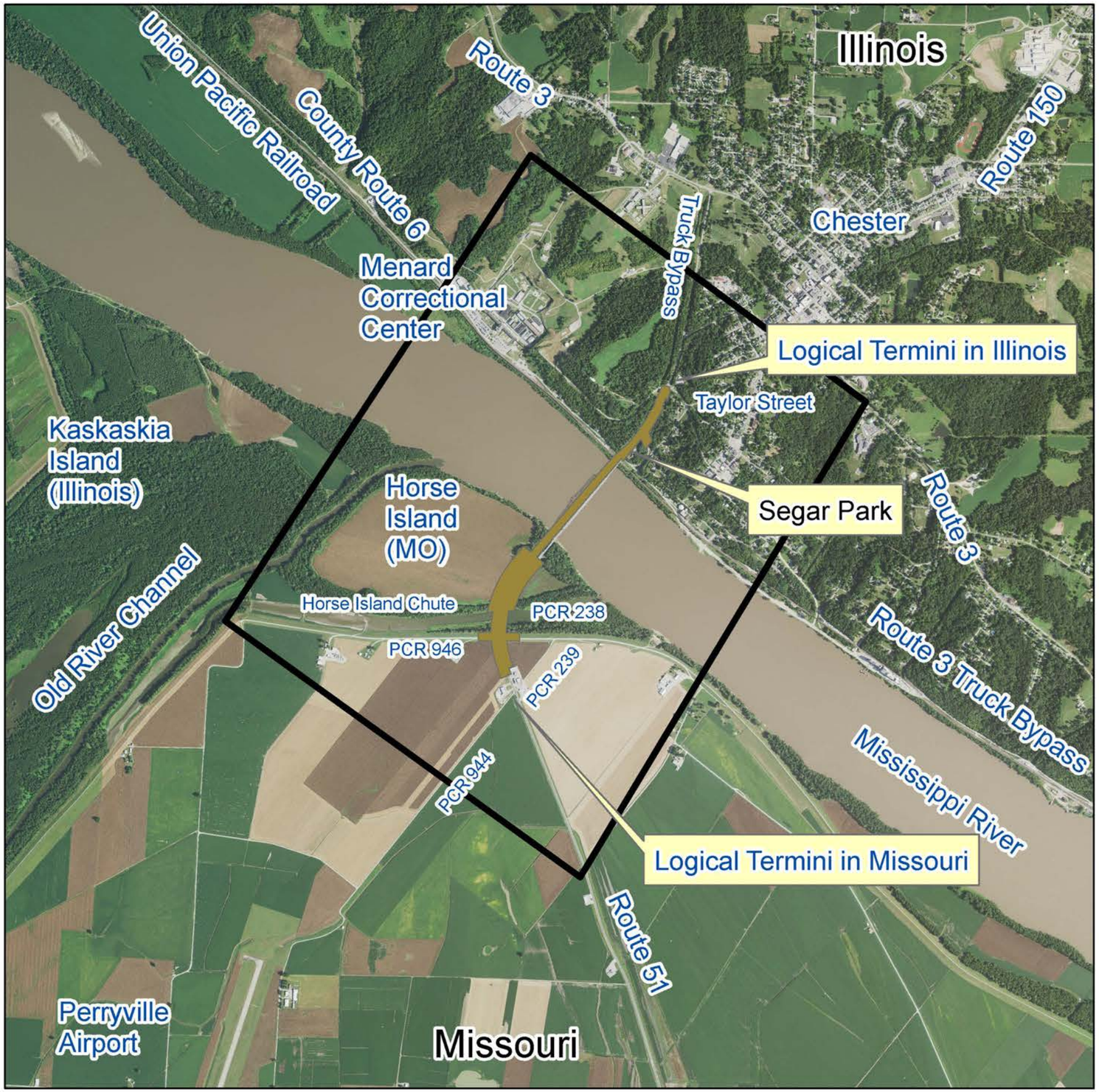
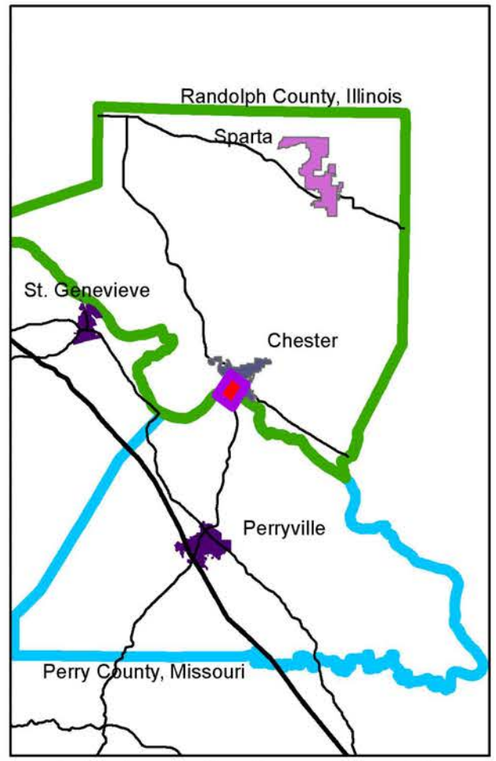
Appendices

Chester Bridge Environmental Assessment

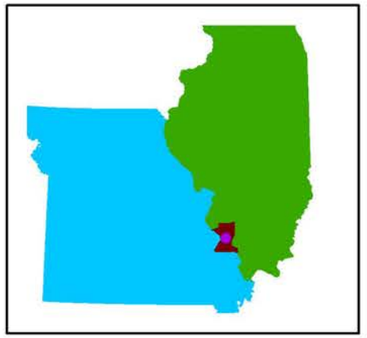
Appendix A
Exhibits

Study Area and Important Land Uses
Chester Bridge EA





Project Location Map (Perry and Randolph)



Project Location Map (Statewide)

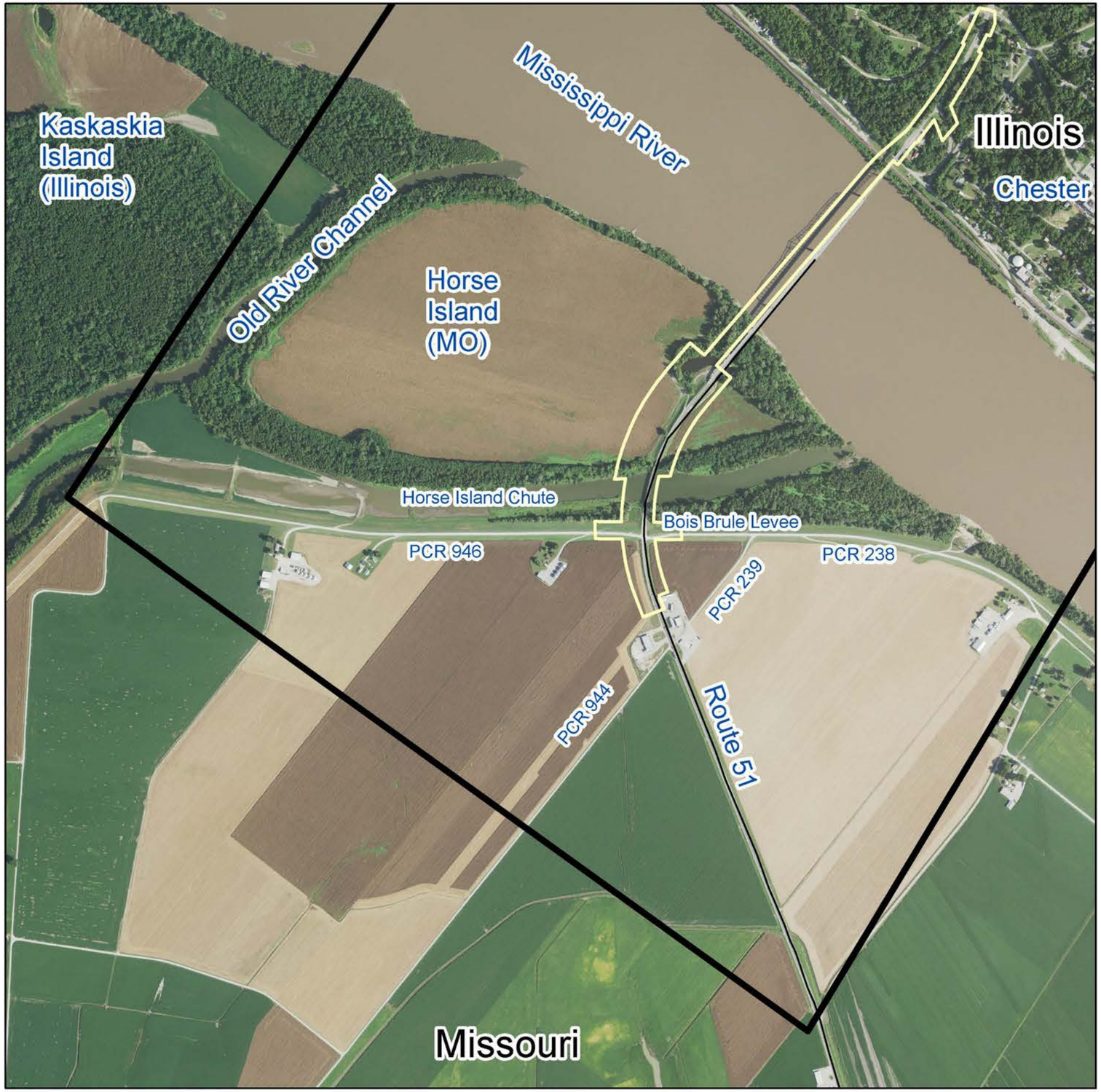
N
W E
S

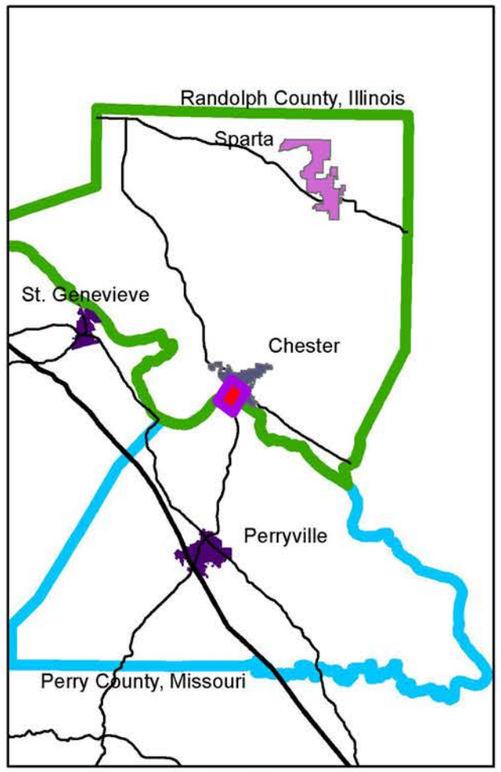
Legend

- Preferred Alternative
- Conceptual Alternative Study Area

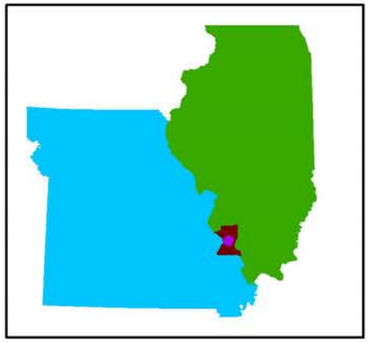
4,750 2,375 0 4,750 Feet

Study Area and Important Land Uses
Chester Bridge EA
Missouri





Project Location Map (Perry and Randolph)



Project Location Map (Statewide)

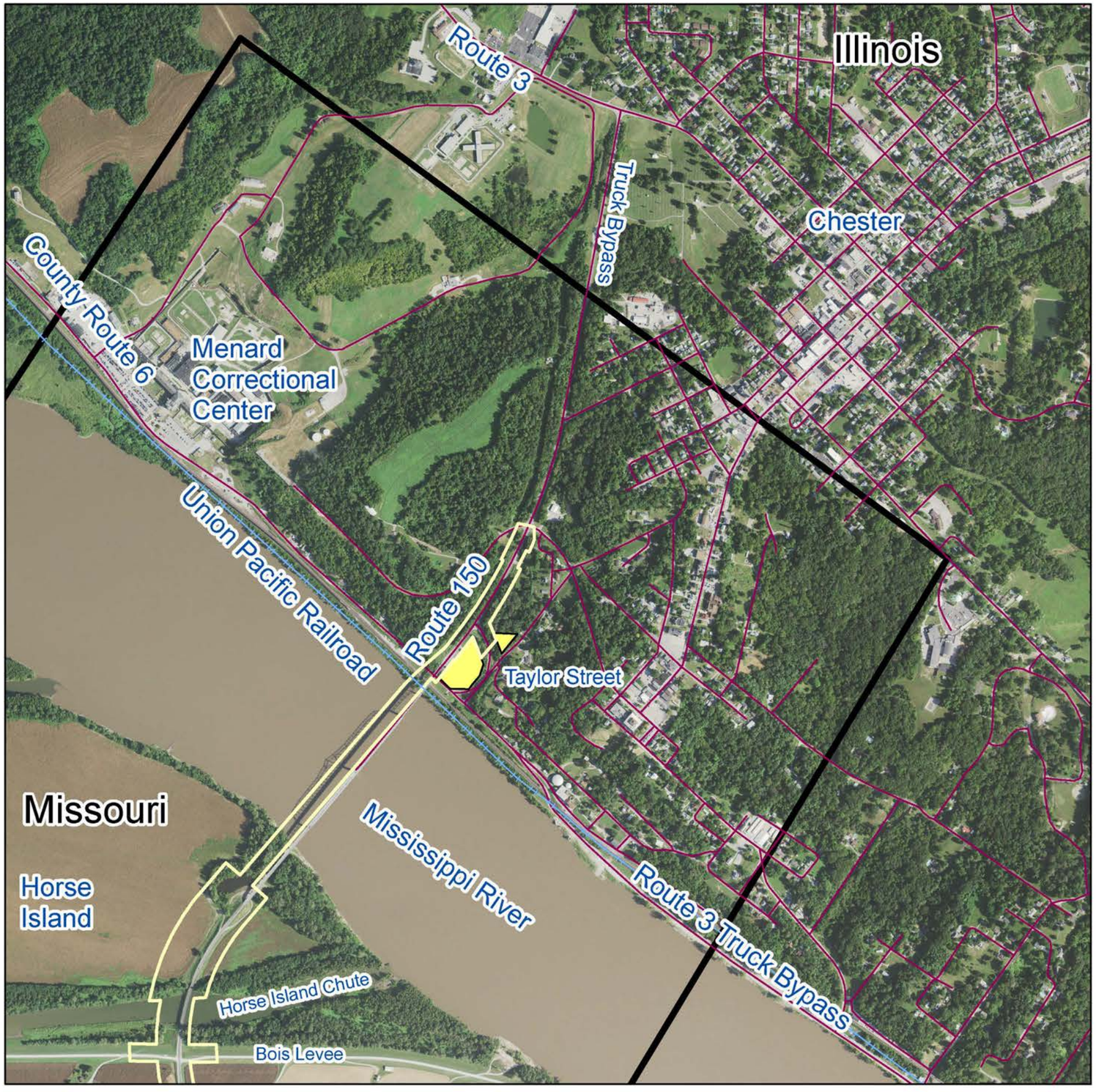
Legend

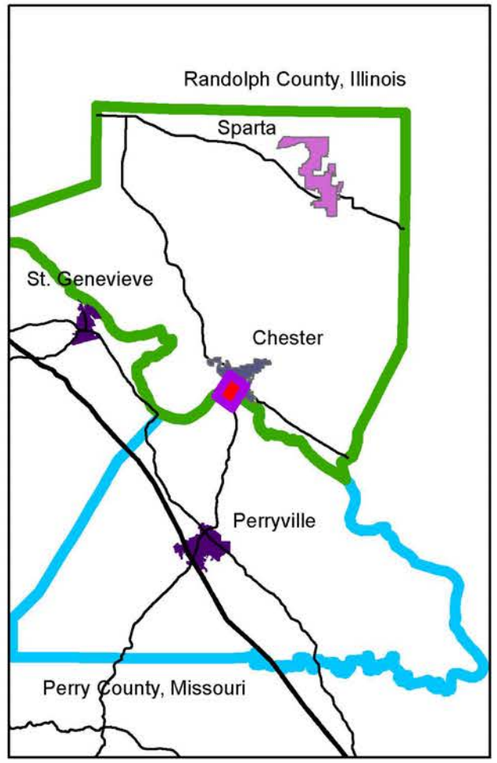
Preferred Alternative

Conceptual Alternative Study Area

2,250 1,125 0 2,250 Feet

Study Area and Important Land Uses
Chester Bridge EA
Illinois





Project Location Map (Perry and Randolph)

Project Location Map (Statewide)

Legend

- Preferred Alternative
- Segar Park
- Conceptual Alternative Study Area

2,250 1,125 0 2,250 Feet

Appendix B
Impact Matrices

TABLE 1 IMPACT SUMMARY TABLE PREFERRED ALTERNATIVE CHESTER BRIDGE REPLACEMENT PROJECT	
EVALUATION FACTORS	**IMPACT**
ENVIRONMENTAL IMPACTS	
Wetland Impacts	• 3.2 acres
Open Water Impacts	• Man-Made Pond Filled • New Piers Added/Old Piers Removed
Regulated Material Involvement	• None Expected
Total Stream Encroachments	• None Expected
Floodplain Encroachments	• No Rise Certification Commitment
Public Land Encroachments	• No Impacts - Avoidance
Cultural Resource Impacts	• No Impacts - Avoidance
Endangered Species Impacts	• No Known Occurrences. Agency Consultation will be Complete Prior to Construction
Visual Impacts	• No Negative Impacts
Land Use Impacts	• No Negative Impacts
DISPLACEMENT/ENCROACHMENT IMPACTS	
Total Structure Acquisitions	• No Structure Acquisition
Total Right-of-Way Acquisition	• 16.1 acres
Construction Impacts	• Existing Bridge Open during Construction
Expected MOT Impacts	• Existing Bridge Open during Construction
Existing Structure Impacts	• Anticipated Removal
Estimated Project Cost	• $195,800,000
Constructability Issues	• Navigation, Aviation & Levee Coordination
Recreational Impacts	• None Expected
COMMUNITY/SOCIOECONOMIC IMPACTS	
Community Service Disruptions	• Existing Bridge Open during Construction
Community Impacts	• None Expected
Environmental Justice Impacts	• None Expected
Travel Pattern Disruptions	• Minimal
Important Drainage Impacts	• Minimal
Important Aviation Impacts	• Minimal
Levee District Impacts	• Minimal
Navigation Impacts	• Minimal

EXHIBIT S-1 ENGINEERING IMPACT SUMMARY TABLE
REASONABLE ALTERNATIVES EMERGING FROM THE CONCEPTUAL ALTERNATIVE EVALUATION AND PRESENTED AT THE PROJECT'S SECOND PUBLIC MEETING (MARCH 13, 2018)
CHESTER BRIDGE ENVIRONMENTAL ASSESSMENT

EVALUATION FACTORS/IMPACTS	ALTERNATIVE U-1 Near North Replacement	ALTERNATIVE U-2 Far North Replacement	ALTERNATIVE R-2 Rehabilitate Existing and Upstream Couplet	NO-BUILD No New Build Elements	ENVIRONMENTAL IMPACT SUMMARY
CONSTRUCTION COSTS	$190 M	$195 M	$173 M	N/A	• U-1/U-2/R-2 equivalent in cost • R-2 (rehabilitation of existing bridge) more susceptible to cost overruns
BRIDGE TYPE CONSIDERATIONS	No obvious shortcomings relative to the bridge types seen as potentially suitable for the site	No obvious shortcomings relative to the bridge types seen as potentially suitable for the site	No obvious shortcomings relative to the bridge types seen as potentially suitable for the site	N/A	• Because vertical clearances can affect navigation and bridge height can affect aviation, agency coordination, with the USCG and the FAA, will be necessary to establish an appropriate Environmental Commitment to balance bridge height and vertical clearance considerations associated with the ultimately selected Preferred Alternative.
CONSTRUCTION AND NAVIGATION	Utilizes standard construction processes	Utilizes standard construction processes	Requires two separate construction processes that must run consecutively	N/A	• Construction of the new crossings could be conducted to reasonably minimize interference with free navigation of the waterway or impair navigable depths. • Demolition of the existing bridge would occur after the new bridge opens, it is possible that demolition could be timed to occur outside the peak navigation season. • The couplet alternative will cause interference both during the new build phase and again during the rehabilitation phase.
NAVIGATION DURING OPERATION	800-foot main span and 500-foot auxiliary span can be provided	800-foot main span and 500-foot auxiliary span can be provided	The couplet alternative would retain the existing bridge and add an additional upstream bridge.	N/A	• The Coast Guard has determined that a replacement bridge shall have a minimum horizontal clearance of 800 feet for the main span and a 500 feet clearance for the auxiliary span. The existing vertical clearance is sufficient. • The Coast Guard has "reservations" about the existing bridge remaining. The presence of two, tightly spaced, bridges would further complicate navigation.
HYDRAULIC IMPACTS	New Build will allow for modern design	New Build will allow for modern design	Retains gap in Bois Brule levee and requires a "no-rise" certificate	Retains gap in Bois Brule levee	• Because build alternative U-1 would construct a new bridge immediately next to the existing bridge, it would minimize potential changes to the floodplain configuration. • The couplet alternative (R-2) would require an analyses of floodplain impacts and would also retain the roadway gap in the Bois Brule levee
TRAFFIC SAFETY AND ACCESSIBILITY IMPACTS	New Build will allow for modern design	New Build will allow for modern design	Couplets generally offer operational benefits	No Change	• In general, one-way couplets have fewer vehicular and pedestrian conflict points and can improve the movement of vehicles along a network. One-way systems usually allow for better pedestrian crossing times and fewer accidents. However, because of the low traffic volumes and minimal pedestrian presence, this benefit is expected to be minimal.
PERRYVILLE AIRPORT IMPACTS	Northern-most alternative	Nearly identical to existing	Requires a second crossing	N/A	• Alternatives that minimize alterations to the existing conditions, are superior. Consequently, Alternative U-1 presents the least potential for aviation conflicts.
DESIGN LIFE IMPACTS	A 75-year design life is achievable	A 75-year design life is achievable	**A 75-year design life is <u>NOT</u> achievable**	The remaining design life of the existing bridge is unclear	• The rehabilitation of the existing bridge would need to retain the bridge's design, materials, and workmanship. It has been concluded that the rehabilitation would be quite expensive and result in a bridge with a shorter operational life.
UTILITY IMPACTS	N/A	N/A	N/A	N/A	• The gas pipeline on the existing bridge is no longer in use.
TRAFFIC/CIRCULATION IMPACTS	Will allow for modern design and a standard construction period	Will allow for modern design and a standard construction period	Ad hoc design and expanded construction period	NA	• Under the couplet alternative (R-2), the rehabilitation of the existing bridge must wait for the completion of the new bridge.

EXHIBIT S-2 ENVIRONMENTAL IMPACT SUMMARY TABLE
REASONABLE ALTERNATIVES EMERGING FROM THE CONCEPTUAL ALTERNATIVE EVALUATION AND PRESENTED AT THE PROJECT'S SECOND PUBLIC MEETING (MARCH 13, 2018)
CHESTER BRIDGE ENVIRONMENTAL ASSESSMENT

EVALUATION FACTORS/IMPACTS	ALTERNATIVE U-1 Near North Replacement	ALTERNATIVE U-2 Far North Replacement	ALTERNATIVE R-1 Rehabilitate Existing and Upstream Couplet	NO-BUILD No New Build Elements	ENVIRONMENTAL IMPACT SUMMARY
AGRICULTURAL IMPACTS	Horse Island: 9 acres Bois Brule: 2 acres	Horse Island: 15 acres Bois Brule: 2 acres	Variable based on new crossing selected	None	• The Horse Island is intermittently cultivated. Flooding and spring rains limit the ability of equipment to access the island. • Areas protected by the Bois Brule levee are regularly cultivated with row crops.
NOISE IMPACTS	Type III Project with no noise sensitive receptors within 500 feet of the Reasonable Alternatives in Missouri or Illinois.			N/A	• Type III Projects include rehabilitations and bridge replacements. • Type III Projects do not require a noise analysis.
VISUAL/AESTHETIC IMPACTS	U-1 will largely swap the existing bridge for a new similarly scaled bridge	U-2 will place the bridge in the more distant background	The couplet alternative will overlay the existing bridge with another bridge.	N/A	• Overall, the impacts to the visual environment is limited and varies by location. From the most common and persistent views of bridge U-1 is expected to most closely maintain existing views.
LAND USE/HABITAT TYPE IMPACTS				N/A	• The study area is lightly populated. • The impacted areas are roughly equivalent. • All known important natural communities will be unaffected by the reasonable alternatives.
Croplands	11 acres	17 acres	11 – 18 acres		
Woodlands/Levee/Sand Bar	11 acres	11 acres	28 – 29 acres		
Developed/Roadways/Water	23 acres	19 acres	12 – 13 acres		
Total Corridor Size	45 acres	47 acres	51 – 60 acres		
FLOODPLAIN ENCROACHMENTS	Because U-1 would construct a new bridge immediately next to the existing bridge, it is expected to minimize the potential changes to the floodplain configuration.	-	R-2 would not only require an analyses of floodplain impacts but would also retain the roadway gap in the Bois Brule levee.	N/A	• The entirety of the Missouri portion of the reasonable alternative study area is within the floodplain of the Mississippi River. • An important purpose of the Chester Project is to raise the roadway enough to eliminate the gap in the Bois Brule levee. • New bridge and roadway approaches would replace existing bridge and roadway approaches. Therefore, it is not anticipated that the project would support incompatible floodplain development.
WATERWAY IMPACTS	New build alternatives will continue the general configuration of stream crossings	New build alternatives will continue the general configuration of stream crossings	The couplet alternative would create two crossings across these waterways.	N/A	• The new build reasonable alternatives don't appear to have important differences relative to waterways. • Under the couplet alternative, he degree of stream impacts will depend on the degree to which the existing bridge will be reconstructed.
WETLAND IMPACTS	PFO1: 2.0 acres PEM: 0.3 acres Open Water: 0.9 acres **Total: 3.2 acres**	PFO1: 3.3 acres PEM: 0.6 acres Open Water: 0.9 acres **Total: 4.8 acres**	Variable based on new crossing selected	N/A	• Wetland resources are protected by the Clean Water Act. • Nearly all of Horse Island south (downstream) of the existing bridge is wetlands. Upstream, the wetlands form a relatively narrow rim along the periphery of the island. Therefore, the use of the upstream alternatives (U-1/U-2) minimizes wetland impacts.
ENDANGERED SPECIES IMPACTS	There are no known occurrences of endangered species within the project's study area. MoDOT is the designated representative for FHWA for completing coordination under the state and federal Endangered Species Acts. Consultation will be complete prior to construction or before any federal funds or resources are obligated.				• The new build reasonable alternatives don't appear to have important differences relative to endangered species.
REGULATED MATERIAL IMPACTS	Two sites in the study area have a High Risk of concern for impacts to soil or groundwater: Site 6: Midwest Petroleum Store No. 1020 and Site 7: Midwest Petroleum Store No. 1021. The identified facilities have a potential for soil or groundwater impacts from past or current site activities. These sites are located at the intersection of Route 51 and PCR 239/944, in Missouri.				

EXHIBIT S-3 COMMUNITY IMPACT SUMMARY TABLE
REASONABLE ALTERNATIVES EMERGING FROM THE CONCEPTUAL ALTERNATIVE EVALUATION AND PRESENTED AT THE PROJECT'S SECOND PUBLIC MEETING (MARCH 13, 2018)
CHESTER BRIDGE ENVIRONMENTAL ASSESSMENT

EVALUATION FACTORS/IMPACTS	ALTERNATIVE U-1 Near North Replacement	ALTERNATIVE U-2 Far North Replacement	ALTERNATIVE R-2 Rehabilitate Existing and Upstream Couplet	NO-BUILD No New Build Elements	ENVIRONMENTAL IMPACT SUMMARY
PROPERTY ACQUISITION – Structures	None	None	None	N/A	• No building displacements expected
PROPERTY ACQUISITION – Acres	30 acres	30 acres	30 acres	N/A	• Original preliminary estimate of permanent right-of-way acquisition
SEGAR PARK IMPACTS	U-1 is not expected to require the acquisition/use of property from the park. Neither is it expected to alter the operations of, or access to, at the park.	U-2 is not expected to require the acquisition/use of property from the park. Neither is it expected to alter the operations of, or access to, at the park	R-2 is not expected to require the acquisition/use of property from the park. Neither is it expected to alter the operations of, or access to, at the park	N/A	• A Section 4(f) property is any publicly owned land of a public park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance. • According to 23 CFR 774.3, a transportation project approved by FHWA may not use a Section 4(f) property unless there is no feasible and prudent avoidance alternative to the use of land from the property.
HISTORIC RESOURCE IMPACTS	The new build reasonable alternatives would result in the removal of the Chester Bridge	The new build reasonable alternatives would result in the removal of the Chester Bridge	A rehabilitation would be quite expensive and result in a bridge with a shorter operational life	N/A	• The Chester Bridge is eligible for the NRHP because of its Engineering. • Pursuant to MoDOT policy, bridges subject to removal are offered to the public. To date, no offers have been received. • The 40-year rehabilitation seems unlikely to result in a bridge that would retain the bridge's historic integrity. The 15-year rehabilitation is not a reasonable/cost-effective alternative.
MENARD CORRECTIONAL CENTER IMPACTS	Access to the Menard Correctional Center is not expected to be negatively affected			N/A	• Property owned/administered by the Center includes several small, unconsolidated lots along IL Route 6.
LEVEE AND DRAINAGE DISTRICT IMPACTS	U-1 can be constructed to avoid the existing levee, allow for the filling of the levee gap and maintain the levee-top roadway system	U-2 can be constructed to avoid the existing levee, allow for the filling of the levee gap and maintain the levee-top roadway system	The couplet alternative will maintain the existing levee configuration, including the gap	N/A	• The district's primary risk is underseepage. This problem affects the entire District. With the existing underseepage issues, sudden failure of the levee can occur along the levee, placing human life, vehicles, building, industrial equipment, livestock, and agricultural production at risk. The new bridge can be constructed using techniques that will not exacerbate these problems.
RECREATIONAL IMPACTS	No Impact	No Impact	No Impact	N/A	• The crossing provides important access to the Mississippi River, primarily via the Chester waterfront. Not only do paddlewheel tour boats use the area, other recreational users gain access from there. The Chester Boat Club is located at 51 Water St. The levees on the Missouri side of the river tends to limit that access. However, PCR 238 seems to provide some informal access.
TRAFFIC/CIRCULATION/ACCESS IMPACTS	U-1 will alter or eliminate the intersection with PCR 946 and PCR 238	U-2 will alter or eliminate the intersection with PCR 946 and PCR 238	R-2 will maintain the existing pathways, including the gap in the floodwall	N/A	• R-2 will require the infrastructure to transition between two-bridge operation to one-bridge operation. These preparations will affect local operations.
NEED TO CLOSE CROSSING DURING CONSTRUCTION	U-1 can be constructed while the existing bridge is still open	U-2 can be constructed while the existing bridge is still open	The rehabilitation of the existing bridge must wait for the completion of the new bridge.	N/A	• Maintenance of traffic across the river, during construction, is essential.

Appendix C
Environmental Site Assessment Summary

Hazardous Waste Assessment, Route 51 Chester Bridge

PREPARED FOR:	Robert Miller/COL
	Rachel Grand/STL
PREPARED BY:	Wayne Conway/STL
COPIES:	None
DATE:	April 30, 2018

CH2M has completed a hazardous waste assessment for the Route 51 Chester Bridge project in Perry County, Missouri (Route 51) and Randolph County, Illinois (Route 150). This technical memorandum was prepared to provide information regarding properties that pose a potential for environmental concern and possible contamination within, adjacent, or near the study area.

Introduction

To facilitate the assessment, a database and records search report was obtained from Environmental Data Services (EDR). This report searched 65 federal, 47 state, five tribal and nine EDR proprietary databases, including historic dry cleaners and gas station/filling station/service stations. These databases are discussed in the EDR report (Attachment 1).

CH2M reviewed the EDR report and identified sites of potential interest. The EDR report included sites within approximately ¼ of a mile on either side of the Route 51 Chester Bridge. Based on alternatives developed during the life of the project, additional sites may need to be added to this report, but for the purpose of this report, CH2M focused on sites directly adjacent (within 1/8 of a mile) of the existing bridge.

Once the potential sites were identified, CH2M conducted a windshield reconnaissance survey to document current land use and conditions and identify any potential sites that were not included in the EDR report. Photographs were taken of the sites to document current conditions (Attachment 2).

Using information gathered as part of this study, CH2M has identified the potential facilities of concern that are discussed in the following sections, and evaluated their possible impact or risk. To assess these issues, CH2M used its best professional efforts to evaluate the contaminants that could be present, the toxicity and mobility of these contaminants, and geological factors that could influence the migration of possible contaminants.

Sites of Potential Concern

CH2M identified 11 sites that pose a potential for environmental concern and possible contamination within, adjacent, or near the study area. Due to multiple owners or changing usage, some of these sites may be collocated with others.

The facilities are summarized in Table 1, along with notes from the site visit. The sites are numbered sequentially generally east to west for ease of discussion in the first column of the table. The EDR map identifying number is also provided in the fourth column. The assessment of potential risk is based on professional judgement, past site practices or the uncertainty of the available records. This is a qualitative assessment and additional information should be obtained if these sites will be utilized for the project.

Site 1: 3669 Illinois 150

This site is a private residence, located behind a fence and a gate, see photos 1 and 2 (Attachment 2). This site is listed in the FINDS (Facility Index System) and the IL-BOL (Illinois Bureau of Land) databases. This property has an EPA Registry Id: 110059653860 but there is no valid (quality assured) locational data available. This property was listed with the Illinois - Agency Compliance and Enforcement System (ACES), which supports compliance and enforcement activities that exist primarily within the Illinois Bureaus of Air, Water, and Land, the Division of Legal Counsel, and the Office of Chemical Safety.

No specific information on spills, releases or environmental issues was identified for this site. Based on the lack of information available, there is a moderate to low risk for a release to soil or groundwater associated with this site.

Site 2: Randolph County Courthouse Storage Area

A storage facility is located at 1 Taylor Street, shown in photos 3, 4, and 5. There are 2 storage garages at this location. The facility had a diesel underground storage tank (UST) which was installed in 1974, and was last used in 1998. This tank is reported to be abandoned in place. Several truck trailers are stored at this location. This site was listed in the FINDS, IL UST (Illinois Underground Storage Tank), and the Illinois Bureau of Land (IL BOL) databases. This property has an EPA Registry ID: 110063672636. This property was listed with ACES.

Because of the UST abandoned in place, there is a moderate risk of a release to soil or groundwater associated with this site.

Site 3: 200 Rebecca Ln

This road leads to a former entrance to the prison, but is now closed (photo 6). This site was found on the IL BOL database. There is no additional information available for this site.

This site has a low risk for a release to soil or groundwater.

Site 4: Menard Correctional Center

The Menard Correctional Center is located at 711 Kaskaskia St..Although the location (22 on EDR map) is shown directly at the intersection of the Highway 150 and Kaskaskia Street, the actual facility is located a half a mile north-west, see photos 7 and 8. Based on the windshield survey, the facility is located outside the study area for this report. Information on this facility is provided in the EDR and it should be noted that there is a high potential for impacts to soil or groundwater if the study area were to be revised to include this facility.

For the purposes of this study, the site is listed as low risk because it is outside the study area. See photos 7 and 8.

Site 5: Upper Mississippi River MP 100

A spill was reported at this location in the Mississippi River in March 2010, Photo 9 depicts the bridge and approximate location of the spill location. This site was found on the IL SPILLS database. Because this was a single occurrence in the Mississippi River, there is a low potential for risk of an impact to soil or groundwater from this site.

Site 6: Midwest Petroleum Store No 1020

This property is located at 12442 State Highway 51 in Missouri, see photos 10 through 17. The site has been identified starting in 2001 as a META oil company and a FISCA oil company. Currently, the site is a Midwest Petroleum ZX mart. Two other buildings are onsite, a Helmers fireworks retailer and a storage building.
A possible groundwater remediation system (Photos 3 and 4) was noted during the windshield survey next to the Helmers building. Thesystem is currently inactive and partially disassembled.

An AST was associated with this site, but was not observed during the windshield survey.
This site was on the LUST list from 1998 to 2008, and from 2010 to 2012. This facility was found on the MO UIC (Missouri Underground Injection), MO AST (Missouri Above Ground Storage Tank), Historical Auto shops list, and the MO RGA LUST (Missouri Recovered Government Archive Leaking Underground Storage Tank) database.

This site has a high potential for impacts to soil and groundwater.

Site 7: Midwest Petroleum Store No 1021

This property is located at 12451 Highway 51 in Missouri (photos 17 through 21). This location is a gasoline service station, and was known as Midwest Petroleum Company from 2005 to 2014, and as CITGO starting in 2014. The site is currently a Midwest Petroleum Conoco Store.

An AST was reported in the EDR report for this location, but no AST was found during the windshield survey. According to the Missouri Underground Injection Well (MO-UIC) database, an active well is located on this property. During the windshield survey, a potential well was identified (capped by a steel cover), but could not be confirmed (see photo in appendix).

A 5-10-gallon gasoline spill was reported in 2008. According to the EDR report, the fire chief reported the site was adequately cleaned up, but no additional information is available. An active soil gas extraction system is present at this facility.
A potential septic system Is located west of the facility (see photo in appendix).

Beginning in 2016, the site was listed as a Non-Generator Handler of hazardous waste. No waste codes are associated with this activity. This Facility appears on the following lists: RCRA NonGen/ NLR (Resource Conservation and Recovery Act, non-generator), MO UIC, MO AST, MO SPILLS, HIST AUTO, and MO RGA LUST.

Because of the past and current use as a gas station, there is a high potential for impact to soil and groundwater associated with this site.

Site 8: Bolch #21

An active injection well is reported at this location. This well is most likely the extraction and treatment well discussed above for Site 6.

Sites 9: FISCA Oil Company

An active injection well is reported at this location. This well is probably associated with site 7. Although several monitoring wells were observed at this location, no injection wells were observed during the windshield survey.

Additional Sites

One site was identified during the site visit that were not included in the EDR report, described below as Site 10.

Site 10: Petroleum Pipeline

A petroleum pipeline was found that paralleled Highway 150, about 30 feet north of the highway. This pipe extended the entire length of the study area (photos 22, 23, and 2428, 29 and 30).
There is a low potential for a release to site soil or groundwater, but there is uncertainty due to the lack of documentation for this site in the EDR report.

Wells

There is one drinking water well reported within the Project area (Attachment 3, photos 20, 21 and 22). This well supplies the Menard Correctional Center, and is identified with a placard attached to the building as the 'Menard Pumping Station'. Although the map places the well just north of the bridge, the actual location is just south of the bridge, along Kaskaskia Street (another potential well exists next to the prison, photo 25. This is likely the well identified in the EDR, the well at the specified location appears to be a Menard Municipal well).

If the work will encroach on this well, it will need to be properly abandoned in accordance with Illinois well abandonment rules (http://www.ilga.gov/commission/jcar/admincode/077/07700920sections.html).

Conclusions

Based on the information gathered as part of this study a review of relevant data, and an understanding of the Project, CH2M HILL offers the following conclusions and recommendations:

There are two sites that have a medium to high potential for impacts to soil or groundwater:

- Site 6: Midwest Petroleum Store No 1020
- Site 7: Midwest Petroleum Store No 1021

Additional information should be obtained for these sites to determine the nature and extent of the contamination, and to determine if any potential construction activities would encounter site contamination. Phase 1 Environmental Site Assessments should be conducted in the areas of planned construction to evaluate whether contamination is present.

There is a low to medium potential that the remainder of the identified facilities has adversely impacted the study area. The identified facilities have a potential for soil or groundwater impacts from past or current site activities. Phase 1 Environmental Site Assessments should be conducted in the areas of planned construction to evaluate whether contamination is present.

Workers who encounter unknown contamination may be at risk, and may unknowingly spread or mishandle this contamination. If there is known or suspected contamination, workers should be notified so that the appropriate procedures can be put in place. Any waste generated, such as water or soil, should be managed in accordance with in accordance with appropriate local, state, and/or Federal rules and regulations.

Sites of Potential Concern
Hazardous Waste Assessment, Route 51 Chester Bridge EA

Site #	Site	Address	EDR Map ID	Page	EDR Notes	Waste Codes	Database	Field Notes
1	Keeton, Phillip	3669 Illinois 150	15	43		None	FINDS, IL BOL	Private residence
2	Randolph County Courthouse, IRID-Ellis Grove, Randolph County Board	#1 Taylor Street	16	44	Closed, abondoned in place	None	IL UST, IL BOL, FINDS	Storage facility with 2 buildings.
3	Hettesheimer Nolan	200 Rebecca Ln	19	46		None	IL BOL	abandonded property, appears to be old entrance to the prison, below:
4	Menard Correctional Center	711 East Kaskaskia St	22	48	Minor air emmisions, Small quantity Generator	D001, D002, U069,	ERNS, FINDS, ECHO, IL AIRS, IL BOL, IL SPILLS, RCRA-CESQG, ICIS, US AIRS	This facility lies completely outside the area of concern. The prison enterence is about a half mile north of the highway, and no building is more than 1/8 of a mile from the enterence (north or south, the prison appears to extend much farther to the east).
5	Upper Mississippi River MP 110		25	69	American Commercial Barge Lines	None	IL SPILLS	Nothing to see, this appears to be a spill into the river
6	Midwest Petroleum Store No 1020	12442 State Highway 51	30	71	Active Well	None	MO UIC, MO AST, MO SPILLS	Appears to be active remediation system, which is currently partially dis-assembled.
7	Midwest Petroleum Store No 1021	12451 N Hwy 51	30	73	Service station	None	MO AST, EDR Hist Auto/ MO UIC	Active filling station, UST present, soil vapor extraction system is present. Monitoring wells are present at this facility
8	Bolch #21		31	77	Active Well	None	MO UIC	injection and extraction well present at this location.
9	FISCA Oil Co, Inc	12442 N HWY 51	30/32	72/78	Service station/ Active Well	None	EDR Hist Auto, MO RGA LUST	active filling station. UST present.
10	Petroleum Pipeline	30 feet north of Highway 150.						Lack of EDR documentation

EDR Report (edited)

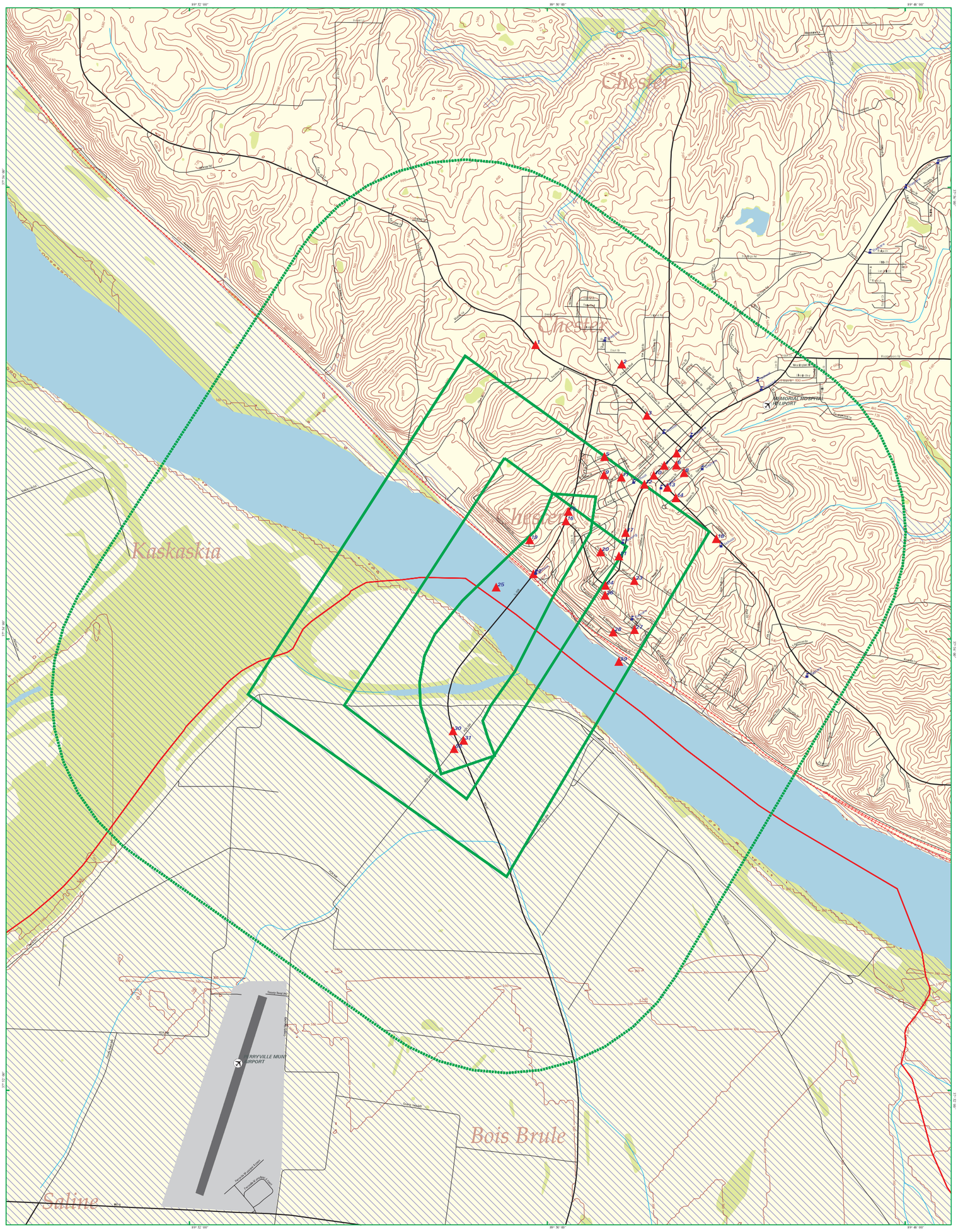
Chester Bridge Environmental Assessment
Chester, IL 62233

Inquiry Number: 5167186.5s
January 26, 2018

EDR DataMap™ Area Study

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.



EDR DataMap® - Area Study

EDR® Environmental Data Resources Inc

Chester Bridge Environmental Assessment

Chester, IL

- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA
- 100-Yr Flood Zones
- National Wetland Inventory

