



America's Central Port Illinois Vehicle Ferry System Assessment Final Report

September 2024



AMERICA'S CENTRAL PORT



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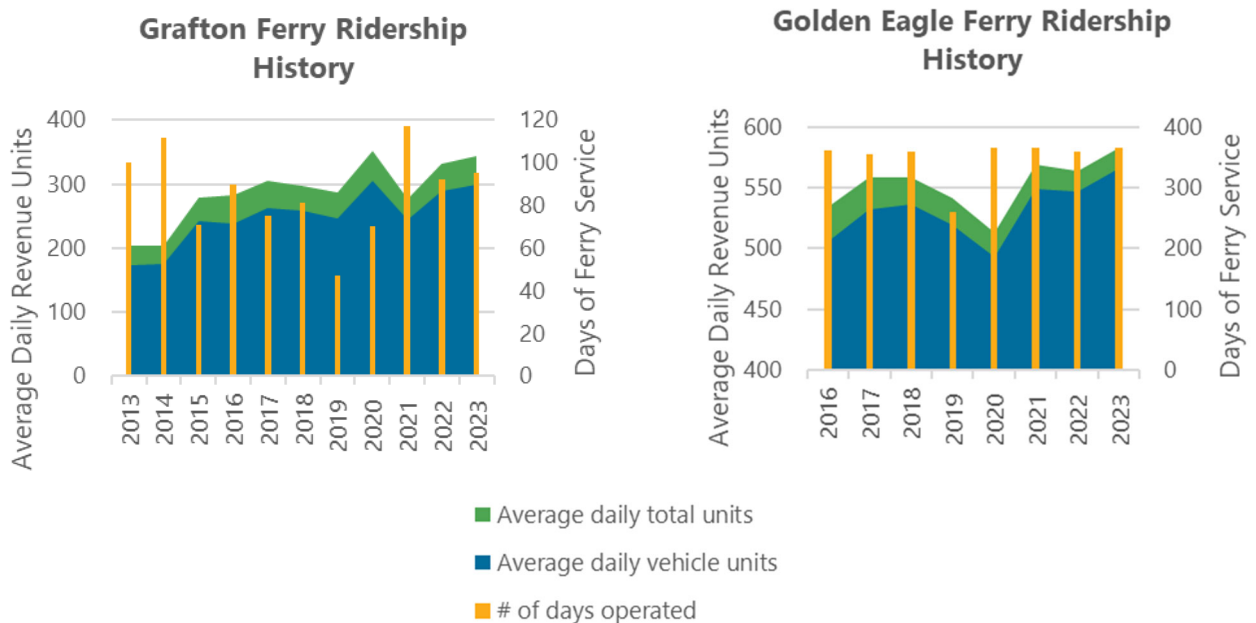


EXECUTIVE SUMMARY

America’s Central Port District (the Port) has set out to answer a question critical to the economic well-being of many small communities along the Great River Road corridor; how important are ferries in the local economy and how can the operations be sustained? There are six ferry operations in Illinois. Two crossings are owned by the Illinois Department of Transportation, two are privately managed by the Calhoun Ferry Company and two are jointly managed by public and private entities. The economies of many towns along this corridor rely on the local ferry systems to support tourism and provide community connectivity. The Port and the State of Illinois want to determine how best to partner with the communities served by these systems to ensure the ferries can continue to operate sustainably to help maintain and prosper the local economies. The long-term sustainability of these systems is pivotal to the future economic well-being of communities along the Great River Road.

Ridership on the Grafton and Golden Eagle Ferries has been on a growth trend over the past decade indicating a positive environment for investments in sustaining the operations.

Figure ES -1 Calhoun Ferry Company Ridership History



The study identified several key findings regarding the Mississippi River Ferries, below are highlights of those findings:

1. Ferries serve a role larger than tourism, the crossings contribute substantially to the economies of the City of Grafton, Calhoun, Jersey, and St. Charles Counties. They connect workers to jobs, provide access for residents to communities with retail and medical services and support freight movement, in particular freight related to agriculture, yet the ferries receive no financial recognition for that contribution.
2. The Calhoun Ferry Company has, and continues to, offer a critical service to Calhoun and Jersey Counties. They are universally respected in the community and they run a very tight, efficient, reliable and, above all, safe operation.
3. The financial condition of the Grafton and Golden Eagle Ferries is not in imminent peril, but neither is it sustainable. Without some form of revenue from outside Calhoun Ferry Company (grants, local government revenue allocations, business improvement district contributions, etc.) the two ferry services do not generate sufficient revenues to support necessary capital replacements, especially for ferry vessels. This means at some point over the next ten years (+/-) it is likely that vessel non-availability due to age will impact, disrupt, potentially even suspend operations on one, or both, crossings.
4. The Grafton and Golden Eagle Ferries do not generate sufficient revenue to backstop operating cost increases related to expansions of service. Without some form of operating revenue supplementation, service expansion at either is unlikely to occur.
5. There are no "Ferry Champions" on the inland waterway. At federal or state levels there are no identified leaders who carry the banner for the importance of the small ferries that cross the inland waterways, be they public or private. Yet these ferries are critical to the sustainability and resilience of many communities that occupy the US inland river systems.
6. Neither the states of Illinois or Missouri has a consistent policy with regards to funding bi-state ferry operations. This is common ground with the Commonwealth of Kentucky which also lacks a consistent policy for bi-state or in-state ferry crossings according to a study completed in 2020.¹ The State of Missouri does have an identified ferry funding program that is funded by appropriation from the legislature, but funds available through that program are limited with the source of funds being primarily derived from USDOT formula grant funds.

¹ Analysis and Assessment of the Reimbursement Rates and Mechanisms for Kentucky's Publicly Funded Ferries, Kentucky Transportation Cabinet, Research Report KTC-20-04/PL35-1F



The following outlines a series of recommended strategies and action steps to ensure longer-term sustainability of the Grafton and Golden Eagle ferry crossings. There is an expanded list with more detail in Chapter 7.

1. Create “Ferry Champions” willing to work local, regional, state, and federal legislative agendas to seek out funding opportunities – Highest priority

Action Steps

- a. Appoint a task force of local elected leaders and/or leaders from groups that benefit from ferries. Assuming the project committee unites around this recommendation a next step would be getting the task force founded and organized, then adopt a workplan. A sample workplan is provided in Chapter 8.
- b. Encourage the Illinois state legislature to adopt an active role in financially supporting the Grafton and Golden Eagle crossings similar to that of the Cave-in-Rock ferry and/or the Brussels and Kampsville ferries.
- c. Maintain a list of upcoming federal funding opportunities to address capital needs and identify grant writers and grant accepting entities. This action step would need to be accompanied by Action Step 2.b to be most effective.

2. Stabilize long-term financial capacity and asset protection – high priority

Action Steps

- a. Identify local, state, and federal sources of revenue to support capital sustainability.
- b. Develop Memoranda of Understanding (MOU’s) between Calhoun Ferry Company, and benefitting public entities to designate ownership and cooperative endeavors to be used as the basis for public agencies to apply for grants to support Calhoun Ferry Company.

3. Improve approaches and wayfinding – high priority

Action Steps

- a. Identify ways to get maintenance and improvements for wayfinding and approach roads accomplished and the dollar magnitude of what is required for each project identified.
- b. Encourage St. Charles County or the Port of St. Charles County to assume responsibility for the easement and maintenance of the Golden Eagle Ferry Road from Hayford Road and Highway B up to the lease line and/or property line of Calhoun Ferry Company landings.



- c. Improve/increase ferry wayfinding in Missouri. The objective is to ensure there are reasonably-sized signs at each decision point on the way to the ferry, Grafton and Golden Eagle.

4. Identify financial resources to allow expansion of operations – moderate priority

Action Steps

- a. Create ways to offer financial incentives and operational cost protections to Calhoun Ferry Company to encourage service expansion.
- b. Adopt a regular fare increase plan based on ferry permits from the City of Grafton Calhoun and St. Charles Counties.
- c. Utilize the localized task force described in Strategy/Action 1a to identify local revenue sources to fund/underwrite service expansion initiatives as described in Action Step 4a.

5. Phase in expansion of operations - moderate priority

Action Steps

- a. Establish a strategic plan to expand ferry operations that will ensure costs and revenues remain within reach of local resources.



1 INTRODUCTION

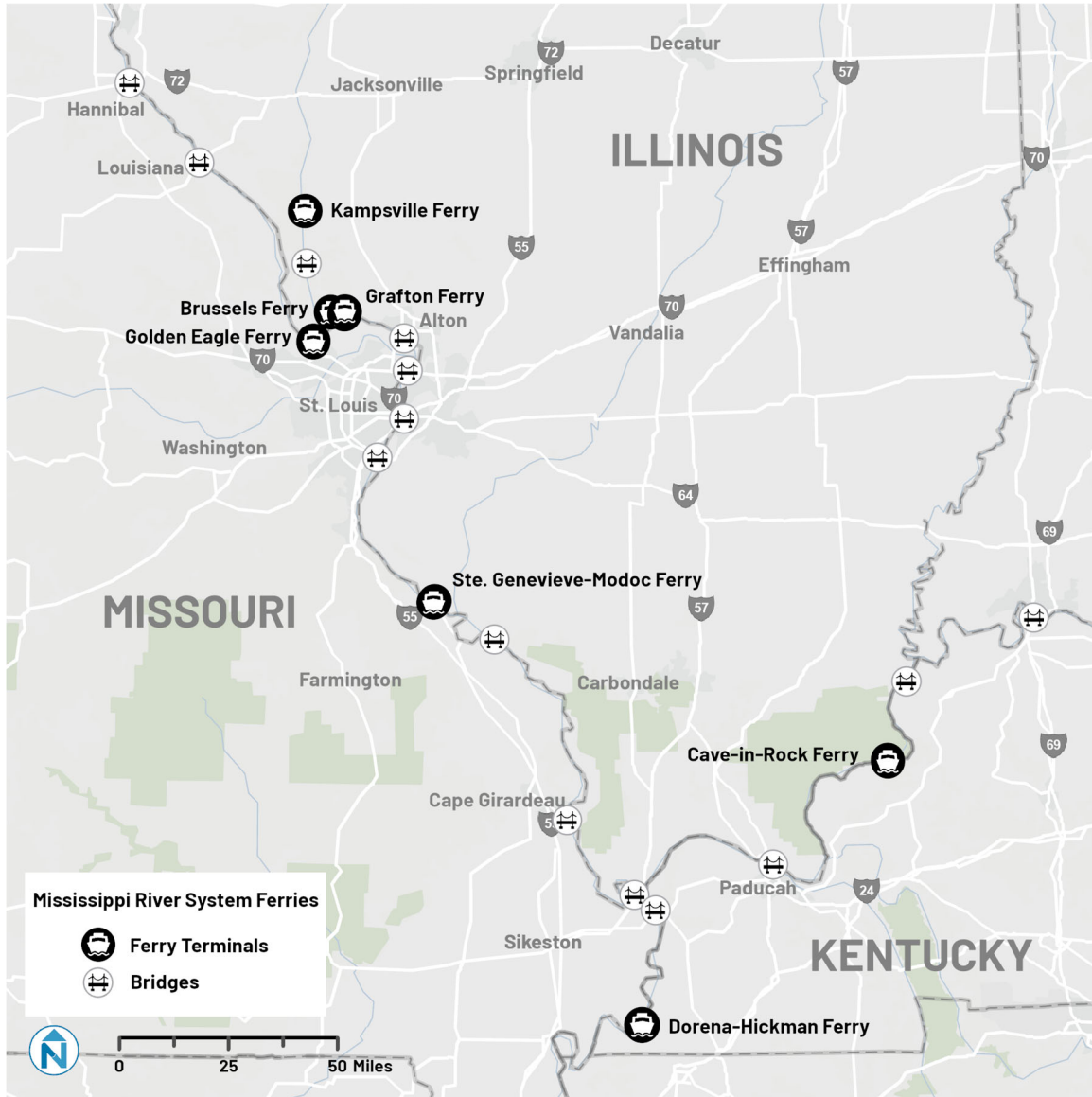
Setting the Stage

America's Central Port District (the Port) has set out to answer a question critical to the economic well-being of many small communities along the Great River Road corridor; how important are ferries in the local economy and how can the operations be sustained? There are six ferry operations in Illinois. Two crossings are owned by the Illinois Department of Transportation, two are privately managed and two are jointly managed by public and private entities. A seventh crossing was also added to the study which also crosses the Mississippi below Cairo, but it is between the states of Missouri and Kentucky. The economies of many towns along this corridor rely on the local ferry systems to support tourism and provide community connectivity. The Port and the State of Illinois want to determine how best to partner with the communities served by these systems to ensure the ferries can continue to operate sustainably to help maintain and prosper the local economies. The long-term sustainability of these systems is pivotal to the future economic well-being of communities along the Great River Road.

The Grafton and Golden Eagle Ferries are the primary focus of this report. They are integral parts of the economy of the City of Grafton, Jersey County, IL, Calhoun County, IL, and St. Charles County, MO. As discussed in the following pages these crossings have played a significant role in the development of southern Illinois and northeastern Missouri since the early 1800's until modern day. These crossings serve areas with rich native and early US history. As such they are natural locations for tourism interest. But these crossings are also in the middle of productive farmland and thriving rural areas and so play a dual role of supporting tourism while also supporting freight and mobility related to the residents and the industry of the area.



Figure 1 Mississippi River System Crossings



2 GRAFTON AND GOLDEN EAGLE FERRIES

The Grafton and Golden Eagle Ferries are the primary focus of this report. They are integral parts of the economy of the City of Grafton, Jersey County, IL, Calhoun County, IL, and St. Charles County, MO. As discussed in the following pages these crossings have played a significant role in the development of southern Illinois and northeastern Missouri since the early 1800's until modern day. These crossings serve areas with rich native and early US history. As such they are natural locations for tourism interest. But these crossings are also in the middle of productive farmland and thriving rural areas and so play a dual role of supporting tourism while also supporting freight and mobility related to the residents and the industry of the area.

GRAFTON AREA RIVER TRAVEL HISTORY

Situated on the Illinois and Mississippi Rivers, Grafton and its neighbors boast a storied history of river travel. Centuries before the European incursion, Indigenous nations relied on the river valleys for sustenance and trade. The Illiniwek—later christened the Illinois Confederation by French colonists—and their rival nations--Očhéthi Šakówiŋ (Sioux), Osage, and Kiikaapoi (Kickapoo)--traversed the rivers in canoes, spearing fish and eels and harvesting mussels. The rivers' regular floods necessitated a diverse range of activities from waterfowl hunting to wetland harvesting, all discharged from canoes. Indigenous vessels were sleek and carefully crafted for the wetland environment. By carving out cypress tree trunks, Indigenous craftsmen built canoes that were water-resistant, maneuverable, and aggressively buoyant. Even a seven-hundred-year-old canoe that resurfaced in the Cahokia mounds (east of present-day St. Louis in Illinois) in 2015 shows little damage despite being trapped in the riverbed for centuries. Combined with their rich agricultural and hunting practices, success on the rivers allowed nations to thrive, cementing the Illinois, Missouri, and Mississippi Rivers as cornerstones of civilization in the region.

Following the Marquette expedition along the Mississippi and subsequent European colonization, river travel evolved to accommodate increased trade and migration. As St. Louis



became a hub in the newly settled American West, ferry operations sprang up to deliver goods and people to the city from outlying settlements across the rivers. James Piggott, an early colonial settler of Cahokia, established the first ferry service to St. Louis in 1797. Note that this pre-dates St. Louis being part of the United States which occurred in 1803. Prior to this time, founded in 1764, St. Louis was the Spanish² center of governance and commerce. It was a common point for trappers from the north to meet with fur merchants from the south. Nearby, just across the river in Illinois, very shortly after this ferry started, Fort Dubois, was founded in 1803 at the confluence of Wood River and the Mississippi, essentially the starting point of the "Expedition of Discovery." Piggot's boats, glorified canoes lashed together and steered by paddles, were primitive but brought residents and revenue to the region. His service was later purchased by St. Louis merchants John McKnight and Thomas Brady, who experimented with keel boats from 1815-1820, and Samuel Wiggins, who introduced horsepower boats³ in 1818 and steam ferries in 1828. As service became safer, speedier, and more accommodating of heavier cargo, ferries injected capital into the Mississippi River valley at a crucial moment in its development, particularly helping to fuel the United States's westward expansion following the Louisiana Purchase. Due to the topography and river confluences in the area, St. Louis⁴ was, quite literally, The Gateway to the West.

It was in this context that Grafton rose as a key ferry port. Though blockhouses existed in the Grafton area since the dawn of the nineteenth century, the city was only formalized in 1832 by brothers James and Paris Mason. The brothers set out to transform Grafton into a small industrial city supported by river trade and local limestone quarries. James, bewitched by the idea of a regional ferry network, obtained a ferry license in 1833, but tragically died in 1834 before he could witness its success. Paris Mason took up his brother's mantle to operate the first Grafton ferries, managing a small fleet of horsepower vessels. As the city prospered, so too did the ferry network, enabling modernization with steamboats in 1849.

² Technically, the Louisiana Territory "belonged" to France, who ceded control of the land to the Spanish in 1762. The "Louisiana Purchase" of 1803 involved negotiations and representation by both France and Spain as France re-took control over the area in 1800, but not completely. The Treaty of the Louisiana Purchase was complicated as a result of secret treaties between France and Spain.

³ Literally, these were vessels powered by horses walking on treadmills usually turning a side mounted paddle wheel, or wheels, see Figure 2.

⁴ St. Louis was incorporated in 1822



Figure 2 A horse-power ferry – circa 1880 to 1900

Mason's successors William Allen and William Shephard operated two steam ferries until 1862. During their tenure, Grafton saw both profound success and profound loss. Shipping and passenger ferries boomed in the absence of regional rail. The lively river transportation scene ushered in a new wave of migration and manufacturing opportunities. Grafton exports diversified to include buttons, explosives, flour, and tin roofs. Simultaneously, floods, cyclones, fires, and cholera killed thousands and wreaked havoc on the city's local limestone buildings. Outlaws, some notorious gunslingers like Jesse James, took refuge in nearby saloons and hotels. It soon became clear that Grafton resembled the Mississippi River itself: calm and enriching one year, turbulent the next. Grafton's population, swollen to 10,000 residents by 1854 plummeted to around 1,000, where it would remain until the Great Flood of 1993. We know that ferry service over the Mississippi was interrupted by the Civil War. Records of the timeline of restoration are very slim. Historical records of the turn of the 20th century for Grafton makes almost no mention of ferries.

Entering the twentieth century, Grafton and its neighbors watched river travel dwindle. Three railroads operated in Grafton by 1882, rendering all but one ferry service obsolete by 1930. The Steamer Golden Eagle from Calhoun County to St. Louis hung on, however briefly; the



last ship sank in 1947, sinking the hope of Mississippi River service along with it. The railroads succumbed to funding difficulties not long after the ferries they displaced. By 1948, Grafton and several other river towns were stranded without ferries or trains. Limited bus service along railroad tracks (given the fitting moniker “The Dinky”) attempted to meet regional passenger transportation needs but shuttered service by 1953. Without ferry, train, or bus service, Grafton residents found themselves disconnected from their neighbors and the commercial hub of St. Louis until the completion of the Great River Road in 1965. Marine transit was relegated to a tourist attraction—casino riverboats and rented day trippers—for much of the twentieth century.

Today, although nowhere near as lively as the 1850s heyday, the rivers remain vital travel routes for seasonal travelers and year-round commuters, alike. During the time from the 19th to the mid-20th century, the economy of Grafton was variously driven by several industries including, quarrying, ice harvesting, button-making, explosive manufacturing, and, of note, boat building. Exactly when ferries served Grafton across the Mississippi is not well recorded. Of interest is that the who, what, when, and where of ferries was thought not to be important enough for anyone to keep an official journal. From historical recollections of people who were children at the time, we know that the Grafton Ferry was running regularly sometime in the late 1950s. But the history of who ran it, the vessels used, and the services offered are not well documented. We know the ferry crossing and ferry was acquired between 2005 and 2010 by the City of Grafton. The acquisition was from operators, reported to be a couple from St. Charles County, who “started” operating the crossing in 2002. There were several fits and starts caused by flooding and siltation in that era until the operation was contracted to the Calhoun Ferry Company in 2013. Opening day in 2013, in fact, re-started ferry service that had been absent for almost three years.

Grafton and Golden Eagle ferries were both operational from time to time from the 1870s to present. We are left with memories and vignettes published in local newspapers. For example, in 2002 a paper published an article detailing the efforts of William Kamp who purchased a wooden hull paddle wheel ferry in 1922 in Des Moines, IA. The ferry traversed down the river and set up operations at the site of the present Golden Eagle Ferry. The newspaper article records that service was often interrupted by ice and flooding, nevertheless the ferry eliminated a 75-mile trip to reach St. Louis from Calhoun County. The vessel was rebuilt with a steel hull in 1935 and continued to operate into 1998 having been rebuilt and modernized over the years, but still powered by paddle wheels. The vessel was finally retired by the Baalmans, the founders of the Calhoun Ferry Company. In the stretch of time from 1935 until its final crossing in October 1998, the vessel was sold to the Pohlman family who ran the ferry for a number of years before selling to Frank Sherman eventually selling to the Baalmans who took over in 1997 and have operated the Golden Eagle ferry since that time.



