APPENDIX D: MEETING SUMMARIES

Meeting Minutes

TO: Jared Jeffers
Co-Project Manager
KYTC Central Office
200 Mero Street
Frankfort, KY 40622

Ben Hunt
Co-Project Manager
KYTC District Office #3
900 Morgantown Rd.
Bowling Green, KY 42101

FROM: Brian Aldridge
Project Manager
Stantec Consulting Services Inc.

DATE: May 22, 2023

SUBJECT: Turkey Neck Bend Bridge Feasibility Study
KY 214 (MP 1.5 – MP 1.9)
Monroe County
KYTC Item No. 3-80200
Project Team Meeting No. 1

The first Project Team Meeting for the subject project was held at the KYTC District 3 Office in Bowling Green, KY and virtually via Microsoft Teams on May 4, 2023 at 12:30 p.m. CDT. The following individuals were in attendance:

Kenny Carrico*	KYTC – Central Office Design
Jeremy Edgeworth*	KYTC – Central Office Planning
Matthew Holder*	KYTC – District 3
Ben Hunt	KYTC – District 3
Jared Jeffers	KYTC – Central Office Planning
Stuart Lich*	KYTC – District 3
Casey Pedigo*	KYTC – District 3
Mikael Pelfrey*	KYTC – Central Office Planning
Joe Plunk*	KYTC – District 3
Wendy Southworth*	KYTC – Central Office Design
Andrew Stewart*	KYTC – District 3
Wes Watt*	KYTC – District 3
Justin Young	KYTC – District 3
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Mark Kranz*	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

*Joined virtually via Microsoft Teams

Brian Aldridge welcomed everyone and led introductions. The purpose of the meeting was to recap existing conditions and discuss improvement concepts before meeting with local officials and stakeholders.

The following enumerated items were discussed.

1. The objective of the study is to evaluate an array of alternatives to maintain a connection for KY 214 across the Cumberland River.

2. The Turkey Neck Bend Ferry was acquired by KYTC in 1968 and is the only free KYTC operated ferry open 24 hours per day. It connects KY 214 across the Cumberland River in Monroe County and transports an average of 200 vehicles per day (VPD). The current tugboat was put into service in December 2022.

3. **Table 1** presents a summary of the ferries in Kentucky, which are also shown in **Figure 1**. Of the seven state-funded / partially state-funded ferries, only two charge fees – the Augusta Ferry in Bracken County ($5) and the Dorena-Hickman Ferry in Fulton County ($14).

Table 1: Summary of Kentucky Ferry Operations

Ferry	River	Counties Served		Fee	Schedule			
		From:	To:	Car/Foot		M-F	Saturday	Sunday
Anderson Ferry	Ohio	Boone	Hamilton (OH)	$5 / .50¢	May-Oct	6:00am - 9:45pm	7:00am - 9:45pm	9:00am - 9:45pm
					Nov-April	6:00am - 8:00pm	7:00am - 8:00pm	9:00am - 8:00pm
Augusta Ferry	Ohio	Bracken	Brown (OH)	$5 / Free	Yearly	8:00am - 8:00pm	8:00am - 8:00pm	8:00am - 8:00pm
Cave in Rock Ferry	Ohio	Crittenden	Hardin (IL)	Free	Yearly	6:00am - 9:30pm	6:00am - 9:30pm	6:00am - 9:30pm
Dorena-Hickman Ferry	Mississippi	Fulton	Mississippi (MO)	$14 / $1	Summer	7:00am - 6:30pm	7:00am - 6:30pm	7:00am - 6:30pm
					Winter	7:00am - 5:30pm	7:00am - 5:30pm	7:00am - 5:30pm
Green River Ferry	Green	Edmonson	Edmonson	Free/No	Yearly	6:00am - 9:55pm	6:00am - 9:55pm	6:00am - 9:55pm
Houchin Ferry	Green	Edmonson	Edmonson			Closed	Closed	Closed
Reeds Ferry	Green	Butler	Butler	Free	Yearly	Sunrise - Sunset	Sunrise - Sunset	Sunrise - Sunset
Rising Star	Ohio	Boone	Ohio (IN)	$5		8:00am - 10:00pm		
Rochester Ferry	Green	Butler	Ohio	Free	Yearly	8:00am - 8:00pm	8:00am - 8:00pm	8:00am - 8:00pm
Turkey Neck Bend Ferry	Cumberland	Monroe	Monroe	Free	Yearly	24 hours	24 hours	24 hours
Valley View Ferry	Kentucky	Fayette/Jessamine	Madison	Free	Yearly	6:00am - 6:00pm	8:00am - 8:00pm	8:00am - 8:00pm

Key:
Blue = State-funded / partially state-funded
Green = Federally funded
Red = Private

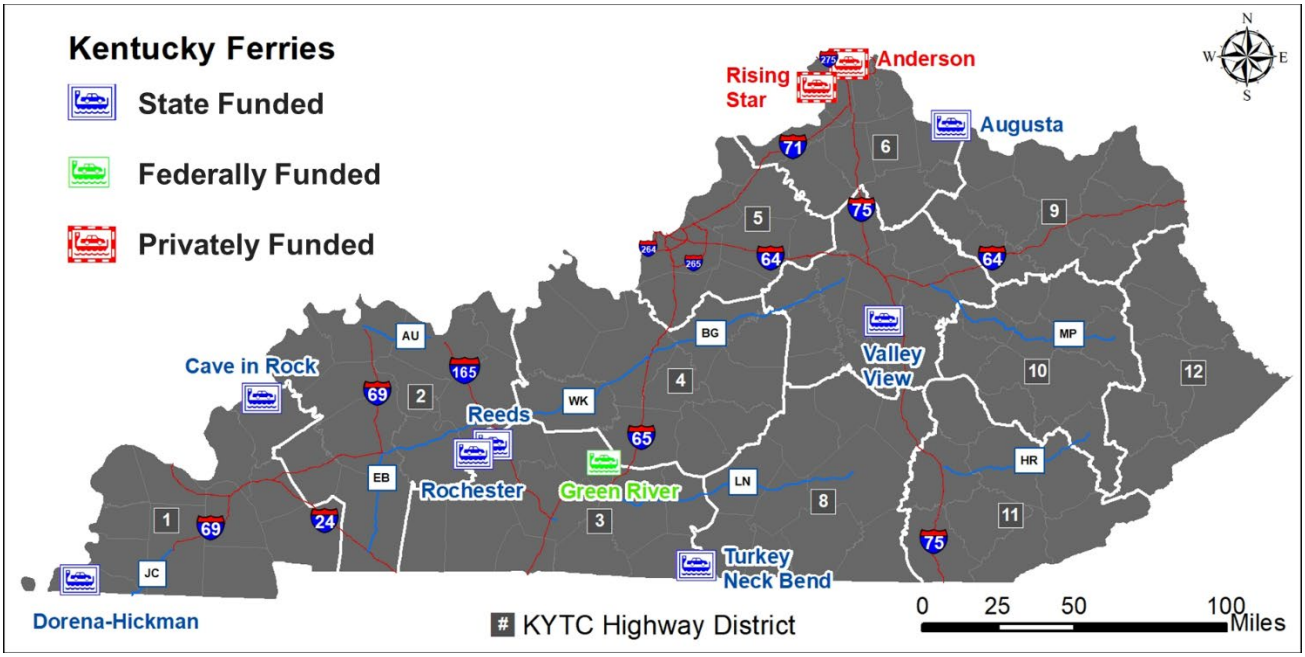

Figure 1: Kentucky Ferries

4. The goals of the study include:
    - Assess the future traffic demand along the KY 214 corridor.
    - Evaluate feasible alternatives to connect KY 214 across the Cumberland River.
    - Develop and compare lifecycle costs for KY 214 connection strategies.
    - Engage the public and other stakeholders.
    - Document the study process and findings.

5. September 2022 daily counts for the Turkey Neck Bend Ferry indicate an average of 200 vehicles per day (VPD) crossing the river. The counts vary by day of the week, with slightly more traffic on Friday and Saturday.
    - It was noted that the ferry is used to transport school children. The students are ferried across the river in SUVs rather than school buses.

6. The Federal Emergency Management Agency (FEMA) floodway across the Cumberland River is 415 feet wide in the study area. The base flood elevation (BFE) of 527 feet is the elevation of the river resulting from a flood that has a one percent chance of equaling or exceeding that level in a given year. There is a Wetland Reserve Program (WRP) easement within the northeastern portion of the study area.

7. Traffic forecasts were developed using outputs from the Kentucky Statewide Travel Demand Model (KYSTM), historical traffic counts, and population projections. Based on an annual growth rate of 0.5 percent per year, 275 VPD is expected on KY 214 west of the Cumberland River in 2045. KYSTM model updates and assumptions were summarized in a technical memorandum.

8. Brian then presented the following range of preliminary options:

Ferry Options

1. No Action / Do Nothing

   The 2022 Long-Range Statewide Transportation Plan identified $32.5 million in funding needs between 2022 and 2045 to operate the Turkey Neck Bend Ferry. This includes $22 million in operations and maintenance, $4.3 million in budget requests, and $6.1 million in additional staffing based on expected Coast Guard requirements, as shown in **Table 2**.

Table 2: 2022 Long-Range Plan Expected Ferry Funding (2022 – 2045)

Ferry	County	Historically Derived Operations and Maintenance	Additional Needs			TOTAL NEEDS
			Known Budget Requests	Subchapter M	Capital	
Augusta	Bracken	$5,563,307	$625,000	$3,073,728	$3,500,000	$12,762,035
Reeds	Butler	$3,684,733	$-	$3,073,728	$-	$6,758,461
Rochester	Butler	$3,684,733	$-	$3,073,728	$-	$6,758,461
Cave-in-Rock	Crittenden	$38,337,955	$-	$3,970,232	$-	$42,308,187
Valley View	Fayette	$8,696,547	$2,125,000	$3,073,728	$-	$13,895,275
Dorena-Hickman	Fulton	$3,349,757	$-	$2,817,584	$-	$6,167,342
Turkey Neck Bend	Monroe	$21,973,609	$4,325,000	$6,147,457	$-	$32,446,066
TOTAL						**$121,095,827**

2. Adjust Hours of Operation

   Based on a review of the Valley View Ferry budget, reducing the daily operating hours of the Turkey Neck Bend Ferry from 24 to 12 would result in reduced labor and fuel costs. Overall, cutting the hours of operations in half would result in an estimated $435,000 in savings per year, as summarized in **Table 3**. However, the reduced hours would also result in added travel time costs due to diversions while the ferry is closed. The nearest river crossing to the north is 27 miles from the western bank of the Turkey Neck Bend and takes an estimated 37 minutes to drive. The nearest river crossing to the south is 25.5 miles from Turkey Neck Bend to Celina, TN and takes an estimated 34 minutes to drive.