0 1/4 1/2

Scale in Miles

N

Site Photographs

Attachment 2: Photographic Log

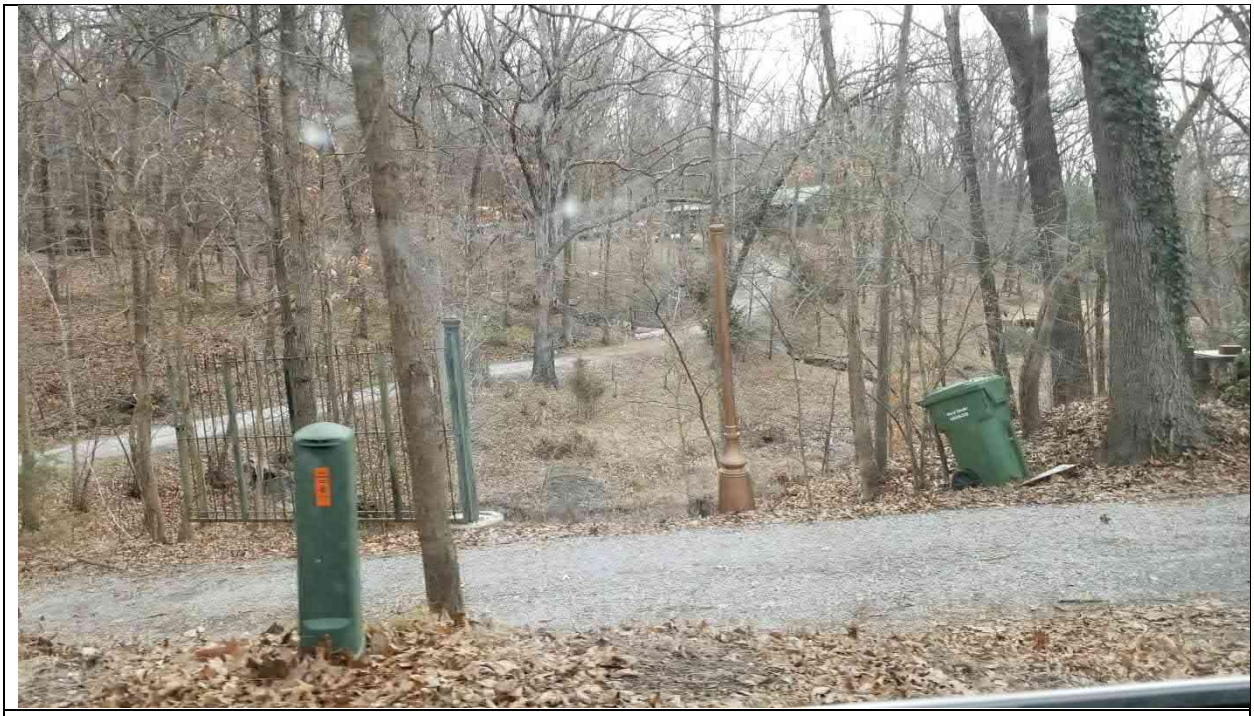


Photo 1 3669 Illinois 150

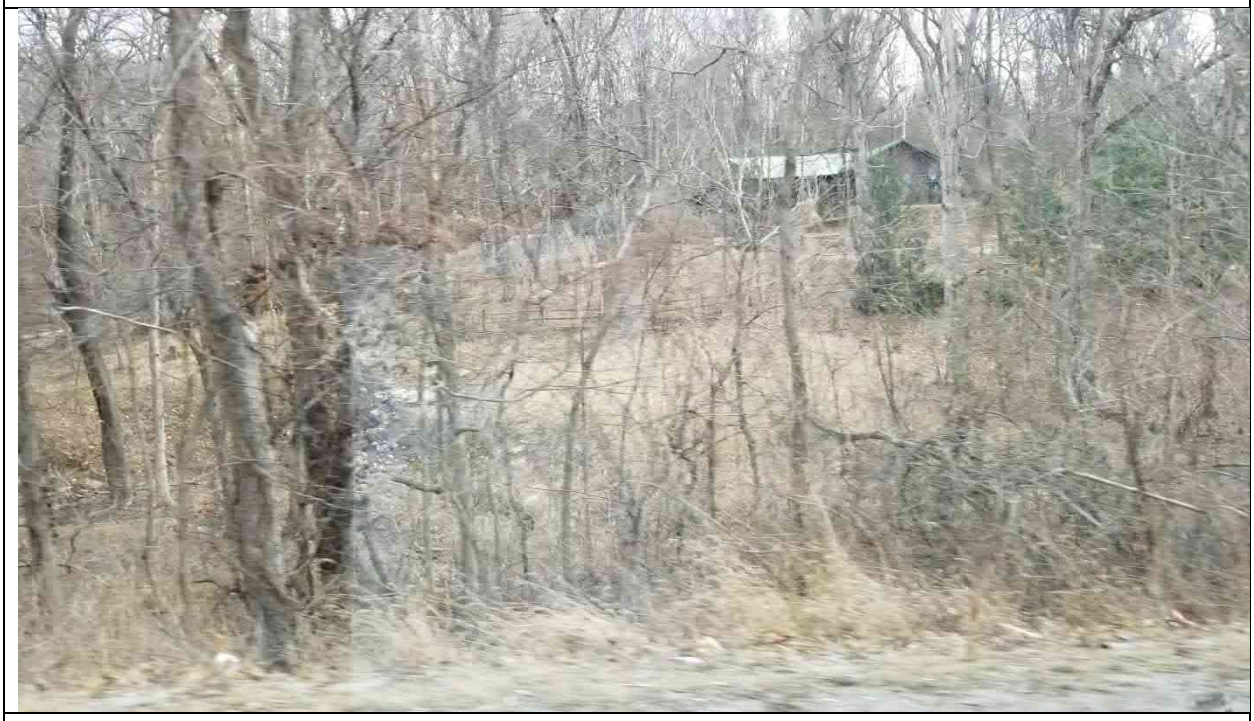


Photo 2 3669 Illinois 150

Photo 3 view of Courthouse storage buildings

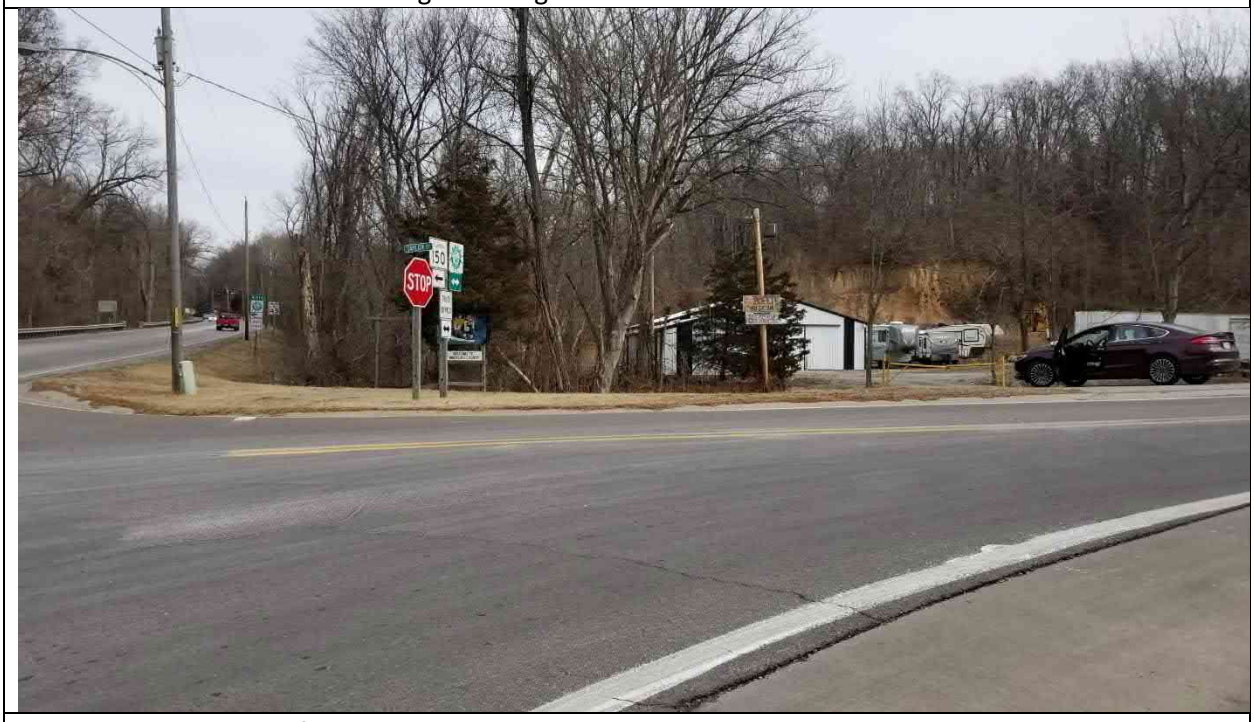


Photo 4 another view of the storage buildings

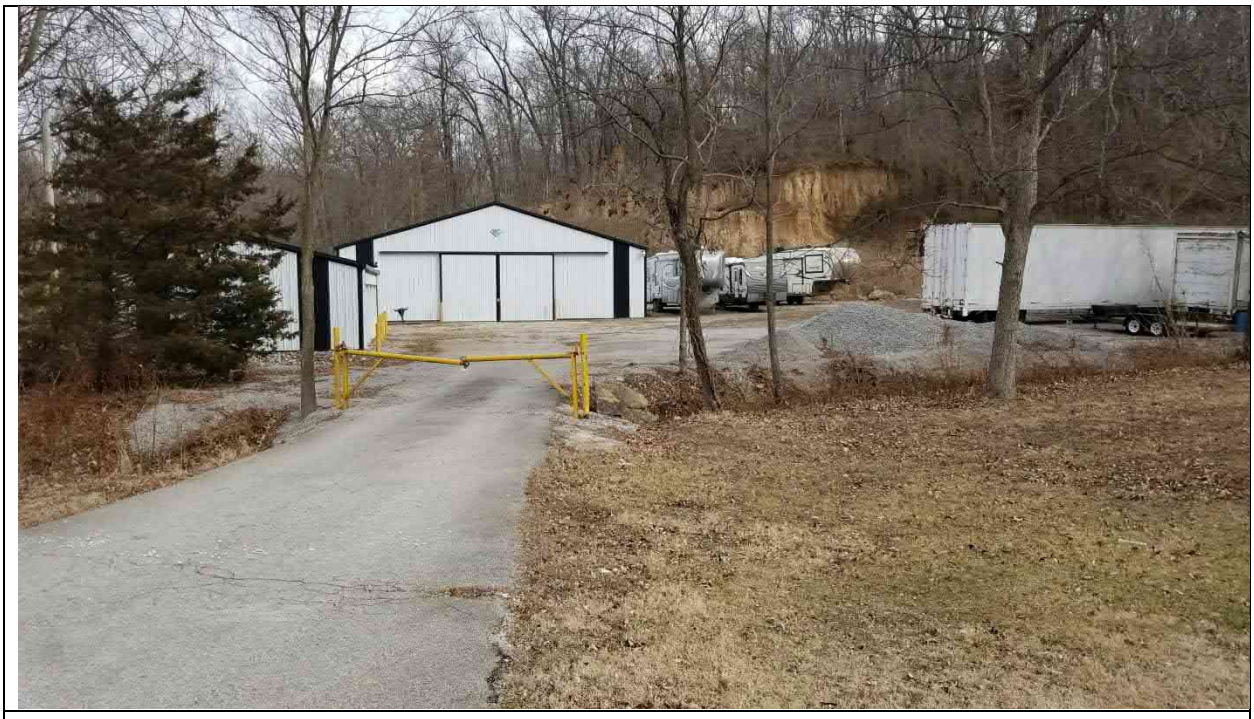


Photo 5 Courthouse storage

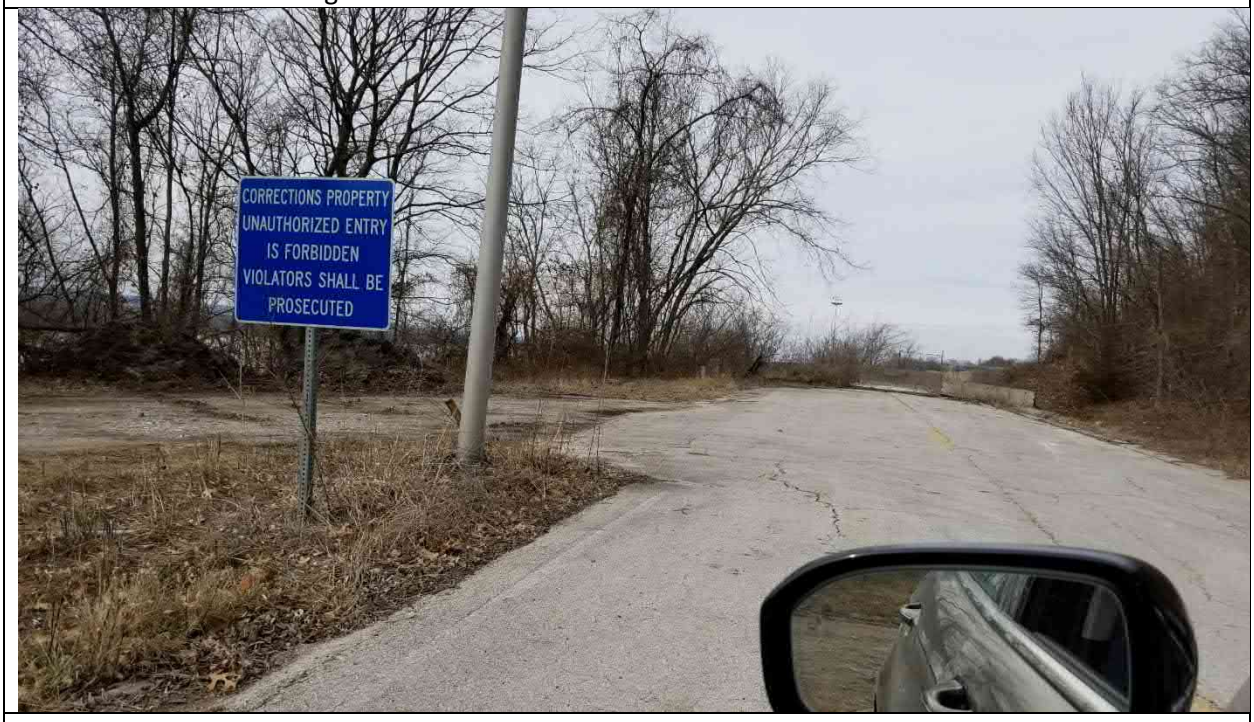


Photo 6 200 Rebecca Ln

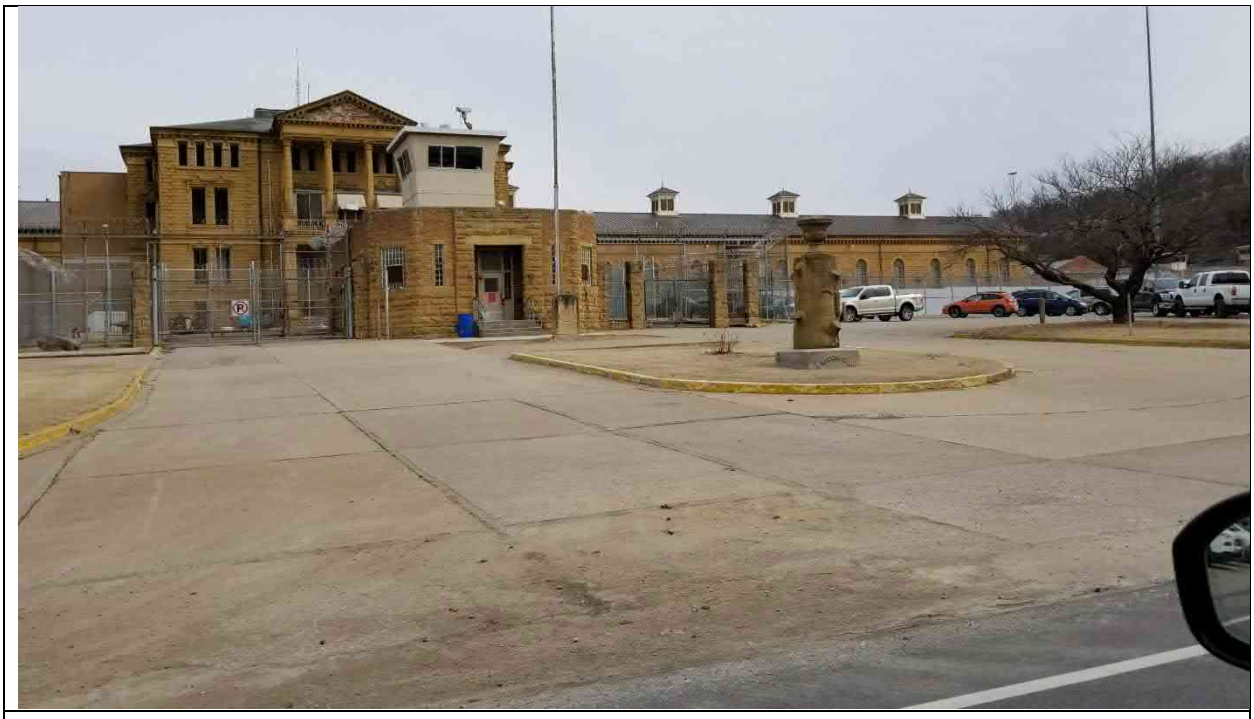


Photo 7 Menard Correctional

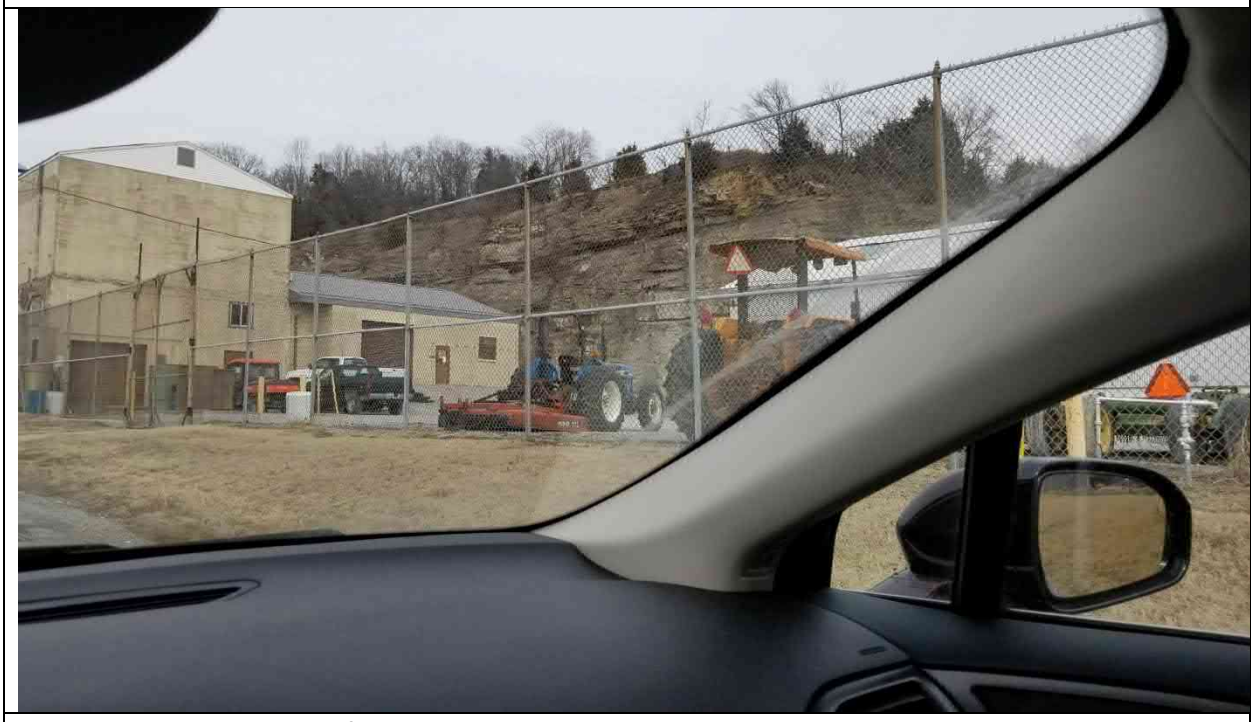


Photo 8 maintenance shop for Menard Correctional

Photo 9, bridge and spill location

Photo 10 Helmers fireworks stand

Photo 11 view of side of Helmers

Photo 12 view of the back of helmers

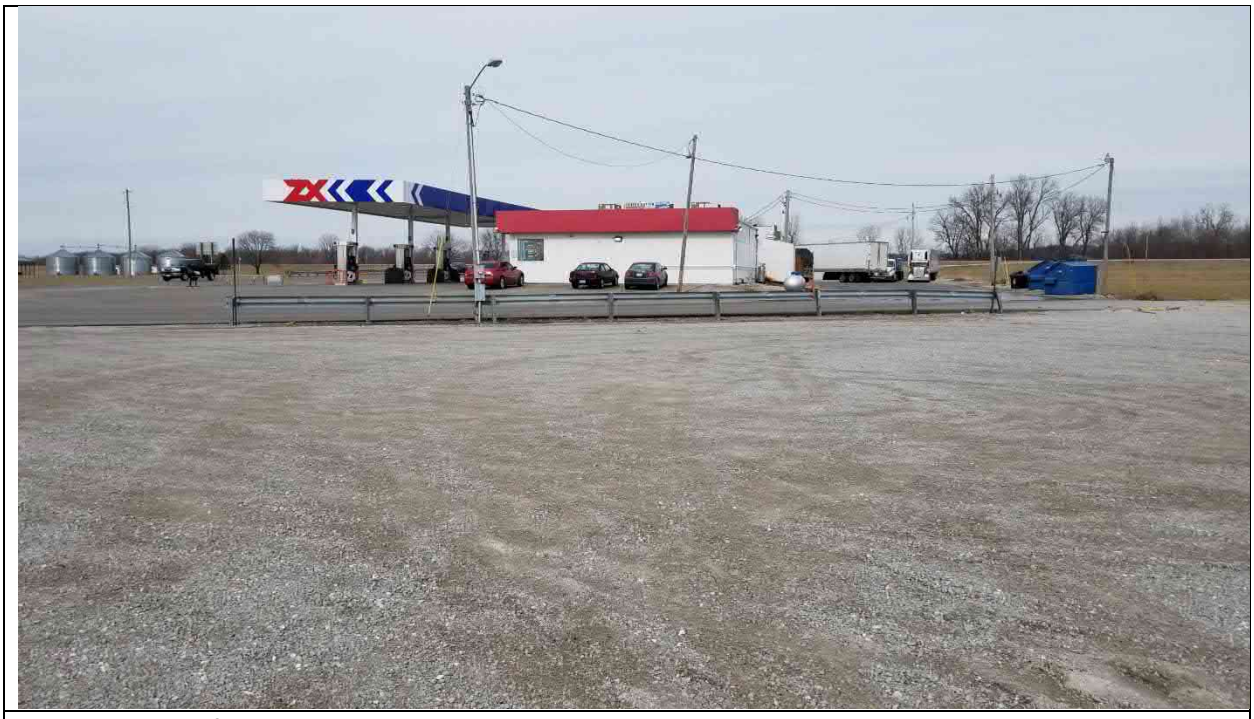


Photo 13 view of the ZX mart

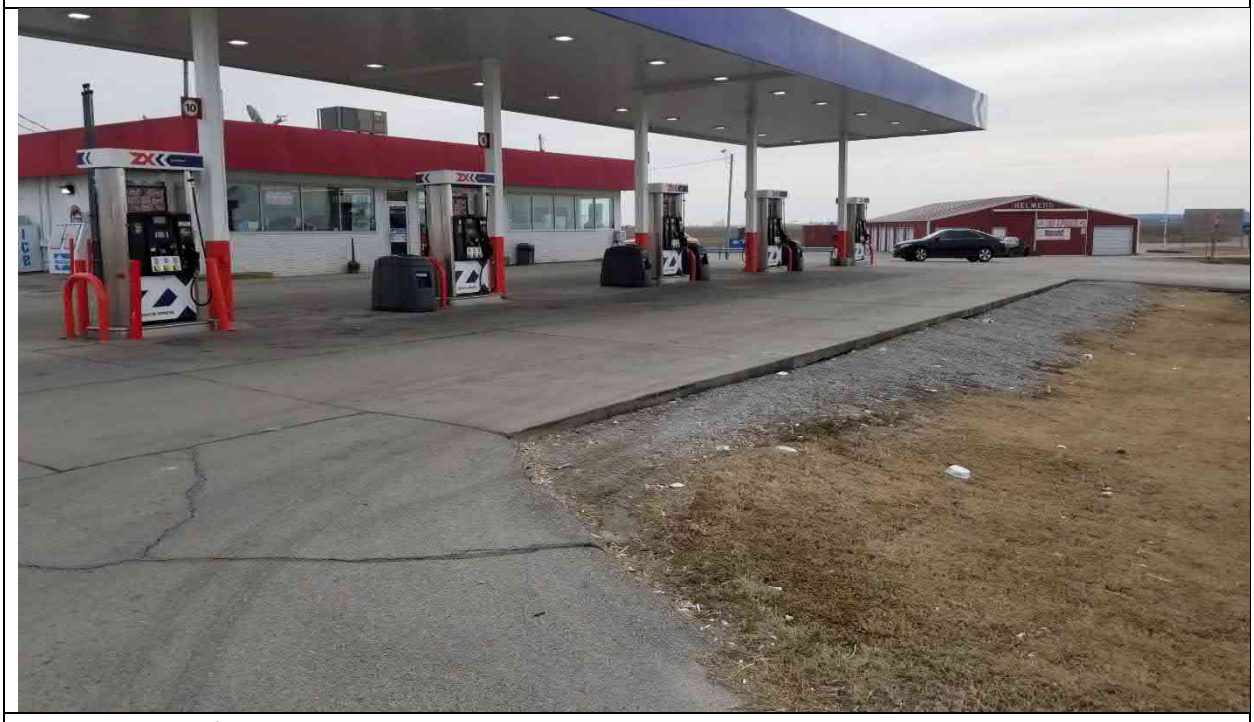


Photo 14 view of the ZX mart gas pumps

Photo 15 view of outbuilding and truck parking at ZX mart

Photo 16 view of diesel pumps at ZX mart

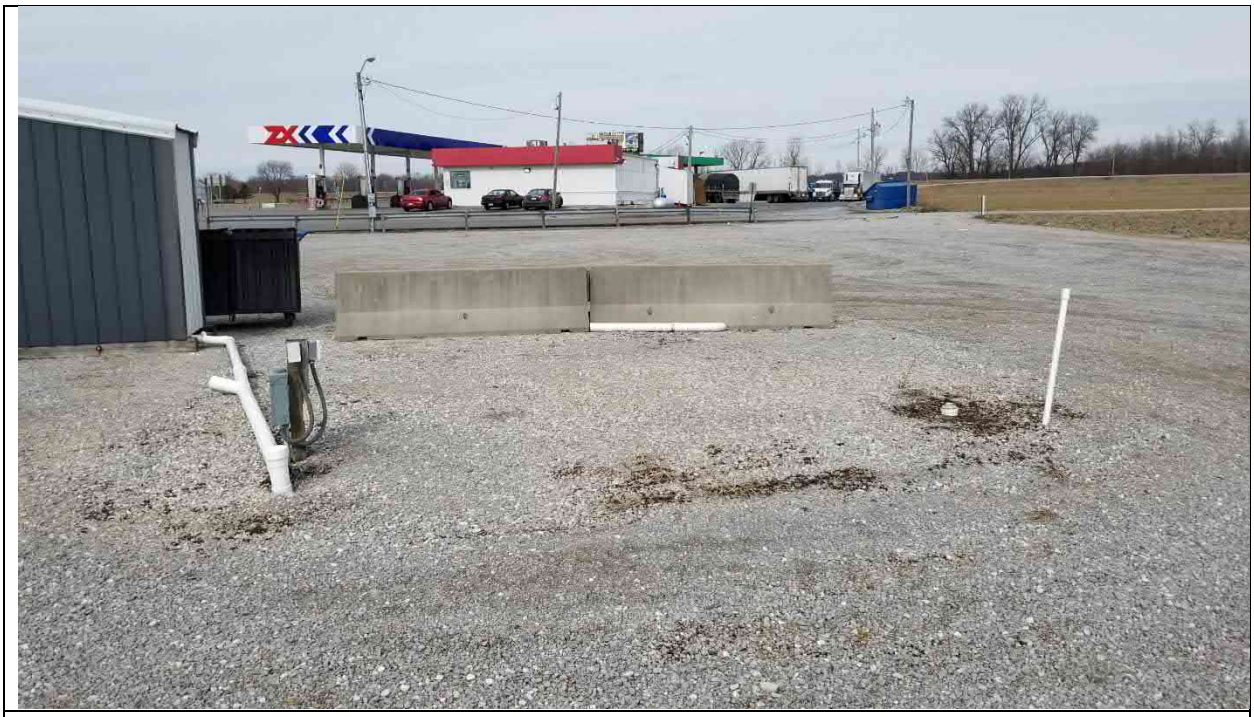


Photo 17 view of likely extraction and injection wells, with the remediation building on left.

Photo 18 view of Conoco, and location of the buried petroleum pipeline

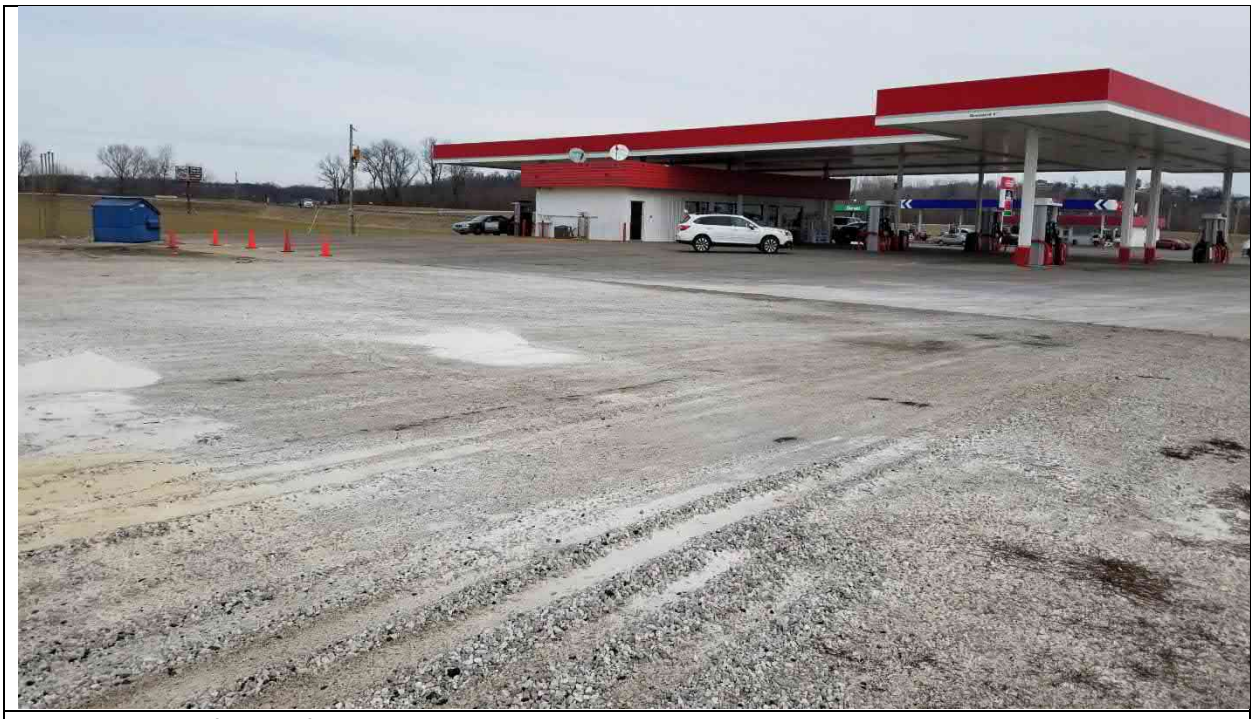


Photo 19 view of back of Conoco

Photo 20 view of side of Conoco

Photo 21 view of likely septic system

Photo 22 View of pipeline crossing minor channel

Photo 23, view east of pipeline right of way from bridge

Photo 24 view of pipeline right of way at 200 Rebecca Ln, looking west

Photo 25 Menard Pumping Station

Photo 26 placard

Photo 27 back of pumping station, looking north, bridge in the mid-ground.

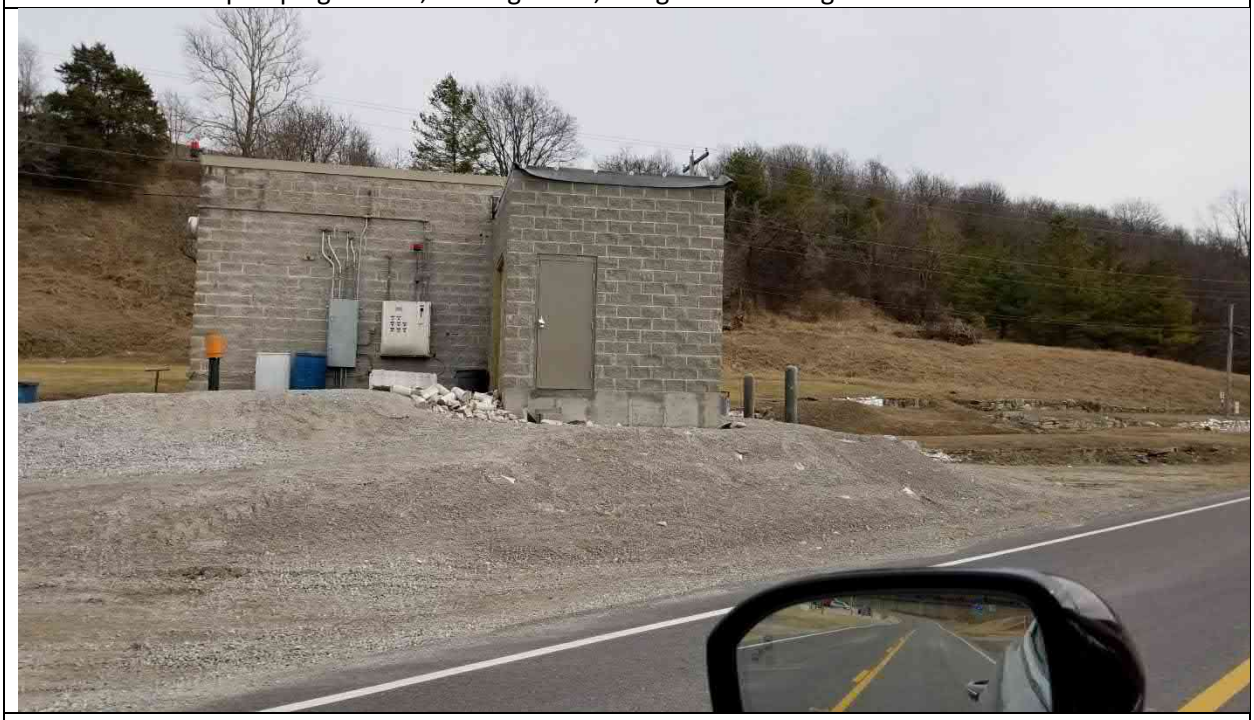


Photo 28 likely the location of the Menard Correctional Center well.

EDR Well Data

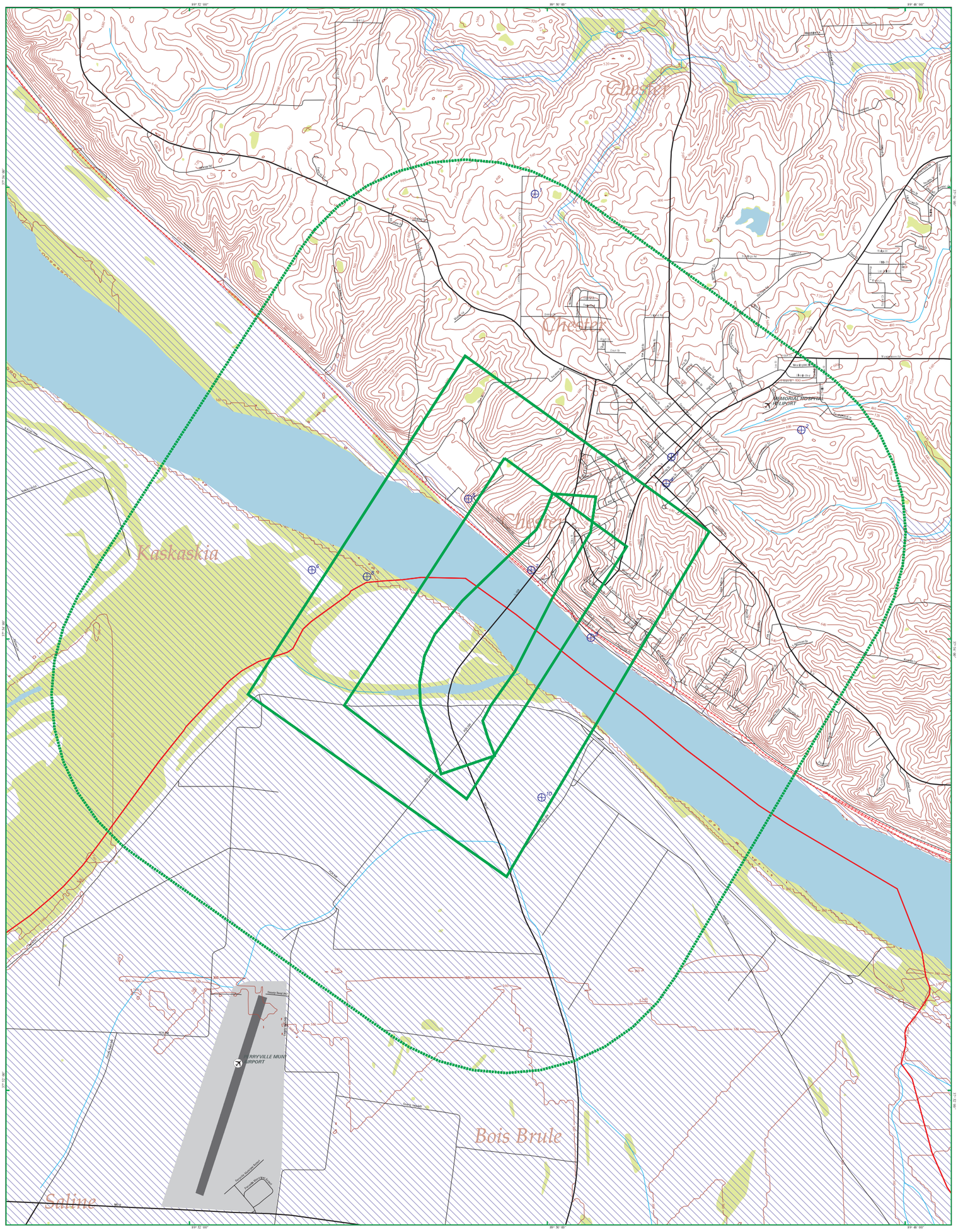
Chester Bridge Environmental Assessment
Chester, IL 62233

Inquiry Number: 5167186.5w
January 26, 2018

EDR DataMap™ Well Search Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.



EDR DataMap® - Well Search

EDR® Environmental Data Resources Inc

Chester Bridge Environmental Assessment

Chester, IL

- Listed Water Wells
- Study Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Fault Lines
- Water
- Superfund Sites
- 100-Yr Flood Zones
- Wetlands

N

0 1/4 1/2

Scale in Miles

Appendix D
Farmland Protection Policy Act Coordination Package

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request **2/14/19**	4. Sheet 1 of **1**
1. Name of Project **Chester Bridge EA**	5. Federal Agency Involved **Federal Highway Administration**	
2. Type of Project **Transportation - Bridge Replacement**	6. County and State **Perry County, Missouri**	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction **Acres:** **%**	7. Amount of Farmland As Defined in FPPA **Acres:** **%**
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment ____			
	U-1 Preferred Alt			
A. Total Acres To Be Converted Directly	**2**			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	**0**			
C. Total Acres In Corridor	**2**	**0**	**0**	**0**
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — **Maximum Points**				
1. Area in Nonurban Use — 15	**4**			
2. Perimeter in Nonurban Use — 10	**4**			
3. Percent Of Corridor Being Farmed — 20	**4**			
4. Protection Provided By State And Local Government — 20	**0**			
5. Size of Present Farm Unit Compared To Average — 10	**3**			
6. Creation Of Nonfarmable Farmland — 25	**25**			
7. Availablility Of Farm Support Services — 5	**3**			
8. On-Farm Investments — 20	**0**			
9. Effects Of Conversion On Farm Support Services — 25	**0**			
10. Compatibility With Existing Agricultural Use — 10	**0**			
TOTAL CORRIDOR ASSESSMENT POINTS — 160	**43**	**0**	**0**	**0**
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100				
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	**43**	**0**	**0**	**0**
TOTAL POINTS *(Total of above 2 lines)* — 260	**43**	**0**	**0**	**0**

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
Alternative U-1	**2 acres**	**4/1/14**	YES ☐ NO ☑

5. Reason For Selection:

The selection of the Preferred Alternative was based, in part, on the benign affect it will have on the farmland community. Using a new alignment will allow for the existing roadway to be used for farm equipment access purposes. This will minimize impacts. The Preferred Alternative will also use a new alignment that is very close to the existing roadway, which will minimize the bisection of farm fields.

Signature of Person Completing this Part: **Rob Miller** DATE **9/9/18**

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

Appendix E
Public Involvement Materials

CAG Summaries

Community Advisory Group – Meeting #1 - Summary

TO:	Chester Bridge EA Project Team
FROM:	CH2M
PROJECT:	Chester Bridge EA (J9P3239)
MEETING DATE:	July 19, 2017
MEETING TIME:	4:00 PM – 6:00 PM
LOCATION:	Chester Public Library 733 Mullins Road Chester, IL 62233
PROJECT TEAM ATTENDEES:	**Missouri Department of Transportation (MoDOT)** – Jason Williams, Richard Moore **CH2M Team** – Buddy Desai, James Ritter, Melissa Marks, Faik Hajderovic, Mandi Voegele, Darby Latham
COMMUNITY ADVISORY GROUP ATTENDEES:	Ken Baer, Mayor – City of Perryville Marty Bert, Fire Chief – Chester Fire Department Brent Buerck, City Administrator/Airport Manager – City of Perryville/Perryville Municipal Airport Ryan Coffey, Chief of Police – Chester Police Department Michael Hoelscher, Administrator – Randolph County Emergency Management Agency Direk Hunt, Chief of Police – Perryville Police Department William Jones, Assistant Chief – Perry County Fire Department Chris Martin, Coordinator for Economic Development – Randolph County Economic Development / Randolph county Progress Committee Tom Page, Mayor – City of Chester Scott Sattler, Executive Director – Perry County Economic Development Authority Linda Sympson, Executive Director and Co-Chairwoman – Chester Chamber of Commerce and Chester Welcome Center Committee Hank Voelker, Director – Perry County Emergency Management Don Welge, President – Gilster-Mary Lee
OTHER ATTENDEES:	Alicia Boxdorfer – Fernow's Fireworks Shaun Boxdorfer – Perryville, MO Robert Cox – Republic Monitor Diana Fernow – Fernow's Fireworks Tammy Grah – Chester Library Travis Lott – County Journal Gary Masters – Midwest Petroleum Pete Spizler – Herald Tribunes Jim Sutterer – Perry County Caal Leuckel – Perry County Jay Wengery – Perry County

I. Meeting Materials

Each Community Advisory Group (CAG) member in attendance was provided a binder containing the following Chester Environmental Assessment (EA) related information:

- CAG Meeting #1 Agenda
- Chester Bridge EA Study Area Map
- CAG Meeting #1 Presentation Slides
- Chester Bridge EA Fact Sheet
- Chester Bridge EA FAQ

A copy of these materials, except for the presentation slides, is included in Appendix A of this meeting summary. The presentation slides are posted to the project website: www.chesterbridgestudy.com.

CAG members were asked to retain these binders for the duration of the project. Additional meeting and project materials will be provided for insertion into the binder at future meetings.

II. Meeting Summary

A. Introductions

The meeting began with an introduction by Missouri Department of Transportation (MoDOT) Project Manager, Jason Williams. After welcoming the attendees to the Community Advisory Group (CAG) meeting, Jason introduced consultant project manager, Buddy Desai. Buddy introduced MoDOT Environmental Compliance Manager, Richard Moore. Buddy then introduced the consultant project team members in attendance including project engineers, James Ritter, Melissa Marks, and Faik Hajderovic; and public involvement leads Mandi Voegele and Darby Latham.

Prior to continuing with the content of the meeting, Buddy asked the CAG members in attendance to perform self-introductions.

The full list of meeting attendees may be found at the beginning of this meeting summary.

B. Presentation – Part One

Buddy began the presentation of the core content of the meeting agenda and the presentation slides. Buddy gave an overview of CAG member roles, CAG meeting rules / guidelines, project decision making authority, and timing of future CAG meetings. Buddy then gave an overview of the project description and study area. Buddy presented an overview of the National Environmental Policy Act (NEPA) process which includes a thorough analysis of project issues, context, alternatives, costs and impacts that must be undertaken to qualify for federal funding. Buddy discussed the definition of an alternative and the types of alternatives that will be considered. Buddy clarified that a bridge type and aesthetics specifics will not be identified as part of the EA.

C. Group Exercise

The study team asked CAG members to identify specific issues along the Chester Bridge EA corridor. The study team noted the discussion will supplement the information provided by the public in the surveys gathered. CAG members provided the following specific comments regarding the bridge:

> Thomas Page (*City of Chester Mayor*) commented that the bridge is too narrow. The City of Chester police department closes the bridge to escort equipment back and forth 400 times a year. Closures are consistent throughout the year and are predominately due to local businesses and farms. Bike and pedestrian traffic is also frequent along the bridge. The Chester bridge is located along a major national bicycle route. Pedestrian traffic is not as frequent, but military

personnel and transient traffic occurs. A high amount of truck traffic also travels across the bridge. Tom stated he would like to see the bridge widened with bicycle and pedestrian facilities. The Cape Girardeau bridge was provided as an example of what a new Chester bridge might look like.

Linda Sympson (*Chester Chamber of Commerce and Chester Welcome Center Committee)* stated that pedestrians frequently go on the bridge to take pictures even though the bridge has signs stating that pedestrian use is not permitted.

Marty Bert (*Chester Fire Chief*) asked about the gas utility line that runs along Horse Island Chute bridge.

> The study team noted that to the best of the team's knowledge, this line is a reserve line for the City of Chester. It is not being used currently.

Don Weldge (*Gilster-Mary Lee*) commented on his concern regarding the flooding at the Horse Island Chute Bridge. Gilster-Mary Lee has 500 employees that cross this bridge to get to work as well as fleet of trucks that cross this bridge 100 times a day. There is a large economic impact due to closure of the Chester bridge. The only alternative to cross the Mississippi River is at Cape Girardeau, over 50 miles away. The curve along the Horse Island Chute bridge is also a safety concern.

> The study team noted that the draft purpose and need states the need for the bridge to be raised to create a safe and reliable crossing of the Mississippi River. The initial review of crashes along the bridge indicate the safety concern of narrow lanes. It was also noted that MoDOT must inspect every bridge after flooding prior to being reopened, causing additional closure delays.

Ken Baer (*City of Perryville Mayor*) asked that if the bridge is widened, if more traffic be generated.

> The study team noted that widening the lanes of the bridge should not influence the amount of traffic that uses this bridge daily. This is due, in part, to the distance to the nearest crossings of the Mississippi River.

Brent Buerck (*Perryville Municipal Airport*) commented that several years ago there was a crane that was too high for the airport to fly.

> The study team stated that there is a formal consultation with the FAA and the airport. The Perryville Municipal Airport's participation is an important part of this.

A member of the public commented that most of the police escorted traffic is wider than a normal 12' lane.

Thomas Page (*City of Chester Mayor*) stated that Chester police and emergency responders often respond to calls on the Missouri side and the bridge is an important connection between the two cities.

Michael Hoelscher (*Randolph County Emergency Management Agency*) asked what the condition of the existing bridge is.

> The study team responded that the bridge is safe but is in poor condition. MoDOT rates bridges on a 0-9 scale. Any bridge with a grade lower than a 3, will be closed. MoDOT

has scheduled deck repairs to the deck surface. Jason stated this is not a long term fix, but will allow time for this study to determine a future path.

Linda Sympson (*Chester Chamber of Commerce and Chester Welcome Center Committee)* stated that when bridge repairs are made, traffic backs up to Route 3 and there are complaints at the Welcome Center regarding the amount of traffic.

William Jones (*Perry County Fire Department*) stated that the Perry County Fire Department heavily relies on the Chester Fire Department in the river bottom areas as the Chester Fire Department has a quicker response time to this area. The Chester Fire Department also relies on the Perry County Fire Department.

Don Weldge (*Gilster-Mary Lee*) stated the close bond between the two cities. Chester and Perryville hold meetings to discuss issues and see how they can work together.

Hank Voelker (*Perry County Emergency Management*) stated that when flooding events occur, they must note that their response is "limited" to the State Emergency Management Agency (SEMA) due to the city's heavy reliance on Chester's response team.

Scott Sattler (*Perry County Economic Development Authority*) noted that the Chester bridge and Horse Chute Island bridge is a very important part of economic development in the area.

Thomas Page (*City of Chester Mayor*) noted that Chester houses two major state facilities.

Don Weldge (*Gilster-Mary Lee*) stated that he believes the key to replacing both bridges is federal funding. If not enough funds are available, Horse Chute Island bridge should be a priority due to flooding concerns.

The study team stated that MoDOT has included both bridges as part of this package. The NEPA process requires that project limits must include logical limits that will not force changes or improvements down the road. It was noted that there is nothing in NEPA that states once a preferred alternative has been determined, that both bridges must be built at the same time.

D. Presentation – Part Two

Mandi Voegele from Vector Communications gave an overview of the feedback the study team had received from the online survey that was available May 10th 2017 through June 16th 2017. It was noted that over 1,000 stakeholders completed the survey. Mandi gave an overview of the stakeholder interviews that have taken place so far.

Buddy gave an overview of the project schedule including a timeline for the Public Involvement meetings and the Community Advisory Group meeting schedule.

III. Meeting Adjourned

The study team noted that a meeting summary would be distributed to CAG members in the coming weeks and that CAG members are welcome to contact the study team at any time with questions, comments, or requests for small group meetings/presentations.

With no further questions or comments, the meeting was adjourned.

IV. Appendix

Appendix A – Meeting Materials

- CAG Meeting #1 Agenda
- Chester Bridge EA Study Area Map
- Chester Bridge EA Fact Sheet
- Chester Bridge EA FAQ

Community Advisory Group – Meeting #2 - Summary

TO:	Chester Bridge EA Project Team
FROM:	CH2M
PROJECT:	Chester Bridge EA (J9P3239)
MEETING DATE:	October 12, 2017
MEETING TIME:	4:00 PM – 5:30 PM
LOCATION:	Perryville City Hall – Council Chambers
PROJECT TEAM ATTENDEES:	**Missouri Department of Transportation (MoDOT)** – Jason Williams **Illinois Department of Transportation (IDOT)** – Cindy Stafford **CH2M Team** – Buddy Desai, James Ritter, Faik Hajderovic, Mandi Voegele
COMMUNITY ADVISORY GROUP ATTENDEES:	Brent Buerck – City Administrator, City of Perryville / Manager, Perryville Municipal Airport M. Ryan Coffey – Chief of Police, Chester Police Department Michael Hoelscher – Administrator, Randolph County Emergency Management Agency Jack Hutchinson – Corporate Engineering and Compliance, Gilster-Mary Lee William Jones – Asst. Chief, Perry County Fire Department / Perryville Emergency Management Thomas Page – Mayor, City of Chester Scott Sattler – Executive Director, Perry County Economic Development Authority Emily Steele – Executive Director, Perryville Chamber of Commerce Linda Sympson – Chester Chamber of Commerce and Chester Welcome Center Committee Hank Voelker – Director, Perry County Emergency Management
OTHER ATTENDEES:	Doug Sachtleben

Meeting Materials

Each Community Advisory Group (CAG) member in attendance was provided the following Chester Environmental Assessment (EA) related information:

- CAG Meeting #2 Agenda
- CAG Meeting #2 Presentation Slides
- Conceptual Alternative Exhibit
- Purpose and Need Screening Matrix

The presentation slides are posted to the project website: www.chesterbridgestudy.com.

Meeting Summary

Introductions

The meeting began with an introduction by Missouri Department of Transportation (MoDOT) Project Manager, Jason Williams. Buddy Desai introduced himself as Consultant Project Manager and Cindy Stafford who represents the Illinois Department of Transportation (IDOT). Buddy then introduced the

consultant project team members in attendance including project engineers, James Ritter and Faik Hajderovic; and public involvement lead Mandi Voegele.

The full list of meeting attendees may be found at the beginning of this meeting summary.

Presentation – Part One

Buddy began the presentation with the meeting agenda and the presentation slides.

The study's Purpose and Need has been approved by MoDOT, IDOT, FHWA – MO, and FHWA – IL and the formal elements of the Purpose and Need were presented to the CAG. It was noted that the overall purpose of the Chester Bridge EA is to improve the reliability and functionality of the Mississippi River bridge and the Horse Island Chute bridge. The project's need is:

- The Route 51 crossings are too narrow for current standards
- The Route 51 Mississippi River crossing is in poor condition
- Route 51 is prone to flood-related closures
- The Route 51 crossings are important to local and regional connectivity

The logical termini (where all alternatives must begin and end) were presented. They are the intersection of Route 51 and Perry County Roads 239/944 in Missouri and the intersection of IL Route 150 and Taylor Street in Illinois. The Conceptual Alternatives were then presented. They are as follows:

- No-build – Routine maintenance only, no improvements.
- Rehabilitate the existing bridges - Structural fixes to the existing bridges without any widening.
- New bridges - Two upstream, two downstream, and one on the existing bridge alignment.

Potential bridge types identified based on anticipated span lengths were presented to the CAG. These include Tied Arch, Continuous Through Truss, Extradosed, Cable Stay, Segmental, and Girder.

A re-cap of the first Public Meeting was provided. The attendees reported that the main issues affecting the bridge are the narrow lanes, poor condition of the Mississippi River bridge, and flood related closures of Route 51.

James Ritter provided an engineering update that included traffic analysis, safety analysis, and the proposed typical section. Buddy then presented an environmental update that included the identification of important resources in the study area, cultural resources, and natural resources.

The presentation concluded with the Purpose and Need screening criteria and next steps. It was noted that the Purpose and Need screening criteria would be used to determine the Reasonable Alternatives. The Reasonable Alternatives are those that will be carried forward for detailed impact analysis.

Questions, Comments, and Discussion

Several questions, comments, and discussions were offered during and after the presentation. A summary of the dialogue is provided in the table below.

Question / Comment	Response
Buddy Desai noted that Conceptual Alternative E-1 Would require closing the crossing for up to two years.	Mayor Page: That wouldn't be good. Buddy Desai: Procedurally, the study must consider a broad range of alternatives including building a structure on the existing alignment.
Brent Buerck: Is the style of the bridge relevant to the location?	Buddy Desai: There are six different bride types that could be built at this location based on anticipated span lengths. The United States

	Coast Guard has jurisdiction over the clearance distances required for navigation. They are in the process of determining what vertical and horizontal clearances will be required. There are two existing navigation channels, 650 feet each. The Coast Guard needs to do more analysis before telling us required spans and clearances, but we will discuss with you the six types that could be there.
Scott Sattler: All of the four alternatives except for E-1 will go over the current levee, correct?	Buddy Desai: Absolutely. That is a major Purpose and Need element, to address the flood related road closures. It is relatively easy to get the new road/bridge profile to the height of the current levee.
Chief Ryan Coffey: Related to the existing levee road, how is that going to affect the levee? Could the levee road go underneath the new road/bridge?	Buddy Desai: There would still be a connection to the levee road but we're not sure if the new road/bridge would be high enough to allow the levee road to pass underneath. James Ritter: Based on what we understand currently, the new road/bridge will not be high enough allow the levee road to go under. More than likely we will tie the levee road into the new road/bridge. It is likely to be an at grade crossing similar to what it is now. Buddy Desai: The fine details will be part of the design process, which will be after this study.
Brent Buerck: Does it make sense to put the new road/bridge at the elevation of a 100-year levee just in case in the next 80 years we get it up that high? Brent Buerck: I would want to know the answer to this question because you might not have to go up that high to get that extra 50 years. Brent Buerck: But nobody knew the first time they built the bridge that there would be a 50-year levee. Brent Buerck: What I am saying is if that if one of those locations will not allow this, would that eliminate the alternative?	Jason Williams: We would work with the US Army Corps of Engineers on this issue. We don't know how much a raise a 100-year flood would be. If it raises too much, the logical termini on the MO side would be difficult to meet. Buddy Desai: We can look at it and see what that elevation would be. Buddy Desai: We will look at it, but either way it will be done as part of the design, we are currently focused on the location study (where the alternatives will go). Design details, such as this, will be addressed in the design phase of the project. Buddy Desai: Meeting the 100-year flood levee is not part of the approved Purpose and Need so it would not eliminate any alternatives in the Purpose and Need screening. The team will note this.

Michael Hoelscher: Does the pipeline affect either of those bridge designs?	Buddy Desai: The good news is that we have been in contact with the people who own the pipeline. They don't currently use it and plan to abandon it. So, this becomes a non-issue.
Brent Buerck: Are all vehicles weighted the same when it comes to traffic operations analysis? Brent Buerck: So that heavy volume of truck does affect the equation?	James Ritter: No. The modeling takes into account truck volumes in the operations analysis. The 22% of the vehicles using the bridge being trucks are factored in to the analysis. Along with other inpt, lane widths and shoulder widths are also taken into account in the traffic analysis along with other inputs. James Ritter: Yes, it does affect the analysis and results.
Chief Coffey: On the width, does the 44-feet include your consideration for foot traffic / pedestrians?	James Ritter: Yes. The 8-foot to 10-foot shoulder would be considered the proposed accommodation. Jason Williams: The proposed widths would include a 12-foot lane and a 8-foot to 10-foot shoulder in each direction of travel. Currently, the roadway leading up to the bridge on the Missouri approach (south of the gas stations) has 8-foot shoulders.
Jason Williams: Does anyone know if they farm Horse Island?	Frank Volker: There is some farming now whenever they can get it dry. Buddy Desai: At the public meeting, a stakeholder noted that they understood that the farmer gets one set of crops every three years.
Michael Hoelscher: Does the US Army Corps of Engineers get involved in river traffic while we're building a new bridge?	Buddy Desai: The US Coast Guard has jurisdiction over river traffic, during construction and otherwise.
Brent Buerck: In round numbers do have a cost estimate for this project?	Cindy Stafford: The I-270 bridge over Chain of Rocks ended up being just under $250 million, but it is an interstate bridge with more lanes. Jason: I think it is public information on our website, but we are scoping this bridge as costing $42 Million per state ($84 M total).

Meeting Adjourned

The study team noted that the presentation slides and a meeting summary would be distributed to CAG members and posted to the study website in the coming weeks. The team also noted that CAG members are welcome to contact the study team at any time with questions, comments, or requests for small group meetings/presentations.

With no further questions or comments, the meeting was adjourned.

Community Advisory Group – Meeting #3 - Summary

TO:	Chester Bridge EA Project Team
FROM:	CH2M
PROJECT:	Chester Bridge EA (J9P3239)
MEETING DATE:	March 6, 2018
MEETING TIME:	4:00 PM – 6:00 PM
LOCATION:	Chester City Hall – Council Chambers
PROJECT TEAM ATTENDEES:	**Missouri Department of Transportation (MoDOT)** – Jason Williams, Kyle Grayson, Jo Dent **Illinois Department of Transportation (IDOT)** – Jennifer Hunt **CH2M Team** – Buddy Desai, James Ritter, Melissa Marks, Mandi Voegele
COMMUNITY ADVISORY GROUP ATTENDEES:	Ken Baer – Mayor, City of Perryville Marty Bert – Fire Chief, Chester Fire Department Brent Buerck – City Administrator, City of Perryville / Manager, Perryville Municipal Airport M. Ryan Coffey – Chief of Police, Chester Police Department Michael Hoelscher – Administrator, Randolph County Emergency Management Agency William Jones – Asst. Chief, Perry County Fire Department / Perryville Emergency Management Thomas Page – Mayor, City of Chester Brian Pasero – Superintendent, Chester Community Unit School District #139 Scott Sattler – Executive Director, Perry County Economic Development Authority Emily Steele – Executive Director, Perryville Chamber of Commerce Linda Sympson – Chester Chamber of Commerce and Chester Welcome Center Committee Hank Voelker – Director, Perry County Emergency Management Don Welge – President, Gilster-Mary Lee
OTHER ATTENDEES:	Dr. Mark Kiehna – Commissioner, Randolph County Board of Commissioners Robert Cox – Managing Editor, Republic Monitor

Meeting Materials

Each Community Advisory Group (CAG) member in attendance was provided the following Chester Environmental Assessment (EA) related information:

- CAG Meeting #3 Presentation Slides
- Newsletter #2 (If not already received)

The presentation slides are posted to the project website: www.chesterbridgestudy.com.

Meeting Summary

Introductions

The meeting began with Buddy Desai introducing the Missouri Department of Transportation (MoDOT) Project Manager, Jason Williams, as well as Kyle Grayson and Jo Dent from MoDOT. Buddy Desai introduced himself as Consultant Project Manager and the consultant project team members in attendance including project engineers, James Ritter and Melissa Marks; and public involvement lead Mandi Voegele. Buddy Desai introduced Jennifer Hunt with IDOT in Collinsville later in the meeting upon her arrival.

The full list of meeting attendees may be found at the beginning of this meeting summary.

Presentation

Buddy Desai began the presentation with the meeting agenda and the presentation slides.

The study's Purpose and Need has been approved by MoDOT, IDOT, FHWA – MO, and FHWA – IL and the formal elements of the Purpose and Need were presented to the CAG. It was noted that the overall purpose of the Chester Bridge EA is to improve the reliability and functionality of the Mississippi River bridge and the Horse Island Chute bridge. The project's need is:

- The Route 51 crossings are too narrow for current standards
- The Route 51 Mississippi River crossing is in poor condition
- Route 51 is prone to flood-related closures
- The Route 51 crossings are important to local and regional connectivity

A recap of the Conceptual Alternatives was presented and include the following:

- Rehabilitate the Existing Bridge without Affecting its Historic Integrity (R-1)
- Rehabilitate the Existing Bridge without Affecting its Historic Integrity as one-way lanes for either eastbound or westbound traffic, coupled with a new upstream or downstream bridge for traffic traveling the alternate direction (R-2)
- Near Upstream Conceptual Alternative (U-1)
- Far Upstream Conceptual Alternative (U-2)
- Replace along Existing Conceptual Alternative (E-1)
- Near Downstream Conceptual Alternative (D-1)
- Far Downstream Conceptual Alternative (D-2)

The Purpose and Need screening criteria was used to determine the Reasonable Alternatives from the Conceptual Alternatives. The Reasonable Alternatives are those that will be carried forward for detailed impact analysis. The following summary of the Conceptual Alternatives Screening was presented.

- No Build satisfies 56% (10 of 18) of the Purpose and Need Performance Measures
- Rehabilitate Existing (R-1) satisfies 67% of the Performance Measures
- New Bridge on Existing (E-1) satisfies all of the Performance Measures except that it requires a 24-month closure of the crossing (94%)
- Upstream Alternatives (U-1 and U-2) meet 100% of the Performance Measures
- Downstream Alternatives (D-1 and D-2) meet 94% and 89% of the Performance Measures, respectively
- Because of its new bridge component, the Rehabilitate as Couplet Alternative (R-2) can theoretically meet 89% of the Performance Measures

Both downstream alternatives (D-1 and D-2) will impact Segar Memorial Park, a Section 4(f) Resource. As feasible and prudent avoidance alternatives to impacting the park exist, the downstream alternatives (D-1 and D-2) are eliminated from consideration.

In addition, the Rehabilitate Existing (R-1) alternative does not meet the Purpose and Need due to the narrow crossing, flood related road closures, and 24-month closure during the rehabilitation creating a 100-mile detour for the duration of the closure. The Alternative for a New bridge at existing location (E-1) also requires a 24-month closure with a 100-mile detour and was also eliminated from further consideration.

Therefore, the Reasonable Alternatives that received concurrence at the February 15, 2018 NEPA/404 Merger Meeting are as follows:

- No Build Alternative
- Upstream Alternatives (U-1 and U-2)
- Rehabilitate the Existing Bridge without affecting its historic integrity as one-way lanes for either eastbound or westbound traffic, coupled with a new upstream or downstream bridge for traffic traveling the alternate direction (R-2)

Jason Williams, MoDOT Project Manager, then gave a quick update regarding summer maintenance to the bridge.

Questions, Comments, and Discussion

Several questions, comments, and discussions were offered during and after the presentation. A summary of the dialogue is provided in the table below.

It was noted that the Community Advisory Group to the Alternatives concurred with the Reasonable Alternatives to be carried forward and the alternatives that were eliminated from further consideration.

Question / Comment	Response
Linda Sympson: Where would the new bridge go in the rehabilitation alternative?	Buddy Desai: The second bridge for the one-way couplet (R-2) alternative would be either U-1 or U-2 as all other alternatives have been eliminated.
Mayor Baer: R-2 doesn't take the Coast Guard's width preferences into consideration, is it still a viable option?	Buddy Desai: It is still a viable option. The Coast Guard prefers a 800' and a 500' clearance, but they haven't noted that the existing bridge must be removed.
Robert Cox: Would either of the upstream Alternatives affect the current Route 51?	Buddy Desai: It would alter the current Route 51 slightly. All alternatives may alter the intersection of the Truck Bypass and Route 51, but drivers won't notice much of a difference. They would come in just a little bit north and West of Segar Park.
Mayor Page: How many vehicles cross the Cape Bridge? - Someone told me there is more traffic on the Chester Bridge.	Jason Williams: Not as many. That wouldn't surprise me. There is more truck traffic on Chester bridge.
Mayor Baer: Is cost is not part of this determination?	Buddy Desai: Cost would come in later in the game. Section 106 does not allow cost to be a factor of why an agency is removing a historic structure. FHWA will make the decision on the existing bridge at a later date.
Don Welge: How much is the curve on the Missouri side?	James Ritter: It eases a little bit, it's a bit gentler horizontal curve. It would be a slight improvement. Something we could explore without getting out of the alignment would be to keep a slightly

Question / Comment	Response
	tighter curve and have more a straight bridge across Horse Island Chute and bigger curve past that. Buddy Desai: It will be a longer downhill because we are going higher, but it will be a flatter curve.
Don Welge: Is this considered one bridge or two bridges?	Buddy Desai: it would be considered two, because there would be one bridge over the Horse Island Chute and one bridge over the Mississippi River.
Linda Sympson: Looking at the map, the alternatives U-1 and U2-, would they not bypass Segar Park? - It is so dangerous right now as vehicle comes off this bridge so fast. - I am surprised there have not been more accidents because it is a real blind spot.	Buddy Desai and James Ritter: No, the connection to the park will be maintained and improved. The height of the roadway may be different, depending on the bridge type. The extra separation from the formalized park will give more space for opportunity. The current driveway is poorly delineated, the entrance will be better defined and there is possibility for more parking.
Mayor Baer: Did anyone look at changing Horse Island Chute rather than building a bridge over?	James Ritter: Moving waterways are discouraged for many reasons. There are some ecological and environmental resources that cause high sensitivity. It is unlikely that the Army Corps of Engineers would allow not bridging over Horse Chute Island.
Michael Hoelscher: In your conversation, is there anybody in the area that has something similar to the R-2 alternative? Like Boone Bridge in St. Louis?	Buddy Desai: I haven't heard of any bridge that is this old that has been used as a one-way couplet with a new bridge. There are other bridges around the state MoDOT has been able to do that with, but the Boone Bridge was only 30-years old, which still has a lot of service life left.
Brent Buerck: Will there be fill? - Fill will obstruct the flow.	James Ritter: The new roadway will be at an elevation above the levee. Exactly how much and where the fill will require future coordination with the Army Corps of Engineers and the Levee District. Analysis must be completed to show that any fill will result in a no-rise.
Don Welge: I think this came up at an earlier meeting, but what altitude will work with the landing patterns at the airport?	Buddy Desai: The Perryville Airport has many surfaces they are required to maintain. From a landing perspective, they care about visual approach surfaces and instrument approach surfaces. The project team is coordinating with the FAA and completing the required analysis. The project team will develop elevation points and surfaces and the FAA will run models to see if we intersect any surfaces.
Michael Hoelscher: Do you see the new bridge being more elevated?	Buddy Desai: The project team has identified 6 possible bridge types but it has not yet been determined if the height of a new bridge would be higher than the existing.
Michael Hoelscher: Would it be a cable-stayed?	Buddy Desai: It could be a cable-stayed bridge – the determination of bridge type will be made after this study is completed.
Brent Buerck: Will the Horse Island Chute be set to the existing levee or will you do a 100-year levee just in case we ever go above that levee increase?	Jason Williams: The Army Corps of Engineers has asked that the approved height of the existing levee is not exceeded. This may require a hydraulic analysis. This decision will not be made until the design phase of the project.

Question / Comment	Response
Don Welge: The height of the levee has sunk to 48' in some places where it should be 50', will this be repaired?	Jason Williams: This is an Army Corps of Engineers decision, not a MoDOT decision.
Chief Coffey: Are these concepts clearing the levee, or meeting the levee?	James Ritter: At this point it will meet or clear. Exactly what elevation that is or how soon the structures start, that requires coordination with the Army Corps of Engineers and what is permissible. Part of the purpose of need is to address the flooding issue and ensure it won't happen with the new build alternatives.
Mayor Page: What is the breakdown of funding for the new bridge?	Jason Williams: Funding for the bridge has not been identified yet. Typically, the state agency puts up 20% and then there is an 80% match from the Federal. Illinois will also share in the cost of the bridge.
Don Welge: This study is to end in Spring of 2019, how many years until the new bridge is built?	Jason Williams: Right now, the next improvement is the Chain of Rocks Bridge. Chester Bridge is the second priority between IDOT and MoDOT.
Robert Cox: Once the study is complete in 2019, how long is the Environmental Assessment good for?	Buddy Desai: The EA once approved, is good for 3 years. After this, a new study doesn't have to be completed, but it must be re-evaluated to see if anything has changed. If it has been a long time, or there are significant changes, more re-evaluation is required.
Don Welge: I would think the Chester would take priority with the government because we are the only bridge to cross in this region. Up in St. Louis there are many more bridges.	Buddy Desai: Although Chester is clearly very important, the Chain of Rocks Bridge has a lot more traffic and carries more trucks so it takes priority.

Meeting Adjourned

The study team noted that the presentation slides and a meeting summary would be distributed to CAG members and posted to the study website in the coming weeks. The team also noted that CAG members are welcome to contact the study team at any time with questions, comments, or requests for small group meetings/presentations.

With no further questions or comments, the meeting was adjourned.

Community Advisory Group – Meeting #4 - Summary

TO:	Chester Bridge EA Project Team
FROM:	CH2M
PROJECT:	Chester Bridge EA (J9P3239)
MEETING DATE:	October 23, 2018
MEETING TIME:	4:00 PM – 6:00 PM
LOCATION:	Chester City Hall – Council Chambers
PROJECT TEAM ATTENDEES:	**Missouri Department of Transportation (MoDOT)** – Jason Williams **CH2M Team** – Buddy Desai, James Ritter, Melissa Marks, Mandi Voegele
COMMUNITY ADVISORY GROUP ATTENDEES:	Brent Buerck – City Administrator, City of Perryville / Manager, Perryville Municipal Airport M. Ryan Coffey – Chief of Police, Chester Police Department Michael Hoelscher – Administrator, Randolph County Emergency Management Agency Jack Hutchinson – Corporate Engineering & Compliance, Gilster-Mary Lee William Jones – Asst. Chief, Perry County Fire Department / Perryville Emergency Management Scott Sattler – Executive Director, Perry County Economic Development Authority Don Welge – President, Gilster-Mary Lee
OTHER ATTENDEES:	Mark Gremaud – Bois Brulee Levee District Jim Sutterer – Perry County Commission Jay Wengert – Perry County Commission

Meeting Materials

Each Community Advisory Group (CAG) member in attendance was provided the following Chester Environmental Assessment (EA) related information:

- CAG Meeting #4 Agenda
- CAG Meeting #4 Presentation Slides

The presentation slides will be posted to the project website: www.chesterbridgestudy.com.

Meeting Summary

Introductions

The meeting began with Buddy Desai introducing himself and welcoming the CAG members.

The full list of meeting attendees may be found at the beginning of this meeting summary. The sign in sheet is at the end of this meeting summary.

Presentation

Buddy Desai began the presentation with the meeting agenda and the presentation slides.

The study's Purpose and Need has been approved by MoDOT, IDOT, FHWA – MO, and FHWA – IL and the formal elements of the Purpose and Need were presented to the CAG. It was noted that the overall purpose of the Chester Bridge EA is to improve the reliability and functionality of the Mississippi River bridge and the Horse Island Chute bridge. The project's need is:

- The Route 51 crossings are too narrow for current standards
- The Route 51 Mississippi River crossing is in poor condition
- Route 51 is prone to flood-related closures
- The Route 51 crossings are important to local and regional connectivity

A recap of the Alternatives Carried Forward was presented and include the following:

- Rehabilitate the Existing Bridge without Affecting its Historic Integrity as one-way lanes for either eastbound or westbound traffic, coupled with a new upstream or downstream bridge for traffic traveling the alternate direction (R-2)
- Near Upstream Conceptual Alternative (U-1)
- Far Upstream Conceptual Alternative (U-2)

The Alternatives Carried Forward screening criteria was used to determine the Preferred Alternative from the three Reasonable Alternatives. The following differential impacts between alternatives U-1 and U-2 were presented.

- U-1 minimizes floodplain configuration impacts
- U-1 being further downstream, it minimizes impacts to the airport
- U-1 impacts fewer acres of wetlands than U-2
- U-1 impacts slightly more agricultural acres than U-2
- U-1 is less expensive than U-2

It was noted that the Rehabilitate Existing with a Companion Bridge (R-2) alternative would only remain as a Reasonable Alternative if rehabilitating the existing bridge would retain its historic integrity. It is not certain that historic integrity would be maintained and the actual cost of the rehabilitation will not be known until rehabilitation commences and progresses.

Based on the overall impacts and analysis, the tentative Preferred Alternative that received concurrence at the September 6, 2018 NEPA/404 Merger Meeting is the Upstream Alternative U-1.

Buddy showed the small change in alignment of the U-1 alternative introduced to avoid sensitive resources. An "S" curve was introduced to the Illinois approach for Alternative U-1 shifting the alignment south towards the Welcome Center. Buddy noted that this shift would not impact the park property and therefore there will be no impact to the Section 4(f) property.

Jason Williams, MoDOT Project Manager, then gave a quick update regarding summer maintenance to the bridge.

Questions, Comments, and Discussion

Several questions, comments, and discussions were offered during and after the presentation. A summary of the dialogue is provided in the table below.

It was noted that the Community Advisory Group concurred with the Preferred Alternative.

Question / Comment	Response
Brent Buerck: On a previous slide it had property affected is 3.2 to 3.8 acres, but this	Buddy: Part of it is this is property that needs to be acquired, and the other is any property that might

says 30 acres.	be impacted.
Brent Buerck: You don't have to acquire the water, that's public, but you have to acquire the land?	Buddy: Essentially, yes that is correct. James: The impacts includes wetlands. That is all the property that has to be acquired, not just the farmlands.
Don Welge: You said you would have to make some relatively small changes due to historical preservation.	Buddy: Yes, there is a slight S-curve that has been introduced on the Illinois approach to avoid/minimize impacts to a sensitive resource to the north.
Brent Buerck: When will this all be complete?	Buddy: We don't have an answer to that question yet. Jason: We originally hoped to have a project programmed by 2022. We had our latest border bridge meeting in October (meetings between MoDOT and IDOT). IDOT and MoDOT both have priorities. We reprioritized Chester Bridge as the number two priority between the states. The number one priority is the Chain of Rocks Bridge in St. Louis. Now we are looking at possibly a project in 2026 to build what comes out of this study.
Don Welge: 2026 for completion?	Jason: 2026 would be the construction year.
Buddy: Is that the case even if Proposition D passes?	Jason: We fund major river bridges with Statewide Interstate & Major Bridge (SWIMB) funds, which includes federal funds. Funding for the Chester Bridge does not depend on Prop D. The problem for both states is going to be securing funding for the bridge.
Don Welge: How much will that bridge (Chain of Rocks) cost?	Jason: I'm not sure. Significantly more as it would be much wider than the Chester bridge. That bridge would be six lanes or more.
Brent Buerck: How do MoDOT and IDOT handle the cost?	Jason: MoDOT and IDOT would split the Mississippi River bridge cost 50/50. The Horse Island Chute bridge would be solely MoDOT responsibility.
Brent Buerck: Is there a chance we could be reprioritized since it's smaller money?	Jason: Perhaps. It's a possibility.
Don Welge: What about an 80/20?	Jason: It could be an 80/20 split with MoDOT and Federal government for MoDOT's portion of the cost. The same could be true for IDOT's portion.
Don Welge: What About the federal government and getting funding from them?	Jason: Federal funds will be available and MoDOT may have to match to get the funding.
Don Welge: I think the current administration has been good about putting money into infrastructure.	Buddy: Yes, they have been. MoDOT is very proactive and has been good about getting any federal money that is available that other states have not been able to utilize.
Brent Buerck: If we comment on the Preferred Alternative, does that help prioritize it?	Buddy: Not with the government funding, just for us to help prioritize whatever Preferred Alternative is supported by the public. The public hearing is the last opportunity for them to comment on the study

	portion of the project.
Don Welge: When will that be?	Buddy: We are expecting the public hearing the early 2019. It seems like a long time, but we are still writing the document and MoDOT has to review and then we revise. FHWA gets six weeks to review also, which is a month and a half.
Don Welge: I ask that because we have P and C meeting coming up and it would seem we should have the Public Hearing before the P and C meeting happens. That way we can fully support the Preferred Alternative.	Buddy: They can write it any time, the EA does not need to be signed for a letter of support of the Preferred Alternative.
Don Welge: Will we be able to print the document?	Buddy: Yes, the report will be online for downloading and printing. Comments will be accepted for 30 days after the document is circulated. A hard copy of the EA will also be placed in the libraries for public use.
Don Welge: I don't think we've heard anything negative on the Illinois side. Have you folks on the Missouri side heard anything negative?	(Others from Missouri agreed) Buddy: We haven't heard anything negative. There is one Facebook page for saving the bridge, but it's not negative.
Don Welge: I guess you could sell it for a dollar to whomever is willing to remove it.	Buddy: It's been advertised for more than one year, but it has to be a financially feasible plan for removal or restoration.
Don Welge: How old is the bridge?	Buddy: It's about 75-years-old.
Don Welge: Most bridges last 75 years?	Jason: Today's bridges do. We design now to last 75 years and expect that with regular maintenance it will last longer. Buddy: The new bridge will be designed to last at least 75 years.
Don Welge: Will the old bridge last until the new bridge is ready?	Jason: Yes, major river crossings are inspected every year, and sometimes additional times each year. The current maintenance repair contract is being done so it will last until it can be rebuilt.
Don Welge: I think the thing that gets worn the most is the road surface.	Jason: Yes, there is significant wear and tear on the bridge deck. With this contract we've run into more repairs than we expected. You often don't know what you are getting into until you start removing concrete. To determine the extent of the repairs we do what is called sounding, which typically involves pulling a series of chains over the bridge deck and analyzing the vibrations that result. This process allows us to identify areas of good and bad (i.e., sound and unsound) concrete. Areas of unsound concrete are removed and replaced. We are about 64% across the bridge with 100% of the budget spent. There is no choice to not do the repairs because to the bridge must last until the rehab or

	replacement.
Don Welge: All you have to do is be parked at the stoplight to hear the vibrations.	Jason: I was out there last week and could certainly hear the vibration noise.
Hank Voekler: Will you repair the south edge?	Jason: The deterioration of the brush curb is not a structural issue. The south curb is in worse condition than the north curb. The curb won't be repaired with the current maintenance contract, but when we come back with the next contract we will address the south curb.
Don Welge: Does anyone know what it cost to build that bridge in the first place?	Buddy: It's posted online on the historical program from the original ceremony. Mandi: It cost $1,835,000 to build the original bridge. Jason: For comparison, that is about the cost of our current repair contract.
Don Welge: That is a lot more expensive.	Buddy: Materials are much more expensive now.
Chief William Jones: Why are we going with 8-foot shoulders?	Jason: The bridge typical includes a minimum 8-foot shoulder to match the existing shoulders on Route 51, which are also 8-feet.
Mark Gremaud: You did a traffic study. Correct?	Buddy: We did a 20-year study on future traffic growth. 20 years out is what we refer to as the "Design Year".
Mark Gremaud: So, we could not have enough lanes when this bridge is past the 20-years?	Jason: Projecting traffic growth more than 20 years out is really difficult. Longer term traffic projections are not reliable. We try to look at a trend line of what growth could be, but you can really overdesign your project if you try to project too far out.
Don Welge: It could have an effect if the interstate is ever built that goes from Washington to the east coast.	Jason: Because there is so much uncertainty with the various I-66 concepts, we really can't consider that in the Chester Bridge study.
Mark Gremaud: Do you know what 8-foot shoulders versus 10-foot shoulders cost?	Jason: We have not determined the cost differential. This will be done in the design phase.
Mark Gremaud: If you had the cost you might see that it is worth the cost for this area? Maybe the 10' shoulders could be restriped into lanes if there is future growth.	Buddy: I understand what you are saying, but we don't go into projects assuming that. We go with what the numbers are telling us. We have 8-foot or 10-foot shoulders because those are sufficient for bike and pedestrian use. The shoulder width won't be decided until the design phase. The designers are limited with that span as to what kind of bridge can be built. We can't use certain bridge types that we could use on shorter crossings.
Don Welge: I think at one time it was estimated to take four years but 2026 is longer than that.	Buddy: We do not specify how long the entire project would take. The study portion was estimated to take 24-months, and we are on track with that.
Don Welge: I know it gets frustrating when you try to build the levees and can't for	Buddy: There are also endangered mussel beds in the Mississippi River, but they aren't in the bridge

environmental reasons. I know there was an endangered species of sturgeon that prevented the levee being raised.	area. We looked at the Pallid Sturgeon (the endangered fish species noted by Don Welge) and a bald eagle roosting site, but it's outside our study area.

Meeting Adjourned

The study team noted that the presentation slides and a meeting summary would be distributed to CAG members and posted to the study website in the coming weeks. The team also noted that CAG members are welcome to contact the study team at any time with questions, comments, or requests for small group meetings/presentations.

With no further questions or comments, the meeting was adjourned.

