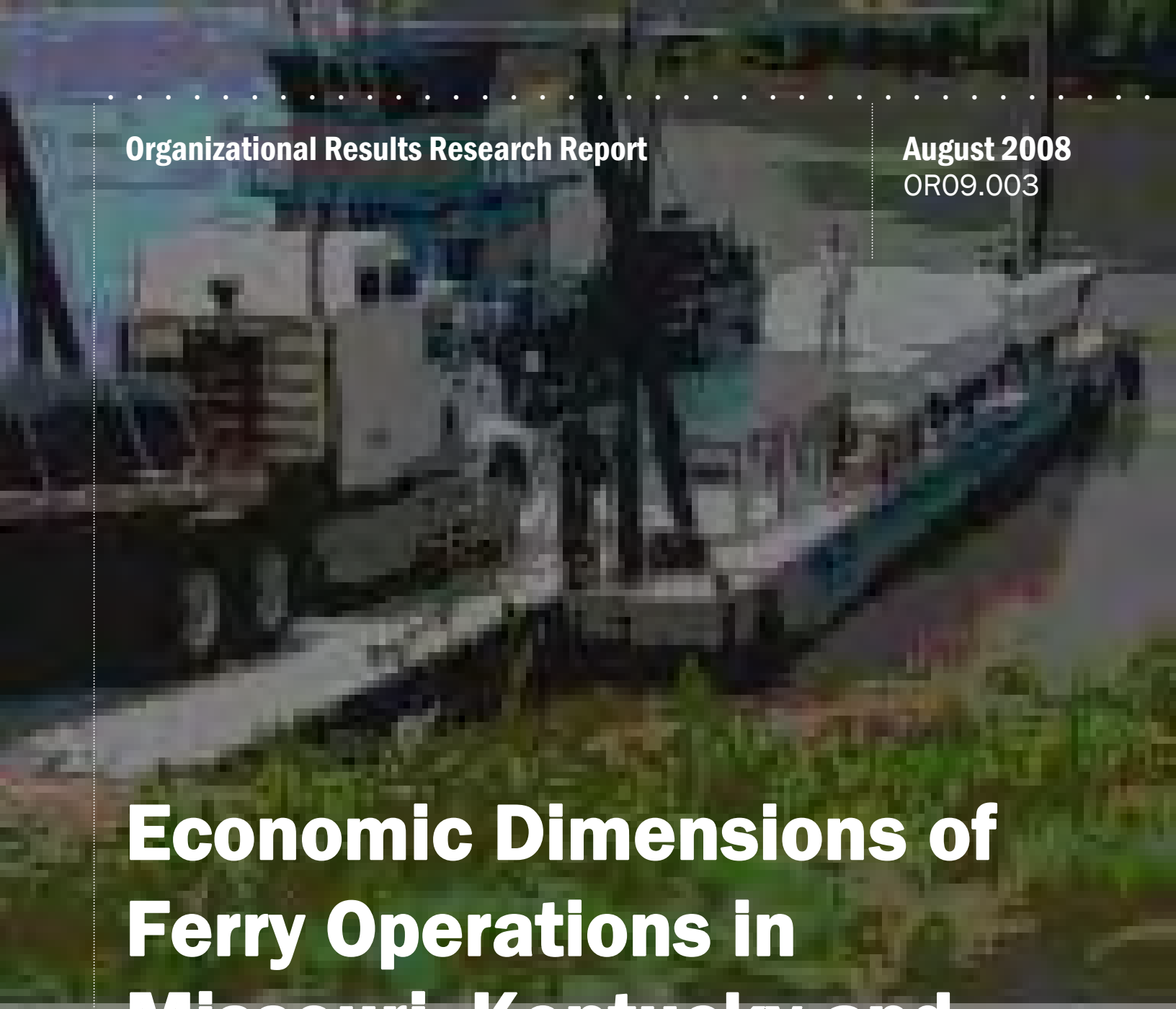

Organizational Results Research Report

August 2008
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Economic Dimensions of Ferry Operations in Missouri, Kentucky and Tennessee