Figure 3 Golden Eagle Ferry -1922-1998 - circa 1960's

The story of the Baalmans is one of two enterprising and hard-working brothers from Calhoun County who entered the restaurant business in Batchtown, IL in 1967 by converting an apple warehouse into a dance hall and restaurant. To expand business a few years after opening the restaurant, about 1973, they purchased the Winfield, MO to Batchtown, IL ferry. After taking over from the Coughlin family they ran operations in a way to allow later night access to their restaurant for the people from St. Charles County in Missouri, who accounted for much of their restaurant business. Fast forward a few more years and by 1986, the brothers found ferry boat operations to be more financially rewarding than the restaurant business. The restaurant/dance hall was closed and the brothers incorporated the Calhoun Ferry Company about a decade later. In 1996 they introduced a new, larger ferry, which they had constructed themselves on the banks of the river in Batchtown to take over cross-river operations at the Winfield ferry. In that same era, 1997, they acquired the ferry crossing at Golden Eagle, including the paddle wheel ferry pictured in Figure 3. In 1998, they elected to move the focus of operations from the Winfield Ferry to the Golden Eagle Ferry. Among the reasons for the move is of relevance to this study. According to Vince Baalman in 1996, with regard to the approaches to the ferry landings for the Winfield Ferry, "It is a county road leading up to us here, and we take care of the rest of the way, but we're hoping to get the county to raise it and maintain it so we can eventually start being open 24 hours a day." Operations at Winfield have been maintained from time to time to address either ice or flooding conditions at Golden Eagle. The Winfield crossing is just below the Winfield Lock and Dam and so remains more ice free than at Golden Eagle due to water movement in the river.



GRAFTON FERRY

The Grafton Ferry runs across the Mississippi River between Grafton, Illinois and St. Charles, Missouri each weekend from mid-April to early November, from 10 A.M. to 10 P.M. on Fridays, 8 A.M. to 10 P.M. on Saturdays, and 8 A.M. to 8 P.M. on Sundays. By allowing riders and their vehicles to bypass IL-100 and US-67 on their way to St. Louis, the Grafton Ferry cuts travel times by around 30 minutes. Fares range from \$4 to \$14 one-way depending on vehicle type. A typical passenger car will cost \$9 one-way and \$17 round-trip.

High waters have intermittently compromised service—notably in 2010, when silt blocked the channel or “chute,” the Grafton Ferry traverses for nearly three years before the channel was dredged and service restored. We know from Calhoun Ferry Company records that service was restored on the Grafton Ferry in July 2013. At the time, a newspaper article records the ferry crossing was owned by the City of Grafton. The operation was contracted to the Calhoun Ferry Company when the operation was re-started in 2013. It is not completely clear which entity actually owned the vessel at the time, but the crossing was opened under the operation of the Calhoun Ferry Company.

Calhoun Ferry Company records indicate that the 2013 season was 100 days long and the ferry ran seven days per week. The records indicate that weekend ridership was much stronger, in the area of 300 to 400 cars per day, while weekday ridership, Monday through Thursday was around 50 to 80 cars per day. In 2014, service was restarted on May 1 and continued to operate seven days a week. The 2014 season yielded an average of 175 vehicles per day over the 112 days service was provided. As was true from the year prior, weekend ridership was stronger than that of weekdays. Then on July 5, 2014 service was disrupted by high water which closed operations for most of July. When service re-opened it ran only on Saturday and Sunday for two weeks, then in August the service was expanded to Friday-Sunday (except Labor Day Monday when service was operated).

Calhoun Ferry Company observed that ridership was much better and profitable on a Friday, Saturday, Sunday basis and proposed to continue to operate the service in that manner for two years. Note this proposal was made specifically to be able to pay the City of Grafton a landing fee of \$0.25 per auto crossed starting in 2014. The weekend only service pattern has persisted, some ten years and another significant flood, in 2019, later. The exception was in 2021 when service on Thursday was introduced for one year. Looking at average daily ridership for the service season, the average was down about 60 vehicles per day. This indicates the addition of Thursday was not helpful in terms of creating a more profitable operation, even though the total volume, at the time, set a seasonal record for Calhoun Ferry company on the Grafton crossing.

Over the past decade, ridership on the Grafton Ferry has seen continued growth, see Figure 6. Ridership has grown at a rate of about 3.3% per year over the past decade. As seen



further along in this report, this is somewhat counter to other ferries in the immediate area, such as Brussels and Kampsville. Noted later, the growth trend, although not as strong, has also accompanied the Golden Eagle ferry crossing.

The Grafton Ferry is a popular way for people from the greater St. Louis area to reach Grafton partly due to the scenery as well as the romantic and more relaxed travel via ferry. From St. Charles, MO to Grafton is 43 miles via road and 15 miles via the Grafton Ferry. A one-way trip on the ferry saves about 28 miles compared to the drive between these two points.⁵

Figure 4 Grafton Ferry – Circa 2000 to 2016

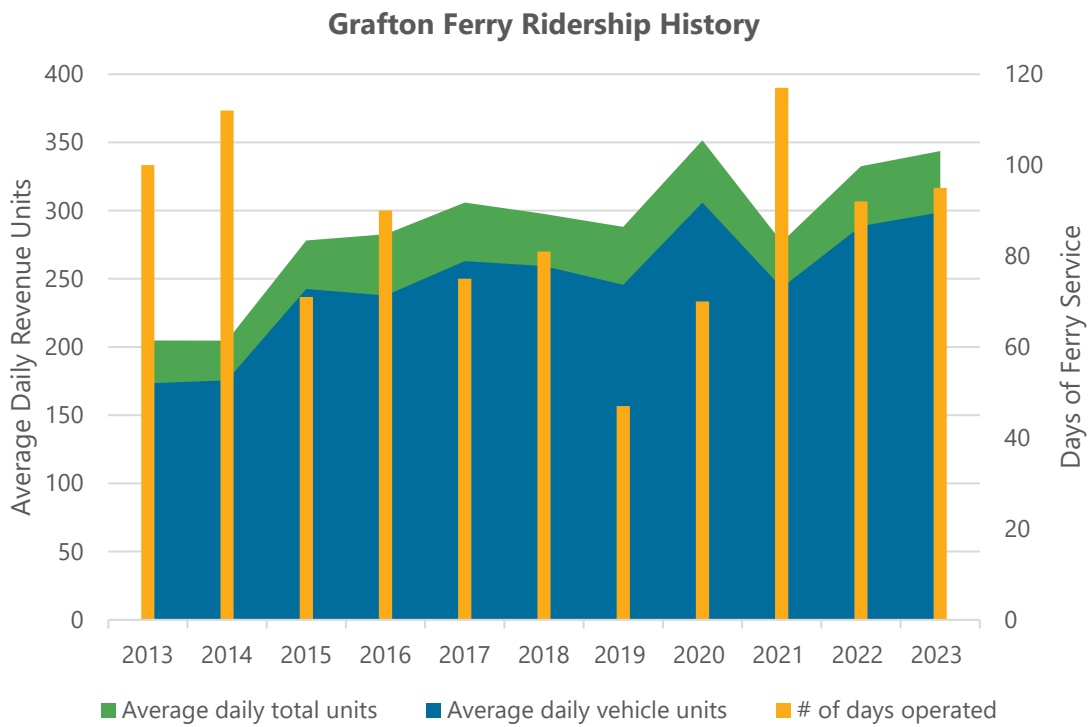


⁵ Source: Google maps travel directions

Figure 5 Grafton Ferry Map



Figure 6 Grafton Ferry Ridership History 2013-2023



Source: Calhoun Ferry Company



Operator

The current Grafton Ferry is operated by the Calhoun Ferry Company. Calhoun Ferry Company is a private, family-owned company that has operated ferries in the region for decades. The City of Grafton owns the right to operate ferry service, but they license/contract service to the Calhoun Ferry Company.

Infrastructure

Ferry Landings

The City of Grafton owns and maintains ferry landings in both Grafton and St. Charles County. There is limited infrastructure at both terminals. Road access to Great River Road on the Illinois side is owned and maintained by the City of Grafton. On the Missouri side the St. Charles-Grafton Ferry Drive is maintained by St. Charles County.

Fleet

The Grafton Ferry operates one barge, and one tug, *Eagle II*, both owned by the Calhoun Ferry Company. The *Eagle II* was built in 1979. It has been re-powered with lower emission diesel engines and has also had the bottom replated in recent years. The ferry barge is one of three 15-car barges owned by Calhoun Ferry Company with construction dates between 1996 and 1998.

Funding and Costs

The Grafton Ferry is 100 percent funded by ticket revenue and generally does not utilize public funding. The Grafton Ferry has previously received indirect state support from the Illinois Department of Commerce and Economic Opportunity to support river dredging in 2012/2013 that allowed the Grafton Ferry to resume operation in 2013. The Calhoun Ferry Company working with the Port of Jefferson County, MO has leveraged federal grant funds to re-power three vessels to low-emission diesel engines (one re-power is underway at the publication date of this study). Further in the report the results of a financial model are presented to help better understand the issues around financial sustainability and the potential to expand operations. At a summary level, the long-term outlook for the financial stability of the Calhoun Ferry Company is mixed. While operating revenues are enough to balance operating costs at present, there are three factors working against that financial strength:



- 1.) Labor costs continue to rise. This is particularly true for the recruitment of ferry pilots. As an example, the Illinois Department of Transportation recently, early 2024, increased wages for ferry pilots very substantially, about 30%, to be able to recruit and retain pilots. The main competition in the area being the towboat companies moving freight on the Great River system.
- 2.) Replacement of the ferry barges. The three 15-car barges owned by Calhoun Ferry Company are of equal age at 26 to 28 years old. The company also has one 12-car barge that is 36 years old. The estimated life of a ferry barge is about 30 years. The present estimated replacement cost is \$3 to 5 million for each barge unit. Operating revenues are not accruing at a rate that allows for depreciation/replacement cost for these vessels as they age.
- 3.) Maintenance of approach roads. This is particularly a factor on the Missouri side of the river. To date, no entity has stepped up (this is an issue that was first noted by Calhoun Ferry Company in 1998) to ensure these roads are maintained. One of the main issues is that the roads are in the flood plain, susceptible to flooding and to roadbed erosion and settlement.



Figure 7 Grafton Ferry Pictures



Clockwise from Top Left: Eagle II Tug, Grafton IL Landing, St. Charles County, MO Landing, Ferry Fares displayed on board the ferry.



GOLDEN EAGLE FERRY

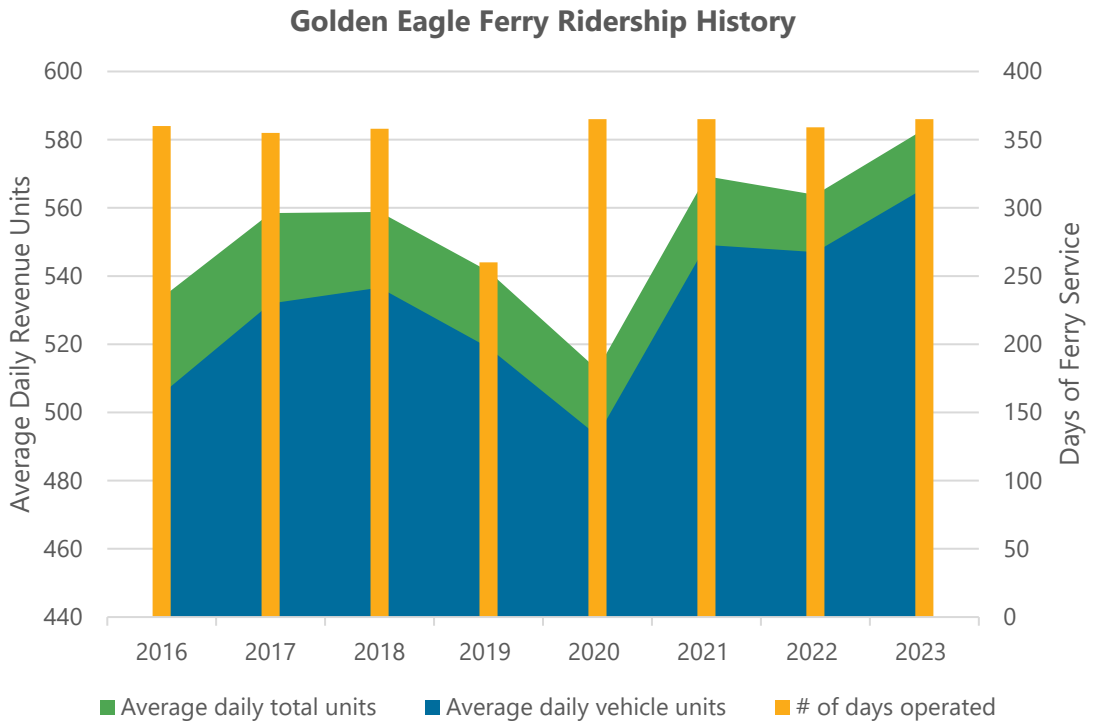
The Golden Eagle Ferry runs across the Mississippi River between Golden Eagle, Illinois and near St. Charles County, Missouri every day from 5 A.M. – 9 P.M. Monday-Thursday, 5 A.M. – 2 A.M. Friday-Saturday, and Sunday 8 A.M. – 9 P.M. By allowing riders and their vehicles to bypass IL-100 and US-67 on their way to St. Louis, the Golden Eagle Ferry cuts travel times by around 30 minutes. Calhoun County reports that the typical mileage saved per crossing on the Golden Eagle Ferry is 30 miles per one way trip. “By utilizing the ferry these commuters are able to change their route from a one-way, 80 mile average trip across some of the most congested routes in the Metro area to a 30 mile average trip across some of the least traveled routes in the area. As such, these ferries greatly reduce congestion and the miles traveled by these commuters. Based on the numbers provided above the Golden Eagle Ferry operation results in an annual reduction of nearly 8,000,000 miles traveled by commuters alone.”⁶ Fares range from \$4 to \$14 one-way depending on vehicle type. A typical passenger car costs \$9 on-way and \$17 round-trip.

Ridership history over the past eight years has shown growth that was disrupted by extensive flooding in 2019 and the COVID Pandemic in 2020, see Figure 8. What is interesting is that the pandemic almost seemed to benefit the more tourism-oriented Grafton Ferry. This is very likely due to many more people staying closer to home in the Summer of 2020, while work, school, and life functions supported by the Golden Eagle Ferry were significantly interrupted. While the growth rate is slower, the Golden Eagle Ferry is also on a growth trend at a rate of about 1% per year over the past decade, although the most recent trends are well above that rate of increase. The notable uniqueness of this trend is that it runs counter to the three other ferries for which the study was able to secure long-term records of ridership.

⁶ Kyle Godar, Calhoun County Engineer in testimony before the U.S. House Transportation & Infrastructure Committee Subcommittee on Highways & Transit hearing on “Examining the Role of Ferries in Improving Mobility,” September 28, 2021.



Figure 8 Golden Eagle Ferry Ridership History 2016-2023



Source: Calhoun Ferry Company



Figure 9 Golden Eagle Ferry Map

Operator

The Golden Eagle Ferry is operated by the Calhoun Ferry Company. Calhoun Ferry Company is a private, family-owned company that has operated ferries in the region for decades. A ferry has operated in Golden Eagle for over a century, with the current Golden Eagle service operational since 1997 through ferry franchise agreement with Calhoun County and St. Charles County with Calhoun Ferry Company.

Infrastructure

Ferry Landings

The Calhoun Ferry Company owns and maintains the Illinois ferry terminal. On the Missouri side, the Calhoun Ferry Company leases the lower and higher landings from the Corps of Engineers. The access roads in Missouri operate on an easement over private land. This access is key to the ferry, but maintaining it is complicated and expensive. There is limited infrastructure at both terminals. Road access to Golden Eagle Ferry Road on the Illinois side is maintained by Calhoun County. The Golden Eagle Ferry Road to the intersection of Highway B and Hayford Road on the Missouri side is privately maintained. From that intersection the



road access is St. Charles County and Missouri Department of Transportation maintained. Note that the BNSF crossing just before the intersection is located on top of an Army Corps of Engineers maintained levee, but the crossing is considered a “private crossing” by BNSF the rail line owner. The tracks are active and maintenance of the “private crossing” is a frequent logistical and financial issue for Calhoun Ferry Company.

Fleet

The Golden Eagle Ferry operates two barges, both owned by the Calhoun Ferry Company. The *Golden Eagle* is the most used vessel, with 25,000 miles. The other vessel is the tug *A-Tee*, which is used as a back-up to the *Golden Eagle*, but also is utilized twice a day on weekdays to address the strong rider demand that occurs during traditional commuting hours. The service utilizes two 15-car barges out of the inventory of three 15-car barges (the third is deployed at Grafton) that are 26 to 28 years old. The present plan is to replace the *Golden Eagle* with another tug, the *Paul B*, later this year as it completes a re-power, then send the *Golden Eagle* into a re-fit program to extend its life. The majority of the refit will address the steel plating on the bottom of the hull.

Funding and Costs

The Golden Eagle Ferry is 95 percent funded by ticket revenue and 5 percent funded by private contract revenue. Golden Eagle does not utilize public funding. Because this ferry crossing is also operated by Calhoun Ferry Company, the long-term financial challenges discussed in conjunction with the Grafton Ferry also apply to this ferry crossing.



Figure 10 Golden Eagle Ferry Pictures



Clockwise from Top Left: Golden Eagle Ferry, Calhoun County IL Landing, Unloading Ferry in St. Charles County, MO, St. Charles County, MO Landing Sign



GRAFTON AND GOLDEN EAGLE FERRY SURVEYS

A survey was conducted onboard both ferries, as well as within the communities between the Summer of 2023 and the end of December 2023. More than 2,000 non-duplicated surveys were received during this period of time. While the survey was self-selecting, the number of non-duplicated responses indicates the data is at least representative of the overall population of the surveyed communities. The surveys conducted were split by ferry, with one set of surveys distributed to obtain feedback on the Grafton Ferry and one set distributed for the Golden Eagle Ferry. Handouts and online promotions for the surveys can be seen in Figure 11.

The Grafton Ferry surveys were distributed in two ways: first as an onboard survey via paper handouts as the ferry fares were collected and second as a community survey through online advertisement of the survey and through in-person distribution of paper handouts at community events. Surveys were collected from July 2023 until the closure of the Grafton Ferry for the season in November 2023. The combined distribution of home locations for the respondents to the two Grafton surveys can be seen in Figure 12.

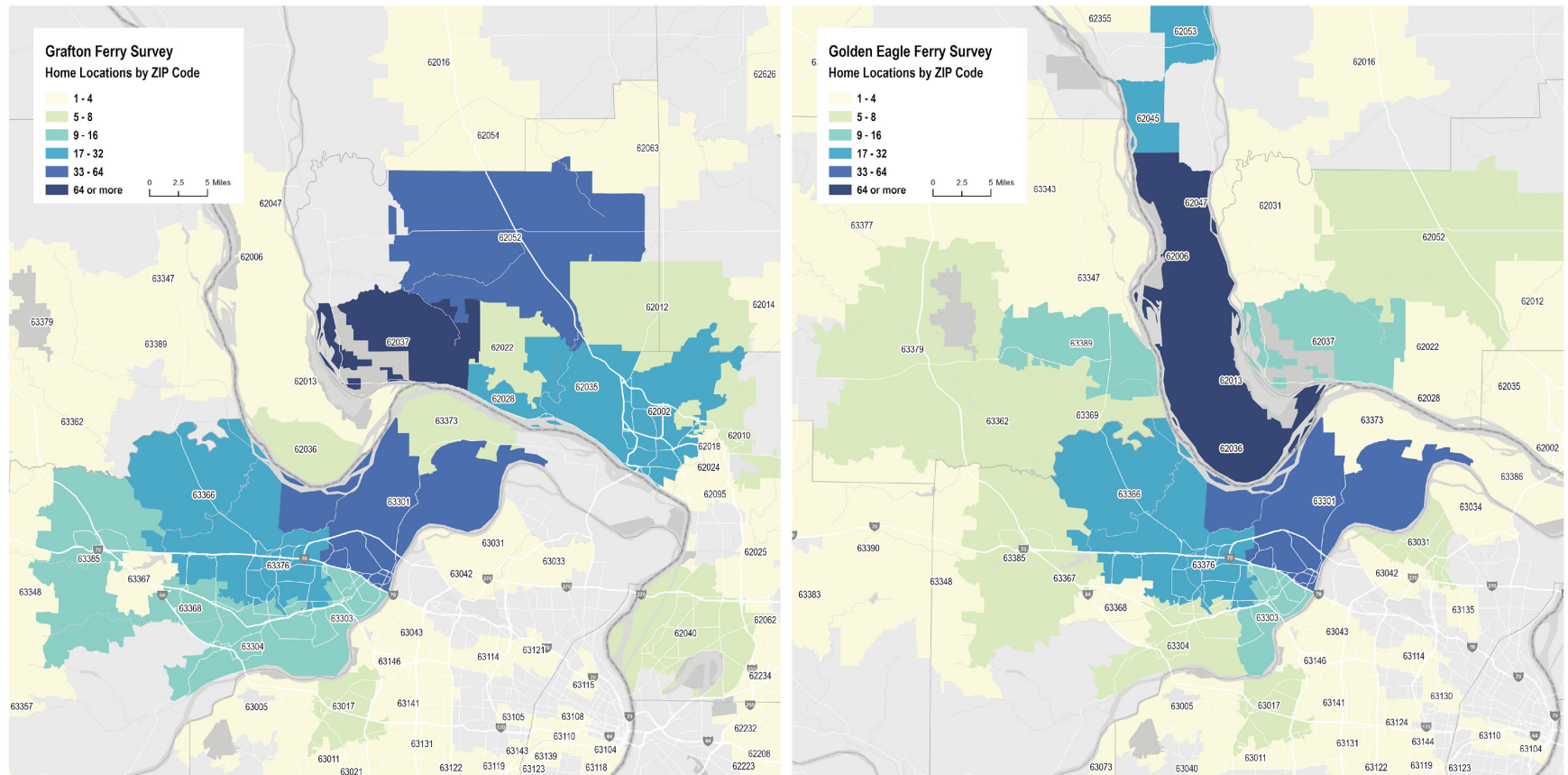
The Golden Eagle Ferry surveys focused on current riders and Calhoun County residents and were collected from October 2023 to the end of December 2023. The vast majority of Golden Eagle Ferry surveys were collected via the rider survey, which had paper handouts onboard the ferry and on the Calhoun Ferry Company's Facebook page. The community survey was distributed online but received few responses compared to the onboard survey. Though the community survey was not as successful in Calhoun County, the participants who responded to the onboard survey were mostly from Calhoun County, providing a good representation of opinions from concerned Calhoun County residents.