COMMUNITY ADVISORY GROUP

Date: October 23, 2018
Location: Perryville City Hall

PLEASE CHECK YOUR INFORMATION FOR ACCURACY

INITIAL HERE	Salutation	First Name	Last Name	Title	Company/ Organization	Address	2nd Address	City	State	Zip	Phone 1	Phone 2	Email
	Honorable	Ken	Baer	Mayor	City of Perryville	215 N. West St.		Perryville	MO	63775	573-513-6450		kenbaer@hotmail.com
	Chief	Marty	Bert	Fire Chief	Chester Fire Department	1330 Swanwick St		Chester	IL	62233	618-826-4156		cfd1901@hotmail.com
✓	Mr.	Brent	Buerck	City Administrator / Airport Manager	City of Perryville / Perryville Municipal Airport	215 N West St		Perryville	MO	63775	573-547-2594	573.768.6631	brentbuerck@cityofperryville.com
MRC	Chief	M. Ryan	Coffey	Chief of Police	Chester Police Department	1330 Swanwick St		Chester	IL	62233	618-826-5454		ryancoffey@chesterill.com
MEH	Mr.	Michael	Hoelscher	Administrator	Randolph County Emergency Management Agency	2515 State St		Chester	IL	62233	618.826.5007 ext 130	618-763-5766	mhoelscher@randolphco.org
	Mr.	Todd	Huber	President	TG Missouri Corporation	2200 Plattin Rd		Perryville	MO	63775	573-547-1041		
	Chief	Direk	Hunt	Chief of Police	Perryville Police Department	120 N. Jackson St.		Perryville	MO		573-547-4546		direkhunt@cityofperryville.com
		Jack	Hutchinson	Corporate Engineering & Compliance	Gilster-Mary Lee	1037 State Street		Chester	IL	62233	618-826-2361 ext. 3231		jhutchinson@gilstermarylee.com
	Asst. Chief	William	Jones	Asst. Chief	Perry County Fire Department / Perryville Emergency	301 W. Ste. Marie St.		Perryville	MO	63775	573-517-1501	(573) 547-4546	billjones@cityofperryville.com
	Mr.	Chris	Martin	Coordinator for Economic Development	Randolph County Economic Development / Randolph County	1 Taylor St.		Chester	IL	62233	618-826-5000 Ext 221		econdev@randolphco.org

COMMUNITY ADVISORY GROUP

Date: October 23, 2018
Location: Perryville City Hall

PLEASE CHECK YOUR INFORMATION FOR ACCURACY

INITIAL HERE	Salutation	First Name	Last Name	Title	Company/ Organization	Address	2nd Address	City	State	Zip	Phone 1	Phone 2	Email
	Honorable	Thomas	Page	Mayor	City of Chester	1330 Swanwick Street		Chester	IL	62233	618-826-5114		thomaspage56@yahoo.com
	Mr.	Brian	Pasero	Superintendent	Chester Community Unit School District #139	1940 Swanwick Street		Chester	IL	62233	618-826-4509		
	Mr.	Scott	Sattler	Executive Director	Perry County Economic	112 W. Saint	Suite S	Perryville	MO	63775	OFFICE: 573-547-1097 or		perrycda@perrycountymo.org
	Ms.	Emily	Steele	Executive Director	Perryville Chamber of Commerce	2 W Sainte Marie St		Perryville	MO	63775	573-547-6062		emily@perryvillemo.com
	Ms.	Linda	Sympson	Executive Director and Co-	Chester Chamber of Commerce and	10 Bridge By-Pass		Chester	IL	62233	618-826-2721	618-826-2964	chesteril@frontier.com
	Mr.	Hank	Voelker	Director	Perry County Emergency Management	406 N. Spring St.		Perryville	MO	63775	(573) 547-4000	573-576-4551	perryema@hotmail.com
✓	Mr.	Don	Welge	President	Gilster-Mary Lee	1037 State Street	P.O. Box 227	Chester	IL	62233	618-826-2361		dwelge@gilstermarylee.com

✓ Mark Gremaud BBLP
✓ Jim Settlemyer Perry Co. Commission
✓ Jay Wagner Perry Co. Comission

Public Involvement Meeting Summaries

CHESTER bridge

Route 51 / Environmental Study

Chester Bridge Study First Public Informational Meeting and Comment Form Summary

September 15, 2017

Prepared for

MoDOT

Prepared by

VECTOR COMMUNICATIONS

1. Overview

Chester Bridge Study

The Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT), is conducting an environmental study of the Chester Bridge (Route 51) over the Mississippi River.

Located northeast of Perryville, Missouri and southwest of Chester, Illinois, the Chester Bridge is the only connection for motorists across the Mississippi River between St. Louis, Missouri to the north, and Cape Girardeau, Missouri to the south. The current truss bridge was originally constructed in 1942, and was re-constructed in 1944 after a severe storm destroyed the main span. The bridge has allowed motorists to travel both east and west across the Mississippi River for more than 73 years.

Over the course of seven decades, the Chester Bridge has become less functional for modern vehicles. The bridge is now in poor condition and too narrow by today's design standards. Thus the goal of the Chester Bridge Study is to develop a safe and reliable Route 51 river crossing.

Elected Officials Briefing

A briefing for regional elected officials was held at 3:00 p.m. on Thursday, August 24, prior to a public informational meeting at Chester High School. The purpose of the briefing was to explain the Study's Purpose and Need, review the study timeline, present Conceptual Alternatives, and answer questions. Twenty (20) people attended the briefing including city, county, and state officials – or a representative from their office - and are listed below:

- Ken Baer, Mayor, City of Perryville
- Dick Durbin, Senator, United States Senate
- Rick Francis, State Representative D-145, Missouri House of Representatives
- Mark Gremaud, Board Chairman, Bois Brule Levee District
- Susan Grotts, Senator Dick Durbin's Office
- Leslie Herbst, Congressman Jason Smith's Office
- Mike Hoelscher, Administrator, Randolph County Emergency Management Agency
- Patsie Hopkins, District Office Administrator, Office of Representative Jerry Costello II
- Marc Kiehna, Commissioner, Randolph County
- Carl "Topper" Leuckel, Presiding Commissioner, Perry County Commission
- Thomas Page, Mayor, City of Chester
- Robert Platt, Alderman - Ward Three, City of Chester - City Council
- Russ Rader, Alderman - Ward Three, City of Chester - City Council
- James Sutterer, Second District Commissioner, Perry County Commission
- Jim Sutterer, Second District Commissioner, Perry County Commission
- Jay Wengert, District One Commissioner, Perry County Commission
- Ronnie White, Chairman, Randolph County Board of Commissioners

Two of the Community Advisory Group (CAG) members and two media outlets also attended the elected officials briefing and are listed below:

- Travis Lott, Reporter, County Journal
- Chris Martin, Coordinator, Randolph County Economic Development
- Pete Spitler, Managing Editor, Herald Tribune
- Don Welge, President, Glister Mary-Lee

Public Informational Meeting

A public informational meeting for the Chester Bridge Study was held on Thursday, August 24, 2017 from 4:00 p.m. to 7:00 p.m. at the Chester High School Cafeteria in Chester, Illinois. Thirty-three (33) people attended. Upon entering the meeting, attendees were given a station guide, a comment form, and a copy of the newsletter if they had not received one in the mail. *A copy of the station guide can be found in Appendix A on page 9.*

The meeting addressed the Purpose and Need for the study, potential alternatives for replacing or repairing Chester Bridge, and potential impacts to the community as well as cultural and environmental resources. Informational display boards and aerial maps were available for review throughout the meeting and posted to the study website following the meeting. The public was invited to discuss the study with MoDOT staff and the study team.

Meeting attendees were encouraged to provide their feedback during the event by filling out a hard copy of the comment form, or by completing the online version of the comment form on the iPads provided. The public was also given three weeks – until September 14, 2017 - to complete the online version through the Study website. *A copy of the comment form can be found in Appendix B on page 10.*

Outreach and Media

To publicize the August public informational meeting, the information was posted on the Study website at http://chesterbridgestudy.com/. The meeting was also promoted on several social media pages and websites including:

- MoDOT's website and Facebook page
- *SunTimes News'* Facebook page
- Randolph County Economic Development's Facebook page

A press advisory was sent out to Chester and Perryville media in the weeks leading to the meeting. Articles announcing the meeting ran in the *Republic Monitor* and the *SunTimes* News in the week prior to the public meeting.

A newsletter announcing the meeting was sent to more than 930 individuals who live or work near the study footprint, or subscribed online to be part of the study master mailing list. A flyer announcement was also distributed via email to more than 740 people. *Copies of the newsletter and flyer can be found in Appendices C and D on pages 12 and 16 respectively.*

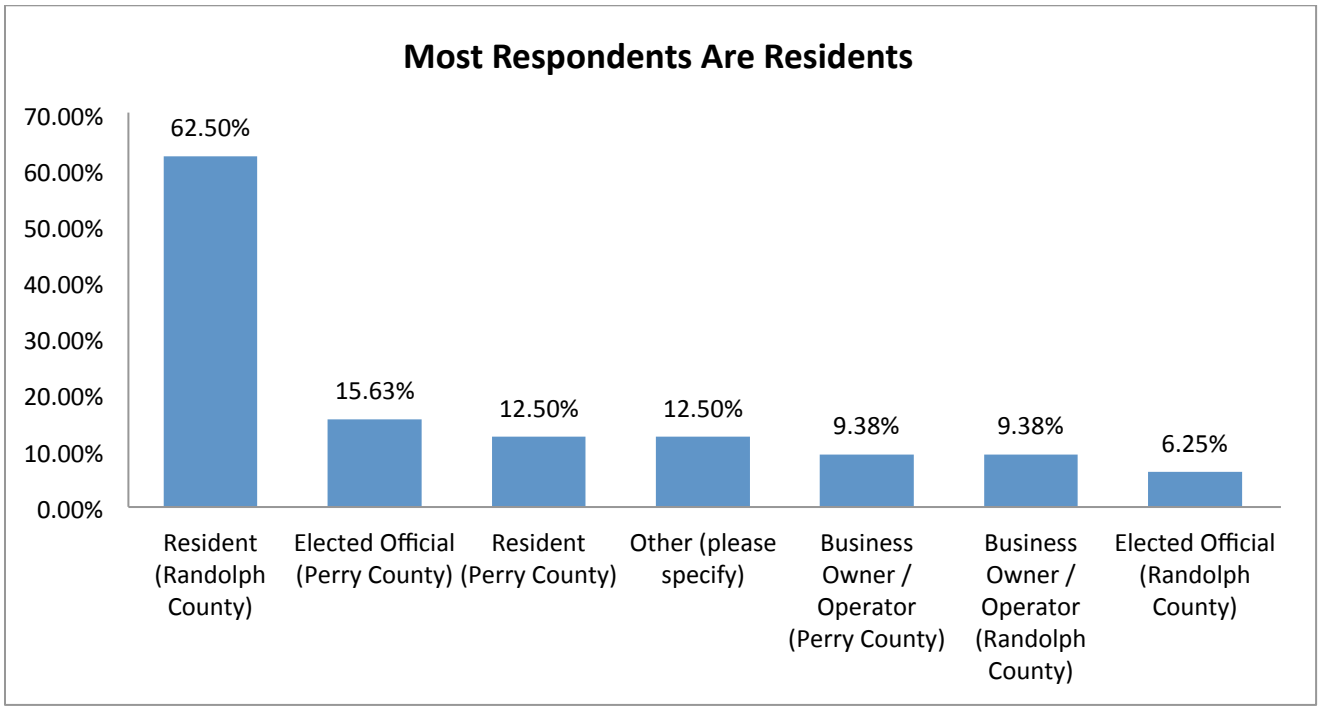
2. Comment Results

A comment form was distributed at the elected officials briefing and the public informational meeting. The form included six questions about the primary issues affecting the bridge, potential alternatives, demographic information, and how each attendee found out about the meeting. Thirty-two (32) individuals completed the comment form either in writing or on online. The remainder of this report summarizes the input obtained from the comment form responses.

Describe Yourself

Question: "Which of the following best describes you? Please check all that apply."

Although this question was third on the comment form, it is at the top of this summary section to provide information about the respondents. Knowing the respondents puts their comments into context. There were six options available and the chart below outlines the results.



The majority of respondents, slightly more than six of ten (62.5%), indicated that they are area residents.

Four (4) responses listed in the "other" category for "which of the following best describes you" were:

- Occasional traveler;
- Retired elected official, Randolph County;
- Bollinger Company, MO; and
- President, Bois Brule' Levee District.

Respondents were also asked to list the zip code for their selections. The majority (74%) of people who responded live in the Randolph County zip code, 62233.

Primary Issues for the Study to Address

Question: "Based on the information gathered to date, the study team has identified narrow lanes, safety concerns, deterioration of the roadway, and road closures due to flooding as the primary issues affecting Chester Bridge. Are there any other primary issues this study should investigate?"

Twenty-one (21) respondents entered an answer for this question, and three of those concurred with the issues already identified. The additional issues that were presented include:

- Bicycle and pedestrian crossing options/safety (4);
- Traffic back-ups, specifically at Route 3 (3);
- Traffic volume (2); and
- Miscellaneous responses (9).

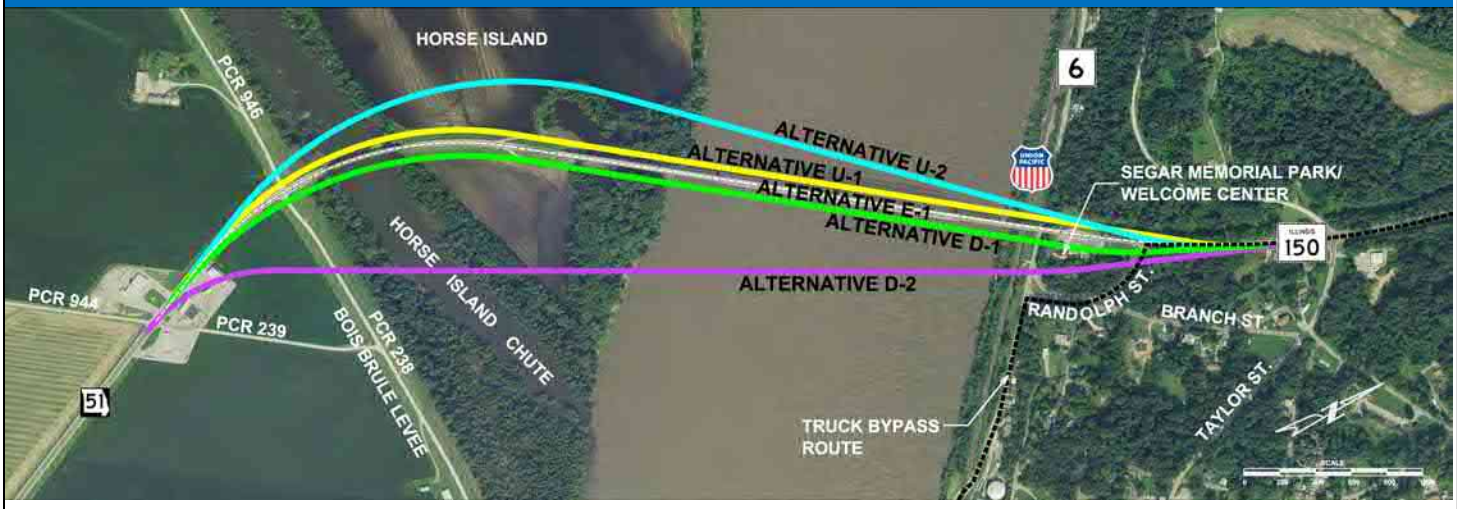
The additional comments are listed verbatim in Appendix E on page 17.

Preliminary Alignment Alternatives

Question: "Which of the following alternatives for crossing the Horse Island Chute and Mississippi River do you believe best meet the study's Purpose and Need? Please check one."

Five (5) conceptual build alternatives for the Chester Bridge Study were presented at the public informational meeting along with options for "no build" and bridge rehabilitation. The question asked respondents to indicate which alternative best meets the Purpose and Need of the study. A map of the alternatives was available at the comment area for reference (*see graphic on following page*).

Conceptual Build Alternatives



U-1 (Yellow)

- ✚ Allows Route 51 to be on fill between the Horse Island Chute Bridge and the Mississippi River Bridge potentially lowering costs compared to downstream alternative D-2
- ✚ No anticipated impacts to Segar Memorial Park/Illinois Welcome Center
- ✚ Maintains existing operation of Truck Bypass and access to Route 6 and Water Street

U-2 (Cyan)

- ✚ Allows Route 51 to be on fill between the Horse Island Chute Bridge and the Mississippi River Bridge potentially lowering costs compared to downstream alternative D-2
- ✚ No anticipated impacts to Segar Memorial Park/Illinois Welcome Center
- ✚ Maintains existing operation of Truck Bypass and access to Route 6 and Water Street
- ➖ Longer alignment may increase overall costs

E-1 (White)

- ✚ Maintains current alignment, minimizing additional impacts
- ✚ No anticipated impacts to Segar Memorial Park/Illinois Welcome Center
- ✚ Maintains existing operation of Truck Bypass and access to Route 6 and Water Street
- ➖ Will require bridge closure during construction (which may be up to 2 years)
- ➖ Bridge closure will have large impact on local economy

D-1 (Green)

- ✚ Allows Route 51 to be on fill between the Horse Island Chute Bridge and the Mississippi River Bridge potentially lowering costs compared to downstream alternative D-2
- ✚ Maintains similar operation of Truck Bypass and existing access to Route 6 and Water Street
- ➖ Requires relocation of Segar Memorial Park/Illinois Welcome Center
- ➖ Some impacts to Phillips 66 gas station in Missouri
- ➖ Will require some realignment of Randolph Street

D-2 (Purple)

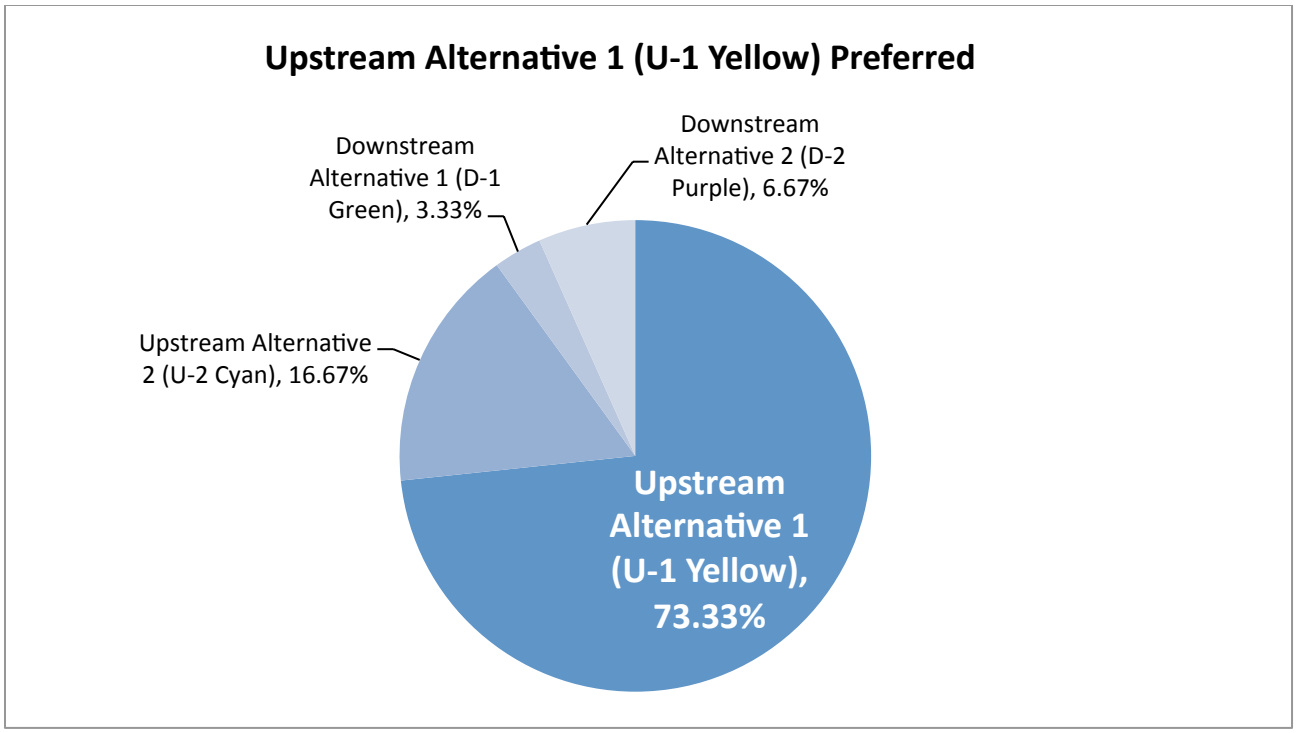
- ✚ Minimizes direct impacts to Horse Island
- ➖ Requires continuous bridge structure(s) that span Horse Island and the Mississippi River which may result in increased costs
- ➖ May require relocation of Segar Memorial Park/Illinois Welcome Center
- ➖ Truck bypass access shifts to Taylor Street and Branch Street
- ➖ Will require relocation of Phillips 66 gas station in Missouri
- ➖ Eliminates access to Horse Island

25

The three following options were not chosen by any of the respondents (0%):

- No Build / Routine Maintenance Only
- Rehabilitate the Existing Bridge
- Current Alignment (E-1 White)

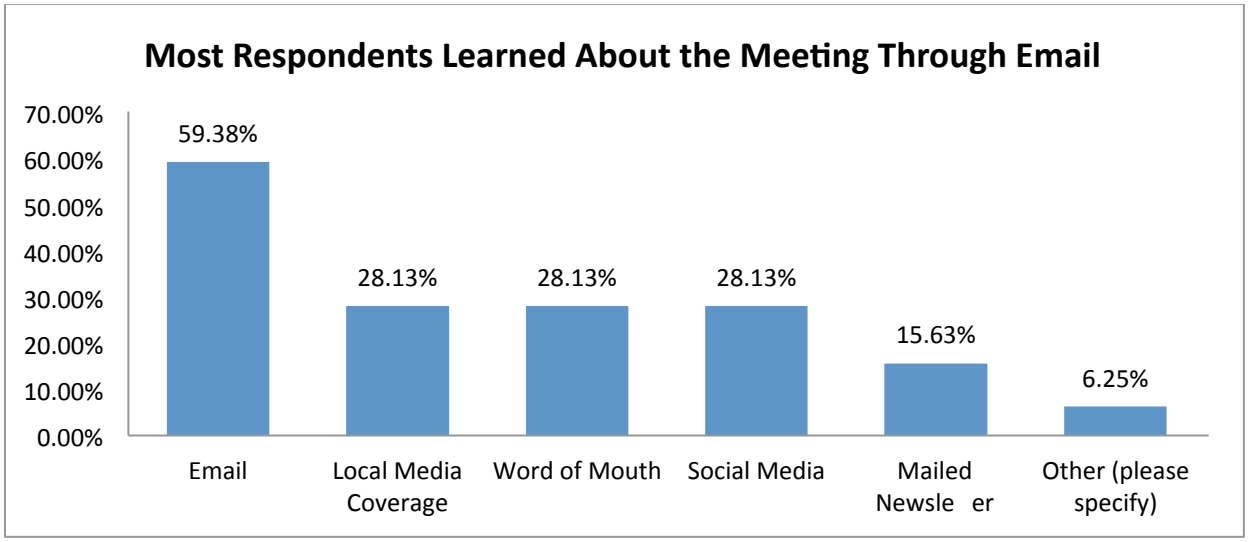
The majority of respondents (73%), or seven out of 10 people, selected Upstream Alternative 1 as best meeting the study's Purpose and Need. The chart below outlines the responses received.



Public Outreach

Question: "How did you find out about this public open house? Please check all that apply."

Respondents were asked to indicate how they found out about the public informational meeting. They were given six choices including an option for "other" and could select more than one. Their answers are detailed in the following graph.



The emails announcing the public open house were the most reported method of learning about the meeting with fifty-nine percent (59%) of respondents, or close to six out of ten people, choosing this option. Three choices were tied as the second most selected option including local media coverage, word of mouth, and social media (28%).

In the "other" category, respondents indicated they learned about the public meeting from the:

- Internet (1); and
- Library (1).

Evaluation of Public Informational Meeting

The sixth question asked attendees to evaluate the public informational meeting. The responses indicated that more than eight out of ten respondents felt the open house was:

- Informative (88%);
- Well-planned (88%); and
- Worth their time (87%).

Additional Comments

Respondents were provided space to write any additional comments they wished to share about the Chester Bridge Study. Sixteen (16) individuals wrote additional comments.

Topics frequently mentioned in the additional comments include the following:

- Appreciation for the open house (4)
- Requests to preserve all or part of the old bridge (3)
- Comments about the alternatives (3)

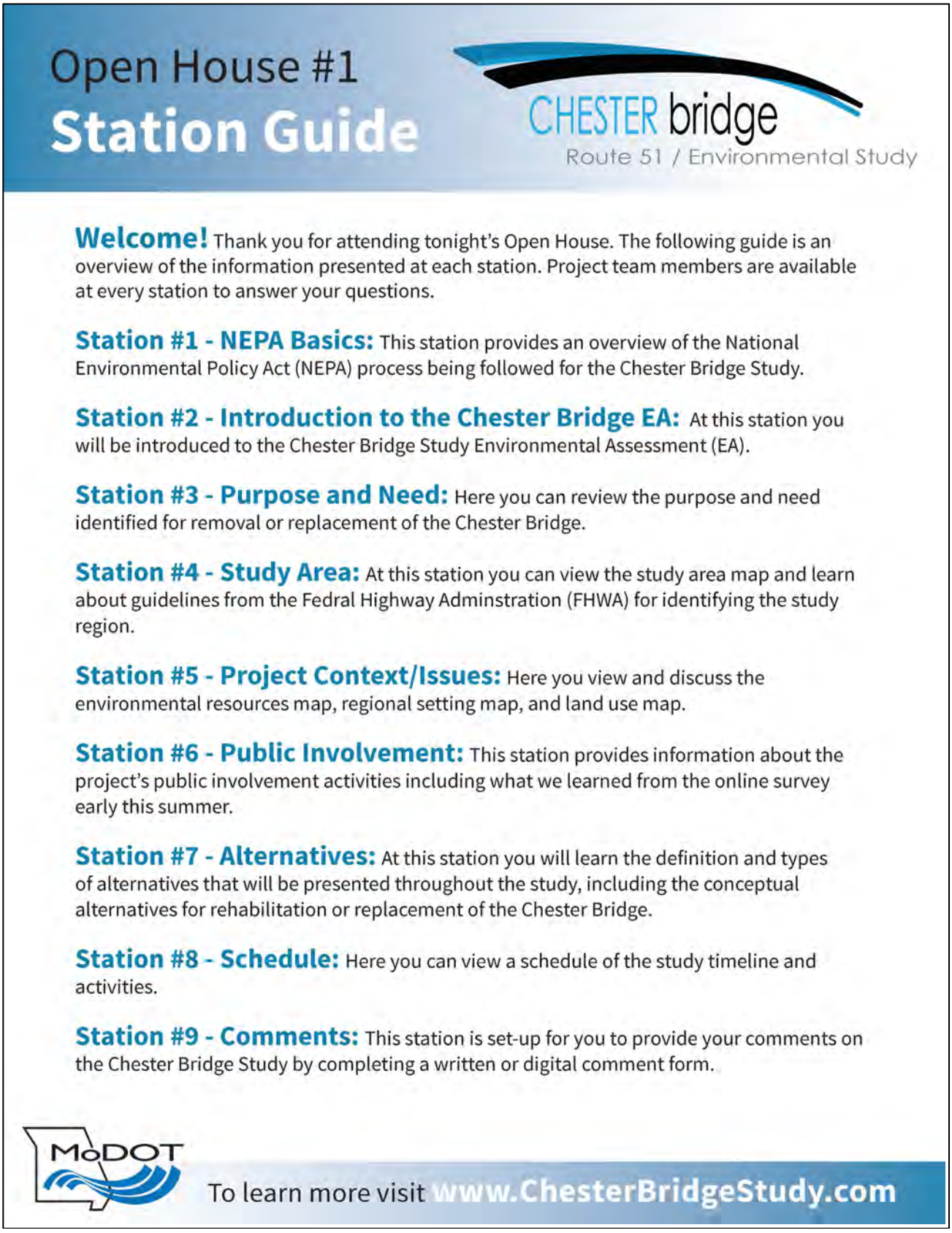
Six (6) comments did not fall into a frequently mentioned category. *The additional verbatim comments from the comment forms are listed by category in Appendix F on page 18.*

Conclusion

The elected officials briefing and public informational meeting for the Chester Bridge Study provided a forum for regional residents, commuters, business owners, and property owners to: learn more about the study; meet with study team members; and provide input. Approximately 50 people attended the meetings and 32 attendees (64%) provided input via the comment form.

The comments received indicate that the majority of the meeting attendees reside in the study area and most learned about the event through an email. The option for repairing or replacing the Chester Bridge that is preferred by the majority of respondents is Upstream Alternative – 1.

Station Guide



Comment Form

CHESTER bridge
Route 51 / Environmental S

Chester Bridge Study
Public Open House
August 24, 2017

COMMENT FORM

Thank you for completing this comment form. Your input will help inform the Chester Bridge Study team's future activities and decision-making.

1. Based on the information gathered to date, the study team has identified narrow lanes, safety concerns, deterioration of the roadway, and road closures due to flooding as the primary issues affecting Chester Bridge. **Are there any other primary issues this study should investigate?**

_____

_____

2. Which of the following alternatives for crossing the Horse Island Chute and Mississippi River do you believe best meet the study's purpose and need? Please check one.

_____ No Build / Routine Maintenance Only

_____ Rehabilitate the Existing Bridge

_____ Current Alignment (E-1 White)

_____ Upstream Alternative 1 (U-1 Yellow)

_____ Upstream Alternative 2 (U-2 Cyan)

_____ Downstream Alternative 1 (D-1 Green)

_____ Downstream Alternative 2 (D-2 Purple)

3. Which of the following best describes you? Please check all that apply.

_____ Resident (Perry County)

_____ Business Owner / Operator (Perry County)

_____ Elected Official (Perry County)

_____ Resident (Randolph County)

_____ Business Owner / Operator (Randolph County)

_____ Elected Official (Randolph County)

_____ Other: _____ Zip Code: _____

4. How did you find out about this Open House? Please check all that apply.

_____ Email

_____ Local Media Coverage

_____ Social Media

_____ Mailed Newsletter

_____ Word of Mouth

_____ Other_____

(Additional Questions on Back)

5. Please evaluate this event according to the following, circle your answers…

A. The Open House was:

Informative				Uninformative
1	2	3	4	5

B. In general the Open House was:

Well Planned				Unorganized
1	2	3	4	5
Worth My Time				Waste of Time
1	2	3	4	5

6. Additional comments:

THANK YOU!

Newsletter 1

CHESTER bridge
Route 51 / Environmental Study

NEWS

Issue #1 - Summer 2017

Your Input Needed at First Open House

More than 1,000 community members completed the initial Chester Bridge Study survey online earlier this summer. Now the study team needs the public's feedback on the purpose and need and conceptual alternatives for repairing or replacing the bridge at the first Public Open House (*see details below*).

Located southwest of Chester, Illinois, and northeast of Perryville, Missouri, the Chester Bridge (Route 51) is the only connection for motorists across the Mississippi River between St. Louis, Missouri to the north, and Cape Girardeau, Missouri to the south. Over the course of seven decades, the Chester Bridge has become less functional for modern vehicles. The bridge is now in poor condition and too narrow by today's design standards. Thus the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting an environmental study of the bridge. The goal of this study is to develop a safe and reliable Route 51 river crossing.

Currently an average of 6,500 vehicles a day, including commuters, travel the bridge. Route 51 is also a major route for semi-trucks transporting goods. The initial phase of the study primarily consists of data gathering. The study will take approximately two years to complete, ending in spring 2019.

Come learn about the purpose and need and conceptual alternatives for the Chester Bridge Study and provide your feedback at the first Public Open House!

PUBLIC OPEN HOUSE

Thursday, August 24, 2017
4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

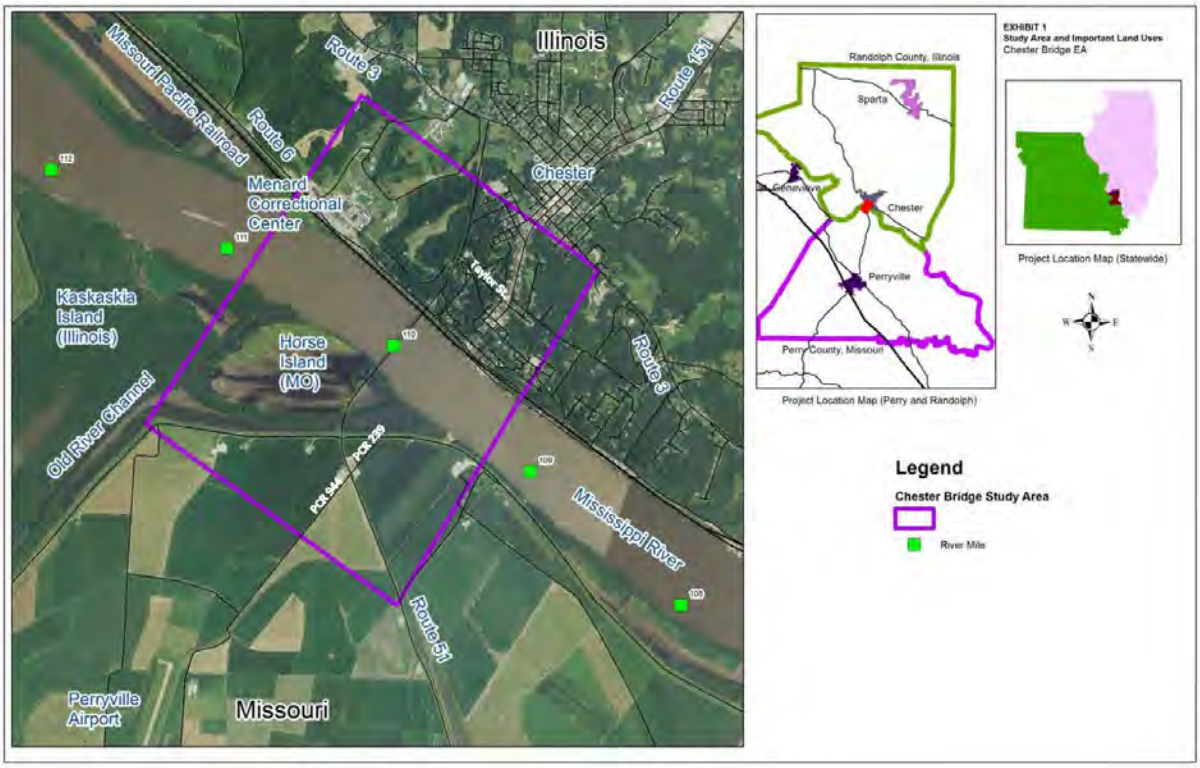
Chester High School Cafeteria*
1901 Swanwick St.
Chester, IL 62233

**This facility is ADA accessible.*

MoDOT

To learn more visit www.ChesterBridgeStudy.com

Study Area Map



Community Advisory Group

As part of the environmental process, the study team has established a Community Advisory Group (CAG). The CAG is comprised of a diverse range of stakeholders who will assist the study team throughout the process. The study team will look to CAG members to give input on behalf of the stakeholder groups that they represent, to review information and study findings, and to help get information to the general public. The role of the CAG is to advise MoDOT and FHWA. MoDOT and FHWA will ultimately make the final decision on how best to create a safe and reliable Mississippi River crossing.

The first meeting of the CAG was held on Wednesday, July 19 at the Chester Public Library. Twelve members of the group were in attendance along with the project team and local media outlets. The CAG meetings are open to the public but intended for one-on-one dialogue between the study team and the CAG. Other stakeholders are welcome to observe during the meeting and the study team members will be available afterwards for any discussions with non-CAG stakeholders. It is expected that the CAG will meet four times over the course of the study.

Frequently Asked Questions

1. Why conduct an environmental study of the Chester Bridge?

The bridge is being studied because it is too narrow for current standards and in poor structural condition. As such, it must follow the National Environmental Policy Act (NEPA) guidelines, which requires that all options must be evaluated including, in this case, leaving the bridge as is.

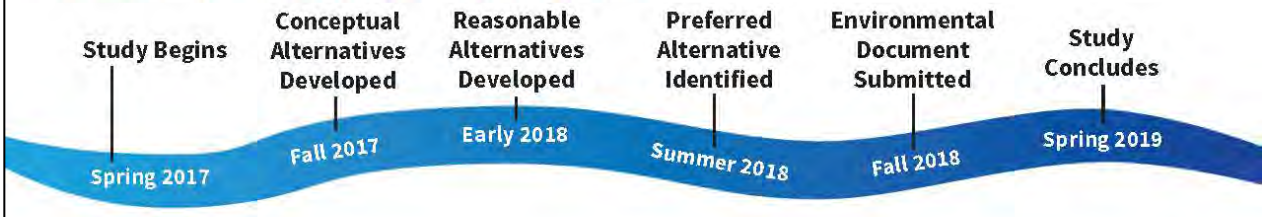
2. What is the purpose of this environmental study?

The study will determine a preferred alternative for the bridge and will take into consideration cost, safety, roadway connections, and cultural and environmental impacts.

3. If it is decided that a new bridge needs to be built, is there money for construction?

No. Currently the Missouri and Illinois Departments of Transportation have not established funding for a new bridge. However, conducting this study will help move the project forward when federal construction funds become available.

4. How long will the study take to complete?



How to Get Involved

Recognizing the value the community brings to the transportation planning process, the study team will employ several tools to ensure the public has a variety of opportunities to be involved in the Chester Bridge Study. The study's Public Involvement Program will be guided by both the National Environmental Policy Act's (NEPA) requirements for public involvement and MoDOT's public engagement policies. The approach to this study will help ensure the recommended improvements to Chester Bridge balance costs, safety, commuter needs, environmental impacts and the study's goals. Public involvement is critical to this approach and helps build awareness and understanding. Ultimately, your input will play an important role in providing guidance toward the study's final outcome.

To learn more or provide your input:

- Visit the study website at **www.ChesterBridgeStudy.com**
- Sign-up for the study mailing list on the website
- Attend a public meeting
- Call 1-888-ASK-MoDOT (275-6636)

CHESTER bridge
Route 51 / Environmental Study

c/o Vector Communications
The Power House Building
401 S. 18th Street, Suite 325
St. Louis, MO 63103

You're Invited . . .

PUBLIC OPEN HOUSE

Thursday, August 24, 2017
4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

Chester High School Cafeteria*
1901 Swanwick St. / Chester, IL 62233

**This facility is ADA accessible.*

DETAILS INSIDE!

MoDOT

To learn more visit **www.ChesterBridgeStudy.com**

Flyer

CHESTER bridge

Route 51 / Environmental Study

MoDOT

You're Invited . . .

PUBLIC OPEN HOUSE

Thursday, August 24, 2017

4:00 p.m. - 7:00 p.m.

(Stop by anytime - no formal presentation)

Chester High School Cafeteria*

1901 Swanwick St. / Chester, IL 62233

**This facility is ADA accessible.*

We need your input!

The Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting an environmental study of the Chester Bridge (Route 51) over the Mississippi River. The goal of this study is to develop a safe and reliable Route 51 river crossing.

Over the course of seven decades, Chester Bridge has become less functional for motorists and is now in poor condition. Weather, vehicle use, age, and snow removal salt have caused deterioration. These factors along with safety and flooding issues have created the need to study the Chester Bridge.

Come learn about the purpose and need and conceptual alternatives for the Chester Bridge Study and provide your feedback at the first Public Open House!

To learn more, visit **www.ChesterBridgeStudy.com**

APPENDIX E - Primary Issues Responses

Verbatim Responses	Categories
The bridge is in US bicycle route 76. This is one of the primary crossings of the Mississippi River for cyclists on trans-continental trips. The existing bridge has no lane/room for pedestrians or cyclists.	Bike/Ped Option & Safety
Poor safety for bicyclists	Bike/Ped Option & Safety
Pedestrian and bicycle crossing safety	Bike/Ped Option & Safety
Will Nighthawk coal add docks to MO side? They should be involved in bridge process. Four lane bridge preferable, wide shoulders and pedestrian/bike option welcomed.	Bike/Ped Option/Safety & Wide Shoulders
Closure of the bridge will have a dramatic affect on the community.	Closures affect community
Not now	Concur with primary issues
Seems to cover all the concerns	Concur with primary issues
These are the main points	Concur with primary issues
Economy concerns	Economy concerns
Flooding on Missouri RT 50	Flooding
Improving ease of access to differing parts of Chester appears to be outside the scope of this project, but one or maybe two of the alternatives may decrease future options. This project needs to not diminish future access options.	Future access options
These are the absolute most affecting factors, the only other point I can think of is the growth of industry since the bridge (existing) was constructed.	Growth of Industry
Horse Island owns access. Bois Brule Levee needs to be high enough for a potential levee raise in future	Levee Clearance
Earthquakes and natural disasters	Natural Disasters
Once the new bridge is built the old bridge should be preserved and repurposed into walk, biking & tourist attraction that is linked directly to the Chester Welcome Center. The costs to blow up and clean up the old bridge from the river will be greater than preserving the old bridge well enough repurpose it. It would be simple to add an off ramp that leads to the old bridge and welcome center if one of the two up river options were chosen. As you know Route 51 is a national cross-country biking route. Keeping the old bridge would keep the cyclists off the new bridge. The old bridge would help attract tourists to the area and the bridge could be used for many events.	Preserving old bridge
Amount of time it will take to build. We need it quickly!	Timeline for Building
Traffic back-up due to shift changes at our state facilities shutting down the bridge to move wide load traffic	Traffic Back-ups
Is there anyway to address the back up at 150 and Route 3 near the truck bypass?	Traffic Back-ups (Route 3)
It sure would be nice if the constant truck back ups turning on to Route 3 could be addressed somehow	Traffic Back-ups (Route 3)
Possibly the volume of traffic	Traffic Volume
Amount of traffic	Traffic Volume

Additional Comments

Verbatim Responses	Categories
I'm impressed with the number of alternatives	Alternatives
Hope you have many more!	Appreciated Open House
Thank you for communication with public!	Appreciated Open House
All agents were well informed with information	Appreciated Open House
Well done open house	Appreciated Open House
I didn't attend the open house	Commented Via Web Link
I was not able to attend this event, but I looked through the displays carefully on the website.	Commented Via Web Link
What about the flooding on Missouri RT 50	Concerned About Flooding
Concern what clearance bridge structure will be above levee MO side	Concerned about Levee clearance
There is a definite need for a new bridge. The alternative for no bridge or expensive repair is not a reasonable alternatives.	Preferred Alternative
Options shown and interests identified seem to cover all anomalies. The cyan route proposed interests me the most as the route is more sweeping curve for traffic as well as leaving the memorial and track bypass nearly untouched.	Preferred Alternative
The piers appear to be in good condition judging from the pictures. Is this not true or is there another reason for not studying a project that reuses the piers and replaces the superstructure? Reuse piers would be Alternative E2 and should reduce costs and time of closure significantly if viable. With 6000 vehicles per day, a ferry does not sound like an option, and I have never heard of a temporary floating bridge used in this type of situation where there is river traffic. Considering the economic and travel costs of E options, or some form of temporary bypass, Alternative U-1 may likely still prove the cheapest option and may do less damage than any of the others.	Request to preserve all or part of old bridge
We are currently gathering as many people as we can in the local community that would like to see the old bridge preserved and repurposed. If this becomes a serious possibility then it may affect or help with deciding which alternate option is chosen for the new bridge location. I just started a Facebook group about 24 hours ago and I hope to build it up with people who are interested in seeing the old bridge preserved & repurposed. https://www.facebook.com/groups/saveandrepurposechesterbridge/	Request to preserve all or part of old bridge
Leave existing bridge for bicyclists etc.	Request to preserve all or part of old bridge
I think a two lane bridge is a mistake- it should be four lanes	Wants four lane bridge
We need to move forward as soon as possible	Wants project to move forward

CHESTER bridge

Route 51 / Environmental Study

Chester Bridge Study
Second Public Informational Meeting and Comment Form Summary

April 25, 2018

Prepared for

MoDOT

Prepared by

VECTOR COMMUNICATIONS

1. Overview

Chester Bridge Study

The Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT), is conducting an environmental study of the Chester Bridge (Route 51) over the Mississippi River.

Located northeast of Perryville, Missouri and southwest of Chester, Illinois, the Chester Bridge is the only connection for motorists across the Mississippi River between St. Louis, Missouri to the north, and Cape Girardeau, Missouri to the south. The current truss bridge was originally constructed in 1942 and was re-constructed in 1944 after a severe storm destroyed the main span. The bridge has allowed motorists to travel both east and west across the Mississippi River for more than 73 years.

Over the course of seven decades, the Chester Bridge has become less functional for modern vehicles. The bridge is now in poor condition and too narrow by today's design standards. Thus, the goal of the Chester Bridge Study is to develop a safe and reliable Route 51 river crossing.

Previous Public Involvement

Public engagement for the Chester Bridge Study began in 2017. The outreach completed included:

- An online public survey;
- Three Community Advisory Group Meetings;
- An Elected Officials Briefings;
- One Public Informational Meeting; and
- Information distributed to local media and via MoDOT's social media pages.

Feedback obtained from the public involvement efforts was utilized to inform the development of Conceptual and Reasonable Alternatives. The remainder of this document outlines the continued engagement efforts and public meeting completed during the first quarter of 2018.

Second Elected Officials Briefing

A second briefing for regional elected officials was held at 1:30 p.m. on Tuesday, March 13th, prior to a public informational meeting at the Perryville Higher Education Center. The purpose of the briefing was to explain the purpose and need for the study, exhibit the study area, display Conceptual Alternatives that have been studied, present Reasonable Alternatives that have been identified, review the study schedule, and answer questions. Eleven (11) people attended the elected officials briefing including city, county, and state officials – or a representative from their office - and are listed below:

- Katie Foley, Senator Tammy Duckworth's Office
- Susan Grotts, Senator Dick Durbin's Office

- Tom Guth, Alderman - Ward One, City of Perryville, Perryville Board of Alderman
- Carl "Topper" Leuckel, Presiding Commissioner, Perry County Commission
- Doug Martin, Alderman - Ward Two, City of Perryville, Perryville Board of Alderman
- Thomas Page, Mayor, City of Chester
- Larry Riney, Alderman - Ward One, City of Perryville, Perryville Board of Alderman
- Jim Sutterer, Second District Commissioner, Perry County Commission
- Jay Wengert, District One Commissioner, Perry County Commission
- Ronnie White, Chairman, Randolph County Board of Commissioners
- Caroline Yielding, Senator Roy Blunt's Office

Four of the Community Advisory Group (CAG) members and one media outlet also attended the elected officials briefing and are listed below:

- Robert Cox, Republic Monitor
- Chris Martin, Coordinator, Randolph County Economic Development
- Scott Sattler, Executive Director, Perry County Economic Development Authority
- Emily Steele, Executive Director, Perryville Chamber of Commerce
- Don Welge, President, Glister Mary-Lee

Public Informational Meeting

The second public informational meeting for the Chester Bridge Study was held on Tuesday, March 13, 2018 from 4:00 p.m. to 7:00 p.m. at the Perryville Higher Education Center in Perryville, Missouri. More than fifty (50) people attended. Upon entering the meeting, attendees were given a station guide, a comment form, a map of the reasonable alternatives, and a copy of the newsletter if they had not received one in the mail. *A copy of the station guide and reasonable alternative map can be found in Appendices A and B on pages 8 and 9.*

The meeting addressed the Purpose and Need for the study, Reasonable Alternatives for replacing or repairing Chester Bridge, and potential impacts to the community as well as cultural and environmental resources. Informational display boards and aerial maps were available for review throughout the meeting and posted to the study website following the meeting. The public was invited to discuss the study with MoDOT staff and the study team.

Meeting attendees were encouraged to provide their feedback during the event by filling out a hard copy of the comment form, or by completing the online version of the comment form on the iPads provided. *A copy of the comment form can be found in Appendix C on page 10.*

Outreach and Media

To publicize the March public informational meeting, the information was posted on the Study website at http://chesterbridgestudy.com/. The meeting was also promoted on several social media pages and websites including:

- MoDOT's website and Facebook page
- *The Republic Monitor's* website and Facebook page
- *YourNews.com*
- *MyMoInfo.com*

A press advisory was sent out to Chester and Perryville media in the weeks leading to the meeting. Articles/videos announcing the meeting ran on *KFVS*, *KDKZ*, and *WSIL (ABC)* news websites. An article also ran in *The* R*epublic Monitor* prior to the public meeting.

A newsletter announcing the meeting was sent to more than 1,000 individuals who live or work near the study footprint, attended a previous meeting, or subscribed online to be part of the study master mailing list. A flyer announcement was also distributed via email to more than 830 people. *Copies of the newsletter and flyer can be found in Appendices D and E on pages 12 and 16 respectively.*

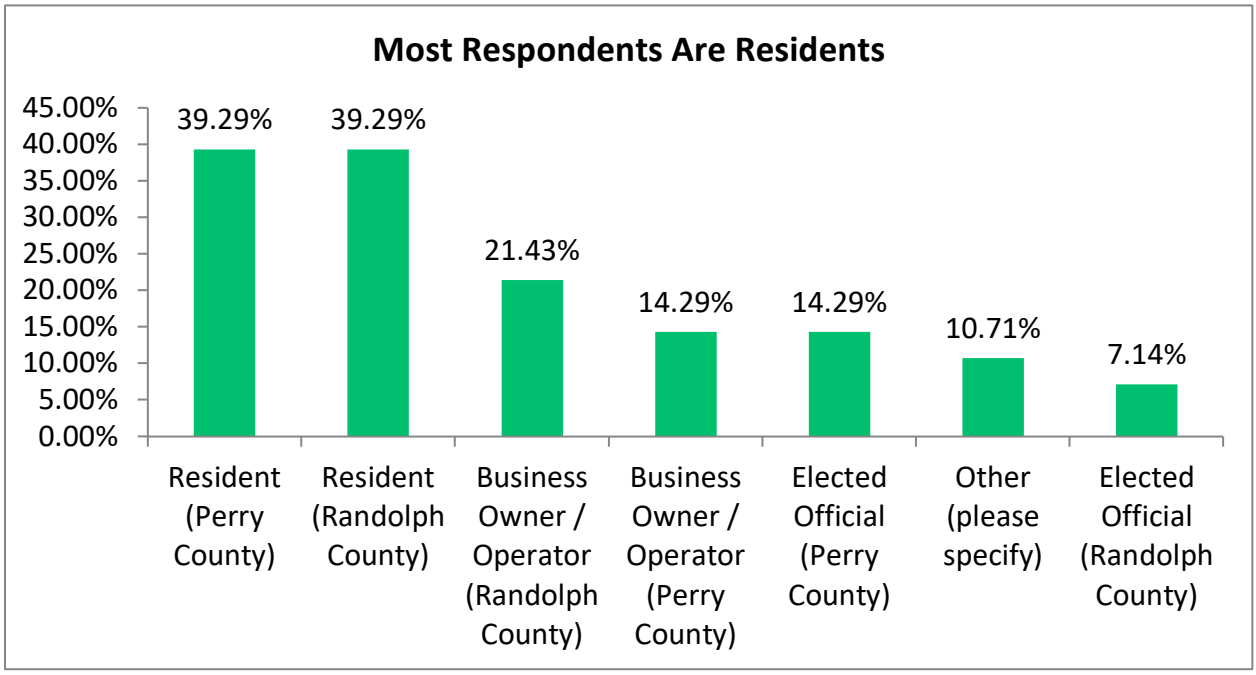
2. Comment Results

A comment form was distributed at the elected officials briefing and the public informational meeting. The form included five questions and asked respondent to give their thoughts on the Reasonable Alternatives, provide demographic information, and indicate how they found out about the meeting. Twenty-eight (28) individuals completed the comment form either in writing or on online. The remainder of this report summarizes the input obtained from the comment form responses.

Describe Yourself

Question: "Which of the following best describes you? Please check all that apply."

Although this question was second on the comment form, it is at the top of this summary section to provide information about the respondents. Knowing the respondents puts their comments into context. There were six options available and the chart below outlines the results.



The majority of respondents, more than seven of ten (78.58%), indicated that they are area residents. Local business owners represented three out of ten respondents (35.72%).

Three (3) responses listed in the "other" category for "which of the following best describes you" were:

- Teacher in Randolph County;
- Work in Perryville often commute to Southern IL.; and
- Tourism.

Respondents were also asked to list the zip code for their selections. The majority (45%) of people who responded live in the Perryville, MO zip code, 63775.

Thoughts on the Reasonable Alternatives

Question: "Please share your thoughts on the Reasonable Alternatives."

A varying number of respondents entered an answer for this question. For each of the Reasonable Alternatives, individuals had the chance to write additional comments pertaining to their thoughts.

Comments for each Reasonable Alternative indicated the following:

- Alternative U-1: Near upstream alternative;
    - **Preferred Alternative (19 – most preferred by respondents)**
    - Not Preferred Alternative (4);
    - Other (2);
- Alternative U-2: Far upstream alternative;
    - Preferred Alternative (8);
    - Not Preferred Alternative (3);

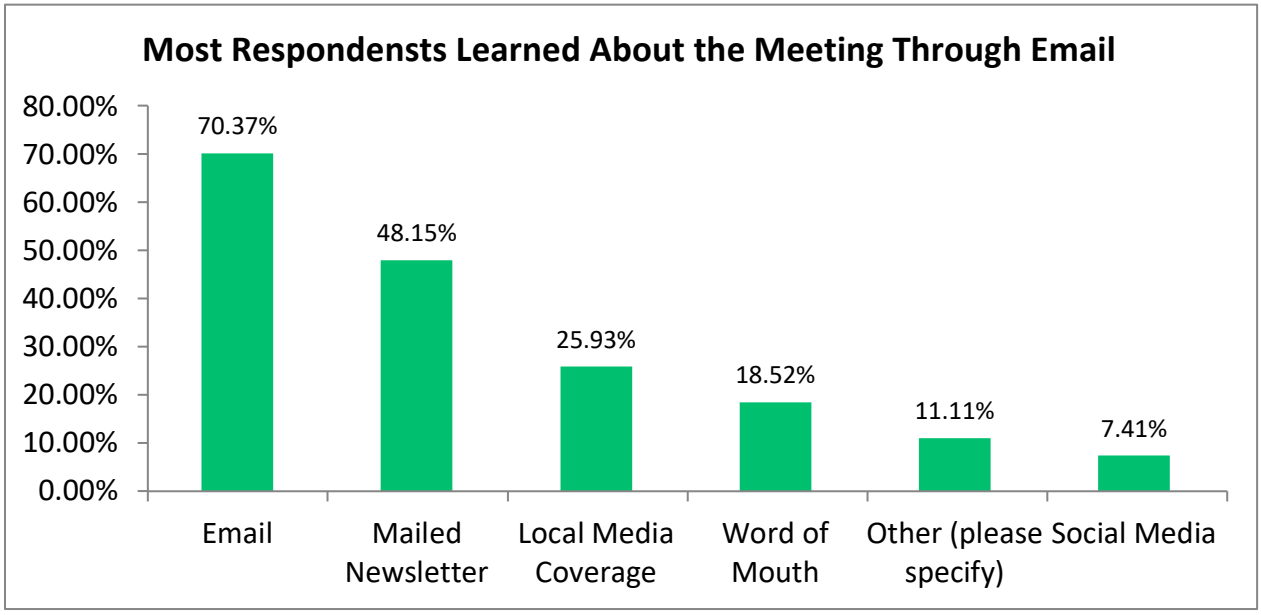
    - Design (3);
    - Cost (2);
    - Other (1); and
- Alternative R-2: Rehabilitates the existing bridge coupled with a new upstream or downstream bridge;
    - Preferred Alternative (3);
    - Not Preferred Alternative (12);
    - Cost (4); and
    - Other (1).

The comments are listed verbatim in Appendix F beginning on page 17.

Public Outreach

Question: "How did you find out about this public open house? Please check all that apply."

Respondents were asked to indicate how they found out about the public informational meeting. They were given six choices including an option for "other" and could select more than one. Their answers are detailed in the following graph.



The emails announcing the public open house were the most reported method of learning about the meeting with a little over seventy percent (70.37%) of respondents, or seven out of ten people, choosing this option. The second and third most selected options included mailed newsletter (48.15%) and local media coverage (25.93%).

In the "other" category, respondents indicated they learned about the public meeting from the:

- Newspapers (2); and
- By clerk (1).

Evaluation of Public Informational Meeting

The fourth question asked attendees to evaluate the public informational meeting. The responses indicated that more than eight out of ten respondents felt the open house was:

- Informative (88.89%);
- Well-planned (81.48%); and
- Worth their time (92.59%).

Additional Comments

Respondents were provided space to write any additional comments they wished to share about the Chester Bridge Study. Sixteen (16) individuals wrote additional comments.

Topics frequently mentioned in the additional comments include the following:

- Appreciation for the open house (11);
- Comments pertaining to the Reasonable Alternatives (3); and
- Comments about traffic (2).

The additional verbatim comments from the comment forms are listed by category in Appendix G on page 20.

Conclusion

The elected officials briefing and public informational meeting for the Chester Bridge Study provided a forum for regional residents, commuters, business owners, and property owners to: learn more about the study; meet with study team members; and provide input. Approximately 50 people attended the meetings and 28 attendees (56%) provided input via the comment form.

The comments received indicate that the majority of the meeting attendees reside in the study area and most learned about the event through an email. The Reasonable Upstream Alternative – 1 (U-1) was most commented on and preferred by respondents.

Open House #2
Station Guide

CHESTER bridge
Route 51 / Environmental Study

Welcome! Thank you for attending tonight's Open House. The following guide is an overview of the information presented at each station. Project team members are available at every station to answer your questions.

Station #1 - Introduction to the Chester Bridge EA: This station provides an introduction to the Chester Bridge Environmental Assessment (EA) and describes the Study Area.

Station #2 - Purpose and Need: Here you can review the purpose and need identified for the Chester Bridge Study.

Station #3 - Conceptual Alternatives: This station presents the broad range of alternatives considered for the study as well as potential bridge types that might be suitable for this crossing.

Station #4 - Conceptual Alternatives Screening: Here you can review the Conceptual Alternatives screening criteria as well as the US Coast Guard navigation requirements.

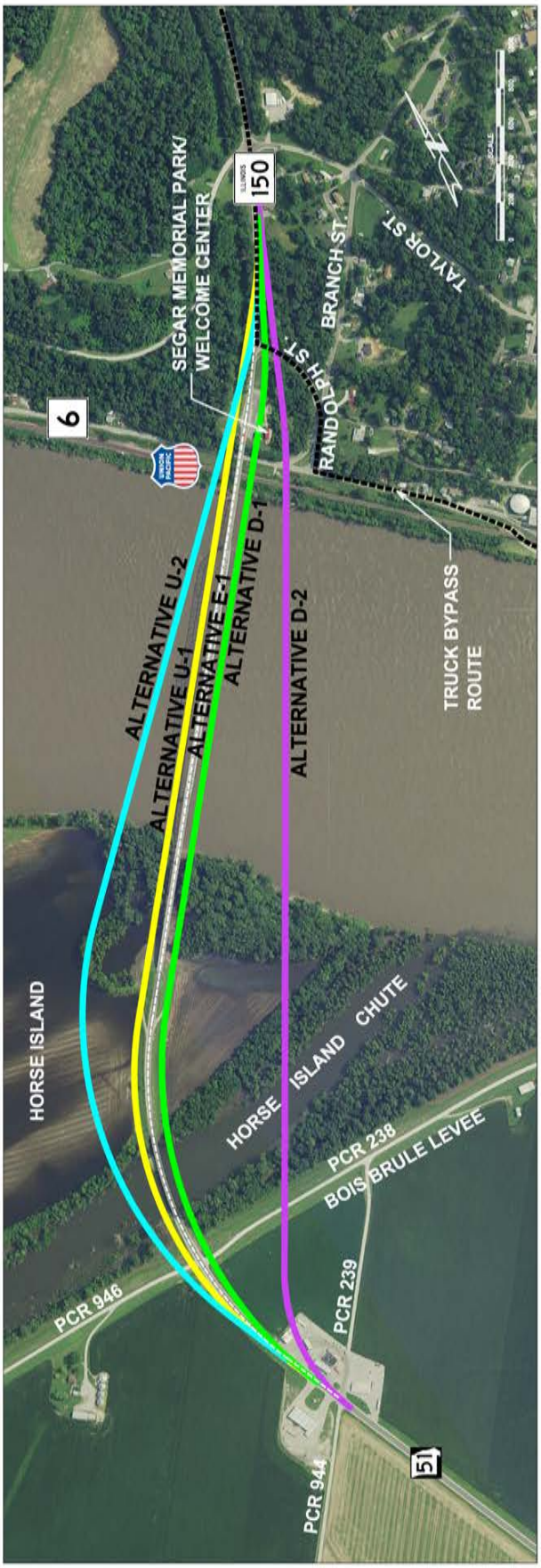
Station #5 - Reasonable Alternatives: At this station you will learn the definition and types of alternatives currently being studied, including the Reasonable Alternatives (alternatives that will be studied further) for rehabilitation or replacement of the Chester Bridge.

Station #6 - Next Steps: This station outlines the Missouri Department of Transportation's (MoDOT) summer maintenance project and the anticipated schedule.

MoDOT

To learn more visit **www.ChesterBridgeStudy.com**

APPENDIX B – Reasonable Alternatives Map



Comment Form

CHESTER bridge
Route 51 / Environmental Study

Chester Bridge Study
Public Open House
March 13, 2018

COMMENT FORM

Thank you for completing this comment form. Your input will help inform the Chester Bridge Study team's future activities and decision-making.

1. Please share your thoughts on the Reasonable Alternatives.

A. Alternative U-1: Near upstream alternative

_____

_____

_____

B. Alternative U-2: Far upstream alternative

_____

_____

_____

C. Alternative R-2: Rehabilitates the existing bridge coupled with a new upstream or downstream bridge

_____

_____

_____

2. Which of the following best describes you? Please check all that apply.

____ Resident (Perry County)	____ Business Owner / Operator (Perry County)	____ Elected Official (Perry County)
____ Resident (Randolph County)	____ Business Owner / Operator (Randolph County)	____ Elected Official (Randolph County)

____ Other: _____ Zip Code: _____

(Additional Questions on Back)

5. Please evaluate this event according to the following, circle your answers...

A. The Open House was:

Informative				Uninformative
1	2	3	4	5

B. In general the Open House was:

Well Planned				Unorganized
1	2	3	4	5
Worth My Time				Waste of Time
1	2	3	4	5

6. Additional comments:

THANK YOU!

Newsletter 2

CHESTER bridge
Route 51 / Environmental Study

NEWS

Issue #2 - Spring 2018

Your Input Needed at Second Open House

At the first public meeting in August of 2017, the Chester Bridge Study team presented a wide range of potential alternatives for the public to review. Based on the feedback received and additional analysis, the study team now needs the public's feedback and input on the narrowed range of alternatives. These alternatives will be presented at the second Public Open House *(see details below)*.

Located southwest of Chester, Illinois, and northeast of Perryville, Missouri, the Chester Bridge (Route 51) is the only connection for motorists across the Mississippi River between St. Louis and Cape Girardeau. The Chester Bridge Study is an Environmental Assessment that is investigating and identifying improvements needed to develop a safe and reliable Route 51 crossing of the Mississippi River. The purpose of this study is to improve the reliability and functionality of the crossing.

After defining the Purpose and Need for the Chester Bridge Study, the alternatives development process began with identifying a wide range of initial alternatives that could potentially address the transportation needs established by the study. These initial alternatives, called Conceptual Alternatives, were developed with consideration of existing planning goals, public involvement, potential environmental impacts, and engineering design standards. The Conceptual Alternatives that are determined to satisfy the study's Purpose and Need and pass other key screening criteria are referred to as Reasonable Alternatives. Recently, the Reasonable Alternatives for repairing or replacing the Chester Bridge were approved by the Missouri Department of Transportation (MoDOT), the Illinois Department of Transportation (IDOT), the Federal Highway Administration (FHWA), and other resource agencies.

PUBLIC OPEN HOUSE

Come learn about the Reasonable Alternatives for the Chester Bridge Study and the study's progress. Ask questions and provide your feedback at the second Public Open House!

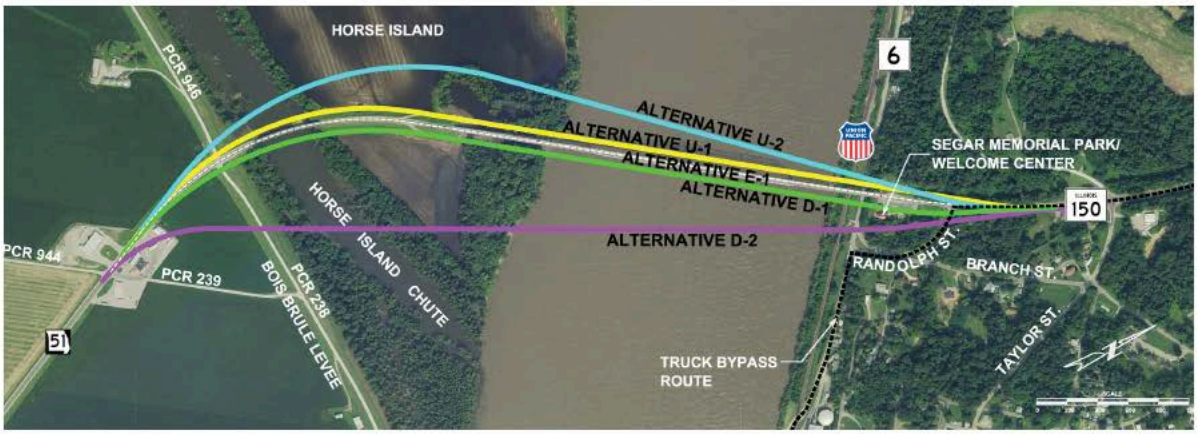
Tuesday, March 13, 2018 / 4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

Perryville Higher Education Center*
108 South Progress Drive / Perryville, MO 63775
**This facility is ADA accessible.*

MoDOT

To learn more visit **www.ChesterBridgeStudy.com**

Conceptual Build Alternatives



In addition to the Conceptual Build Alternatives (pictured above) and the No-Build Alternative presented at the first Public Open House, two rehabilitation alternatives are also being considered and will be presented at the second Public Open House. Both include rehabilitating the existing bridge while maintaining its historic integrity, as follows:

- Alternative R-1 rehabilitates the existing bridge as a standalone alternative.
- Alternative R-2 rehabilitates the existing bridge as one-way lanes for either eastbound or westbound traffic, coupled with a new upstream or downstream bridge for traffic traveling the alternate direction.

Historic Aspects of Bridge and Potential Rehabilitation

The Chester Bridge is eligible for the National Register of Historic Places under criteria C for local significance in engineering. In September of 2017, MoDOT advertised the bridge as available for relocation or reuse by others.

Investigations have begun related to the ability to rehabilitate the existing bridge without affecting the historical integrity of the bridge. To maintain a high degree of integrity through rehabilitation, the bridge must retain – to a significant degree – at least five of the following seven characteristics from its original design, which convey its historical significance: setting, materials, design, location, workmanship, feeling, and association.