Prepared by
Missouri Department of Transportation

FINAL REPORT
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Economic Dimensions of Ferry Operations in Missouri, Kentucky and Tennessee: The Dorena –Hickman Ferry

Prepared for the

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Organizational Results

by
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16. Abstract

Ferries have a long-standing role in moving people and commerce on the nation's waterways and rivers and continue to play a vital economic role in many areas across the United States. This analysis considers the economic dimensions of the Dorena-Hickman ferry for a three-state region that includes Missouri, Tennessee and Kentucky. The Dorena-Hickman ferry adds to the economic climate of this three state region by:

1) Supporting limited direct employment and investment in the region
2) Acts as tourism draw in the area as it provides a unique travel amenity
3) Supporting regional employment through job access
4) Provides saving in travel time and costs

While flooding and decreased revenues have hampered the cost effectiveness of the Dorena-Hickman ferry operation, it continues to be an important and unique amenity for this three state region.

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Executive Summary

Ferries have a long-standing role in moving people and commerce on the nation's waterways and rivers and continue to play a vital economic role in many areas across the United States. This analysis considers the economic dimensions of the Dorena-Hickman ferry for a three-state region that includes Missouri, Tennessee and Kentucky. The Dorena-Hickman ferry adds to the economic climate of this three state region by:

1) Supporting limited direct employment and investment in the region
2) Acts as tourism draw in the area as it provides a unique travel amenity
3) Supporting regional employment through job access
4) Provides saving in travel time and costs

This analysis demonstrates that the ferry operation adds approximately $349,494. directly to the local economy through tolls, fees and subsidies. In 2007, the ferry moved over 18,000 vehicles with over 38,000 passengers.

With the unique attributes of using a ferry to cross a major river, and the fact that this region is well known for its outdoor-related tourism, it is estimated that the ferry operation supports tourism activity of approximately $2,370,084.

The ferry operation also supports regional employment by providing more immediate access to jobs. This analysis estimates that the ferry provides access to employment generating $162,369,792 in salaries per year.

In this region, the nearest Mississippi River crossing is 31 miles away. Considering travel time, fuel and vehicle use, the Dorena-Hickman ferry saves travelers approximately $340,216 per year in additional travel costs a shown in the illustrative trips from Dorena, Missouri to Reelfoot, Tennessee and Fulton, Kentucky.

While flooding and decreased revenues have hampered the cost effectiveness of the Dorena-Hickman ferry operation, it continues to be an important and unique amenity for this three state region. The ferry provides benefits for tourism, employment and employment access, as well as for local residents who use the ferry on a daily basis, just as most of us use a bridge.

Introduction

Ferry operations have a historic role in transporting people and goods across the nation's rivers and waterways. They are still relevant in many areas today. Ferry operations continue to provide two important, economic roles. First, they provide direct access across our rivers where bridges either don't exist or are too distant. In this case they play an important role in moving people to employment, moving goods, and in closing the distance across the river, that while only a one-half mile or so away, could take a considerably longer drive if access was only available via the nearest bridge. Secondly, ferries tend to be a recreational or tourist attraction due to their historic relevance, dependence on the river, and the unique travel attributes they provide. In this case, the ferry operations not only draw tourism, they help support local businesses by bringing consumers into areas frequently bypassed by major roads.

While Missouri and most central state ferries do not provide the mass transit benefits of ferries in Washington State, San Francisco or the New York area, they do provide a vital role in moving people to jobs, for business and for a full range of market activities, including tourism.

This analysis focuses on the economic dimensions of the Dorena-Hickman ferry operation in Mississippi County, Missouri and Fulton County, Kentucky and serving Tennessee. The analysis examines the economic and service attributes of the ferry operation and includes direct employment, toll and subsidy benefits, recreation and tourism benefits, regional employment considerations, and travel time benefits for the ferry service regions that include Missouri, Kentucky and Tennessee.