Table 3: Adjusted Hours of Operations

			Current (24-hour)	Modified (12-hour)
EXPENSE	**Valley View**		**Turkey Neck**	
Fees	2.8%	$16,000		
Contract Services	3.5%	$19,900		
Dues & Subscriptions	0.1%	$500		
Employee Expenses	72.8%	$413,900		
Fuel	3.7%	$21,000	$1,050,000	$615,000
Insurance	5.0%	$28,518		
Repairs/Maint.	8.8%	$50,000		
Utilities	1.0%	$5,536		
Miscellaneous	2.4%	$13,577		
TOTAL	100.0%	**$568,931**	**$1,050,000**	**$615,000**

3. Crossing Fee (Toll)

   Based on a review of fee-based ferries in Kentucky, a user fee of $5 per trip was assumed for Turkey Neck Bend. It was also assumed that this fee would result in a 25 percent reduction in traffic demand across the river. Based on these assumptions, a $5 fee would bring in approximately $262,500 in gross revenue per year, as summarized in **Table 4**.

   - Question: How do other ferries collect fees?

     Answer: The ferry operators collect cash only and deposit it in the bank each night.

Table 4: Crossing Fee Summary

Base trips (2023)	200
Time Value of $5 toll (minutes)	16.0
Reduction (-25%)	150
Daily Revenue @ $5	$750
Annual Gross Revenue	$262,500

4. Close Ferry

   Closing the ferry would require the 200 VPD (based on September 2022 average counts) to detour either south to Celia, TN or north to Burkesville, KY to cross the Cumberland River. **Table 5** presents a summary of the estimated cost of time and distance of the two detour options. The cost of time is the additional time associated with the detour trip and is estimated by the Federal Highway

Administration (FHWA) at $18.80 per hour. The cost of distance includes the cost of gas and the additional wear and tear on vehicles and is estimated at $0.46 per mile. Table 5 presents a summary of the user costs estimated for the north and south detours, assuming there is no reduction in cross-river travel demand.

Table 5: Ferry Closure Detour Options

Detour	ADT	Original Distance	Detour Distance (mi)	Original Time	Detour Route Speed	Time at Reduced Speed	Delay / Trip (hrs)	V-hrs/ day Delay (hrs)	Cost of Time ($18.80/hr)	Cost of Distance ($0.46/mi)	Total Cost Detour	Yearly Cost
South Detour	200	0.36	45	0.100	45	1.000	0.900	180.000	$3,384	$4,100	$7,484	**$2,731,660**
North Detour	200	0.36	25	0.100	45	0.556	0.456	91.111	$1,713	$2,300	$4,013	**$1,464,704**

Table 6 presents a summary of the expected operations and maintenance costs, the user costs due to diversions, and the total cost between 2023 and 2045 for the four ferry options presented.

Table 6: Summary of Conceptual Ferry Options

		Expected Costs (2023 - 2045)		
Option	Description	Ferry O&M	User Costs	Total
1	Do Nothing	$32,400,000	$0	**$32,400,000**
2	Reduce Hours of Operation	$19,300,000	$9,312,500	**$28,612,500**
3	User Fee	$26,000,000	$0	**$26,000,000**
4a	Closure - South Detour	$0	$66,700,000	**$66,700,000**
4b	Closure - North Detour	$0	$37,250,000	**$37,250,000**

Bridge Options

The following bridge conceptual options were developed based on discussions with KYTC and previous experience with the US Coast Guard. An official request for input has not been made to the Coast Guard, but Stantec did reach out informally to solicit input. Base criteria assumptions include 30 feet of vertical clearance above the normal pool and 250 feet of horizontal clearance for the main river span. Bridge options include two 11-foot wide lanes with four-foot wide shoulders and are shown north and south of the ferry for it to be left open during construction.

1. Bridge North of the Ferry

   The northern bridge option includes constructing a new alignment north of the existing crossing with a total 825-foot-long bridge (250-foot main span with 175-

foot approach spans and 125-foot spans over the floodplain associated with Andrews Branch, as shown in **Figure 2**.

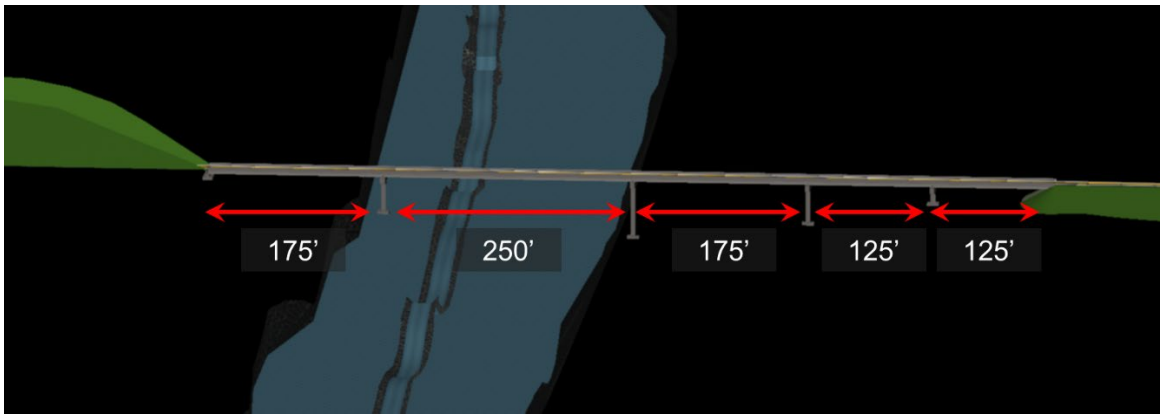

Figure 2: Bridge North of the Ferry

2. Bridge South of the Ferry

   The southern bridge option includes constructing a new alignment south of the existing crossing with a 600-foot-long bridge , as shown in **Figure 3**.

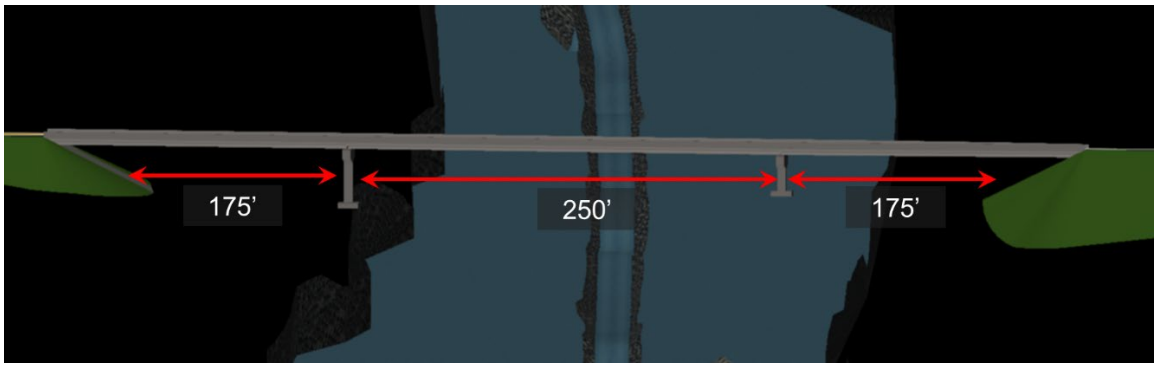

Figure 3: Bridge South of the Ferry

There have been several previous studies evaluating river crossing options at Turkey Neck Bend. A 1966 study resulted in a bridge estimate of $1.3 million, $12.1 million in 2023 dollars accounting for inflation. Similarly, a 1998 estimate was $14.4 million ($26.8 million in 2023) and a 2003 estimate was $14.5 million ($23.75 million in 2023).

- Brian mentioned the current estimate includes what may be considered high unit costs for most items. This is due to current inflationary impacts affecting construction combined with the remote location of this project.
- Joe Plunk suggested that 10 years is a reasonable timeframe for opening a new bridge should such an option move forward.

Table 7 presents a summary of the updated estimated costs of the two bridge options. The southern bridge option is expected to cost $8.3 million less than the northern option due to the shorter bridge span and reduced earthwork requirements on the west side of the Cumberland River.

Table 7: Preliminary Opinion of Probable Bridge Costs

Alternative	Length (miles)	Description	Right-of-Way	Design	Construction Cost
North	0.53	Construct new alignment north of existing Cumberland River ferry crossing with a 5-span bridge over the Cumberland River and Andrews Branch	$250,000	$2,140,000	$21,500,000
South	0.41	Construct new alignment south of existing Cumberland River ferry crossing with a 3-span bridge over the Cumberland River	$190,000	$1,980,000	$13,200,000

9. The next steps are to refine the concepts and costs based on project team feedback before meeting with local officials. After the Local Officials meeting, a survey will be distributed at the ferry to solicit feedback from ferry users. Additionally, Stantec will perform a life-cycle cost analysis for the ferry and bridge options. The bridge options will use a 2033 opening year.
    - A question will be asked on the survey to inquire how / if travelers cross the river when the ferry is closed.
    - Stantec will correct Ben Hunt's email address on the survey.
    - Question: Can KYTC transfer ownership of the ferry to Monroe County? Answer: Yes, if Monroe County agrees to take ownership.

The meeting ended at approximately 1:30 p.m. CDT.

Meeting Minutes

TO: Jared Jeffers
Co-Project Manager
KYTC Central Office
200 Mero Street
Frankfort, KY 40622

Ben Hunt
Co-Project Manager
KYTC District Office #3
900 Morgantown Rd.
Bowling Green, KY 42101

FROM: Brian Aldridge
Project Manager
Stantec Consulting Services Inc.

DATE: October 5, 2023

SUBJECT: Turkey Neck Bend Bridge Feasibility Study
KY 214 (MP 1.5 – MP 1.9)
Monroe County
KYTC Item No. 3-80200
Local Officials / Stakeholder Meeting No. 1

The first Local Officials / Stakeholder Meeting for the subject project was held at the Monroe County Courthouse in Tompkinsville, KY on September 25, 2023, at 1:30 p.m. CDT. The following individuals were in attendance:

Lori Brown	Monroe County Economic Development
Terry Bryant	Long Branch Farm
Vickie Bryant	Long Branch Farm
Darren Cleary	Monroe County Citizen
Kevin Cloyd	Monroe County Board of Education
Kathleen Evans	Monroe County Citizen
Jill Ford	Monroe County Health Department
Shawn Guffey	Monroe County PVA
Jon Osgatharp	Monroe County Citizen
Lesley Tade	Community Action of Southern Kentucky
Carter Walden	Monroe County Economic Development
Saralu White	Monroe County Citizen
Brittany Wilborn	Monroe County Judge Executive
Steve DeWitte	KYTC – Central Office Planning
Matthew Holder	KYTC – District 3
Ben Hunt	KYTC – District 3
Jared Jeffers	KYTC – Central Office Planning
Casey Pedigo	KYTC – District 3
Joe Plunk	KYTC – District 3
Austin Sims	Barren River Area Development District
Andrew Stewart	KYTC – District 3

Wes Watt	KYTC – District 3
Justin Young	KYTC – District 3
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

Brian Aldridge welcomed everyone and led introductions. The purpose of the meeting was to discuss the existing conditions of the Turkey Neck Bend Bridge Feasibility Study and to solicit feedback from the local officials and stakeholders on ferry operations and potential bridge options.