The work required to reach an additional 50 years of unrestricted operation requires complete disassembly of the bridge, rehabilitation or replacement of bridge components (depending on condition and materials), and reassembly of the bridge's main structure. This process would require the closing of the existing bridge for approximately two years and includes replacing an estimated 90% of rivets and bolts, steel replacement, and repairing the substructure elements including piers and abutments.

Summer 2018 Maintenance

Although the Chester Bridge (Route 51) over the Mississippi River is safe and structurally sound, the bridge deck needs maintenance and repair.

Through a cost share between MoDOT and the State of Illinois, the bridge will receive preventative maintenance, which will include patching and sealing the bridge deck. These repairs are included in an estimated $1.5 million contract to be put out for bid in April 2018. If the Missouri Highways and Transportation Commission awards a contract for the project in May 2018 as anticipated, work could begin as early as summer 2018.

Once work is underway, traffic will be reduced to one lane with temporary signals in place. Flaggers will be present in the morning and evening to help reduce back-ups. Additional scheduling will take place once the project is awarded to a contractor.

Despite the repairs that will be made to the bridge deck, this is only a short-term solution. The purpose of the Chester Bridge Study is to determine a long-term solution to the poor condition of the bridge.

Study Timeline

How to Get Involved

Recognizing the value that the community brings to the transportation planning process, the study team will continue to employ several tools to ensure the public has a variety of opportunities to be involved in the Chester Bridge Study. The study's Public Involvement Program will be guided by both the National Environmental Policy Act's (NEPA) requirements for public involvement and MoDOT's public engagement policies. The approach to this study will help ensure the recommended improvements to Chester Bridge balance costs, safety, commuter needs, environmental impacts and the study's goals. Public involvement is critical to this approach and helps build awareness and understanding. Your input will play an important role in providing guidance toward the study's outcome.

To learn more or provide your input:

- Visit the study website at **www.ChesterBridgeStudy.com**
- Sign-up for the study mailing list on the website
- Attend a public meeting
- Call 1-888-ASK-MoDOT (275-6636)

CHESTER bridge

c/o Vector Communications
The Power House Building
401 S. 18th Street, Suite 325
St. Louis, MO 63103

You're Invited . . .

PUBLIC OPEN HOUSE

Tuesday, March 13, 2018
4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

Perryville Higher Education Center*
108 South Progress Drive / Perryville, MO 63775

**This facility is ADA accessible.*

DETAILS INSIDE!

MoDOT

To learn more visit www.ChesterBridgeStudy.com

Flyer

CHESTER bridge

Route 51 / Environmental Study

You're Invited . . .

PUBLIC OPEN HOUSE

Tuesday, March 13, 2018

4:00 p.m. - 7:00 p.m.

(Stop by anytime - no formal presentation)

Perryville Higher Education Center*

108 South Progress Drive / Perryville, MO 63775

**This facility is ADA accessible.*

We need your input!

At the first public meeting in August of 2017, the Chester Bridge Study team presented a wide range of potential alternatives for the public to review. Based on the feedback received and additional analysis, the study team now needs the public's feedback and input on the narrowed range of alternatives. These Reasonable Alternatives will be presented at the second Public Open House *(see details above)*.

Located southwest of Chester, Illinois, and northeast of Perryville, Missouri, the Chester Bridge (Route 51) is the only connection for motorists across the Mississippi River between St. Louis and Cape Girardeau. The Chester Bridge Study is an Environmental Assessment that is investigating and identifying improvements needed to develop a safe and reliable Route 51 crossing of the Mississippi River. The purpose of this study is to improve the reliability and functionality of the crossing.

Come learn about the Reasonable Alternatives for the Chester Bridge Study and provide your feedback at the second Public Open House!

To learn more, visit **www.ChesterBridgeStudy.com**

Reasonable Alternative Comments

Verbatim Responses for Alternative U-1	Categories
A. I think Ul is a very good alternative since it is least disruptive to traffic flow on the Illinois side, and I think it appears less expensive than the other alternatives to construct since it is only 75 ft. north of the present bridge and will cause less drilling in order to bring the bridge road back onto the highway that now exists, and I think it would also cost less to bring the bridge back onto Missouri highway 51 on the Missouri side. The only question I have head is if there would be much congestion where the bridge intersects highway 51 and traffic to the gas stations.	Preferred
Preference	Preferred
Best solution	Preferred
Probable, best working plan	Preferred
This is okay with me Yellow line rebuild new bridge. Tear down current bridge.	Preferred
I think this would work!	Preferred
Best	Preferred
U-1 seems like the best alternative, shortest distance and least impact	Preferred
Probably the best option. Eliminates the sharp curve coming off the bridge on the Missouri side. Need to provide some kind of additional access to farm land and river.	Preferred
I prefer this option but design should be careful to not put too much pressure on levee.	Preferred
Seems like the most logic alternative. Ensures safety for all who uses the bridge.	Preferred
Preferred alignment. This alternative seems to have the least impact on existing landmarks.	Preferred
Best alternative for improvement	Preferred
Seems to be the best alternatives to me.	Preferred
My choice	Preferred
(Circle this alternative on the physical paper)	Preferred
(Circled this alternative ion physical paper)	Preferred
Only Choice	Preferred
Support	Preferred
No	Not Preferred
No	Not Preferred
No - Preserve current bridge	Not Preferred
Not viable unless old bridge is no longer need - U-1 okay of total 2 way	Not Preferred
Most near to the footprint of existing bridge; satisfies performance criteria	Location
Looks to be most expensive with biggest problems to got to horse island	Cost

Verbatim Responses for Alternative U-2	Categories
Okay	Preferred
Best choice, a totally new bridge with plenty of distance between piers	Preferred
Best choice is a totally new bridge.	Preferred
I find that this is the optimum choice in that the traffic flow and disruption of current traffic and business flow	Preferred
Looks to be best plan with least amount of disturbance to flow crossing the bridge	Preferred
I think this would work!	Preferred
Seems ok	Preferred
Support	Preferred
2nd best	Second Preference
No - Preserve current bridge	Not Preferred
Not recommended. This alternative seems to have a greater impact on existing landmarks than alt u1	Not Preferred
out	Not Preferred
Concern with the curve coming off the bridge on the Missouri side. Otherwise an ok option.	Design
This appears to be a good alternative, but I believe it would take more work across horse island for the construction	Design
Is viable if road bed ((illegible)) 51) is higher than it is now will also eliminate horse chute bridge	Design
B. Alternative U-2, while not bad, I believe would be more expensive to construct on both the Illinois and Missouri sides.	Cost
U-2 cuts into field on Horse Island and is a longer route to bridge. Looks as though it would cost more	Cost

Verbatim Responses for Alternative R-2	Categories
I like this idea in that the historic value of the bridge is retained and that 4-lane traffic would then become a viable option for the area	Preferred
I would like to see this alternative. This bridge is part of Chester History	Preferred
Perfect - restores historic bridges, keeps route more closely to original	Preferred
No. Too expensive. Someday would have to replace it anyway.	Not Preferred
Would be a lot of disruption in the short and long run. I feel it would cost more in the long run. There would still be a problem with the narrow lanes on the old bridge.	Not Preferred
It will still be an old bridge with high maintenance, waste, and narrow lanes	Not Preferred
No, the bridge will still have narrow lanes	Not Preferred
Man! I feel like this is a Band-Aid and not the best option.	Not Preferred
Will not work	Not Preferred
R-2 does not fix some of the major issues also does not meet clearance requirements	Not Preferred
Not a good alternative. Two bridges with different maintenance requirements and overall conditions. Different spans for boats to cross under will make river traffic difficult.	Not Preferred
I believe that two bridges this location with both be undesirable to see and still leaves the old bridge to maintain.	Not Preferred
I would not like to see this chosen as the final project. If work is going to be put into constructing a new bridge, I would like to see the old bridge removed completely.	Not Preferred
out	Not Preferred
Not in favor!	Not Preferred
Interesting idea I would like to see discussed more	Need additional details
this alternative is attractive since our present bridge is a very attractive bridge and this would give you more capacity to cross the Mississippi. The disadvantage is it would cost considerably more construction money.	Cost
Would love this as it keeps the historic bridge and accomplishes the care that has gone undone for years, but am concerned with the cost of this alternative	Cost
Would be a great plan if funds would be available with the U-2 alternative	Cost
could be okay - but require both (2) Horse Chute bridge and continued maintenance of old bridge - costly and possible short lived	Cost

Additional Comments

Verbatim Responses	Categories
We are very effected by the bridge and are happy it is being repaired, even before construction takes place on a new bridge, since we have several hundred people and trucks crossing the bridge daily, employees that either live in Missouri and work in Illinois or vice versa. The same is true regarding a number of other employers. Please let us know if we can be of further help.	Appreciated Open House
Obviously very important. Should get done just as soon as possible.	Appreciated Open House
You have kept me updated well!	Appreciated Open House
Good Job	Appreciated Open House
Good job	Appreciated Open House
The bridge project is a much-needed project for the area it will solve huge problems that occur with the flooding as of late.	Appreciated Open House
Thank you!	Appreciated Open House
Representatives were well informed and honest about the process. I feel better informed about the possibilities and hope to see the best outcome for both states	Appreciated Open House
Need this project.	Appreciated Open House
Hard to hear with others talking in room, but very well done. Thank you for your efforts.	Appreciated Open House
Thank you for your time.	Appreciated Open House
12' 1 lane plus 10' shoulder would be great rather have 10' shoulder for moving farm equipment across. Prefer 2 lanes each way with shoulder but totally understand the extra cost. Also would like 2 lanes each way from Chester to the river, but totally understand all that cost, dirt, work etc... Thanks	Reasonable Alternative
Provide more detailed information regarding the current Bois Brule Flood wall and how those alternatives that omit the man will accomplish that. Thanks and keep up the work!	Reasonable Alternative
Staff was very helpful informative Any closure of a way crossing is totally unacceptable! alternatives U-2 or U-1 preferred D-1. Looks to me like the decision has already pretty much been made revamp/repair old bridge coupled with U-1 that's okay But we cannot live with closures of a way to cross	Reasonable Alternative
I think a bike path across the bridge would be great! This community is way too unhealthy. Is there anything in place to address increased volume of the Rte. 3 intersection in Chester? That intersection is a nightmare in high traffic times. I would guess traffic would increase with a new bridge.	Traffic
Please keep in mind if traffic has to stop going across bridge, please do not do from June 20 - July 10th. This would impact the many firework business and tax money.	Traffic

Project Newsletters

CHESTER bridge
Route 51 / Environmental Study

NEWS

Issue #1 - Summer 2017

Your Input Needed at First Open House

More than 1,000 community members completed the initial Chester Bridge Study survey online earlier this summer. Now the study team needs the public's feedback on the purpose and need and conceptual alternatives for repairing or replacing the bridge at the first Public Open House (*see details below*).

Located southwest of Chester, Illinois, and northeast of Perryville, Missouri, the Chester Bridge (Route 51) is the only connection for motorists across the Mississippi River between St. Louis, Missouri to the north, and Cape Girardeau, Missouri to the south. Over the course of seven decades, the Chester Bridge has become less functional for modern vehicles. The bridge is now in poor condition and too narrow by today's design standards. Thus the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting an environmental study of the bridge. The goal of this study is to develop a safe and reliable Route 51 river crossing.

Currently an average of 6,500 vehicles a day, including commuters, travel the bridge. Route 51 is also a major route for semi-trucks transporting goods. The initial phase of the study primarily consists of data gathering. The study will take approximately two years to complete, ending in spring 2019.

Come learn about the purpose and need and conceptual alternatives for the Chester Bridge Study and provide your feedback at the first Public Open House!

PUBLIC OPEN HOUSE

Thursday, August 24, 2017
4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

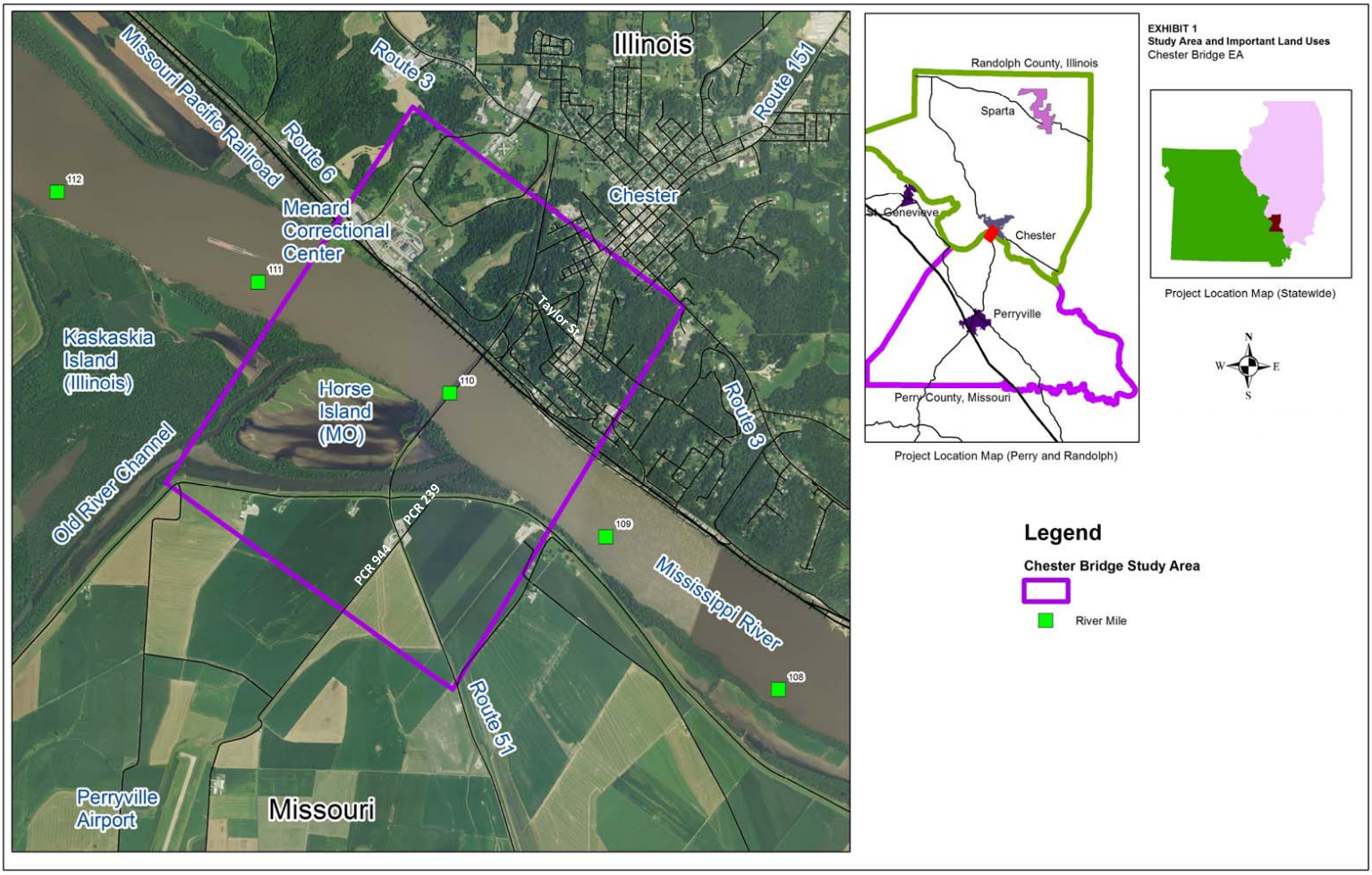
Chester High School Cafeteria*
1940 Swanwick St.
Chester, IL 62233

**This facility is ADA accessible.*

MoDOT

To learn more visit **www.ChesterBridgeStudy.com**

Study Area Map



Community Advisory Group

As part of the environmental process, the study team has established a Community Advisory Group (CAG). The CAG is comprised of a diverse range of stakeholders who will assist the study team throughout the process. The study team will look to CAG members to give input on behalf of the stakeholder groups that they represent, to review information and study findings, and to help get information to the general public. The role of the CAG is to advise MoDOT and FHWA. MoDOT and FHWA will ultimately make the final decision on how best to create a safe and reliable Mississippi River crossing.

The first meeting of the CAG was held on Wednesday, July 19 at the Chester Public Library. Twelve members of the group were in attendance along with the project team and local media outlets. The CAG meetings are open to the public but intended for one-on-one dialogue between the study team and the CAG. Other stakeholders are welcome to observe during the meeting and the study team members will be available afterwards for any discussions with non-CAG stakeholders. It is expected that the CAG will meet four times over the course of the study.

Frequently Asked Questions

1. Why conduct an environmental study of the Chester Bridge?

The bridge is being studied because it is too narrow for current standards and in poor structural condition. As such, it must follow the National Environmental Policy Act (NEPA) guidelines, which requires that all options must be evaluated including, in this case, leaving the bridge as is.

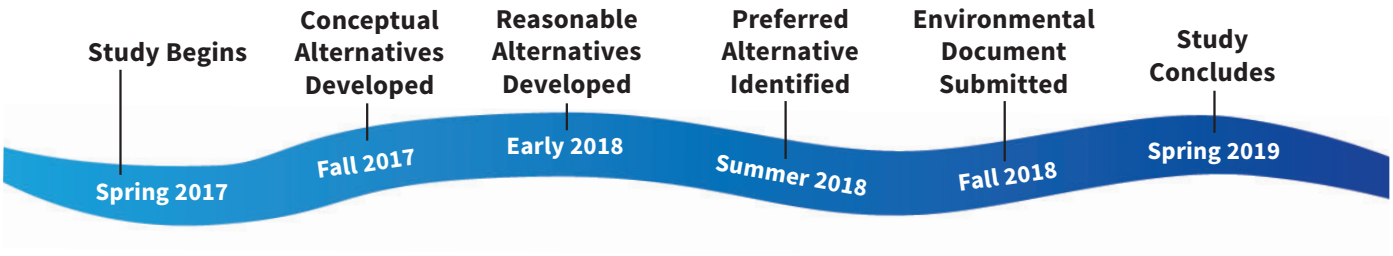
2. What is the purpose of this environmental study?

The study will determine a preferred alternative for the bridge and will take into consideration cost, safety, roadway connections, and cultural and environmental impacts.

3. If it is decided that a new bridge needs to be built, is there money for construction?

No. Currently the Missouri and Illinois Departments of Transportation have not established funding for a new bridge. However, conducting this study will help move the project forward when federal construction funds become available.

4. How long will the study take to complete?



How to Get Involved

Recognizing the value the community brings to the transportation planning process, the study team will employ several tools to ensure the public has a variety of opportunities to be involved in the Chester Bridge Study. The study's Public Involvement Program will be guided by both the National Environmental Policy Act's (NEPA) requirements for public involvement and MoDOT's public engagement policies. The approach to this study will help ensure the recommended improvements to Chester Bridge balance costs, safety, commuter needs, environmental impacts and the study's goals. Public involvement is critical to this approach and helps build awareness and understanding. Ultimately, your input will play an important role in providing guidance toward the study's final outcome.

To learn more or provide your input:

- Visit the study website at **www.ChesterBridgeStudy.com**
- Sign-up for the study mailing list on the website
- Attend a public meeting
- Call 1-888-ASK-MoDOT (275-6636)

CHESTER bridge
Route 51 / Environmental Study

c/o Vector Communications
The Power House Building
401 S. 18th Street, Suite 325
St. Louis, MO 63103

You're Invited . . .

PUBLIC OPEN HOUSE

Thursday, August 24, 2017
4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

Chester High School Cafeteria*
1940 Swanwick St. / Chester, IL 62233

**This facility is ADA accessible.*

DETAILS INSIDE!

To learn more visit

CHESTER bridge
Route 51 / Environmental Study

NEWS

Issue #2 - Spring 2018

Your Input Needed at Second Open House

At the first public meeting in August of 2017, the Chester Bridge Study team presented a wide range of potential alternatives for the public to review. Based on the feedback received and additional analysis, the study team now needs the public's feedback and input on the narrowed range of alternatives. These alternatives will be presented at the second Public Open House (*see details below)*.

Located southwest of Chester, Illinois, and northeast of Perryville, Missouri, the Chester Bridge (Route 51) is the only connection for motorists across the Mississippi River between St. Louis and Cape Girardeau. The Chester Bridge Study is an Environmental Assessment that is investigating and identifying improvements needed to develop a safe and reliable Route 51 crossing of the Mississippi River. The purpose of this study is to improve the reliability and functionality of the crossing.

After defining the Purpose and Need for the Chester Bridge Study, the alternatives development process began with identifying a wide range of initial alternatives that could potentially address the transportation needs established by the study. These initial alternatives, called Conceptual Alternatives, were developed with consideration of existing planning goals, public involvement, potential environmental impacts, and engineering design standards. The Conceptual Alternatives that are determined to satisfy the study's Purpose and Need and pass other key screening criteria are referred to as Reasonable Alternatives. Recently, the Reasonable Alternatives for repairing or replacing the Chester Bridge were approved by the Missouri Department of Transportation (MoDOT), the Illinois Department of Transportation (IDOT), the Federal Highway Administration (FHWA), and other resource agencies.

PUBLIC OPEN HOUSE

Come learn about the Reasonable Alternatives for the Chester Bridge Study and the study's progress. Ask questions and provide your feedback at the second Public Open House!

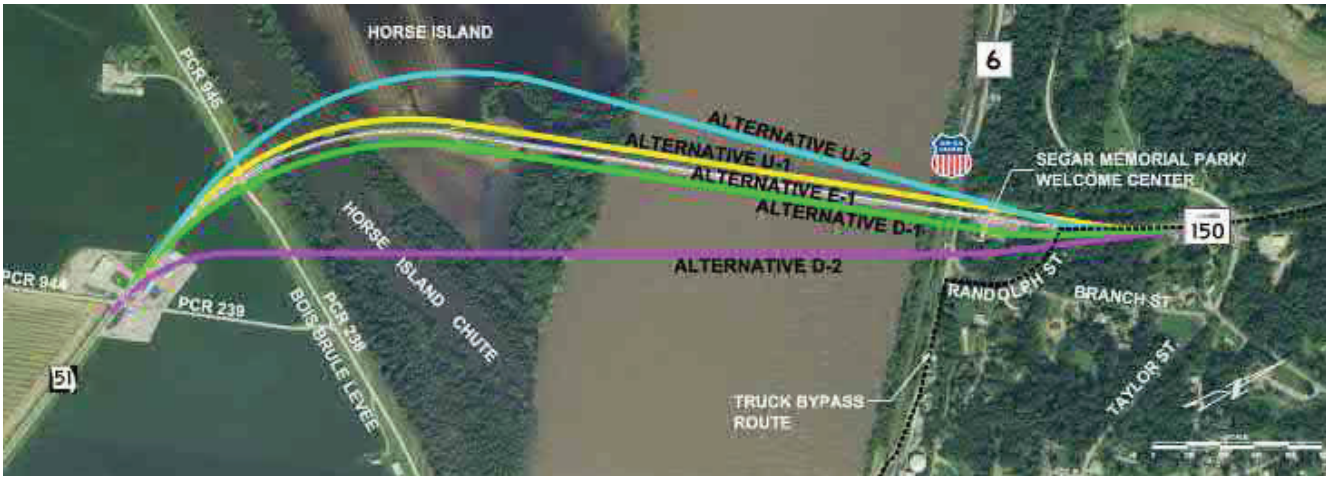
Tuesday, March 13, 2018 / 4:00 p.m. - 7:00 p.m.
(Stop by anytime - no formal presentation)

Perryville Higher Education Center*
108 South Progress Drive / Perryville, MO 63775
**This facility is ADA accessible.*

MoDOT

To learn more visit **www.ChesterBridgeStudy.com**

Conceptual Build Alternatives



In addition to the Conceptual Build Alternatives (pictured above) and the No-Build Alternative presented at the first Public Open House, two rehabilitation alternatives are also being considered and will be presented at the second Public Open House. Both include rehabilitating the existing bridge while maintaining its historic integrity, as follows:

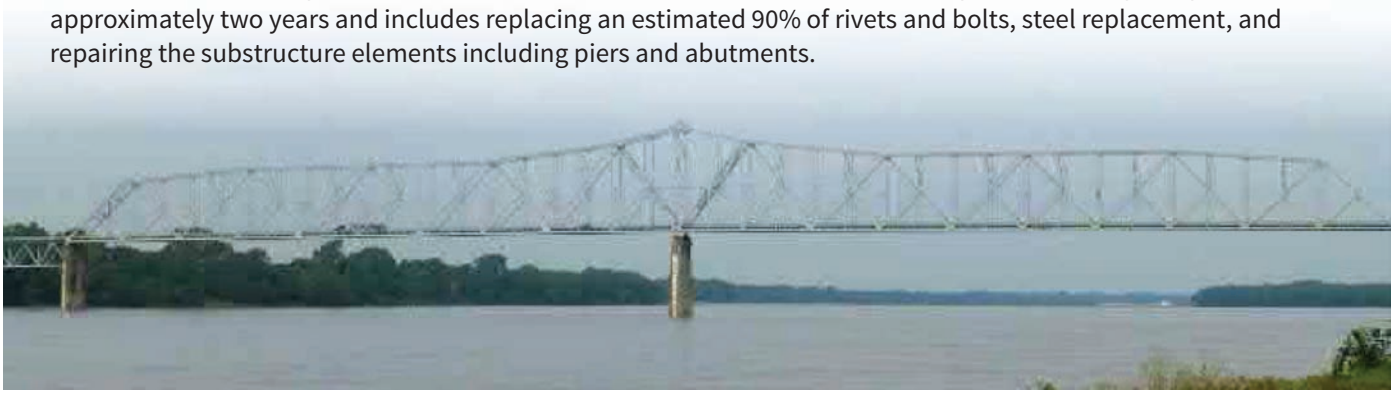
- Alternative R-1 rehabilitates the existing bridge as a standalone alternative.
- Alternative R-2 rehabilitates the existing bridge as one-way lanes for either eastbound or westbound traffic, coupled with a new upstream or downstream bridge for traffic traveling the alternate direction.

Historic Aspects of Bridge and Potential Rehabilitation

The Chester Bridge is eligible for the National Register of Historic Places under criteria C for local significance in engineering. In September of 2017, MoDOT advertised the bridge as available for relocation or reuse by others.

Investigations have begun related to the ability to rehabilitate the existing bridge without affecting the historical integrity of the bridge. To maintain a high degree of integrity through rehabilitation, the bridge must retain – to a significant degree – at least five of the following seven characteristics from its original design, which convey its historical significance: setting, materials, design, location, workmanship, feeling, and association.

The work required to reach an additional 50 years of unrestricted operation requires complete disassembly of the bridge, rehabilitation or replacement of bridge components (depending on condition and materials), and reassembly of the bridge's main structure. This process would require the closing of the existing bridge for approximately two years and includes replacing an estimated 90% of rivets and bolts, steel replacement, and repairing the substructure elements including piers and abutments.



Summer 2018 Maintenance

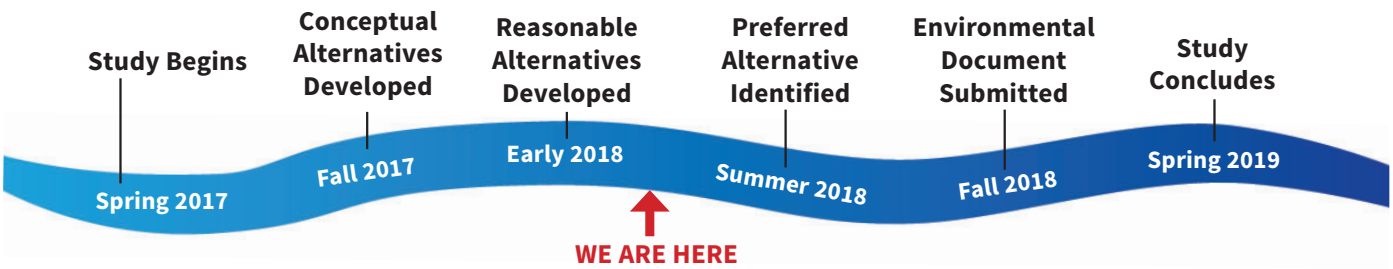
Although the Chester Bridge (Route 51) over the Mississippi River is safe and structurally sound, the bridge deck needs maintenance and repair.

Through a cost share between MoDOT and the State of Illinois, the bridge will receive preventative maintenance, which will include patching and sealing the bridge deck. These repairs are included in an estimated $1.5 million contract to be put out for bid in April 2018. If the Missouri Highways and Transportation Commission awards a contract for the project in May 2018 as anticipated, work could begin as early as summer 2018.

Once work is underway, traffic will be reduced to one lane with temporary signals in place. Flaggers will be present in the morning and evening to help reduce back-ups. Additional scheduling will take place once the project is awarded to a contractor.

Despite the repairs that will be made to the bridge deck, this is only a short-term solution. The purpose of the Chester Bridge Study is to determine a long-term solution to the poor condition of the bridge.

Study Timeline



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To learn more or provide your input:

- Visit the study website at **www.ChesterBridgeStudy.com**
- Sign-up for the study mailing list on the website
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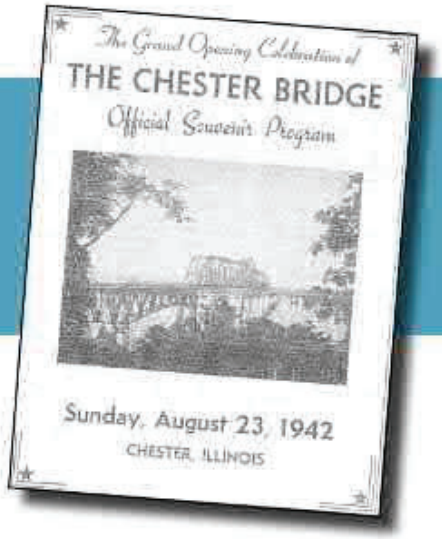
Fact Sheets

CHESTER bridge

Route 51 / Environmental Study

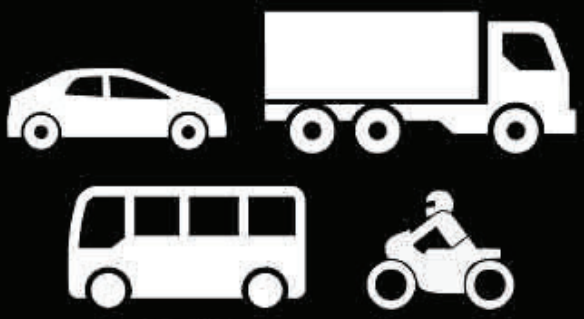
FACT SHEET

Opened in **1942**, Chester Bridge is the only vehicular bridge crossing the Mississippi River between St. Louis and Cape Girardeau



Connects MISSOURI 51 **with** ILLINOIS 150

An average of **6,500** vehicles cross the bridge daily



Roughly **25%** of crossings are trucks or agricultural equipment

MoDOT says the bridge is safe, but is in **poor** condition and too narrow by today's design standards

The **environmental study** will investigate alternatives for providing a safe and reliable river crossing

To learn more visit **www.ChesterBridgeStudy.com**

MoDOT

Elected Official Invitations

March 2, 2018

Alderman Ray Allison
Alderman - Ward 4
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Allison:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

The Chester Bridge Study team continues to look to elected officials to give input on behalf of the constituents they represent, to review information and study findings, and to help get information to the general public.

We are pleased to announce that the second Chester Bridge elected official's briefing is set for Tuesday, March 13th from 1:30 pm to 3:00 pm. The main purpose of the meeting will be to present the project's Reasonable Alternatives that will be carried forward for further analysis. The project's Preferred Alternative, which will be selected later this year, will be selected from these Reasonable Alternatives.

The second elected officials briefing will be held on:

Tuesday, March 13, 2018 / 1:30 p.m. - 3:00 p.m.
Perryville Higher Education Center
108 South Progress Drive
Perryville, MO 63775

Please RSVP by Friday, March, 9th to Mandi Voegele at mvoegele@vectorstl.com or 314-621-5566.

Following the briefing, a Public Open House will be held at the same location from 4:00 p.m. to 7:00 p.m. A flyer for that meeting is enclosed for your reference.

We look forward to seeing you.

Sincerely,

Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Ken Baer
Mayor
City of Perryville
City Hall, 215 N. West Street
Perryville, MO 63775

Dear Mayor Baer:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman D. Michael Blechle
Alderman - Ward 4
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Blechle:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Roy Blunt
U.S. Senator
U.S. Senate
260 Russell Senate Office Building
Washington, DC 20510

Dear Senator Blunt:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Roy Blunt
U.S. Senator
United States Senate
7700 Bonhomme Ave #315
St. Louis, MO 63105

Dear Senator Blunt:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Michael Bost
Congressman (D-12)
Illinois House of Representatives
300 E Main St #4
Carbondale, IL 62901

Dear Congressman Bost:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Curt Buerck
Alderman - Ward 2
Perryville Board of Aldermen
1306 Old St. Mary's Road
Perryville, MO 63775

Dear Alderman Buerck:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman David Chumer
Alderman - Ward 3
Perryville, MO
1308 Big Springs Blvd.
Perryville, MO 63775

Dear Alderman Chumer:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Donnie Clark
Alderman - Ward 2
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Clark:

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Jerry Costello II
State Representative D-116
Illinois House of Representatives
200-9S Stratton Office Building
Springfield, IL 62706

Dear Representative Costello II:

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderwoman Nancy Crossland
Ward 1 Alderman
City of Chester
1 Taylor Street
Chester, IL 62233

Dear Alderwoman Crossland:

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Tammy Duckworth
Senator
United States Senate
8 South Old State Capitol Plaza
Springfield, IL 62701

Dear Senator Duckworth:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Dick Durbin
Senator
United States Senate
250 W. Cherry Street
Springfield, IL 62901

Dear Senator Durbin:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Kevin Engler
State Representative D-116
Missouri House of Representatives
201 West Capitol Ave, Rm 313-3
Jefferson City, MO 65101

Dear Representative Engler:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

The Chester Bridge Study team continues to look to elected officials to give input on behalf of the constituents they represent, to review information and study findings, and to help get information to the general public.

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The second elected officials briefing will be held on:

Tuesday, March 13, 2018 / 1:30 p.m. - 3:00 p.m.
Perryville Higher Education Center
108 South Progress Drive
Perryville, MO 63775

Please RSVP by Friday, March, 9th to Mandi Voegele at mvoegele@vectorstl.com or 314-621-5566.

Following the briefing, a Public Open House will be held at the same location from 4:00 p.m. to 7:00 p.m. A flyer for that meeting is enclosed for your reference.

We look forward to seeing you.

Sincerely,

Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Rick Francis
State Representative D-145
Missouri House of Representatives
201 West Capitol Ave, Rm 115-I
Jefferson City, MO 65101

Dear Representative Francis :

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Dan Geisen
Alderman - Ward 1
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Geisen:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Susan Grotts
Senator Dick Durbin's Office
250 W. Cherry Street
Springfield, IL 62901

Dear Ms. Grotts:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Tom Guth
Alderman - Ward 1
Perryville, MO
530 Mecker Rd.
Perryville, MO 63775

Dear Alderman Guth:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Leslie Herbst
Congressman Jason Smith's Office
2502 Tanner Drive Suite 205
Cape Girardeau, MO 63703

Dear Ms. Herbst:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Patsie Hopkins
District Office Administrator
Illinois House of Representatives - Office of Jerry Costello II
200-9S Stratton Office Building
Springfield, IL 62706

Dear Ms. Hopkins:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Prince Hudson
Alderman - Ward 3
Perryville, MO
123 Zeno St.
Perryville, MO 63775

Dear Alderman Hudson:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Carl "Topper" Leuckel
Presiding Commissioner
Perry County Commission
321 N Main St. Suite 2
Perryville, MO 63775

Dear Commissioner Leuckel:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Donna Lichtenegger
State Representative D-146
MO. House of Representatives
201 West Capitol Avenue
Jefferson City, MO 65101

Dear Representative Lichtenegger:

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Doug Martin
Alderman - Ward 2
Perryville Board of Aldermen
907 Elliot Court Perryville
Perryville, MO 63775

Dear Alderman Martin:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Claire McCaskill
U.S. Senator (MO)
United States Senate
5850 Delmar Blvd, Suite A
St. Louis, MO 63112

Dear Senator McCaskill:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Claire McCaskill
U.S. Senator
U.S. Senate
503 Hart Senate Office Building
Washington, DC 20510

Dear Senator McCaskill:

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St. Louis, MO 63102

March 2, 2018

Alderman Dan Ohlau
Alderman - Ward 2
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Ohlau:

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Thomas Page
Mayor
City of Chester
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Mayor Page:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Robert Platt
Alderman - Ward 3
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Platt:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Russ Rader
Alderman - Ward 3
City of Chester - City Council
Chester City Hall 1330 Swanwick Street
Chester, IL 62233

Dear Alderman Rader:

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Alderman Larry Riney
Alderman - Ward 1
Perryville, MO
214 E. Ste. Marie St.
Perryville, MO 63775

Dear Alderman Riney:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Gary Romine
State Senator R-03
Missouri Senate
201 W Capitol Ave., Rm. 429
Jefferson City, MO 65101

Dear Senator Romine:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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St. Louis, MO 63102

March 2, 2018

Honorable Paul Schimpf
State Senator D-58
Illinois Senate
342 North St., Suite C
Murphysboro, IL 62966

Dear Senator Schimpf:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

The Chester Bridge Study team continues to look to elected officials to give input on behalf of the constituents they represent, to review information and study findings, and to help get information to the general public.

We are pleased to announce that the second Chester Bridge elected official's briefing is set for Tuesday, March 13th from 1:30 pm to 3:00 pm. The main purpose of the meeting will be to present the project's Reasonable Alternatives that will be carried forward for further analysis. The project's Preferred Alternative, which will be selected later this year, will be selected from these Reasonable Alternatives.

The second elected officials briefing will be held on:

Tuesday, March 13, 2018 / 1:30 p.m. - 3:00 p.m.
Perryville Higher Education Center
108 South Progress Drive
Perryville, MO 63775

Please RSVP by Friday, March, 9th to Mandi Voegele at mvoegele@vectorstl.com or 314-621-5566.

Following the briefing, a Public Open House will be held at the same location from 4:00 p.m. to 7:00 p.m. A flyer for that meeting is enclosed for your reference.

We look forward to seeing you.

Sincerely,

Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Randy Sikowski
Downstate Director
United States Senate - Tammy Duckworth's Office
8 South Old State Capitol Plaza
Springfield, IL 62701

Dear Mr. Sikowski:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Jason Smith
U.S. Representative
U.S. House of Representatives
1118 Longworth House Office Building
Washington, DC 20515

Dear Representative Smith:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Jason Smith
Congressman
2502 Tanner Drive Suite 205
Cape Girardeau, MO 63703

Dear Congressman Smith:

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable James Sutterer
Second district Commissioner
Perry County Commission
321 N Main St. Suite 2
Perryville, MO 63775

Dear Commissioner Sutterer:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Wayne Wallingford
State Senator (D-27)
Missouri State Senate
201 W. Capitol Ave Room 225
Jefferson City, MO 65101

Dear Senator Wallingford:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Jay Wengert
District 1 Commissioner
Perry County Commission
321 N Main St. Suite 2

Dear Commissioner Wengert:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

March 2, 2018

Honorable Ronnie White
Chairman
Randolph County Board of Commissioners
1 Taylor Street Suite 206
Chester, IL 62233

Dear Chairman White:

As you know, the Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting the Chester Bridge Study, an environmental study of the Chester Bridge (Route 51) over the Mississippi River and the Horse Island Chute Bridge.

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Buddy Desai
CH2M Project Manager
501 N. Broadway
St. Louis, MO 63102

Public Involvement Plan

CHESTER bridge

Route 51 / Environmental Study

STAKEHOLDER AND PUBLIC INVOLVEMENT PLAN

and

AGENCY COLLABORATION PLAN

Submitted On Behalf of CH2M By

VECTOR COMMUNICATIONS

June 21, 2017

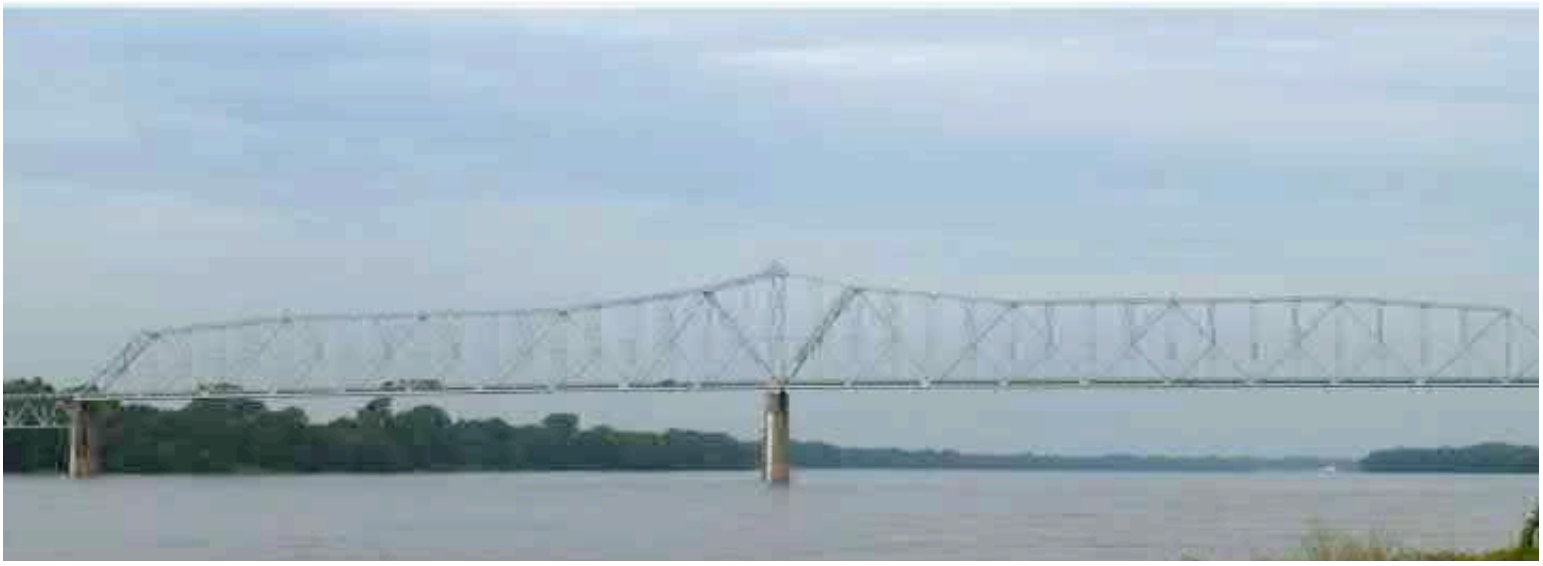

TABLE OF CONTENTS

1. Introduction

The Missouri Department of Transportation's (MoDOT) Southeast District, in cooperation with the Federal Highway Administration (FHWA), is conducting an Environmental Assessment (EA) of the Chester Bridge (Route 51) over the Mississippi River. The goal of this study is to develop a safe and reliable Route 51 river crossing.

The Chester Bridge is located northeast of Perryville, Missouri and southwest of Chester, Illinois. The structure is a continuous truss bridge and is the only connection for motorists across the Mississippi River between St. Louis, Missouri to the north, and Cape Girardeau, Missouri to the south.

2. Study Background

The Chester Bridge was originally constructed in 1942, and was re-constructed in 1944 after a severe storm destroyed the main span. The bridge has allowed traffic to travel both east and west across the Mississippi River for more than 73 years. Access to the bridge on the Missouri side requires crossing the Horse Island Chute Bridge, which is part of the Bois Brule Levee and Drainage District.

Over the course of seven decades, the Chester Bridge has become functionally obsolete and is in poor condition. Weather, vehicle use, age, and salt used in snow removal have contributed to the deterioration. The existing average daily traffic is approximately 6,500 vehicles per day including commuters, and Route 51 is a major route for semi-trucks transporting goods. The Chester Bridge has no shoulders for emergency vehicles to utilize, or for vehicles involved in accidents to get out of the lanes of traffic. The bridge has closed to traffic twice in the last two years so levee gates could be installed to prevent flooding in Perry County, Missouri. These factors precipitated the need to study the Chester Bridge.

MoDOT has contracted a study team led by CH2M to carry out the Chester Bridge EA. Part of the CH2M team is Vector Communications, which will lead the study's stakeholder and public involvement program.

3. Purpose and Approach

Recognizing the value that stakeholders bring to the transportation planning process, the study team will employ several tools to ensure a variety of opportunities for public involvement are available throughout the EA. Additionally, the Stakeholder and Public Involvement Plan (PIP) will be guided by both the National Environmental Policy Act's (NEPA) requirements for public involvement and MoDOT's public engagement policies.

The approach to this study will help ensure the recommended improvement balances costs, safety, commuter needs, environmental impacts, and the study's goals. Stakeholder and public involvement is critical to this approach and helps build awareness and understanding. Ultimately, it will play an important role in providing input into a final outcome that reflects an interdisciplinary collaborative process and includes input from anyone with a stake in the study.

The purpose of the PIP is to provide a roadmap for citizen participation throughout the study. Effective public engagement involves meaningful open exchanges of information and ideas between the stakeholders and the study's decision-makers. This plan outlines various techniques and tools to ensure this open exchange of information occurs. It will remain flexible throughout the study process and will be amended as necessary to achieve the study's overall goals and objectives. *A glossary of terms used in the PIP can be found in Appendix A.*

4. Goals and Objectives

The goals and objectives of the PIP process are to:

- Identify early the key stakeholders and engage them throughout the study;
- Build trust with stakeholders through effective communication and transparency;
- Raise community awareness about the study through clear, accurate and easily accessible information;
- Generate interest around the study by focusing on the outcomes that matter most to people;
- Promote the public's understanding of key study components through community meetings and other communications vehicles;
- Build MoDOT's understanding of key issues, concerns, opportunities, and challenges in the study area;
- Establish a process that allows all stakeholders to obtain information and provide input; and
- Include stakeholder input in the decision-making process and final recommendation.

The PIP goals and objectives will be measured throughout the study by keeping records of meeting attendance, tracking stakeholder feedback, and analyzing public comments.

5. Stakeholder Identification

One of the first steps of the PIP is to identify the target audiences, in this case, the stakeholders. A stakeholder is any person or organization who is directly affected by, or interested in, the study. This could include residents or property owners, business owners, elected officials, community leaders, environmental resource agencies, special interest groups, educational institutions, and commuters who travel Chester Bridge.

Stakeholders for this study have been identified using background information from MoDOT as well as research.

6. Stakeholder and Public Involvement Methods

a. Stakeholder Interviews / Briefings

The public involvement team will schedule and conduct interviews with key stakeholders at the beginning of the study including community leaders, emergency responders and elected officials. These stakeholders have been identified in collaboration with MoDOT. The consultant will prepare for and conduct up to fifteen (15) one-on-one interviews. A summary will be prepared and distributed to MoDOT after the interviews are completed. *The stakeholder interview guide can be found in Appendix B.*

A letter will be sent to additional stakeholders not interviewed introducing them to the study, asking them to complete a survey and telling them how they can be involved.

b. Community Advisory Group

Using the list of identified key stakeholders, a Community Advisory Group (CAG) will be established. CAG members will represent various study area constituencies including residents, chambers of commerce, emergency responders, and other community stakeholders. The CAG is a means of directly engaging stakeholders to gain valuable community input; identify and address local concerns; and build public interest and involvement in the study's decision-making process.

Participants will serve as liaisons between the interests and communities they represent and MoDOT, providing deeper insight into community conditions and values so the study process is well-informed and responsive to community needs. The specific roles and responsibilities of all participants will be to:

- Attend meetings;
- Treat each other with respect and dignity;
- Come to the process with an open mind and participate openly and honestly;
- Advise MoDOT on community concerns and sentiment; and
- Serve as study ambassadors.

Members of the news media and other stakeholders are welcome to attend all CAG meetings, but will remain in the role of observers and not participate in the process.

The role of the CAG Member is to advise MoDOT. The agency will ultimately make the final decision on how best to create a safe and reliable Mississippi River crossing.

The anticipated CAG meetings are: a kickoff meeting to present the study including the preliminary Purpose and Need statement; a meeting to present the Conceptual Alternatives; a meeting to discuss the Reasonable Alternatives; and a final meeting to present the Preferred Alternative. A meeting summary report will be prepared and distributed to the CAG after each meeting. *The list of potential members of the Community Advisory Group can be found in Appendix C.*

c. Elected Officials Briefings

Early coordination and continuous communication with elected officials will be accomplished through an introductory letter, and briefings. A letter introducing the study will be sent to all identified elected officials for Perryville and Perry County in the State of Missouri, and Chester and Randolph County in the State of Illinois. The study team will conduct briefings with elected officials prior to each public meeting. The purpose of these briefings is to inform and educate officials about the study at key milestones before presenting to the general public. The first briefing will be to introduce the study and Purpose and Need, the second to discuss the Reasonable Alternatives prior to the public informational meeting, and the third to present the Preferred Alternative prior to the public hearing. *A list of city, county, and state elected officials for the study region can be found in Appendix D*.

d. Public Informational Meetings

Public meetings represent an important opportunity for direct engagement with the larger, general public. At these meetings, study team members will be available to discuss, explain, and help participants understand the information presented.

Two public informational meetings are planned for the study and tentatively scheduled for summer 2017 and spring 2018. A critical function of each meeting will be to educate and inform the public about the study. At these meetings, the Purpose and Need statement, Conceptual and Reasonable Alternatives, and the screening process will be presented to attendees.

The public meetings will be held in an open house format with a variety of stations and information boards. Formal presentations are not planned components of these meetings.

The study team will announce meeting information to appropriate audiences, including all identified stakeholders, via emails and mailings, flyers/posters, press advisories, and the study website.

Comment forms will be available at the public meetings in both printed and electronic formats to gather feedback from attendees. The comment form along with the information presented will also be available on the study website following the public meetings. A comprehensive comment summary report will be prepared and submitted to MoDOT following each meeting. These summaries will be included in the environmental document.

e. Public Hearing

Once the EA has been approved, a Public Hearing will be held. The hearing will include exhibits on display outlining the study's results. Attendees will also be able to complete a comment form, give their comments verbally to a court reporter, and/or publically voice their comments. An official transcript of the hearing will be prepared.

f. Presentations

Presentations to community and civic groups, business groups, and other interested groups or organizations over the course of the study will be used as opportunities to introduce the study, provide study updates, and obtain public input. Such presentations will be made upon request.

g. Community Events and Festivals

The public involvement consultant will stay informed of local events and festivals where the study team can conduct public outreach throughout the study process. One such event was the Perryville Mayfest May 10 - 13, 2017. Team members attended these events to distribute study information and to promote public engagement and the study website.

7. Stakeholder Involvement Schedule

The PIP covers a variety of study outreach and coordination as outlined above, including elected officials briefings, CAG meetings, public meetings, and a public hearing. In an effort to ensure stakeholder collaboration and input, these meetings will be held in conjunction with the study phases of introducing the study and developing the Purpose and Need, selecting the Reasonable Alternatives, and selecting a Preferred Alternative.

Stakeholder Meeting	Target Date
CAG Meeting #1: Study Introduction and Purpose and Need	Summer 2017
Elected Officials Briefing #1: Study Introduction and Purpose and Need	Summer 2017
Public Meeting #1: Study Introduction and Purpose and Need	Summer 2017
CAG Meeting #2: Conceptual Alternatives	Fall 2017
CAG Meeting #3: Reasonable Alternatives	Spring 2018
Elected Officials Briefing #2: Reasonable Alternatives	Spring 2018
Public Meeting #2: Reasonable Alternatives	Spring 2018

CAG Meeting #4: Preferred Alternative	Fall 2018
Elected Officials Briefing #3: Preferred Alternative	Early 2019
Public Hearing: Preferred Alternative	Early 2019

8. Communications: Outreach and Informational Materials

Informational materials will be developed and outreach will be conducted to drive the public involvement activities as follows:

Fact Sheet

A fact sheet will be written and designed for distribution at the CAG meetings, elected official's briefings, presentations and study meetings. It will also be uploaded to the study website. This handout will provide a description of the study, a timeline, and a study area map.

Frequently Asked Questions Document

A list of frequently asked questions (FAQ) will be written, designed, and distributed at meetings and presentations. This handout will also be uploaded to the study website and updated as needed throughout the study.

Newsletters

The public involvement team will write, design, and distribute study newsletters. Three (3) newsletters will be produced, one before each of the two public open houses and the third before the public hearing. They will explain the study at each key milestone and promote the public events. Newsletters will be two-page, two color publications and will be printed on 11" x 17" paper. The newsletter will be distributed to stakeholders on the study mailing list via email and regular mail. PDF files of all newsletters will be posted to the study website.

Informational Kiosks

Informational kiosks featuring the study fact sheet, newsletters, maps, and other study information for the public will be placed at locations frequented by citizens throughout the region. Recommended locations for kiosk placement include:

- Chester Welcome Center, Segar Park
- Chester Public Library
- Chester City Hall
- Riverside Regional Library, Perryville
- Perryville City Hall

Study Website

A study website will be developed as a tool for both public outreach and engagement. The website is online at www.ChesterBridgeStudy.com and includes general study information, contact information, technical documents, and information on how citizens can be involved. It will be a centralized information portal for learning about the study, getting updates, and downloading public meeting displays and other study materials. Visitors will also be able to submit comments and sign-up to be on the study's mailing list. A link to the study website page will be placed on MoDOT's website.

Surveys

An initial public survey was developed on www.SurveyMonkey.com to obtain stakeholder input on why they use the bridge, when they use it, and the issues with the bridge they would like the study team to address. It also asked respondents how best to engage them.

As the study moves forward, a more detailed survey that incorporates interactive maps of the study area and allows respondents to rank preferences for developing a safe and reliable crossing will be developed using MetroQuest. This public engagement software guides participants through the process of learning about the study and providing feedback.

All surveys will be accessible through the study website and compatible with devices such as mobile phones and tablets.

Study Mailing List

An initial study mailing list will be created and continuously updated throughout the study. This list will include the identified key stakeholders, CAG members, elected officials, Chester and Perryville Chamber of Commerce members, and coordinating agencies. Anyone who attends a stakeholder meeting or signs-up for mailings through the study website will be added to the master mailing list. Additionally, resident information based on zip codes and proximity to the study area will be identified through the post office.

Postcard Mailings

Study postcards and flyers will be prepared to promote the public informational meetings and public hearing. Approximately two weeks before both events, the postcards will be distributed either through regular mail or email depending on the contact information available for each citizen.

Phone Inquiries

MoDOT's phone number, 1-888-Ask-MoDOT, will be used as the phone number for the study on all communications materials. Project related phone calls and messages received by MoDOT will be answered preferably within two business days after they are received.

The study team will provide input to the response if necessary and assist MoDOT. Once a response has been given, MoDOT will complete a study communications report form that will detail the time of the call, name of the caller, their question, the answer, and who responded.

MoDOT will send the communications report form to the PI consultant who will keep a record of all correspondences. *The communications report form can be found in Appendix E.*

Email / Mail Inquiries

MoDOT's Southeast District office address will be used as the mailing address for the project. MoDOT will have primary responsibility for responding to correspondences, with assistance from the study team. It is recommended that all public correspondences be answered within two business days of receipt. MoDOT will provide copies of correspondences to the consultant for record keeping. Once a response has been given, MoDOT will complete a study communications report that includes the response to the correspondence. MoDOT will send the communications report form to the public involvement consultant who will keep a record of all sheets. At the end of the study, the sheets will be given to MoDOT.

Media Relations

Another method for informing the general public is through the news media. The primary media strategy will be for the team to produce and distribute press advisories to announce the informational public meetings and the public hearing. Representatives from MoDOT and CH2M will also respond to media inquiries that come in with the assistance of the public involvement consultant. The consultant will also prepare press releases that will be part of the information in media kits distributed to reporters who attend the public informational meetings and the public hearing.

Media outlets for outreach to the study area will include newspapers, online news sources, television stations, and radio stations. The local media sources and reporters that have been identified to date include:

- *The Republic Monitor* - Robert Cox (Perryville, MO)
- *The Herald Tribune* - Pete Spitler (Randolph County, IL)
- *The County Journal* – Travis Lott (Percy, IL)
- *Sun Times News* - Don Pritchard (Chester, IL and Perryville, MO)
- KTVI, KMOV, and KSDK Television Stations – St. Louis, MO
- KFVS and KBSI Television Stations - Cape Girardeau, MO

Social Media

During the development of the EA, content will be posted on MODOT's Facebook page, tweeted via its Twitter account, and emailed using a mass email service. The content will primarily focus on getting information about the events (the public informational meetings and the public hearing) to all stakeholders and the general public.

9. Plan Administration and Monitoring

Administering and monitoring the PIP will be an ongoing effort throughout the Chester Bridge Environmental Study. The tasks listed below will help to ensure an effective and efficient partnership with study stakeholders and the public.

Plan Monitoring/Updates

This PIP will be regularly reviewed for effectiveness and will be updated/amended as appropriate. PIP administration includes, but is not limited to:

- Maintaining a current list of study stakeholders;
- Maintaining a detailed public involvement record (log) that includes stakeholder contacts, meetings, and comments; and
- Ensuring two-way communications and timely responses to stakeholders through direct and indirect channels.

Public involvement activities will be reviewed with MODOT on a regular basis. Direct feedback will be solicited from the public during meetings (via comment forms) to determine their effectiveness.

Comment Management & Communications Protocol

The public involvement consultant will manage and document stakeholder comments and responses throughout the study, and if needed, prepare draft responses. Public comments may come in the form of an email (via a direct link from the website), regular mail, phone calls, and comment forms from meetings and briefings. Addressing public comments is important to ensure the public understands that its concerns and opinions are being documented. This will also be a way to respond to potentially problematic issues such as misinformation being communicated.

The Chester Bridge EA – Project Instructions document created by CH2M establishes the protocol for responding to external communications, including the public's input and inquiries. The protocol includes a timely response to inquiries/requests, addressing comments when necessary, and logging responses and outcomes from these communications. The communications report form has been provided to all team members for tracking conversations with stakeholders and the public.

10. Agency Collaboration Plan

a. Introduction

This Collaboration Plan is intended to define the process by which the Project Study Team will communicate information about the Chester Bridge Environmental Assessment project to the interested federal and non-federal governmental agencies. The plan also identifies how input from agencies will be solicited and considered.

Since the Federal Highway Administration (FHWA) is expected to provide funding for this project, FHWA (Missouri Division) serves as the Lead Agency for the project. MoDOT, as the direct recipient of federal funds for the project, is a Co-Lead Agency.

MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), was signed into law in July 2012. MAP-21 is intended to create a streamlined and performance-based surface transportation program. Relative to public involvement MAP-21 builds on many of the policies established in SAFETEA-LU. This requires that the Lead agencies establish a plan for coordinating public and agency

participation and comment during the environmental review process. This plan has been prepared in response to that requirement.

The Agency Collaboration Plan will be updated periodically to reflect any changes to the project schedule and other items that typically require updating over the course of the project.

The Chester Bridge connects Missouri to Illinois. Because the Illinois Department of Transportation (IDOT) uses the NEPA-404 merger process to coordinate the review of complex transportation projects, MoDOT has committed itself to utilizing this system for collaborating with Illinois agencies. For the Missouri agencies, project team will pursue a Collaboration Plan in accordance with MoDOT policy. These two processes are similar in that they will utilize three collaboration points to provide interested agencies with project data, at key points in the project, in order to inform and receive feedback. The schedules and materials will be somewhat different, but comparable.

b. Cooperating Agencies

Cooperating agencies are those federal agencies that the lead agency specifically requests to participate in the environmental evaluation process for the project. FHWA's NEPA regulations (23 CFR 771.111(d)) require that federal agencies with jurisdiction by law (such as permitting or land transfer authority) be invited to be cooperating agencies for an EA. Letters of invitation were sent to the US Army Corps of Engineers (St. Louis District) and US Coast Guard.

The U.S. Coast Guard accepted/rejected formal cooperating agency status on this EA in a letter of Xxxxx ##, 20xx. The U.S. Army Corps of Engineers accepted/rejected formal cooperating agency status on this EA in a letter of Xxxxx ##, 20xx. If new information reveals the need to request another agency to serve as a cooperating agency, then MoDOT, in consultation with FHWA, will issue that agency an invitation.

c. Collaboration with Missouri Agencies

c.1. Interested Agencies

The standard for identifying potential agencies for collaboration was federal and non-federal governmental agencies that may have an interest in the project because of their jurisdictional authority, special expertise, local knowledge and/or statewide interest. Based on these criteria, the project team led an effort to identify all of the agencies that potentially met that criterion. The definition of "governmental" was broadened to include an organization with an official mandate (including Illinois agencies not covered by the NEPA-404 merger process). Any organization that cannot satisfy the criteria as an agency, but is interested in the project, will be included in the project as a general stakeholder. Collaboration with these groups will be coordinated through the activities discussed in the project's Public Involvement Plan.

Table 1 lists the agencies that were identified as potentially interested in the Chester Bridge project *(see following page).*

Table 1: Chester Bridge Environmental Assessment - Agency Contacts

Agency	Role	Contact
U.S. Army Corps of Engineers	**Cooperating**	
-Section 408 Point of Contact		Ed Rodriguez
-Section 10 Point of Contact		Rob Gramke
-General NEPA Point of Contact		Danny McClendon
-Section 404 Point of Contact		Rob Gramke
Eighth Coast Guard District	**Cooperating**	Eric Washburn
Bois Brule Levee and Drainage District	**Local Government**	President, Board of Commissioners
		District Engineer USACE, St. Louis (Matt Hahn)
Kaskaskia Island Levee and Drainage District	**Local Government**	Michael Colbert, Daniel Lankford, Shane Sulser
USDA -Natural Resource Conservation Service	**Federal Agency**	Renee L. Cook, Area Conservationist
U.S. Fish and Wildlife Service	**Federal Agency**	
Missouri Ecological Services Field Office		Karen Herrington
Middle Mississippi River National Wildlife Refuge		Director
National Park Service	**Federal Agency**	Nick Chevance
Missouri Emergency Management Agency	**State Agency**	Karen McHugh and Scott Samuels
Federal Emergency Management Agency	**Federal Agency**	Kenneth Sessa
Missouri Department of Conservation	**State Agency**	Audrey Beres
Missouri Department of Natural Resources	**State Agency**	Lorisa Smith
Randolph County Commissioners	**Local Agency**	
Perry County Commissioners	**Local Agency**	
City of Chester	**Local Agency**	Mayor Tom Page
Southeast Missouri Regional Planning Commission	**Local Agency**	
Southwest Illinois Metropolitan and Regional Planning Commission	**Local Agency**	
U.S. Environmental Protection Agency	**Federal Agency**	Larry Shepard
Missouri State Historic Preservation Office	**State Agency**	Judith Deel
City of Perryville	**Local Agency**	Ken Baer, Mayor
Perryville Airport	**Local Agency**	Manager: Lawrence A. Dauer
Federal Aviation Administration	**Federal Agency**	Multiple St. Louis and Kansas City Offices
New Bourbon Port Authority	**State Agency**	Owen Welge

c.2. Agency Collaboration Points

The goal of the Agency collaboration points is to provide the Agencies, which may have an interest in the project, the data they need to provide relevant input. The collaboration points will:

- Provide data at key points in the NEPA process: Purpose and Need, Reasonable Alternatives and Preferred Alternative stages,
- Identify, as early as practical, any issues of concern regarding the project's potential environmental or socioeconomic impacts;
- Provide the Agencies the ability for meaningful and timely input; and
- Allow for a process to address unresolved issues.

Specific opportunities are provided via the Agency collaboration points that have been defined for this project. All collaboration will occur through review/response of supplied data packages. The Agencies will also be invited to all Public Involvement Meetings.

c.3. Collaboration Point 1 - Purpose and Need/ Feasible Solutions

The draft Purpose and Need document for the project will be the focus of the initial collaboration point. The collaboration package will include, in addition to the draft Purpose and Need Statement, the following:

A. Description of core objectives of the proposed action, and any secondary objectives;

B. Explanation of the basis for the project objectives in terms of;

   1. Relevant federal, state and/or local policies, which may include transportation, economic conditions, land use conditions, and other conditions;
   2. Relevant data that may include information on transportation conditions, economic conditions, land use conditions, and other conditions;
   3. Public and stakeholder comments regarding the project's objectives;

C. Demonstration of the project's logical termini and independent utility; and

D. A map detailing the study area.

The Agencies will be provided 30 days from receipt to review and provide a response on the project Purpose and Need document. It will be assumed that those agencies that have not responded have no comments that need further consideration.

Based on the output of Collaboration Point 1, the project team will revise, as appropriate, the Purpose and Need document and the Agency Collaboration Plan.

c.4. Collaboration Point 2 – Reasonable Alternatives

As Reasonable Alternatives emerge, they will be the subject of Collaboration Point 2. The following information package will be forwarded to the Agencies:

- Revised Purpose and Need document;
- Description of the evaluation criteria that will be used to evaluate the effectiveness of an alternative in meeting the purpose and need of the project and explanation of how those evaluation criteria will be utilized;
- Description of any other factors, besides purpose and need that will be considered in the screening of alternatives, such as cost and environmental factors;
- Methodologies to be used and level of detail required in the analysis of each alternative;
- A summary table of all project alternatives to be evaluated and their effectiveness in addressing the purpose and need of the project, as well as a map showing the location of the project alternatives;
- Qualitative results of the preliminary alternatives analysis and environmental screening (based on existing data sources and GIS inventories); and
- Discussion of the No-Build Alternative.

The Agencies will be provided 30 days from receipt to review and provide a response on the reasonable alternatives. It will be assumed that those Agencies that have not responded have no comments that need further consideration.