Background

The Dorena-Hickman Ferry (D-H) is one of six operating ferries in Missouri. Five of the ferries, including the D-H, operate on the Mississippi River. The Akers ferry operates on the Current River in south-central Missouri. Kentucky is home to nine ferry operations including the D-H and Tennessee supports three ferry operations.

Ferry operations in Missouri are managed and owned through a variety of arrangements, but in Missouri as well as other states, they are often subsidized. In 2007, for the D-H ferry, Missouri provided a subsidy of $95,000 and Kentucky supplied $95,000. Since 1990, D-H ferry service levels have continued to increase from approximately 3,000 vehicles to over 18,000 vehicles in 2007. 2008 can be expected to be an off-year due to flooding and engine problems, and 2009 may see reduced usage due to continuing engine troubles compounded by a lack of available funding.

Based on a report from the S.T.A.M. Marine Enterprises, which collected information on 7,000 consecutive ticket sales during early 2008, the ferry service at D-H predominately serves residents of Missouri, Tennessee and Kentucky. Based on a license plate survey of ferry users, 36 percent of the users are Missouri residents, 24 percent are Tennessee residents and 16 percent are Kentucky residents. The remaining 24 percent of users consist of Indiana (2 percent), Illinois residents (1 percent) and those from other states

outside of the immediate area (21 percent). In terms of the number of vehicles and people using the ferry in 2007, this equates to over 6,500 vehicles or nearly 14,000 people from Missouri, over 4,300 vehicles or over 9,200 people from Tennessee, and nearly 2,900 vehicles or over 6,000 people riding with Kentucky license plates.

The 2008 season so far has been problematic for the D-H ferry operation. Chronic high water conditions on the Mississippi River followed by engine failure have kept the operation out of service. As of July 28, 2008, the ferry remains inoperable due to engine problems with the ferry. When not in operation, the ferry loses ground in terms of recouping operating dollars, and the operation also risks losing long-time as well as new customers as the service remains out and reliability becomes an issue.

Economic Dimensions of Midwest Ferry Operations

Fees, Revenues and Ferry Employment

Ferry operations in Missouri and the Midwest in general tend to require subsidies in order to remain in operation. This reflects the more rural locations and smaller population base, as well as the tourism and seasonal use characteristic of these ferry operations. These characteristics are in contrast to operations such as in Washington State or in metropolitan east coast settings that tend to carry tremendous traffic, are located in very urban areas and often provide a commuter link. None-the-less, the smaller operations such as D-H provide a vital service to local residents and business as well as support local businesses and tourism.

Ferry income is based on the operations fee/toll structure and the number and type of vehicle using the service. For the D-H ferry, the following fee structure was provided:

Modified Ferry Toll Schedule

Basic fare	*$14.00*	
Single width vehicles up to 30 feet long		
Longer vehicles		
Single width vehicles 31 – 55 feet long	*$28.00*	
Single width vehicles 56 – 75 feet long	*$42.00*	
Wide loads		
Over 8' wide up to 12' at widest point		
Length charge from above	Multiplied by 1 ½	
Over 12' at widest point		
Length charge from above	Multiplied by 2	

In order to encourage round trip usage, all the above fares will be reduced by ½ for the return trip when the same vehicle travels the opposite direction and presents the original ticket.
This offer does not expire. All previously issued tickets will be honored at rate on that ticket.