The following enumerated items were discussed.

1. The objective of the study is to evaluate an array of alternatives to maintain a connection for KY 214 across the Cumberland River.

2. **Figure 1** presents a summary of the ferries in Kentucky. Of the seven state-funded / partially state-funded ferries, only two charge fees – the Augusta Ferry in Bracken County ($5) and the Dorena-Hickman Ferry in Fulton County ($14). **Figure 2** shows the location of the Turkey Neck Bend ferry within Monroe County.

3. The goals of the study include:
    - Assess the future traffic demand along the KY 214 corridor.
    - Evaluate feasible alternatives to connect KY 214 across the Cumberland River.
    - Develop and compare lifecycle costs for KY 214 connection strategies.
    - Engage the public and other stakeholders.
    - Document the study process and findings.

4. There are two active projects in the study area listed in *Kentucky's 2022-2028 Enacted Highway Plan*.
    - KYTC Item No. 3-128.11 includes operation of Turkey Neck Bend Ferry for FY 2022 – 2028. This project has a length of 0.1 miles across the Cumberland River. (C = $6.055 million).

    - KYTC Item No. 3-80200 including the Turkey Neck Bend Planning Study.

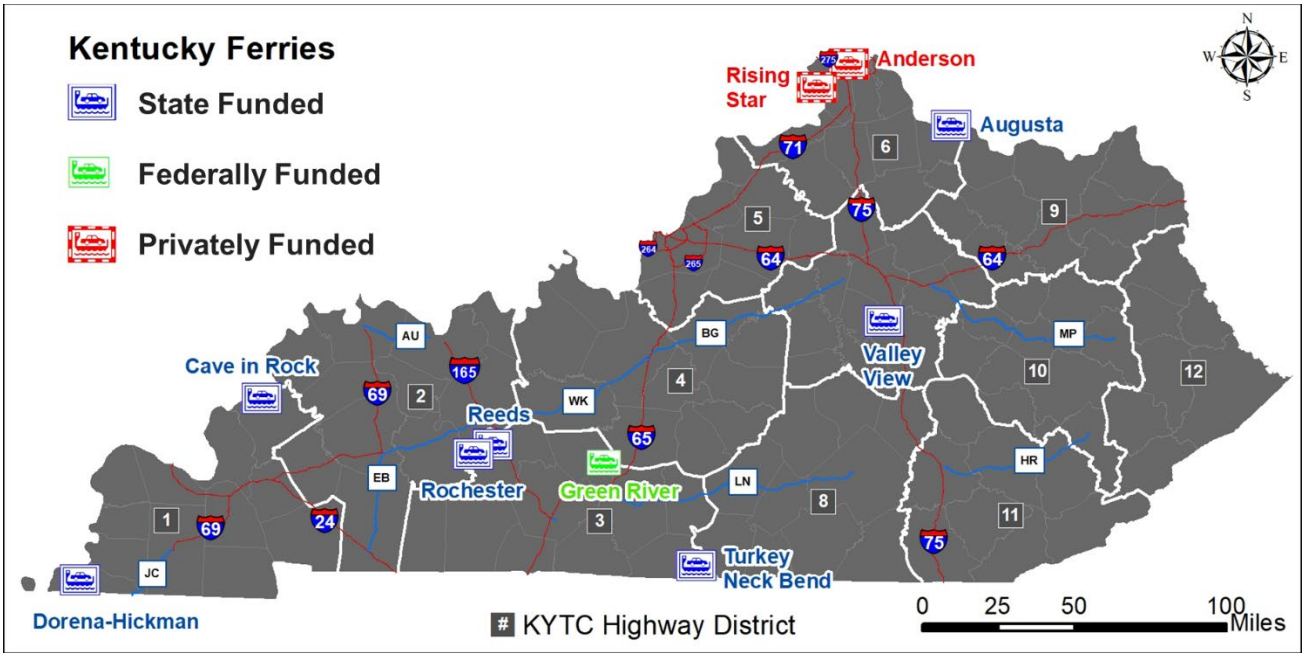

Figure 1: Kentucky Ferries

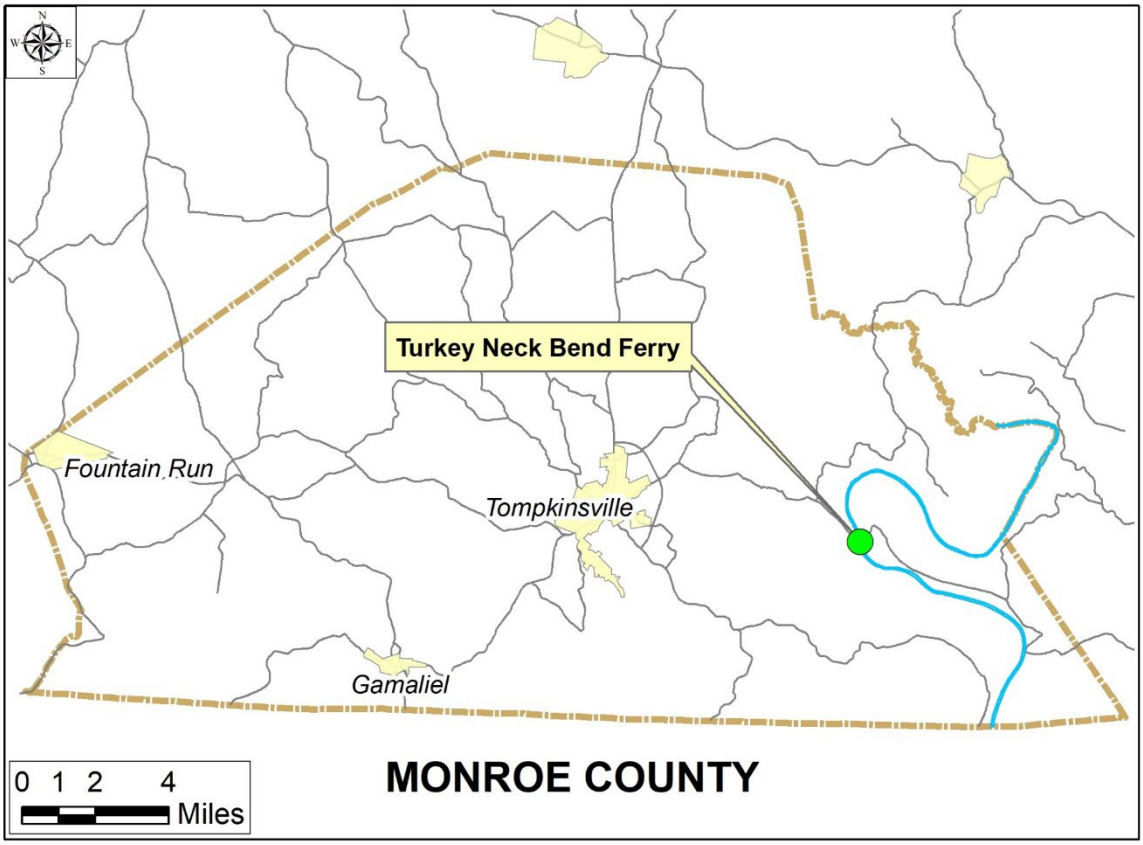

Figure 2: Study Area

5. The Turkey Neck Bend Ferry was acquired by KYTC in 1968 and is the only free KYTC operated ferry open 24 hours per day. It connects KY 214 across the Cumberland River in Monroe County and transports an average of 200 vehicles per day (VPD). The current tugboat was put into service in December 2022. The annual cost of operation is $1 million per year including labor, equipment, and repairs. The 2023/2024 annual ferry budget is $1.5 million.

6. Highlights from the existing conditions were then discussed. Approaching the ferry crossing, KY 214 has two eight- to nine-foot lanes and three-foot stabilized shoulders.

   September 2022 daily counts for the Turkey Neck Bend Ferry indicate an average of 200 vehicles per day (VPD) crossing the river. The counts vary by day of the week, with slightly more traffic on Friday and Saturday. Friday was shown to have the highest average daily traffic (ADT), with 218.2 trips as shown in **Figure 3.**

   - It was noted that the ferry is used to transport school children. The students are ferried across the river in SUVs rather than school buses.

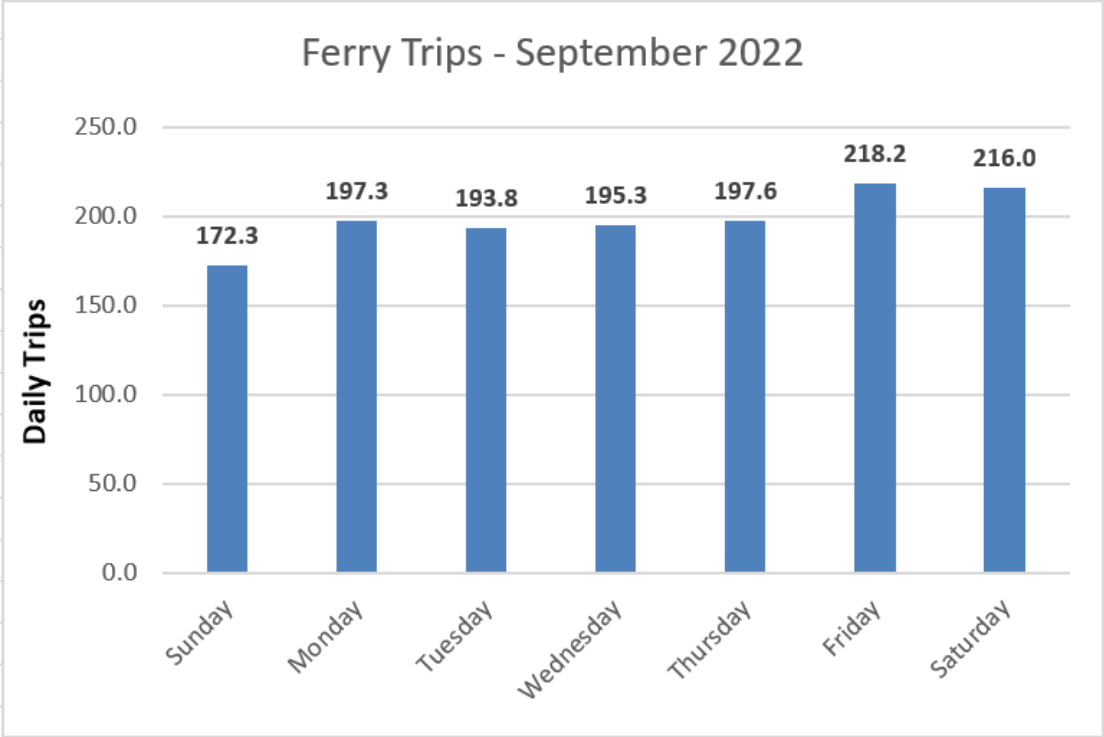

Figure 3: Average Daily Ferry Traffic

7. Traffic forecasts were developed using outputs from the Kentucky Statewide Travel Demand Model (KYSTM), historical traffic counts, and population projections. Based on an annual growth rate of 0.5 percent per year, 275 VPD are expected on KY 214 west of the Cumberland River in 2045. KYSTM model updates and assumptions were summarized in a technical memorandum.