Figure 11 Survey Handouts for Grafton and Golden Eagle Ferries



Figure 12 Grafton and Golden Eagle Survey Home Locations



Trip Purpose

Two fundamental questions asked during the surveys were: “How often do you use the ferry?” and “What are your reasons for taking a trip?”. These two questions help provide a basic understanding of the types of riders utilizing each ferry. As seen in Figure 13, Grafton survey respondents mostly use the ferry for non-work trips regardless of how often they use the ferry. While daily or weekly riders are more likely to use the Grafton Ferry for work trips, the majority of trips are for recreation, which included going to restaurants and bars, and shopping.

The same questions were asked for Golden Eagle Ferry riders in Figure 14. Unlike the Grafton Ferry, which only operates Friday through Sunday, many more riders use the Golden Eagle Ferry for work trips, including people who use the ferry everyday and on weekdays. A large number of respondents also only use the Golden Eagle Ferry weekly, monthly, or a few times a year, but are more likely to have a trip purpose other than work, including regular appointments, shopping, and social visits.

Figure 13 Trip Purpose by Frequency of Grafton Ferry Use

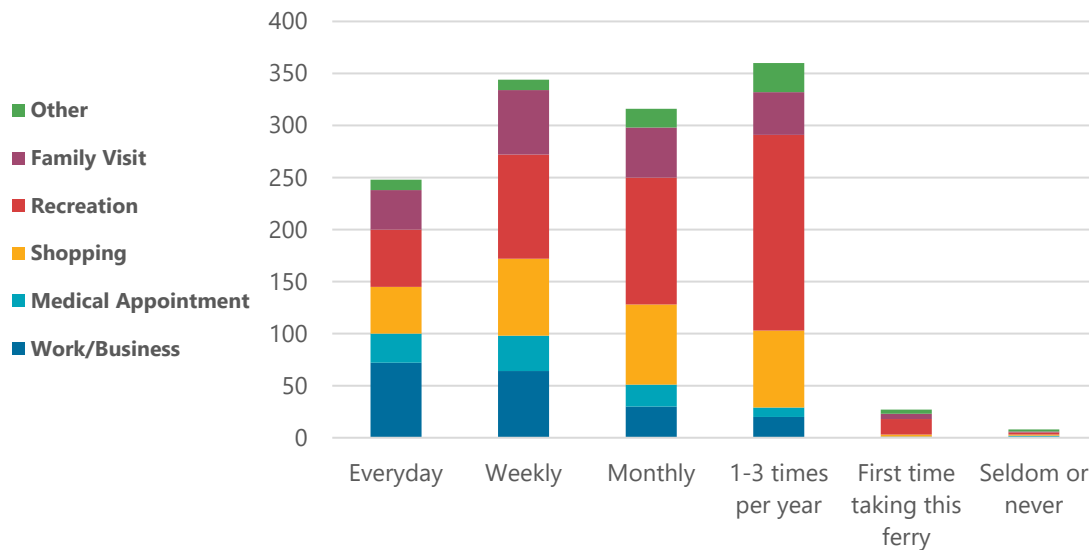
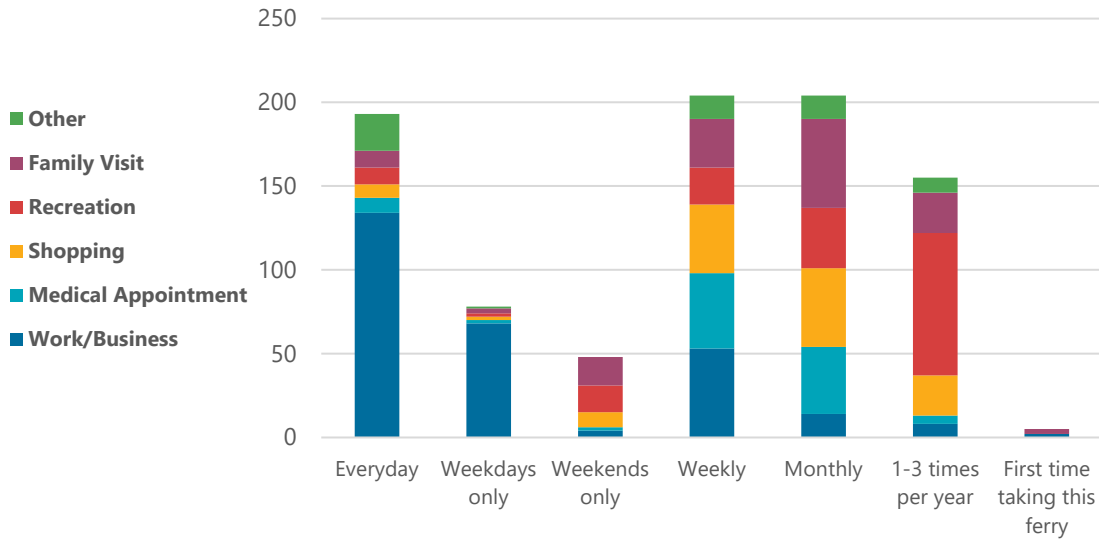


Figure 14 Trip Purpose by Frequency of Golden Eagle Ferry Use



Alternative Crossings

To determine the travel patterns of respondents when either ferry is not available for use, the surveys asked, "If the ferry is not available, how do you cross the Mississippi River?" This question also helps determine how likely some users are to use the nearby ferries to complete a trip versus utilizing nearby bridges. As seen in Figure 15 and Figure 16, respondents from both ferries are unlikely to use the other ferry to complete a trip. Most respondents will use US-67 bridge in Alton to complete their trip across the Mississippi River.



Figure 15 Alternative Crossings for Grafton Ferry by Home Location

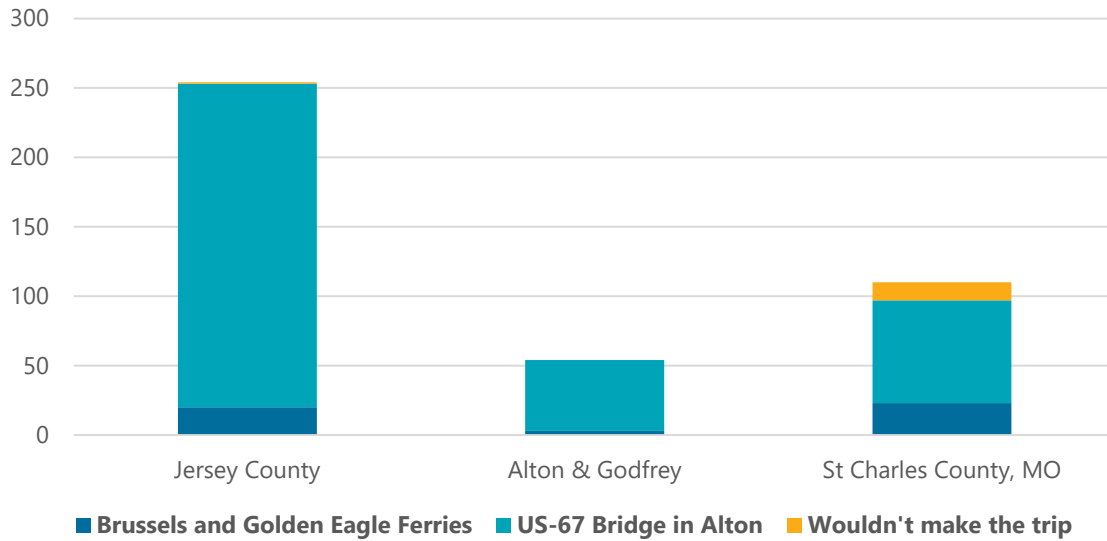
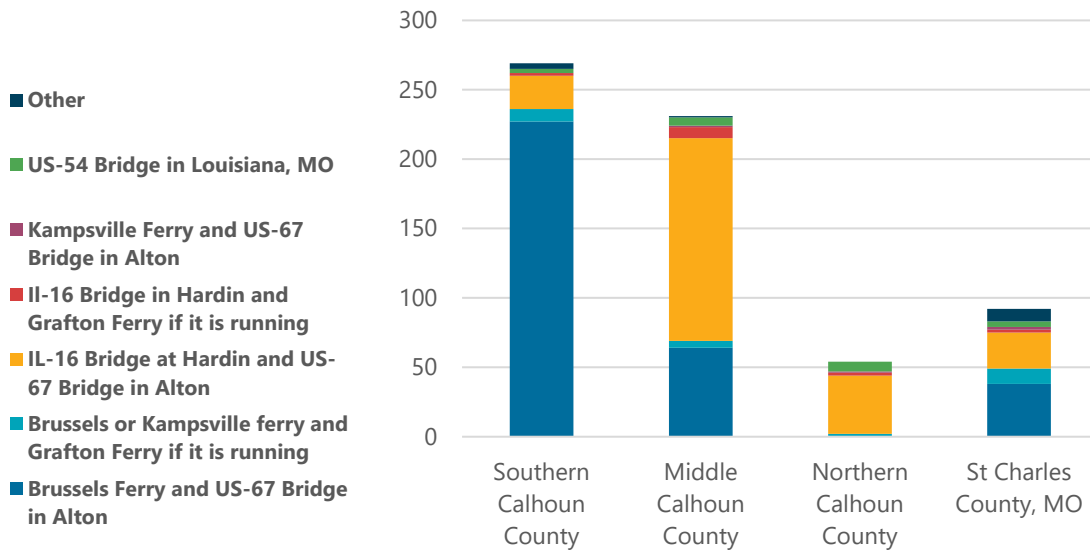


Figure 16 Alternative Crossings for Golden Eagle Ferry by Home Location



Ferry Information and Fares

In anticipation of the funding analysis and potential strategies for how to improve the ferry, respondents were asked how they currently receive information about the ferry (“How do you get information about the ferry?”) and their views on current trip pricing (“Does the current price of a trip (\$9 one-way for a passenger vehicle) deter you from riding the ferry?”).

The majority of respondents for both ferries either have local knowledge of the ferries from regular use or utilize social media to access news about the ferry, as seen in Figure 17. With the Grafton Ferry having a high number of infrequent riders and a higher percentage of shopping and leisure trips, more users on the Grafton Ferry responded that they use other online tools, like the City of Grafton website or Google Maps, to get information on how to access the ferry and when it operated.

Most users and community members on both ferries responded that the current price does not deter them from riding the ferry. As seen in Figure 18, community members who seldom or never use the ferry had more hesitation about the price, but still had a majority that responded no to the question. More of the Golden Eagle Ferry users believed that current prices were a concern for taking more trips, particularly for users who use the ferry more often (daily, weekdays, or weekly), as seen in Figure 19.

Figure 17 Getting Information about the Ferry

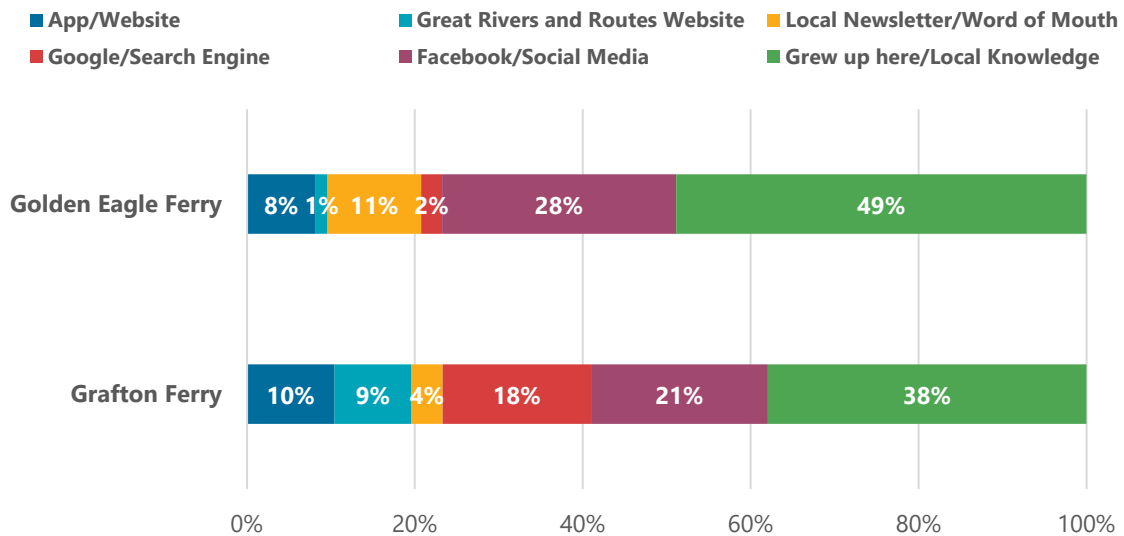


Figure 18 Grafton Ferry Prices and Frequency of Use

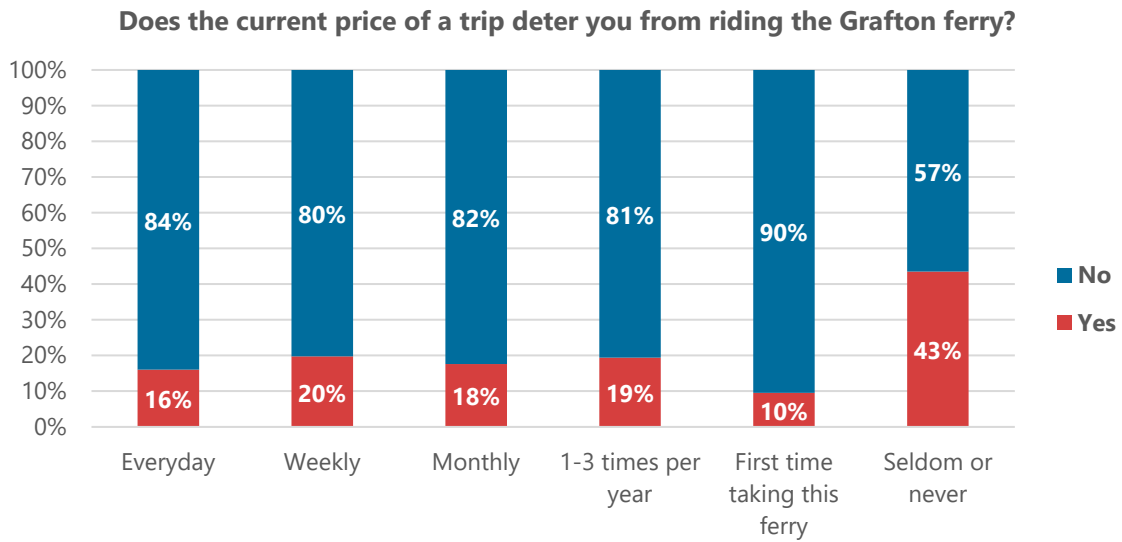
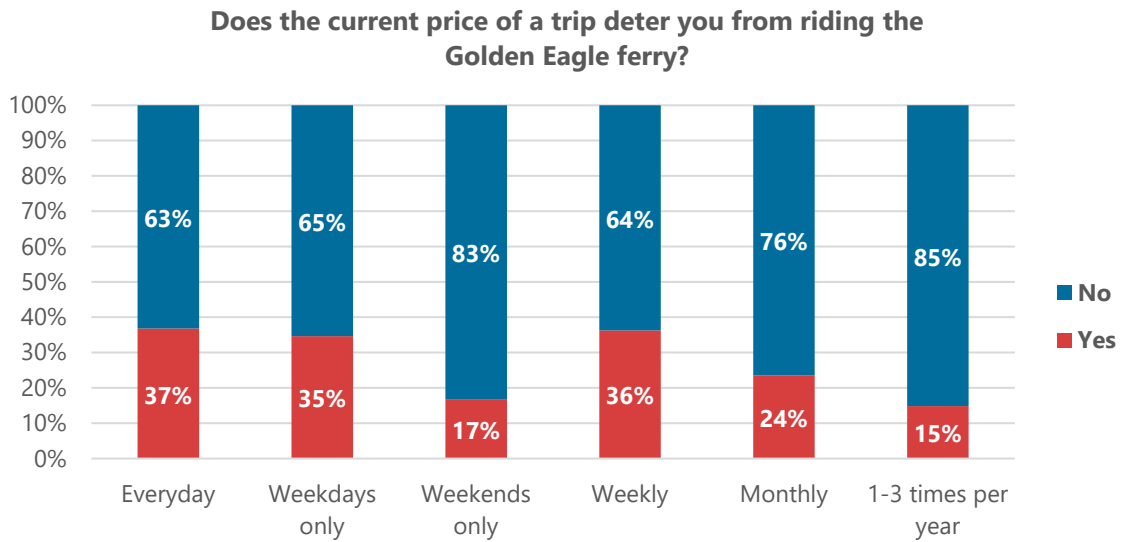


Figure 19 Golden Eagle Ferry Prices and Frequency of Use



Service Expansion

As the City of Grafton explores how to increase service on the Grafton Ferry, survey respondents were asked their willingness to pay for increased services and what type of services they prioritize the most. Survey respondents had different opinions for each ferry on their willingness to pay for expanded services. With more service currently available to users of the Golden Eagle Ferry, respondents were less likely to support increased fares to pay for any additional service, while Grafton Ferry users were more likely to pay for increased service (Figure 20).

Respondents concerned with the Grafton Ferry favored service expansions in the following order: having the ferry available throughout the year, expanding the service to run seven days a week, and having the service start earlier or end later (Figure 21). This prioritization of service expansion was consistent by respondents' frequency of use except for people who were taking the ferry for the first time. They favored seven days a week as their highest priority. As seen in Figure 22, Golden Eagle Ferry survey respondents favored additional weekday service, whether that was having extended hours Monday through Thursday or having the same hours every day (currently Fridays & Saturdays operate later at night and Sundays don't start as early).

With a high availability of service on the Golden Eagle Ferry, respondents were also asked what improvements they would prioritize for the ferry infrastructure. As seen in Figure 23, most respondents, regardless of how often they use the ferry, want a more flood tolerant landing on the Missouri side. Additionally, riders prioritized improving the approach roads in Missouri and expanding the service hours available.