Based on the output of Collaboration Point 2, the project team will revise, as appropriate, the Purpose and Need document, the Reasonable Alternatives, the evaluation methodologies and the Agency Collaboration Plan.

c.5. Collaboration Point 3 – Preferred Alternative

Collaboration Point 3 will focus on the emerging Preferred Alternative and the preliminary mitigation needs that may be associated with the emerging Preferred Alternative. The information package may include the following:

- Narrative describing the various elements of the preferred alternative;
- Rationale for recommending the preferred alternative; and
- A preliminary mitigation summary describing the various elements of the proposed mitigation, including a map locating the elements of the preferred alternative and preliminary mitigation.

The project team will assume concurrence from those agencies from whom it has not heard at the end of the 30-day period.

Based on the output of Collaboration Point 3, the project team will revise, as appropriate, the Preferred Alternative and incorporate mitigation comments.

d. Collaboration with Illinois Agencies (NEPA-404 Merger)

The purpose of the NEPA-404 merger process is to coordinate the review of complex transportation projects that impact wetlands and Waters of the U.S. requiring an individual Section 404 permit. The

process is outlined in the "*IDOT–FHWA, NEPA-404 Merger Process - Information for Project Teams*" December 15, 2016.

The process utilizes meetings at three decision points with resource and regulatory agencies in order to reach agreement ("concurrence") before the project advances to the next stage of project development. The three decision points are the **Purpose and Need** for the project, **Reasonable Alternatives** to be carried forward, and the **Preferred Alternative**. By obtaining concurrence, it is not necessary to revisit those decisions at later stages of project development (design and construction) and during the permitting process. Concurrence by an agency does not imply their endorsement of the project or release the agency from its obligation to determine if the project meets statutory review criteria.

d.1. Agencies Participating in the Merger Process

The signatories to the IDOT NEPA-404 merger agreement are:

- U.S. Army Corps of Engineers,
- U.S. Environmental Protection Agency,
- U.S. Fish and Wildlife Service,
- U.S. Coast Guard,
- FHWA (Illinois Division)

State agencies invited by IDOT to participate at the merger meetings are:

- Illinois Environmental Protection Agency,
- Illinois Historic Preservation Agency,
- Illinois Department of Natural Resources, and
- Illinois Department of Agriculture.

d.2. Logistics for Merger Meetings

Merger meetings are held in February, June, and September with specific dates set approximately two months prior to each meeting.

The merger meetings are normally held in Springfield and Chicago. The agencies and other attendees can choose to participate from either location. Additionally, a webinar and teleconference is made available for those agencies that cannot make the meeting in person.

The three concurrence points/meetings are:

- Purpose and Need,
- Alternatives to be Carried Forward (Reasonable Alternatives), and
- Preferred Alternative

The project team has submitted the request to be added to the September 2017 merger meeting agenda. FHWA is the merger meeting organizer. The IDOT district is responsible for the materials

being presented and the district decides who makes the presentation. FHWA allots 60 minutes for the presentation and question and answer period.

Concurrence is confirmation from the agency that (1) the information to date is sufficient and (2) the project may proceed to the next stage of project development. Concurrence does not imply the resource or regulatory agency has endorsed the project or released its obligation to determine if the project meets statutory review criteria.

Documentation is required in advance of the merger meeting. The merger meeting milestone schedule establishes dates when draft documentation must be sent to IDOT and FHWA for review. By following the merger meeting milestone schedule, it ensures that IDOT and FHWA have time to review and comment on the documentation before it is finalized and sent to the resource agencies. The resource agencies are given at least 30 days to review the documentation; therefore, the final documentation is normally due five weeks prior to the scheduled merger meeting date.

11. Conclusion

This PIP for the Chester Bridge Environmental Study represents the stakeholder and public engagement process and Agency Collaboration Plan that the study team intends to follow. However, this plan is a living document and as such is subject to change as stakeholder and agency comments are obtained, reviewed and addressed throughout the study.

Appendix A – Glossary of Terms

Alternatives - Potential transportation improvements that meet the study area plan goals and objectives by addressing the transportation issues and needs. Examples might include alternate routes or alignments, using the same alignment but widening the road/bridge, or a no-build alternative with which includes only routine maintenance. Alternatives might also include the use of other modes such as transit, bike, and pedestrian.

Environmental Assessment - A concise public document for which a Federal agency is responsible that serves to:

1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
2) Aid an agency's compliance with NEPA when no environmental impact statement is necessary.
3) Facilitate preparation of a statement when one is necessary.

It shall include brief discussions of the need for the proposal, of alternatives of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

Federal Highway Administration (FHWA) - The agency of the U.S. Department of Transportation that administers the Federal-aid Highway Program.

National Environmental Policy Act (NEPA) - Legislation passed in 1969 that established a national environmental policy requiring that any study using Federal funding or requiring Federal approval, including transportation studies, examine the effects of proposed and alternative choices on the environment before a Federal decision is made.

Public Involvement - The process by which the public is informed, made aware, and involved in the transportation planning and study development processes.

Purpose and Need - Used in environmental documents, a study purpose is a broad statement of the overall objective to be achieved by the proposed action. Need is more detailed explanation of the specific transportation problems that exist, or are expected to occur in the future.

Stakeholders - Person or group affected by a transportation plan, program, or study. Person or group who believes they are affected by a transportation plan, program, or study. Residents of affected geographical areas.

Public Involvement Plan (PIP) - An integral part of a planning or environmental study, which outlines procedures and protocols for presenting information to, obtaining comments from, and considering opinions of the stakeholders and the public.

Resource Agencies - Federal and state agencies charged with protecting natural and human resources. This includes agencies such as the U.S. Fish and Wildlife Service; the U.S. Environmental Protection Agency; U.S. Army Corps of Engineers; the Missouri and Illinois Department of Agriculture; the Missouri and Illinois State Historic Preservation Office; and the Missouri and Illinois Department of Natural Resources.

Appendix B – Stakeholder Interview Guide

Stakeholder Interview Guide

Introduction:

I am a public involvement specialist on the CH2M consulting team working on the Chester Bridge Environmental Assessment for the Missouri Department of Transportation. As you know, the Chester Bridge connects Missouri Route 51 with Illinois State Route 150. At 75-years-old, it is the only bridge crossing the Mississippi River for cars between south St. Louis and Cape Girardeau.

The Chester Bridge is functionally obsolete and in poor condition. The purpose of the environmental study is to investigate alternatives for providing a safe and reliable Mississippi River crossing. The findings of our environmental assessment may result in rehabilitating the existing bridge or replacing the bridge.

While the technical team is currently gathering data on the environmental resources in the study area and engineering data such as traffic volumes and crash history, we are interviewing stakeholders like yourself to get your overall experiences using the Chester Bridge and how you would like to be engaged during the 18-month study.

Thank you for your willingness to be interviewed.

Questions:

1. How often do you travel the Chester Bridge? What about your constituents?
2. For what reason do you travel the bridge? Where are you going?
3. What issues do you see with the existing bridge that the study team needs to address?
4. How do you get your news information?
5. What suggestions do you have for us regarding getting the word out about this study and getting people to attend our meetings?
6. How do you and your constituents like to be engaged?
7. Do you have any databases you are willing to share with us? Particularly email databases? The list will be used for this study ONLY.
8. **Would you be willing to serve on our Community Advisory Group?** The purpose of this group is to provide input and feedback to the study team and to serve as study ambassadors. As advisors, CAG members will not have the final say in determining the best alternative for upgrading the Chester Bridge, but their input will be considered by the study team. The final decision will be determined by the Missouri Department of Transportation. *(If they are not willing to participate, ask if they have a recommendation of someone else we can contact to represent their company or organization.)*
9. How best should we reach out to you going forward?

Within the next few weeks, we will have a specific website on the study where the community can obtain the latest information about what is happening and when they will be public events. The website will be online at www.ChesterBridgeStudy.com

Thank you for your time!!

Appendix C – Recommended Community Advisory Group

First Name	Last Name	Title	Company/ Organization
Ken	Baer	Mayor	City of Perryville
Marty	Bert	Fire Chief	Chester Fire Department
Brent	Buerck	City Administrator and Airport Manager	City of Perryville and Perryville Municipal Airport
M. Ryan	Coffey	Chief of Police	Chester Police Department
Christopher	Martin	Coordinator	Randolph County Economic Development
Rick	Goodman	Superintendent	Chester Community Unit School District #139
Todd	Huber	President	TG Missouri Corporation
Direk	Hunt	Chief of Police	Perryville Police Department
Jackie	Lashbrook	Warden	Menard Correctional Center
Thomas	Page	Mayor	City of Chester
Scott	Sattler	Executive Director	Perry County Economic Development Authority
Linda	Sympson	Executive Director and Co-Chairwoman	Chester Chamber of Commerce and Chester Welcome Center Committee
Jeremy	Triller	Fire Chief	Perryville / Perry County Fire Department
Don	Welge	President	Gilster-Mary Lee
Amanda	Winschel	Executive Director	Perryville Chamber of Commerce

Appendix D – Elected Officials

First Name	Last Name	Title	Organization
Ray	Allison	Aldermen - Ward 4	City of Chester
Ken	Baer	Mayor	City of Perryville
D. Michael	Blechle	Aldermen - Ward 4	City of Chester
Roy	Blunt	U.S. Senator	United States Senate
Michael	Bost	Congressman (D-12)	Illinois House of Representatives
Curt	Buerck	Aldermen - Ward 2	Perryville Board of Aldermen
Donnie	Clark	Aldermen - Ward 2	City of Chester
Jerry	Costello II	State Representative D-116	Illinois House of Representatives
Nancy	Crossland	Ward 1 Alderman and President	City of Chester and Randolph County Progress Committee
Tammy	Duckworth	Senator	United States Senate
Dick	Durbin	Senator	United States Senate
Kevin	Engler	State Representative D-116	Missouri House of Representatives
Rick	Francis	State Representative D-145	Missouri House of Representatives
Dan	Geisen	Aldermen - Ward 1	City of Chester
Doug	Martin	Alderman - Ward 2	Perryville Board of Aldermen
Claire	McCaskill	U.S. Senator (MO)	United States Senate
Dan	Ohlau	Aldermen - Ward 2	City of Chester
Thomas	Page	Mayor	City of Chester
Robert	Platt	Aldermen - Ward 3	City of Chester
Russ	Rader	Aldermen - Ward 3	City of Chester
Gary	Romine	State Senator R-03	Missouri Senate
Paul	Schimpf	State Senator D-58	Illinois Senate
Jason	Smith	Congressman	
Wayne	Wallingford	State Senator (D-27)	Missouri State Senate

Appendix E – Communication Report Form

CHESTER bridge
Route 51 / Environmental Study

Communication Report

This form is to be used by team members to monitor public input and communications during the Chester Bridge Environmental Study. It must be completed after each interaction with citizens or other stakeholders that occur outside of study sponsored public events. Please send this form to Mandi Voegele of Vector Communications (mvoegele@vectorstl.com) within **two (2) business days** of the initial meeting.

Team Member Name:	Of:
Date of contact:	Date form completed:
Contact was with:	Of:
Address:	Phone #: H
Address:	Phone #: W
City:	Phone #: C
State ZIP	E-mail:
Summary of discussion:	

Requested Follow-up Measures:

For Use by Vector Staff Only:

- Vector Received Form: Date: _____ From:
- Follow-up Completed: Date: _____ By Whom: _____

Chester Bridge Environmental Study

Appendix F
Endangered Species Materials

Information for Planning and Conservation (IPaC) Data

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Chester Bridge Environmental Assessment

LOCATION

Illinois and Missouri

DESCRIPTION

The
Chester Bridge EA is intended to develop a safe and reliable Route 51 crossing of the Mississippi River and the Horse Island Chute bridge. These two bridges connect Route 51 in Perry County, Missouri with Route 150 in Chester, Illinois.

Local offices

Missouri Ecological Services Field Office

(573) 234-2132
(573) 234-2181

101 Park Deville Drive
Suite A
Columbia, MO 65203-0057

Southern Illinois Sub-Office

(618) 997-3344
(618) 997-8961

Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822

http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Gray Bat Myotis grisescens No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern Sterna antillarum No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8505	Endangered

Fishes

NAME	STATUS
Pallid Sturgeon Scaphirhynchus albus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7162	Endangered

Flowering Plants

NAME	STATUS
Small Whorled Pogonia Isotria medeoloides No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1890	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE"

INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Blue-winged Warbler *Vermivora pinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 1 to Jun 30
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding

their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or

local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: October 30, 2020
Consultation Code: 03E14000-2016-SLI-1979
Event Code: 03E14000-2021-E-00488
Project Name: 9P3239 Perry County Route 51

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. N**ote that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects: projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features particularly within stream corridors, riparian areas, or associated upland woodlots gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags 5 inches diameter at breast height (dbh) for Indiana bat, and 3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project other than bats (see #3 below) then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the S7 Technical Assistance website.

3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:

a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
b. Any activity in or near the entrance to a cave or mine;
c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
d. Construction of one or more wind turbines; or
e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Southern Illinois Sub-Office
Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 997-3344

Project Summary

Consultation Code: 03E14000-2016-SLI-1979

Event Code: 03E14000-2021-E-00488

Project Name: 9P3239 Perry County Route 51

Project Type: TRANSPORTATION

Project Description: Scoping for bridge improvements over Mississippi River. Project involves bridge L0135.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.89869970387623N89.84086789977081W

Counties: Randolph, IL | Perry, MO

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7162	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER EMERGENT WETLAND

- PEM1C

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1C

FRESHWATER POND

- PUBF

RIVERINE

- R5UBH
- R2UBH

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Southern Illinois Sub-Office
Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
Phone: (618) 997-3344 Fax: (618) 997-8961
http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html

In Reply Refer To: October 30, 2020
Consultation Code: 03E18100-2016-SLI-0338
Event Code: 03E18100-2021-E-00113
Project Name: 9P3239 Perry County Route 51

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat. Under the ESA, it is the responsibility of the Federal action agency or its designated respresentative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website

http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website http://www.fws.gov/midwest/endangered/section7/s7process/index.html. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all wind energy projects and projects that include installing towers that use guy wires or are over 200 feet in height, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act *(*16 U.S.C. 703 *et seq*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Southern Illinois Sub-Office
Southern Illinois Sub-office
8588 Route 148
Marion, IL 62959-5822
(618) 997-3344

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

Project Summary

Consultation Code: 03E18100-2016-SLI-0338

Event Code: 03E18100-2021-E-00113

Project Name: 9P3239 Perry County Route 51

Project Type: TRANSPORTATION

Project Description: Scoping for bridge improvements over Mississippi River. Project involves bridge L0135.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.89869970387623N89.84086789977081W

Counties: Randolph, IL | Perry, MO

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7162

Flowering Plants

NAME	STATUS
Small Whorled Pogonia *Isotria medeoloides*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1890

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Missouri Department of Conservation (MDC) Coordination

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to
protect and manage the forest, fish, and
wildlife resources of the state and to
facilitate and provide opportunities for all citizens to
use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Update for Chester Bridge #8325
User Project Number: Project Number: J9P3239
Project Description: the Chester Bridge EA is intended to develop a safe and reliable crossing of the Mississippi River and the adjacent Horse Island Chute. These two bridges connect Route 51 in Perry County, Missouri with Route 150 in Chester, Illinois. Original NHR report dated 9/29/2016.
Project Type: Transportation, Structures and Bridges, Bridge Replacement adjacent to existing alignment (within 100 feet up/down stream), Span
Contact Person: Rob Miller
Contact Information: robert.miller1@jacobs.com or 614-825-6703

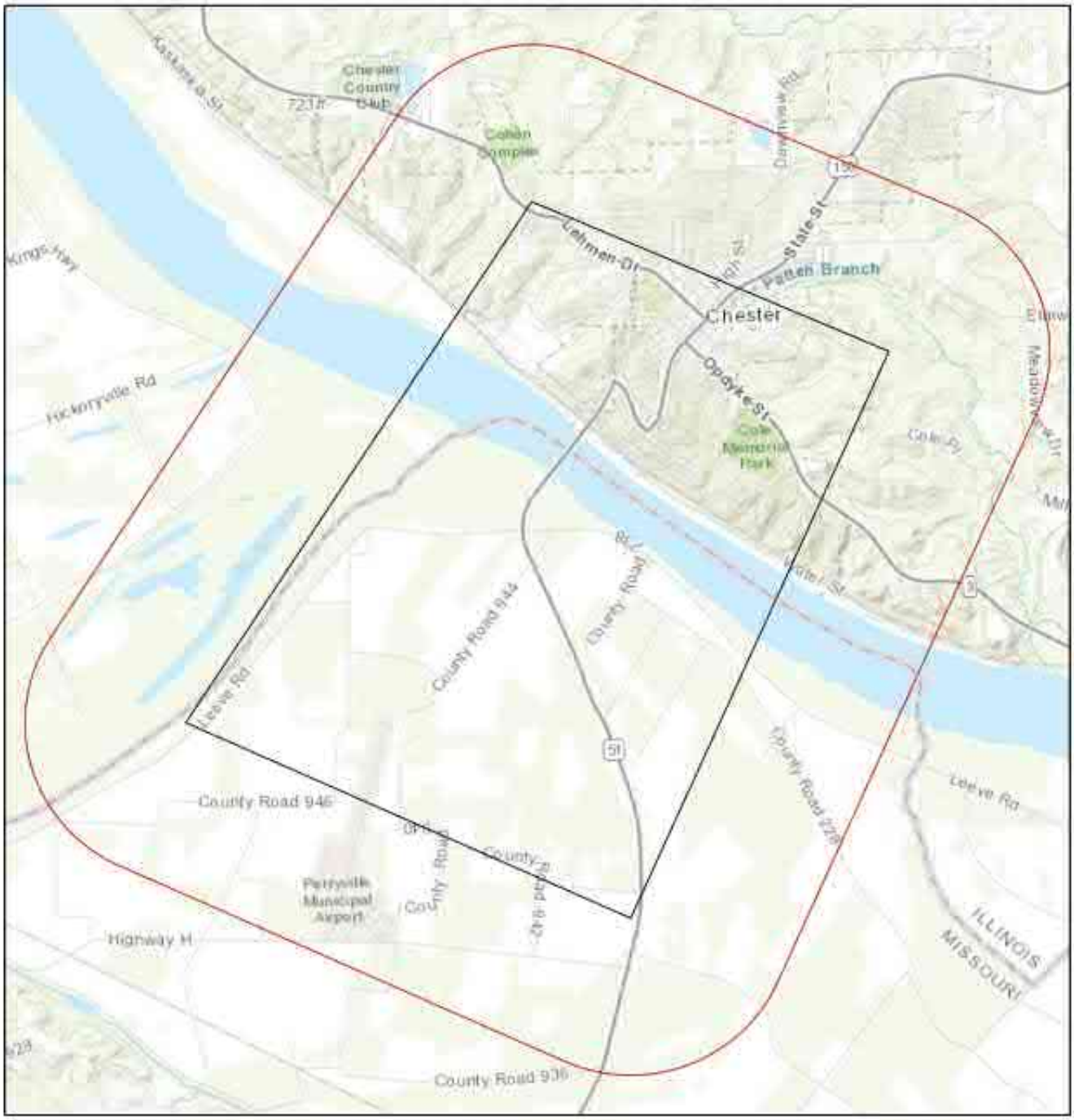
Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

The Natural Heritage Report is not a site clearance letter for the project. It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at https://ecos.fws.gov/ipac/ for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or www.modot.mo.gov/ehp/index.htm for additional information on recommendations.

Update for Chester Bridge



November 19, 2020

1:55,930

0 0.5 1 2 mi

0 0.75 1.5 3 km

Project Boundary

Buffered Project Boundary

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species or Communities of Conservation Concern within the Area:

There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182
NaturalHeritageReview@mdc.mo.gov

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, MIDDLE MISSISSIPPI RIVER NATIONAL WILDLIFE REFUGE, please contact USFWS.

Project Type Recommendations:

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. **If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: http://www.fws.gov/midwest/MidwestBird/EaglePermits/index.html if eagle nests are seen.

The project location submitted and evaluated is located within or adjacent to the Mississippi or Missouri rivers. Pallid Sturgeons (*Scaphirhynchus albus*, federal- and state-listed endangered) are big river fish that range widely in the Mississippi and Missouri River system (including parts of some major tributaries). Any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See http://mdc.mo.gov/124 for Best Management Practices. Additional coordination with the U.S. Fish and Wildlife Service under the Endangered Species Act may be necessary (U.S. Fish and Wildlife Service, Ecological Services, 101 Park DeVille Drive, Suite A, Columbia, Missouri 65203-0007; phone 573-234-2132.)

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See http://mdc.mo.gov//9633 for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (?140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (http://dnr.mo.gov/env/wpp/401/index.html), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit http://dnr.mo.gov/env/wpp/permits/index.html for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below.

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182
NaturalHeritageReview@mdc.mo.gov

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

Additional information on Missouri's sensitive species may be found at http://mdc.mo.gov/discover-nature/field-guide/endangered-species . Detailed information about the animals and some plants mentioned may be accessed at http://mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx . If you would like printed copies of best management practices cited as internet URLs, please contact the Missouri Department of Conservation.

Pending further coordination letter

Illinois Department of Natural Resources (IDNR) Coordination

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov
Bruce Rauner, Governor
Wayne A. Rosenthal, Director

November 09, 2018

Felecia Hurley
Illinois Department of Transportation – CO
2300 S. Dirksen Pkwy, Room 330
Springfield, IL 62764

RE: Chester Bridge EA (seq. no. 20783)
Project Number(s): 1903099 [20783]
County: Randolph

Mrs. Hurley:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

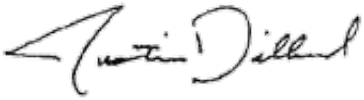
The Department concurs with IDOT that there are no T&E species likely to be impacted by this project. The Department finds impacts to the **Mississippi River – Mudds Landing** INAI site are unlikely. However, the Department wishes to monitor potential fish kill following blasting of the old piers. Please contact IDNR Fisheries Lower Mississippi River Biologist Butch Atwood at least 60 days prior to blasting.

Consultation for Part 1075 is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database and the Illinois Wetlands Inventory at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for

detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.



Justin Dillard

Resource Planner, Consultation Services
Illinois Dept. of Natural Resources
(217) 557-6723
Justin.Dillard@Illinois.gov

cc. Butch Atwood – IDNR Fisheries Lower Mississippi River Biologist

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	Illinois Department of Transportation - CO	*IDNR Project Number:*	1903099
Contact:	Felecia Hurley	*Date:*	09/18/2018
Address:	2300 S. Dirksen Pkwy, Room 330 Springfield, IL 62764	*Alternate Number:*	20783
Project:	Chester Bridge EA (seq. no. 20783)		
Address:	Chester Bridge, Chester		

Description: Build a new two lane bridge just upstream of the existing bridge across Mississippi River.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Mississippi River - Mudds Landing INAI Site

An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Randolph

Township, Range, Section:
7S, 7W, 23
7S, 7W, 24

IL Department of Natural Resources Contact
Nathan Grider
217-785-5500
Division of Ecosystems & Environment

Government Jurisdiction
IL Department of Transportation
Felecia Hurley
2300 S. Dirksen Pkwy
Springfield, Illinois 62764

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

Chester Bridge
Environmental Assessment
Over the Mississippi River
Randolph County
Seq. no. 20783
IDNR Project Number 1903099
EcoCAT response dated 10/4/2018

Preferred alternative is the near upstream alternative (U-1). A new two-lane bridge just upstream of the existing bridge.

EORs in the vicinity of the project study area.

The Illinois Natural Heritage Database has no EORs in the area of the preferred alternative.

INAI, NHL, L&WR, and NP within one mile of the project study area

Mississippi River – Mudds Landing INAI site – The existing bridge has three piers in the Mississippi River on the Illinois side and the navigation channel is 650' wide on both the IL and MO sides. USCG is requiring an 800' navigation channel on the IL side and a 500' navigation channel on the MO side for the new bridge. The 800' requirement on the IL side pushes the new bridge's third pier into the Missouri side of the river. The new bridge will require two new piers to be built on the IL side of the river in the Mississippi River Mudd's Landing INAI site. The existing bridge will likely be taken down (MoDOT has advertised the bridge for re-use under Section 106). The existing three piers that are currently on the IL side, in the INAI site, would then be removed. Per EcoCAT response dated October 4, 2018 the following commitment shall be added to the project. **The DOT will contact IDNR Fisheries Lower Mississippi River Biologist Butch Atwood at least 60 days prior to blasting.**

Coles Mill Geological Area INAI site – This project is just under one mile from the preferred alternative. No work will occur in this INAI site.

Species listed by USFWS for Randolph County

The USFWS lists the Indiana bat, northern long eared bat, least tern, pallid sturgeon, and small whorled pogonia as occurring in Randolph County, IL. Missouri DOT is the lead agency for this project. Due to this, Missouri DOT is responsible for completing coordination for compliance with Section 7 of the ESA

Chester Bridge EA (Seq. No. 20783)

N

0 0.75 1.5 3 Miles

Date: 5/22/2017

LEVEE RD
Reily Lake Area
Mississippi Kite-Reily Lake Area
Mississippi Kite
Kaskaskia St
Park Rd
SINGER RD
Shawneetown Trail
PERDY ROAD
DIAMOND CROSS RD
Timber Rattlesnake
Barn Owl
GLOBER RD
UNION SCHOOL ROAD
SUBSTATION RD
PARADISE ROAD
BALLPARK RD
Paddlefish
Sturgeon
American Eel
OLD RTE 3
PALESTINE ROAD
DAWN VIEW RD
UNION SCHOOL RD
BRIARHILL RD
PRINROCK LANE
WINE HILL RD
WELGE RD
RIECKENBERG LANE
COMMONFIELD ROAD
Bald Eagle
Fairway Ln
LEHMEN DRIVE
BODES LANE
RANDOLPH
SURMAN RD
ESTATE DR
PAUL DR
STATE
OLD PLANK RD
NEW PALESTINE
BRENDA ST
WILLY GULLY RD
DUSTY DRIVE
COUNTY FARM RD
DEERFIELD RD
Mississippi River - Mudds Landing
OLIVE ST
KASKASKIA ST
ANDREW ST
HIGH ST
MURPHYSBORO RD
ELMWOOD RD
Pamlico
BRYAN
1ST
5TH
CEMETARY RD
NORTH KINGSHIGHWAY
BOND ROAD
HICKORYVILLE RD
LA GRANDE RUE
SPARTA ST
OPYDYKE
MULLINS RD
WATER ST
Rookery
COLE PLACE RD
MILL CREEK RD
VIEW VALLEY RD
MT SUMMIT RD
SOUTH KINGSHIGHWAY
GRABE RD
LITTLE WOODS ROAD
Bald Eagle
Coles Mill Geological Area
Chester South Geological Area
Mississippi Kite
Timber Rattlesnake
PLEASANT RIDGE RD
CRANES IS.
CRANES ISLAND
(GRR)
CEMETERY RD
Timber Rattlesnake

Legend

- Study_Area
- T&E
- Nature Preserve
- INAI

U.S. Fish and Wildlife Service (USFWS) Coordination

Chester and Horse Island Bridge Replacement

Meeting Notes

11/9/20 11:00 am

Virtual Teams Meeting

Purpose of meeting:

The Chester and Horse Island Bridge Replacement meeting was called to share information and build consensus as to how to proceed with interstate issues and the ESA.

In Attendance:

Matt Mangan IL FWS, Andy Roberts MO FWS and from MoDOT Environmental: Chris Shulse, Bree McMurray, Melissa Scheperle, Kyle Grayson, and Georganne Bowman.

FWS Organization

It was determined that Matt Mangan will be the FWS lead for the Project. Andy Roberts will provide technical assistance and document review.

T&E Species of Concern

- Bats – Gray, Indiana and NLE are listed, however there are no NHD records for this area. A review of tree clearing limits and suitable habitat will be done. Work with Il DNR to determine if there are records in the area.
- Pallid Sturgeon – there are records for this species in this reach of the Mississippi River. Timing of bridge demolition will be discussed with FWS to minimize impacts.
- Least Tern – No records for this species in the vicinity.
- Mussels – There is little suitable habitat for mussels in this reach of the Mississippi River. (Also confirmed in separate meeting with MDC Malacologist, Steve McMurry.)
- Bald Eagles – there are recorded nests in the vicinity. Field check is required to confirm distance from project.
- Whorled Pogonia – No records for this species in the vicinity.

Action Items:

- Additional coordination is needed with Illinois DNR, IDOT and Illinois EPA, and COE. Georganne will work to find contacts and reach out to these agencies. The next CTM is scheduled for November 16. Georganne will work to find out if contact with those agencies has occurred, when and with whom.
- Georganne requested Il FWS provide a Technical Assistance Memo to show FHWA there is a plan for coordination. This memo will include bat habitat assessment recommendations.

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE
Southern Illinois Sub-Office (ES)
8588 Route 148
Marion, Illinois 62959

Georganne Bowman
MO Department of Transportation

December 11, 2020
Electronic Mail

Georganne,

Thank you for requesting technical assistance during our November 9th conference call for the proposed Chester and Horse Island Bridge Replacement Project located in Randolph County, Illinois and Perry County, Missouri. These comments are provided under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.); the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*); the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 *et seq.*) and, the National Environmental Policy Act (83 Stat. 852, as amended P.L. 91-190, 42 U.S.C. 4321 et seq.).

Fish and Wildlife Resources

We recommend that impacts to wetlands and streams be avoided or minimized to the greatest extent possible. Activities in the project area that would alter these features may require a Section 404 permit from the US Army Corps of Engineers.

Threatened and Endangered Species

To facilitate compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, Federal agencies are required to obtain from the Fish and Wildlife Service (Service) information concerning any species, listed or proposed to be listed, which may be present in the area of the proposed action. You can visit our Information, Planning, and Conservation System (IPaC) at the link below to obtain an updated official species list.

https://ecos.fws.gov/ipac/

Potential habitat for the gray, Indiana, and northern long-eared bat exists in the proposed project area and tree clearing may be required as part of the project. The Service recommends that any tree clearing be minimized or avoided if possible, to reduce impacts to potential habitat for the listed bat species and migratory birds. If tree clearing is necessary, it should not occur during the April 1 to November 1 time frame to avoid impacting the listed bat species. If it is necessary to clear trees during this time frame, then a detailed bat habitat assessment or other approved surveys may need to be conducted in order to assess the value of the habitat to listed bat species and ascertain whether they occur in the project area.

The least tern is known to occur in several counties along the Mississippi River and may be present within or in the vicinity of the project area during the summer time frame if bare alluvial or dredge spoil islands and/or sand/gravel bars are present. They are also known to forage in shallow water areas along the river and in backwater areas, such as side channels and sloughs. If the species is documented in the proposed project area or vicinity, then avoidance or minimization measures should be coordinated with the Service. The pallid sturgeon is also known to occur within this portion of the Mississippi River and has been documented upstream and downstream of the proposed project area (see attachment). The Service recommends that impacts to sand/gravel bars and off-channel areas be minimized and avoided if possible. In addition, construction and demolition activities should be scheduled outside the April 15 to June 30 time frame to avoid impacts during fish spawning and migration. Other minimization measures may also be appropriate to reduce impacts from pile driving and blasting activities and the Service recommends continued coordination during project development to discuss these measures. The Service is not aware of any listed mussels being present within the proposed project area and there are no records of the small whorled pogonia in the vicinity of the proposed project.

Although the bald eagle has been removed from the threatened and endangered species list, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA). The Service developed the National Bald Eagle Management Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. The Service is unaware of any bald eagle nests within the proposed project area; however, if a bald eagle nest is found in the project area or vicinity of the project area then our office should be contacted, and the guidelines implemented. A copy of the guidelines is available at:

http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf

Thank you for the opportunity to provide information concerning threatened and endangered species. For additional coordination, please contact me at (618) 998-5945.

Matt Mangan
U.S. Fish & Wildlife Service
Southern Illinois Ecological Services Sub-Office
8588 Route 148
Marion, IL 62959
618-998-5945
618-364-5389 Cell
618-997-8961 Fax
matthew_mangan@fws.gov

Appendix G
Cultural Coordination Materials

Advisory Council on Historic Preservation (ACHP) Coordination

Preserving America's Heritage

April 25, 2019

Ms. Raegan Ball
Program Development Team Leader
Federal Highway Administration
Missouri Division
3220 W. Edgewood, Suite H
Jefferson City, MO 65109

Ref: *Proposed Replacement of the Mississippi River Bridge carrying Missouri Route 51 and Illinois Route 150 in Perry County, Missouri and Randolph County, Illinois*
MoDOT Job No. J9P3239/IDOT Sequence No. 20783A
ACHPConnect Log Number: 013882

Dear Ms. Ball:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Missouri and Illinois State Historic Preservation Officer's (SHPO's), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact Ms. Mandy Ranslow at (202) 517-0218 or by email at mranslow@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F Street NW, Suite 308 • Washington, DC 20001-2637
Phone: 202-517-0200 • Fax: 202-517-6381 • achp@achp.gov • www.achp.gov

Programmatic 4(f) Form

Missouri Department of Transportation

On
Behalf of the Federal Highway
Administration–Missouri Division Office

Nationwide/Programmatic Section 4(f) Evaluation for Projects that Necessitate the Use of Historic Bridges

October 2016 Version

County:	**Route:**	**Job/Project Number:**
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

SELECT ONE: ☐ **EIS** ☒ **EA** ☐ **CE2** ☐ **CE**

This Programmatic Section 4(f) Evaluation Form will be completed by the MoDOT District and Historic Preservation Staff. **District staff should complete sections A, B and E (questions 1, 2 and 3) and provide the name of the preparer.** Historic Preservation staff will complete sections C, D and F and the names of their preparer. Once compiled, the form will be reviewed by the Historic Preservation Manager before being submitted to the FHWA for approval.

A. PROJECT DESCRIPTION:

(Provide a concise but thorough description of the proposed action.)

The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT), is preparing a Location Study and National Environmental Policy Act (NEPA) investigation for the improvement to the Route 51 Mississippi River bridge in Chester, Illinois (Chester Bridge) and the accompanying Horse Island Chute bridge. The Chester Bridge is a continuous-truss bridge across the Mississippi River. The Horse Island Chute bridge is a steel stringer bridge over the Horse Island Chute. The bridges connect Route 51 (in Missouri) with Route 150 (in Illinois). They form the only Mississippi River roadway crossing between St. Louis (roughly 57 river miles north) and Cape Girardeau (roughly 56 river miles south). The nearest population centers are Chester (Randolph County, Illinois) and Perryville (Perry County, Missouri). Chester is located on the bluff immediately adjacent to the bridge. Perryville is located roughly 11 miles south of the bridge along Route 51. The approximate latitude/longitude of the existing bridge is latitude 37°54'09" N and longitude 89°50'13" W.

The Preferred Alternative for the Chester Bridge project is the Near Upstream Conceptual Alternative (U-1), which connects at the logical termini and moves the crossing approximately 75 feet upstream of the existing corridor.

The bridge sections are assumed to be 40 to 44 feet wide, with two 12--foot travel lanes and 8- to 10-foot shoulders. A 16.5-foot vertical clearance is assumed to allow for oversized loads and large farm equipment to cross the river without stopping traffic and provide room to maneuver during emergencies or to remove disabled vehicles from the travel lanes. The shoulders would allow bicyclists and pedestrians to cross the bridge without using the vehicular travel lanes. The shoulders would also allow bridge inspections to occur without restricting traffic.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

B. PROJECT PURPOSE AND NEEDS:

(Include the project's purpose and need(s), which are the same as those included in the project's NEPA documentation. Needs are problem statements, not solutions.)

The Chester Bridge EA is intended to develop a safe and reliable Route 51 crossing of the Mississippi River. Overall, the purposes of the Chester Bridge EA are to:

- Improve the reliability of the crossing.
- Improve the functionality of the crossing.

Within the context of these goals, several specific transportation problems have been identified. The specific transportation problems affecting the Route 51 crossings include in no particular order:

Major Element #1 – The Chester and Horse Island Chute bridges are too narrow for current design standards.

Major Element #2 – The Route 51 crossing of the Mississippi River is in poor condition.

Major Element #3 – Route 51 is subject to flood-related closures.

Major Element #4 – The Route 51 crossing is important to local and regional connectivity.

C. IDENTIFICATION OF SECTION 4(F) PROPERTY:

(List the property (bridge name and number) and provide a description of the property. Attach a map, photo(s), etc. as appropriate.)

On August 10, 1998, the Keeper of the National Register determined **the Chester Bridge** eligible for the National Register under Criterion C. In 2009, the Missouri SHPO also determined the bridge to be eligible for the National Register under Criteria A, B, and C, with the area of significance as engineering. The Chester Bridge was reevaluated on October 11, 2018, by Archaeological Research Center of St. Louis. The architectural survey has revealed that the bridge has been regularly maintained and it retains its integrity; Chester Bridge (#L0135) remains eligible to the NRHP under Criterion C, for Engineering. The economic importance of the bridge to the City of Chester also makes it eligible under Criterion A. Replacement will have an adverse effect on the Chester Bridge.

Its partner, **the Horse Island Chute Bridge** (#L1004), is an example of an extremely common bridge. However, it is eligible for the NRHP under criterion A for significance in commerce, since its construction was necessary for the Chester Bridge to function in its role in improving commerce. Replacement will have an adverse effect on the Horse Island Chute Bridge.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

D. APPLICABILITY DETERMINATION:

1. The bridge will be replaced or rehabilitated. ☒ YES

2. The project requires the use of a historic bridge structure which is eligible for listing or listed on the *National Register of Historic Places* (including contributing elements to a historic district). ☒ YES

3. The bridge has not been determined to be a National Historic Landmark (NHL) (If the bridge is a NHL, this programmatic Section 4(f) evaluation does not apply). ☒ YES

4. A Memorandum of Agreement (MOA)/Programmatic Agreement (PA) has been executed pursuant to 36 CFR 800.6 or is being submitted concurrently with this form. ☒ YES

5. The project does not involve any uses that would require an individual Section 4(f) Evaluation. (It is acceptable if there are other Section 4(f) uses that are *de minimis* or covered by one of the other nationwide programmatic Section 4(f) evaluations or meet temporary occupancy criteria). ☒ YES

6. If there are other Section 4(f) properties used, list them here, briefly describe the use, and identify how the use will be addressed.

   Click here to enter text.

7. Are there Section 4(f) properties in the project area that will NOT be used by the undertaking? ☐ YES ☒ NO

   List the properties and attach a map showing their location(s) in relation to the proposed project.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

E. ALTERNATIVES CONSIDERED/FINDINGS:

1. Verify that the **Do Nothing Alternative** has been examined, and document why it has been determined to ignore the basic transportation need and not be feasible and prudent. It should clearly demonstrate the consequences of failing to rehabilitate or replace the bridge. It should also provide additional discussions concerning the social, economic and environmental impacts and the constructability, safety and design issues facing the historic bridge if the project is not developed. **(*Indicate all that apply. A minimum of one must be selected for this programmatic Section 4(f) evaluation to be applicable*):**

☒ **Maintenance** – The Do Nothing Alternative does not correct the situation that causes the bridges to be considered structurally deficient or deteriorated. These deficiencies can lead to sudden collapse and potential injury or loss of life. Normal maintenance is not considered adequate to address the situation.

Explain (Provide the facts that support this conclusion):

The condition of the current bridges is such that it requires continual maintenance, resulting in substantial expense and periodic closures.

☒ **Safety** – The Do Nothing Alternative does not correct the situation that causes the bridges to be considered deficient. Because of these deficiencies, the bridge poses serious and unacceptable safety hazards to the traveling public or places intolerable restriction on transport and travel.

Explain (Provide the facts that support this conclusion):

The current bridges are very narrow with no shoulders. Many modern design standards are not incorporated into the bridges. This creates safety issues and degrades the functionality.

☒ **Other**: Flooding

Explain (Provide the facts that support this conclusion):

There is a small gap in the Bois Brule Levee, where the Horse Island Chute bridge meets Route 51. In order to maintain the integrity of the levee, a temporary flood wall is installed over the road. This closes Route 51 and the river crossing.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

2. Investigations must be conducted to **construct a bridge on a new location/alignment or parallel to the old bridge** (including consideration of using the bridge as a couplet with a new bridge) to determine if the alternative would be feasible and prudent. Document below why building on new location/alignment without using the old bridge is not feasible and prudent. (***Indicate all that apply. A minimum of one must be selected for this programmatic Section 4(f) evaluation to be applicable***):

☐ **Terrain** – A new bridge at another site will result in extraordinary bridge and approach engineering and construction difficulty, or cost, or extraordinary disruption to established traffic patterns.

☐ **Adverse Social, Economic, or Environmental Effects** – A new bridge away from the present site would result in social or environmental impact of extraordinary magnitude.

☒ **Engineering and Economy** – Cost and engineering difficulties reach extraordinary magnitude. Factors supporting this conclusion include significantly increased roadway and structure costs, serious foundation problems, or extreme difficulty in reaching the new site with construction equipment. Additional design and safety factors considered include minimum design standards or requirements of various permits such as involved with navigation, pollution, and the environment.

☒ **Preservation of Old Bridge** – It is not feasible and prudent to preserve the existing bridges at the existing location or a new location. This could occur when the bridges are beyond rehabilitation for transportation or an (non-motorized) alternative use, or when no responsible party can be located to maintain and preserve the bridges through the Bridge Marketing Plan, or when a permitting authority requires removal[1] or demolition of the old bridges. (Note: Moving a historic bridge to a new location with rehabilitation may constitute a no use.)

Explain (For each checkbox above, provide thorough and specific evidence/explanation that supports checking the box):

Interest in the reuse of the existing bridges for aesthetic, recreational, and bicycle/pedestrian purposes has been expressed during the public involvement process. Pursuant to MoDOT policy, the existing Chester Bridge was made available for donation. Proposals for the reuse of the Chester Bridge were due by December 31, 2018; however, no proposals were submitted by the deadline. The Horse Island Chute Bridge was given an exemption from the marketing requirement. It is a bridge type that is aesthetically not likely to be selected for relocation and its existing location in a notch of the Bois Brule Levee means project's Purpose and Need could not be met while the Horse Island Chute Bridge remains in place. Finally, this bridge is eligible for

[1] Note that if a permitting authority requires removal of a historic bridge, it still may be usable at another location rehabilitated.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

the National Register of Historic Places under Criterion A for Commerce. Relocation of the bridge would remove the bridge from its association.

In order to investigate the use of the existing bridges (while preserving their historic integrity) Reasonable Alternative R-2 was developed. Reasonable Alternative R-2 would rehabilitate the existing condition by using a one-way couplet configuration where a modified version of U-1 or U-2 is used along with the existing bridges. Alternative R-2 would need to be rehabilitated in a manner that maintains its historic integrity. This alternative may be able to minimally satisfy the purpose and need and maintain the historic integrity of the existing bridges. The use of a new one-way crossing can eliminate a closure of the river crossing. However, it does not eliminate the need for the temporary flood wall along Route 51. Other negative aspects of Alternative R-2 include the following:

- The USCG has "reservations" about the existing Chester bridge remaining in place; citing navigation safety due to the 650-foot navigation channels and light from Chester partially obscuring the bridge during the night. The presence of two tightly spaced bridges would further complicate navigation.
- The construction schedule would be double of the standalone Alternatives U-1 and U-2. The couplet alternative will cause interference both during the new build phase and again during the rehabilitation phase.
- Rehabilitation of the existing bridge may require extensive amounts of falsework, adding to navigation complications.
- The couplet alternative would retain the roadway gap in the Bois Brule Levee.
- The second crossing required by Alternative R-2 represents another potential for aviation conflict.
- The cost of Alternative R-2 could be extensive given the required rehabilitation work. As such, Alternative R-2 could be the most expensive alternative.
- To maintain its historic integrity, the rehabilitation of the existing bridge would need to retain the bridge's design, materials, and workmanship. A 15-year rehabilitation could maintain the bridge's historical integrity; however, it is not a practical alternative. A 50-year rehabilitation is not expected to retain the bridge's historic integrity. In addition, it would be quite expensive and result in a bridge with an operational life below the project design life.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239
Project Name: Chester Bridge NEPA Study	Resource Name: Chester and Horse Island Chute Bridges	

3. Investigations must be conducted to determine if **rehabilitation of the existing** bridge, without affecting the historic integrity of the bridge, would be feasible and prudent. Refer to functional and structural deficiencies described in the No Build, and discuss how the deficiencies impact, influence or relate to the historic bridge being rehabilitated for continued vehicular use. Explain the constructability, safety and design project issues created or resolved by rehabilitation (including right-of-way constraints, traffic demands and types, roadway geometric constraints, location advantages or disadvantages and bridge load capacity). Explain social, economic and environmental issues created or resolved by rehabilitating the historic bridge. Document below why the rehabilitation alternative is not feasible and prudent. **(*Indicate all that apply. A minimum of one must be selected for this programmatic Section 4(f) evaluation to be applicable*):**

☐ **Structurally Deficient** – The bridge is so structurally deficient that it cannot be rehabilitated to meet minimum acceptable load requirements without affecting the historic integrity of the bridge.

☒ **Geometrically Deficient** – The bridge is seriously deficient geometrically and cannot be widened (horizontally and/or vertically) to meet the minimum required capacity of the highway system on which it is located without affecting the historic integrity of the bridge.

☐ **Approach(es) Geometrically Deficient** – The approach(es) is seriously deficient due to horizontal or vertical curves that do not meet the minimum design criteria.

Explain (For each checkbox above, provide thorough and specific evidence/explanation that supports checking the box. Note that flexibility in the application of AASHTO standards should be exercised during the analysis of this alternative. It is important that project needs be specific for a location and this discussion should focus on whether the rehabilitation alternative is feasible and prudent for the project location and needs.):

The Chester Bridge and the Horse Island Chute Bridge are very narrow with no shoulders. Many other modern design standards are not incorporated into the bridges. This creates safety issues and degrades their functionality.

To determine if a rehabilitation alternative could satisfy the project's Purpose and Need, two screening criteria and three performance measures were analyzed against the rehabilitation alternatives. These performance measures examined whether important design standards, such as lane width, shoulders, and bicycle/pedestrian facilities, could be provided. The rehabilitation of the existing bridges will accomplish none of these measures.

In parallel, structural engineers and other team members considered the extent of rehabilitation against the ability to maintain historic integrity in terms of the Chester Bridge's design, materials, and workmanship. A 15-year rehabilitation may maintain the bridge's historical integrity; however, it is not a practical alternative as it would have significant risk of expanding in scope

County:	Route:	Job/Project Number:
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and expense similar to ongoing maintenance and bridge deck rehabilitation efforts. A 50-year rehabilitation is not expected to retain the bridge's historic integrity and would also have significant risk of expanding in scope and expense with an operational life below the project design life.

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239
Project Name: Chester Bridge NEPA Study	Resource Name: Chester and Horse Island Chute Bridges	

F. MEASURES TO MINIMIZE HARM:

1. Verify that the project includes all possible planning to minimize harm. **(Indicate all that apply. A minimum of one must be selected for this programmatic Section 4(f) evaluation to be applicable):**

   ☐ For bridges that are to be **rehabilitated**, the historic integrity of the bridge will be preserved, to the greatest extent possible, consistent with unavoidable transportation needs, safety, and load requirements.

   ☐ For bridges that are to be **rehabilitated** to the point that the historic integrity is affected or that are to be **replaced**, adequate records will be made of the bridge through State Level or Historic American Engineering Record (HAER) standards, as determined through the Section 106 consultation process.

   ☒ For bridges that are to be **replaced**, the existing bridge will be made available for alternative use provided a responsible party agrees to maintain and preserve the bridge.

   ☐ Other: Click here to enter text.

   Explain (For each checkbox above, provide thorough and specific evidence/explanation that supports checking the box):

   The Chester Bridge (L0135) was marketed for 481 days between September 6, 2017 and December 31, 2018 in accordance with the Missouri Bridge Marketing Plan. No proposals for reuse were received.

   An exemption from the marketing requirement was obtained for the Horse Island Chute Bridge (L1004), following the process outlined in the Missouri Bridge Marketing Plan, after consultation with the SHPO, and was approved by FHWA on February 14, 2019.

2. Verify that the measures to minimize harm from the Section 106 MOA/PA have been incorporated into the project or are included as environmental commitments. ☒

   The executed MOA/PA can be found in the following Attachment:

   EA Environmental Commitment #30: MoDOT and IDOT will ensure that all stipulations outlined in the Section 106 MOA be fulfilled within 5 years of the date of execution of the MOA by FHWA. The MOA will be contained in the Project Record and available upon request to the MoDOT Historic Preservation Section. (Cultural Resources – Sections 3.6.1.3 and 4.12)

County:	Route:	Job/Project Number:
Perry	Route 51	9P3239

Project Name:	Resource Name:
Chester Bridge NEPA Study	Chester and Horse Island Chute Bridges

G. DETERMINATION OF APPLICABILITY:

The applicability of this Programmatic Section 4(f) has been based on the contents of this form and other supporting documentation.

H. SUMMARY AND APPROVAL:

The subject project meets all of the applicability criteria set forth in this Programmatic Section 4(f) Evaluation issued on August 22, 1983. All alternatives set forth in the subject programmatic have been fully evaluated and the findings made are clearly applicable to this project. There are no feasible and prudent alternatives to the use of the historic bridge.

The project includes all possible planning to minimize harm. FHWA will assure that the measures to minimize harm are incorporated into the project through its oversight of the federal-aid highway program. MoDOT or the Local Participating Agency will include the measures to minimize harm as environmental commitments in the applicable NEPA document and Environmental Commitments for the project. MoDOT or the Local Participating Agency will also provide a copy of this evaluation to other parties upon request.

All supporting documentation is attached or referenced.

The project, and its use of the historic bridge, fall within and satisfy all of the criteria as set forth in the Department of Transportation, Federal Highway Administration – Nationwide/Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges, dated August 22, 1983.

Name(s) of Preparer(s): Rob Miller; James Ritter, Karen Daniels Date: 9/9/2021

Historic Preservation Manager: Michael Meinkoth Date: 9/9/2021

FHWA : TAYLOR ROBERT PETERS Digitally signed by TAYLOR ROBERT PETERS Date: 2021.09.20 13:29:23 -05'00' Date:

Typical attachments for this form include, but are not limited to:

- Project location map
- Map of affected Section 4(f) property and other Section 4(f) property(ies) in the project vicinity
- Photograph(s) of the Section 4(f) property
- Project plan sheet to show impacts
- SHPO correspondence regarding effects
- Executed MOA/PA

Appendix H
Environmental Justice Screen (EJSCREEN)

EJSCREEN Report (Version 2018)

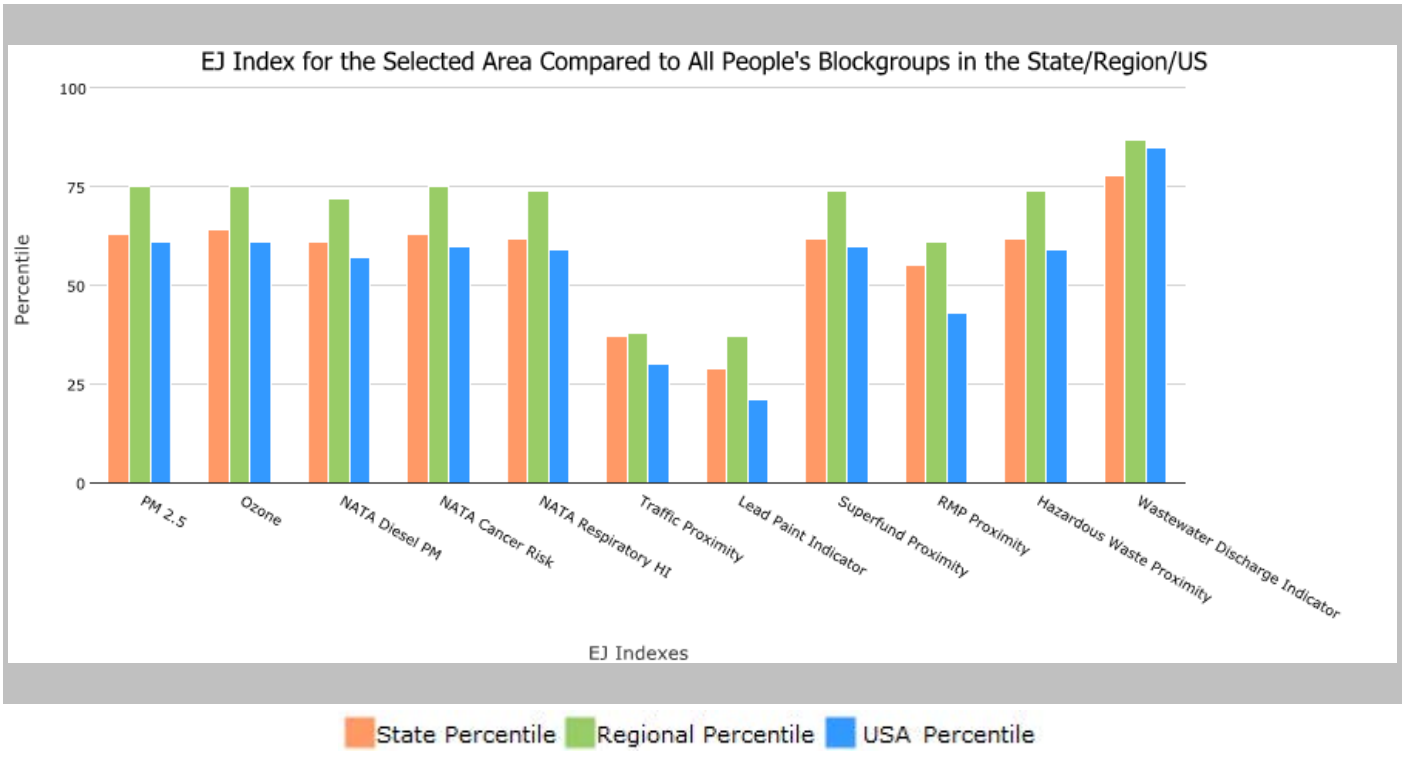
the User Specified Area, ILLINOIS, EPA Region 5

Approximate Population: 8,832

Input Area (sq. miles): 52.22

Chester - Area

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	63	75	61
EJ Index for Ozone	64	75	61
EJ Index for NATA* Diesel PM	61	72	57
EJ Index for NATA* Air Toxics Cancer Risk	63	75	60
EJ Index for NATA* Respiratory Hazard Index	62	74	59
EJ Index for Traffic Proximity and Volume	37	38	30
EJ Index for Lead Paint Indicator	29	37	21
EJ Index for Superfund Proximity	62	74	60
EJ Index for RMP Proximity	55	61	43
EJ Index for Hazardous Waste Proximity	62	74	59
EJ Index for Wastewater Discharge Indicator	78	87	85



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

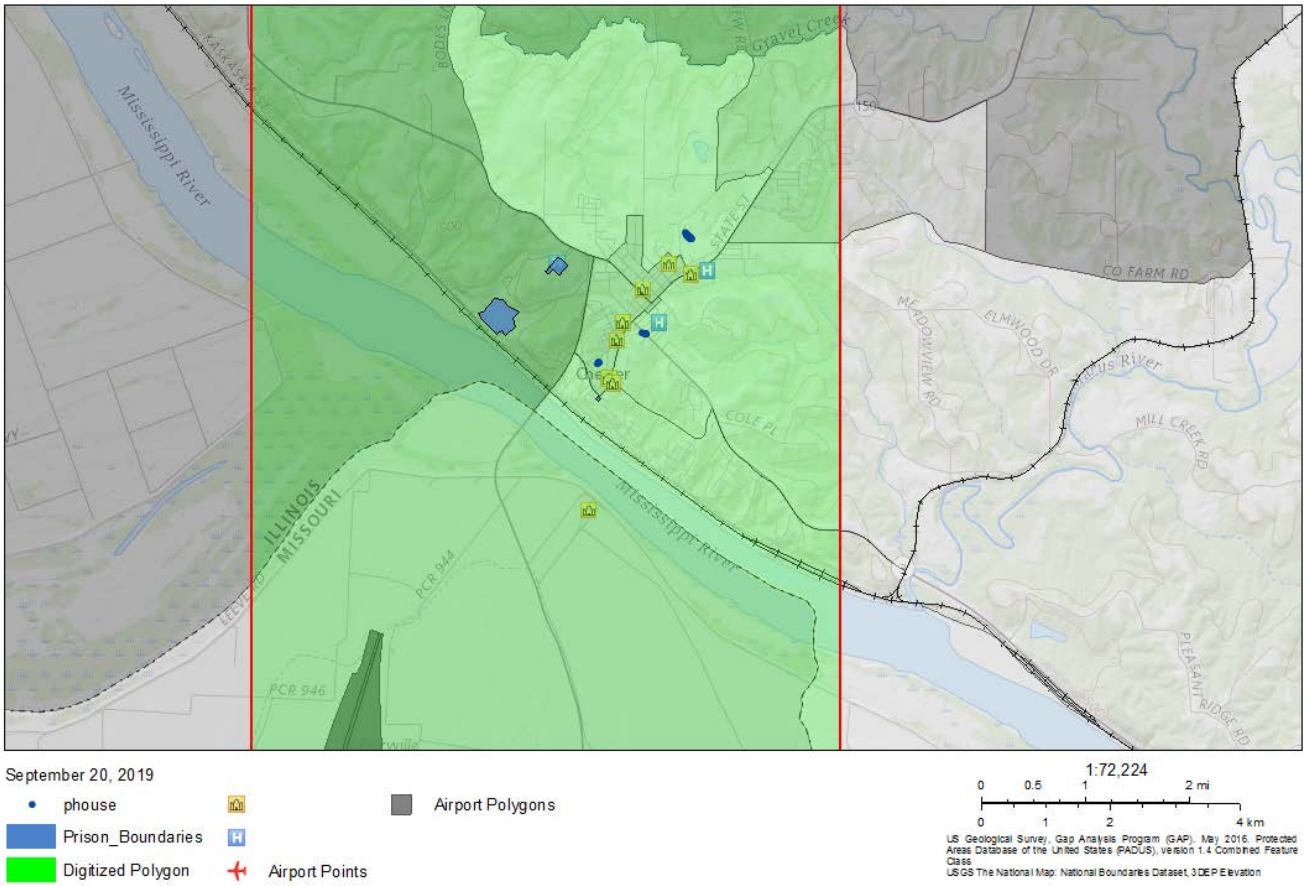
EJSCREEN Report (Version 2018)

the User Specified Area, ILLINOIS, EPA Region 5

Approximate Population: 8,832

Input Area (sq. miles): 52.22

Chester - Area



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2018)

the User Specified Area, ILLINOIS, EPA Region 5

Approximate Population: 8,832

Input Area (sq. miles): 52.22

Chester - Area

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	10.7	12.1	4	10.8	30	9.53	72
Ozone (ppb)	45.8	43.3	95	42.6	92	42.5	80
NATA* Diesel PM (µg/m^3)	0.533	1.28	17	0.932	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	35	36	52	34	50-60th	40	<50th
NATA* Respiratory Hazard Index	1	1.9	16	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	100	510	48	370	54	600	51
Lead Paint Indicator (% Pre-1960 Housing)	0.54	0.41	62	0.38	70	0.29	78
Superfund Proximity (site count/km distance)	0.017	0.091	7	0.12	13	0.12	20
RMP Proximity (facility count/km distance)	0.39	1.1	37	0.81	51	0.72	55
Hazardous Waste Proximity (facility count/km distance)	0.05	2.1	3	1.5	11	4.3	13
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0023	0.44	48	4.2	63	30	72
Demographic Indicators							
Demographic Index	30%	34%	54	28%	66	36%	50
Minority Population	30%	38%	52	25%	72	38%	51
Low Income Population	35%	31%	62	32%	62	34%	57
Linguistically Isolated Population	0%	5%	43	2%	58	4%	44
Population With Less Than High School Education	29%	12%	89	10%	94	13%	88
Population Under 5 years of age	3%	6%	20	6%	20	6%	20
Population over 64 years of age	13%	14%	53	15%	46	14%	50

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 0-mile radius
Description: Chester - Area

Summary of ACS Estimates	2012 - 2016
Population	8,832
Population Density (per sq. mile)	191
Minority Population	2,669
% Minority	30%
Households	2,297
Housing Units	2,661
Housing Units Built Before 1950	1,092
Per Capita Income	23,801
Land Area (sq. miles) (Source: SF1)	46.32
% Land Area	96%
Water Area (sq. miles) (Source: SF1)	1.98
% Water Area	4%

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	8,832	100%	268
Population Reporting One Race	8,735	99%	535
White	6,589	75%	239
Black	2,124	24%	197
American Indian	18	0%	25
Asian	0	0%	11
Pacific Islander	0	0%	11
Some Other Race	5	0%	52
Population Reporting Two or More Races	97	1%	66
Total Hispanic Population	485	5%	147
Total Non-Hispanic Population	8,347		
White Alone	6,163	70%	239
Black Alone	2,112	24%	197
American Indian Alone	18	0%	25
Non-Hispanic Asian Alone	0	0%	11
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	11
Two or More Races Alone	54	1%	30
Population by Sex			
Male	5,994	68%	250
Female	2,837	32%	160
Population by Age			
Age 0-4	276	3%	81
Age 0-17	1,251	14%	113
Age 18+	7,580	86%	305
Age 65+	1,164	13%	113

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016 .

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 0-mile radius
Description: Chester - Area

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	6,993	100%	225
Less than 9th Grade	510	7%	91
9th - 12th Grade, No Diploma	1,485	21%	173
High School Graduate	2,682	38%	179
Some College, No Degree	1,699	24%	142
Associate Degree	360	5%	82
Bachelor's Degree or more	617	9%	67
Population Age 5+ Years by Ability to Speak English			
Total	8,555	100%	266
Speak only English	8,146	95%	265
Non-English at Home[1+2+3+4]	409	5%	104
[1]Speak English "very well"	265	3%	83
[2]Speak English "well"	108	1%	59
[3]Speak English "not well"	36	0%	33
[4]Speak English "not at all"	0	0%	11
[3+4]Speak English "less than well"	36	0%	33
[2+3+4]Speak English "less than very well"	144	2%	61
Linguistically Isolated Households*			
Total	1	100%	19
Speak Spanish	1	100%	16
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	11
Speak Other Languages	0	0%	11
Households by Household Income			
Household Income Base	2,297	100%	109
< $15,000	280	12%	58
$15,000 - $25,000	326	14%	68
$25,000 - $50,000	760	33%	124
$50,000 - $75,000	419	18%	62
$75,000 +	513	22%	66
Occupied Housing Units by Tenure			
Total	2,297	100%	109
Owner Occupied	1,644	72%	87
Renter Occupied	653	28%	98
Employed Population Age 16+ Years			
Total	7,691	100%	243
In Labor Force	2,585	34%	147
Civilian Unemployed in Labor Force	125	2%	42
Not In Labor Force	5,106	66%	235

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 0-mile radius
Description: Chester - Area

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	7,347	100%	287
English	6,982	95%	289
Spanish	300	4%	101
French	2	0%	15
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	28	0%	37
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	0	0%	15
Chinese	0	0%	15
Japanese	N/A	N/A	N/A
Korean	0	0%	15
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	0	0%	15
Other Asian	0	0%	15
Tagalog	0	0%	15
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	15
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	8	0%	32
Total Non-English	365	5%	407

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016.
*Population by Language Spoken at Home is available at the census tract summary level and up.