8. Brian then presented the following range of preliminary options:

Ferry Options

1. No Action / Do Nothing

   The 2022 Long-Range Statewide Transportation Plan identified $32.5 million in funding needs between 2022 and 2045 to operate the Turkey Neck Bend Ferry. This includes $22 million in operations and maintenance, $4.3 million in budget requests, and $6.1 million in additional staffing based on expected Coast Guard requirements, as shown in **Table 1.**

Table 1: Ferry Needs Analysis

Ferry	County	Historically Derived Operations and Maintenance	Additional Needs			TOTAL NEEDS
			Known Budget Requests	Subchapter M	Capital	
Augusta	Bracken	$5,563,307	$625,000	$3,073,728	$3,500,000	$12,762,035
Reeds	Butler	$3,684,733	$-	$3,073,728	$-	$6,758,461
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TOTAL						**$121,095,827**

2. Adjust Hours of Operation

   Based on a review of the Valley View Ferry budget, reducing the daily operating hours of the Turkey Neck Bend Ferry from 24 to 12 would result in reduced labor and fuel costs. Overall, cutting the hours of operations in half would result in an estimated $435,000 in savings per year, as summarized in **Table 2**. However, the reduced hours would also result in added travel time costs due to diversions while the ferry is closed. The nearest river crossing to the north is 27 miles from the western bank of the Turkey Neck Bend and takes an estimated 37 minutes to drive. The nearest river crossing to the south is 25.5 miles from Turkey Neck Bend to Celina, TN and takes an estimated 34 minutes to drive.

Table 2: Adjusted Hours of Operations

EXPENSE	Valley View		Current (24-hour) Turkey Neck	Modified (12-hour) Turkey Neck
Fees	2.8%	$16,000		
Contract Services	3.5%	$19,900		
Dues & Subscriptions	0.1%	$500		
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Miscellaneous	2.4%	$13,577		
TOTAL	100.0%	**$568,931**	**$1,050,000**	**$615,000**

3. Crossing Fee (Toll)

   Based on a review of fee-based ferries in Kentucky, a user fee of $5 per trip was assumed for Turkey Neck Bend. It was also assumed that this fee would result in a 25 percent reduction in traffic demand across the river. Based on these assumptions, a $5 fee would bring in approximately $262,500 in gross revenue per year, as summarized in **Table 3**.

Table 3: Crossing Fee Summary

Base trips (2023)	200
Time Value of $5 toll (minutes)	16.0
Reduction (-25%)	150
Daily Revenue @ $5	$750
Annual Gross Revenue	$262,500

Bridge Options

The following bridge conceptual options were developed based on discussions with KYTC and previous experience with the US Coast Guard. An official request for input has not been made to the Coast Guard, but Stantec did reach out informally to solicit input. Base criteria assumptions include 30 feet of vertical clearance above the normal pool and 250 feet of horizontal clearance for the main river span. Bridge options include two 11-foot-wide lanes with four-foot-wide shoulders and are shown north and south of the ferry for it to be left open during construction.

There have been several previous studies evaluating river crossing options at Turkey Neck Bend. A 1966 study resulted in a bridge estimate of $1.3 million, $12.1 million in

2023 dollars accounting for inflation. Similarly, a 1998 estimate was $14.4 million ($26.8 million in 2023), and a 2003 estimate was $14.5 million ($23.75 million in 2023).

- Brian mentioned the current estimate includes what may be considered high unit costs for most items. This is due to current inflationary impacts affecting construction combined with the remote location of this project.

1. Bridge North of the Ferry

   The northern bridge option includes constructing a new alignment north of the existing crossing with a total 850-foot-long bridge (250-foot main span with 175-foot approach spans and 125-foot spans over the floodplain associated with Andrews Branch, as shown in **Figure 4**.

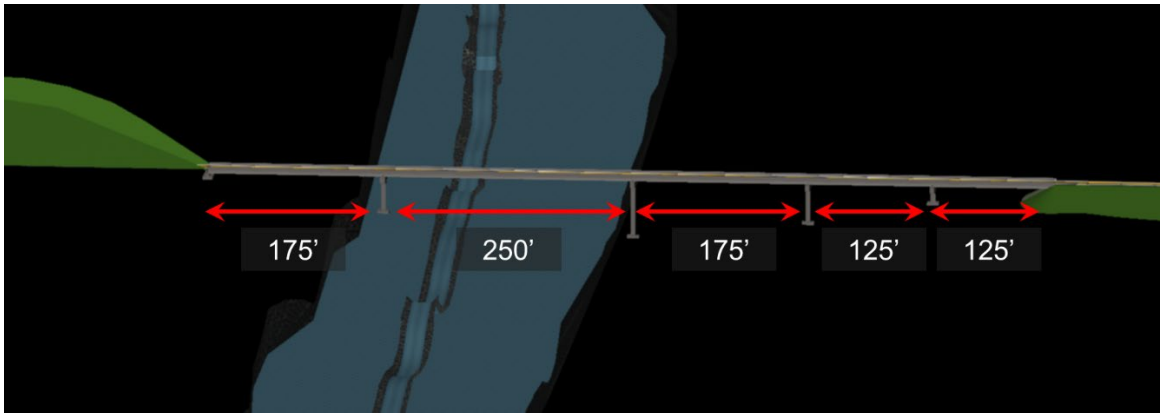

Figure 4: Bridge North of the Ferry

2. Bridge South of the Ferry

   The southern bridge option includes constructing a new alignment south of the existing crossing with a 600-foot-long bridge, as shown in **Figure 5**.

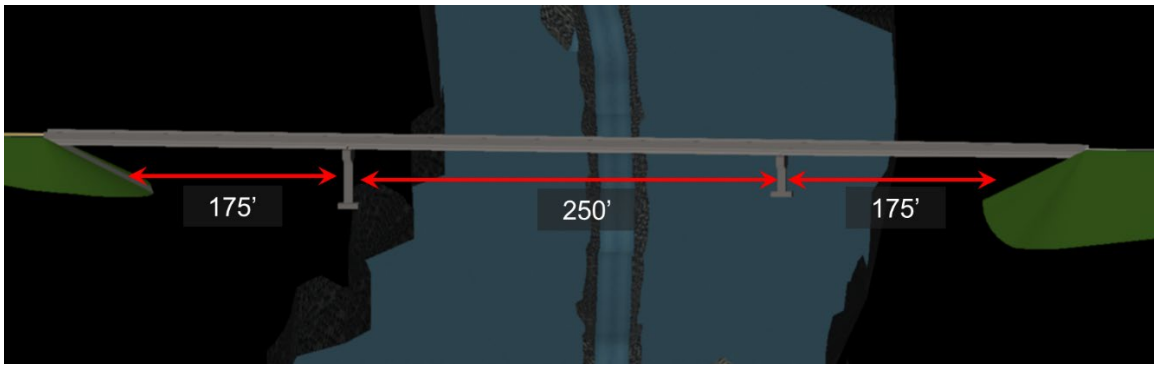

Figure 5: Bridge South of the Ferry

Table 4 presents a summary of the updated estimated costs of the two bridge options. The southern bridge option is expected to cost $8.3 million less than the northern option

due to the shorter bridge span and reduced earthwork requirements on the west side of the Cumberland River.

Table 4: Preliminary Opinion of Probable Bridge Costs

Alternative	Length (miles)	Description	Right-of-Way	Design	Construction Cost
North	0.53	Construct new alignment north of existing Cumberland River ferry crossing with a 5-span bridge over the Cumberland River and Andrews Branch	$250,000	$2,140,000	$21,500,000
South	0.41	Construct new alignment south of existing Cumberland River ferry crossing with a 3-span bridge over the Cumberland River	$190,000	$1,980,000	$13,200,000

9. As shown in **Table 5**, maintaining the current ferry operations of 24 hours per day is estimated to cost $33,140,000 through 2045, while reducing the ferry's operational hours to 12 hours per day would decrease the estimated cost to $19,690,000. The construction of a bridge on the southern side of the existing ferry crossing has a construction and maintenance cost through 2045 of $20,860,000 while the construction of a bridge on the north side of the existing ferry crossing has a construction and maintenance cost of $31,590,000.
    - It was noted that the "Do Nothing" option has potential user costs associated with closures for maintenance or inclement weather.