Figure 20 Additional Costs for Expanded Service

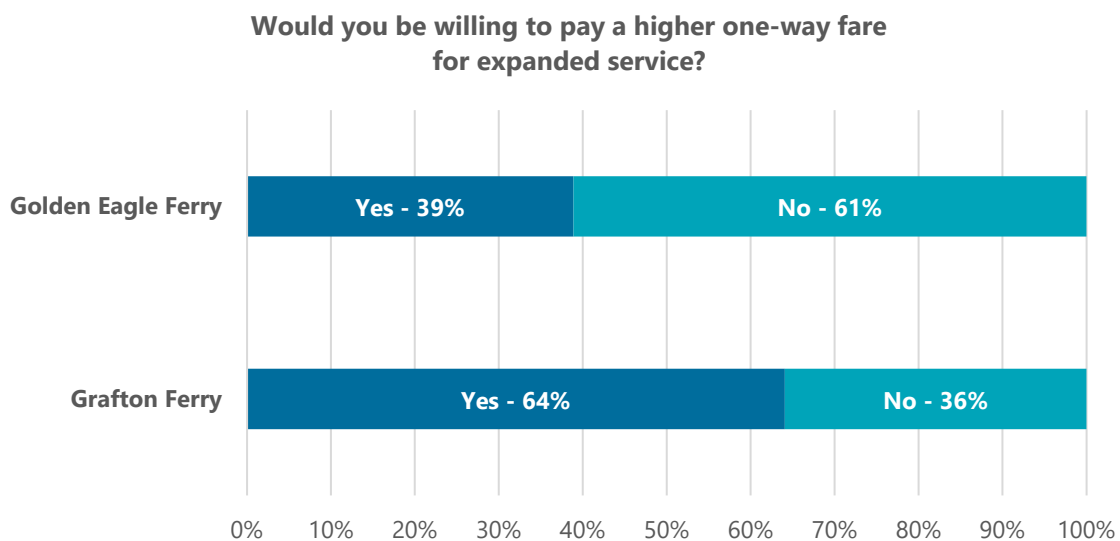


Figure 21 Grafton Ferry Service Expansion by Frequency of Use

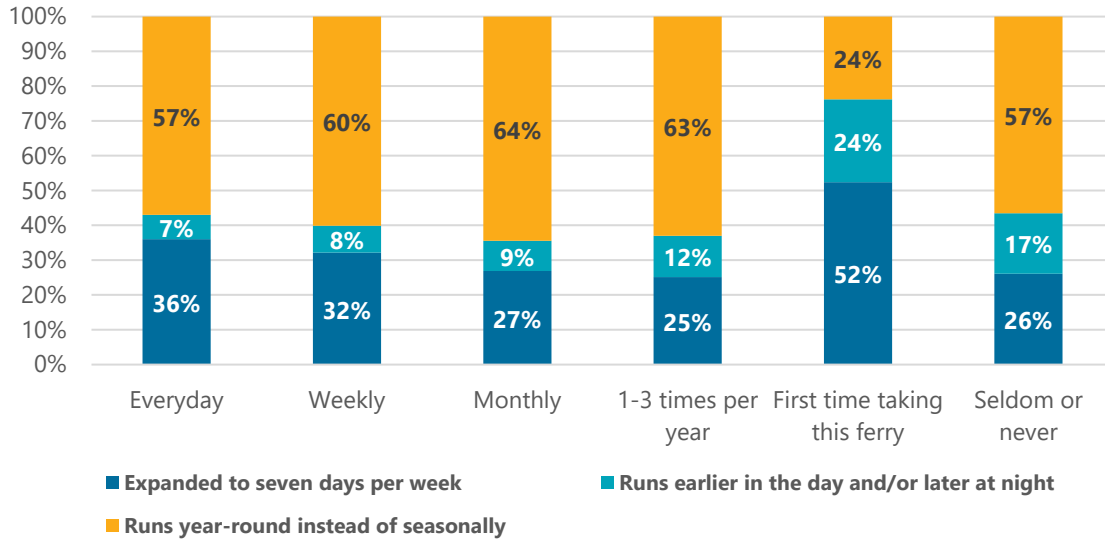


Figure 22 Golden Eagle Service Expansion by Frequency of Use

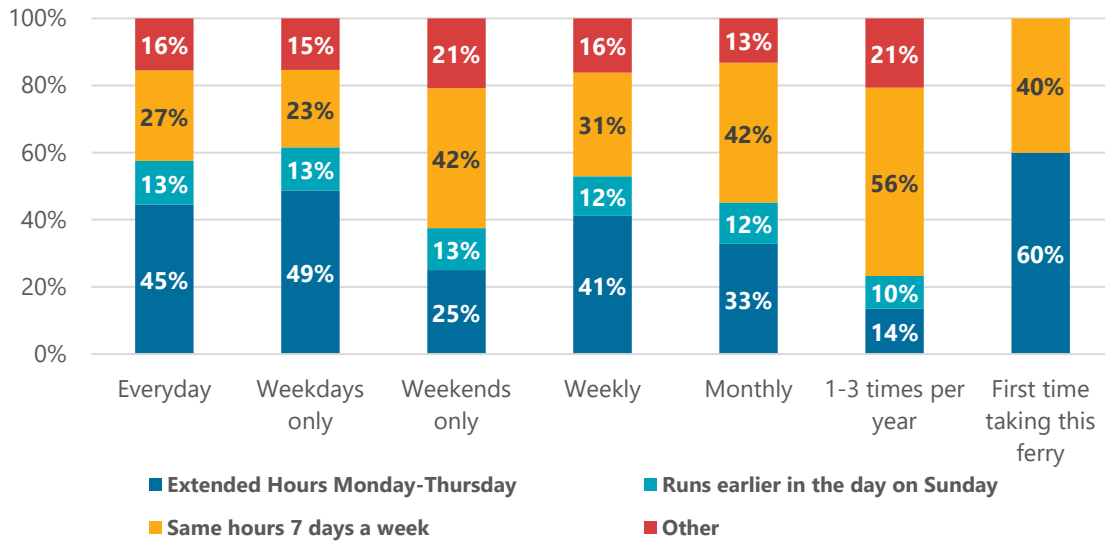
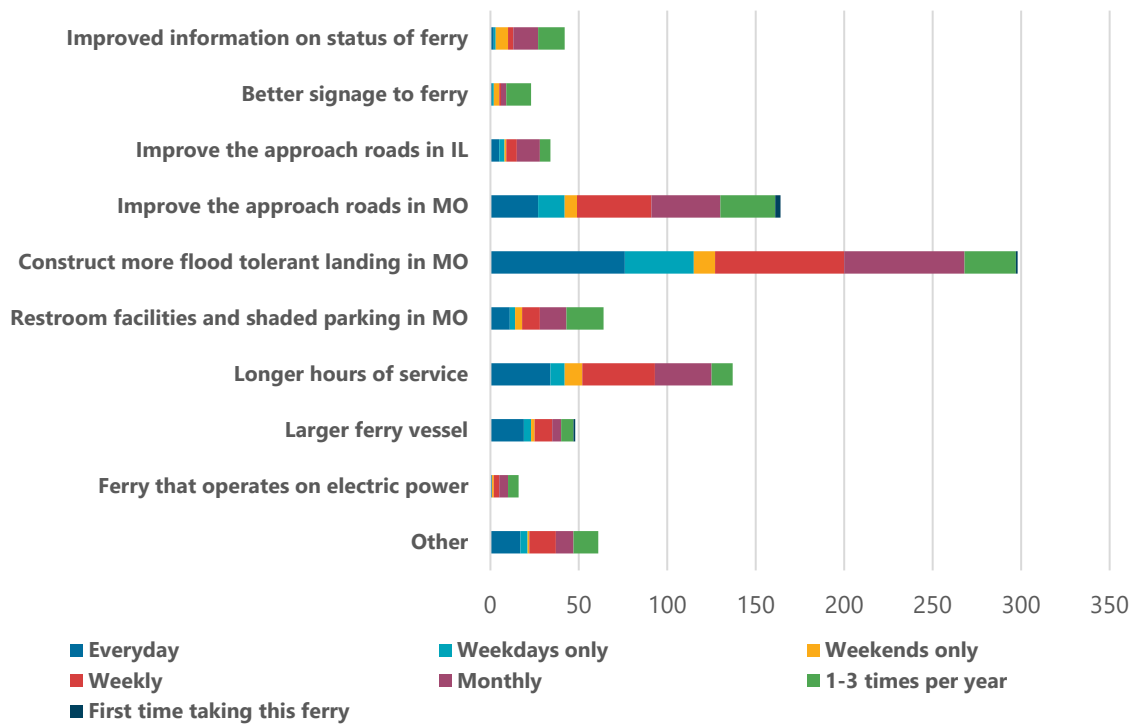


Figure 23 Golden Eagle Important Improvements by Frequency of Use



3 ADDITIONAL FERRY PROFILES

Calhoun County is a long peninsula created by the nearly parallel courses of the Mississippi and Illinois Rivers. The Brussels and Kampsville ferries create a “bridge” from Calhoun County into Jersey and Greene Counties and is operated by the State of Illinois. These two crossings supplement the IL-16 bridge crossing of the Illinois River at Hardin, which is about halfway between the southern crossing of the Brussels Ferry and the more northern crossing of the Kampsville Ferry. These two ferry crossings and one bridge crossing are essential in that they allow people travelling to and from other parts of Illinois to have access into Calhoun County without a long road detour. These crossings are distinct from those at Grafton and Golden Eagle as they connect two portions of the State of Illinois together as opposed to connecting Illinois with Missouri. The two ferries on the Illinois River have been under control of the State of Illinois since the early 1960’s.

BRUSSELS FERRY

The Brussels Ferry runs across the Illinois River between a landing 3.3 miles west of Grafton, Illinois and north of Brussels, Illinois for 24 hours every day. By allowing riders and their vehicles to bypass IL-100 and US-67 on their way to St. Louis, the Brussels Ferry cuts travel times significantly, while also providing faster access between Calhoun and Jersey Counties in Illinois. The ferry is free to ride.

The Brussels Ferry performs 36,972 trips annually⁷ and carried 292,000 vehicles in 2023, with a daily average of 801 vehicles per day. The ridership history presented in Figure 24 represents data that is missing as a result of the ferry not operating as well as some gaps in ridership data. However, the data gaps are not significant enough to have a marked impact on the annual average traffic volumes.

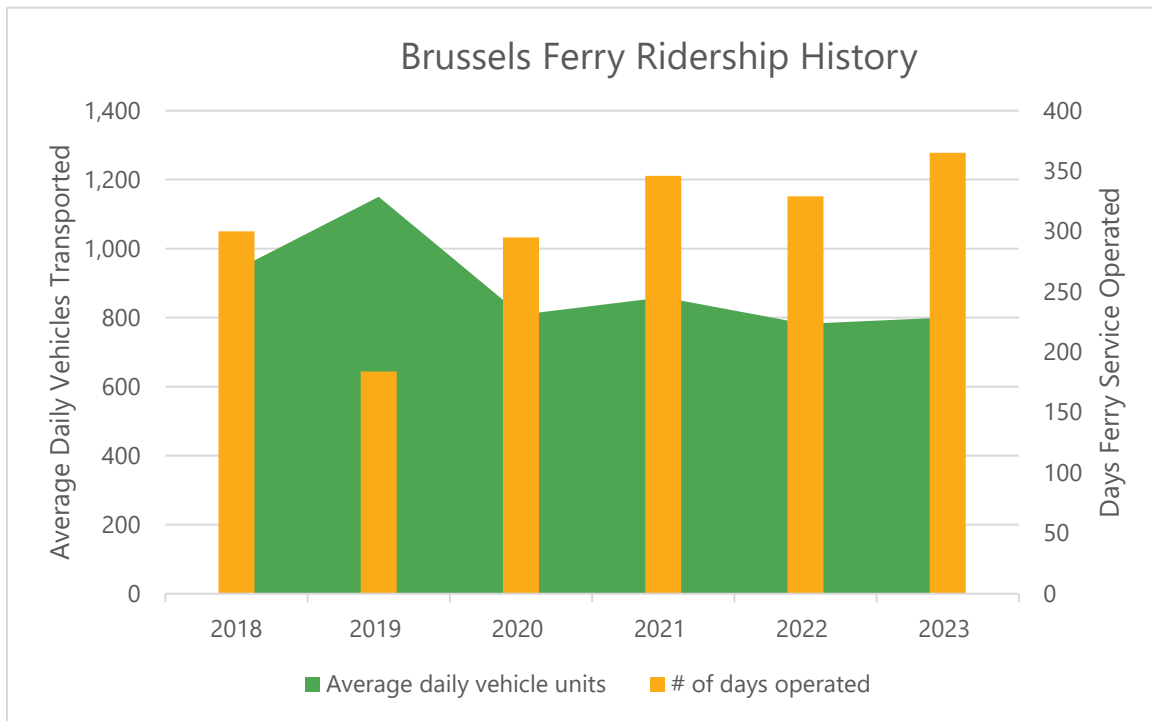
In general, ridership in recent years on the Brussels Ferry topped out in 2019. Which is somewhat counter-intuitive given the significant service disruption caused by the Great Flood of 2019. However, of significant note is that ferries tend to be more resilient in the face of floods than bridges. Daily average ridership on the Brussels Ferry was driven higher

⁷ Depending on the year, ice floes and flood waters historically have disrupted operations and the number of trips, even the number of days of operation will increase and decrease from year to year.



by riders detouring from the bridge at Hardin. While the bridge was largely un-affected by the flooding, the approach roads remained impassable for an extended period meaning the ferries at Brussels and Kampsville were the primary alternative pathways in and out of Calhoun County. Otherwise, ridership declined in 2020, likely as a result of the pandemic and has remained fairly constant since that time. This runs counter to the ridership trends of the Golden Eagle Ferry. As observed in Figure 9 the Golden Eagle ferry also had a significant ridership decline as a result of the pandemic in 2020, but recovered fully in 2021 and has been increasing each year since that time. One possible explanation is that the balance of economic activity in Calhoun County is tipping more toward business and employment relationships in St. Charles County, as opposed to activity related to Jersey County. Also, of note is that the IDOT ferry runs 24 hours a day and is fare free. The Golden Eagle Ferry runs a more limited schedule and charges fares. Even with those differences in 2023 the Brussels ferry ran 801 vehicles per day while the Golden Eagle ferry ran 583 vehicles per day, a 37 percent difference. These two ferries are fairly close together, but in large measure are not direct competitors. The difference in ridership history is more a measure of economic activity within Calhoun County as opposed to a commentary on ferry crossing competition.

Figure 24 Brussels Ferry Ridership History



Source: Illinois Department of Transportation



Figure 25 Brussels Ferry Map



Operator

The Brussels Ferry is owned and operated by the Illinois Department of Transportation.

Infrastructure

Ferry Landings

The Illinois Department of Transportation owns and maintains ferry landings both near Grafton and near Brussels. There is limited infrastructure at both terminals but road access from Grafton on Route 100/Great River Road and from Brussels via Old Ferry Road and Illinois River Road.

Fleet

The Illinois Department of Transportation owns and operates four barges and push boats, with two operating out of Brussels and the other two operating out of Kampsville. The most used vessel traveled 5,420 miles in 2019. The newest towboat was constructed in 2012, the *Liberty Belle*.



Funding and Costs

The Brussels Ferry is 90 percent funded by state revenue through the Illinois Department of Transportation and 10 percent federally funded. The USDOT has historically supported the acquisition of new vessels.



Figure 26 Brussels Ferry Pictures



Clockwise from Top Left: Brussels Ferry vessels, Jersey County IL ferry operations building, Looking from Jersey County IL to Calhoun County, IL landing, traffic holding area in Jersey County, IL for ferry landing (Great River Road is to left side of picture).

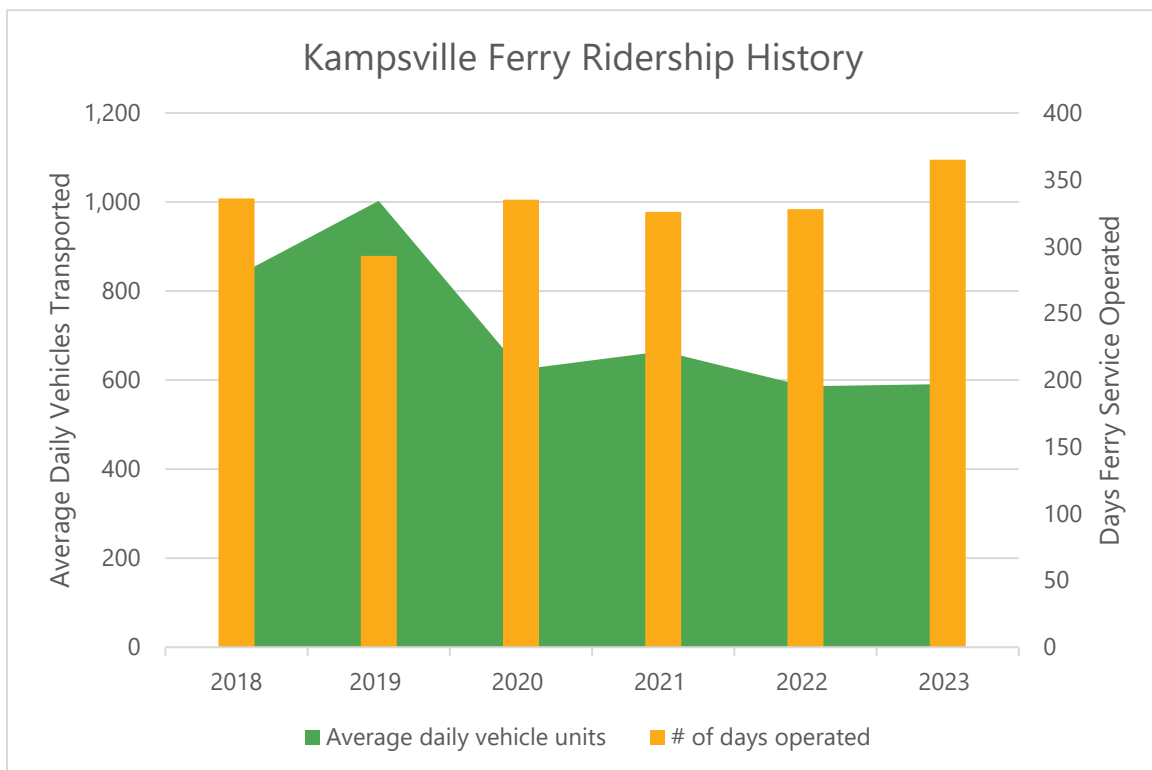


KAMPSVILLE FERRY

The Kampsville Ferry runs across the Illinois River between Illinois Route 108 and Illinois Route 100 (Great River Road south) near Kampsville for 24 hours every day. By allowing riders and their vehicles to bypass the Great River Road and the Page Bridge, the Kampsville Ferry cuts travel times significantly. The ferry is free to ride.

The Kampsville Ferry performs 34,944 trips annually (see footnote on Brussels Ferry) and in 2023 carried 215,810 vehicles, with approximately 591 vehicles per day. Figure 27 reveals that the ridership trends of the Kampsville Ferry are remarkably similar to those of the Brussels Ferry and likely for many of the same reasons. However, the volume is about 36 percent less at Kampsville than at Brussels. Again, though not in direct competition, it is notable that the Kampsville ferry is presently operating at about the same volume as the Golden Eagle Ferry, yet it operates without collecting fares and operates on an extended daily schedule.

Figure 27 Kampsville Ferry Ridership History



Source: Illinois Department of Transportation



Figure 28 Kampsville Ferry Map



Operator

The Kampsville Ferry is owned and operated by the Illinois Department of Transportation.

Infrastructure

Ferry Landings

The Illinois Department of Transportation owns and maintains ferry landings. There is limited infrastructure at both terminals but road access to Illinois Routes 108 and 100.

Fleet

The Illinois Department of Transportation owns and operates four barges and push boats, with two operating out of Kampsville and the other two operating out of Brussels. The most used vessel traveled 5,420 miles in 2019.



Funding and Costs

The Kampsville Ferry is 90 percent funded by state revenue through the Illinois Department of Transportation and 10 percent federally funded. In 2021, IDOT upgraded landing infrastructure for increased accessibility using a combination of annual Ferry Boat Program Funds from the Federal Highway Administration, a 20 percent state match, and federal COVID Supplemental funds.



Figure 29 Kampsville Ferry Pictures



Clockwise from Top Left: Kampsville Ferry, Calhoun County IL Landing, Heading into landing in Greene County, IL, Ferry landing in Kampsville, Calhoun County, IL



The remaining ferry route profiles represent ferries that are more similar to the Grafton and Golden Eagle ferries in that they are bi-state crossings. What is the most notable difference between these crossings and Grafton and Golden Eagle, they have significant financial interest of either the state or a local government entity involved in the operation.

STE. GENEVIEVE-MODOC FERRY

The Ste. Genevieve-Modoc Ferry runs across the Mississippi River between Ste. Genevieve, Missouri and Modoc, Illinois year-round from 6 A.M. – 5:30 P.M. Monday-Saturday and 9 A.M. – 5:30 P.M. Sundays. By allowing riders and their vehicles to travel between Chester and Columbia, the Ste. Genevieve-Modoc Ferry cuts travel times significantly. Fares range from \$2 to \$60 one-way depending on vehicle type, with higher fares reserved for large trucks, buses, and farm equipment. A typical passenger car will cost \$15 on-way and \$25 round-trip.

The Ste. Genevieve-Modoc Ferry performs 1,338 trips annually and carries 15,097 passengers and 5,440 vehicles, with approximately 63 passengers per day. A long-term history of ridership was not available for this ferry crossing.

Figure 30 Ste. Genevieve – Modoc Ferry Map



Operator

The Ste. Genevieve-Modoc Ferry, Inc., a private company, operates the ferry service under contract to the New Bourbon Regional Port Authority. The New Bourbon Regional Port Authority in Perryville, Missouri owns the service, including the towboat and barge.

Infrastructure

Ferry Landings

The Illinois Department of Transportation owns and maintains the Illinois ferry terminal. On the Missouri side, the New Bourbon Port Authority owns the landing and approach roads up to the Modoc railroad tracks. There is limited infrastructure at both terminals except road access to County Highway 12 on the Illinois side and Little Rock Road on the Missouri side.

Fleet

The Ste. Genevieve-Modoc Ferry operates one vessel, owned by the New Bourbon Port Authority. This vessel travels approximately 12,000 miles each year.

Funding and Costs

The Ste. Genevieve-Modoc Ferry is 58 percent funded by ticket revenue and 42 percent funded by the Missouri DOT Multi-Modal Division. In July 2023, the Illinois General Assembly appropriated \$250,000 to the Illinois Department of Transportation to continue operating the Ste. Genevieve–Modoc River Ferry.



Figure 31 Ste. Genevieve-Modoc Ferry Pictures



Clockwise from Top Left: St. Genevieve-Modoc Ferry, ferry landing sign in Randolph County, IL, ferry departing from landing in St. Genevieve County, MO, Road guide signage in Modoc, IL



CAVE-IN-ROCK FERRY

The Cave-in-Rock Ferry runs across the Ohio River between Hardin County, Illinois and Crittenden County, Kentucky year-round from 6:00 A.M. to 10 P.M. every day. By allowing riders and their vehicles to avoid the Shawneetown Bridge and Kentucky Route 56, the Cave-in-Rock Ferry cuts travel times by around 60 minutes. The ferry is free to ride.

The Cave-in-Rock Ferry performs 16,634 trips annually and carries 126,456 passengers, and 55,892 vehicles, with approximately 375 passengers per day. A longer-term ridership history was not available. Of note, however, is that this bi-State ferry crossing, directly supported by the Illinois Department of Transportation at the direction of the Illinois legislature operates at about half the volume of the Golden Eagle Ferry.

Figure 32 Cave-In-Rock Ferry Map



Operator

Cave-in-Rock Ferry service is provided by private company Lonnie Lewis, Inc., (doing business as The Cave-in-Rock Ferry) which has operated service since October, 1994. Lonnie Lewis operates under contract to the Ohio River Ferry Authority, Inc., operated by the Crittenden



County Fiscal Court and is fiscally supported by the Kentucky Transportation Cabinet and Illinois Department of Transportation, as directed by the Illinois State legislature.

