduct the comprehensive feasibility study for the project. HNTB subcontracted the traffic and revenue studies to Wilbur Smith Associates.

The engineering and environmental studies by HNTB included location alternatives analyses, roadway and bridge engineering studies, an environmental assessment, cost estimates, financing alternatives, and implementation planning. The bridge design consists of 11 constant-depth, welded steel plate girder spans, each 245 feet long, for a total bridge length of 2,695 feet. The substructure of the bridge consists of large-diameter (8-foot) drilled shafts socketed into bedrock. The piers vary in height from 75 feet to 235 feet from the bottom of the lake. Approximately 3.6 miles of approach roadways connect the bridge to the state highway system.

The traffic and economic studies by Wilbur Smith Associates included corridor growth studies,

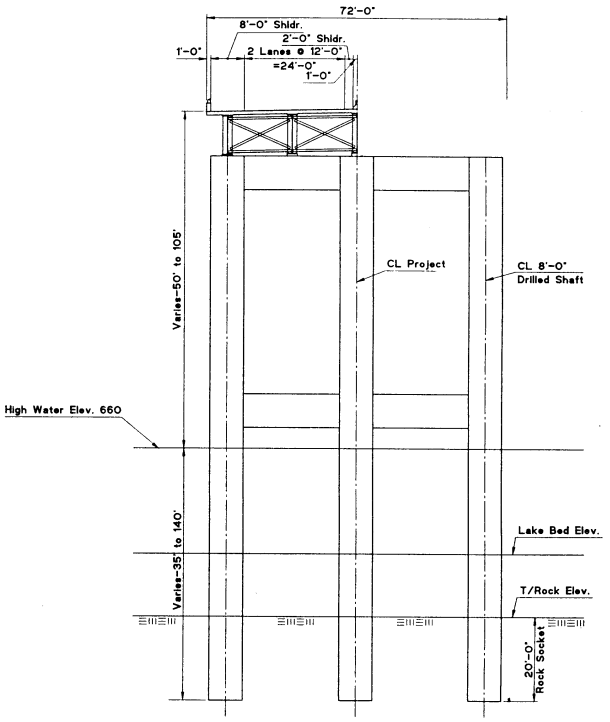
analyses of existing and projected traffic and travel characteristics, origin-destination surveys, and estimates of bridge traffic and toll revenue. The traffic and revenue estimates are summarized in Table 2.

Table 2 - Summary of Traffic and Toll Revenue Estimates

	Opening Year 1998	Design Year 2018
Average Daily Traffic		
Summer	3,100	13,500
Winter	1,900	9,200
Annual Toll Revenue	$ 1.59 million	$ 8.85 million

The traffic volume forecasts indicated that a two-lane bridge will provide sufficient capacity for the initial years' operation, but that a four-lane bridge will be needed sometime in the second decade of bridge operations.

Figure 2 – "Two-on-Four" Bridge Section



The draft feasibility study report was published in August, 1993. The feasibility analysis indicated that toll revenues would be sufficient to finance the construction of a two-lane bridge and approach roadway. However, since a four-lane facility would be needed to handle 20-year volumes, both the LOCBC and MoDOT believed that it was important to provide for the ultimate four-lane structure, to be constructed when traffic volumes demanded and toll revenues permitted.

The report recommended a staged implementation of the bridge to match the capital cost requirements with the toll revenue potential. The initial bridge would be a "two-on-four" structure with a two-lane deck constructed on a four-lane substructure (Figure 2). Likewise, the approach roadways would be constructed initially as two lanes on a four-lane right-of-way.

The financing analysis indicated that a "two-on-four" concept would not be feasible as a strictly private project. The concept would be feasible as a public/private partnership under either of two approaches. In the first approach, the state would contribute approximately $10 million, to be combined with revenue bond financing for a single, bridge/approach roadway project. In the second approach, the state would construct the approach roadways as a separate project, at a cost

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of approximately $10 million, leaving the LOCBC to finance and construct only the bridge and toll plaza as a revenue bond project.

Public/Private Partnership

The Missouri Transportation Corporation Act gives transportation corporations broad authority to contract with public and private entities for a number of purposes. Therefore, the feasibility study explored a number of project delivery options for the LOCB. Among the options considered were:

- Private project developer -- Build-Transfer-Operate or Build-Operate-Transfer
- Design/build
- Conventional design/construction bid

It was concluded that the LOCBC could achieve the most economical project implementation under a conventional design/construction bid delivery option. Since this was the first private project in the state of Missouri under this act, project developers or contractors might have demand a premium to assume a higher-than-normal implementation risk in a first-time institutional environment. Therefore, the bridge project was bid conventionally in a manner as similar as possible to MoDOT projects.