Table 5: Summarized Life Cycle Cost

Years	24-Hour Ferry Operation	12-Hour Ferry Operation	South Bridge Option	North Bridge Option
2023 - 2045	$33,140,000	$19,690,000	$20,860,000	$31,590,000

10. Attendees were then asked to fill out a survey to provide input on the ferry operations and bridge options. 15 Local Officials / Stakeholders filled out the survey, twelve of which live in postal code 42167, and 14 of which work in postal code 42167. One respondent uses the ferry daily, while two use the ferry two to three times per week, and six use the ferry two to three times per month, and six use the ferry rarely, as shown in **Figure 6.**

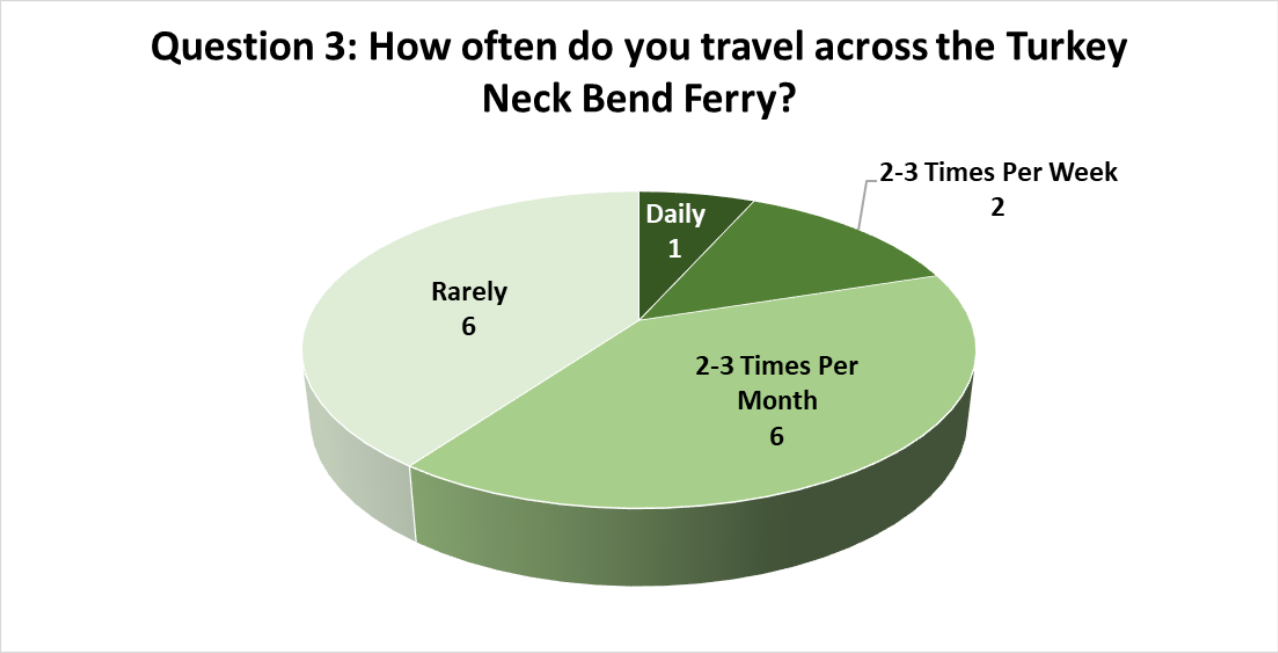

Figure 6: Local Official / Stakeholder Survey – How often do you travel across the Turkey Neck Bend Ferry?

When asked about their purpose for using the ferry, five attendees indicated they use it to commute to work, one for shopping, one for healthcare and eight respondents use the ferry for other purposes, as shown in **Figure 7**. The "other" responses are summarized below:

- Visit family
- Access property
- Attend church
- Pay bills
- Recreation
- Transport students to / from school

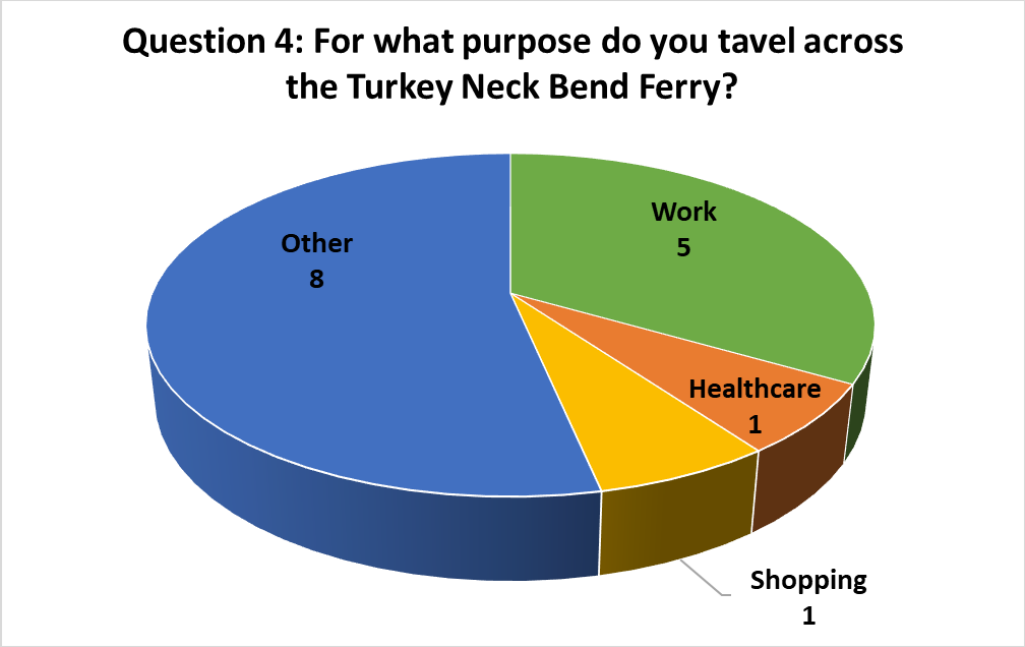

Figure 7: Local Official / Stakeholder Survey – For what purpose do you travel across the Turkey Neck Bend Ferry?

The most common time of day to use the ferry was between 6:00 a.m. and 12:00 p.m., followed by the period between 12 p.m. and 6 p.m., as shown in **Figure 8.**

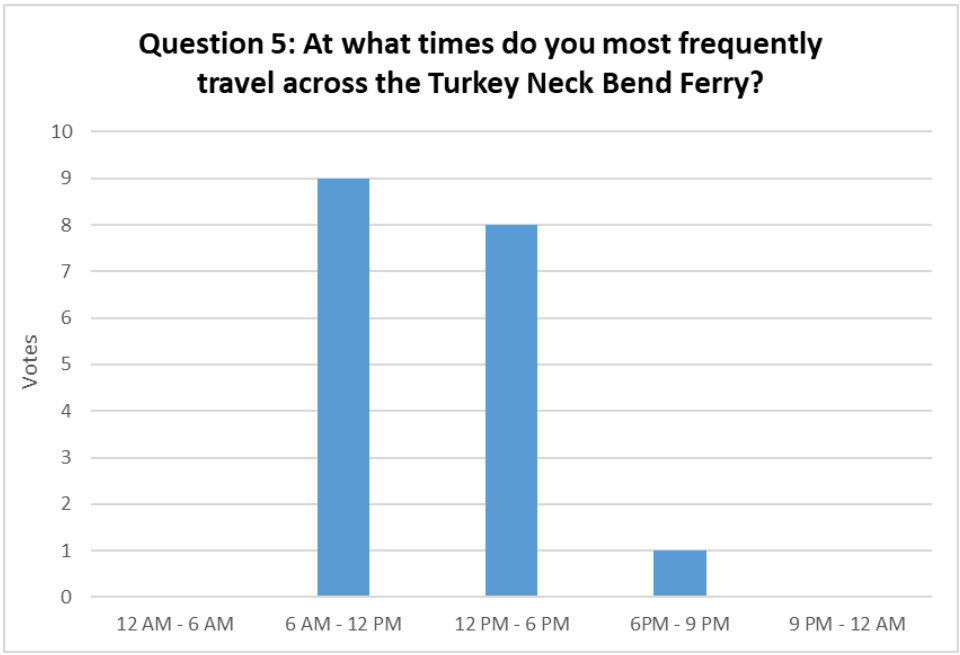

Figure 8: Local Official / Stakeholder survey – At what times do you most frequently travel across the Turkey Neck Bend Ferry?

Respondents were asked if changes are needed to the ferry services in the near-term. Eleven respondents replied that they did not believe changes were needed soon, while two respondents were in support of near-term changes**.** The final question asked if respondents supported maintaining a ferry crossing or the construction of a bridge. Thirteen respondents believe the construction of a bridge is needed while two respondents voted for maintaining the ferry, as shown in **Figure 9.**

- It was noted that closing the ferry or reducing operating hours without providing a bridge would increase EMS response times.
- One respondent indicated that the historical nature of the ferry crossing should be taken into consideration.
- Question: Are the bridge concepts wide enough to accommodate large farm equipment?
  Answer: Yes, the bridge options assume 11' lanes and usable shoulder.

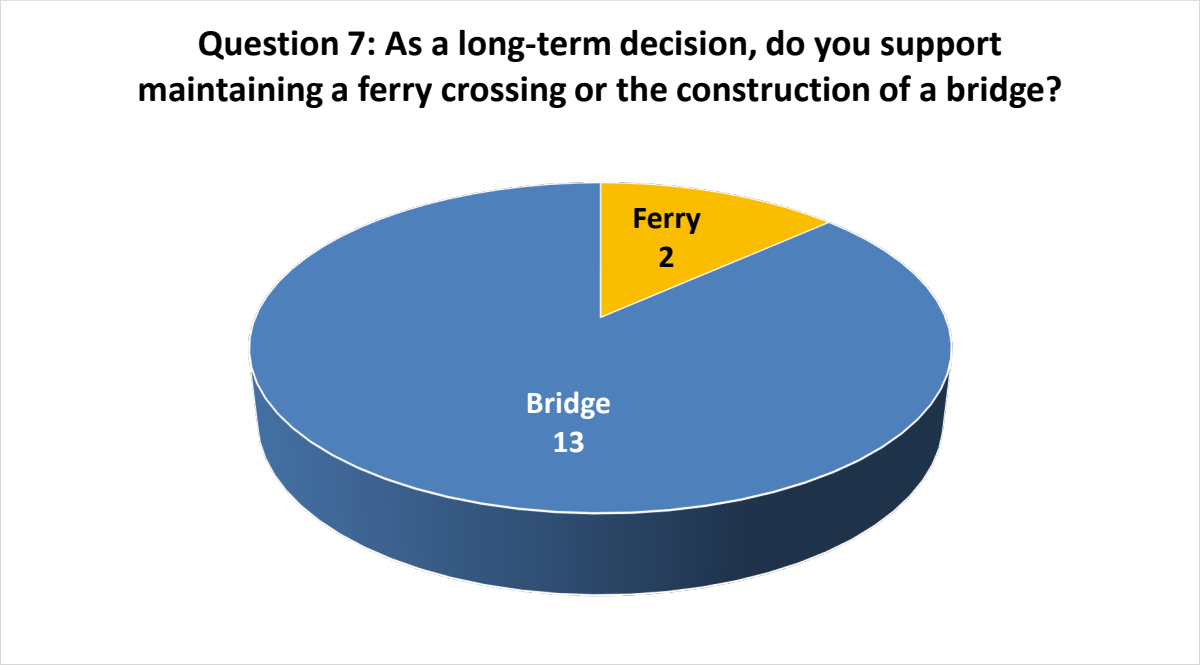

Figure 9: Local Official / Stakeholder survey – Do you support long-term maintaining the ferry or the construction of a bridge?

11. Brian then discussed the project schedule. The next steps are to analyze feedback from Local Officials / Stakeholders survey and to provide a similar survey to ferry users.

The meeting ended at approximately 2:30 p.m. CDT.