Infrastructure

Ferry Landings

The State of Illinois and IDOT own and maintain the Illinois ferry terminal. On the Kentucky side, the landing is owned and managed by the Commonwealth of Kentucky. There is limited infrastructure at both terminals but road access to Canal Street on the Illinois side and Kentucky Route-91 in Kentucky.

Fleet

The Ohio River Ferry Authority owns two vessels, with the most used traveling 6,817 miles in 2019.

Funding and Costs

The Cave-in-Rock Ferry is 100 percent funded through Kentucky Transportation Cabinet (KYTC) and Illinois Department of Transportation. The former contract, negotiated in 2022 with KYTC and IDOT allocates \$3,324,000 for the operation of the ferry through June 30, 2024. The contract was renewed, again, on June 30, 2024 as this report is being finalized. It was reported the new contract has a value of \$1,878,060 per year, or \$3,756,120 for two years. One half of that cost is supported by each state through an agreement between IDOT and the Kentucky Transportation Cabinet.



Figure 33 Cave-in-Rock Ferry Pictures



Clockwise from Top Left: Cave-in-Rock Ferry, Ferry Landing in IL, Preparing to leave with river tow passing by, From ferry landing in Illinois looking north on IL-1.



DORENA-HICKMAN FERRY

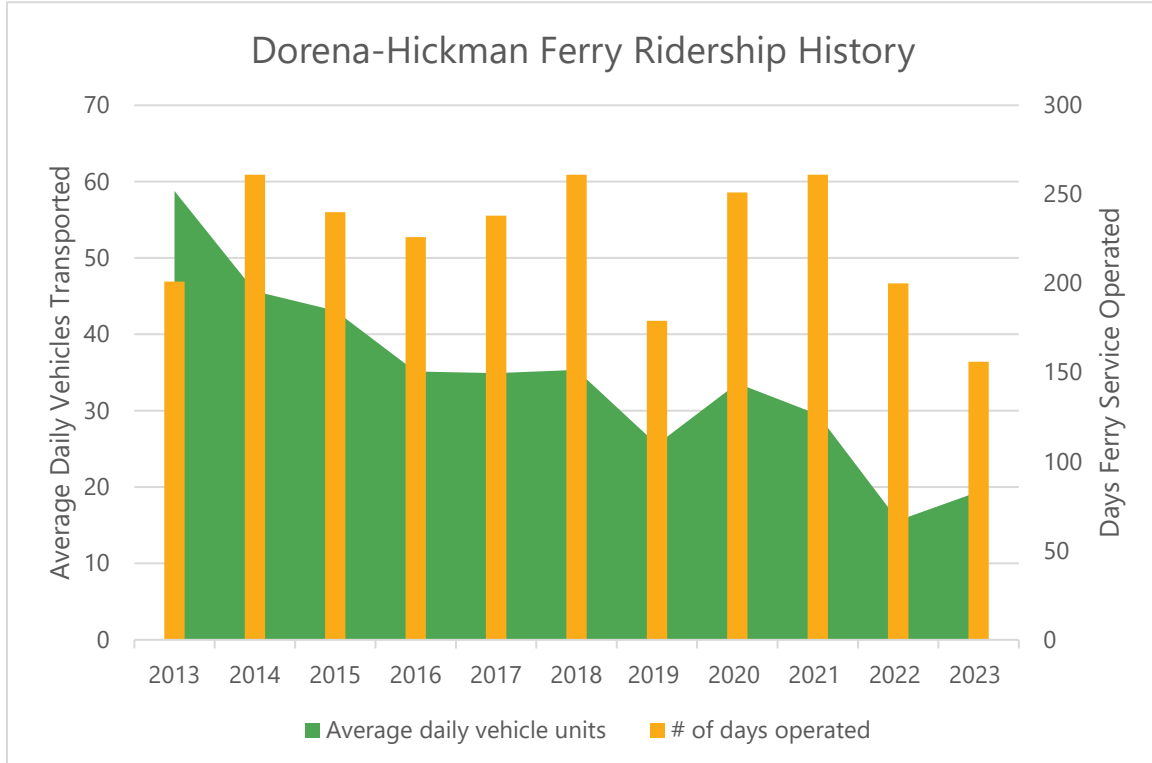
The Dorena-Hickman Ferry runs across the Mississippi River between Mississippi County, Missouri and Fulton County, Kentucky. Service is planned to operate year-round from 7:00 A.M. to around 4:30 to 6:30 P.M. every day except Tuesday and Wednesday. The published operating schedule says:

“The Dorena-Hickman Ferry hours of operation do not fit into Facebook's options. We are currently closed on Tuesday, Wednesday and the third weekend of each month. We run on demand except for the first and last runs of the day which roughly follow the hours of daylight. The first run of each day from Kentucky is 7:00 am; the first run of each day from Missouri is 7:30 am.

Last runs are as follows:

- December 1 - February 14---4:15 pm from Kentucky and 4:30 pm from Missouri
- February 15 - March 14 and October 15 - November 30---5:15 pm from Kentucky and 5:30 pm from Missouri
- March 15 - October 14---6:15 pm from Kentucky and 6:30 pm from Missouri
- We also close on New Year's Day, Thanksgiving Day and Christmas Day.”

Figure 34 Dorena-Hickman Ferry Ridership History



Source: Mississippi County Port Authority



As indicated in Figure 34, ridership on the Dorena-Hickman Ferry has declined steadily over the past decade. Some of the decline is indicative of the economic state of the two areas served by the ferry, but the lack of consistent operation has also been an obstacle to ridership growth. When the Port of Mississippi County restarted, or took over, the ferry crossing in 2008, the ferry had not been in operation for more than four years. The early years of operation were more similar to those shown for 2013. Again, what is different for this crossing is the long-term downturn in ridership when compared to the recent ridership results at Grafton and Golden Eagle. Much of this trend reflects the economic conditions of the adjacent communities, but also speaks volumes about the role ferries can play in supporting economic activity.

Figure 35 also shows one of the weaknesses of this ferry crossing; the landing in Kentucky is essentially in a harbor. This has not always been the case. The southern tip of the peninsula that forms the harbor has been steadily extending south over the years through accretion of river deposited material. According to local residents, 40 years ago it was possible to see the ferry landing at Hickman from the Missouri side, that is no longer true. This feature of the crossing means that there is limited space to navigate the ferry into the landing and that the landing is severely limited by low water. While in theory the landing could be extended, the challenge is there would not be enough water in front of the landing to allow navigation of the ferry. This particular stretch of the river is also subject to strong winds which create issues for navigating into the harbor channel, as well as holding the ferry into the Missouri landing. The result of these factors, in addition to high water, is that the ferry operates about 70 percent of the time when it is intended to operate. For many non-locals this is a major disincentive to riding the ferry as current ferry operations information is limited in availability, except on Facebook.



Figure 35 Dorena-Hickman Ferry Map

Operator

Dorena-Hickman Ferry service is provided under the authority of the Mississippi County Port Authority which assumed the operation in 1996 after nearly five years of shutdown following termination of service by private operators. The Port Authority built the Dorena at that time and later replaced it with the Dorena II in 2003. The ferry is directly operated by Port Authority employees. However, there is only one pilot and one deckhand which reduces operating days to not more than 5 days per week and limits service to not more than twelve hours per day.

Infrastructure

Ferry Landings

The ferry has been frequently shut down over the past year. The predominant cause appears to be low water conditions as this is the farthest north ferry crossing on the Mississippi that is not operating in a controlled depth pool. This ferry crossing is located approximately 30 river miles downstream of the confluence of the Ohio and Mississippi rivers. As indicated above the landing in Kentucky is of inadequate length to accommodate the recent low-water



conditions on the free-running portions of the Mississippi. Historical records indicate the landings on both sides of the river were relocated in 2008-2009 onto levees immediately adjacent to the ferry landings to facilitate better high and low water operations, but the issue with the Kentucky landing within the harbor has not been resolved.

Fleet

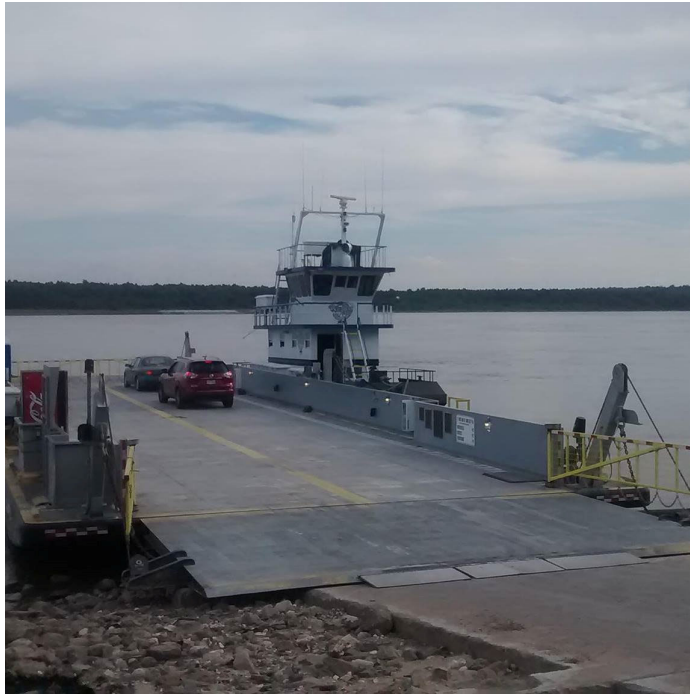
There is one vessel available for this crossing, a combination of the Dorena II (built in 2003 by Progressive Industries) and the vehicle barge, Hickman II, built in 2012 by Eagle Fabrication. The vessels are fully owned and maintained by the Port Authority of Mississippi County, MO. According to Port Authority staff the tug needs to be re-powered.

Funding and Costs

This section is incomplete as precise financial reports on the ferry are not available as the operation is not reported in the US Bureau of Transportation Statistics Ferry Census, nor are there publicly available reports from either Missouri or Kentucky that report on the operations and finance of this ferry crossing. We do know the two states invest about \$300,000 per year in the operation of the ferry and that the insurance for the ferry is about \$52,000 per year. Other costs are fuel, payroll for the two employees, and maintenance for the two ferry vessels. Overall, it was acknowledged by the Port Authority that the ferry does require some level of subsidy from local funds in addition to funds provided by Missouri and Kentucky. Not counted in that total are funds provided by both states and local government organizations that have contributed to maintaining the ferry landings and approach roads over the years.



Figure 36 Dorena-Hickman Ferry Pictures



**Dorena-Hickman Ferry Toll Schedule
Effective August 1, 2022**

Approved by the Mississippi County Port Authority

Basic Fare

Single vehicles (up to 8' wide and 30' long)	\$20.00
Single vehicles (up to 8' wide and 31' – 55' long)	\$40.00
Single vehicles (up to 8' wide and 56' – 75' long)	\$60.00

Wide Loads

Over 8' wide up to 12' at widest point and up to 30' long	\$30.00
Over 8' wide up to 12' at widest point and 31' – 55' long	\$60.00
Over 8' wide up to 12' at widest point and 56' – 75' long	\$90.00
Over 12' at widest point and up to 30' long	\$40.00
Over 12' at widest point and 31' – 55' long	\$80.00
Over 12' at widest point and 56' – 75' long	\$120.00

In order to encourage round trip usage, all the above fares will be reduced by one-half 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.

Discount Fares (per trip):

Motorcycles and ATV's	\$10.00
Horse drawn wagons	\$5.00
Bicycles and Horses	\$5.00
Pedestrians	\$5.00
School Groups (per person, return trip included)	\$1.00 (Advance notice required)

Coupons

Sheet of ten basic fare vouchers	\$114.00 (\$11.40 per voucher)
Multiple vouchers required for long/wide vehicles	

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

EXCLUSIONS: Unattended minors, vehicles or cargo.
We cannot carry: Any vehicle carrying anything requiring DOT placard signage.



Clockwise from Top Left: Dorena-Hickman Ferry vessel, nameplate on ferry, ferry landing sign, ferry fares.



4 ECONOMICS OF TOURISM

Thanks to the establishment, operations, data gathering, and planning of Great Rivers and Routes Tourism Bureau (GRRTB) we can present some picture of the contribution of tourism into the local economy, see Figure 37. The data presented below was collected in 2022 and published in early 2024, representing the latest information available. This effort by GRRTB is the first part of a larger effort to create a Tourism Master Plan for the Great Rivers and Routes region, or corridor. In a January 2024 report “Great Rivers and Routes Current State Analysis” the report authors, Whereabout, offer the following in the report introduction.

“The Great Rivers & Routes Tourism Bureau (GRRTB) has chosen a pivotal time to initiate a Tourism Master Planning process for the region. As the world continues its emergence from the COVID-19 pandemic, destinations have the opportunity to reconsider how they approach travel and tourism to empower economic recovery; how to enhance their tourism product; who their visitors are; who they want their visitors to be; and how to ensure an equitable distribution of the benefits of tourism throughout the community. This moment is the opening to reconsider how tourism serves visitors, the local quality of life, and equitably grows the economy.

This report serves as an input to the creation of a Tourism Master Plan for the Great Rivers & Routes region. GRRTB has initiated this process to create economic wealth for the communities in the region, enhance the tourism product, and engage its constituents on behalf of tourism. Sustaining, growing, and diversifying the visitor economy into the next decade and beyond will rely on an understanding of the region’s assets, current visitation patterns, and opportunities for growth—an understanding which we hope this report can bring.”

Many of the recommendations of this report (see Chapter 7) are very much in-line with the early findings in this GRRTB report. More than anything, this report underscores the importance of collaborating with this larger regional effort to ensure the interests of Grafton and Calhoun County are represented in the tourism master plan and that those interests result in a more sustainable operating plans for the Grafton and Golden Eagle Ferries.

The GRRTB data is not as granular as desirable being confined to county-level summaries, but still offers great insight into the economic value tourism represents for Jersey and Calhoun Counties, see Figure 38.



As discussed in Chapter 2 the Golden Eagle Ferry, in particular, leans much further into supporting a non-tourism economy than does the Grafton Ferry. Examples include offering Calhoun County residents easier and more time efficient access to the job market in the St. Charles County and northern St. Louis County regions of Missouri. This is evidenced by the fact that every weekday the first trip of the Golden Eagle Ferry is over capacity typically before the ferry crew is ready to start the operation. Calhoun Ferry Company operates a second ferry immediately following the first to make sure these workers reach their destinations on time. Calhoun Ferry Company employees report that the people on these early ferries are predominantly the same people every day and that they are headed to their jobs and businesses in Missouri. The Golden Eagle Ferry also is an economic pipeline for goods and services moving into and out of Calhoun County. Unfortunately, no economic analysis of this role exists, but one can easily postulate that the economic impact of non-tourism traffic in Calhoun County is substantially more significant than tourism contributions.

There are also issues trying to isolate the direct economic benefits of tourism to Grafton. Grafton is a gateway to many of the tourist-related features in Jersey County and certainly reaps economic benefits from that position. Part of that gateway is formed by the Grafton Ferry while the other part is formed by the Great River Road. For example, people on their way to visit Pere Marquette State Park likely distribute some amount of economic benefit to Grafton. Attempts to somehow allocate that economic benefit between Grafton and the balance of Jersey County is arbitrary, at best. As a result, we are left with looking at tourism economics at a county level.

The economic benefits of the Grafton Ferry should not be limited to just tourism. In the effort to intercept and interview ferry riders as described in Chapter 2, the study team encountered many Grafton area residents making trips into Missouri via the Grafton Ferry. Some of those trips were for work, some for medical appointments, some for shopping and recreation, and some for visiting family and friends. If this ferry were operated seven days a week, year-round, that travel pattern would almost certainly increase as the travel time and distance benefit from Grafton into Missouri is almost as significant as the travel time and distance benefit from Calhoun County into Missouri. Whether that pattern for the Grafton Ferry would rise to the commuter base that has developed for the Golden Eagle Ferry over the past 40 years is unknown, but it will most certainly develop to a greater extent than today's limited service level permits.



Figure 37 Excerpt from GRRTB Current State Report

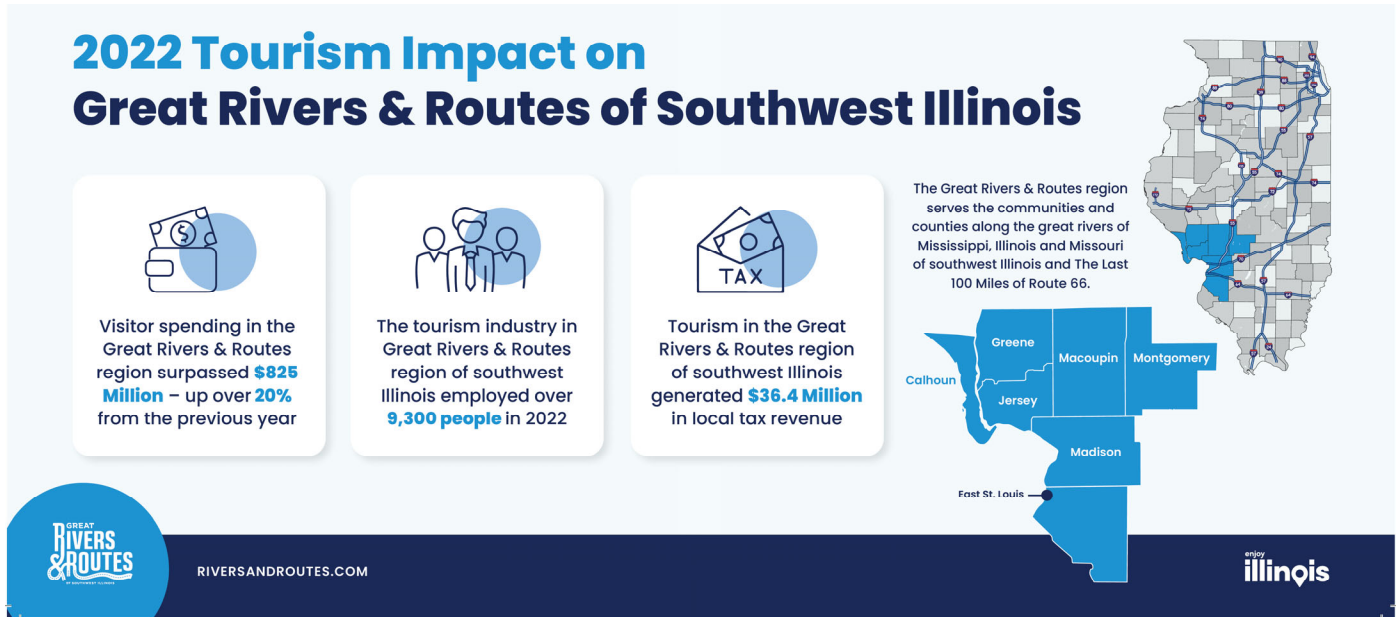


Figure 38 GRRTB 2022 Tourism Economic Impact at County Level

Illinois Tourism saves the average household \$1,263 in taxes

	MADISON	JERSEY	MONTGOMERY	MACOUPIN	CALHOUN	GREENE
Travel Spending	\$512.1 million (20.3% increase)	\$81 million (15.5% increase)	\$130.2 million (20.1% increase)	\$57.1 million (31.9% increase)	\$32.9 million (4.1% decrease)	\$12 million (4.2% increase)
Payroll	\$143.3 million	\$13.6 million	\$29.2 million	\$8.8 million	\$6.2 million	\$2 million
Jobs	4,291	384	999	261	161	58
State Taxes	\$29.1 million	\$4.8 million	\$4.7 million	\$4.3 million	\$2.2 million	\$1 million
Local Taxes	\$15 million (22% increase)	\$5 million (13% increase)	\$2.8 million (16% increase)	\$3.4 million (30% increase)	\$4.2 million (2.4% increase)	\$0.6 million (0% increase)

Information provided from studies prepared for the Illinois Office of Tourism by the US Travel Data Center, Travel Industry of America and the US Travel Association which reviewed the economic impact of travel on Illinois counties.

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5 INITIAL FINDINGS

The following are observations and conclusions drawn from the substantial research conducted with respect to the long-term sustainability of the Grafton Ferry and the Golden Eagle Ferry. This is primarily due to the operation of both ferry crossings being the business of the Calhoun Ferry Company.

GENERAL FINDINGS

1. There are no “Ferry Champions” on the inland waterway. At federal or state (Illinois, specifically) levels there are no identified leaders who carry the banner for the importance of the small ferries that cross the inland waterways, be they public or private. Yet these ferries are critical to the sustainability and resilience of many communities that occupy the US inland river systems.

COMMUNITY RELATIONSHIPS

2. Ferries serve a role larger than tourism. They connect workers to jobs, provide access for residents to communities with retail and medical services and support freight movement, in particular freight related to agriculture. The Golden Eagle Ferry is a critical freight route and could receive funding to recognize that role. However, data available to support the contention of its freight importance is limited and difficult to translate to freight tonnage which is a necessity to make the case for freight funding.
3. Ferries provide an important access resource and emergency response asset during emergency situations and are essential to local resiliency.
4. The Calhoun Ferry Company has, and continues to, offer a critical service to Calhoun and Jersey Counties. They are universally respected in the community and they run a very tight, efficient, reliable and, above all, safe operation. These ferry services are popular with local residents and out of area riders. However, regulatory and financial conditions outside their control are squeezing the long-term success of this business toward failure.