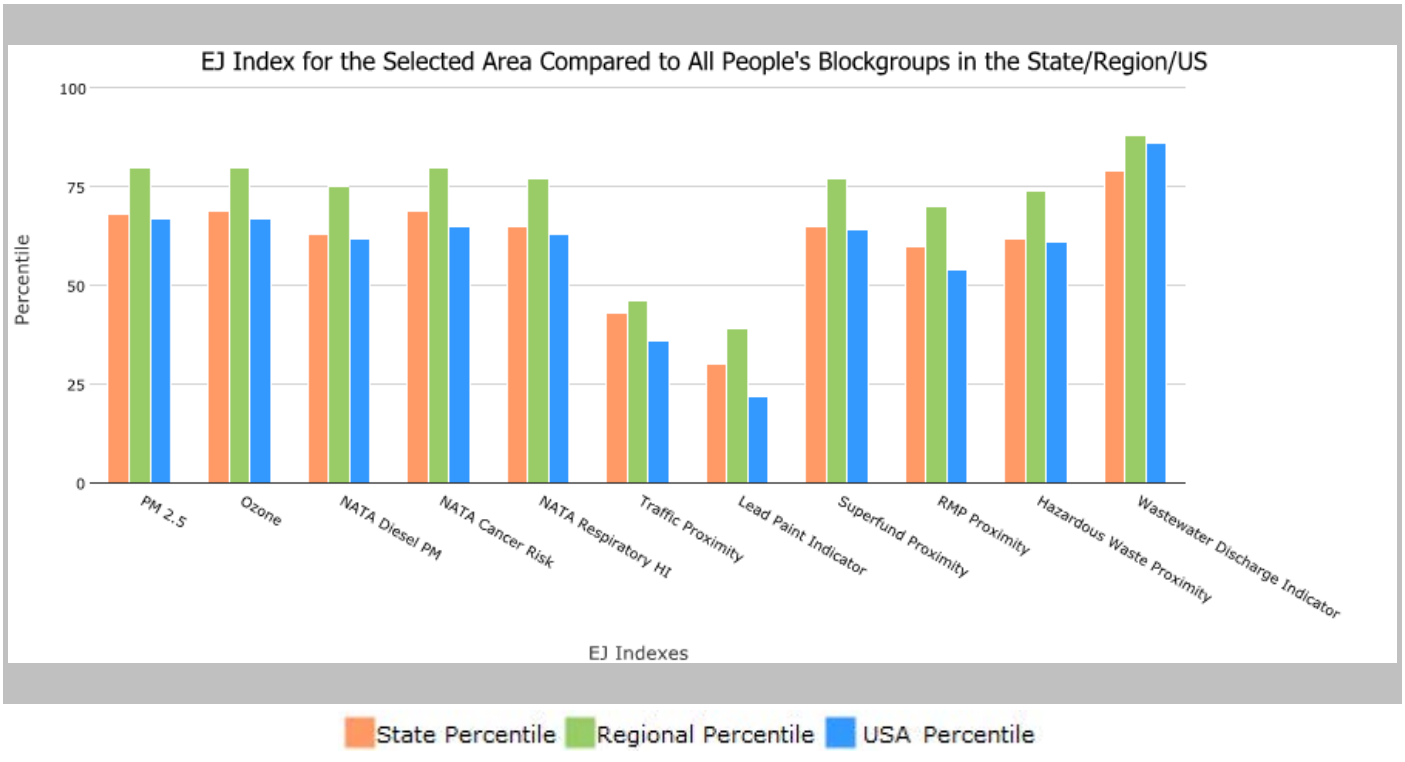
EJSCREEN Report (Version 2018)

Blockgroup: 171579512001,171579513004,171579513003,171579513001, ILLINOIS, EPA Region 5

Approximate Population: 6,471

Input Area (sq. miles): 63.48

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	68	80	67
EJ Index for Ozone	69	80	67
EJ Index for NATA* Diesel PM	63	75	62
EJ Index for NATA* Air Toxics Cancer Risk	69	80	65
EJ Index for NATA* Respiratory Hazard Index	65	77	63
EJ Index for Traffic Proximity and Volume	43	46	36
EJ Index for Lead Paint Indicator	30	39	22
EJ Index for Superfund Proximity	65	77	64
EJ Index for RMP Proximity	60	70	54
EJ Index for Hazardous Waste Proximity	62	74	61
EJ Index for Wastewater Discharge Indicator	79	88	86



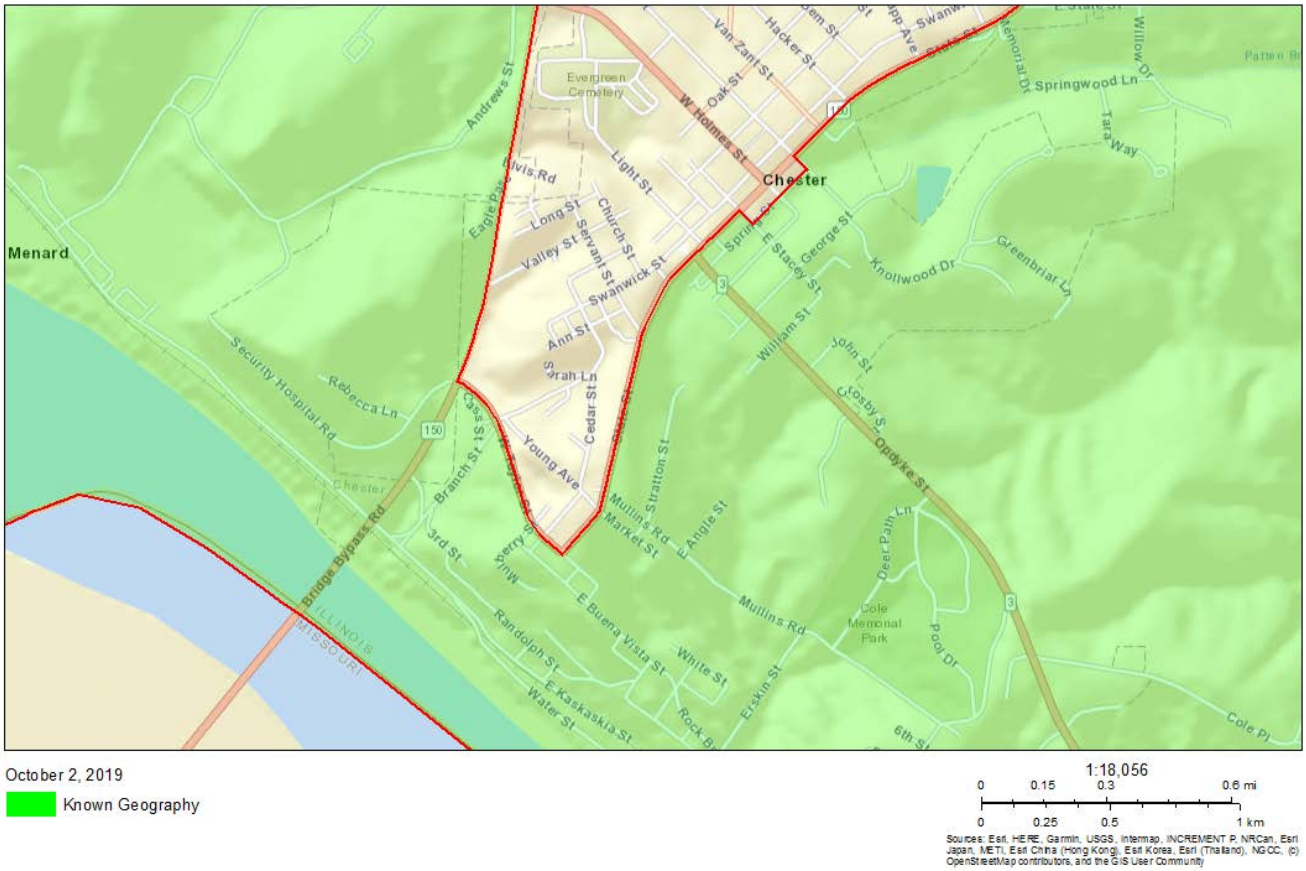
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2018)

Blockgroup: 171579512001,171579513004,171579513003,171579513001, ILLINOIS, EPA Region 5

Approximate Population: 6,471

Input Area (sq. miles): 63.48



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2018)

Blockgroup: 171579512001,171579513004,171579513003,171579513001, ILLINOIS, EPA Region 5

Approximate Population: 6,471

Input Area (sq. miles): 63.48

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	10.7	12.1	4	10.8	30	9.53	72
Ozone (ppb)	45.8	43.3	95	42.6	92	42.5	80
NATA* Diesel PM (µg/m^3)	0.545	1.28	17	0.932	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	35	36	52	34	50-60th	40	<50th
NATA* Respiratory Hazard Index	1	1.9	16	1.7	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	66	510	42	370	48	600	44
Lead Paint Indicator (% Pre-1960 Housing)	0.65	0.41	72	0.38	78	0.29	85
Superfund Proximity (site count/km distance)	0.017	0.091	7	0.12	13	0.12	20
RMP Proximity (facility count/km distance)	0.44	1.1	39	0.81	53	0.72	57
Hazardous Waste Proximity (facility count/km distance)	0.051	2.1	4	1.5	11	4.3	13
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0028	0.44	49	4.2	64	30	73
Demographic Indicators							
Demographic Index	34%	34%	60	28%	72	36%	56
Minority Population	41%	38%	62	25%	79	38%	61
Low Income Population	36%	31%	63	32%	63	34%	58
Linguistically Isolated Population	0%	5%	43	2%	58	4%	44
Population With Less Than High School Education	36%	12%	94	10%	96	13%	93
Population Under 5 years of age	2%	6%	10	6%	10	6%	11
Population over 64 years of age	11%	14%	40	15%	33	14%	37

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN ACS Summary Report

Location: Blockgroup: 171579512001,171579513004,171579513003,171579513001
Ring (buffer): 0-mile radius
Description:

Summary of ACS Estimates	2012 - 2016
Population	6,471
Population Density (per sq. mile)	115
Minority Population	2,660
% Minority	41%
Households	1,320
Housing Units	1,572
Housing Units Built Before 1950	780
Per Capita Income	20,524
Land Area (sq. miles) (Source: SF1)	56.35
% Land Area	89%
Water Area (sq. miles) (Source: SF1)	7.13
% Water Area	11%

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	6,471	100%	268
Population Reporting One Race	6,400	99%	466
White	4,223	65%	239
Black	2,171	34%	183
American Indian	6	0%	11
Asian	0	0%	11
Pacific Islander	0	0%	11
Some Other Race	0	0%	11
Population Reporting Two or More Races	71	1%	66
Total Hispanic Population	470	7%	147
Total Non-Hispanic Population	6,001		
White Alone	3,811	59%	239
Black Alone	2,159	33%	184
American Indian Alone	6	0%	11
Non-Hispanic Asian Alone	0	0%	11
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	11
Two or More Races Alone	25	0%	30
Population by Sex			
Male	5,005	77%	250
Female	1,466	23%	157
Population by Age			
Age 0-4	125	2%	38
Age 0-17	608	9%	87
Age 18+	5,863	91%	305
Age 65+	693	11%	113

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016 .

EJSCREEN ACS Summary Report

Location: Blockgroup: 171579512001,171579513004,171579513003,171579513001
Ring (buffer): 0-mile radius
Description:

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	5,420	100%	225
Less than 9th Grade	460	8%	91
9th - 12th Grade, No Diploma	1,488	27%	173
High School Graduate	1,938	36%	179
Some College, No Degree	1,087	20%	142
Associate Degree	235	4%	82
Bachelor's Degree or more	447	8%	67
Population Age 5+ Years by Ability to Speak English			
Total	6,346	100%	266
Speak only English	5,951	94%	265
Non-English at Home[1+2+3+4]	395	6%	104
[1]Speak English "very well"	273	4%	83
[2]Speak English "well"	113	2%	59
[3]Speak English "not well"	9	0%	19
[4]Speak English "not at all"	0	0%	11
[3+4]Speak English "less than well"	9	0%	19
[2+3+4]Speak English "less than very well"	122	2%	61
Linguistically Isolated Households*			
Total	0	0%	11
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	11
Speak Other Languages	0	0%	11
Households by Household Income			
Household Income Base	1,320	100%	90
< $15,000	145	11%	51
$15,000 - $25,000	193	15%	68
$25,000 - $50,000	304	23%	70
$50,000 - $75,000	289	22%	57
$75,000 +	389	29%	66
Occupied Housing Units by Tenure			
Total	1,320	100%	90
Owner Occupied	1,042	79%	87
Renter Occupied	278	21%	64
Employed Population Age 16+ Years			
Total	5,906	100%	243
In Labor Force	1,393	24%	139
Civilian Unemployed in Labor Force	42	1%	25
Not In Labor Force	4,513	76%	235

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: Blockgroup: 171579512001,171579513004,171579513003,171579513001
Ring (buffer): 0-mile radius
Description:

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016.
*Population by Language Spoken at Home is available at the census tract summary level and up.

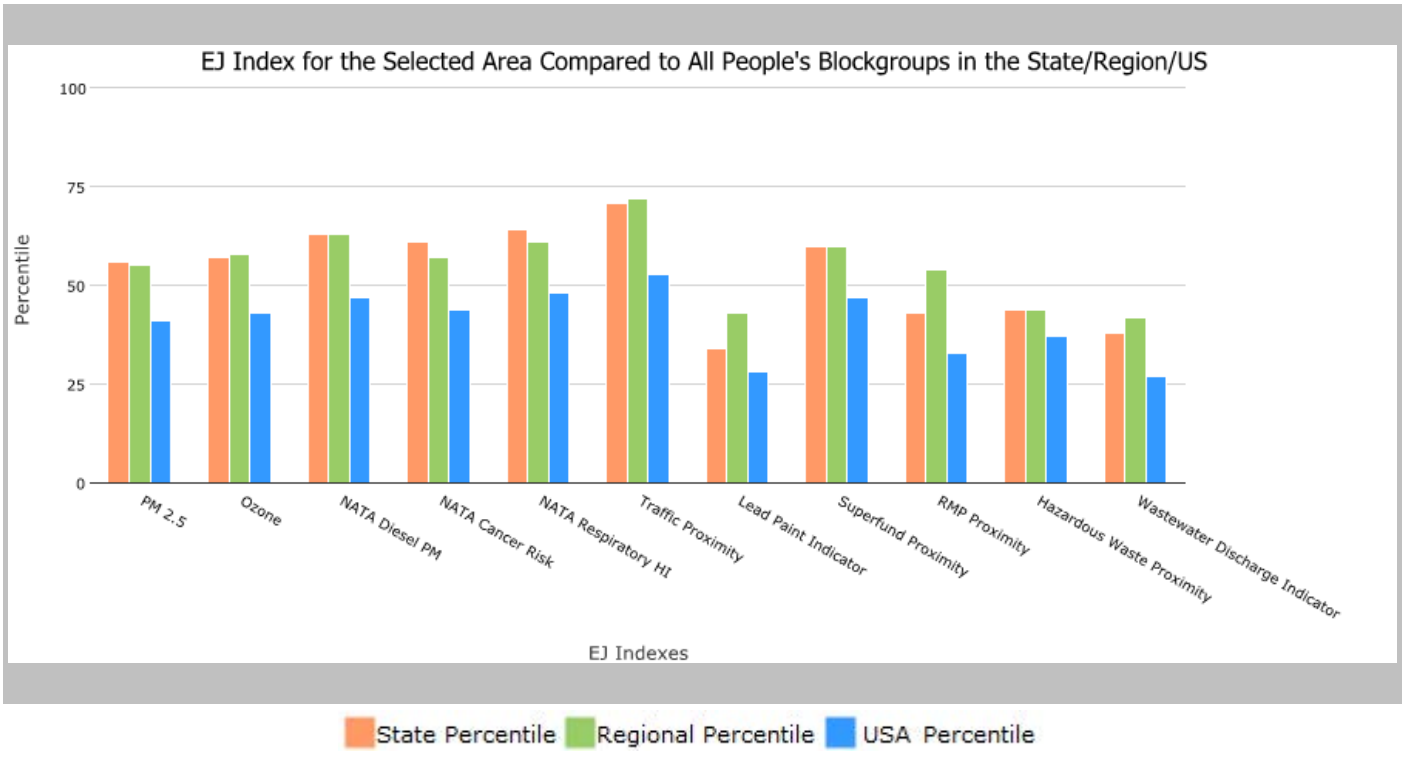
EJSCREEN Report (Version 2018)

Blockgroup: 291574701003, MISSOURI, EPA Region 7

Approximate Population: 823

Input Area (sq. miles): 64.33

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	56	55	41
EJ Index for Ozone	57	58	43
EJ Index for NATA* Diesel PM	63	63	47
EJ Index for NATA* Air Toxics Cancer Risk	61	57	44
EJ Index for NATA* Respiratory Hazard Index	64	61	48
EJ Index for Traffic Proximity and Volume	71	72	53
EJ Index for Lead Paint Indicator	34	43	28
EJ Index for Superfund Proximity	60	60	47
EJ Index for RMP Proximity	43	54	33
EJ Index for Hazardous Waste Proximity	44	44	37
EJ Index for Wastewater Discharge Indicator	38	42	27



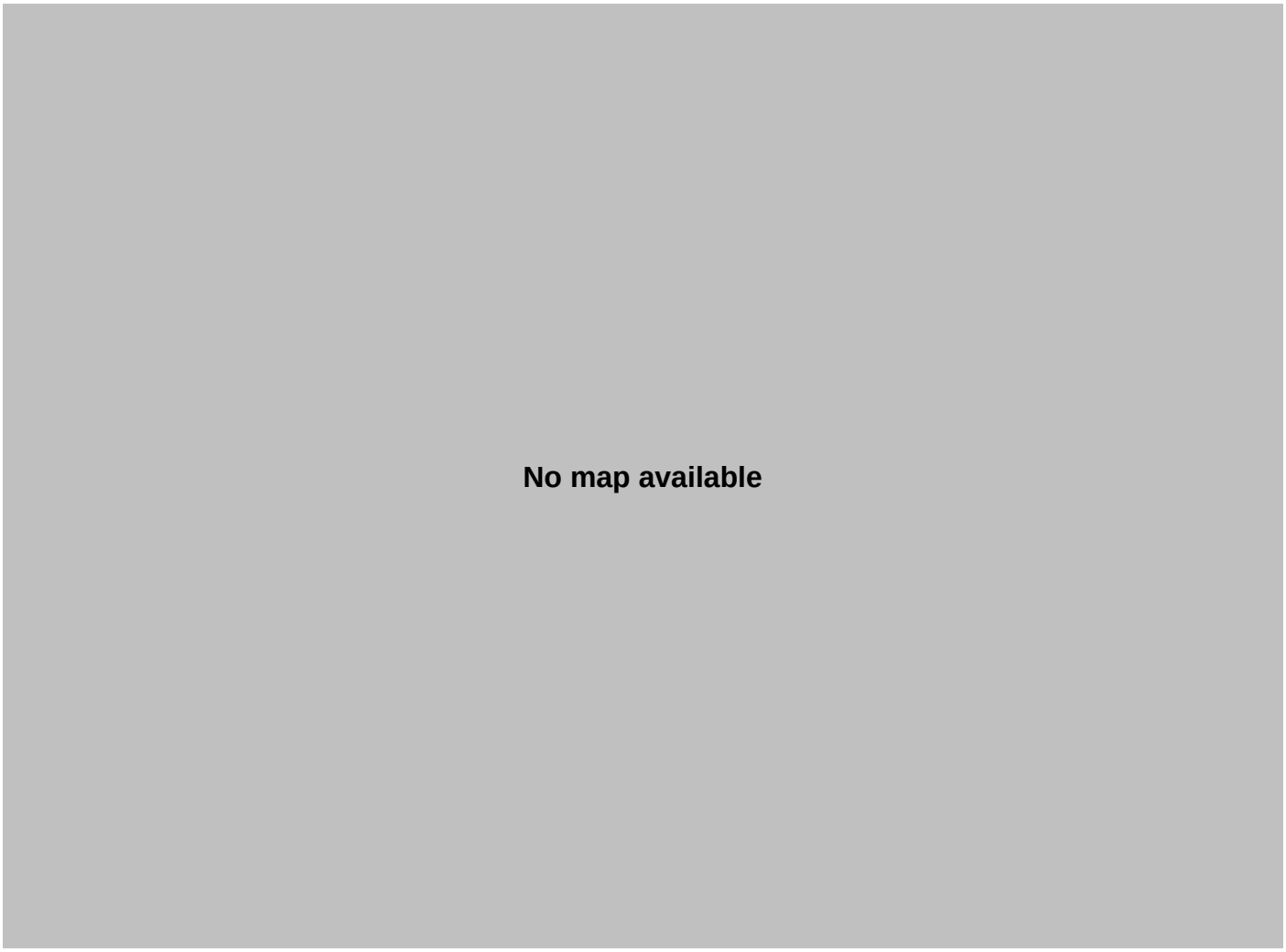
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2018)

Blockgroup: 291574701003, MISSOURI, EPA Region 7

Approximate Population: 823

Input Area (sq. miles): 64.33



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2018)

Blockgroup: 291574701003, MISSOURI, EPA Region 7

Approximate Population: 823

Input Area (sq. miles): 64.33

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	10.6	10.1	66	9.45	85	9.53	72
Ozone (ppb)	45.3	43.2	78	42.8	81	42.5	76
NATA* Diesel PM (µg/m^3)	0.322	0.953	18	0.78	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	34	43	7	38	<50th	40	<50th
NATA* Respiratory Hazard Index	0.95	1.7	6	1.5	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	2.1	270	6	490	6	600	6
Lead Paint Indicator (% Pre-1960 Housing)	0.28	0.3	61	0.35	50	0.29	60
Superfund Proximity (site count/km distance)	0.02	0.087	24	0.091	29	0.12	23
RMP Proximity (facility count/km distance)	0.3	0.61	56	0.92	40	0.72	49
Hazardous Waste Proximity (facility count/km distance)	0.25	1	48	0.82	48	4.3	40
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	4.6E-05	4.7	50	2.4	45	30	54
Demographic Indicators							
Demographic Index	20%	27%	43	26%	48	36%	31
Minority Population	7%	20%	37	19%	35	38%	17
Low Income Population	34%	35%	51	32%	57	34%	55
Linguistically Isolated Population	4%	1%	90	2%	85	4%	66
Population With Less Than High School Education	10%	11%	54	10%	62	13%	51
Population Under 5 years of age	3%	6%	18	6%	16	6%	19
Population over 64 years of age	13%	15%	43	15%	44	14%	51

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN ACS Summary Report

Location: Blockgroup: 291574701003
Ring (buffer): 0-mile radius
Description:

Summary of ACS Estimates	2012 - 2016
Population	823
Population Density (per sq. mile)	13
Minority Population	59
% Minority	7%
Households	310
Housing Units	338
Housing Units Built Before 1950	49
Per Capita Income	25,219
Land Area (sq. miles) (Source: SF1)	62.80
% Land Area	98%
Water Area (sq. miles) (Source: SF1)	1.53
% Water Area	2%

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	823	100%	181
Population Reporting One Race	823	100%	236
White	823	100%	181
Black	0	0%	11
American Indian	0	0%	11
Asian	0	0%	11
Pacific Islander	0	0%	11
Some Other Race	0	0%	11
Population Reporting Two or More Races	0	0%	11
Total Hispanic Population	59	7%	85
Total Non-Hispanic Population	764		
White Alone	764	93%	146
Black Alone	0	0%	11
American Indian Alone	0	0%	11
Non-Hispanic Asian Alone	0	0%	11
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	11
Two or More Races Alone	0	0%	11
Population by Sex			
Male	481	58%	121
Female	342	42%	79
Population by Age			
Age 0-4	24	3%	17
Age 0-17	196	24%	73
Age 18+	627	76%	107
Age 65+	110	13%	42

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016 .

EJSCREEN ACS Summary Report

Location: Blockgroup: 291574701003
Ring (buffer): 0-mile radius
Description:

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	561	100%	98
Less than 9th Grade	36	6%	25
9th - 12th Grade, No Diploma	21	4%	20
High School Graduate	252	45%	60
Some College, No Degree	151	27%	55
Associate Degree	34	6%	22
Bachelor's Degree or more	101	18%	47
Population Age 5+ Years by Ability to Speak English			
Total	799	100%	180
Speak only English	736	92%	136
Non-English at Home[1+2+3+4]	63	8%	66
[1]Speak English "very well"	4	1%	14
[2]Speak English "well"	48	6%	59
[3]Speak English "not well"	11	1%	19
[4]Speak English "not at all"	0	0%	11
[3+4]Speak English "less than well"	11	1%	19
[2+3+4]Speak English "less than very well"	59	7%	61
Linguistically Isolated Households*			
Total	11	100%	19
Speak Spanish	11	100%	16
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	11
Speak Other Languages	0	0%	11
Households by Household Income			
Household Income Base	310	100%	49
< $15,000	21	7%	19
$15,000 - $25,000	44	14%	23
$25,000 - $50,000	68	22%	35
$50,000 - $75,000	76	25%	39
$75,000 +	101	33%	39
Occupied Housing Units by Tenure			
Total	310	100%	49
Owner Occupied	254	82%	45
Renter Occupied	56	18%	36
Employed Population Age 16+ Years			
Total	651	100%	124
In Labor Force	432	66%	107
Civilian Unemployed in Labor Force	23	4%	29
Not In Labor Force	219	34%	65

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: Blockgroup: 291574701003
Ring (buffer): 0-mile radius
Description:

	2012 - 2016 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A means not available. Source: U.S. Census Bureau, American Community Survey (ACS) 2012 - 2016.
*Population by Language Spoken at Home is available at the census tract summary level and up.

Appendix I
Agency Collaboration Materials

Chester Bridge Environmental Assessment - Agency Contacts		
Agency	**Role**	**Contact**
U.S. Army Corps of Engineers	**Cooperating**	
-Section 408 Point of Contact		Ed Rodriguez
-Section 10 Point of Contact		Rob Gramke
-General NEPA Point of Contact		Danny McClendon
-Section 404 Point of Contact		Rob Gramke
Eighth Coast Guard District	**Cooperating**	Eric Washburn
Bois Brule Levee and Drainage District	**Local Government**	President, Board of Commissioners
		District Engineer USACE, St. Louis (Matt Hahn)
Kaskaskia Island Levee and Drainage District	**Local Government**	Michael Colbert, Daniel Lankford, Shane Sulser
USDA -Natural Resource Conservation Service	**Federal Agency**	Renee L. Cook, Area Conservationist
U.S. Fish and Wildlife Service	**Federal Agency**	
Missouri Ecological Services Field Office		Karen Herrington
Middle Mississippi River National Wildlife Refuge		Director
National Park Service	**Federal Agency**	Nick Chevance
Missouri Emergency Management Agency	**State Agency**	Karen McHugh and Scott Samuels
Federal Emergency Management Agency	**Federal Agency**	Kenneth Sessa
Missouri Department of Conservation	**State Agency**	Audrey Beres
Missouri Department of Natural Resources	**State Agency**	Lorisa Smith
Randolph County Commissioners	**Local Agency**	
Perry County Commissioners	**Local Agency**	
City of Chester	**Local Agency**	Mayor Tom Page
Southeast Missouri Regional Planning Commission	**Local Agency**	
Southwest Illinois Metropolitan and Regional Planning Commission	**Local Agency**	
U.S. Environmental Protection Agency	**Federal Agency**	Larry Shepard
Missouri State Historic Preservation Office	**State Agency**	Judith Deel
City of Perryville	**Local Agency**	Ken Baer, Mayor
Perryville Airport	**Local Agency**	Manager: Lawrence A. Dauer
Federal Aviation Administration	**Federal Agency**	Multiple St. Louis and Kansas City Offices
New Bourbon Port Authority	**State Agency**	Owen Welge

Collaboration Point #1

October 17, 2017

Subject: Agency Collaboration Point #1
Chester Bridge Environmental Assessment
Perry County, Missouri and Randolph County, Illinois

Dear Sir/Madam:

Introduction
This letter accompanies the data associated with Agency Collaboration point #1. The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois DOT (IDOT, is preparing a Location Study and National Environmental Policy Act (NEPA) investigation of the Chester Bridge crossing of the Mississippi River, from Perry County, Missouri to Randolph County, Illinois. The project also includes the investigation of the Horse Island Chute Bridge on the Missouri approach.

Agency Collaboration Plan
The goal of the project's Agency Collaboration Plan is to provide interested regulatory agencies with the data they need to stay informed and a mechanism to provide relevant input. Collaboration points occur at key points in the NEPA process. The anticipated points of contact are 1) when the Purpose and Need is produced, 2) when Reasonable Alternatives are established and 3) when a Preferred Alternative emerges.

Project Purpose and Need
The term "purpose and need" refers to the transportation-related problems that a study is intended to address. The generation and evaluation of alternatives is conducted to develop the most-appropriate solution to the identified problems. Ultimately, the identification of a preferred alternative will be based, in part, on how well it satisfies the study's purpose and need.

In its very broadest sense, the Chester Bridge EA is intended to maintain a safe and reliable crossing of the Mississippi River. The specific goals and objectives associated with the Chester Bridge Environmental Assessment can be defined as follows:

- The Route 51 bridges are too narrow.
- The Route 51 Mississippi River crossing is in poor condition.
- Route 51 is subject to flood-related closures.
- The Route 51 crossing is important to local and regional connectivity.

Attached Materials
Attached to this email is the Project Fact Sheet, the Purpose and Need Statement, and an annotated Study Area map.

We appreciate your involvement in this very important project and look forward to continuing to work with you as the project progresses. Please contact me at 314.335.3011 or at buddy.desai@ch2m.com should you have any questions.

Sincerely,

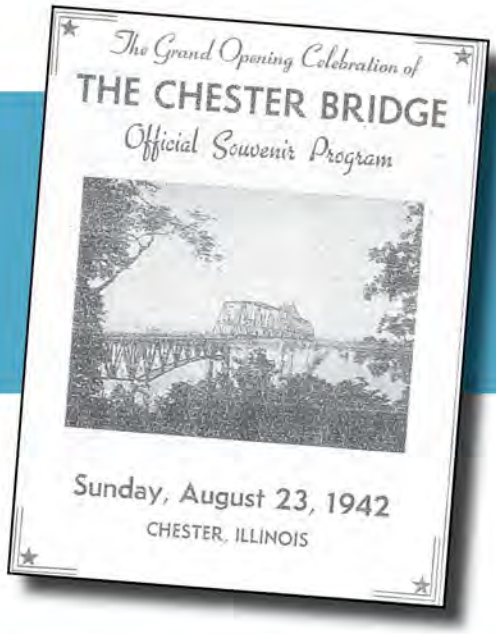
Buddy Desai
Consultant Project Manager
CH2M

CHESTER bridge

Route 51 / Environmental Study

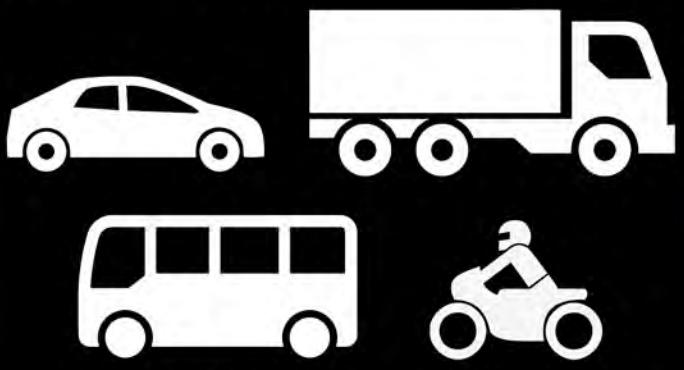
FACT SHEET

Opened in **1942**, Chester Bridge is the only vehicular bridge crossing the Mississippi River between St. Louis and Cape Girardeau



Connects MISSOURI **51** **with** ILLINOIS **150**

An average of **6,500** vehicles cross the bridge daily



Roughly **25%** of crossings are trucks or agricultural equipment

MoDOT says the bridge is safe, but is in **poor** condition and too narrow by today's design standards

The **environmental study** will investigate alternatives for providing a safe and reliable river crossing

To learn more visit **www.ChesterBridgeStudy.com**

MoDOT

Chester Bridge Environmental Assessment

Perry County, Missouri and Randolph County, Illinois

August 3, 2017

Contents

Figures

SECTION 1

Introduction/Study History

This document presents the purpose and need for the Chester Bridge Environmental Assessment (Chester Bridge EA) study. *Purpose and Need* refers to the transportation-related problems that a study is intended to address. The generation and evaluation of alternatives are conducted to develop the most appropriate solutions to the identified problems. Ultimately, the identification of a preferred alternative will be based, in part, on how well it satisfies the study's purpose and need.

In its very broadest sense, the Chester Bridge EA is intended to develop a safe and reliable Route 51 crossing, defined as the Mississippi River crossing and the Horse Island Chute bridge, of the Mississippi River. The specific problems identified in this study are the following:

- The Route 51 crossing of the Mississippi River and the Horse Island Chute bridge are too narrow for current design standards
- The Route 51 crossing of the Mississippi River is in poor condition
- Route 51 is subject to flood-related closures
- The Route 51 crossing is important to connectivity locally and within Southeast Missouri and Southwest Illinois

The remainder of this document will examine these themes. **Section 1** introduces the project and study area. **Section 1** contains several figures - **Figure 1** shows the location of the project, **Figure 2** are typical photographs of the existing crossing and **Figure 3** depicts the locations referenced in this section. **Section 2** describes the study's purpose statement. **Section 3** summarizes the specific elements that comprise the purpose and need. **Section 4** presents the study's Logical termini and independent utility.

1.1 Study Overview

The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT), is preparing a Location Study and EA for proposed improvements to the two Route 51 bridges at Chester, IL (Chester Bridge). The Chester Bridge is a continuous truss bridge across the Mississippi River. The Horse Island Chute Bridge is steel stringer bridge over the Horse Island Chute. These two bridges connect Route 51 (in Missouri) with Route 150 (in Illinois). They form the only Mississippi River roadway crossing between St. Louis (roughly 57 river miles north) and Cape Girardeau (roughly 56 river miles south). The nearest population centers are Chester (Randolph County, Illinois) and Perryville (Perry County, Missouri). Chester is located on the bluff immediately adjacent to the bridge. Perryville is located roughly 11 miles south of the bridge along Route 51. The approximate latitude/ longitude of the existing bridge is 37°54'09" N, 89°50'13" W (degrees°minutes'seconds"). The Chester Bridge was opened in 1942 as a toll bridge. Tolls were removed in 1989.

Figure 1 contains 2 vicinity maps showing the location of the Chester and Horse Island Chute Bridges.

1.2 Overview of Existing Route 51 Crossing

The Chester Bridge is composed of 4 spans with a total length of the 2,830 feet. The main spans of the Chester Bridge are two-span subdivided Warren cantilevered through trusses. Each of these spans are roughly 670 feet long. The approaches are Warren deck trusses. The Missouri approach connects across Horse Island. The Illinois approach connects to the top of the bluff in Chester. There are 4 piers in the Mississippi River associated with the bridge. Three are associated with the main spans. A fourth small pier is located in the center of the Illinois approach span along the edge of the river. The deck width is 22 feet. The vertical clearance above the deck is 20 feet.

Based on an inspection in 2016, the Chester Bridge has been determined to be too narrow for current design standards. The bridge is routinely closed, with police support, to allow for the passage of over-sized loads. While widening the lanes and/or adding shoulders will reduce the number of required bridge closings, it may not completely eliminate bridge closings due to oversized loads.

Relative to its condition, the Chester Bridge is on the MoDOT list of poor bridges. The conditions/ratings of the existing bridges are identified in **Section 3.2.1**. The Chester Bridge is also anticipated to be eligible for the National Register of Historic Places (NRHP).

An associated bridge is the steel stringer bridge over Horse Island Chute on Route 51. There is approximately 800 feet of roadway (on embankment) between the Chester Bridge and the Horse Island Chute Bridge. This bridge was also built in 1942. Total length of the bridge is 462 feet. The deck width is 22 feet. It is in slightly better condition than the Chester Bridge, but is also considered to be too narrow for current design standards. Horse Island Chute Bridge is not anticipated to be eligible for the NRHP.

Figure 2 shows the photographs of the Chester Bridge and the Horse Island Chute Bridge.

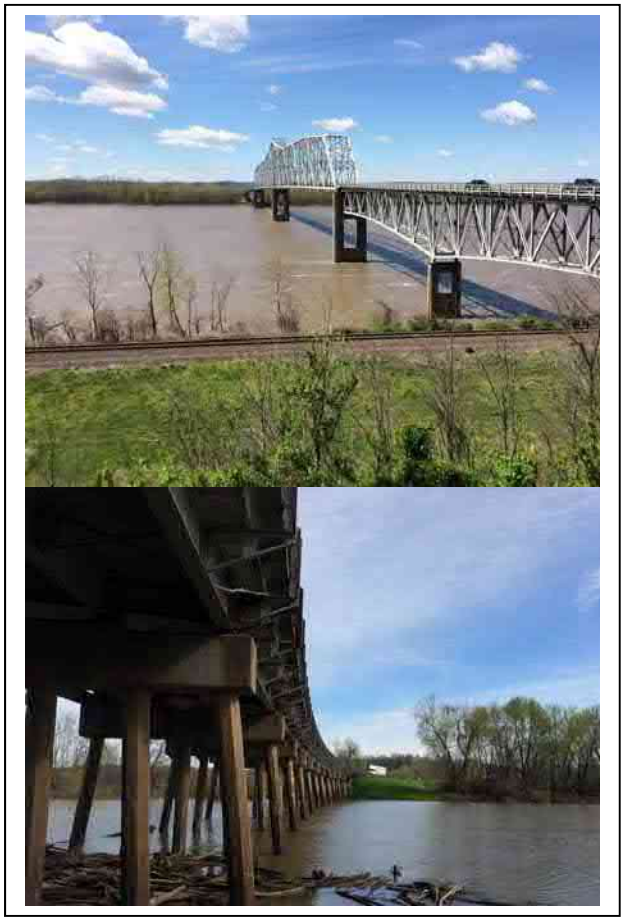
Figure 1 *Vicinity Maps*

1.3 Study Area Description

The study area for the Chester Bridge EA includes portions of Missouri and Illinois. The major elements of the study area are shown on **Figure 3** and are discussed below.

The Chester Bridge is located at river mile 110 of the upper branch of the Mississippi River (110 miles upstream of the confluence with the Ohio River). The Mississippi River is roughly 1,700 feet wide in this area. Over time, the path of the Mississippi River has changed. In 1844, the channel straightened creating Kaskaskia Island. The Old River Channel still exists and forms the official boundary between Illinois and Missouri. The Old River Channel branches near the bridge to create Horse Island. The Route 51 approach to the Chester Bridge traverses the Horse Island with a separate bridge crossing the Horse Island Chute. The road rests on embankment between the bridges.

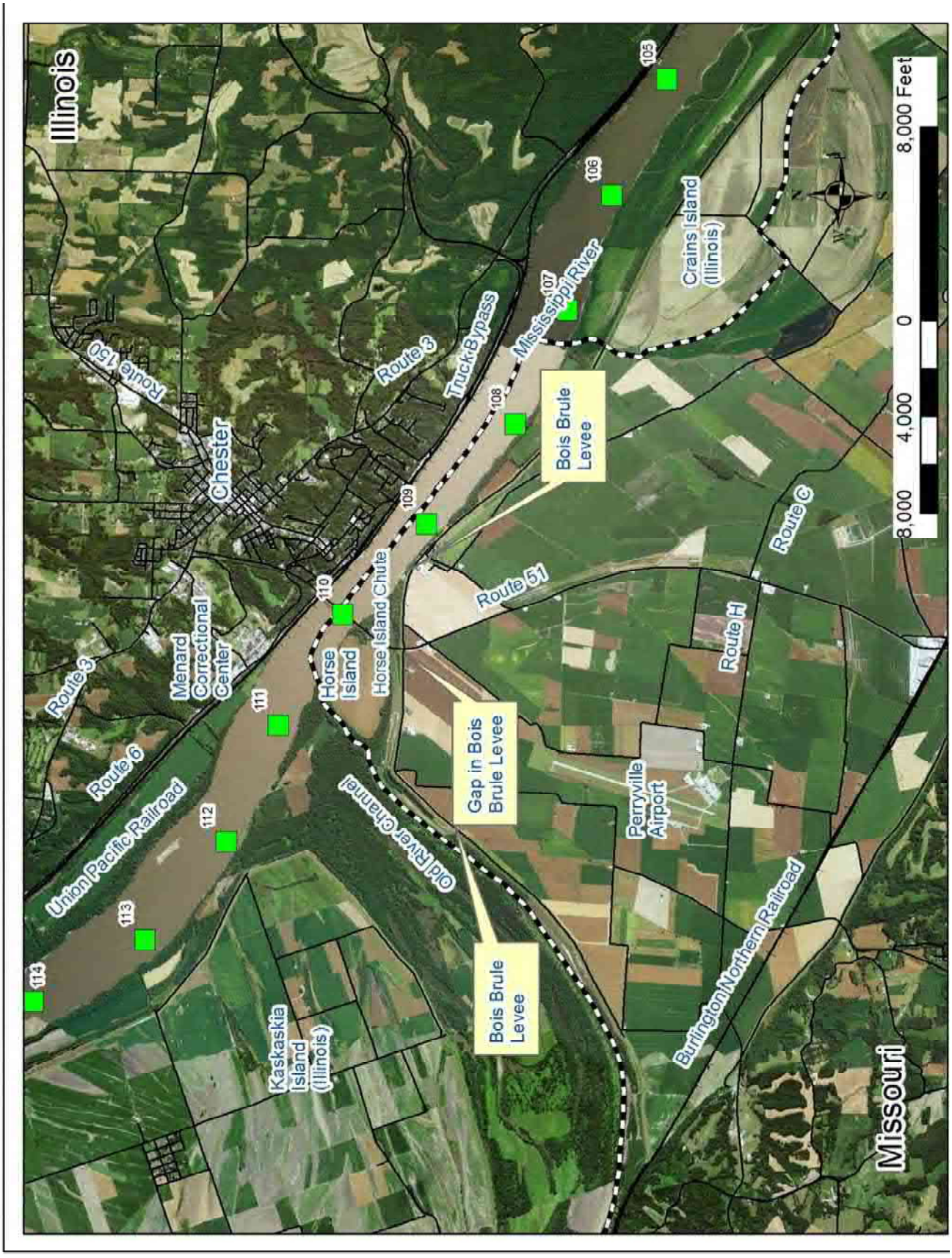
Figure 2
Typical Photographs of the Chester Bridge and the Horse Island Chute Bridge



In Missouri, the earthen Bois Brule levee parallels the river in this area. Gravel roads run along the top of the levee. Behind the levee, the land is flat and fertile and is used for agriculture. Route 51 is a two-lane road with minimal shoulders. It is the only paved road in the immediate vicinity of the Chester Bridge. The other roads are narrow gravel farm roads. Two gas stations exist at the intersection of Route 51 and Perry County Roads (PCR) 239 and 944. There are also a few isolated farmsteads on this side of the river. The largest development is at the Perryville Airport (1856 Highway H). This regional airport was originally built by the U.S. Government as a training facility in the early 1940's. The airport was deeded to the City of Perryville in 1947. The airport has a 7,000-foot x 100-foot concrete runway equipped with medium intensity runway lights which allow for use by numerous kinds of aircraft, including jets. Fixed base operators include Sabreliner Aviation and CertiFLY Aviation Parts, which is engaged in modifications and overhauls to both civilian and military aircraft. The city of Perryville is located approximately 9 miles from the airport. Perryville (population 8,394) is the county seat of Perry County.

In Illinois, a steep bluff rises approximately 100 feet from the river to the city of Chester (population 8,586). Immediately off the bridge is the Chester Welcome Center on IL Route 150. Chester is known as the home of comic book hero Popeye. His statue is a highlight of the welcome center. A Union Pacific Railroad line parallels the river below the bluff, and goes under the bridge. IL Route 6 also parallels the river and railroad. North/West of the bridge on Route 6 is the Menard Correctional Center, a maximum-security state penitentiary. Land uses to the south/east of the existing bridge include a Chester water treatment facility, a riverboat pier, residences, and recreational facilities. Two main routes traverse Chester – IL Route 3 (parallel to the river) and IL Route 150 (perpendicular to the river). To remove heavy truck traffic from downtown Chester, a Truck Bypass was developed. South of the city, the Truck Bypass follows the river front road until it gets to the Chester Bridge. From there, trucks traverse a short spur to Route 150, back to Route 3, north of the city center.

Figure 3
Chester Bridge Project Area



SECTION 2

Purpose Statement

The Chester Bridge EA is a transportation study that will investigate and identify improvements intended to develop a safe and reliable Route 51 crossing of the Mississippi River. Overall, the purpose of the Chester Bridge EA is to:

- Improve the reliability of the crossing
- Improve the functionality of the crossing

Within the context of this purpose, several specific transportation problems have been identified. The specific transportation problems affecting the Route 51 crossings include, in no particular order:

Major Element #1 – The Route 51 crossing of the Mississippi River and the Horse Island Chute Bridge are too narrow for current design standards
The current bridges are very narrow with no shoulders. Many modern design standards are not incorporated into the bridges. This creates safety issues and degrades the functionality.

Major Element #2 – The Route 51 crossing of the Mississippi River is in poor condition
The condition of the current bridges is such that it requires continual maintenance, resulting in substantial expense and periodic closures.

Major Element #3 – Route 51 is subject to flood-related closures
There is a small gap in the Bois Brule Levee, where the Horse Island Chute Bridge meets Route 51. In order to maintain the integrity of the levee, a temporary floodwall is installed over the road. The temporary floodwall closes Route 51 and the river crossing.

Major Element #4 – The Route 51 crossing is important to local and regional connectivity
The existing bridge system provides locally important roadway connections. Some of these are the only available access points. These will need to be accommodated in appropriate ways. The current bridges are also important to connectivity within the area covered by the Southeast Missouri Regional Planning Organization (SEMO-RPC).

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SECTION 3

Elements of the Purpose and Need

This section of the document will examine the context of the transportation problems that affect the Route 51 crossing (Chester Bridge and Horse Island Chute Bridge). As defined here, context refers to the overall nature, scope, and degree of how the transportation problems affect the existing corridor.

These transportation problems are often inter-related but will be discussed within the framework of four major elements.

The specific transportation issues that affect the Chester/Horse Island Chute Bridges include:

1. The existing crossing is too narrow for current design standards
2. The existing crossing is in poor condition
3. The existing bridge approach is closed by flood waters along the Bois Brule levee
4. The existing crossing provides important local access as well as important connectivity within the SEMO-RPC Region

3.1 The Route 51 Crossing is Too Narrow for Current Design Standards

The Chester Bridge and the Horse Island Chute Bridge were designed and constructed for narrower vehicles than currently exist. Consequently, several of the existing bridge's physical features are now too narrow for current design standards. These issues contribute to the reduction of traffic efficiency, traffic service levels, and safety conditions on the bridges, resulting in diminished traffic performance, increased driver safety issues, and heightened operational concerns. Addressing the following substandard design features are important goals of the Chester Bridge project.

3.1.1 Narrow Travel Lanes

The existing bridges have deck widths of 22 feet. The travel lanes on the Chester Bridge are 11 feet wide with no shoulders. The configuration of the Horse Island Chute Bridge is similar. While this was consistent with standard highway design when the bridge was built and for many years after, average vehicle dimensions have continued to increase. As a result, AASHTO now recommends a standard lane width of 12 feet. Another factor contributing to the adverse effect of narrow lane widths is the increasing number of larger-sized trucks, buses, and farm equipment that now cross the Chester Bridge. Typical truck-trailer and full-size passenger bus widths are now 102 inches (8.5 feet). Almost one-quarter of bridge traffic is made up of trucks[1]. When lane widths are less than 12 feet and lateral clearances (i.e., the distance between the edge of the travel lanes and physical obstructions such as roadway barriers) are less than 6 feet, typical driver reaction is to reduce speed due to uncomfortable driving conditions, and to lengthen the distances between vehicles in the same lane. Substandard lane width can affect the efficient flow of traffic and contribute to delays when crashes, vehicle breakdowns, or scheduled road work result in lane closures. Crash data provided by MoDOT and IDOT for the portion of the project with narrow travel lanes and no shoulders (between Perry County Roads 238/946 in Missouri and the Illinois end of the Chester Bridge) show that over 50% of crashes (13 out of 25) between 2011 and 2015 are either head-on or sideswipe with vehicles traveling in the opposite direction – both crash types can be attributed, in part, to narrow travel lanes. In addition, because of the narrow deck width, oversize loads and large farm equipment often require police assistance to stop traffic to cross the bridges. Based on conversations with the Chester Police Department, the bridge is closed for oversized loads between 12 and 20 times per day.

[1]According to traffic data provided by MoDOT and IDOT in 2017. MoDOT traffic planning data provides a truck percentage of just under 22%. 2015 traffic classification data from IDOT shows truck percentages of 22% or 23% depending on the direct of traffic flow.

Missouri's current standards for new bridges longer than 1,000 feet specify 12-foot lanes and 10-foot shoulders. Missouri's bridge standards meet or exceed the American Association of State Highway and Transportation Officials (AASHTO) national standards[2].

***Figure 4**-The Chester Bridge must use lane closures during maintenance or to accommodate over-sized loads (photo credit: Google Earth).*

3.1.2 Lack of Emergency Shoulder Lanes

The 22-foot wide deck results in a complete lack of shoulders on the bridges. Stalled vehicles, wide load crossings and minor accidents on the bridges can result in significant delays. Due to the lack of emergency shoulders, clearing accidents sometimes requires blocking all traffic. The lack of a shoulder breakdown lane on the bridge main span and approaches also reduces safety, as stalled vehicles themselves become safety hazards. While accident data suggest that crashes on the bridge are relatively low, closures to allow oversize loads (primarily agricultural vehicles) are more common. According to conversations with the Chester Police Department, this happens between 12 and 20 times per day. Local police facilitate these closures, each which take approximately 15 minutes.

In Missouri, along Route 51 south of the bridge, 8-foot paved shoulders exist. Between the bridges very narrow shoulders exist. In Illinois, along Route 150, narrow turf shoulders exist.

3.1.3 Approach Span Alignments

There are curves on the approaches at both ends of the existing crossing. To maneuver through these curves, drivers of wider trucks and buses traveling in the right lane often encroach on the left travel lane, making it more difficult for vehicles operating in the left lane. This phenomenon results in slower travel speeds for all vehicles and reduced bridge capacity, because trucks operating on the approach span tend to travel at comparatively slower speeds due to the span's incline, truck weight and acceleration requirements, the presence of the curve and the narrow lane widths.

***Figure 5** - Typical view of truck crossing center line on curves at the bridge approaches (photo credit: Google Earth).*

3.1.4 Bike/Ped Access

Consideration must be given to safely accommodating pedestrians and bicyclists during the development of federally funded highway projects (23 CFR 652.5). The bridge's narrow lane width and lack of shoulders discourage pedestrians and bicyclists from crossing.

Important bicycle resources in the area include U.S. Bicycle Route 76 (USBR-76) and Illinois' Mississippi River Trail (MRT). In Missouri, USBR-76 is signed and crosses the Mississippi River on the Chester Bridge. The MRT utilizes Route 6 and Truck Bypass to traverse Chester.

[2] Under AASHTO shoulders narrower than 10 feet are possible.

3.2 The Route 51 Crossing is in Poor Condition

As bridges age, conditions deteriorate generally leading to traffic restrictions as deck repairs and other routine maintenance activities are performed. Traffic also is reduced to one lane for the increasingly needed inspections. Currently, there is a project for deck and structural repairs on the bridge (STIP project J9P3104). This work is scheduled for a January 2018 letting.

Addressing closures due to condition issues is a transportation problem that the Chester Bridge EA is intended to rectify. This section will discuss the condition of the Chester Bridge and the Horse Island Chute Bridge.

3.2.1 Chester Bridge Conditions

MoDOT's 2016 Bridge Inventory and Inspection System reports the following conditions for the Chester Bridge (L0135):

Deck condition:	Poor (4/9)
Superstructure condition:	Poor (4/9)
Substructure condition:	Poor (4/9)
Deck geometry[3] appraisal:	Basically intolerable requiring high priority of replacement (2/9)
Channel protection:	Bank protection is in need of minor repairs
Pier/abutment protection:	None present but re-evaluation suggested
Scour condition:	Bridge is scour critical; bridge foundations determined to be unstable
Operating/Inventory rating:	42.6 tons/25.7 tons

Overall, from a structural standpoint, the inspection recommendation was consideration for the replacement of the bridge due to substandard load carrying capacity.

The Chester Bridge has been placed on the MoDOT List of Poor Bridges because of historically documented poor conditions.

Barge strikes of piers force the closure of the Chester Bridge periodically to investigate the integrity of the piers and the bridge.

3.2.2 Horse Island Chute Bridge Conditions

MoDOT's 2016 Bridge Inventory and Inspection System reports the following conditions for the Horse Island Chute Bridge (L1004):

Deck condition:	Fair (5/9)
Superstructure condition:	Good (7/9)
Substructure condition:	Fair (5/9)
Deck geometry appraisal:	Basically intolerable requiring high priority of replacement (2/9)
Channel protection:	Bank protection is in need of minor repairs
Scour condition:	Bridge is scour critical; bridge foundations determined to be unstable.
Operating/Inventory rating:	67.3 tons/40.6 tons

[3] Deck geometry is calculated using curb-to-curb width and the minimum vertical clearance over the bridge roadway. Deck geometry rating codes vary by traffic level.

Overall, from a structural standpoint, the inspection recommendation was for a bridge rehabilitation because of general structure deterioration and inadequate strength.

3.3 Route 51 is subject to Flood-Related Closures

On the northeast side of the Mississippi River (Illinois), the topography is defined by steep rocky/wooded bluffs. Flooding is limited to the areas immediately adjacent to the river. There are no substantial flood-related issues on this side of the river that affect the Chester Bridge.

On the southwest side of the Mississippi River (Missouri), the topography is broad and flat. Flooding is a dominant feature affecting this landscape. The Bois Brule Levee and Drainage District covers the portion of Missouri in the vicinity of the Chester Bridge. There is a small gap in the Bois Brule Levee, where the Horse Island Chute Bridge meets Route 51. In order to maintain the integrity of the levee, a temporary flood wall is installed over the road, when necessary. This closes Route 51 and the river crossing. The Bois Brule Levee and gap are labeled on **Figure 3**. Minimizing these closures is a transportation problem that this project is intended to rectify. This section will discuss this issue.

Figure 6 *– Gap in Bois Brule levee at Route 51.*

3.3.1 Bois Brule Levee and Drainage District

The Bois Brule Bottom is approximately six miles wide and eighteen miles long. With rich soil, it is very suited to farming. Bois Brule Bottom is bordered to the north by the Old River Channel, which is the old channel of the Mississippi River which shifted course following the flood of 1844 and separates Bois Brule Bottom from Kaskaskia Island. Bois Brule is French for "Burnt Wood". Early French settlers used the term to describe a burnt tract of forest. Flooding has been a constant concern within Bois Brule Bottom since settlement began. The US Army Corps of Engineers operates the Bois Brule Levee and Drainage District, and cares for the maintenance of the levees and chutes.

The Bois Brule Levee and Drainage District protects approximately 26,000 acres. The district consists of 33.1 miles of levee, 341 relief wells, and 4 pump stations. The district's primary risk is underseepage. This problem affects the entire District. With the existing underseepage issues, sudden failure of the levee can occur along the levee, placing human life, vehicles, building, industrial equipment, livestock, and agricultural production at risk. The levee failed due to underseepage prior to the crest of the 1993 Great Flood, flooding the entire levee district to a depth of 20 feet. Failures due to underseepage can occur very rapidly with little warning. The location of the Bois Brule Levee within the study vicinity is shown in **Figure 3**.

In the vicinity of the Chester Bridge, an earthen levee parallels the Horse Island Chute. At Route 51, the elevation of the road is lower than the top of

Figure 7 *– Heavy equipment is needed to install/remove the Route 51 temporary flood wall.*

the levee. This creates a gap in the levee. To cover this gap, a temporary flood wall is placed across the road, as necessary. This of course, closes Route 51.

3.3.2 Frequency of Flood-Related Closures

Near Chester, flooding of the Mississippi River begins at a river level of 27 feet.

The highest level recorded was during the Great Flood of 1993 (49.74 feet). According to the *National Weather Service – Advanced Hydrologic Prediction Service,* when the river reaches 40.7 feet, Route 51 will need to be closed. However, MoDOT reports that based on recent experience, Route 51 needs to be closed when the river reaches 44 feet on the Chester gauge.

According to the National Weather Service, only seven of the historic highest river crests met the 40.7 foot level; only four met the 44 foot level. Consequently, closures of Route 51 are relatively rare. However, all closures have been relatively recent (since 1973) and can be quite lengthy. The 2015 closure lasted roughly a week (December 28th through January 4th). The 2017 closure also lasted nearly a week (May 4th through May 10th).

Closures result in detours of roughly 100 miles. The increasingly interconnected world makes the crossing important to both Chester and Perryville, as well as the larger region. With roughly 25 percent of bridge traffic composed of trucks, the negative consequences of closures can impact a myriad of interests beyond Perry and Randolph counties.

3.4 The Route 51 Crossing is Important to Local and Regional Connectivity

This section will discuss the important connectivity issues associated with the Chester Bridge. This will be described in terms of important regional connections as well as accommodating existing local pathways

3.4.1 Important Regional Connectivity

The Southeast Missouri Regional Planning and Economic Development Commission (SEMO-RPC) offers planning and economic development services to a seven-county region of Bollinger, Cape Girardeau, Iron, Madison, **Perry**, St. Francois, and Ste. Genevieve. They work with governments, economic development organizations, civic groups, businesses and individual citizens to provide services which will help enhance the livability and economic base. They focus on promoting emergency preparedness, community development, healthcare, commerce, social services, public works, and administration.

Relative to transportation planning, SEMO-RPC provides input to the Missouri Department of Transportation concerning regional transportation issues and projects. They also prioritize construction and maintenance projects.

This section will discuss the important connectivity issues contained within the Southeast Missouri Regional Transportation Plan. **Figures 8 and 9** shows many of the important elements discussed in this section.

3.4.1.1 Access to I-55

Interstate (I-55) is the highest volume roadway through the SEMO-RPC region. Within the SEMO-RPC, I-55 traverses the rolling terrain through Cape Girardeau. Exit 95 at Cape Girardeau provides direct access to the only other Mississippi River crossing (Bill Emerson Memorial Bridge) in the SEMO-RPC. I-55 then goes through rural areas again as it makes a north-northwesterly run through the towns of Perryville and Ste. Genevieve before entering the southern reaches of the St. Louis metro area at the interchange with U.S. Route 67 and the Twin Cities of Festus and Crystal City.

Currently, I-55 is roughly 14 miles from the Chester Bridge. Close access to I-55 allows the SEMO-RPC to be attractive for commerce. It also enhances emergency preparedness. As important, the Chester Bridge is roughly equidistance from the nearest up and downstream crossings. The closure of the existing bridge results in a detour of roughly 100 miles. Invoking this detour would negatively impact the SEMO-RPC. The

spacing of the existing bridges across the Mississippi River is important to the SEMPO-RPC and central to the Southeast Missouri Regional Transportation Plan. See **Figure 8**.

Maintaining appropriate access to I-55 and to Mississippi River crossings are important goals of the SEMO-RPC and the Chester Bridge project.

3.4.1.2 Connection to Truck Bypass

To reduce the number of trucks going through downtown Chester on Route 3, a Truck Bypass has been established. Starting southeast of Chester, the Truck Bypass starts at Water Street. It follows the river to the base of the Chester Bridge. At that point, Randolph Street ascends the bluff to Route 150. From that point, a left turn takes you to the Chester Bridge. A right turn returns you to Route 3. While primarily a benefit to Chester, all truck traffic, including those to and from Missouri, benefit from this expedited route.

The Truck Bypass is shown on **Figure 9.** Approximately 1,800 trucks use the Truck Bypass per day. These trips are regionally important because they connect the regions important movements of personnel and materials. They directly benefit the SEMO-RPC. Accommodating this movement is an important goal of this project.

3.4.1.3 Access to Chester

The Chester Bridge provides access (from Missouri) to the commercial resources within Chester, Illinois. Among the largest resources are the Menard Correctional Center, the Gilster-Mary Lee Company, and Conagra. Accommodating this access is an important goal of this project.

***Figure 8** - I-55 and Adjacent Mississippi River Bridges*

Gilster-Mary Lee is a leading private label food manufacturer with facilities in both Perryville, Missouri and Chester, Illinois. In Perryville, there are four facilities. The Perryville Distribution Center is located on Route 51, near US Route 61. In Chester, there is a 165,000 square foot Baking Mix Plant that produces a variety of retail and food service items.

Conagra operates in the Grain Mill Products industry within the Food and Kindred Products sector. There are approximately 31 employees at this location. Onsite resources include grain elevators and milling equipment. The facility is located on the Truck Bypass.

Menard Correctional Center is an Illinois state prison. It houses maximum-security and high medium-security adult males. It is the state's largest prison with an average population of 3,410. Menard Correctional Center occupies a total of 2,600 acres. The Menard Correctional Center is located on IL Route 6 less than a mile north (upstream) of the Chester Bridge.

Another important resource in Chester is the Chester Docks Port Facility (Southern Illinois Transfer Company). The facility is located on IL Route 3 south of Chester. It receives steel products and dry-bulk commodities. The piers are approximately 350 feet apart, with berthing space at shore moorings. Open storage area at rear of lower pier has capacity for 10,000 tons of bulk materials.

In addition, the Chester Community Unit School District #139 serves students residing on Kaskaskia Island and uses the Chester Bridge daily during the school year to transport students.

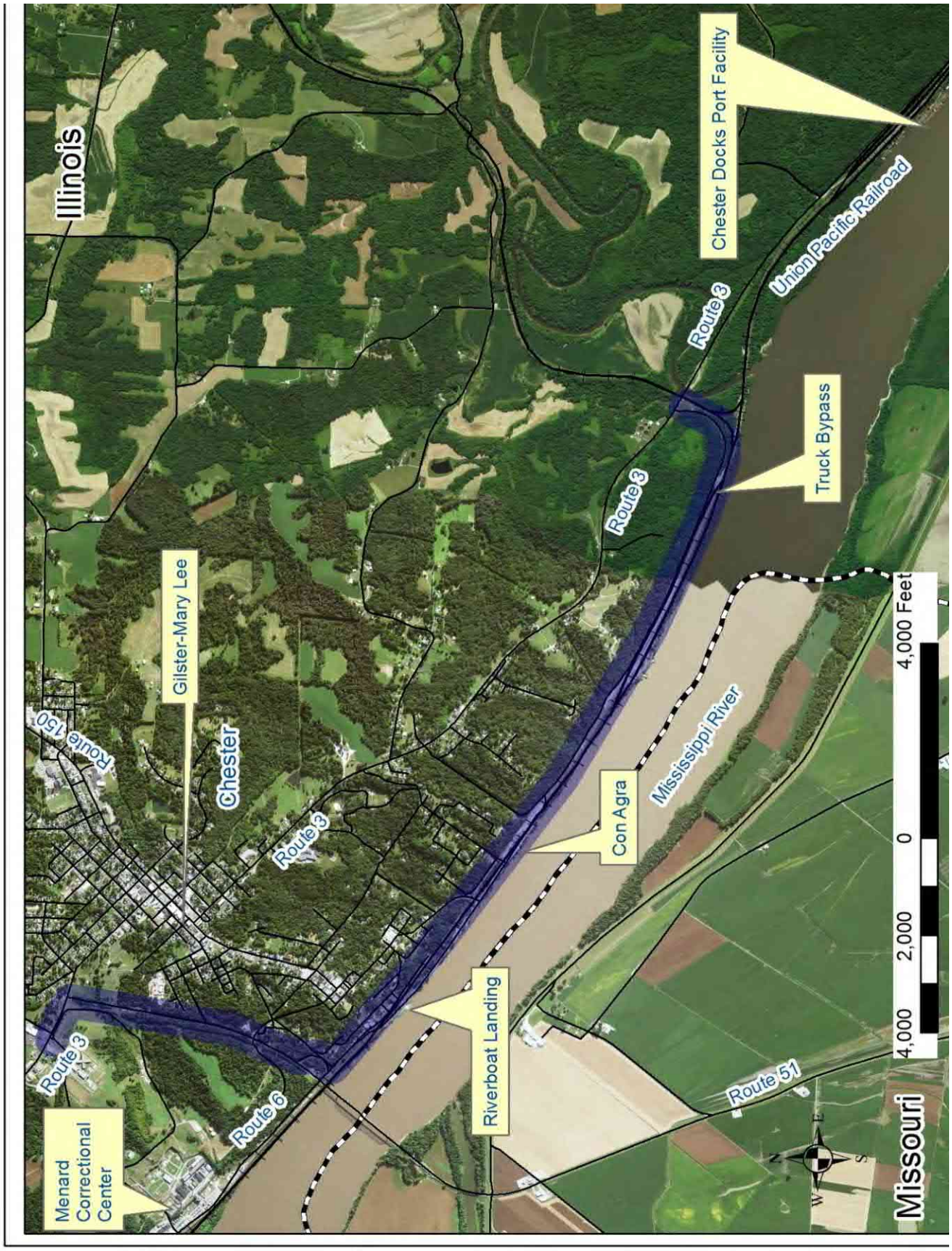


FIGURE 9 *- Truck Bypass and Other Important Land Uses*

3.4.1.4 Farm Access

The Chester Bridge provides important farm access (from Illinois) to Horse Island, Bois Brule Bottom, and Kaskaskia Island.

Horse Island is where the Missouri approach of the Chester Bridge touches down. The balance of the small island is in cultivation.

Bois Brule Bottom is an important, very productive, alluvial floodplain. It is approximately six miles wide and eighteen miles long. Because of the risk of flooding, the Bois Brule Bottom is sparsely developed. Most supplies, materials and resources must come from outside the area. Additionally, the closest river port is located on IL Route 3 – outside Chester, Illinois. The Chester Bridge provides important access.

The Kaskaskia Island is part of Illinois. The relocation of the Mississippi River in the 1800's created this isolated portion of the state. The only vehicular access comes from Missouri. The Chester Bridge is the shortest route to Illinois.

Maintaining this access is an important goal of this project.

3.4.1.5 River Access

The Chester Bridge provides important access to the Mississippi River itself. The levees on the Missouri side of the river tend to limit access. The bridge provides access to both commercial and recreational spaces that are important to the region.

The Chester waterfront provides relatively easy access to the Mississippi River. Not only do paddlewheel tour boats use the area, other recreational users gain access from there. The Chester Boat Club is located at 51 Water Street.

A Union Pacific Railroad line also parallels the river, and goes under the bridge. Bulk terminal transfers are important uses. The Chester Docks Port Facility is the nearest public dry-bulk terminal.

There are two navigation channels along the Mississippi River under the Chester Bridge. Barge traffic is heavy and maintaining safe access for barges under the Chester Bridge is important on regional, statewide, and national levels.

Maintaining this access is a goal of this project.

3.4.2 Accommodation of the Existing Local Pathways

The Chester Bridge has several roadway connections within the logical termini of the project. **Section 4** discusses the logical termini. These connections will need to be accommodated appropriately.

Within Missouri, the important local connections to maintain are:

- Driveways to Horse Island: Currently, much of Horse Island is under cultivation. Farm equipment access is provided via driveways on either side of Route 51. Equipment can pass under the Chester Bridge approach from one side of Route 51 to the other. Providing adequate farm equipment access to Horse Island is a goal of this project. See **Figure 10**.