Meeting Minutes

TO:

Jared Jeffers Co-Project Manager KYTC Central Office 200 Mero Street Frankfort, KY 40622	Ben Hunt Co-Project Manager KYTC District Office #3 900 Morgantown Rd. Bowling Green, KY 42101

FROM: Brian Aldridge
Project Manager
Stantec Consulting Services Inc.

DATE: April 16, 2024

SUBJECT: Turkey Neck Bend Bridge Feasibility Study
KY 214 (MP 1.5 – MP 1.9)
Monroe County
KYTC Item No. 3-80200
Project Team Meeting No. 2

The second Project Team Meeting for the subject project was held at the KYTC District 3 Office in Bowling Green, KY and virtually via Microsoft Teams on March 4, 2024 at 10:00 a.m. CDT. The following individuals were in attendance:

Kenny Carrico*	KYTC – Central Office Design
Stephen DeWitte*	KYTC – Central Office Planning
Jeremy Edgeworth*	KYTC – Central Office Planning
Matthew Holder	KYTC – District 3
Michael Hollinsworth*	KYTC – District 3
Ben Hunt	KYTC – District 3
Jared Jeffers	KYTC – Central Office Planning
Stewart Lich	KYTC – District 3
Casey Pedigo*	KYTC – District 3
Joe Plunk	KYTC – District 3
Andrew Stewart	KYTC – District 3
Brent Sweger*	KYTC – Central Office Planning
Mark Walker*	KYTC – District 3
Tyler Wilder*	KYTC – District 3
Wes Watt	KYTC – District 3
Justin Young	KYTC – District 3
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Ali Vargas*	Stantec Consulting Services Inc.
Graham Winchester*	Stantec Consulting Services Inc.

*Joined virtually via Microsoft Teams

Brian Aldridge welcomed everyone and led introductions. The purpose of the meeting was to discuss results from the ferry user survey and the updated improvement concepts.

The following enumerated items were discussed.

1. The objective of the study is to evaluate an array of alternatives to maintain a connection for KY 214 across the Cumberland River which include:
    - Assess the future traffic demand along the KY 214 corridor.
    - Evaluate feasible alternatives to connect KY 214 across the Cumberland River.
    - Develop and compare lifecycle costs for KY 214 connection strategies.
    - Engage the public and other stakeholders.
    - Document the study process and findings.

2. The Turkey Neck Bend Ferry was acquired by KYTC in 1968 and is the only free KYTC operated ferry open 24 hours per day. It connects KY 214 across the Cumberland River in Monroe County and transports an average of 200 vehicles per day (VPD). The current tugboat was put into service in December 2022.

3. Highlights from *Kentucky's FY 2024 – 2030 Highway Plan* for the operation of Turkey Neck Bend Ferry include an increased estimated operations cost by $250,000 per year, as shown in **Table 1**.

Table 1: ***FY 2024-2030 Highway Plan***

FUND	PH	2024	2025	2026	2027	2028	2029	2030	Phase Total
SPP	C	$0	$1,250,000	$1,250,000	$1,250,000	$1,250,000	$1,250,000	$1,250,000	**$7,500,000**
FY TOTAL:		**$0**	**$1,250,000**	**$1,250,000**	**$1,250,000**	**$1,250,000**	**$1,250,000**	**$1,250,000**	**$7,500,000**

4. **Figure 1** presents the ferry user survey that was administered via paper and electronically to users of the ferry on December 5, 2023. There was a total of 91 respondents.

    Respondents were first asked what zip code they live in. As shown in **Figure 2**, most of the ferry users live in the surrounding areas of zip codes 42167 and 42717, which include Tompkinsville and Burkesville, respectively.

1. Please tell us in which zip code you live?	☐ 42167	☐ 42717	☐ 42151
	☐ 42602	☐ 42731	☐ Other: _____
2. Please tell us in which zip code you work?	☐ 42167	☐ 42717	☐ 42151
	☐ 42602	☐ 42731	☐ Other: _____

3. How often do you travel across the Turkey Neck Bend Ferry? ☐ Daily ☐ 2-3 times per week ☐ 2-3 times per month ☐ Rarely

4. For what purposes do you travel across the Turkey Neck Bend Ferry? (Check all that apply.) ☐ Work ☐ Travel for healthcare ☐ Travel for education ☐ Travel for shopping ☐ Other

If you said "Other", please tell us for what other purposes you use the ferry:

_____

_____

_____

5. At what time do you most frequently travel across the Turkey Neck Bend Ferry? (Please check one.) ☐ 6-9 AM ☐ 9 AM - Noon ☐ Noon – 3:00 PM ☐ 3-6 PM ☐ 6 PM-6 AM

6. Do you think changes are needed with the service provided at the Turkey Neck Bend Ferry? ☐ Yes ☐ No

If so, please tell us what should be considered.

_____

_____

_____

Figure 1: Ferry User Survey

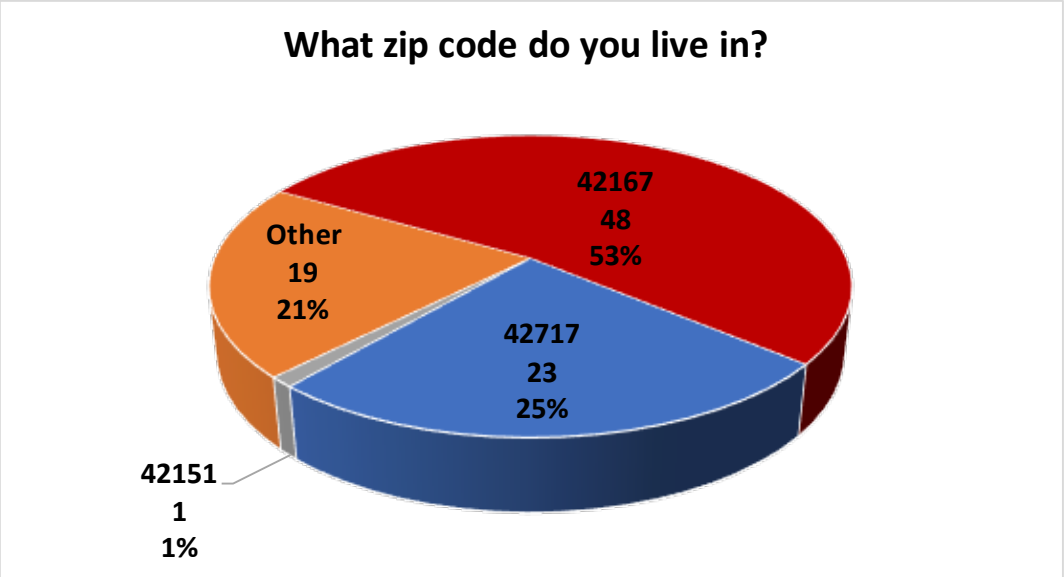

Figure 2: Ferry User Survey Question 1

Respondents were asked what zip code they work in. As shown in **Figure 3**, over half of the respondents work in the zip code 42167, Tompkinsville.

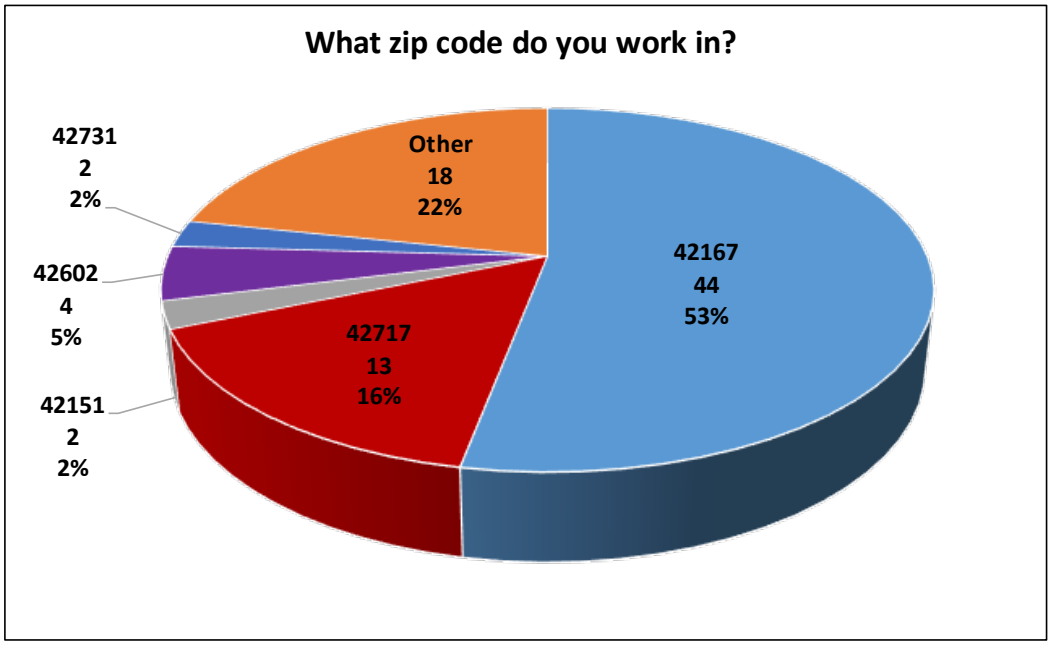

Figure 3: Ferry User Survey Question 2

Respondents were then asked how often they travel across the Turkey Neck Bend Ferry. Most of the ferry users answered that they travel across the Turkey Neck Bend Ferry 2-3 times per week or 2-3 times per month, as shown in **Figure 4**.

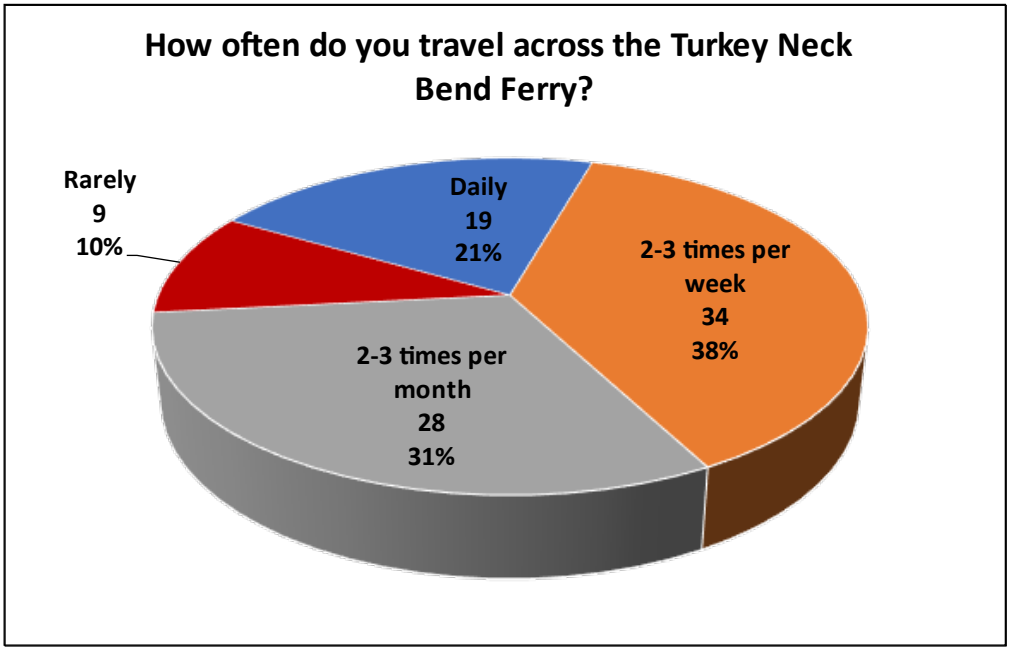

Figure 4: Ferry User Survey Question 3

Respondents were asked for their purpose(s) for traveling using the ferry. As shown in **Figure 5**, most of the ferry users utilize the Turkey Neck Bend ferry for multiple reasons, most commonly being shopping, healthcare, and work. Many respondents stated their other reasons for using the ferry as including banking, visiting friends and family, and recreation.