5. Ferries contribute substantially to the economies of the City of Grafton, Jersey, Calhoun, and St. Charles Counties, yet the ferries receive no financial recognition for that contribution.
6. Promotion of the Grafton and Golden Eagle Ferries is reasonable and appears effective. But wayfinding for either ferry from the Missouri side of the river is a challenge as directional signage is extremely limited. This is an important issue to casual and first-time ferry users as they know the ferry is there, but finding it is a challenge.

GOVERNANCE AND POLICY

7. There are five bi-state ferry operations⁸, within a fairly tight geography of Grafton and Calhoun County, that are successful, yet the governance and funding of each of those ferries is unique in each circumstance. Of the five operations, Grafton and Golden Eagle are the only ferry operations of the five with no organized participation by a public entity or entities. The two closest completely private ferries are on the Ohio River, one between Rabbit Hash, KY and Rising Sun, IN (the casino ferry) the other is the Anderson Ferry, from Hebron, KY to Delhi, OH, a ferry crossing founded in 1817 and believed to be one of the oldest continuously operated ferry crossings in the United States.
8. Neither the States of Illinois or Missouri has a consistent policy with regards to funding bi-state ferry operations. This is common ground with the Commonwealth of Kentucky which also lacks a consistent policy for bi-state or in-state ferry crossings, at least according to a study completed in 2020.⁹
9. The State of Missouri does have an identified ferry funding program that is funded by appropriation from the legislature, but funds available through that program are limited with the source of funds being primarily derived from USDOT formula grant funds.
10. Maintenance of approach roads is a significant need but is a complex undertaking due to property ownership, federal grant requirements, and access.
11. Fares for privately operated ferries are regulated through the county process that grants operating rights for a particular crossing. Fares for public crossings are also regulated with state law that encourages fare free ferries except for smaller municipalities. Counties and Port Districts within Illinois are not as limited in the

⁸ Golden Eagle Ferry, Grafton Ferry, St. Genevieve-Modoc, Cave-in-Rock, Dorena-Hickman

⁹ Analysis and Assessment of the Reimbursement Rates and Mechanisms for Kentucky's Publicly Funded Ferries, Kentucky Transportation Cabinet, Research Report KTC-20-04/PL35-1F



- ability to set fares to offset operating costs. At the state level, there is very limited statutory authority for a state entity to establish and collect fares for ferries. For example, IDOT could not establish and begin collecting fares at Brussels and Kampsville within current law.
- 12.** For the City of Grafton, Calhoun, Jersey, and St. Charles Counties on-going ferry operations are more cost effective than building a new bridge. The most recent published ferry replacement study in Clackamas County, OR concerning the Canby ferry (2019), concluded that ferries should continue to provide access and mobility in that community as the most cost-effective solution. For the City of Grafton and Calhoun County, in particular, there is also substantial concern within the community about maintaining their essential character. The well-founded fear is that a bridge will open access that will be accompanied by unwanted changes in community character.

OPERATIONS AND MAINTENANCE

- 13.** Significant expansion of service on Grafton or Golden Eagle ferries is not financially feasible without some form of support beyond the fares generated. Even with fare increases, it is doubtful that adequate financial strength can be generated that will allow the ferry vessels to be depreciated and also maintain a sustainable future with respect to maintaining Coast Guard certification.
- 14.** Ferry pilots are not uncommon, but many are growing older and the ability to pay people appropriate to their level of training, professionalism, and skill is being squeezed by other increases in costs. This labor-economic reality will be a limiting factor in service expansion and may also create issues maintaining present service levels. The average age of a tug captain is 40 years and pay scales are not keeping up with labor and healthcare costs making it difficult for short route ferries to survive. These professionals carry the same credentials as the long-haul river ferries that are the major competition for wages and benefits in the Mississippi River system.
- 15.** Low water conditions can affect operations at Grafton and Golden Eagle, but because they are in the pool created by the Melvin Price Dam and Lock in Alton, they are less prone to disruption caused by low water than other crossings.
- 16.** Flood conditions create issues for ferry operations at Grafton and Golden Eagle. The most significant disruption is caused by access road flooding, although landings, at very high water levels can also be vulnerable. High water issues will continue to be problematic for these two crossings on the Missouri side of the river, in particular. This is primarily due to the location of the landings versus the locations of the levees that tend to be set well back from the "normal" riverbank in this geographic area.



REGULATION

- 17.** United States Coast Guard regulatory changes are increasing the cost of ferry ownership mostly as a result of implementation of Subchapter M and historic under-investment by the industry. The average age of a ferry tug is 35 years compared to a vessel in a global trade which is 13 years old (according to an article in November, 2021 Marine Log Magazine). Private ferries are financially threatened by needing to support operations, maintenance, and depreciation (for replacement or rehabilitation of assets). This situation was deepened by implementation of Subchapter M. See below for more detail on subchapter M.

FUNDING

- 18.** Private ferries must fund vessels, terminals, maintenance, labor, fuel, access roads, marketing, and program development, plus management and administration. The cost of labor, fuel, and replacement vessels have dramatically increased. In fact, the cost of fuel and labor are growing faster than ridership and fare box recovery. These are two of the largest costs for a private operator and threaten small business profitability. Moreover, more traditional depreciation schedules do not account for the rapid rise in costs to replace or rehabilitate vessels, especially vessels that must comply with Subchapter M requirements. A small business must be “super”-profitable to allow for the reinvestment in tugs and barges.
- 19.** There are four reports that include economic development assessments to establish the economic benefits inland waterway ferries contribute to the rural communities they serve. Each report underscores the importance of inland ferry crossings with respect to local economies. In 2020, the University of Kentucky completed a study for the Kentucky Transportation Cabinet covering all ferry crossings in the state. The major purpose of the study was to address the commonwealth’s funding policy with respect to the twelve ferry crossings that touch the state. An important by-product was a picture of the economic benefit of the ferries to the local communities. Montgomery County, Maryland conducted a comprehensive study of White’s Ferry. Which had closed due to a dispute between ferry owner and the private owner of the ferry landing on the Virginia side of the river. A study by Clackamas County, OR documented the economic benefit of the Canby Ferry. The State of Missouri documented the economic benefits of the Dorena-Hickman Ferry.
- 20.** Federal ferry funding programs have changed, the rules tend to favor longer ferry service routes. Federal funding for private ferries requires a public agency sponsor



and due to liability (indemnity and fiduciary) associated with the programs, public agencies shy from this risk.

21. Private ferries no longer have access to capital (grants) and have been impacted by changes in Federal funding. ISTEA (former surface transportation act, 1991-1997) provided funds to private ferries. But that act was replaced by TEA-21, then SAFETEA-LU, MAP-21, FAST, and, most recently the IJA. FTA program changes in 2016, under FAST Act, changed funding eligibility and eliminated privately-owned operators from grant programs unless they have a public sponsor.

Subchapter M – What is it? What does it mean?

Officially, Subchapter M is the Code of Federal Regulations Title 46, Volume 5, Subchapter M adopted in 2016 and fully effective in 2018. After nearly two decades in the making this regulation establishes the minimum requirements for vessels engaged as “towboats.” This includes a wide variety of vessels including the large towboats that move barges up and down the Mississippi River, as well as all other navigable waters in the US. The definition also includes the power units that move the ferry barges at Grafton, Golden Eagle, Brussels, Kampsville, Cave-in-Rock, St. Genevieve-Modoc, Dorena-Hickman and all other places towboats are used to move ferry barges across a navigable waterway.

Subchapter M is a complex regulation with many different aspects. The construction of the regulation was intended to vastly improve safety and environmental stewardship in the towboat industry, ensure operators and crew members meet minimum standards, incentivize exceeding those standards, and to leverage the expertise of third-party organizations to help the US Coast Guard focus resources where needed the most.

In a nutshell, for the ferry towboats, the regulation establishes these vessels as “inspected vessels.” This means there are standards the vessels must meet and that they are inspected and certified at regular intervals, in this case a maximum of every five years. Without a valid certificate of inspection, the vessel owners are legally prohibited from using the vessels to move ferry barges across the river. Prior to implementation of Subchapter M, the ferry towboats were uninspected. Aside from navigational and fire and life safety measures, the most impactful aspect of Subchapter M has been the required structural inspections of the towboat hull.

Where in prior years the definition of a “safe” vessel was determined by the ownership, that determination is now in the hands of an inspector who will apply established standards to issues such as structural failure and plate wastage. There is no evidence to suggest that historically there have been “unsafe” ferry towboats. But the inspections have had the effect of increasing the margin of safety, especially with respect to structural condition and watertight integrity. For example, before inspection was implemented in 2018, a vessel owner



may have patched a thin spot in the plating of the towboat hull. With inspection, the inspector may now require the entire hull to be replated if a prescribed level of wastage has occurred, even if the hull is watertight. This is essentially a change that reflects the difference between reactive maintenance and preventive or predictive maintenance. The inspectors want to ensure the vessel will be safe over the period covering the next upcoming inspection, usually five years. This is, as opposed to simply correcting issues that exist when the vessels are inspected. This change has created a profound impact on the longevity of a hull and the financial sustainability of operation as there are substantial costs to achieve the higher margin of safety brought about through the standards and inspection regime.

The “shadow” effect of the regulatory change has been a substantial increase in business for shipyards and repair facilities up and down the Mississippi River System. This has led to lower availability of ship building and repair and substantially increased costs. At some point the supply and demand will tend to balance out, but for now, the impact on the towboat industry has been profound.



6 FINANCIAL AND ECONOMIC ANALYSIS

INTRODUCTION

Summary Statement: The financial condition of the Grafton and Golden Eagle Ferries is not in imminent peril, but neither is it sustainable. Without some form of revenue from outside Calhoun Ferry Company (grants, local government revenue allocations, business improvement district contributions, etc.) the two ferry services do not generate sufficient revenues to support necessary capital replacements, especially for ferry vessels. This means at some point over the next ten years (+/-) it is likely that vessel non-availability due to age will impact, disrupt, potentially even suspend operations on one, or both, crossings. Secondly, the two ferry crossings do not generate sufficient revenue to backstop operating cost increases related to expansions of service. Without some form of operating revenue supplementation, service expansion at Grafton or Golden Eagle simply will not occur.

The current conditions of the ferries at Grafton and Golden Eagle make precise fiscal analysis challenging to complete. Calhoun Ferry Company has been very forthcoming with statistics and issues faced, but all the precise details of the company finances have not been fully explored. There are some things we do know based on interviews with the company. For example, workers on the IDOT ferries at Brussels and Kampsville have more stringent work rules in place than Calhoun Ferry Company and the state workers, while showing remarkable flexibility, do not take on as many tasks as employees of Calhoun Ferry Company. But the cost aspect of that difference has not been established. As noted in the previous chapters Calhoun Ferry Company has had a long-standing tradition of working hard within the company to promote the well-being of the business. For example, many years ago, the company principals went back and forth from being ferry operators to being ferry constructors on a daily basis. That tradition continues today and is one of the factors that makes the company resilient and able to remain in business.

That degree of flexibility with staff and function makes difficult to impossible the ability to more precisely track and model costs. The consulting team constructed a cost model to emulate, as nearly as possible, the conditions of today. We know, for example, that the Grafton Ferry is profitable, but is also very close to break-even. Using the combination of



traffic statistics and fares, the team was able to estimate revenues and then calibrate expenses from other known points learned from Calhoun Ferry Company to calibrate a twenty-five year cost model that is at least representative of the present operation. The model includes expansion scenarios to test various financial outcomes for the operation of the Grafton Ferry. One very important limitation of the model is that it was designed to only consider the financial outcomes for the Grafton Ferry. However, Calhoun Ferry Company does not actually work that way, the financial outcomes for the Grafton and Golden Eagle Ferries are tied together within the company. There may be operational and capital crossover considerations within the company that could change the apparent model outcomes. A summary of key financial indicators derived from the model can be found in Figure 39.

KEY FINANCIAL MODEL TAKEAWAYS

1. The Grafton Ferry is not financially sustainable at the current level of service over the next 25 years depending only on fares for revenues. Without an influx of funding from sources external to the operation for capital renewal, the service will eventually be forced to shut down.
2. Service expansion for the Grafton Ferry of any significance will require revenue supplementation from an outside source for four to six years to ensure operating costs can be covered.
3. Long-term financial viability for Calhoun Ferry Company will require infusions of external capital funds beyond those identified for the Grafton Ferry. At minimum, for Calhoun Ferry Company, a financially sustainable 25-year future likely entails the replacement of three, possibly four, ferry vessels used on the two ferry routes within about the next ten years. A comprehensive assessment of vessel condition is required to more fully outline the costs and an approach to replacing these vessels. Evaluating only the Grafton Ferry, the acquisition of a new vessel assumes a grant is available to fund 80% of the capital cost, with the remaining 20% of the cost financed over twenty years.
4. Expanding Grafton Ferry service to four days a week, seasonally, does very little to change the picture described in 1.), assuming there is no influx of funds to offset the capital needs of the operation.
5. A seasonal seven day per week operation of the Grafton Ferry will continue to struggle financially when capital costs are also included. From an operations-only perspective, as is true with all of the scenarios, operating costs can be offset through fares with some revenue supplementation in early years of expansion. In the later years, depending on traffic and revenue levels, there is some indication the operation



may be able to support capital and operating for the longer term. However, this assumes the ability to accumulate depreciation annually to fund the eventual need to replace the new vessel acquisition at about 25 to 30 years of age.

- 6. A year-round seven day per week operation may become self-sustaining as traffic builds in the long term. However, the initial requirement for capital and operating revenue supplementation is far larger than the other scenarios at about \$1.5 million spread through the first six years of operation to reach this point of viability. This also assumes the same capital financing scenario described in #3.) above.

Figure 39 Summary of Cost Model Findings – Grafton Ferry

Scenario	Capital Grant assumed (millions) 80% of acquisition cost	25 year accum. revenue supplement assumed	Operating only farebox recovery Year 1 (not including revenue supplement)	Operating only farebox recovery Year 25	Capital and Operating Farebox Recovery Year 5	Capital and Operating Farebox Recovery Year 25	Accumulated deficit capital and operating (millions)
Current Service	\$8.4	\$ 0	104%	182%	32%	84%	\$16.0
Seasonal 4 days per week	\$8.4	\$29,000	92%	172%	33%	89%	\$16.0
Seasonal 7 days per week	\$8.4	\$463,000	72%	170%	39%	106%	\$14.7
Year-round 7 days per week	\$8.4	\$1,512,000	64%	162%	45%	118%	\$13.5

CAPITAL COSTS

One outstanding issue is an accurate estimate for the capital costs to replace a vessel. This is essentially because few, if any, vessels of this type have been constructed since the



pandemic. We know, based on literature, that marine construction costs have risen very substantially in the past five years which also creates a shadow of uncertainty over cost predictions.

Present estimates for a pusher tug are between \$3 and \$5 million. The “ferry,” or barge, has a cost estimate of \$5 to \$8 million. For a full “ferry” that puts the range at \$8 to \$13 million for a set. On the positive side, Calhoun Ferry Company has continued to invest in improving the present fleet of tugs and barges. For example, the company is presently re-powering one of the tugs, the Paul B. The plan is for the Paul B to become active to allow for extensive steel rehabilitation work on the Golden Eagle. Both of these vessels are presently, or will be, operated on the Golden Eagle Ferry. Very similar work was completed on the Eagle II (used on the Grafton Ferry) a few years ago. This means the vessel is in a reasonable state of good repair, making it more reliable and less likely to be sidelined by USCG Subchapter M inspection issues. The age of the equipment in use on Grafton and Golden Eagle Ferry crossing suggests the possibility of needing to build new ferry sets in the next five to ten years. This allows some of the action strategies to get underway and to build a better understanding of options to replace older parts of the fleet. These options could include a public party financing the construction of the ferry using grant funds, then offering the vessel for charter, or lease to Calhoun Ferry Company.

While the feasibility of such an action requires full exploration, substantial federal funds are presently available that encourage the construction of zero emission ferry vessels. It is not known if a zero-emission ferry vessel would be a good match for either the Grafton or Golden Eagle Ferries. This uncertainty is mostly based on the lack of knowledge regarding the availability of substantial electric energy from grid sources near the ferry terminals. But the length of these two routes and the present fuel consumption profile (quite low, comparatively) makes these two routes ideal candidates to at least explore the idea of the vessels being powered by electricity. If it is feasible, it is possible a very substantial portion of the costs of building new vessels, perhaps an entire fleet of new vessels, could be obtained through federal grant sources. If conducted by a public entity, it is possible the feasibility study could be grant funded.

FUNDING OPPORTUNITIES

The study amassed a substantial list of possible grant opportunities, many of which are at the federal level and many of which have been utilized by other localities to bolster or provide funding to construct new ferry vessels. The paragraphs below offer an overview of those funding sources. As already recorded in this report, a very significant need is to enlist the support of one or more public agencies to be the fiscal agent to apply for these grants. That is essentially necessary as there are very few opportunities for a fully private company to access federal grants.



For federal grants, an essential definition is that of a ferry. What is a Ferry?

In U.S. Code statute **19 USC 58 c (c)(1)**, the term ferry is defined as:

- Has fixed routes between two or more different ports of call.
- Provides service on a fixed schedule or on demand within a fixed window of time.
- Is a common carrier meaning they serve the general public at reasonable rates and without discrimination.
- Includes railroad car float operations that utilize a tug and barge combination.

Ferries which handle passengers may also be eligible for transit programs. Some ferries which handle passengers and/or cargo in the continuation of a highway system and are eligible for FHWA funding. Ferries which are part of the National Park System are eligible for park system specific funding. At a state level, ferries may be eligible for recreation grants if they support tourism.

A ferry project may have multiple eligible project components such as site planning activities, terminal design, development improvements, vessel repowering of diesel engines, electrification studies, building etc. safety and security systems, workforce development activities for workers and other community access and support connections and infrastructure.

Grant funding requires an eligible applicant and an eligible project. Grant funding is typically divided by function. Grant funds are available to build vessels, improve greenhouse gas emissions, fund transit operations, and highway continuation projects.

The Grant Landscape

A grant is a funding mechanism that federal and state governments use to fund ideas and projects to provide public services and stimulate the economy. Grants also support critical recovery initiatives, safety programs, innovative research, technology, research and many other programs. A short list of Federal Agencies which sponsor funding programs for which ferry projects maybe eligible are listed below:

- **The Department of Commerce (DOC)** promotes economic development and technological advancements by supporting international trade policy, domestic business policy and growth and promotes economic programs at all levels.
(<https://www.commerce.gov>)
- **The Department of Energy (DOE)** provides grants to support energy security and promote technological innovation to ensure a clean environment
(<http://www.energy.gov>)



- **The Department of Homeland Security (DHS)** has three missions which include terrorism prevention, vulnerability reduction, to minimize damage from potential terrorists threats, and to minimize national disaster impacts. (<https://www.dhs.gov>)
- **The Department of Transportation (DOT)** The mission of this department is to ensure fast, safe, efficient, accessible and convenient transportation that supports the national economy and enhances the quality of life. (<https://www.dot.gov>) Grants provided by this agency support individual modes, multi-modalism, public and private transportation systems. Programs are available for planning, construction, preservation and safety among other objectives.
- **The Environmental Protection Agency (EPA)** supports programs aimed at protecting human health and the environment. (<https://www.epa.gov>)
- **Federal Emergency Management Agency (FEMA)** supports people before, during, and after disasters (<https://www.fema.gov>)
- Other agencies have programs available to support other federal programs such as the U.S. Department of Agriculture for agricultural production or the Department of the Interior, which would support recreation and access to recreation, especially on federal lands.

Other forms of federal support include cooperative agreements, donations of property (including surplus property), direct appropriations (aka earmarks), food commodities, and other financial assistance. A robust resource for active federal grants is www.grants.gov.

Screening grant opportunities

Federal grants posted with a Notice of Fund Availability (NOFA) will identify the following program elements:

- Program Objective
- Eligible Applicant
- Eligible Project
- Expected Applicants
- Award information
- Matching requirements

It is important to read the full posting as you consider your project as these programs are very competitive.



Select Federal Programs

A. U.S. Department of Transportation - General

- INFRA Grants
- MEGA Grants
- RAISE Discretionary Grants
<https://www.transportation.gov/RAISEgrants>
- PROTECT Discretionary Grants
<https://www.fhwa.dot.gov/environment/protect/discretionary/>
- Reduction of Truck Emissions at Port Facilities (RTEPF) Grant Program
<https://ops.fhwa.dot.gov/bipartisan-infrastructure-law/index.htm>
- ATTAIN Discretionary Grants - Advanced Transportation Technologies and Innovation
<https://ops.fhwa.dot.gov/bipartisan-infrastructure-law/index.htm>
- ROUTES Initiative - Rural Opportunities to Use Transportation for Economic Success
<https://www.transportation.gov/rural>
- Rural and Tribal Assistance Pilot Program
<https://www.transportation.gov/buildamerica/RuralandTribalGrants>

B. U.S. DOT / Federal Transit Administration

- Electric or Low-Emitting Ferry Pilot Program - IIJA § 71102
<https://www.transit.dot.gov/funding/grants/grant-programs/electric-or-low-emitting-ferry-pilot-program-iija-ss-71102>

C. U.S. DOT / Maritime Agency

- Port Infrastructure Development Program
<https://www.maritime.dot.gov/ports/port-infrastructure-development-program/2021-port-infrastructure-development-program-grant>
- US Marine Highway Program
<https://www.maritime.dot.gov/grants/marine-highways/marine-highway>
- US Marine Highway Route Designations:
<https://cms.marad.dot.gov/sites/marad.dot.gov/files/2021-08/Route%20Designation%20one-pagers%20Aug%202021.pdf>
- Small Shipyard Grants
<https://www.maritime.dot.gov/grants-finances/small-shipyard-grants>



- [Port Resilience Grants](#)
- [Port Security Grants](#)
- [Port Protection Grants](#)

D. U.S. Environmental Protection Agency

- Clean Heavy-Duty Vehicle Program
<https://www.epa.gov/inflation-reduction-act/clean-heavy-duty-vehicle-program>
- Diesel Emissions Reduction Act
<https://www.epa.gov/dera>
- Clean Ports Program
<https://www.epa.gov/inflation-reduction-act/clean-ports-program>

E. U.S. Department of the Interior/ US Fish and Wildlife:

- Boating Infrastructure Grant program
<https://www.fws.gov/press-release/2023-03/20m-support-boating-infrastructure-local-communities-and-outdoor-recreation>
- Boating Infrastructure
<https://www.fws.gov/program/boating-infrastructure>
- National Parks Ferry Program

F. Federal Emergency Management Program

State Programs

States can create their own funding programs to support transportation. These programs are typically posted by state agencies such as the State Department of Transportation, the State Department of Commerce, the State Department of Environmental Protection, or the State Department of Energy. A good source of information for these programs is your local Metropolitan Planning Organization or the Regional Planning Commission.