Once the feasibility study findings were presented to the LOCBC and the MHTC, the public/private partnership evolved further. Two separate projects were established (Figure 6) -- a toll-financed bridge/toll plaza project by the LOCBC (the "Corporation project") and a state highway-funded approach roadway project by MHTC, with a maximum contribution by the state of $10 million (the "Commission project"). Each project was to be advertised for conventional competitive construction bids. Cost estimates for the two projects are summarized in Table 3.

Table 3 - Cost Estimate Summary

	Corporation Project	Commission Project	Total
Construction	$ 21.7 million	$ 6.9 million	$ 28.6 million
Right-of-Way	$ 0.7 million	$ 0.5 million	$ 1.2 million
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Total	$ 22.4 million	$ 7.4 million	$ 29.8 million

To provide the necessary close coordination between the two separate projects, with two separate owners, the projects were bid as a required combination. Contractors had to bid on both projects; the low bid would be the low sum of the two project bids; and both projects would be awarded to the lowest responsive bidder. In addition, other tools were used, including coordinated liquidated damages in both project contracts -- both projects must be completed by a certain date to avoid the assessment of liquidated damages.

The public/private partnership was formalized in a Cooperative Agreement between the LOCBC

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and MHTC. MODOT agreed to provide right-of-way acquisition services, such as appraisals and negotiations, with its right-of-way staff for not only the Commission project but also for the Corporation project. The LOCBC reimbursed MODOT for the cost of these services attributable to the Corporation project. The LOCBC would be responsible for toll collection and operations and maintenance of the toll plaza. MODOT agreed to provide roadway and bridge maintenance with its forces for the Corporation project, with the cost of these services reimbursed by the LOCBC.

PROJECT IMPLEMENTATION

Throughout the feasibility study phase of the project, a number of optional financing plans and funding sources were being considered. Federal-aid highway funds from the Intermodal Surface Transportation Efficiency Act (ISTEA) were one potential funding source. Therefore, the project team decided to meet all federal project development and environmental clearance requirements so that the project would remain eligible for federal funding. The following clearances and permits were obtained for the project, in full conformance with state and federal laws and regulations:

- Environmental Assessment (EA)/Finding of No Significant Impact (FONSI)
- U.S. Coast Guard - Rivers and Harbors Act - Section 9 Permit
- U.S. Army Corps of Engineers - Clean Water Act - Section 404 Permit
- Federal Energy Regulatory Commission (FERC) Permit

Construction Contracting

The two projects were advertised for construction bids by MODOT in November, 1995. Consistent with the project delivery strategy, the invitations for bids were virtually identical to standard MODOT bid packages, with the exception of the liquidated damages mentioned earlier and some specific insurance provisions for the Corporation project. Five bids were received -- bids for the Corporation project ranged from $18.2 million to $21.7 million; bids for the Commission project ranged from $5.5 million to $6.2 million; and the total bids ranged from $23.7 million to $28.0 million. The successful bidder was Edward Kraemer & Sons, Inc., of Plain, Wisconsin. The low bid was 11.6 percent below the engineer's estimate.

Project Financing

In late 1993, the LOCBC selected Smith Barney Inc., as the project underwriter, to develop a structure for the financing based on the issuance of uninsured, unrated toll revenue bonds. The basic marketing strategy focused on institutional investors. Smith Barney's experience with this investor group on similar projects guided the development of the financing structure, with reserve and contingency funds serving as safety nets in those areas of known investor concern. Substantial construction contingency funds and debt service reserve funds were structured to reduce investor concerns about the start-up nature of the project and the non-recourse financing.

Once a firm construction bid price was received, the financing plan was finalized. The bond

pricing occurred in mid-January, 1996. The size of the bond issue was $40.085 million, and the net interest cost was 6.59 percent. This rate was only about 110 basis points above what insured, rated Missouri municipal bonds were priced at the same time. The bond issue was oversubscribed by more than 100%, with offers to purchase the bonds totaling more than $100 million. Smith Barney allocated the bonds to 11 investors. The bond sale was closed on February 7, 1996. In response to favorable market conditions, the LOCBC refinanced its bonds in February, 1998. The new bonds were issued at a net interest cost of 5.41 percent.

Construction

With project financing in-hand, the LOCBC awarded construction contracts in mid-February, 1996. Construction began in March, 1996 and was substantially completed by May 1, 1998. The project was completed on time and within budget.