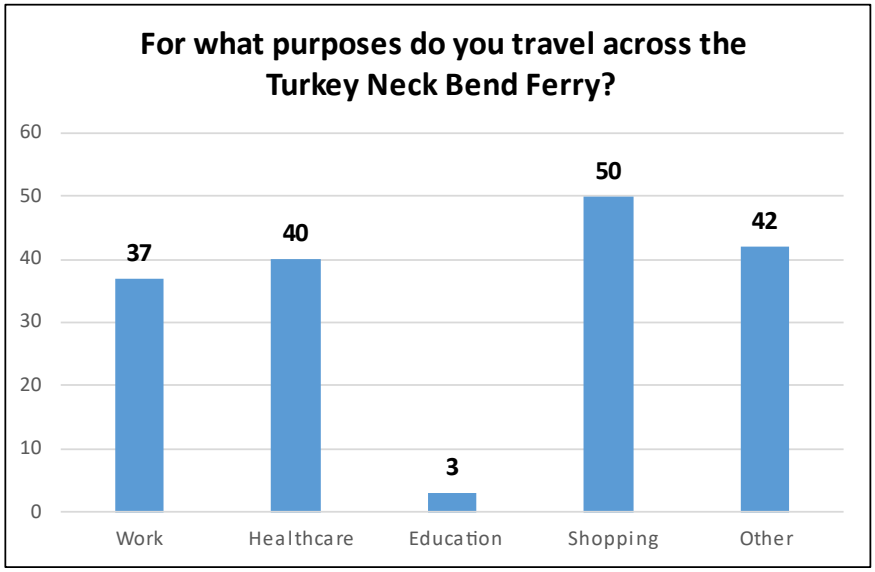

Figure 5: Ferry User Survey Question 4

Respondents were asked what times they most frequently travel across the ferry. **Figure 6** summarizes that 79 percent of the travelers commute by the ferry between the times 6 a.m. and 6 p.m.

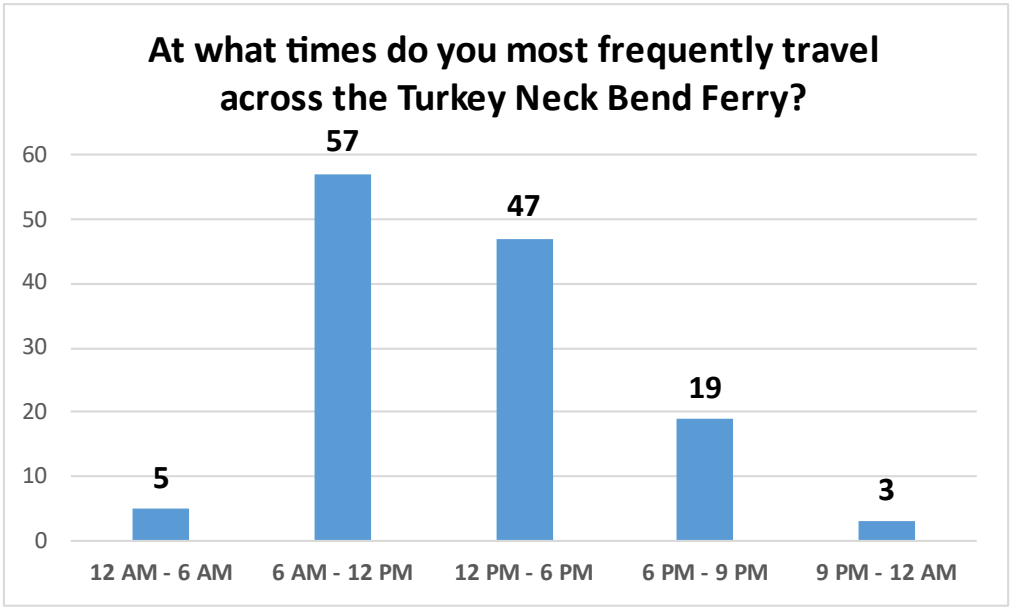

Figure 6: Ferry User Survey Question 5

Respondents were asked if they use an alternative route while the ferry is closed. As shown in **Figure 7**, during closure of the Ferry, 70 percent of the respondents use an alternative route or detour, while the remaining 30 percent do not make the trip or did not respond to the question. The alternative routes that are most often taken are detours through Burkesville, KY (27.3 miles) or Celina, TN (25.5 miles).

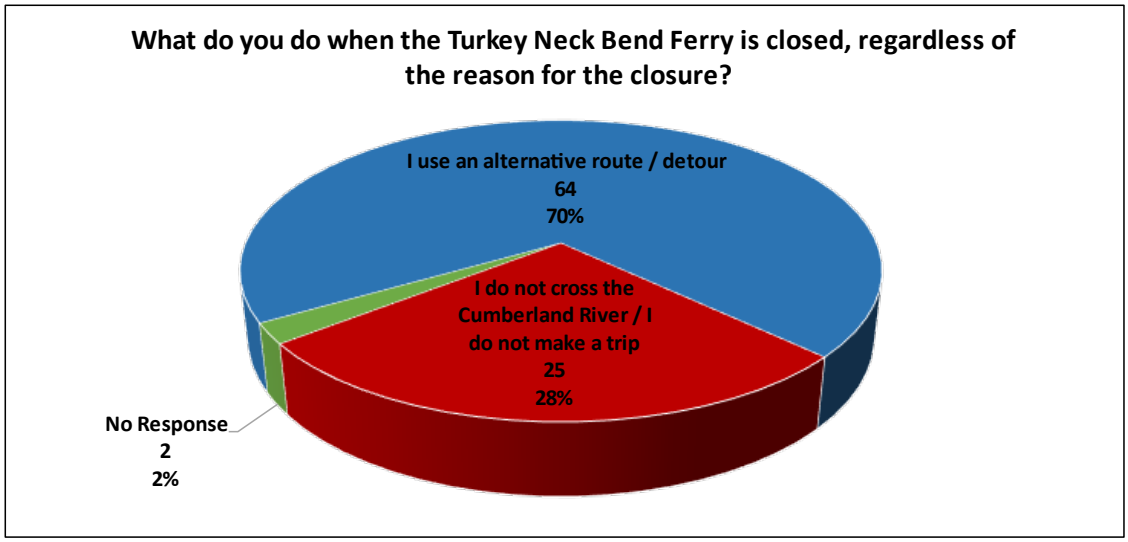

Figure 7: Ferry User Survey Question 6

Respondents were asked if changes are needed with the service provided at the Turkey Neck Bend Ferry. 58 percent of the ferry users believed that the Turkey Neck Bend Ferry services do not need any changes, while 30 percent responded that there should be changes in the services provided, as shown in **Figure 8**.

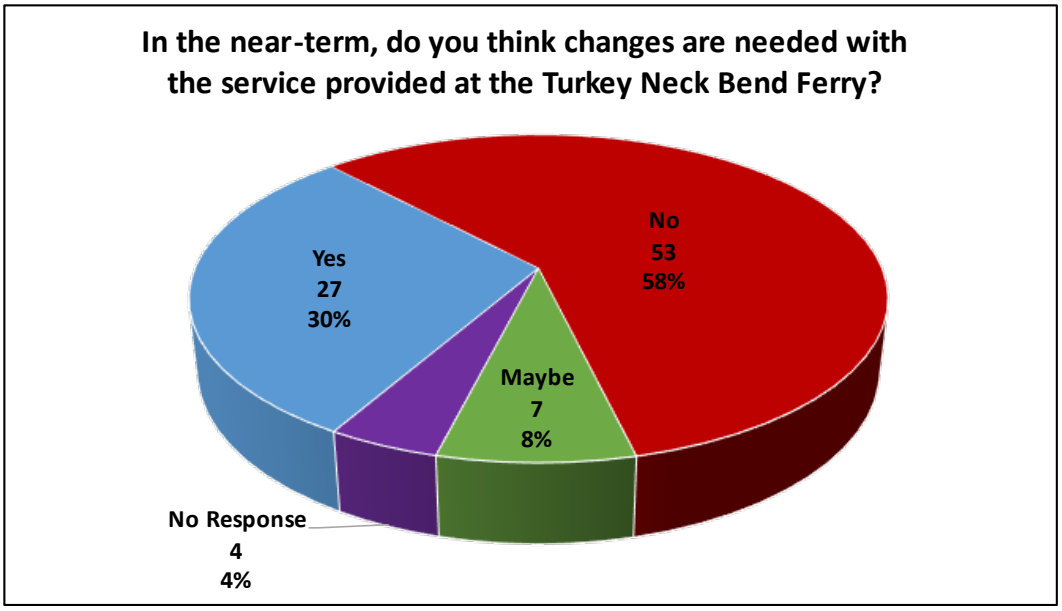

Figure 8: Ferry User Survey Question 7

To conclude the survey, respondents were asked if they supported maintaining the ferry crossing or the construction of a bridge. As shown in **Figure 9**, the results were close, with 53 percent choosing the ferry crossing and 47 percent choosing bridge construction.

- It was noted that a driving factor for the those who want to keep the ferry open was nostalgia and positive feedback about the workers.