In the State of Illinois programs for which ferries may apply include:

- A. Congestion Mitigation and Air Quality (CMAQ)**
- B. Carbon Reduction Programs**



- IDOT - Illinois Port Facilities Capital Investment Grant Program
<https://idot.illinois.gov/transportation-system/transportation-management/planning/marine-transportation/illinois-port-facilities-capital-grant-program.html>
- IDOT - Illinois Competitive Freight Program
<https://idot.illinois.gov/transportation-system/transportation-management/planning/freight/illinois-competitive-freight-program.html>
- IEPA - Driving a Cleaner Illinois-Diesel Emissions Reduction Act (DERA) program
<https://epa.illinois.gov/topics/air-quality/driving-a-cleaner-illinois.html>
- DCEO - Tourism Attractions and Festivals Grant program -
<https://omb.illinois.gov/public/gata/csfa/Program.aspx?csfa=2645>
- DCEO - Rebuild Illinois Programs
https://dceo.illinois.gov/communitydevelopment/rebuildillinois_programs.html
- IDNR - Boat Access Area Development Program
<https://dnr.illinois.gov/grants/boataccessareadevelopmentprogram.html>
- IDNR - Park and Recreational Facilities Construction Program
<https://dnr.illinois.gov/grants/parc-grant.html>
- IDNR - Clean Vessel Act
<https://dnr.illinois.gov/grants/cleanvesselact.html>

In the state of Missouri the following is a list of resources and general information

Transit Grants - [Transit General Information | Missouri Department of Transportation \(modot.org\)](#)

Freight Grants - [Freight General Information | Missouri Department of Transportation \(modot.org\)](#)

Waterway Grants - [Waterways General Information | Missouri Department of Transportation \(modot.org\)](#)

OPERATING COSTS

The consulting team was able to construct what we believe to be a reasonable cost model that can predict the costs of the current or an expanded operation for the Grafton Ferry. It is



not precise and it is unlikely more effort will make it more precise due to factors such as the cost of fuel, general inflation, unplanned repairs and maintenance, or the need to improve compensation and benefits to attract new workers. For example, in March 2024, we know that IDOT negotiated a very substantial wage increase of 30% for ferry workers at Brussels and Kampsville. Somewhat similar cost increase assumptions were made for Calhoun Ferry Company in the cost model, assuming they will need to improve compensation to remain competitive with the IDOT positions. The unknown is whether this would need to happen all at one time, or can be stretched over a few years. The latter possibility is the assumption built into the cost model.

The annual cost of operating the Grafton Ferry from mid-April to mid-November, three days a week is about \$245,000 in 2024 dollars, not including any depreciation on the ferry, or costs to maintain the landings or approach roads. If depreciation/replacement costs are added to the operating costs, the total cost of operation is closer to \$600,000 per year. This still does not include any estimated costs for maintaining or improving the ferry approach roads and landings. In terms of operating costs, the Grafton Ferry, in 2024, is expected to break even with estimated revenues of about \$250,000. Making the ferry marginally profitable. However, that does not account for the need to replace the capital asset of the ferry vessel. When that consideration is added, the model estimates the Grafton Ferry will fall short of being profitable by about \$340,000 in 2024. Over the long-term of the model, 25 years, each year shows the same condition, at current service level and assuming regular fare increases, the ferry can continue to break even from an operating cost perspective, but continues to run in the red when the costs of vessel replacement are also included. Over 25 years, the model predicts the accumulated loss to be about \$16 million when capital costs are also considered. This is one of the reasons the ferry route is not considered to be financially sustainable over the long term as it is presently not generating sufficient revenue to offset operating AND capital costs.

As noted elsewhere, incremental increases in service may be possible within Calhoun Ferry Company's existing pool of personnel, but any long-term commitment to service expansion likely means increasing personnel, which is likely to come in the form of a "lump" of new expense, as opposed to an incremental cost, such as burning more fuel to operate on additional days. The art is to make new jobs, especially for ferry captains, attractive and to retain the services of the employees for the longer term. For example, it would likely be difficult to hire a ferry captain to work one month a year, as opposed to offering a person a year-round full-time job. The primary competition for licensed professional mariners in this part of the US is the towboat industry. Many of those jobs require long periods of time away from home. A benefit of a ferry job is that most days, people sleep in their own beds every night. There are off-setting considerations for costs of labor but the expansions, in terms of personnel required for Calhoun Ferry Company would need to be in large enough chunks to



allow a reasonable job offer, as opposed to very incremental improvements where attracting qualified personnel would be very difficult, if not impossible.

The cost model was utilized to test the feasibility of incentive payments to Calhoun Ferry Company in return for expanded operations. The source of the incentive payments is discussed in the recommendations chapter, but the premise is that some local entity, or entities, establishes and administrates a revenue source, apart from Calhoun Ferry Company, to incentivize CFC to expand operations. The source of the incentives has not been determined as there are several options available to create a revenue stream. The model attempts to estimate the demand differences between the early years of expansion based on natural growth and the relative attraction of the new service additions. The purpose is to provide some sense of what these pricing incentives might look like over time as it is assumed that each new service addition will take some time for traffic to adapt to the new availability of service resulting in higher long-term revenues thus offsetting the needs for incentive payments.

From the traffic and ridership history, it can be postulated that increases in service will eventually be met with sufficient increased fare revenues to cover the costs of operation. For example, using the cost model it appears that expanding the Grafton Ferry operation to year-round, seven days per week would render an operating cost of about \$710,000 per year in 2024 dollars and create an operating deficit of about \$260,000 per year in the first year. To offset that deficit would require new revenues from some new source as it is unlikely to be derived from ferry riders in the early years. From the model it is estimated over 365 days of operation, the service would need to average about 280 vehicles per day, year-round, to create a break-even scenario on operating costs only. The model suggests it would be reasonable to expect the expansion to generate an annual average of about 165 vehicles per day at the outset of the service. Given the early history of the Grafton Ferry in 2013 and May of 2014 and the more recent experiment to move to four day a week service in 2021 the consulting team used those observations to assess the potential traffic response to service expansion. Using that information the ridership deficit appears to be about 115 vehicles per day, on average, between break-even and expected traffic, at least in the first year. Given the growth rate and latent demand a level of ridership that could offset the increase in operating costs would be expected to develop over four to six years, assuming there were not extended periods where the ferry could not operate due to vessel unavailability, issues with crewing, ice, low, or high water. The principle is if you built it, they will come, eventually.

The experience of 2021 is instructive about how this works. Reports from Calhoun Ferry Company indicated that 2021 was not a break-even year for the Grafton Ferry, versus 2023 which was, at least, a break-even year. The total number of vehicles in 2021 was nearly identical to 2023 at about 28,500 units. But that 2021 total was accumulated over about 20% more operating days (meaning about 20% more operating cost) and yielded a daily average



of about 244 vehicles per day compared to 2023 with 299 vehicles per day. This illustrates the rather delicate balance between offering more service and continuing to be profitable. It is notable that in 2021, Calhoun Ferry Company did not pay the per-crossing fee assessed by the City of Grafton to offset maintenance and improvement costs for the landings. But in 2023, Calhoun Ferry Company paid the city just over \$7,000 (\$0.25 per vehicle) for operating over Grafton's landings.

It is important to recognize the above discussion only accounts for operating costs. If capital costs are also included the total of operating and capital come to about \$1.06 million, boosting the deficit to nearly \$340,000 in year 1 (2024 dollars). Over the course of 25 years, the deficit of operating and capital accumulates to about \$13.5 million. The model suggests that the operation could be self-sustaining in terms of operating cost only over about 8 years. The model also suggests continued operation year-round, with an assumption of continued traffic growth and continued fare increases, the operation might generate enough revenue to also offset the capital costs although that possibility emerges past the 20 year mark. This suggests that if funding can be found to build a new ferry in the next few years, financially, the ferry may become self-supporting in the very long term. This happens with average annual traffic volumes that are substantially less than what is presently crossing the Golden Eagle ferry. The economic principle at work here is that any capital asset will have a much better chance to recoup the initial investment if it is actively utilized to generate revenue. In other words, it is the difference between a vessel that is presently only utilized for about 95 days a year, versus one that is utilized 365 days per year, assuming traffic is present and at a reasonable level which the model helps to illustrate.

ESTIMATION OF A FARE INCENTIVE

One of the purposes served by the cost model is to forecast the approximate magnitude of costs if the City of Grafton, or others, were to offer an incentive to Calhoun Ferry Company to expand service (see Chapter 7, Strategy 4a.). The level of the incentive could be capped to create a situation where the ridership response to the service expansion would also determine the total level of incentive payments. Because of the uncertainty around the level of traffic needed to create at the least break-even revenues, the model was set up to forecast the subsidy required at a given rate to support a specific level of revenue and then compare that to what might be reasonably expected to occur from a traffic increase perspective. Based on experience, for example, it would not be reasonable to assume that a new service might generate the same average traffic as the present system, but somewhat less as added days initially will not generate the same level of traffic as the present weekend days. We know that weekday traffic, Monday through Thursday, even in the peak summer months hovers in the range of 100 to 150 vehicles per day from service offered in 2013 and 2014. The modeling effort creates a reasonable estimate, but lack of information about the specifics of



the expansion, what the community might do to promote it, and the resulting actual ridership and revenues, makes it only that, an estimate.

The model has also been set up to assume fare increases to help support the higher level of service. The assumed increases are incremental and spread over time to encourage continued growth in traffic. The mechanics of how that approach might be managed will need to be integrated into the permits issued for operation for each ferry crossing. For an individual prospective ferry rider assessing the time and fuel trade-off of driving versus using the ferry the expected market response to a ferry fare increase is difficult to forecast without much greater historic detail about fare increases and traffic response. From an economic perspective this is called market elasticity.

From other research we know that these values vary significantly based on the geographic area and the type of travel. Generally, fare increases are inelastic, that is that a change in fares, results in positive change in revenue, but it is less than the increase in fares due to a loss in market attractiveness to riders. For most transport services a generally accepted guideline is that for every 1 percent increase in fares, ridership will decrease 0.3 percent. From other ferry fare studies the elasticity values move more toward inelastic responses when riders are infrequent and trip purpose is non-essential, such as tourism. But when riders are frequent and travel is essential, such as going to work, studies have shown riders tend to be more elastic. That is ridership will decline more and net revenue will be lower than the % increase in fares as a result. Given lack of data to assess how fare levels impact ridership and revenue for Grafton and Golden Eagle, the model did not assign an elasticity value to small incremental increases in fares. For example, an increase of \$0.50, from \$9.00 to \$9.50 on the Grafton Ferry, was assumed to have no depressing effect on traffic but at the same time may help to offset some of the costs. This same assumption may not hold true for the Golden Eagle Ferry as a much higher percentage of riders are frequent and are taking essential trips as compared to the Grafton Ferry that tends to be more dominated by infrequent riders who are taking non-essential trips.

Aside from the potential financial support, places like Grafton would also need to create more interest in being in Grafton on a weekday. There will certainly be some level of local traffic develop for expanded ferry services, that is people within the community travelling into Missouri and vice-versa. But it is very unlikely to be sufficient to generate enough revenue to offset the operating costs of a daily service. There needs to be a reason for people from places like St. Charles County to want to come to Grafton during the week. Setting up mid-week events and attractions will be as necessary as incentivizing the Calhoun Ferry Company to expand operations.

Estimated incentive payment systems are shown below for three different service levels. Figure 40 shows the approximate payments for two years estimated to be necessary if service is expanded to four days per week, Thursday through Sunday. This shows that in the first year



an incentive payment of somewhere between \$0.50 and \$0.75 per vehicle carried will be required to allow the service to break-even. By year two, shown as 2025 in the table, the amount drops below \$0.25 per vehicle carried indicating that the service might be expected to be close to break even in the second year.

Figure 40 Expand Service to Four Days per Week in the Current Operating Season and one year later

Level of Incentive per Vehicle	Average Daily Revenue Units to Breakeven 2024	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2024	Estimated Operating PROFIT/(Loss) 2024
\$0	313	\$0	287	(\$24,000)
\$0.25	313	\$9,000	287	(\$15,000)
\$0.50	313	\$18,000	287	(\$6,000)
\$0.75	313	\$27,000	287	\$3,000
Level of Incentive per Vehicle	Average Daily Revenue Units to Breakeven 2025 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2025	Estimated Operating Profit/(Loss) 2025
\$0	301	\$0	299	(\$3,000)
\$0.25	301	\$9,500	299	\$7,000
\$0.50	301	\$19,000	299	\$16,000
\$0.75	301	\$28,000	299	\$25,000

Figure 41 shows an illustration if operations expand to seven days a week, although continuing to remain a seasonal service, April -November. The illustration was extended to four years starting in 2025 to demonstrate the rate at which it is expected the service expansion will break even. This illustration also assumes ferry fares rising \$0.50 per year. It should be noted that this is an assumption, not an absolute. The present fare collection operations would likely struggle with fares that are not in even \$1.00 increments. So, perhaps fares increasing \$1.00 every two years, rather than \$0.50 each year would be a more practical assumption.

The required incentive payments are relatively larger than those required for the previous illustration. But as the illustration shows, the expectation is that the incentive payments would not be necessary for long-term operating cost sustainability. In fact, it appears by year four the need for incentive payments has nearly been offset by traffic increases. It is important to emphasize this only addresses the operating loss and does include the costs associated with vessel depreciation or new vessel construction. Nevertheless, this financial



arrangement still appears to be within a reasonable range for the community and Calhoun Ferry Company to take on collaborative risk of expanding service.

Figure 41 Expand Service to Seven Days per Week in the Current Operating Season starting 2025 plus three years

Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2025 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2025	Estimated Operating Profit/(Loss)
\$0	265	\$0	215	(\$93,000)
\$1.00	265	\$47,000	215	(\$46,000)
\$1.50	265	\$70,000	215	(\$23,000)
\$2.00	265	\$94,000	215	\$1,000
Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2026 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2026	Estimated Operating Profit/(Loss)
\$0	275	\$0	231	(\$85,000)
\$1.00	275	\$50,000	231	(\$35,000)
\$1.50	275	\$70,000	231	(\$10,000)
\$2.00	275	\$101,000	231	\$16,000
Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2027 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2027	Estimated Operating Profit/(Loss)
\$0	281	\$0	248	(\$70,000)
\$1.00	281	\$54,000	248	(\$15,000)
\$1.50	281	\$81,000	248	\$12,000
\$2.00	281	\$108,000	248	\$39,000
Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2028 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2028	Estimated Operating Profit/(Loss)
\$0	284	\$0	263	(\$46,000)
\$1.00	284	\$57,000	263	\$12,000
\$1.50	284	\$90,000	263	\$40,000



\$2.00	284	\$120,000	263	\$69,000
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Figure 42 is an illustration of the same model, but now assuming service is expanded to year-round service, seven days a week. This requires more subsidy than the previous scenarios because the total amount of service being delivered is larger and also because the traffic attracted and creating revenue is smaller in the off-season. While this off-season traffic will eventually grow and be attracted to a seven day per week, year-round operation, that attraction will not happen quickly, it will take a few years of the service being available for people to adapt their travel habits.

Note that the initial levels of subsidy are substantially higher than the earlier scenarios. This may indicate a need to phase service expansion over time. For example, increasing to seven day per week service in 2025, but only in the April-November season. Then assess how that went and plan, at the start of the 2026 operating season (April 2026) to continue the operation into what has typically been the closed season in November 2026, thus moving to year around operations.

Figure 42 Expand Service to Seven Days per Week year around starting 2025 plus three years

Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2025 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2025	Estimated Operating Profit/(Loss)
\$0	252	\$0	182	(\$217,000)
\$1.00	252	\$66,000	182	(\$151,000)
\$2.00	252	\$133,000	182	(\$84,000)
\$3.00	252	\$200,000	182	(\$18,000)
Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2026 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2026	Estimated Operating Profit/(Loss)
\$0	262	\$0	196	(\$218,000)
\$1.00	262	\$71,000	196	(\$146,000)
\$2.00	262	\$143,000	196	(\$75,000)
\$3.00	262	\$214,000	196	(\$4,000)



Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2027 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2027	Estimated Operating Profit/(Loss)
\$0	269	\$0	210	(\$206,000)
\$1.00	269	\$77,000	210	(\$146,000)
\$2.00	269	\$153,000	210	(\$52,000)
\$3.00	269	\$290,000	210	\$24,000
Level of Incentive per vehicle	Average Daily Revenue Units to Breakeven 2028 (\$0.50 fare increase)	Estimated Incentive Payments	Estimated Actual Daily Average Revenue Units 2028	Estimated Operating Profit/(Loss)
\$0	272	\$0	223	(\$180,000)
\$1.00	272	\$81,000	223	(\$97,000)
\$2.00	272	\$162,000	223	(\$16,000)
\$3.00	272	\$244,000	223	\$65,000

FINANCIAL EVALUATION CONCLUSIONS

The above calculations are not intended to be a precise recommendation as to how to proceed, but rather are presented as a way to begin grappling with the financial realities of expanding the Grafton or Golden Eagle Ferry services. Even at relatively low levels of expansion, the financial picture is not trivial. That said, the intent of offering the illustrations is to drive home the importance of forming a partnership between the community and Calhoun Ferry Company and to offer the community some insight into the level of investment that might be necessary to ensure financial sustainability. The other point is to offer the observation that a financial relationship could start at a lower level, then expand over time as it is better understood how service expansions are being accepted and if they are attracting the volume of ridership and generating the level of economic activity anticipated in this report.

It is also worthwhile to note one of the not so obvious conclusions from the cost model, the operating costs for the Grafton and Golden Eagle Ferries are substantially lower than the costs to operate the IDOT ferries at Brussels and Kampsville. A state “take-over” of either Grafton or Golden Eagle crossings will necessarily create an increase in operating costs and would also require state legislative action. While it is arguable this is good or bad in either the short or long term, it is important to recognize the role of Calhoun Ferry Company in continuing to support these two crossings while also generating business and traffic for the



community and for the fact that Calhoun Ferry Company can deliver these services at lower overall cost while also collecting fares from ferry riders to partially, or completely, offset those costs and, very importantly, contribute revenue into the local economy as a private business.

If grants can be landed to finance significant portions of the cost of vessels as well as improvement of the approach roads, it appears, from a financial perspective, that in current form operations are sustainable. If the same level of grant funding is applied to both crossings, i.e. replacing four ferries (tugs and barges), the model further suggests the possibility that service expansion, partially funded by fare incentives, may be financially viable in the very long term. The immediate challenge is to line-up the grants to support new vessel construction and roadway improvements and identify ways to offset the initial costs of service expansion. Without this level of financial intervention, service will start to become less reliable as vessels reach useful life. Usually that means less traffic, which leans less revenue, which means eventually the operation cannot be financially sustained. It is in the best interests of the communities most directly affected to find ways to fund the replacement of ferry vessels and to fund expansion of operations.

FERRY FARE REGULATIONS IN ILLINOIS

The role of fares in creating a sustainable ferry operation cannot be overlooked, particularly when, in the case of Grafton and Golden Eagle Ferries, fare revenue is the lifeblood of the two routes. Calhoun Ferry Company has, on occasion, been the recipient of grant funds for specific capital projects, such as re-powering ferry tugs with lower emission diesel engines. Even in those cases, fare revenue is the source of local matching money. Even more importantly fare revenue is what allows these ferries to continue operating. One may ask, why are Grafton and Golden Eagle ferries operated on a fare recovery basis, while the IDOT operated ferries at Brussels and Kampsville are fare free?

The answers lie in decades of law passed by the Illinois legislature as discussed below. Because the Grafton and Golden Eagle ferries operate between two states, the laws of the State of Missouri may also have some impact on fare setting. The authors of this report are not attorneys. The findings presented below have no legal standing and should not be cited as legal resources. What is presented below are interpretations of Illinois Compiled Statutes (ILCS) which are Illinois state law. However, in the absence of those interpretations being vetted by an attorney licensed to practice law in the State of Illinois, what is presented below has no legal standing and should not be interpreted as such.



Brussels and Kampsville Ferries

605 ILCS 5/Article 10 Division 9 Contains the state legislature’s authorization for IDOT to acquire, operate, and maintain what are today the Brussels and Kampsville Ferries. The legislation is specific to ferries that cross the Illinois River and is also restrictive regarding where such service could be established. This legislation specifies that the service be a “free ferry service for the conveyance of persons, motor vehicles and other property across the Illinois River.” There appear to be no other provisions in present state law that establish the ability to set and collect tolls for ferries that are operated by the state, either by IDOT or some other state entity, such as the Illinois State Toll Highway Authority.