Advance Purchase Options		
Coupons		
Sheet of ten basic fare vouchers	*$105.00*	*($10.50 per trip)*
(Multiple vouchers required for long and/or wide vehicles)		
Free Ferry Fridays-Commuter Special		
Four Sheets of ten basic fare vouchers	*$336.00*	*($8.40 per trip)*
(Valid for two (2) months from date of purchase)		
Discount fares (per trip)		
Motorcycles, ATV's and Horse drawn wagons	$ 5.00	
Bicycles and Horses	$ 2.00	
Pedestrians	$ 1.00	
School Groups (per person, return trip included)	$ 1.00 (advance notice required)	

Individual Vehicular Limits: 75' long, 18' wide, 80,000 lbs.

In terms of income generated from 2007 operations, there were over 18,000 vehicles with 38,000 passengers. This level of operation generated total revenue of $159,494. For average revenue per vehicle, this returns $8.82 per vehicle, or $4.12 per passenger. With an average of 1.8 vehicles per trip across the river, the revenue per trip equals $16.17.

As stated earlier, the D-H ferry was subsidized at $190,000 in 2007 and claimed estimated additional needs of $38,000. Currently the ferry operation estimates a funding deficit of $161,000 in 2009.

Based on 2007 toll data, operations and external funding of the D-H ferry moves $349,494 per year through the regional economy that includes portions of Missouri, Tennessee and Kentucky. While complete operational data was not available for this analysis, $150,000 of these operating dollars were pumped directly back into the local economy in the form of salaries for seven different positions related to the operations of the D-H ferry. These local investments would then be amplified by the dollars spent on diesel fuel, local services and the multiplier affect as the dollars travel through the regional economy. These dollars will also provide income to taxing entities such as counties, cities and the state as incomes and sales tax directly related to the ferry operation are collected.

In the limited available research for smaller ferry operations (Adams 2006), economic multipliers for these investments and expenditures tend to be low (.5 to 1.5) and very little research exists to substantiate additional returns to the local economy beyond the direct benefits. Additionally, as economic multipliers are regionally, project or operation specific, transferring the experiences from one local to another is unlikely to yield precise estimates of economic benefit.

Recreation Benefits

In the early 2008 survey of 7,000 consecutive ferry riders, 60 percent of the riders indicated that their trip was for recreation or leisure. With the many lakes, conservation areas and historic sites in this three state region, the ferry not only shortens the trip in some instances, but also adds a unique experience to the travel.

Extrapolating this percent of tourism related visits with yearly ridership data suggests that approximately 10,843 of the total riders were visiting one of the three states (Missouri, Kentucky or Tennessee) for recreation or leisure. Based on average visitor expenditure for these three states of $84.07 per day and an average stay of approximately 2.6 days, this ferry operation plays a role in generating over $2,370,084 tourism dollars in this region.

These calculations are based on information from the Missouri, Tennessee and Kentucky Departments of Tourism studies on their visitor industries. Tennessee reports visitor expenditures that average $104 per day, Kentucky reports $85.01 per day and Missouri reports $63.21 per day. Average visitor stays range from 2.5 to 2.7 days. And while the over $2 million is not directly a result of ferry use, the ferry undoubtedly played a significant role in the visitor experience to these three states.

Support of Regional Employment

With 60 percent of the ridership on the D-H ferry related to tourism that leaves 40 percent of the ridership using the ferry for activities such as employment, business or shopping. For the purposes of this analysis, it was assumed that approximately 30 percent of the remaining ridership is employment related. Quarterly employment data from the localized region within all three of these states indicates that the averaged weekly salary is approximately $576.00 or $14.40 per hour (U.S. Department of Labor 2007).

Based on these Labor Department statistics, these wages provide an average annual salary of $29,952 per person per year. With an estimated 5,421 ferry users per year riding to access employment, it can be estimated that approximately $162,369,792 in salaries per year are supported by ferry use. Again, these figures are for illustrative purposes. It is unlikely that the regional employment would cease without the ferry access, and in fact the ferry has been out of operation over the data collection period used for these estimates. However on a personal level, some of these jobs may not offer the same level of income and quality of life benefit if transit time to employment was two or three times as long without the ferry.