Figure 10 *- Typical view of the Route 51 driveways to Horse Island (photo credit: Google Earth).*

- Levee Roads: east of Route 51, Perry County Route 238 (PCR 238) runs along the top of the earthen levee. West of Route 51, PCR 946 runs along the top of the levee. Maintaining connectivity

to these roads is a goal of this project. See **Figure 11**. Other roads in the vicinity are PCR 944 and PCR 239. These intersect at Route 51. The intersection of PCR 239/944 house a small cluster of commercial land uses, principally gas and convenience stores. All of these roads are narrow/low speed gravel roads, used primarily by farm equipment. The access they provide to the agricultural fields is the important function. Less important is the location of the intersections with Route 51 and the exact configuration of the roads.

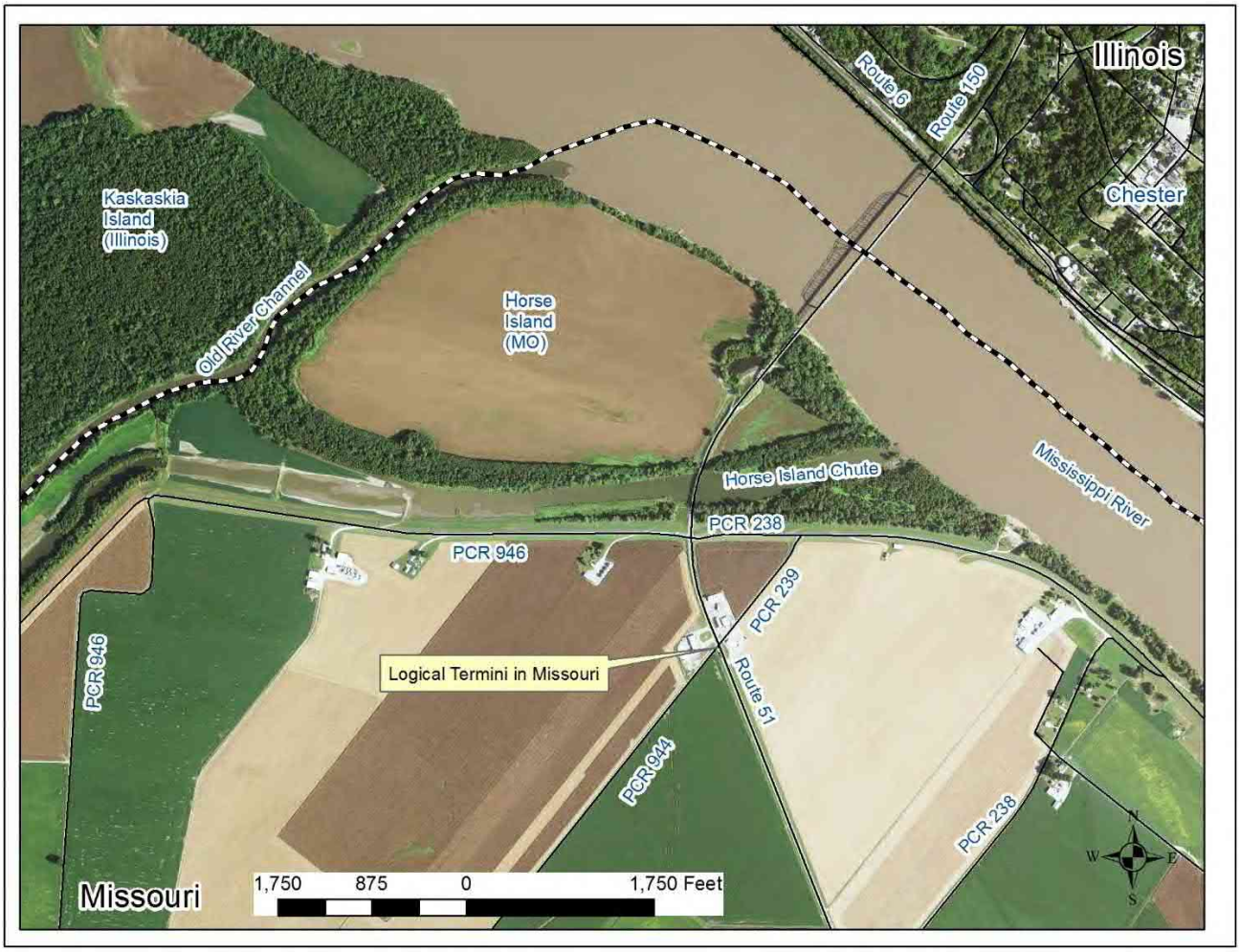


Figure 11 *- Local Roads in Missouri*

Within Illinois, the important local connections to maintain are:

- IL Route 6 underpass of bridge: IL Route 6 provides the principal access to the Menard Correctional Center. See **Figure 12**. Route 6 is a narrow two-lane road with minimal unpaved shoulders. The speed limit is 40 mph.
- Truck Bypass: Randolph Street intersects with Route 150 roughly 800 feet from the Chester Bridge. Randolph Street descends to IL Route 6/Kaskaskia Road/Water Street. It is also part of the Truck Bypass. See **Figure 12**.

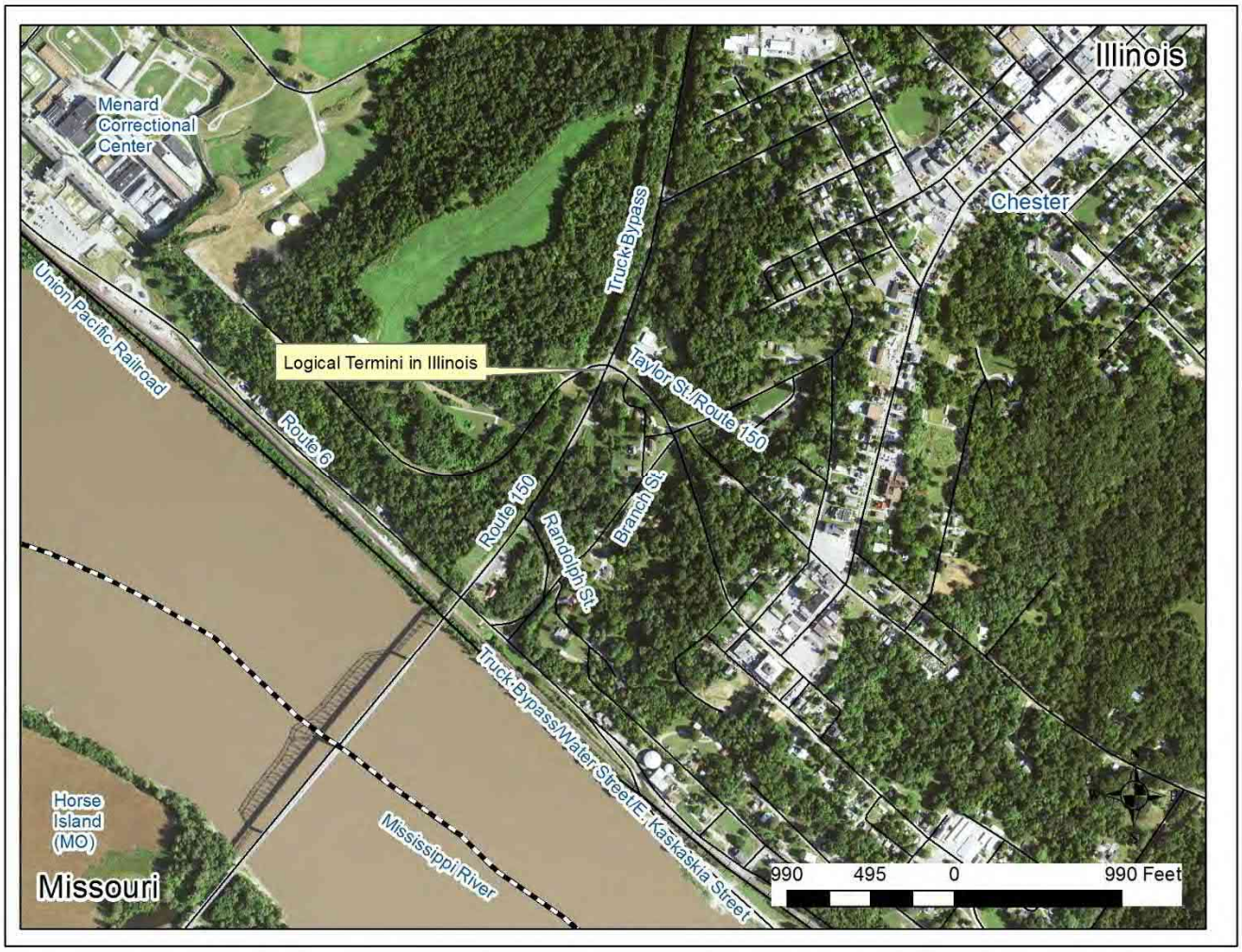


Figure 12 *- Local Roads in Illinois*

SECTION 4

Logical Termini and Independent Utility

FHWA issues guidelines to assist transportation planners in designating logical termini for a study. In addition to being the rational end points for a transportation improvement, logical termini also serve as general geographical boundaries for a review of any environmental impacts triggered by the study. Logical termini are located within the study area and frequently are points of major traffic generation, especially intersecting roadways. This is because in most cases traffic generators determine the size and type of facility being proposed.

Based on these criteria, the logical termini for the Chester Bridge EA are:

- In Missouri, the intersection of Route 51 and PCR 239/944
- In Illinois, the intersection of Route 150 and Taylor Street.

These limits connect all of the essential movements associated with the purpose and need for the project. See **Figures 11 and 12**.

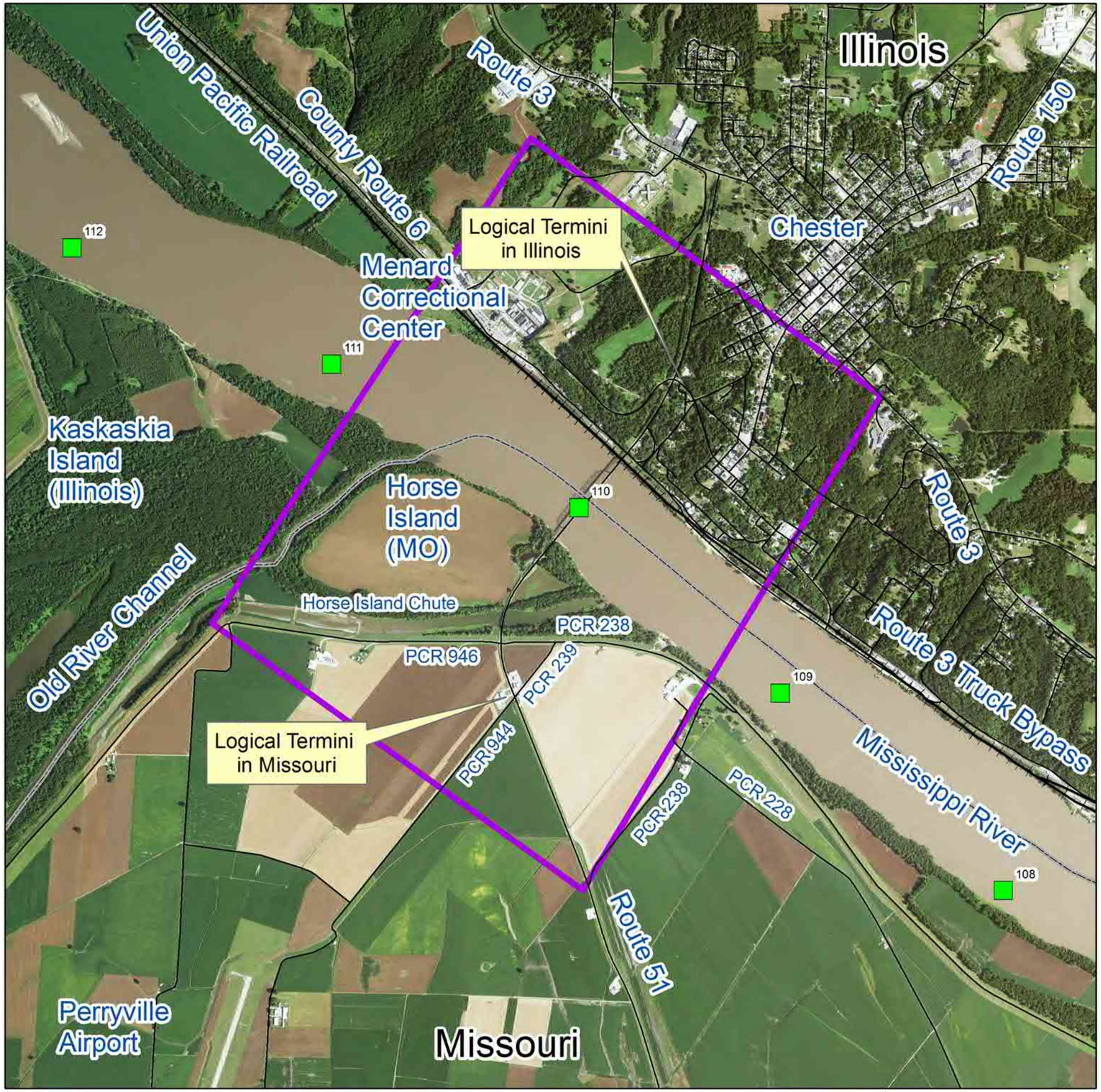
In addition to being the rational end points for a transportation improvement, it also incorporates all of the general geographical boundaries needed for the review of environmental impacts triggered by the study. Finally, because traffic generators affect the appropriate size and type of a facility, these limits include all of the points of major traffic generation.

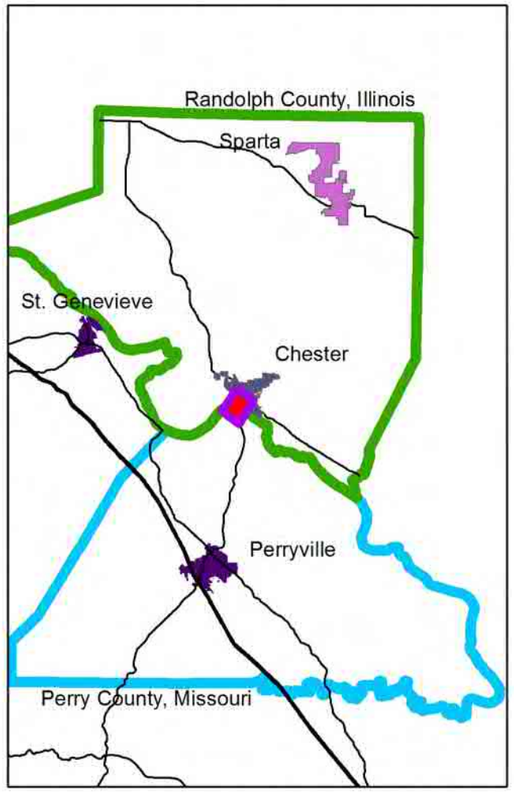
The Chester Bridge project also has independent utility. It will be able to function on its own, without further construction of an adjoining segment. It also does not preclude any current or future projects within the total study area from advancing once the study's findings have been approved by FHWA.

Multiple transportation improvements within the study area will almost certainly be identified, allowing projects of independent utility that improve the overall system to be built, but whose construction does not restrict or otherwise alter planning and construction of adjacent projects.

Finally, the Chester Bridge EA does not restrict consideration of other reasonably foreseeable transportation improvements. The transportation problems and solutions are being evaluated in light of existing long-range transportation plans in order to minimize conflicts with the goals and improvements laid out in those plans. Solutions will be developed to allow for complementary improvements of connecting roadways as needed in the future.

EXHIBIT 1
Project Area and Important Land Uses
Chester Bridge EA





Project Location Map (Perry and Randolph)

Project Location Map (Statewide)

N
W E
S

Legend

- River Mile
- Chester Bridge Study Area
- Missouri/Illinois Boundary

4,500 2,250 0 4,500 Feet

Collaboration Point #2

February 27, 2018

CHESTER bridge
Route 51 / Environmental Study

Subject: Agency Collaboration Point #2
Chester Bridge Environmental Assessment
The Missouri Bicycle and Pedestrian Federation

Dear Sir/Madam:

Introduction
This letter accompanies the data associated with Agency Collaboration Point #2. The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois DOT (IDOT, is preparing a Location Study and National Environmental Policy Act (NEPA) investigation of the Chester Bridge crossing of the Mississippi River, from Perry County, Missouri to Randolph County, Illinois. The project also includes the investigation of the Horse Island Chute Bridge on the Missouri approach.

Summary of Agency Collaboration Plan
The goal of the project's Agency Collaboration Plan is to provide interested regulatory agencies with the data they need to stay informed and a mechanism to provide relevant input. Collaboration points occur at key points in the NEPA process. The anticipated points of contact are 1) when the Purpose and Need is produced, 2) when Reasonable Alternatives are established, and 3) when a Preferred Alternative emerges.

Recap of Project Purpose and Need (Agency Collaboration Point #1)
The term "purpose and need" refers to the transportation-related problems that a study is intended to address. In its very broadest sense, the Chester Bridge EA is intended to maintain a safe and reliable crossing of the Mississippi River. The specific goals of the Chester Bridge project can be defined as follows:

1. The bridges are too narrow.
2. The bridges are in poor condition.
3. Route 51 is subject to flood-related closures.
4. Route 51 is important to connectivity.

Reasonable Alternatives and Attached Materials
Enclosed with this letter is the Project Fact Sheet, the Reasonable Alternative Summary, and an annotated alternative map. Based on the results of the Screening Criteria, the two upstream new build alternatives (U-1 and U-2) were recommended for further consideration. These alternatives satisfy all 19 of the project's performance measures. In addition, the No-Build Alternative and the Rehabilitate the Existing Alternative while maintaining its historic integrity as a one-way couplet (R-2) were recommended for further consideration. Alternative R-2 will be considered as a part of a one-way couplet configuration, utilizing either alternative U-1 or alternative U-2 for travel in the opposite direction.

These Reasonable Alternatives were presented, and received concurrence, at the Illinois NEPA/404 Merger Meeting on February 15, 2018.

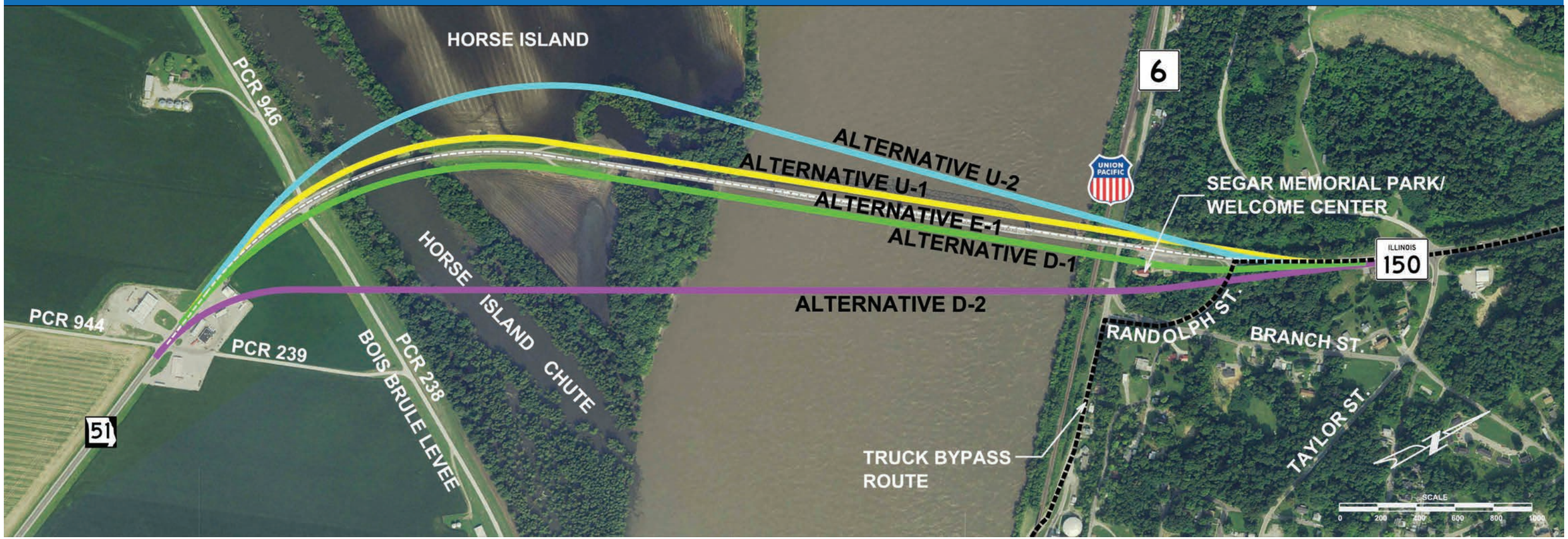
We appreciate your involvement in this very important project and look forward to continuing to work with you. Please contact me at 314.335.5065 or at buddy.desai@ch2m.com should you have any questions.

Sincerely,

Buddy Desai
Consultant Project Manager
CH2M

Chester Bridge Conceptual Alternatives

CHESTER bridge
Route 51 / Environmental Study



In addition to the Conceptual Build Alternatives (pictured above) and the No-Build Alternative, two rehabilitation alternatives are also being considered. Both include rehabilitating the existing bridge while maintaining its historic integrity, as follows:

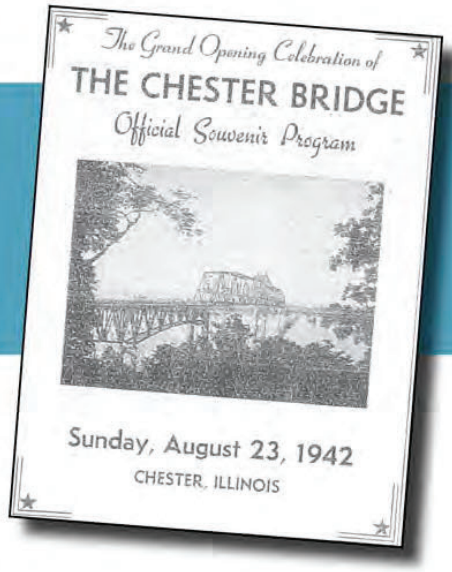
- Alternative R-1 rehabilitates the existing bridge as a standalone alternative.
- Alternative R-2 rehabilitates the existing bridge as one-way lanes for either eastbound or westbound traffic, coupled with a new upstream or downstream bridge for traffic traveling in the alternate direction.

CHESTER bridge

Route 51 / Environmental Study

FACT SHEET

Opened in **1942**, Chester Bridge is the only vehicular bridge crossing the Mississippi River between St. Louis and Cape Girardeau



Connects MISSOURI **51** **with** ILLINOIS **150**

An average of **6,500** vehicles cross the bridge daily

Roughly **25%** of crossings are trucks or agricultural equipment

MoDOT says the bridge is safe, but is in **poor** condition and too narrow by today's design standards

The **environmental study** will investigate alternatives for providing a safe and reliable river crossing

To learn more visit **www.ChesterBridgeStudy.com**

MoDOT

Chester Bridge Environmental Assessment

Perry County, Missouri and Randolph County, Illinois

December 12, 2017

Contents

Figures

SECTION 1

Introduction

This document presents the Conceptual Alternatives being carried forward for the Chester Bridge Environmental Assessment (Chester Bridge EA). This decision is based on how well the Conceptual Alternatives satisfy the project's *Purpose and Need* (the transportation-related problems that the study is intended to address).

Section 1 introduces the project and study area. **Section 2** summarizes the study's Purpose and Need. **Section 3** describes the Conceptual Alternatives. **Section 4** presents the screening of the Conceptual Alternatives. **Section 5** summarizes the project's Public Involvement Process.

1.1 Study Overview

The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT), is preparing a Location Study and EA for proposed improvements to the two Route 51 bridges at Chester, IL. The Route 51 Mississippi River Bridge (Chester Bridge) is a continuous truss bridge across the Mississippi River. The Horse Island Chute Bridge is steel stringer bridge over the Horse Island Chute. These bridges connect Route 51 (in Missouri) with Route 150 (in Illinois). They form the only Mississippi River roadway crossing between St. Louis (roughly 57 river miles north) and Cape Girardeau (roughly 56 river miles south). The nearest population centers are Chester (Randolph County, Illinois) and Perryville (Perry County, Missouri). Chester is located on the bluff immediately adjacent to the bridge. Perryville is located roughly 11 miles southwest of the bridge along Route 51. The approximate latitude/ longitude of the existing bridge is 37°54'09" N, 89°50'13" W (degrees°minutes'seconds"). The Chester Bridge was opened in 1942 as a toll bridge. Tolls were removed in 1989.

Figure 1 contains 2 vicinity maps showing the location of the Chester and Horse Island Chute Bridges.

1.2 Overview of Existing Route 51 Crossing

The Chester Bridge is composed of 4 spans with a total length of 2,830 feet. The main spans of the Chester Bridge are two-span subdivided Warren cantilevered through trusses. Each of these spans is roughly 670 feet long. The approaches are Warren deck trusses. The Missouri approach connects across the Horse Island. The Illinois approach connects to the top of the bluff in Chester. There are 4 piers in the Mississippi River associated with the bridge. Three are associated with the main spans. A fourth small pier is in the center of the Illinois approach span along the edge of the river. The deck width is 22 feet. The vertical clearance above the deck is 20 feet.

The Chester Bridge has been determined to be too narrow for current design standards. The bridge is routinely closed, with police support, to allow for the passage of over-sized loads. Relative to its condition, the Chester Bridge is on the MoDOT list of poor bridges. The Chester Bridge is also anticipated to be eligible for the National Register of Historic Places (NRHP).

An associated bridge is the steel stringer bridge over Horse Island Chute on Route 51. There is approximately 800 feet of roadway (on embankment) between the Chester Bridge and the Horse Island Chute Bridge. This bridge was also built in 1942. Total length of the bridge is 462 feet. It is in slightly better condition than the Chester Bridge, but is also considered to be too narrow for current design standards. The Horse Island Chute Bridge will be evaluated for eligibility for the NRHP.

Figure 2 shows the photographs of the Chester Bridge and the Horse Island Chute Bridge.

Figure 1 *Vicinity Maps*

1.3 Study Area Description

The study area for the Chester Bridge EA includes portions of Missouri and Illinois. The major elements of the study area are shown on **Figure 3** and are discussed below.

The Chester Bridge is located at river mile 110 of the upper branch of the Mississippi River (110 miles upstream of the confluence with the Ohio River). The Mississippi River is roughly 1,700 feet wide in this area. Over time, the path of the Mississippi River has changed. In 1844, the channel straightened creating Kaskaskia Island. The Old River Channel still exists and forms the official boundary between Illinois and Missouri. The Old River Channel branches near the bridge to create Horse Island. The Route 51 approach to the Chester Bridge traverses the Horse Island with a separate bridge crossing the Horse Island Chute. The road rests on embankment between the bridges.

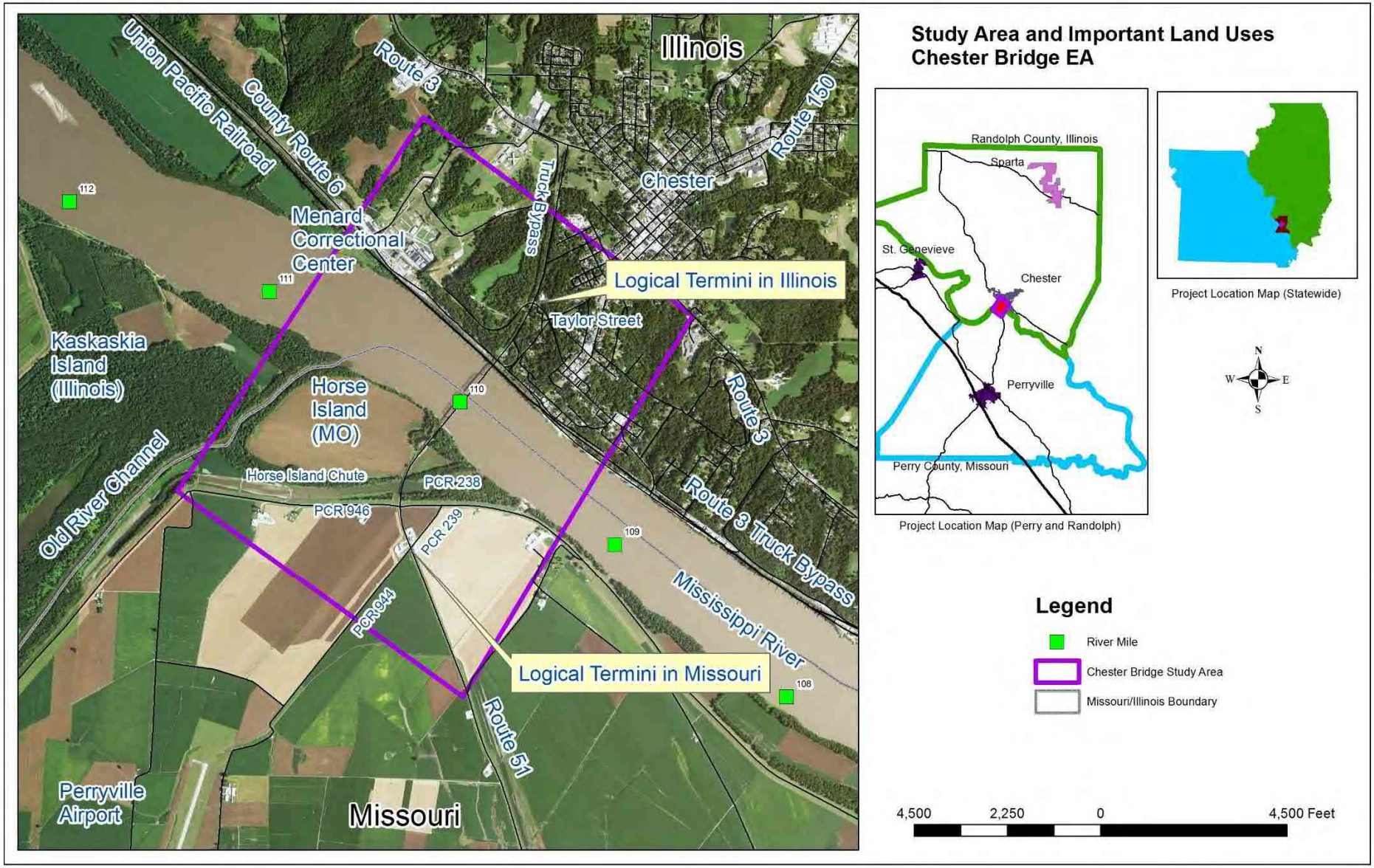
Figure 2 *Typical photographs of the Chester Bridge and the Horse Island Chute Bridge*

In Missouri, the earthen Bois Brule levee parallels the river in this area. Gravel roads run along the top of the levee. Behind the levee, the land is flat and fertile and is used for agriculture. Route 51 is a two-lane road with minimal shoulders. It is the only paved road in the immediate vicinity of the Chester Bridge. The other roads are narrow gravel farm roads. Two gas stations stand at the intersection of Route 51 and Perry County Roads (PCR) 239 and 944. There are also a few isolated farmsteads on this side of the river. The largest development is at the Perryville Airport (1856 Highway H). This regional airport was originally built by the U.S. Government as a training facility in the early 1940s. The airport was deeded to the City of Perryville in 1947. The airport has a 7,000-foot x 100-foot concrete runway equipped with medium intensity runway lights which allow for use by numerous kinds of aircraft, including jets. Fixed base operators include Sabreliner Aviation and CertiFLY Aviation Parts, which is engaged in modifications and overhauls to both civilian and military aircraft. The city of Perryville is located approximately 9 miles from the airport. Perryville (population 8,394) is the county seat of Perry County.

In Illinois, a steep bluff rises approximately 100 feet from the river to the city of Chester (population 8,586). Immediately off the bridge is the Chester Welcome Center on IL Route 150. Chester is known as the home of comic book hero Popeye. His statue is a highlight of the welcome center. A Union Pacific Railroad line parallels the river below the bluff, and goes under the bridge. County Route 6 also parallels the river and railroad. North/West of the bridge on County Route 6 is the Menard Correctional Center, a maximum-security state penitentiary. Land uses to the south/east of the existing bridge include a Chester water treatment facility, a riverboat pier, residences and recreational facilities. Two main routes traverse Chester – IL Route 3 (parallel to the river) and IL Route 150 (perpendicular to the river). To remove heavy truck traffic from downtown Chester, a Truck Bypass was developed. South of the city, the Truck Bypass follows the river front road until it gets to the Chester Bridge. From there, trucks traverse a short spur to Route 150, back to IL Route 3, north of the city center.

Based on these constraints, the project's Purpose and Need/logical termini, the study area shown on **Figure 3** was established for future evaluations of alternatives.

Figure 3 *Chester Bridge Study Area*



1.4 Logical Termini

FHWA issues guidelines to assist transportation planners in designating logical termini for a study. In addition to being the rational end points for a transportation improvement, logical termini also serve as general geographical boundaries for a review of any environmental impacts triggered by the study. Logical termini are located within the study area and frequently are points of major traffic generation, especially intersecting roadways. This is because in most cases traffic generators determine the size and type of facility being proposed.

Based on these criteria, the logical termini for the Chester Bridge EA are:

- In Missouri, the intersection of Route 51 and PCR 239/944
- In Illinois, the intersection of Route 150 and Taylor Street

These limits connect all essential movements associated with the Purpose and Need for the project. See **Figure 3**.

In addition to being the rational end points for a transportation improvement, they also incorporate all general geographical boundaries needed for the review of environmental impacts triggered by the study. Finally, because traffic generators affect the appropriate size and type of a facility, these limits include all points of major traffic generation.

The Chester Bridge project also has independent utility. It will be able to function on its own, without further construction of an adjoining segment. It also does not preclude any current or future projects within the total study area from advancing after the study's findings have been approved by FHWA.

Multiple transportation improvements within the study area will almost certainly be identified, allowing projects of independent utility that improve the overall system to be built, but whose construction does not restrict or otherwise alter planning and construction of adjacent projects.

Finally, the Chester Bridge EA does not restrict consideration of other reasonably foreseeable transportation improvements. The transportation problems and solutions are being evaluated with consideration for existing long-range transportation plans in order to minimize conflicts with the goals and improvements laid out in those plans. Solutions will be developed to allow for complementary improvements of connecting roadways as needed in the future.

SECTION 2

Project Purpose and Screening Criteria

This section summarizes the project's purpose and the screening criteria developed to evaluate how well alternatives satisfy that purpose. **Section 2.1** is a summary of the project's Purpose and Need Statement (submitted as part of Merger Package #1). **Section 2.2** is an examination of the specific criteria proposed to evaluate Conceptual Alternatives and select alternatives to be carried forward (Reasonable Alternatives). The Conceptual Alternatives will be described in **Section 3**. The alternatives analysis will be presented in **Section 4**.

2.1 Project Purpose

The Chester Bridge EA is a transportation study that will investigate and identify improvements intended to develop a safe and reliable Route 51 crossing of the Mississippi River. Overall, the purpose of the Chester Bridge EA is to:

- Improve the reliability of the crossing
- Improve the functionality of the crossing

Within the context of this purpose, several specific transportation problems have been identified. The specific transportation problems affecting the Route 51 crossings include, in no particular order:

Major Element #1 – The Route 51 crossing of the Mississippi River and the Horse Island Chute Bridge are too narrow for current design standards
The current bridges are very narrow with no shoulders. Many modern design standards are not incorporated into the bridges. This creates safety issues and degrades the functionality.

Major Element #2 – The Route 51 crossing of the Mississippi River is in poor condition
The condition of the current bridges is such that it requires continual maintenance, resulting in substantial expense and periodic closures.

Major Element #3 – Route 51 is subject to flood-related closures
There is a small gap in the Bois Brule Levee, where the Horse Island Chute Bridge meets Route 51. To maintain the integrity of the levee, a temporary floodwall is installed over the road. The temporary floodwall closes Route 51 and the river crossing.

Major Element #4 – The Route 51 crossing is important to local and regional connectivity
The existing bridge system provides locally important roadway connections. Because of the distance to other river crossings, for all practical purposes the Chester Bridge provides the only available access to these connections. These will need to be accommodated in appropriate ways. The current bridges are also important to regional connectivity within southeast Missouri and southwest Illinois.

2.2 Screening Criteria

The screening criteria will be used to determine how well a Conceptual Alternative satisfies the Purpose and Need. Only those Conceptual Alternatives that satisfy each element of the Purpose and Need will be considered a Reasonable Alternative. Ultimately, the identification of a Preferred Alternative will be based, in part, on how well it satisfies the project's Purpose and Need. To determine the potential for each alternative to meet the project Purpose and Need, screening criteria and performance measures were developed. Screening criteria are specific topics that define the Purpose and Need elements. Performance measures define how well an alternative succeeds at accomplishing the evaluation criteria. **Figure 4** presents a summary of the major elements of the Purpose and Need, the screening criteria, and performance measures.

Figure 4 *Purpose and Need Screening Criteria*

Purpose	Screening Criteria	Performance Measures
Address the design deficiencies of the existing bridge	• Is the river crossing improved? • Does it comply with current MoDOT Design Standards?	- Are 12 foot lanes provided? (y/n) - Are 8-10 foot shoulders provided? (y/n) - Can bike/pedestrian facilities be accommodated? (y/n)
Address the poor condition of the existing bridge	• Is the bridge condition improved? • Does it comply with current MoDOT Design standards?	- Are the deck and superstructure improved to a good condition or better - 7 of 9? (y/n) - Are the bridge foundations stable?(y/n) - Is the anticipated lifespan of the proposed improvements greater than 25 years? (y/n) - Is the load carrying capacity adequate? (y/n) - Is current seismic design criteria met? (y/n)
Minimize the flood-related closures of Route 51	• Is the gap in the Bois Brule Levee corrected?	- Is the need for the existing temporary flood wall eliminated? (y/n)
Maintain important local and regional connectivity	• Are important regional connections maintained? • Are important local connections maintained?	- Is the distance and spacing in relation to I-55 adequate? (y/n) - Is the Truck Bypass maintained? (y/n) - Is access to Chester maintained? (y/n) - Can the crossing be maintained during construction? (y/n) - Is access to Bois Brule Bottoms and Kaskaskia Island maintained? (y/n) - Is access to the Mississippi River maintained? (y/n) - Is farm equipment access to Horse Island maintained? (y/n) - Is farm equipment access to Bois Brule maintained? (y/n) - Is access to Menard Correctional Center maintained? (y/n)

SECTION 3

Conceptual Alternatives

This section of the document examines the project's Conceptual Alternatives. The development and evaluation of alternatives was based on their ability to satisfy the project's Purpose and Need. **Section 4** will present the screening of the Conceptual Alternatives.

3.1 Overview of the Alternative Development Process

The alternative development process began with identifying a wide range of initial alternatives that could potentially address the transportation needs established by the study. These initial alternatives are called ***Conceptual Alternatives***. The Conceptual Alternatives were developed in accordance with principles of appropriate design standards with consideration of existing planning goals, public involvement, potential environmental impacts, and engineering judgment.

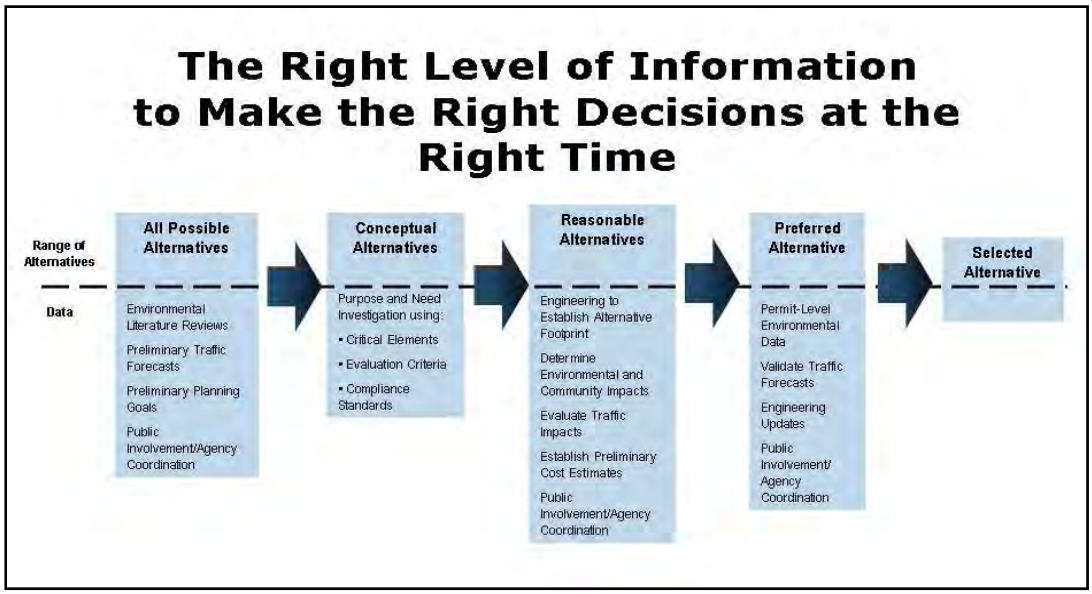
At this point (December 2017), the project is at the Conceptual Alternatives stage. This document will identify the alternatives to be carried forward to the Reasonable Alternatives stage.

The primary screening tool used to evaluate the Conceptual Alternatives is an analysis of how well they could satisfy the study's Purpose and Need. **Section 4** presents the Purpose and Need screening of the Conceptual Alternatives. Those that are determined to satisfy the study's Purpose and Need are referred to as **Reasonable Alternatives/Alternatives to be Carried Forward**. The identification of the Reasonable Alternatives is presented in **Section 4.7**.

The Reasonable Alternatives will be further developed and refined based on more detailed engineering analysis and known constraints. This will allow for the establishment of preliminary study footprints and, in turn, for detailed impact assessments, cost estimates, and traffic evaluations.

The Reasonable Alternative that best accomplishes the Purpose and Need for the proposed action while avoiding, minimizing, or mitigating the impacts to the social and natural environment will eventually be identified as the ***Preferred Alternative***. **Figure 5** depicts the overall process of alternative development and evaluation.

Figure 5 *Process of Alternative Development and Evaluation*



3.2 No New Build Conceptual Alternatives

The range of Conceptual Alternatives that do not include a new bridge structure is limited and presented in this section.

3.2.1 No-Build Alternative

The No-Build Alternative for the Chester Bridge EA would consist of maintaining the current roadways and structures in essentially their current condition. Routine maintenance would continue, and occasional minor safety upgrades would be implemented. No capacity additions or major improvements would be made. Overall, the No-Build Alternative does nothing to meet the study's Purpose and Need. It is described in this document to provide a baseline condition against which the changes associated with the other alternatives may be evaluated.

The No-Build Alternative assumes that capacity additions on major improvements would not be constructed; thus, many impacts—positive and negative—associated with a new facility, would not occur. These impacts would include expenditure of funds, land use changes that include converting existing development or public lands into highway right-of-way, potential increased economic development, improved multi-modal accessibility, and improved safety. The No-Build Alternative is not a no-cost concept because maintenance and repair of the existing roadway infrastructure would be needed to ensure the continued use of the corridor. Given the age of the bridge, maintenance costs are an increasing concern.

3.2.2 Transportation System Management and Travel Demand Management

Transportation System Management (TSM) solutions focus on improving the existing system, without construction of additional new infrastructure. Travel Demand Management (TDM) solutions reduce congestion on existing transportation infrastructure. In that way, existing roadways can function acceptably for a longer time.

No viable TSM or TDM solution is possible.

3.3 New Build Conceptual Alternatives

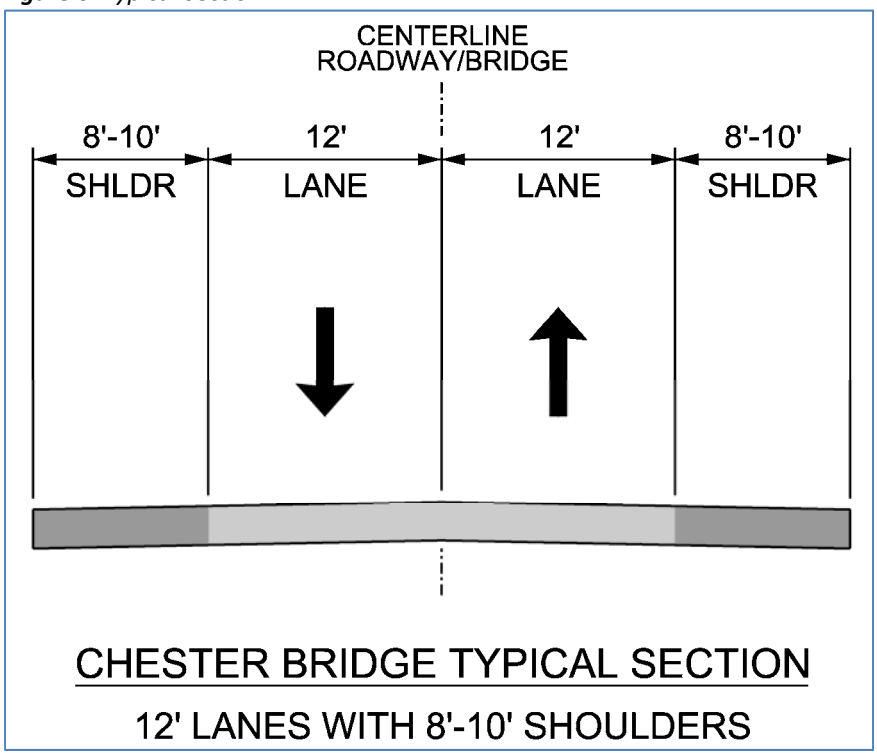
Based on the project's Purpose and Need, logical termini, and study area, a series of Conceptual Alternatives were developed. The Conceptual Alternatives represent the wide range of initial alternatives that could potentially address the transportation needs established by the study. Those that are determined to satisfy the study's Purpose and Need will be advanced for further consideration.

The bridge sections were assumed to be 40 to 44 feet wide - with two 12-foot travel lanes and 8 to 10-foot shoulders. They also assume a 16.5-foot vertical clearance design standard. This would allow oversized loads and large farm equipment to cross the river without stopping traffic and provide room to maneuver during emergencies or to remove disabled vehicles from the travel lanes. The shoulders would allow bicyclists and pedestrians to cross the bridge without using the vehicular travel lanes. The shoulders would also allow bridge inspections to occur without restricting traffic.

The roadway sections were assumed to be two-way rural minor arterial roadways. The design speed of 45 mph will be maintained. Existing intersections and turns will be maintained in their current configuration. Direct access to the roadways for individual driveways will be maintained, to the extent possible.

A typical section is shown in **Figure 6**.

Figure 6 *Typical Section*



3.3.1 Rehabilitate the Existing Bridge without Affecting its Historic Integrity Alternative (R-1)

The Rehabilitate the Existing Bridge without Affecting its Historic Integrity (Rehabilitate Existing) Alternative would involve major structural steel repairs, deck replacement, cap replacement, and/or rail replacement. While this will improve the crossing at its existing location, it would not return the bridge to its original condition and could not be widened to meet current design standards including the lane widths and shoulder widths outlined in **Figure 6** above.

It is assumed that this alternative would represent a configuration that maintains the historic integrity of the Chester Bridge. Further evaluation will be conducted to determine whether the existing bridge can be rehabilitated such that historic integrity is not diminished. In addition, analysis will be performed to determine if re-use of the existing bridge is feasible and prudent.

3.3.2 Near Upstream Conceptual Alternative (U-1)

Connecting at the logical termini, this alternative moves the alignment approximately 75 feet upstream of the existing corridor. The bridge is parallel to the existing bridge. For most stakeholders. once completed, this alignment is expected to be nearly indistinguishable from the existing crossing.

3.3.3 Far Upstream Conceptual Alternative (U-2)

Connecting at the logical termini, this alternative moves the alignment a maximum of roughly 375 feet upstream of the existing corridor. The bridge is not parallel to the existing bridge; it is roughly 6 degrees askew. This would make the new bridge more perpendicular to the river, potentially shortening the length of the bridge. However, the overall length of the crossing/corridor will be longer, as the alignment curves back to the logical termini.

3.3.4 Replace along Existing Conceptual Alternative (E-1)

This alternative will construct a new bridge on the existing alignment. This alternative would be unique in that it would require the closure of the crossing during construction.

3.3.5 Near Downstream Conceptual Alternative (D-1)

Connecting at the logical termini, this alternative moves the alignment approximately 75 feet downstream of the existing corridor. The bridge is parallel to the existing bridge. For most stakeholders. once completed, this alignment is expected to be nearly indistinguishable from the existing crossing.

3.3.6 Far Downstream Conceptual Alternative (D-2)

Connecting at the logical termini, this alternative moves the alignment a maximum of roughly 675 downstream of the existing corridor. The bridge is not parallel to the existing bridge; it is roughly 11 degrees askew. This would be the longest corridor. It would miss most of Horse Island. It would also affect the land uses and roadways at the termini.

The new build Conceptual Alternatives are depicted on **Figures 7** and **8**.

3.3.7 Rehabilitate the Existing Bridge without Affecting its Historic Integrity as a Couplet with a New Bridge Alternative (R-2)

In addition to the stand-alone new build conceptual alternatives described above, the Rehabilitate the Existing Bridge without Affecting its Historic Integrity as a Couplet with a New Bridge Alternative (Rehabilitate as Couplet) would involve one-way couplet using a rehabilitated existing bridge and the construction of a new, possibly narrower, bridge.

Under this scenario, the existing bridge would require the rehabilitation measures described in Section 3.3.1 above (while maintaining the historical integrity of the bridge). The one-way couplet could be considered with any of the stand-alone new build conceptual alternatives described above.

For brevity, the Rehabilitate the Existing Bridge without Affecting its Historic Integrity Alternative (R-1) and the Rehabilitate the Existing Bridge without Affecting its Historic Integrity as a Couplet with a New Bridge Alternative (R-2) will be referred to, in the remainder of this document, as the "Rehabilitate Existing Alternative" and "Rehabilitate as Couplet Alternative", respectively. While the shortened alternative names are used in the document, it is a requirement that the rehabilitation is performed in a manner that maintains the bridge's historic integrity.

Additionally, alternatives R-1, R-2 and E-1 are depicted together on project figures.

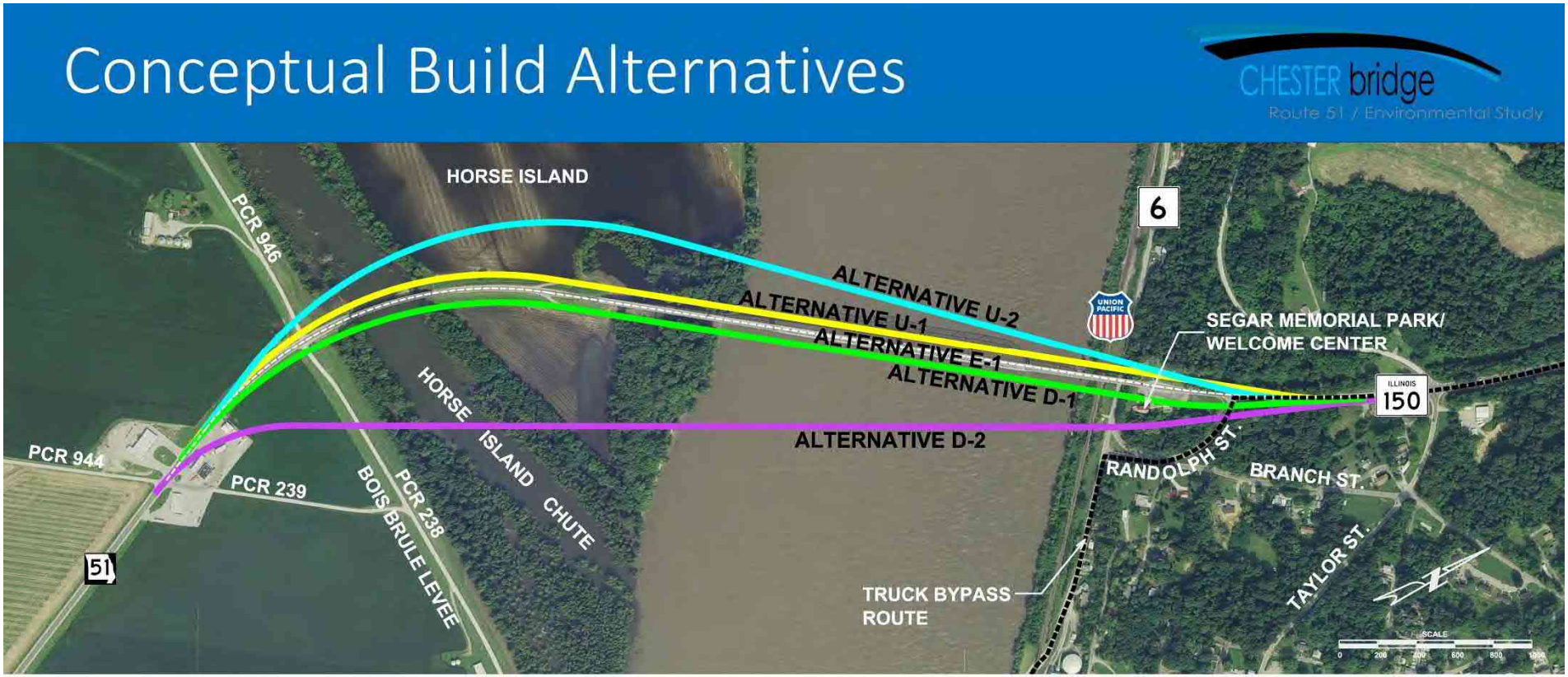


Figure 7 *Conceptual Alternatives Presented at Public Involvement Meeting (August 24, 2017)*

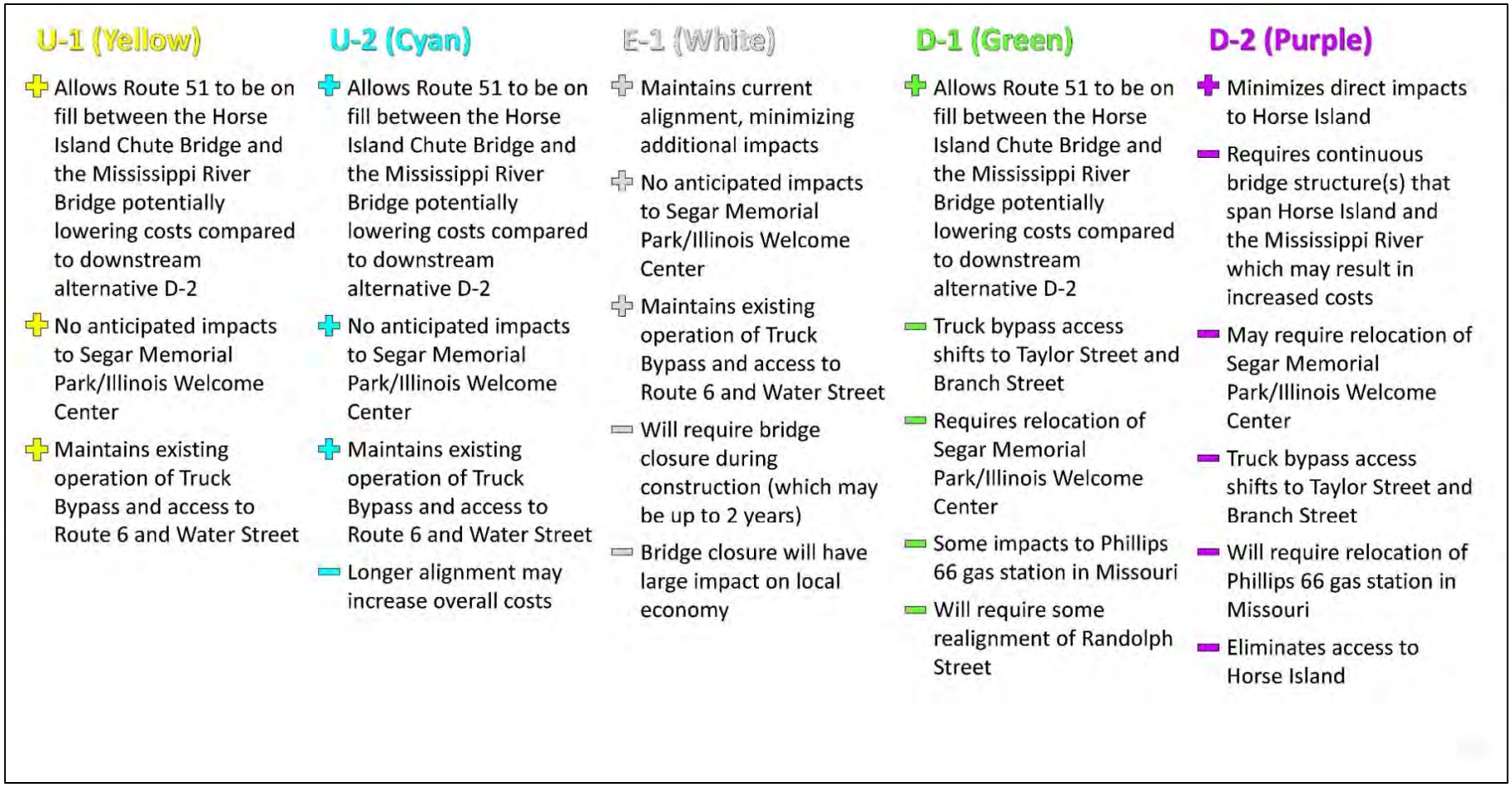


Figure 8 *Legend of Conceptual Alternatives Presented at Public Involvement Meeting (August 24, 2017)*

SECTION 4

Conceptual Alternatives Screening

To determine the Conceptual Alternatives to advance for further study, Purpose and Need screening was conducted. **Figure 9** is a summary of the analysis.

Based on the results of the Screening Criteria, the build Conceptual Alternatives U-1 and U-2 are recommended for further consideration. These alternatives satisfy all 18 of the project's performance measures.

4.1 Project Purpose: Route 51 is too Narrow for Current Design Standards

The current bridges are very narrow with no shoulders. Many other modern design standards, including meeting current seismic design requirements, are not incorporated into the bridges. This creates safety issues and degrades the functionality of the bridge.

To determine if an alternative can satisfy this Purpose and Need element, two (2) screening criteria and three (3) performance measures were used (see **Figure 4**). These performance measures examined whether important design standards; such as lane width, shoulders and bicycle/pedestrian facilities could be provided.

Any stand-alone new bridge alternative (E-1, D-1, D-2, U-1 and U-2) could be designed to accomplish these measures. However, the No-Build Alternative and the Rehabilitate Existing Alternatives (NB and R-1) will accomplish none of these measures. Because the Rehabilitate as a Couplet Alternative (R-2) includes a new bridge component, it has been determined to minimally satisfy this project element.

4.2 Project Purpose: The Route 51 Crossing is in Poor Condition

The poor condition of the current bridges are such that they require continual maintenance, resulting in substantial expense and periodic closures.

To determine if an alternative can satisfy this Purpose and Need element, two (2) screening criteria and five (5) performance measures were used (see **Figure 4**). These performance measures examined whether important standards; such as deck/superstructure/foundation condition, life span and seismic/carrying capacity limits.

Any stand-alone new bridge alternative (E-1, D-1, D-2, U-1 and U-2) can be designed to accomplish these measures. The No-Build Alternative only accomplishes one of these measures. The Rehabilitate Existing Alternative and Rehabilitate as Couplet Alternative (R-1 and R-2) can theoretically accomplish most of these measures, although it might require a near complete reconstruction to accomplish some of these measures. Further evaluation will be conducted to determine whether the existing bridge can be rehabilitated such that historic integrity is not diminished.

SCREENING CRITERIA MATRIX CONCEPTUAL ALTERNATIVES CHESTER BRIDGE EA											
Purpose	Screening Criteria	Performance Measures	No Build	Rehab Existing (R-1)	Rehab as Couplet (R-2)	UPSTREAM ALTERNATIVES		E-1: New Bridge at Existing Location	DOWNSTREAM ALTERNATIVES		SCREENING SUMMARY
						U-2: Far North	U-1: Near North		D-1: Near South	D-2: Far South	
The Route 51 Bridges are too narrow for current design standards	Is the river crossing improved? Does it comply with current MoDOT Design Standards?	Are 12 foot lanes provided? (y/n)	N	N	Y	Y	Y	Y	Y	Y	All New Build Alternatives can be designed to satisfy current design standards. Because R-2 includes a new bridge component, it has been determined to minimally satisfy this project element.
		Are 8-10 foot shoulders provided? (y/n)	N	N	Y	Y	Y	Y	Y	Y	
		Can bike/ped facilities be provided? (y/n)	N	N	Y	Y	Y	Y	Y	Y	
The Route 51 crossing of the Mississippi River is in poor condition	Is the bridge condition improved? Does it comply with current MoDOT Design Standards?	Are the deck and superstructure improved to a good condition - 7 of 9? (y/n)	N	Y	Y	Y	Y	Y	Y	Y	All New Build Alternatives can be designed to satisfy current design standards. Rehabilitation of the existing structure is possible, but may result in a virtual reconstruction.
		Are the bridge foundations stable? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	
		Is the anticipated lifespan of the proposed improvements greater than 25 years? (y/n)	N	N	N	Y	Y	Y	Y	Y	
		Is the load carrying capacity adequate? (y/n)	N	Y	Y	Y	Y	Y	Y	Y	
		Are current Seismic Design Criteria met? (y/n)	N	Y	Y	Y	Y	Y	Y	Y	
Route 51 is subject to flood-related closures	Is the gap in the Bois Brule Levee corrected?	Is the need for the existing temporary flood wall eliminated? (y/n)	N	N	N	Y	Y	Y	Y	Y	Raising the height of the existing Route 51 is necessary to eliminate the need for the temporary flood wall.
The Route 51 crossing is important to local and regional connectivity	Are important regional connections maintained?	Is the distance and spacing in relation to I-55 adequate? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	These perfomance measures are primarily regional, They require uninterupted access to the river crossing and to the Route 3 Truck Bypass. The existing and downstream alternatives have difficulties satisfying these criteria.
		Is the existing Truck Bypass route maintained? (y/n)	Y	Y	Y	Y	Y	Y	N	N	
		Is access to Chester maintained? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	
		Can construction be completed without closing the existing crossing for an extended period of time? (y/n)	Y	N	Y	Y	Y	N	Y	Y	
	Are important local connections maintained?	Is access to Bois Brule Bottoms and Kaskaskia Island maintained? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	These performance measures are primarily local. Most of alternatives can provide/maintain access to these local resources.
		Is access to the Mississippi River maintained? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	
		Can farm equipment access to Horse Island be provided from Route 51? (y/n)	Y	Y	Y	Y	Y	Y	Y	N	
		Is farm equipment access to Bois Brule maintained? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	
		Is access to Menard Correctional Center maintained? (y/n)	Y	Y	Y	Y	Y	Y	Y	Y	

Figure 9 *Conceptual Alternative Screening Criteria Matrix*

4.3 Project Purpose: Route 51 is Subject to Flood-Related Closures

There is a small gap in the Bois Brule Levee, where the Horse Island Chute Bridge meets Route 51. To maintain the integrity of the levee, a temporary floodwall is installed over the road. The temporary floodwall closes Route 51 and the river crossing. To determine if an alternative can satisfy this Purpose and Need element, a single screening criteria was used:

- Is the gap in the Bois Brule Levee corrected?

The performance measure is simply whether the need for the existing temporary flood wall is eliminated.

Any stand-alone new bridge alternative (E-1, D-1, D-2, U-1 and U-2) can be designed to accomplish this measure. However, the No-Build Alternative and the Rehabilitate Existing Alternatives (NB and R-1) will not satisfy this measure as the existing gap in the Bois Brule Levee would not be corrected. However, the Rehabilitate as Couplet Alternative (R-2) has been determined to minimally satisfy this project element, because it includes a new bridge component.

4.4 Project Purpose: The Route 51 Crossing is Important to Local and Regional Connectivity

The existing bridge system provides locally important roadway connections. Because of the distance to other river crossings, for all practical purposes the Chester Bridge provides the only available access to these - connections. These will need to be accommodated in appropriate ways. To determine if an alternative can satisfy the needs of local connectivity, five (5) performance measures were used (see **Figure 4**). These performance measures examined whether access to important local resources (Mississippi River, Horse Island, Bois Brule, Menard Correctional Center and the Route 3 Truck Bypass) could be maintained/accommodated.

The current bridges are also important to regional connectivity within southeast Missouri and southwest Illinois. To determine if an alternative can satisfy the needs of regional connectivity, three (3) performance measures were used (see **Figure 4**). These performance measures examined whether access to important regional resources (I-55/Chester/Bois Brule Bottoms and Kaskaskia Island) could be maintained/ accommodated? A final general connectivity performance measure was used - can the crossing be maintained during construction?

The No-Build, the two upstream alternatives (U-1 and U-2) can satisfy all of the connectivity performance measures.

Because the Rehabilitate as Couplet Alternative (R-2) includes a new bridge component, which could be constructed without closing the existing crossing, it has been determined to minimally satisfy this project element.

The Reconstruct along Existing Alternative and the Rehabilitate Existing Alternative (E-1 and R-1) cannot construct the new bridge without closing the existing crossing for the assumed 24-month construction schedule. Also, any closure of the existing bridge, regardless of duration, would require 100+ mile detour to the closest upstream and downstream Mississippi River bridges at St. Louis and Cape Girardeau, respectively.

The two downstream alternatives (D-1 and D-2) cannot maintain the existing Truck Bypass. Additionally, alternative D-2 cannot provide farm access to Horse Island.