Operations and Maintenance

From early on, the LOCBC's operational philosophy was to minimize the number of staff on the Corporation. An Executive Director (part-time) and a secretary are the only employees of the Corporation. Toll collection and toll plaza maintenance have been contracted to a private contractor – All-Tech, Inc. The toll operations contract is a five-year contract with payment on a cost plus fixed fee basis. Bridge and roadway maintenance are provided by MoDOT, reimbursed by the LOCBC.

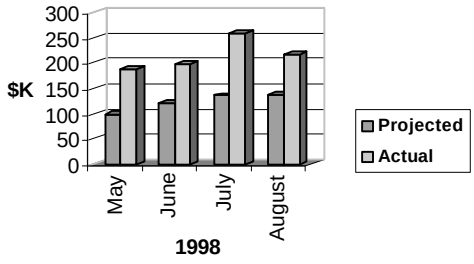
STATUS OF THE PROJECT

A ribbon-cutting ceremony was held on May 1, 1998, and the bridge opened for revenue service on May 2, 1998.

Traffic and Toll Revenue

The monthly toll revenues to date are shown in Figure 3 along with the budget projections for each month. For the first four months, toll revenues have exceeded the projections by about 75 percent. The winter, off-season travel patterns have not yet occurred with the bridge in operation. Therefore, it is too early to assess the long-term, year-round traffic and toll revenue outlook.

Toll Revenue Performance



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Economic and Development Impacts

It is too early to assess the long-term economic development impacts of the LOCB as well. Land sales on Shawnee Bend and adjacent areas have been brisk since construction of the bridge began, and housing starts are up. In its 2nd Quarter, 1998, U. S. Housing Market Conditions, the U.S. Department of Housing and Urban Development reported,

> "The area is currently experiencing an economic surge related to the recent opening of the Lake Community Bridge…"
>
> "With the new accessibility of these properties to services and the general attractiveness of the Lake of the Ozarks, strong growth is likely to continue."

CONCLUSIONS AND LESSONS LEARNED

The model of public/private partnership established for the Lake of the Ozarks Community Bridge was quite successful. The partnership resulted in the implementation of a project which had gone unbuilt for 30 years. In addition, the public/private team developed the LOCB project on a very fast track. The period from the formation of the Corporation until the ribbon-cutting opening the bridge for service was only six years! Similar public sector projects could easily take from ten to fifteen years.

Projects like the LOCB may not represent the leading edge of transportation privatization. However, these small to mid-size projects are more within the *"institutional comfort zone"* of state DOT's, regulators, designers, contractors, and investors.

- Public/private projects need the foundation of *specific authorizing legislation*. It is not enough to have just permissive legislation. Investors, business leaders, and public officials need the legal umbrella of specific authorizing legislation to provide a level of comfort in supporting, approving, and investing in a project.

- *Small- to medium-size* projects do not have overwhelming capital requirements and, therefore, simply are not as onerous to investors as mega-projects.

- Effective public/private models *allocate to the private and public sectors the things which these sectors do best*. For the LOCB, the MODOT undertook tasks such as right-of-way acquisition, bid letting, and bridge maintenance, functions in which it has long-standing experience and excellent staff capabilities. The LOCBC and its project team took the lead in upfront project development support, fast-track planning and design, and knowledgeable securities marketing -- tasks which benefited from private sector participation.

- The LOCB project benefited from establishing a *credible project team* with extensive experience in innovative transportation projects. Well-qualified firms were retained for all aspects of the project, including traffic and revenue studies, feasibility studies, design, financial underwriting, bond counsel, and corporate counsel. For a first-of-a-kind project in Missouri, no one knew in advance exactly how the project development, financing, and implementation

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would fall into place. However, the experienced team helped create innovative, credible solutions when roadblocks were encountered.

- Using *familiar construction documents and bid procedures* resulted in obtaining very competitive construction bids. A number of contractors indicated after the bid that they were somewhat uncertain about bidding on a project for a private, not-for-profit client but that the familiar nature and appearance of the plans and bid documents improved their confidence in the project and reduced their bid prices. The contractors were not asked to assume unreasonable risks and, therefore, did not need to bid premium prices to cover such risks.

Grassroots, public/private projects like the Lake of the Ozarks Community Bridge can stay within this "institutional comfort zone." There are many transportation projects which are suitable for this implementation model. Therefore, these projects are more implementable than private mega-projects and, in the long-run, may offer more real opportunities to improve our transportation systems.

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