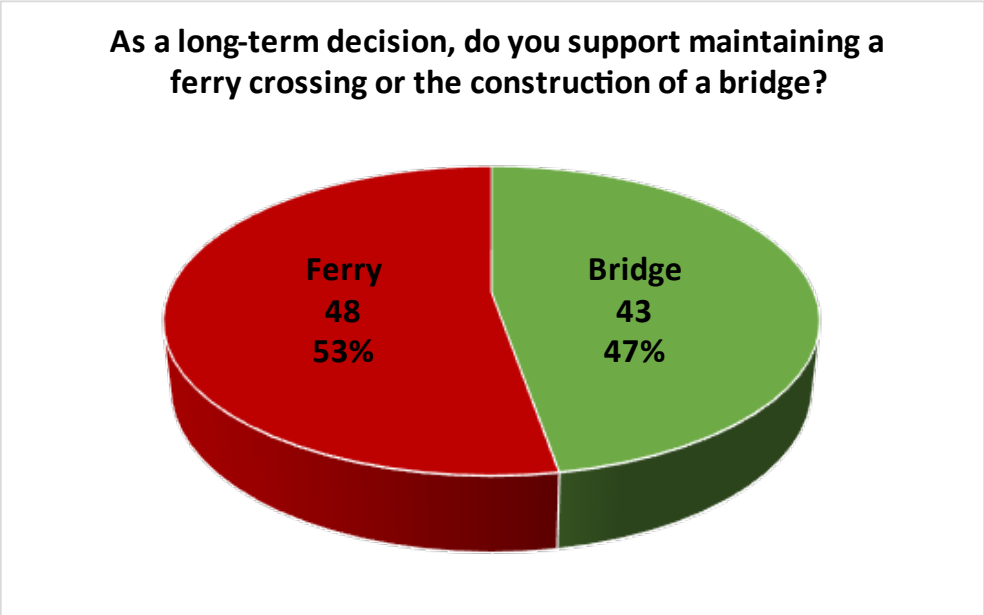

Figure 9: Ferry User Survey Question 8

At the end of the survey, the respondents had an opportunity to voice what they thought should be considered in changing the services of the ferry. Some of the comments from this portion of the survey included:

- There should be an estimated wait time on ferry shutdowns.
- The employees of the ferry are often asleep from 12 a.m. and 6 a.m.
- There should be an extended loading ramp to make more accessible to low-riding vehicles.
- Build a bridge.
- Charge a small fee.
- Keep ferry in service.
- Increase pay for ferry employees.
- Increase operation speed.

A common misconception that was a possible factor for the backing of the continuance of the ferry was that the ferry operators would lose their jobs if the ferry was to close. It was discussed that since they are employed by the State of Kentucky, the operators would be transferred rather than fired. It was also noted that many of the ferry users

mentioned that during off hours, it takes longer to get the ferry boat captain's attention, and there should be alterative and increased communication methods for announcing unforeseen closings of the ferry.

5. Brian then presented both a Northern and Southern Concept for the bridge:

   As shown in **Figure 10**, the North alternative would be a 5-span bridge over the Cumberland River and a 100-year floodplain, Andrews Branch. The South alternative would be a 3-span bridge only over the Cumberland River.

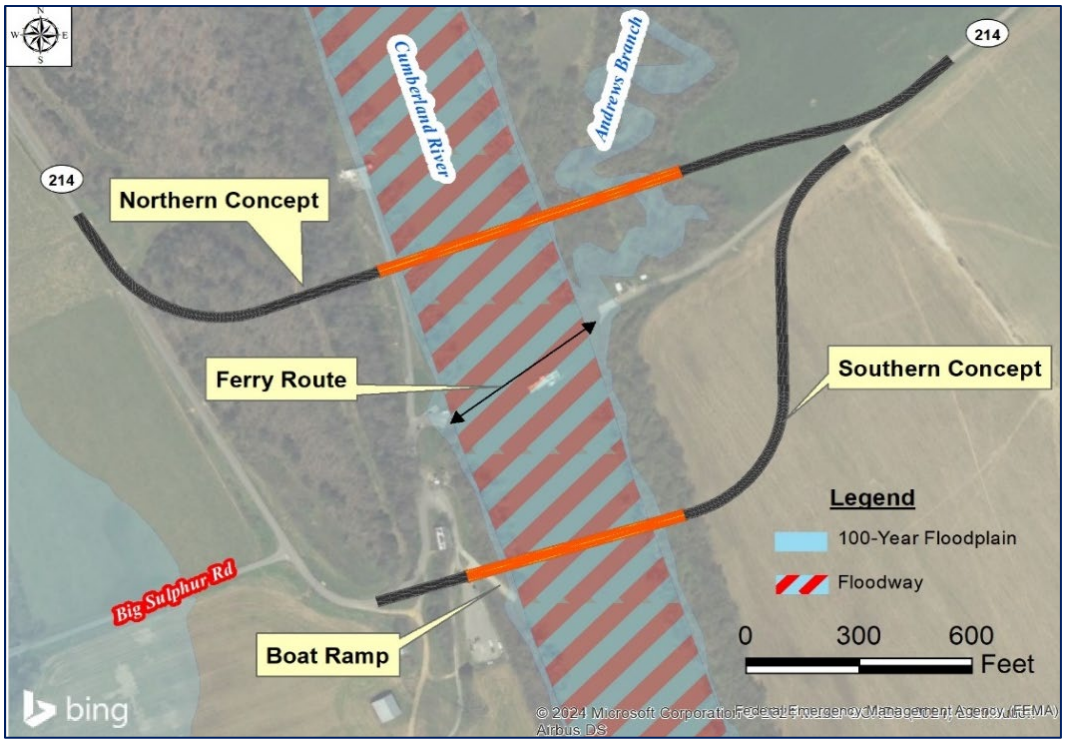

Figure 10: Northern and Southern Bridge Concepts

The northern bridge option includes constructing a new alignment north of the existing crossing with a total 850-foot-long bridge (250-foot main span with 175-foot approach spans and 125-foot spans over the floodplain associated with Andrews Branch. The southern bridge option includes constructing a new alignment south of the existing crossing with a 600-foot-long bridge.

6. **Table 2** presents a summary of the the updated probable cost opinions for 2024. The southern bridge option is expected to cost $11.6 million less than the northern option due to the shorter bridge span and reduced earthwork requirements on the west side of the Cumberland River.

Table 2: Opinion of Probable Bridge Costs

Alternative	Length (miles)	Description	Design	Right-of-Way	Utilities	Construction Cost	Total Cost
North	0.53	Construct new alignment north of existing Cumberland River ferry crossing with a 5-span bridge over the Cumberland River and Andrews Branch	$2,590,000	$250,000	$200,000	$25,900,000	$28,940,000
South	0.41	Construct new alignment south of existing Cumberland River ferry crossing with a 3-span bridge over the Cumberland River	$1,540,000	$190,000	$100,000	$15,500,000	$17,330,000

7. Lifecycle costs were developed to compare the cost of maintaining ferry operations to the construction of north and south bridge options. **Table 3** presents the comparison with 24-hour ferry operation assumed during the design and construction of the bridge, **Table 4** presents the comparison assuming 16-hour operation, and **Table 5** presents the comparison assuming 12-hour operation.

Table 3: Life Cycle Analysis (24-Hour Operation)

Concept	Cost (2024 - 2075)				
	Bridge	24-Hour Ferry Operation	16-Hour Ferry Operation	12-Hour Ferry Operation	Total
24-Hour Ferry Operation	N/A	$133,165,000	N/A	N/A	**$133,165,000**
16-Hour Ferry Operation	N/A	N/A	$105,921,000	N/A	**$105,921,000**
12-Hour Ferry Operation	N/A	N/A	N/A	$78,652,000	**$78,652,000**
South Bridge Option*	$25,806,000	$12,509,000	N/A	N/A	**$38,315,000**
North Bridge Option*	$40,164,000	$12,509,000	N/A	N/A	**$52,673,000**

*Assumes 24-hour ferry operation from 2024-2032

Table 4: Life Cycle Analysis (16-Hour Operation)

Concept	Cost (2024 - 2075)				
	Bridge	24-Hour Ferry Operation	16-Hour Ferry Operation	12-Hour Ferry Operation	Total
24-Hour Ferry Operation	N/A	$133,165,000	N/A	N/A	**$133,165,000**
16-Hour Ferry Operation	N/A	N/A	$105,921,000	N/A	**$105,921,000**
12-Hour Ferry Operation	N/A	N/A	N/A	$78,652,000	**$78,652,000**
South Bridge Option*	$25,806,000	N/A	$10,181,000	N/A	**$35,987,000**
North Bridge Option*	$40,164,000	N/A	$10,181,000	N/A	**$50,345,000**

*Assumes 16-hour ferry operation from 2024-2032

Table 5: Life Cycle Analysis (12-Hour Operation)

Concept	Cost (2024 - 2075)				
	Bridge	24-Hour Ferry Operation	16-Hour Ferry Operation	12-Hour Ferry Operation	Total
24-Hour Ferry Operation	N/A	$133,165,000	N/A	N/A	**$133,165,000**
16-Hour Ferry Operation	N/A	N/A	$105,921,000	N/A	**$105,921,000**
12-Hour Ferry Operation	N/A	N/A	N/A	$78,652,000	**$78,652,000**
South Bridge Option*	$25,806,000	N/A	N/A	$7,842,000	**$33,648,000**
North Bridge Option*	$40,164,000	N/A	N/A	$7,842,000	**$48,006,000**

*Assumes 12-hour ferry operation from 2024-2032

8. The meeting was opened up for discussion.
    - It was determined that a bridge will be recommended as a long-term solution with reduced ferry operation hours near term.
    - Question: Should mitigation costs be included to preserve the Ferry's historic context?
      Answer: Yes, mitigation costs should be included.
    - Question: Should we include the cost of travel time from River crossing back to Turkey Neck?
      Answer: No, we will not assume trip paths. The detour analysis only gets them across the river.
    - Question: What would be the time for the Emergency Medical Services (EMS) call if the ferry operates 12-hours versus 24-hours?
      Answer: This is difficult to quantify, possible 4-minute delay. Helicopters are used for more serious situations.
    - Question: When the ferry is closed, does EMS starting location change?
      Answer: Yes, Cumberland County EMS helps if the ferry is closed.
    - Question: How densely populated is this area?
      Answer: We do not have a good estimate due to the large size of the census tracts.
    - Question: Can the ferry accommodate large vehicles since there are farms on both sides of the river?
      Answer: No, the ferry cannot accommodate large farm equipment or tractor trailers.
    - Question: Would the boat ramp be closed if ferry hours are reduced / closed?
      Answer: No, we are assuming it will remain open.

9. The next steps are to refine the concepts and minimize operational and maintenance costs to the extent feasible based on project team feedback. Another Life Cycle Analysis will be conducted to 2075, as the bridge will last longer than the Life Cycle Analysis period shown previously. Additionally, a 16-hour operation option will be considered to

better accommodate the ferry operators' 8-hour work shifts. Coordination with EMS will be done to obtain additional information.

The meeting ended at approximately 11:00 a.m. CDT.