Illinois State Toll Highway Authority

605 ILCS 10 Article 1 Provides a state authority (not IDOT) to establish and regulate tolls on each identified toll highway and bridge identified as part of the state tollway system. However, there is no equivalency set in state statute that identifies ferries as part of a toll highway or bridge. It is, therefore, doubtful, the State Toll Highway Authority, could be a possible way tolls would be established on ferries operated by the State. Further, if an interpretation were established defining ferries as an eligible connection under the Toll Authority legislation, the designation of each ferry crossing would also have to be approved by the legislature to become part of the Illinois tollway system.

State Authorization for Local Governments

605 ILCS 5 Article 10 Division 6 Provides for “Municipalities” the power to establish, operate and maintain ferries. Under the Illinois constitution only cities, villages, or towns are considered municipalities. Counties are not municipalities. County jurisdictions of ferries is believed to be authorized by powers granted to Illinois counties by the state constitution and **605 ILCS 5 Article 5**, although ferries are not specifically noted in the definition of roads, but they are not specifically excluded. It is fair to say this is a somewhat gray area with respect to counties, or more appropriately, county road districts.

The state code allows municipalities to collect tolls on ferries only to the extent necessary to defray the capital costs associated with the ferries and ferry terminals. This provision is specifically exempted for municipalities with population under 5,000 people. In those cases the use of tolls to also defray operating costs is specifically allowed.

State Authorization to Regulate Private Ferries

225 ILCS 435 Article 1 (also known as “The Ferry Act”) Establishes the requirements for private individuals or corporations to operate ferries on public waterways. The code provides



the specific rights to counties to award permits to such individuals or corporations. As part of the permit the county has the right to specifically establish the tolls to be collected for crossing the ferry.

Summary of Fare Setting

It appears that authority for the state to set and collect fares for ferries is available only as a legislatively authorized function. IDOT appears to have no legislative authority to establish, set, or collect ferry tolls. It is somewhat ambiguous if the State Toll Highway Authority has that ability. But there are presently no ferries defined as part of the state network of toll roads and the addition of new toll roads, or ferries, in this case, requires legislative action. The conclusion is that the state does not have, under current law, the ability to establish and collect fares, or tolls, for ferry crossings.

Presently, setting tolls for ferries appears to be solely in the jurisdictions of county legislative authorities or municipal legislative authorities. For municipal authorities the limits are based on the size of the municipality and the intent of the tolls to recover capital costs and/or operating costs. Counties appear to be granted broader authority to establish and regulate tolls.

It should also be noted that the Illinois constitution offers the ability for municipalities to vote the community into "home rule charter" status. This allows municipalities to create laws, as needed, to meet local goals so long as those laws do not conflict with state law. Grafton is not presently listed as a municipality that has chosen to implement "home rule charter" status, but could do so as a way to clarify the statutory authority to set and regulate ferry fares.



7 STRATEGIC APPROACH TO IMPROVING FERRY SERVICE AT GRAFTON AND GOLDEN EAGLE

The following section outlines a series of recommended strategies and action steps to ensure longer-term sustainability of the Grafton and Golden Eagle ferry crossings, but also establishes a plan to expand the operations in a manner that is financially balanced.

4. Create “Ferry Champions” willing to work local, regional, state, and federal legislative agendas to seek out funding opportunities – Highest priority

Action Steps

- d. Appoint a task force of local elected leaders and/or leaders from groups that benefit from ferries such as the City of Grafton, Calhoun County, Grafton Chamber of Commerce, Calhoun Ferry Company, and Calhoun Growth Association with an effort to start an awareness and advocacy campaign for the importance of the ferries to the local economy. A good starting point would be for the Mayor of Grafton to appoint a task force convenor to gather this group. The individual appointed as convenor should be someone familiar with river and port operations and someone who understands the importance of supporting the economic development in an area utilizing strategic investments. The group can assemble a work plan partially from the recommendations in this study and partially from community priorities. Members of this task force may also include representatives from the organizations listed above, but may also include St. Charles County, St. Charles County Port Authority, America’s Central Port, and Jersey County. This may be only an interim task force which can also identify a sustainable organization to keep the effort moving forward. It may also be wise to seek advisory representation from IDOT and MODOT for the task force.
- e. Encourage the state legislature to adopt an active role in financially supporting the Grafton and Golden Eagle crossings similar to that of the Cave-in-Rock ferry and/or the Brussels and Kampsville ferries.



- f. Maintain a list of upcoming federal funding opportunities to address capital needs and identify grant writers and grant accepting entities, such as cities, counties, ports in Jersey, Calhoun, and St. Charles Counties, IDOT and MODOT. This action step would need to be accompanied by Action Step 2.b to be most effective.
- g. Target advocacy at the federal level to revise the current funding distribution rules that disfavor short rural ferry crossings. The goal of the advocacy would be a federal funding program that establishes a fair and equitable distribution of funding regardless of ferry service route length, especially in rural areas.

5. Stabilize long-term financial capacity and asset protection – high priority

Action Steps

- c. Identify potential local, state, and federal sources of revenue to support capital sustainability.
- d. Develop Memoranda of Understanding (MOU's) between Calhoun Ferry Company, Grafton, Calhoun County, and St. Charles County to designate ownership and cooperative endeavors which could then be used as the basis for public agencies to apply for grants to support Calhoun Ferry Company.
- e. Build a bi-state long-range capital plan between Calhoun Ferry Company, St. Charles County, Calhoun County, and the City of Grafton. This should be a project specific capital plan to specifically identify and prioritize projects that will point the way to which funding opportunities might be pursued. The plan should include approach roads, landings, barges, and tugs so that as grants become available the financial needs and timing are well understood.
- f. Identify public-private partnership opportunities to enhance grant opportunities. For example, a public entity, such as the City of Grafton, Calhoun County, St. Charles County Port Authority, might secure funds to build a new ferry vessel, then lease the vessel long-term to Calhoun Ferry Company. Mapping strategies that offer public entities a defined role and responsibility for capital assets is critical to success in landing grants to sustain these ferry crossings.
- g. Encourage IDOT to include all ferry crossings that touch the State of Illinois in the mobility goals and modes for the state as reflected in the Long-Range Transportation Plan. This local effort should reach out to those representing the Kaskaskia and Cave-in-Rock areas to include their voices in the plan.
- h. Encourage the State of Illinois, IDOT, to amend the Illinois Marine Transportation System Plan to include a comprehensive section on ferry operations, their economic



and freight benefits, and funding programs. If possible, this effort should include establishment of a uniform policy for funding ferry operations on an equitable basis.

6. Improve approaches and wayfinding – high priority

Action Steps

- d. Identify ways to get maintenance and improvements for wayfinding and approach roads accomplished and the dollar magnitude of what is required for each project identified.
- e. Encourage St. Charles County or the Port of St. Charles County to assume responsibility for the easement and maintenance of the Golden Eagle Ferry Road from Hayford Road and Highway B up to the lease line and/or property line of Calhoun Ferry Company landings.
- f. Encourage MODOT to address high water vulnerabilities on Highway B. Recent flooding has emphasized that Highway B, a MODOT managed roadway, also has specific locations that flood during high water events and these locations also block access to the Golden Eagle Ferry.
- g. Improve/increase ferry wayfinding in Missouri. New riders must be able to discern how to get to the ferry. The objective is to ensure there are reasonably-sized signs at each decision point on the way to the ferry, Grafton and Golden Eagle. The audience for wayfinding is people who are not regular, or are first time, ferry riders. The region wants new riders to tell their friends how much fun and adventure they had in the vicinity of the Great River Road and how easy it was to find their way around. Once signs are installed there should be a maintenance plan to replace missing signs and ensure signs are not obscured by vegetation.

5. Identify financial resources to allow expansion of operations – moderate priority

Action Steps

- d. Create ways to offer financial incentives and operational cost protections to Calhoun Ferry Company to encourage service expansion. The communities of Calhoun County, City of Grafton, and St. Charles County need to find ways to tip the present balance between ferry fare revenues, and the costs of expanded operations and capital costs. There are very good reasons, in terms of economic development and improving transportation options to expand operations, but the financial risk for the private company outweighs the reward in that it may take three to five years to see the cost of expansion fully offset by the increases in fare revenues. This action strategy could



- be in the form of a fare incentive payment to Calhoun Ferry Company for each revenue unit delivered.
- e. Adopt a regular fare increase plan based on ferry permits from the City of Grafton Calhoun and St. Charles Counties. Presently, the operating permits issued by the City of Grafton, Calhoun County, and St. Charles County specifically limit the capacity of Calhoun Ferry Company to change fares. This practice should be amended to allow CFC latitude in terms of the fares charged to allow increases based on cost increases and optimizing revenue generation.
 - f. Utilize the localized task force described in Strategy/Action 1a to identify local revenue sources to fund/underwrite service expansion initiatives as described in Action Step 4a.
 - g. Establish a road map for a longer-term effort to make ferry operations a full public-private partnership or a fully public operation. Identify the desired year of completion and annual, concrete steps to reach that achievement.

6. Phase in expansion of operations - moderate priority

Action Steps

- b. Establish a strategic plan to expand ferry operations that will ensure costs and revenues remain within reach of local resources. This will be a work in progress as each increment of new service means Calhoun Ferry Company needs to add employees and assess the market response and revenue production. For example, a first step might be to expand the Grafton Ferry to a 7-day per week operation from April to November. A next step could be to move to a longer season, then eventually year-round, similar to the Golden Eagle Ferry. The very fact that both Golden Eagle and Grafton Ferries continue to be, despite flooding and pandemic set-backs, on a long-term growth trend (see Figures 6 and 8 in Chapter 2) is what makes this expansion feasible.
- c. Expand operations of the Golden Eagle ferry trending toward operations that match the state ferries at Brussels and Kampsville with longer service days. Market indicators would lead one to the conclusion this might be sustainable over time, but the initial expansion would need some form of revenue protection to offset the substantial increase in cost to hire new ferry crews.



8 NEXT STEPS

Assuming the project committee unites around a recommendation to form a ferry task force, a next step would be getting that task force founded and organized, then adopt a workplan. From the recommendations it might be difficult to discern what is the highest priority. A sample workplan is provided in Figure 43.

From a risk perspective, absolutely the highest priority is getting the task force organized to address the largest vulnerability of the present private ferry operation, the state of the capital assets of Calhoun Ferry Company. The three active ferry barges are within 3 years of the others in age, 26 to 28 years, old. The expected life of one of these vessels is 30 years. While there is no magic that suddenly occurs at 30 years old, there is the risk that the steel thickness, in particular, has decreased to the extent that the Coast Guard would not renew the Certificate of Inspection when the barge is next drydocked unless the steel is renewed. This is a very expensive undertaking and will almost always cause an owner to consider the option of repairing the current vessel versus building a new one. In this case Calhoun Ferry Company has only one “spare” vessel, but it is older than those in daily use and also smaller, at 12 cars, with narrower driving lanes. The three 15-car ferry barges used at Grafton and Golden Eagle are in use close to every day from April – November. If one goes missing, it leaves Calhoun Ferry Company with a decision about which services to operate or how to deploy the “spare” ferry. This fact and the fact that ferries are only built on demand and that funding and building a ferry is a longer-term project, makes vessel capital replacement a top priority.

The ferry tugs are somewhat less of an issue due to recent and near-term planned activity of Calhoun Ferry Company to re-power one tug, the Paul B, and get ready to refurbish the hull of the Golden Eagle later in 2025. The Eagle II, used at the Grafton Ferry, has recently been re-powered and also has a refurbished hull which will serve it well for a while. These actions take some pressure off the need to add a new tug to the fleet, but that is somewhat short-term in terms of need. The situation also presents the opportunity to at least investigate the feasibility of moving to a ferry powered by electric motors and batteries. Regardless of the desire to address greenhouse gas emissions, the advantages are two-fold, first, energy costs for the ferry will be more stable and is very likely to be lower than diesel. Second, and perhaps most importantly, there is great availability of federal funds to build electric vessels



and electric infrastructure. If electric propulsion turns out to be feasible, electric power may provide a more feasible pathway to grant funding the construction of new tug-barge sets.

The second highest priority is to establish funding and projects to address the high-water vulnerability of the ferry landings on the Missouri side of both crossings. For example, as this report was being finalized the Golden Eagle ferry was out of service due to flooding on the approach roads, Golden Eagle Ferry Road and Highway B. These will take time to work through the ownership, grant, project planning, environmental, permitting, and design levels, all before any construction can occur. As long as current conditions remain unaddressed they impact the reliability of the ferries. These are complex undertakings and will take time to resolve, so getting them into the workplan of the task force early on is important.

Calhoun County and City of Grafton clearly benefit economically from the existence and service provided by the two ferry crossings. The third priority of the task force should be to identify how the community can better support these critical assets from an operating cost perspective. While the ferry crossings are financially sound from an operating cost perspective, the costs of operation continue to rise and that will begin to erode the financial viability of the current operation, as well as move possible expansion to a distant consideration. The community needs to map a way to financially support the present operation and create financial incentives to expand services.

With the foregoing considerations as top of mind, the following, Figure 43, represents a possible workplan for the ferry task force.

Figure 43 Sample Ferry Task Force Work Plan

Year 1 (2024)	
Priority 1	Get organized – establish regular meetings, assign task leads
Priority 2	Find and confirm a public agency grant partner and apply for a grant for a new barge (\$5 to \$8 million)
Priority 3	Establish a funding mechanism to subsidize service expansion
Priority 4	Launch a feasibility study of electrifying the Grafton Ferry Crossing
Year 2 (2025)	
Priority 1	Use funding mechanism to expand Grafton Ferry to 7 days seasonally, CFC will need to know not later than Jan, 2025
Priority 2	Establish partnerships and line up grants for rebuilding approach roads in St. Charles County
Priority 3	Improve wayfinding signage in Missouri
Priority 4	Work with Chamber of Commerce to establish 7 day per week activity in Grafton
Priority 5	Expand promotion of Jersey and Calhoun County events in St. Louis, St. Charles, and Madison counties



Year 3 (2026)	
Priority 1	Find a funding partner and apply for a grant for a new tug (\$3 to \$5 million, more if it is electric)
Priority 2	Complete design and start construction of new barge
Priority 3	Improve approach roads in St. Charles County (construction)
Year 4 (2027)	
Priority 1	Evaluate progress to date decide where to go next
Priority 2	Complete design and start construction of new tug
Priority 3	Expand to 16 hours per day service at Grafton, 20 hours per day at Golden Eagle
Priority 4	Grafton Ferry does not shut down in November 2027, but operates year-round
Year 5 (2028)	
Priority 1	New barge in service - Jan 1.
Priority 2	Approach road improvements completed
Priority 3	Expand off-season activities in Jersey and Calhoun Counties
Priority 4	New Tug in service Dec. 31

The table could go on, but even by year 3 there is a high probability that the priorities and strategy will need to be reviewed and revised.

Madeline Island, Wisconsin, a Case Study

Madeline Island is a small island community on Lake Superior that hosts the Town of LaPointe, Big Bay State Park, and a year-round residential population, about 400 people, increasing to about 2,500 people in summer. A ferry connects the mainland town of Bayfield with LaPointe. Similar to Grafton and Calhoun County, this part of Wisconsin was settled in the early 1800's. Various ferries and ferry operators have been the purveyors of ferry service from its earliest history. In 1970 the remaining two ferry lines merged into a single private company and continued to operate the Madeline Island Ferry from Bayfield until they signaled a desire to sell the ferry company in early 2024. This desire was triggered by the owner's desire to retire from the daily tasks of running a transportation company, as well as facing the financial reality that continued costs to repair, maintain, and replace five vessels was trending toward financial failure.

The concept of selling the private operation caused local officials to create a task force to assess options for the community to assume ownership. This was deemed to be more reliable than the possibility the company would be purchased by a large corporation or an absent owner. The Town of LaPointe used a Wisconsin statute to establish a harbor commission to take on the task of funding and acquiring the vessels. The ferry company



owned five vessels, all five were part of the acquisition. The settled-on purchase price was \$17.4 million which was raised through a variety of revenue sources including sale of about \$10.8 million in revenue and general obligation bonds. The harbor commission also executed a four-year contract with Madeline Island Ferry Line, LLC to continue operating the line utilizing the vessels that now are assets of the harbor commission.

Interestingly, the harbor commission has chosen to not only retain fares, but to increase fares to ensure fare revenue continues to cover operating costs. There are also discussions of the ability to expand operations to improve options for people wanting schedules extended on a daily basis. The harbor commission is also studying the feasibility of building an all-new electric ferry for the service.

The lessons learned from this series of events are instructive for the situation of the City of Grafton and Calhoun County.

- 1.) Local interest from community leadership is critical to reaching a reasonable course of action.
- 2.) Finding ways to partner with the existing ferry operator that allows for leverage of their expertise while also decreasing their financial risk is important.
- 3.) State and Federal funding opportunities are crucial to solving longer-term financial needs, but a public agency with a direct interest in those long-term outcomes needs to be at the center of the grant activity.
- 4.) Building a transition plan, even when the assets of the ferry company have been acquired by a public entity, is in the best interests of all.
- 5.) Balancing short-term operational profitability and long-term capital needs of a ferry service is complex. Great solutions take creativity, time, and willingness to consider changes to how things have operated in the past.



9 CHAIN OF ROCKS FERRY FEASIBILITY

This chapter addresses a subject that was included in the scope of work that is similar in some ways to the remainder of this report, but different in that it is a feasibility assessment of a possible new ferry crossing. Chouteau Island is formed by the Mississippi River and the Chain of Rocks Canal. The island provides a place for the support footings and columns of the I-270 Bridge. However, there are no access points between the freeway and the island. Mostly, the island has been utilized for a regional landfill (now decommissioned), agriculture and recreation, but it is also home to the water intake and primary treatment plant for Illinois American Water of Granite City. The island is accessible by bridge from northern St. Louis and Mitchell, IL. However, the bridge from St. Louis is restricted to only pedestrians and bicycles and the bridge over the Chain of Rocks Canal is load limited to 7 tons. Further, the bridge has been converted to only allow one direction of traffic to cross at a time, via a traffic signal system.

The limited access has caused issues for the Illinois American's Water plant as there is occasional need to bring freight to the location that exceeds the weight limit on the Chain of Rocks Canal Bridge. From a cost perspective, the cost to upgrade the bridge to facilitate that occasional need is not cost effective and even if it was, there are many other bridges ahead of this bridge in the funding stream that would be of higher priority. The question has been posed, could a ferry be utilized to move the occasional truck to the island?

The answer is mostly positive but has some unknown elements. The most significant unknowns would be where a ferry would land. On the East side of the Chain of Rocks Canal there is one developed site that appears feasible to load a large truck onto a ferry/barge of suitable size, that is at the roll-on/roll-off terminal facility in Granite City, a property under the control of America's Central Port just north of the Granite City Lock and Dam. There may be other opportunities. However, it has been many, many decades since ferries provided service to Chouteau Island. Noted here is that some of the earliest ferries crossing the upper Mississippi River were landed in the vicinity of Chouteau Island. But the very long absence of ferries in this area and a long series of road and waterway improvements have erased any evidence of ferry landings on any side of Chouteau Island.



The entire east side of the island, forming the west shoreline of the Chain of Rocks Canal is a levee that is unbroken from the northern end of the island until the lock and dam which is almost at the southern end of the island. The west shore of the island is equally difficult made further so by the existence of the Chain of Rocks that span the entire width of the river. Similar to ferry landings at St. Genevieve-Modoc Ferry and Dorena-Hickman Ferry, it may be possible to construct a ramp on the bank of the levy that lines the canal that would allow a large truck to access from and to a ferry. There are, however, significant regulatory and structural issues to overcome before anyone starts pouring concrete. It should also be noted that the canal is the main shipping channel of the Mississippi River and is characterized by frequent commercial marine traffic. The canal is likely wide enough, but there may be significant concerns about navigational safety for such an operation, even though it would be planned to be infrequent.

The other issue would be the ferry vessel. The closest operational ferries are in Grafton. At least for now a vessel is available Monday through Thursday from April to November and seven days a week from November through March. The Calhoun Ferry Company frequently does contract work, and moving trucks to Chouteau Island may present an opportunity for the company. It is, however, a fairly substantial run, about 30 miles, from Grafton to Chain of Rocks Canal, including the need to pass through the Melvin Price Lock and Dam at Alton, IL. Another possibility is for some entity to build a special purpose barge that has a long-reach ramp to reduce the need for even more substantial infrastructure on Chouteau Island. Construction of such a barge would be far less expensive than upgrading the Chain of Rock Canal Bridge and may even be cost effective compared to more extensive improvements on land. The barge may also find other work suited to its specialized characteristics in the greater St. Louis area. The tug could be almost any small to medium-sized towboat with a current certificate of inspection as well as a licensed pilot and crew. It should also be noted that the cost of one ferry-barge, perhaps even shared with other potential transport needs, pales in comparison to the costs to rehabilitate/rebuild the existing bridge to increase the load limit.

It is likely some ferry solution could be found to solve the truck access issue for Chouteau Island. Even if a ferry solution is pursued, it will be neither simple, nor inexpensive, but may provide a way to continue to provide occasional industrial access to the island at a fraction of the cost when compared to replacing the bridge. In the long-term, a ferry may become the only way to get any vehicles onto the island if the Chain of Rocks Canal Bridge is limited to pedestrians and bicycles or removed altogether. But the level of activity on the island is not significant enough to generate revenues that would offset the ferry cost, operating and/or capital costs. At the outset, some level of public subsidy will be necessary.