Travel Time Benefits

For the three corners area of Missouri, Tennessee and Kentucky, the next closest means to cross the Mississippi River other than the D-H ferry to the north is at Cairo, Ill. This crossing is approximately 42 minutes away, or 31.49 vehicle miles according to MapQuest (MapQuest 2007). The closest crossing to the south is at Caruthersville, 1 hour away or a 54.02-mile drive.

As a means to demonstrate the potential travel time cost savings using the ferry versus using one of the other available river crossings, the cost of two trips including both Tennessee and Kentucky, with and without using the ferry are calculated. For illustrative purposes, the first example represents a trip from Dorena, Missouri to Reelfoot Lake, Tennessee. The second example uses a trip from Dorena, Missouri to Fulton, Kentucky. These locations were selected based on their relative prominence and short distance to the ferry in each state. It is likely that travelers would either be going to or through one of these areas. All travel time and distance information was extracted using MapQuest.

Dorena to Reelfoot Lake

Using the D-H ferry for a trip from Dorena to Reelfoot Lake takes 52 minutes and is 26.41 miles in length. Without using the ferry and crossing the river at Caruthersville, the trip lengthens to 1 hour 46 minutes and 91.86 miles. In this case, not using the ferry equates to an additional 65.45 miles for the trip and an extra 54 minutes travel time. Based on Internal Revenue Service standard mileage rates of $.505 per mile (IRS 2007), a standard travel time value for passenger vehicles of $14.60 per hour (TTI 2007), an average fuel economy of 17.2 mpg (U.S. DOE 2007) at a Midwest price average of $3.82 per gallon (U.S. DOE 07/28/08), this additional mileage and time is estimated to add an extra $13.14 in wages, $33.05 in mileage costs and an extra $14.53 in gas to each single person trip. In effect, each trip to or from the Reelfoot Lake area costs an additional $60.72 per person in fuel, vehicle costs and time. Conservatively assuming only one person per vehicle, and that 24 percent of the total ridership or 4,300 vehicles are going to or from Tennessee, this increases the estimated travel cost without the ferry to $261,096. Conversely, the use of the ferry saves those traveling to and from the Reelfoot Lake area $261,096 per year.

Dorena to Fulton

Using the D-H ferry for a trip from Dorena to Fulton, Kentucky requires 55 minutes drive time and is 26.98 miles. Without using the ferry the trip is 1 hour 33 minutes long and 72.99 miles. In this case, not using the ferry adds 38 minutes and 46.01 miles to the trip. Based on the previous cited mileage rates, fuel costs and the time value for one person, this additional time and mileage adds up to an extra $42.80 per vehicle, or an extra $9.25 in wages, $23.24 in travel costs, and an extra $10.31 in fuel. With approximately 16 percent of the ferry users or 2,900 vehicles using the ferry to move from Kentucky to Missouri and back, there is a total saving to those from Kentucky of $124,120 per year.

In terms of travel timesavings, the D-H ferry has demonstrated savings to users. These savings represent dollars that can then remain in the hands of citizens for other purchases or investments rather than being consumed in travel costs.

Conclusions

This analysis has provided an illustration of the economic dimensions of the Dorena-Hickman ferry which predominately services residents in the States of Missouri, Tennessee and Kentucky. The ferry operation directly or indirectly adds to the economic climate of this three state area by providing the following benefits:

1) Supports limited direct employment and investment in the region
2) Acts as a tourism draw in the area as it provide a unique travel amenity
3) Supports regional employment through job access
4) Provide saving in travel time and costs

This analysis could further delineate the benefits of the D-H ferry as well as other Midwestern ferry operations with the addition of more complete origin and destination data, additional survey data that addresses travel purpose and expenditures, and information that outlines traveler preferences and options in this three state region.

Overall, the D-H ferry plays an important role in the economic life in this region. While ferry service may not generate exceptional return, it is undoubtedly a convenience and an important part of the character of this river dependent region.

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