4.5 Summary of Conceptual Alternatives Screening

The Conceptual Alternatives are remarkably successful at addressing the transportation problems associated with the Chester Bridge crossing. As can be seen on **Figure 9**, even the poorest operating Conceptual Alternatives – those that retain the existing structure (No-Build and Rehabilitate Existing)—satisfy many of the Purpose and Need performance measures. Nevertheless, the following Conceptual Alternatives cannot be seen as minimally satisfying the project's Purpose and Need:

- The **No Build Alternative** satisfies 56 percent of the performance measures (10/18). However, it can't satisfy any of the performance measures associated with addressing the operational issues caused by the bridge's narrow lanes. Further, it doesn't address the condition issues of the existing bridge. Neither can it eliminate the need for the temporary flood wall along Route 51. On the other hand, it maintains existing access patterns.
- The **Rehabilitate Existing Alternative** (R-1) satisfies 63 percent of the performance measures (12/18). This alternative has the advantage (over the No Build) of possibly allowing for the improvement of some of the condition issues of the existing bridges and the disadvantage of requiring the closure of the crossing to do this work. Also, this alternative would not meet current design standards and would not eliminate the need for the temporary flood wall along Route 51.
- A new bridge along the existing location (**Conceptual Alternative E-1**) can satisfy all the performance measures, except that it requires the long-term closure of the crossing for the assumed 24-month construction duration. Because of the duration of the closure and length of the detour, this must be considered a fatal flaw.

Alternatives that include a new stand-alone new bridge are vastly more successful at satisfying the Purpose and Need performance measures. These all can be designed to satisfy all, or nearly all, of the performance alternatives:

- The **Upstream Alternatives (U-1 and U-2)** satisfy all (100 percent) of the performance measures.
- The **Downstream Alternatives (D-1 and D-2)** satisfy 95 percent and 89 percent, respectively, of the performance measures. However, the Downstream Alternatives may require substantial revisions to the Truck Bypass. These alternatives go between the Truck Bypass and Segar Park. In addition to horizontal alignment issues, there is a large increase in elevation between the riverfront and bluff portions of the Truck Bypass (roughly 60 feet over 850 feet). While the Truck Bypass is an essential feature of the project, it can't be maintained in its existing form under these alternatives. Improving the Truck Bypass will require work beyond the logical termini and study area and will result in impacts along an existing residential street. The Segar park is also an important constraint. **Section 4.6.1** provides for detail regarding this issue. Conceptual Alternative D-2 also fails to be able to provide farm equipment access to Horse Island.
- The **Rehabilitate as Couplet Alternative (R-2)** meets as much as 89% of the performance measures. Combining the rehabilitated bridge with a new downstream bridge (D-1/D-2) would lower this somewhat. This alternative was determined to minimally satisfy the project's purpose and need, although it has obvious shortcomings. Not only is it unclear whether the bridge can be rehabilitated without diminishing its historic integrity, but it requires the construction of an additional structure. The need for two structures increases costs and potentially could create river navigation difficulties. In fact, it's the presence of the second new bridge that allows this alternative to be considered to even minimally satisfy the project's purpose and need.

4.6 Additional Considerations Regarding the Conceptual Alternatives

Because of the similarity of the Build Alternatives, and their ability to accomplish all or many of the performance measures associated with the purpose and need, it is appropriate to examine other important, potentially fatal, impacts that are reasonably associated with the alternatives. This information will allow for a more nuanced understanding of the alternatives and allow for a more reasoned decision on the alternatives to advance for further consideration.

4.6.1 Segar Memorial Park and Section 4(f)

The Segar Memorial Park/Illinois Welcome center is located on the south side of IL Route 150, immediately after the Chester Bridge. Elzie C. Segar is the creator of Popeye and Chester is his birthplace and early home. Segar is said to have modeled many of the Popeye characters after real residents of Chester. In 1977, a 6-foot bronze statue of Popeye was dedicated in Segar Memorial Park. The Park is owned and administered by the City of Chester. It is included in the city's roster of recreational amenities. On-site is a scenic overlook, picnic tables and a tourist center. In addition to its status as a locally important recreational resource, the 3-acre park is also a Section 4(f) resource. See **Figures 10, 11, 12 and 13**.

A Section 4(f) property is any publicly owned land of a public park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (public or private). According to 23 CFR 774.3, a transportation project approved by FHWA may not use a Section 4(f) property unless there is no feasible and prudent avoidance alternative to the use of land from the property, or the use is determined to be of a de minimis (trifling) nature.

Figure 10 *Popeye Statue at Segar Park*

Figure 11 *Segar Park with IL Route 150 in Foreground*

The downstream alternatives (D-1/D-2) are expected to require the use of major portions of the Segar Memorial Park. **Figure 13** depicts the important elements of the Segar Memorial Park and the centerline of the Conceptual Alternatives. Assuming an actual project footprint width of 300 to 400 feet, impacts to the park are not expected to be de minimis. Based on this depiction, it is expected that the near-downstream alternative (D-1) will displace the park's decorative fencing, picnic areas, parking, Popeye statue and perhaps the welcome center/scenic overlook patio. Even if the building remains it will completely alter the facility's layout and operation. The far-downstream alternative (D-2) will nearly bisect the park property. While D-2 might avoid the displacement of the existing park amenities, the post-project configuration of the park will

change dramatically. It is unlikely that the public's access to the park will come directly from the bridge, as it does now. It's more likely that visitors will be routed around to the existing entrance on existing IL Route 150. This will greatly depreciate the value that the center provides. Without the kind of direct access that currently exists, fewer visitors are expected. A primary goal of the center is to reach as many travelers as possible. Alternatives D-1 and D-2 will negatively affect that goal. A further complication is the elevation change that occurs within the Route 3 Truck Bypass at this location. The Segar Park sits on a promontory above the river. The Truck Bypass goes from the low elevation of the riverfront (380 feet) to the higher elevation that intersection with IL Route 150 (440 feet) around this promontory. This short segment (850 feet) of the Truck Bypass is on a 7 percent grade. Given these grades, reconnecting the Truck Bypass, IL Route 150 and the associated local roads (Third Street and Branch Street) will be difficult. These difficulties will also be challenges within the context of Section 4(f).

Further, because there are other alternatives that satisfy all, or nearly all, of the Purpose and Need performance measures, there are other feasible and prudent avoidance alternatives. Consequently, continuing consideration for the downstream alternatives (D-1/D-2) seems unnecessary.

Figure 12 *Conceptual Alternatives and Important Resources*

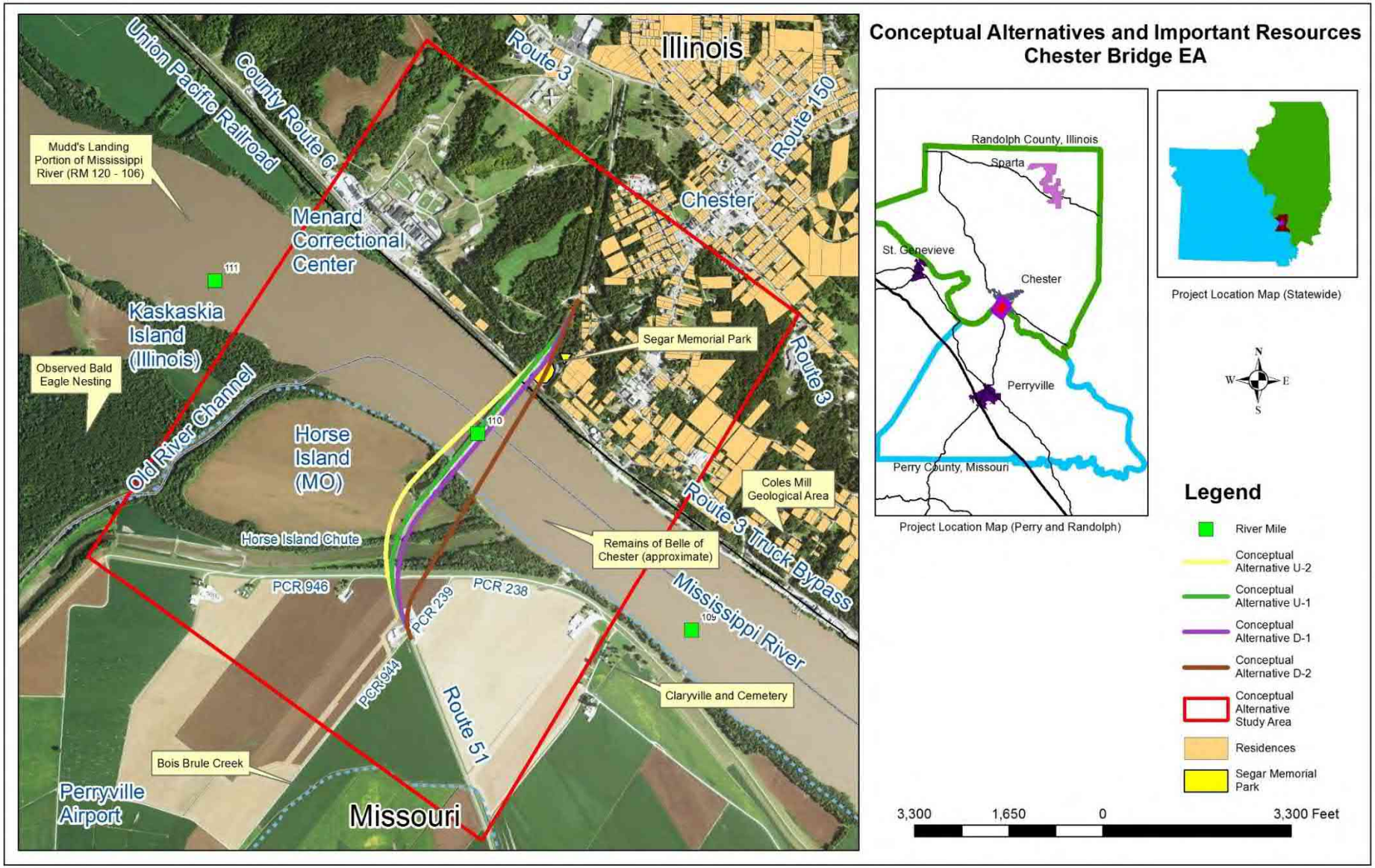
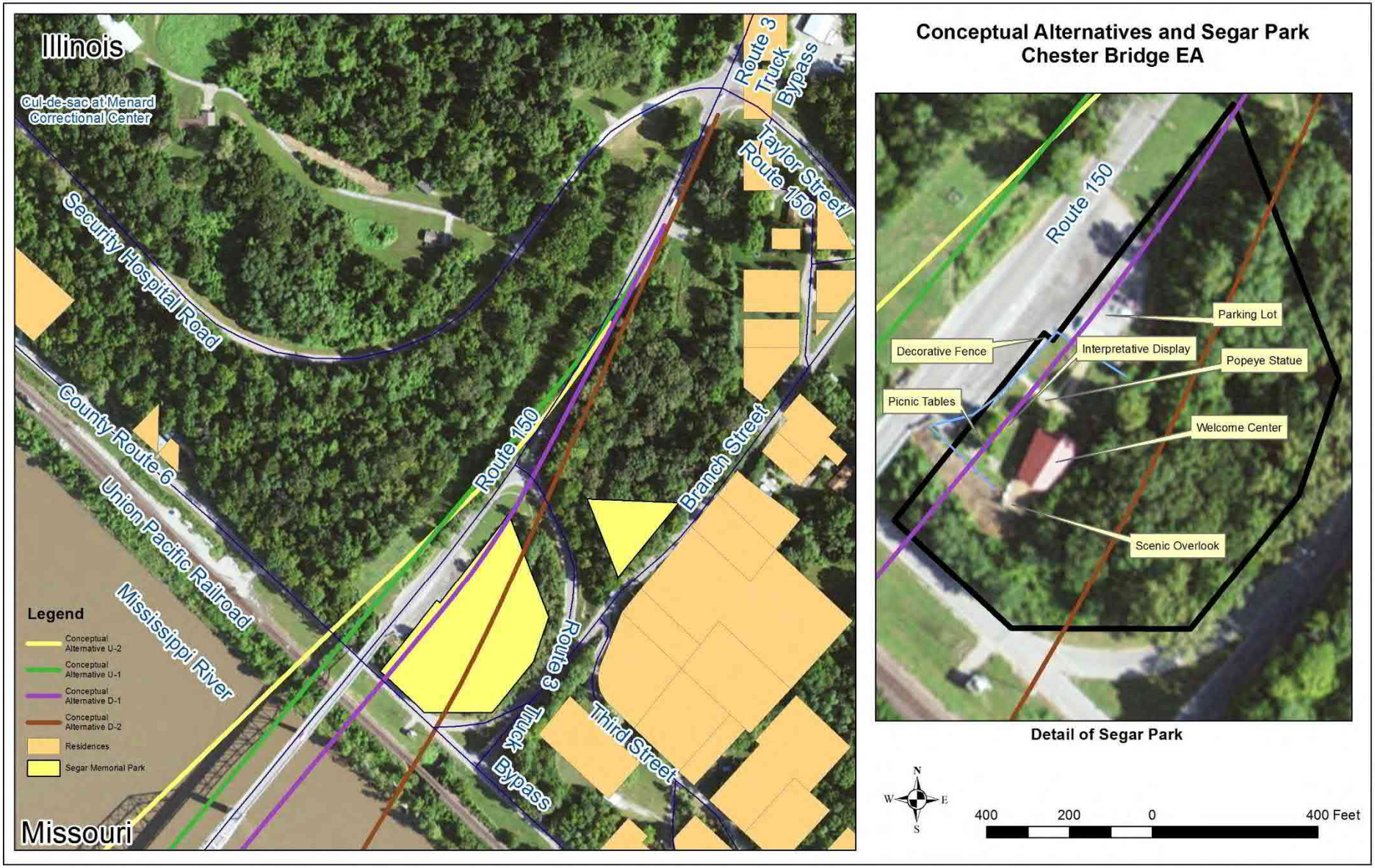


Figure 13 *Conceptual Alternatives and Segar Park*



4.6.2 Reuse of Existing Bridge

Interest in the reuse of the existing bridges for aesthetic, recreational and bicycle/pedestrian purposes has been expressed throughout the public involvement process. Pursuant to MoDOT policy, the existing bridge has been made available for donation. Proposals for the reuse of the bridge are due in December 2018. It appears that local proposals may be submitted. Retention of the existing bridge in place is not possible under Alternative E-1 (construct a new bridge on existing alignment).

Figure 14 *Gas Pipeline on Existing Bridge*

The Chester Bridge is eligible for the National Register of Historic Places. While the reuse of the bridge, on its own, will not satisfy the purpose and need of the project, pairing it with another crossing in a one-way couplet configuration is included in the Rehabilitate as Couplet Alternative. Further investigation related to the ability to rehabilitate the existing bridge without affecting the historical integrity of the bridge will be conducted.

4.6.3 Pipeline

A gas pipeline is present on the upstream side of the Chester Bridge as seen in **Figure 12**. At the onset of the study, questions were raised by the study team and some Community Advisory Group members as to the project's effects on the pipeline. Rehabilitation or replacement of Chester Bridge would require careful engineering consideration for the relocation of the pipeline.

After researching the issue, it was discovered that this pipeline is now owned by the Energy Transfer Partners (ETP). It is currently not being used for movement of gas from Missouri to Illinois is handled via a pipeline downstream of the bridge. Coordination with ETP determined that there are no plans to replace the pipeline on a new bridge; consequently, this issue is assumed to be resolved.

4.6.4 Wetland Impacts

Wetland resources are protected by the Clean Water Act. The extent of wetlands is depicted in **Figure 12**. Nearly all of Horse Island south (downstream) of the existing bridge is wetlands. Upstream, the wetlands form a relatively narrow rim along the periphery of the island. Therefore, the use of the upstream alternatives (U-1/U-2) will minimize wetland impacts.

4.6.5 Need to Close Crossing during Construction

Maintenance of traffic across the river, during construction, is essential as the bridge serves residents, shoppers, and industry on both sides with a regional workforce that relies on being able to cross the river daily. A new bridge along the existing location (Conceptual Alternative E-1) and the Rehabilitate the Existing Bridge Alternative (while maintaining the historic integrity of the bridge – R-1) cannot maintain this link. Because the closure will be several years long and cause a 100-mile detour, this must be considered a fatal flaw. Other stop-gap measures, such as ferries across the river, have been determined to be inadequate to addressing the 1,500 heavy trucks and 4,500 other vehicles that use the bridge daily. An existing ferry operates upstream at Ste. Genevieve. The infrastructure to that location is inadequate to handle the demand, and would represent a toll of between $15 to $60 per vehicle.

4.6.6 Other Emerging Environmental Issues

As the NEPA process continues, more detailed environmental studies are conducted. The results of these studies are beginning to emerge. Some of the more important emerging findings are listed below and identified on **Figure 12**:

- The Mudd's Landing Illinois Natural Area Inventory site (INAI site #1307) occurs within the Mississippi River between river mile 120 and 106. As a Category II site it may provide habitat for state-listed endangered species. Records of the state-endangered western sand darter (Ammocrypta clarum) occur within the INAI site.
- Records of other endangered species, such as the pallid sturgeon (Scaphirhynchus albus) are also known for the Mississippi River.
- The Coles Mill Geological Area is located just outside the study area in Chester.
- Bald Eagle Nesting was observed on Kaskaskia Island: near, but outside, the study area.
- South of the current bridge is the historic town of Claryville. A cemetery is located near the study area.
- In the river (downstream of the bridge) are the remains of the ferry – Belle of Chester. The remains of the ferry have been seen at low water.

These conditions will inform the configuration of alternatives as the project moves forward. These resources validate the use of alternatives in the general vicinity of the existing crossing.

4.7 Reasonable Alternatives/Alternatives to be Carried Forward

Based on the results of this Screening, the **No Build**, the new build **Conceptual Alternatives U-1 and U-2**, and the **Rehabilitate as Couplet (R-2)**, are recommended for further consideration. These alternatives satisfy the project's purpose and need and avoid fatal flaws.

The balance of the Conceptual Alternatives were eliminated from further consideration:

- The Rehabilitate the Existing Bridge Alternative (R-1) does not minimally satisfy the project's purpose and need. Among its fatal flaws are the need to close the crossing during the assumed 2-year construction period, the failure to meet many current design standards and the continued need for the temporary flood wall along Route 51.
- A new bridge along the existing location (Conceptual Alternative E-1) can satisfy all the performance measures, except that it requires the long-term closure of the crossing for the assumed 24-month construction period. Because of the duration of the closure and length of the detour (over 100 miles), this must be considered a fatal flaw.
- The Downstream Alternatives (D-1 and D-2) satisfy 95 percent and 89 percent, respectively, of the performance measures associated with the purpose and need. However, the Downstream Alternatives require substantial revisions to Segar Park (a Section 4(f) resource). Alternative D-1 will displace the park's decorative fencing, picnic areas, parking, Popeye statue and perhaps the welcome center/scenic overlook patio. Alternative (D-2) will nearly bisect the park property. Both will alter the access to the welcome center. It is expected that visitors will be routed around to the existing entrance on existing IL Route 150. This will greatly depreciate the value that the center provides. Without the kind of direct access that currently exists, fewer visitors are expected.

  A further complication is the elevation change that occurs within the Route 3 Truck Bypass at this location. The Segar Park sits on a promontory above the river. The Truck Bypass goes from the low elevation of the riverfront (380 feet) to the higher elevation that intersection with IL Route 150 (440

feet) around this promontory. This short segment (850 feet) of the Truck Bypass is on a 7 percent grade. Given these grades, retaining the Truck Bypass, IL Route 150 and the associated local roads (Third Street and Branch Street) can't be maintained in its existing form under these alternatives.

Conceptual Alternative D-2 also fails to be able to provide farm equipment access to Horse Island and is expected to result in roughly 3 times the wetland encroachments of the other alternatives.

SECTION 5

Public Involvement Summary

Recognizing the value that stakeholders bring to the transportation planning process, the study team will employ several tools to ensure a variety of opportunities for public involvement are available throughout the EA. Additionally, the Stakeholder and Public Involvement Plan (PIP) will be guided by both the National Environmental Policy Act's (NEPA) requirements for public involvement and MoDOT's public engagement policies.

The approach to this study will help ensure the recommended improvement balances costs, safety, commuter needs, environmental impacts, and the study's goals. Stakeholder and public involvement are critical to this approach and help build awareness and understanding. Ultimately, it will play an important role in providing input into an outcome that reflects an interdisciplinary, collaborative process and includes input from anyone with a stake in the study. The remainder of this section will outline the various techniques and tools being used to exchange information.

5.1 Stakeholder Interviews/Briefings

The public involvement team scheduled and conducted interviews with key stakeholders at the beginning of the study including community leaders, emergency responders, and elected officials. These stakeholders have been identified in collaboration with MoDOT. A total of 10, one-on-one interviews were conducted.

5.2 Community Advisory Group

A Community Advisory Group (CAG) was established. CAG members represent various study area constituencies including residents, chambers of commerce, emergency responders, and other community stakeholders. The CAG is a means of directly engaging stakeholders to gain valuable community input, identify and address local concerns, and build public interest and involvement in the study's decision-making process.

The role of the CAG member is to advise MoDOT. The agency will ultimately make the final decision on how best to create a safe and reliable Mississippi River crossing. Four CAG meetings are anticipated:

1. Kickoff meeting to present the study, discuss issues affecting the existing bridges, and presentation of the draft Purpose and Need statement;
2. Meeting to present the Conceptual Alternatives and screening process;
3. Meeting to discuss the Reasonable Alternatives; and
4. Final meeting to present the Preferred Alternative

CAG Meeting #1 was conducted on July 19, 2017. The primary issues identified by the CAG members were the narrow travel lanes, poor condition of the Chester Bridge, roadway closures due to flooding, bridge closures due to oversized loads, and safely accommodating bicycle and pedestrian traffic.

5.3 Elected Officials Briefings

Early coordination and continuous communication with elected officials will be accomplished through an introductory letter, followed by briefings. A letter introducing the study was sent to all identified elected officials for Perryville and Perry County in the State of Missouri, and Chester and Randolph County in the State of Illinois. The study team will conduct briefings with elected officials prior to each public meeting. The purpose of these briefings is to inform and educate officials about the study at key milestones before

presenting to the public. The first briefing occurred prior to the first Public Involvement Meeting on August 24, 2017 and introduced the study and Purpose and Need. Twenty elected officials, or representatives of elected officials, attended the briefing. The second briefing will discuss the Reasonable Alternatives prior to the second public involvement meeting. The third briefing will present the Preferred Alternative prior to the Public Hearing.

5.4 Public Involvement Meetings

Public meetings are an important opportunity for direct engagement with the larger public. At these meetings, study team members will be available to discuss, explain, and help participants understand the information presented.

Two public involvement meetings and one public hearing are planned for the study. The first public meeting was conducted on August 24, 2017. The draft Purpose and Need and the initial Conceptual Alternatives were presented for comment. Thirty-three stakeholders attended the first public meeting citing narrow lanes, flood-related closures, the poor condition of the Chester Bridge, and safely accommodating bicycles and pedestrian as the major issues affecting the bridges. Based on comment forms submitted by attendees, Alternative U-1 (near upstream) received the most positive ratings.

5.5 Presentations

Presentations to community and civic groups, business groups, and other interested groups or organizations over the course of the study will be used to introduce the study, provide study updates, and obtain public input. Such presentations will be made upon request.

The first such presentation, providing an update on the Chester Bridge EA, was given to the Chester Chamber of Commerce on September 19, 2017.

5.6 Community Events and Festivals

The public involvement consultant will stay informed of local events and festivals where the study team can conduct public outreach throughout the study process. One such event was the Perryville Mayfest May 10-13, 2017. Team members attend these events to distribute study information and to promote public engagement and the study website.

5.7 Outreach and Informational Materials

Informational materials will be developed and outreach will be conducted to drive the public involvement activities as follows.

5.7.1 Fact Sheet

A fact sheet has been written and designed for distribution at the CAG meetings, elected officials briefings, presentations, and study meetings. It has been uploaded to the study website. This handout provides a description of the study, a timeline, and a study area map.

5.7.2 Frequently Asked Questions Document

A list of frequently asked questions (FAQ) has been written, designed, and distributed at meetings and presentations. This handout has been uploaded to the study website and will be updated as needed throughout the study.

5.7.3 Newsletters

The public involvement team will write, design, and distribute study newsletters. Three (3) newsletters will be produced, one before each of the two public meeting and the third before the public hearing. The newsletter will be distributed to stakeholders on the study mailing list via email and regular mail. PDF files of all newsletters will be posted to the study website.

The first newsletter was prepared and distributed prior to the first public meeting held on August 24, 2017.

5.7.4 Informational Kiosks

Informational kiosks featuring the study fact sheet, newsletters, maps, and other study information for the public will be placed at locations frequented by citizens throughout the region.

5.7.5 Study Website

The study website is a tool for both public outreach and engagement. The website is online at www.ChesterBridgeStudy.com and includes general study information, contact information, technical documents, and information on how citizens can be involved. It serves as a centralized information portal for learning about the study, getting updates, and downloading public meeting displays and other study materials. Visitors will also be able to submit comments and sign up for the study's mailing list. A link to the study website page will be part of MoDOT's website.

5.7.6 Surveys

An initial public survey will be developed on www.SurveyMonkey.com to obtain stakeholder input on why they use the bridge, when they use it, and the issues with the bridge they would like the study team to address. It will also ask respondents how best to engage them. As the study moves forward, a more detailed survey will be developed. Of the over 1,000 completed surveys, the most frequent concerns with the Chester Bridge are narrow lanes and lack of shoulders, poor condition of the infrastructure and road surface, and closures due to flooding and oversized loads.

5.7.7 Stakeholder Interviews

One-on-one stakeholder interviews were conducted with 10 community leaders and business owners in Perryville and Chester. All interviewees indicate that the bridge is a major factor in the local economy. The most frequent concerns identified were narrow lanes/vehicle safety, delays and expenses of rerouting local industry trucks, closures due to flooding and equipment crossings, and deterioration of infrastructure.

5.7.8 Study Mailing List

An initial study mailing list will be created and continuously updated throughout the study. This list will include the identified key stakeholders, CAG members, elected officials, Chester and Perryville Chamber of Commerce members, and coordinating agencies. Anyone who attends a stakeholder meeting or signs up for mailings through the study website will be added to the master mailing list.

5.7.9 Phone Inquiries

MoDOT's phone number, 1-888-Ask-MoDOT, will be used as the phone number for the study on all communications materials. Project-related phone calls and messages received by MoDOT will be answered, preferably within two business days after they are received.

5.7.10 Email / Mail Inquiries

MoDOT's Southeast District office address will be used as the mailing address for the project. MoDOT will have primary responsibility for responding to correspondences, with assistance from the study team.

5.7.11 Media Relations

Another method for informing the public is through the news media. The primary media strategy will be for the team to produce and distribute press advisories to announce the informational public meetings and the public hearing.

5.7.12 Social Media

During the development of the EA, content will be posted on MoDOT's Facebook page, tweeted via its Twitter account, and emailed using a mass email service.

5.8 Agency Collaboration Plan

The Collaboration Plan is intended to define the process by which the Project Study Team will communicate information about the Chester Bridge Environmental Assessment project to the interested federal and non-federal governmental agencies.

Because the Federal Highway Administration (FHWA) is expected to provide funding for this project, FHWA (Missouri Division) serves as the Lead Agency for the project. MoDOT, as the direct recipient of federal funds for the project, is a Co-Lead Agency. The Agency Collaboration Plan includes 2 types of agencies:

1. Cooperating agencies are those federal agencies that the lead agency specifically requests to participate in the environmental evaluation process for the project. FHWA's NEPA regulations (23 CFR 771.111(d)) require that federal agencies with jurisdiction by law (such as permitting or land transfer authority) be invited to be cooperating agencies for an EA. The US Army Corps of Engineers (St. Louis District) and US Coast Guard have agreed to be Cooperating Agencies for the Chester Bridge EA.
2. Interested agencies are those federal and non-federal governmental agencies that may have an interest in the project because of their jurisdictional authority, special expertise, local knowledge and/or statewide interest. Based on these criteria, the project team identified 22 agencies. The definition of "governmental" was broadened to include an organization with an official mandate (including Missouri and Illinois agencies not covered by the NEPA-404 merger process). Any organization that cannot satisfy the criteria as an agency, but is interested in the project, will be included in the project as a general stakeholder. Collaboration with these groups will be coordinated through information packages that coincide with the CAG meetings.

Collaboration Point #3

January 29, 2020

Judith Deel
Missouri State Historic Preservation Office
P.O. Box 176
Jefferson City, Missouri 65102

Subject: Agency Collaboration Point #3
Tentative Preferred Alternative
Chester Bridge Environmental Assessment

Dear Ms. Deel:

Introduction
This letter accompanies the data associated with Agency Collaboration Point #3 for the Chester Bridge NEPA Study. The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois DOT (IDOT), is preparing a Location Study and National Environmental Policy Act (NEPA) investigation of the Chester Bridge crossing of the Mississippi River, from Perry County, Missouri to Randolph County, Illinois. The project also includes the investigation of the Horse Island Chute Bridge on the Missouri approach.

Summary of Agency Collaboration Plan

The goal of the project's Agency Collaboration Plan is to provide interested regulatory agencies with the data they need to stay informed and a mechanism to provide relevant input. Collaboration points occur at key points in the NEPA process. The points of contact are 1) when the Purpose and Need is produced, 2) when Reasonable Alternatives are established, and 3) when a Preferred Alternative emerges.

Recap of Project Purpose and Need and Reasonable Alternatives (Agency Collaboration Points #1 and #2)

The term "purpose and need" refers to the transportation-related problems that a study is intended to address. In its very broadest sense, the Chester Bridge EA is intended to maintain a safe and reliable crossing of the Mississippi River. The specific goals of the Chester Bridge project can be defined as follows:

1. The bridges are too narrow.
2. The bridges are in poor condition.
3. Route 51 is subject to flood-related closures.
4. Route 51 is important to connectivity.

Based on the results of the Conceptual Alternatives screening criteria, the two upstream new build alternatives (U-1 and U-2) were selected as the study's Reasonable Alternatives. These alternatives satisfy all 19 of the project's performance measures. In addition, the No-Build Alternative and the Rehabilitate the Existing Alternative while maintaining its historic integrity as a one-way couplet (R-2) were recommended as Reasonable Alternatives.

Preferred Alternative and Attached Materials
Enclosed with this letter is technical memorandum discussing the analysis that led to the selection of upstream alternative (U-1) as the study's Preferred Alternative. The Preferred Alternative was presented, and received concurrence, at the Illinois NEPA/404 Merger Meeting on September 6, 2018.

We appreciate your involvement in this very important project and look forward to continuing to work with you. Please contact me at 314.335.5065 or at buddy.desai@jacobs.com should you have any comments or questions.

Sincerely,

Buddy Desai
Consultant Project Manager
CH2M/Jacobs

Chester Bridge Environmental Assessment

Perry County, Missouri and Randolph County, Illinois

MoDOT Job J9P3239

IDOT Sequence # 20783

January 27, 2020

Contents of the Preferred Alternative Selection

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Figures

Tables

Appendices

SECTION 1

Introduction

This document presents the Preferred Alternative for the Chester Bridge Environmental Assessment (Chester Bridge EA). This decision is based on the impacts, merits, and stakeholder preferences of the Alternatives Carried Forward (Reasonable Alternatives).

Section 1 introduces the project and study area. **Section 2** summarizes the study's Purpose and Need. **Section 3** describes the Conceptual Alternatives. **Section 4** presents the screening of the Reasonable Alternatives. **Section 5** presents the selection of the Preferred Alternative. **Section 6** summarizes/updates the project's Public Involvement Process.

1.1 Study Overview

The Missouri Department of Transportation (MoDOT), in cooperation with the Federal Highway Administration (FHWA) and the Illinois Department of Transportation (IDOT), is preparing a Location Study and EA for proposed improvements to the two Route 51 bridges at Chester, IL. The Route 51 Mississippi River Bridge (Chester Bridge) is a continuous truss bridge across the Mississippi River. The Horse Island Chute Bridge is steel stringer bridge over the Horse Island Chute. These bridges connect Route 51 in Missouri with Route 150 in Illinois. They form the only Mississippi River roadway crossing between St. Louis (roughly 57 river miles north) and Cape Girardeau (roughly 56 river miles south). The nearest population centers are Chester (Randolph County, Illinois) and Perryville (Perry County, Missouri). Chester is located on the bluff immediately adjacent to the bridge. Perryville is located roughly 11 miles southwest of the bridge along Route 51. The approximate latitude/ longitude of the existing bridge is 37°54'09" N, 89°50'13" W (degrees°minutes'seconds"). The Chester Bridge was opened in 1942 as a toll bridge. Tolls were removed in 1989.

Figure 1 contains two vicinity maps showing the location of the Chester and Horse Island Chute Bridges.

1.2 Overview of Existing Route 51 Crossing

The Chester Bridge is composed of 4 spans with a total length of 2,830 feet. The main spans of the Chester Bridge are two-span subdivided Warren cantilevered through trusses. Each of these spans is roughly 670 feet long. The approaches are Warren deck trusses. The Missouri approach connects across the Horse Island. The Illinois approach connects to the top of the bluff in Chester. There are 4 piers in the Mississippi River associated with the bridge. Three are associated with the main spans. A fourth small pier is in the center of the Illinois approach span along the edge of the river. The deck width is 22 feet. The vertical clearance above the deck is 20 feet.

The Chester Bridge has been determined to be too narrow for current design standards. The bridge is routinely closed, with police support, to allow for the passage of over-sized loads. Relative to its condition, the Chester Bridge is on the MoDOT list of poor bridges. The Chester Bridge is also eligible for the National Register of Historic Places (NRHP).

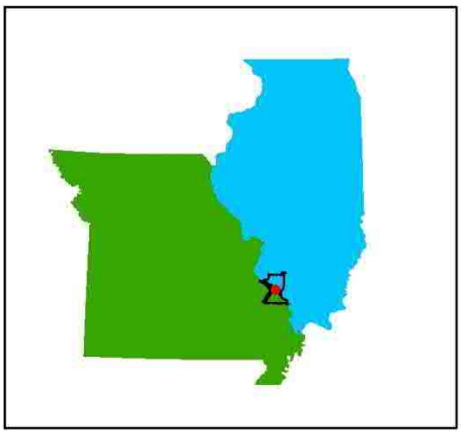
An associated bridge is the steel stringer bridge over Horse Island Chute on Route 51. There is approximately 800 feet of roadway (on embankment) between the Chester Bridge and the Horse Island Chute Bridge. This bridge was also built in 1942. Total length of the bridge is 462 feet. It is in slightly better condition than the Chester Bridge, but is also considered to be too narrow for current design standards.

Figure 2 shows the photographs of the Chester Bridge and the Horse Island Chute Bridge.

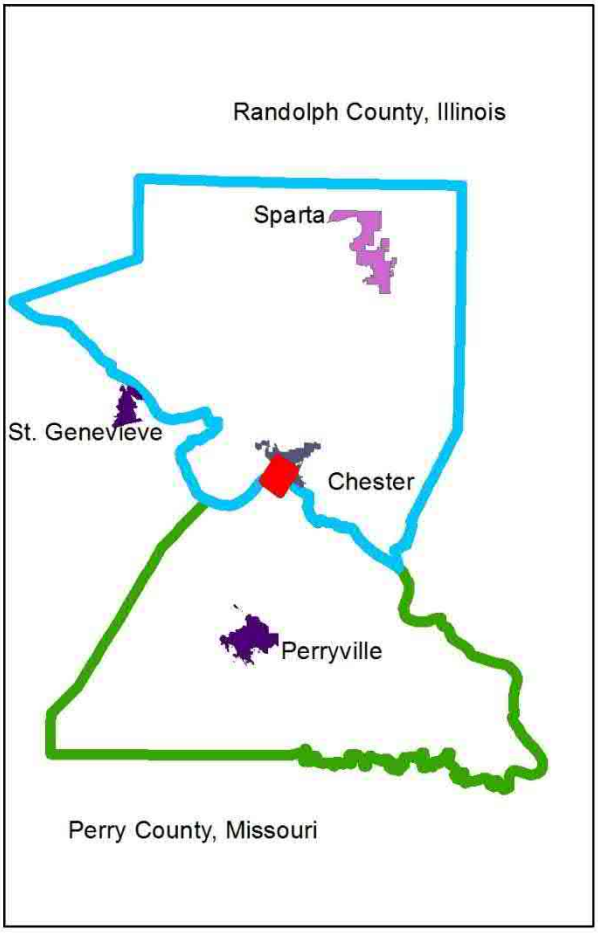
1.3 Study Area Description

The study area for the Chester Bridge EA includes portions of Missouri and Illinois. The major elements of the study area are shown on **Figure 3** and are discussed below.

Figure 1 *– Vicinity Maps*



Project Location Map (Statewide)



Project Location Map (Perry and Randolph Counties)

The Chester Bridge is located at river mile 110 of the upper branch of the Mississippi River (110 miles upstream of the confluence with the Ohio River). The Mississippi River is roughly 1,700 feet wide in this area. Over time, the path of the Mississippi River has changed. In 1844, the channel straightened creating Kaskaskia Island. The Old River Channel still exists and forms the official boundary between Illinois and Missouri. The Old River Channel branches near the bridge to create Horse Island. The Route 51 approach to the Chester Bridge traverses the Horse Island with a separate bridge crossing the Horse Island Chute. The road rests on embankment between the bridges.

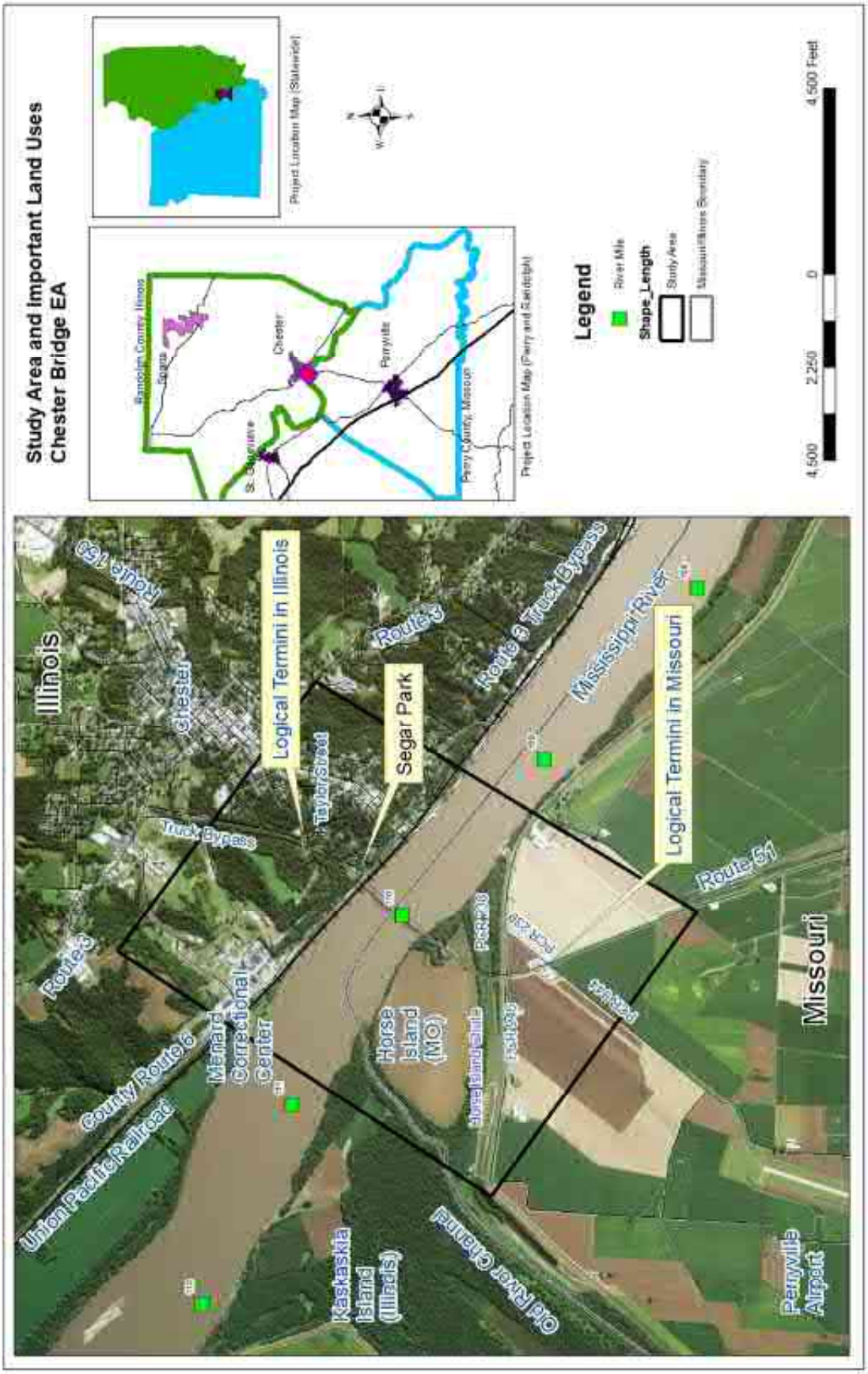
Figure 2 *– Typical photographs of the Chester Bridge and the Horse Island Chute Bridge*

In Missouri, the earthen Bois Brule levee parallels the river in this area. Gravel roads run along the top of the levee. Behind the levee, the land is flat and fertile and is used for agriculture. Route 51 is a two-lane road with minimal shoulders. It is the only paved road in the immediate vicinity of the Chester Bridge. The other roads are narrow gravel farm roads. Two gas stations stand at the intersection of Route 51 and Perry County Roads (PCR) 239 and 944. There are also a few isolated farmsteads on this side of the river. The largest development is at the Perryville Airport (1856 Highway H). This regional airport was originally built by the U.S. Government as a training facility in the early 1940s. The airport was deeded to the City of Perryville in 1947. The airport has a 7,000-foot x 100-foot concrete runway equipped with medium intensity runway lights which allow for use by numerous kinds of aircraft, including jets. Fixed base operators include Sabreliner Aviation and CertiFLY Aviation Parts, which is engaged in modifications and overhauls to both civilian and military aircraft. The city of Perryville is located approximately 9 miles from the airport. Perryville (population 8,394) is the county seat of Perry County.

In Illinois, a steep bluff rises approximately 100 feet from the river to the city of Chester (population 8,586). Immediately off the bridge is the Chester Welcome Center on IL Route 150. Chester is known as the home of comic book hero Popeye. His statue is a highlight of the welcome center. A Union Pacific Railroad line parallels the river below the bluff and goes under the bridge. County Route 6 also parallels the river and railroad. North/West of the bridge on County Route 6 is the Menard Correctional Center, a maximum-security state penitentiary. Land uses to the south/east of the existing bridge include a Chester water treatment facility, a riverboat pier, residences and recreational facilities. Two main routes traverse Chester – IL Route 3 (parallel to the river) and IL Route 150 (perpendicular to the river). To remove heavy truck traffic from downtown Chester, a Truck Bypass was developed. South of the city, the Truck Bypass follows the river front road until it gets to the Chester Bridge. From there, trucks traverse a short spur to Route 150, back to IL Route 3, north of the city center.

Based on these constraints, the project's Purpose and Need/logical termini, the study area shown on **Figure 3** was established for the initial evaluation of alternatives.

Figure 3 *– Chester Bridge Study Area*



1.4 Logical Termini

FHWA issues guidelines to assist transportation planners in designating logical termini for a study. In addition to being the rational end points for a transportation improvement, logical termini also serve as general geographical boundaries for a review of any environmental impacts triggered by the study. Logical termini are located within the study area and frequently are points of major traffic generation, especially intersecting roadways. This is because in most cases traffic generators determine the size and type of facility being proposed.

Based on these criteria, the logical termini for the Chester Bridge EA are:

- In Missouri, the intersection of Route 51 and Perry County Road 239/944
- In Illinois, the intersection of Route 150 and Taylor Street

These limits connect all essential movements associated with the Purpose and Need for the project.

In addition to being the rational end points for a transportation improvement, they also incorporate all general geographical boundaries needed for the review of environmental impacts triggered by the study. Finally, because traffic generators affect the appropriate size and type of a facility, these limits include all points of major traffic generation.

The Chester Bridge project also has independent utility. It will be able to function on its own, without further construction of an adjoining segment. It also does not preclude any current or future projects within the total study area from advancing after the study's findings have been approved by FHWA.

Multiple transportation improvements within the study area will almost certainly be identified, allowing projects of independent utility that improve the overall system to be built, but whose construction does not restrict or otherwise alter planning and construction of adjacent projects.

Finally, the Chester Bridge EA does not restrict consideration of other reasonably foreseeable transportation improvements. The transportation problems and solutions are being evaluated with consideration for existing long-range transportation plans in order to minimize conflicts with the goals and improvements laid out in those plans. Solutions will be developed to allow for complementary improvements of connecting roadways as needed in the future.

SECTION 2

Summary of Project Purpose and Need

This is a summary of the project's Purpose and Need Statement (submitted as part of Agency Collaboration Point #1).

The Chester Bridge EA is a transportation study that will investigate and identify improvements intended to develop a safe and reliable Route 51 crossing of the Mississippi River. Overall, the purpose of the Chester Bridge EA is to:

- Improve the reliability of the crossing
- Improve the functionality of the crossing

Within the context of this purpose, several specific transportation problems have been identified. The specific transportation problems affecting the Route 51 crossings include, in no particular order:

1) The Route 51 crossings of the Mississippi River and the Horse Island Chute are too narrow for current design standards

2) The Route 51 crossing of the Mississippi River is in poor condition

3) Route 51 is subject to flood-related closures

4) The Route 51 crossing is important to local and regional connectivity

The screening criteria were used to determine how well Conceptual Alternatives satisfy the Purpose and Need. **Table 1** presents a summary of the major elements of the Purpose and Need, the screening criteria, and performance measures. Screening criteria are specific topics that define the Purpose and Need. Performance measures define how well an alternative succeeds at accomplishing the evaluation criteria.

Table 1 *– Purpose and Need Screening Criteria*

Purpose	Screening Criteria	Performance Measures
Address the design standard deficiencies of the existing bridge	• Is the river crossing improved? • Does it comply with current MoDOT Design Standards?	-Are 12-foot lanes provided? (y/n) -Are 8-10-foot shoulders provided? (y/n) -Can bike/pedestrian facilities be accommodated? (y/n)
Address the poor condition of the existing bridge	• Is the bridge condition improved? • Does it comply with current MoDOT Design standards?	-Are the deck/superstructure improved to a good condition? (y/n) -Are the bridge foundations stable? (y/n) -Is the lifespan of the improvements greater than 25 years? (y/n) -Is the load carrying capacity adequate? (y/n) -Are current seismic design criteria met? (y/n)
Minimize the flood-related closures of Route 51	• Is the gap in the Bois Brule Levee corrected?	-Is the need for the existing temporary flood wall eliminated? (y/n)
Maintain important local and regional connectivity	• Are important regional connections maintained? • Are important local connections maintained?	- Is the distance and spacing in relation to I-55 adequate? (y/n) - Is the Truck Bypass maintained? (y/n) - Is access to Chester maintained? (y/n) - Can the crossing be maintained during construction? (y/n) - Is access to Bois Brule Bottoms/Kaskaskia Island maintained? (y/n) - Is access to the Mississippi River maintained? (y/n) - Is farm equipment access to Horse Island maintained? (y/n) - Is farm equipment access to Bois Brule maintained? (y/n) - Is access to Menard Correctional Center maintained? (y/n)

SECTION 3

Conceptual Alternatives

This is a summary of the project's *Alternatives Being Carried Forward* (submitted as part of Agency Collaboration Point #2). **Section 3.1** presents the Conceptual Alternatives. **Section 3.2** summarizes the evaluation of the Conceptual Alternatives. **Section 3.3** presents the alternatives being carried forward (Reasonable Alternatives).

3.1 Overview of the Conceptual Alternatives

The alternative development process began with identifying a wide range of initial alternatives that could potentially address the transportation needs established by the study. These initial alternatives are called ***Conceptual Alternatives***. The Conceptual Alternatives were developed in accordance with principles of appropriate design standards with consideration of existing planning goals, public involvement, potential environmental impacts, and engineering judgment.

3.1.1 No-Build Alternative

The No-Build Alternative for the Chester Bridge EA would consist of maintaining the current roadways and structures in essentially their current condition. Routine maintenance would continue, and occasional minor safety upgrades would be implemented. No capacity additions or major improvements would be made. Overall, the No-Build Alternative does nothing to meet the study's Purpose and Need. It is described in this document to provide a baseline condition against which the changes associated with the other alternatives may be evaluated.

The No-Build Alternative assumes that capacity additions on major improvements would not be constructed; thus, many impacts—positive and negative—associated with a new facility, would not occur. These impacts would include expenditure of funds, land use changes that include converting existing development or public lands into highway right-of-way, potential increased economic development, improved multi-modal accessibility, and improved safety. The No-Build Alternative is not a no-cost concept because maintenance and repair of the existing roadway infrastructure would be needed to ensure the continued use of the corridor. Given the age of the bridge, maintenance costs are an increasing concern.

3.1.2 New Build Conceptual Alternatives

Based on the project's Purpose and Need, logical termini, and study area, a series of Conceptual Alternatives were developed. The Conceptual Alternatives represent the wide range of initial alternatives that could potentially address the transportation needs established by the study. Those that are determined to satisfy the study's Purpose and Need will be advanced for further consideration.

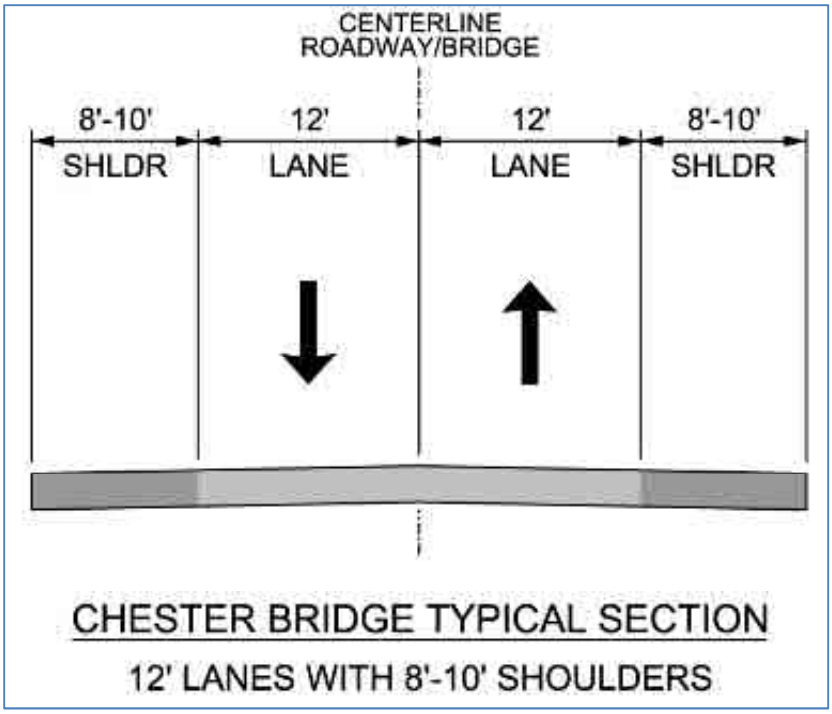
The bridge sections were assumed to be 40 to 44 feet wide - with two 12-foot travel lanes and 8 to 10-foot shoulders. They also assume a 16.5-foot vertical clearance design standard. This would allow oversized loads and large farm equipment to cross the river without stopping traffic and provide room to maneuver during emergencies or to remove disabled vehicles from the travel lanes. The shoulders would allow bicyclists and pedestrians to cross the bridge without using the vehicular travel lanes. The shoulders would also allow bridge inspections to occur without restricting traffic.

The roadway sections were assumed to be two-way rural minor arterial roadways. The design speed of 45 mph will be maintained. Existing intersections and turns will be maintained in their current configuration.

These Conceptual Alternatives do not preclude the use of more than one of these corridors for hybrid configurations. For example, one-way couplets utilizing two of the new build or rehabilitate the existing bridge alternative. The possibility of these pairings will be considered in the recommendation of alternatives for further consideration.

Direct access to the roadways for individual driveways will be maintained, to the extent possible. The Typical Roadway Section is shown on **Figure 4**.

Figure 4 *– Typical Roadway Section*



The new build Conceptual Alternatives are depicted below and on **Figure 5**.

Near Upstream Conceptual Alternative (U-1)

Connecting at the logical termini, this alternative moves the alignment approximately 75 feet upstream of the existing corridor. The bridge is parallel to the existing bridge. For most stakeholders, once completed, this alignment is expected to be nearly indistinguishable from the existing crossing.

Far Upstream Conceptual Alternative (U-2)

Connecting at the logical termini, this alternative moves the alignment a maximum of roughly 375 feet upstream of the existing corridor. The bridge is not parallel to the existing bridge; it is roughly 6 degrees askew. This would make the new bridge more perpendicular to the river, potentially shortening the length of the bridge. However, the overall length of the crossing/corridor will be longer, as the alignment curves back to the logical termini.

Replace along Existing Conceptual Alternative (E-1)

This alternative will construct a new bridge on the existing alignment. This alternative would require the closure of the crossing during construction.

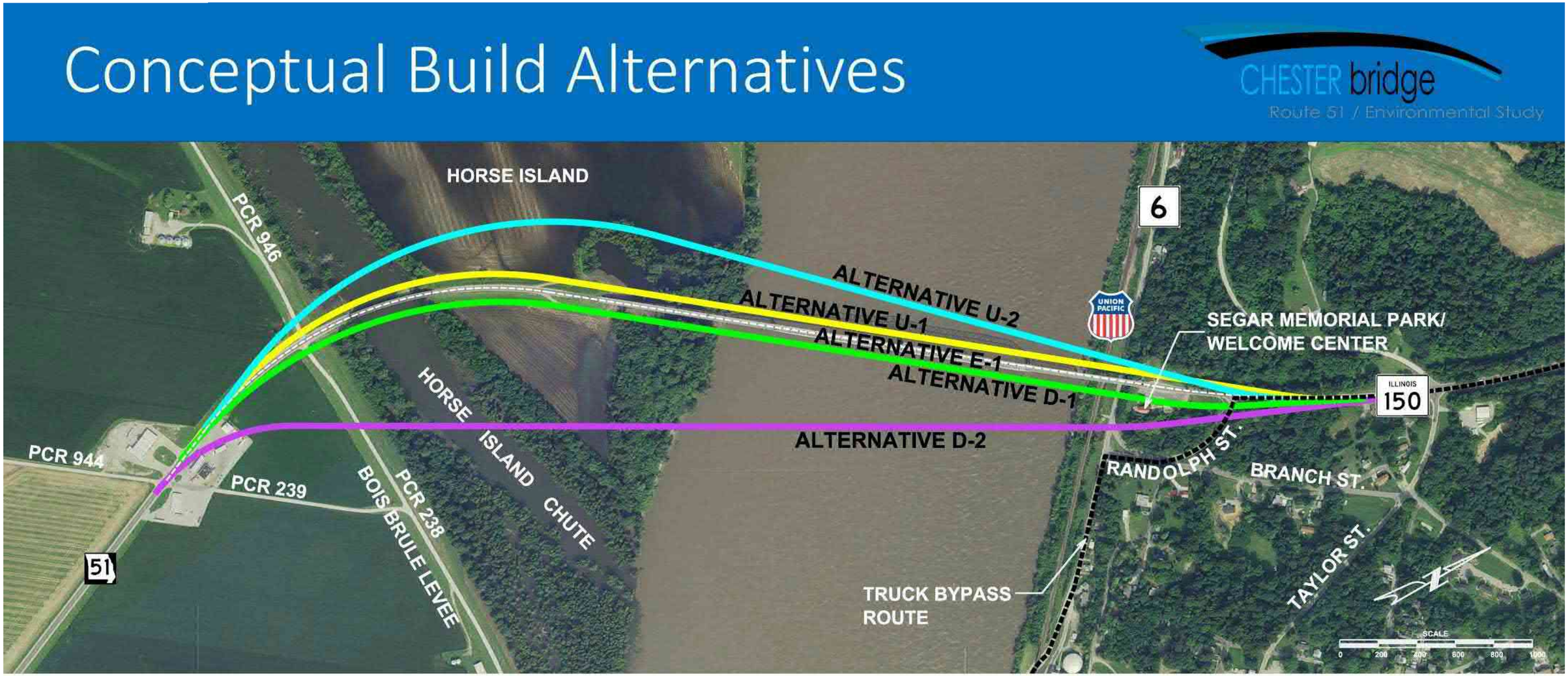
Near Downstream Conceptual Alternative (D-1)

Connecting at the logical termini, this alternative moves the alignment approximately 75 feet downstream of the existing corridor. The bridge is parallel to the existing bridge. For most stakeholders, once completed, this alignment is expected to be nearly indistinguishable from the existing crossing.

Far Downstream Conceptual Alternative (D-2)

Connecting at the logical termini, this alternative moves the alignment a maximum of roughly 675 feet downstream of the existing corridor. The bridge is not parallel to the existing bridge; it is roughly 11 degrees askew. This would be the longest corridor. It would miss most of Horse Island. It would also affect the land uses and roadways at the termini.

Figure 5 *– Conceptual Alternatives*



Rehabilitate Existing (R-1)

This alternative will rehabilitate the existing bridges in a way that would maintain the Chester Bridge's historic integrity. Like E-1, this alternative would require the closure of the crossing during construction. The rehabilitation alternatives are primarily driven by Section 106 of the National Historic Preservation Act, which requires consideration the effect that actions have on historic properties.

Rehabilitate Existing (R-2)

This alternative will rehabilitate the existing bridges in a way that would maintain the Chester Bridge's historic integrity and construct a new crossing, creating a one-way couplet. The new crossing can be any of the configurations advanced as a reasonable alternative. Unlike R-1, this alternative can be constructed without the closure of a Mississippi River crossing in the vicinity of Chester.

3.2 Summary of Conceptual Alternatives Screening

To determine the Conceptual Alternatives to advance for further study, a Purpose and Need screening was conducted.

The Conceptual Alternatives were found to be remarkably successful at addressing the transportation problems associated with the Chester Bridge crossing. Even the poorest operating Conceptual Alternatives – those that retain the existing structure (No-Build and Rehabilitate Existing)—satisfy most of the Purpose and Need performance measures:

- The **No Build Alternative** satisfies 56 percent of the performance measures. However, it can't satisfy any of the performance measures associated with addressing the operational issues caused by the bridge's narrow lanes. Further, it doesn't address the condition issues of the existing bridge. Neither can it eliminate the need for the temporary flood wall along Route 51. On the other hand, it maintains existing access pattern.
- The **Rehabilitation Alternatives (R-1 and R-2)** were driven by Section 106 of the National Historic Preservation Act, which requires consideration of the effect that actions have on historic properties. The Chester Bridge is eligible for the National Register of Historic Places.

  The **Rehabilitate the Existing Bridge Alternative (R-1)** does not satisfy the project's purpose and need. It only satisfies 63 percent of the performance measures (12/19). This alternative requires the closure of the crossing during the rehabilitation work. This alternative also does not eliminate the need for the temporary flood wall along Route 51.

  The **Rehabilitate the Existing Alternative (R-2)** utilizes a one-way couplet configuration (where a modified version of U-1 or U-2 is used along with the existing bridges rehabilitated to maintain the Chester Bridge's historic integrity). This alternative can eliminate the need to close the crossing during the rehabilitation work. However, it does not eliminate the need for the temporary flood wall along Route 51.
- The **Upstream Alternatives (U-1 and U-2)** satisfy all (100 percent) of the performance measures.
- The **Downstream Alternatives (D-1 and D-2)** satisfy 95 percent and 89 percent, respectively, of the performance measures. However, the Downstream Alternatives may require substantial revisions to the Truck Bypass. These alternatives go between the Truck Bypass and Segar Park. In addition to horizontal alignment issues, there is a large increase in elevation between the riverfront and bluff portions of the Truck Bypass (roughly 60 feet over 850 feet). While the Truck Bypass is an essential feature of the project, it can't be maintained in its existing form under these alternatives. Improving the Truck Bypass will require work beyond the logical termini and study area and will result in impacts along an existing residential street. The Segar Park is also an important impediment. Conceptual Alternative D-2 also fails to be able to provide access for farm equipment to Horse Island.

- A new bridge along the existing location (**Conceptual Alternative E-1**) can satisfy all the performance measures, except that it requires the long-term closure of the crossing. Because of the duration of the closure and length of the detour, this must be considered a fatal flaw.

3.3 Reasonable Alternatives/Alternatives to be Carried Forward

Based on the results of the Screening Criteria, the build Conceptual Alternatives U-1 and U-2 are recommended for further consideration. These alternatives satisfy all 18 of the project's performance measures.

The rehabilitation of the existing bridge (R-2), as a portion of a one-way couplet configuration, is also recommended for further configuration.

Based on the results of the Screening Criteria, the new build **Conceptual Alternatives U-1 and U-2** were recommended for further consideration. These alternatives satisfy all 19 of the project's performance measures.

Even though the other new build Conceptual Alternatives satisfy many of the performance measures, because there are alternatives that satisfy all, these are not recommended for further consideration. These alternatives have clear/obvious difficulties. The downstream alternatives are likely to negatively impact the Truck Bypass, wetlands and the Segar Memorial Park. These impacts may force property acquisitions and building displacements during the replacement of those resources. Further, Segar Park is a Section 4(f) resource, where impacts are generally prohibited when there are "reasonable and prudent alternatives." Because the upstream alternatives avoid these issues, it is prudent to narrow the Reasonable Alternatives to U-1 and U-2.

Based on the results of the Screening Criteria, the **No-Build Alternative** and the **Rehabilitate the Existing Alternative (R-2)** were also recommended for further consideration. The rehabilitation of the existing bridges will be considered as a part of a one-way couplet configuration, utilizing U-1 or U-2 and the Chester bridge rehabilitated to maintain its historic integrity. The rehabilitation alternatives are primarily driven by Section 106 of the National Historic Preservation Act, which requires consideration the effect that actions have on historic properties. The details of the Section 106 consultation are outlined in **Section 6.9**.

SECTION 4

Screening of the Reasonable Alternatives

This is a presentation of the evaluation of the project's Reasonable Alternatives. **Section 4.1** presents the updated configuration of the Reasonable Alternatives. **Section 4.2** presents the footprints associated with the Reasonable Alternatives. **Section 4.3** summarizes the engineering impacts associated with the Reasonable Alternatives. **Section 4.4** summarizes the environmental impacts associated with the Reasonable Alternatives. **Section 4.5** summarizes the community impacts associated with the Reasonable Alternatives.

4.1 Updated Configurations Associated with the Reasonable Alternatives

The Reasonable Alternatives discussed in **Section 3.3** were further developed and refined based on more detailed engineering analysis and known constraints. This allows for the establishment of preliminary study footprints and, in turn, for detailed impact assessments, cost estimates, and traffic evaluations. The Reasonable Alternatives were updated based on more detailed design studies to further avoid and minimize environmental impacts and to optimize engineering design and constructability.

Reasonable Alternative U-1 was refined to enhance constructability of the roadway embankment adjacent to the existing roadway approaching the Chester Bridge on the Missouri side of the river. Shifting the alignment approximately 50' further upstream ensures that that the existing roadway could remain operational during construction of the new embankment and roadway while avoiding the need for any temporary shoring. Other minor refinements simplify the proposed roadway curvature as it ties into the existing roadway west of Taylor Street in Illinois and to complete connections for intersecting roadways at Perry County Road 946/238 in Missouri and Randolph Street in Illinois.

Reasonable Alternative U-2 was refined minimally with to simplify the curvature of the proposed roadway as it ties into the existing Route 150 west of Taylor Street in Illinois and to complete connections to the proposed roadway at Perry County Road 946/238 in Missouri and Randolph Street in Illinois.

The Rehabilitate the Existing Alternative (R-2) utilizes a one-way couplet configuration (where a modified version of U-1 or U-2 is used along with the existing Mississippi River bridge rehabilitated to maintain its historic integrity). This alternative can eliminate the need to close the crossing during the rehabilitation work. However, it does not eliminate the need for the temporary flood wall along Route 51.

Figure 6 depicts the configuration modifications.

4.2 Construction and Project Footprints Associated with the Reasonable Alternatives

The preliminary footprints were developed to determine the physical area required to construct the Reasonable Alternatives including anticipated right of way, temporary and permanent easements and accounting for the width of the proposed roadway, embankments, stormwater drainage and conveyance, and roadway connections. Utilizing the alignments of the Reasonable Alternatives and a preliminary profile that is anticipated to meet the clearance requirements for likely bridge structure types, the roadway typical section, embankment slopes, and drainage features were used to define approximate construction limits. Based on these limits and a reasonable buffer width to accommodate further engineering refinements, future design, and eventual construction; a preliminary footprint was developed for each segment of the alternatives.

4.3 Distinguishing Engineering Impacts Associated with the Reasonable Alternatives

This section focuses on the engineering-related impacts associated with the Reasonable Alternatives. The specific engineering topics include:

1. Construction Costs
2. Bridge Type Considerations
3. Construction and Navigation
4. Navigation During Operation
5. Hydraulic Impacts
6. Traffic Safety and Accessibility Impacts
7. Perryville Airport Impacts
8. Design Life Impacts
9. Utility Impacts
10. Traffic/Circulation Impacts

Exhibit S-1 (Appendix A) contains an impact summary for engineering elements.

4.3.1 Construction Costs

A planning level cost estimate was prepared for each of the Reasonable Alternatives and is presented in **Table 2** below. These cost estimates will be updated as the alternatives are further refined.

The costs associated with upstream alternatives (U-1 and U-2) are roughly equivalent. Based on the current level of design detail, the primary difference is volume of earthen fill required to construct the embankment between Horse Island Chute and the Mississippi River. Alternative U-1 overlaps with the existing Route 51 embankment on the Missouri approach reducing the amount of earthen fill required to construct the embankment for the new roadway in this area of the project.

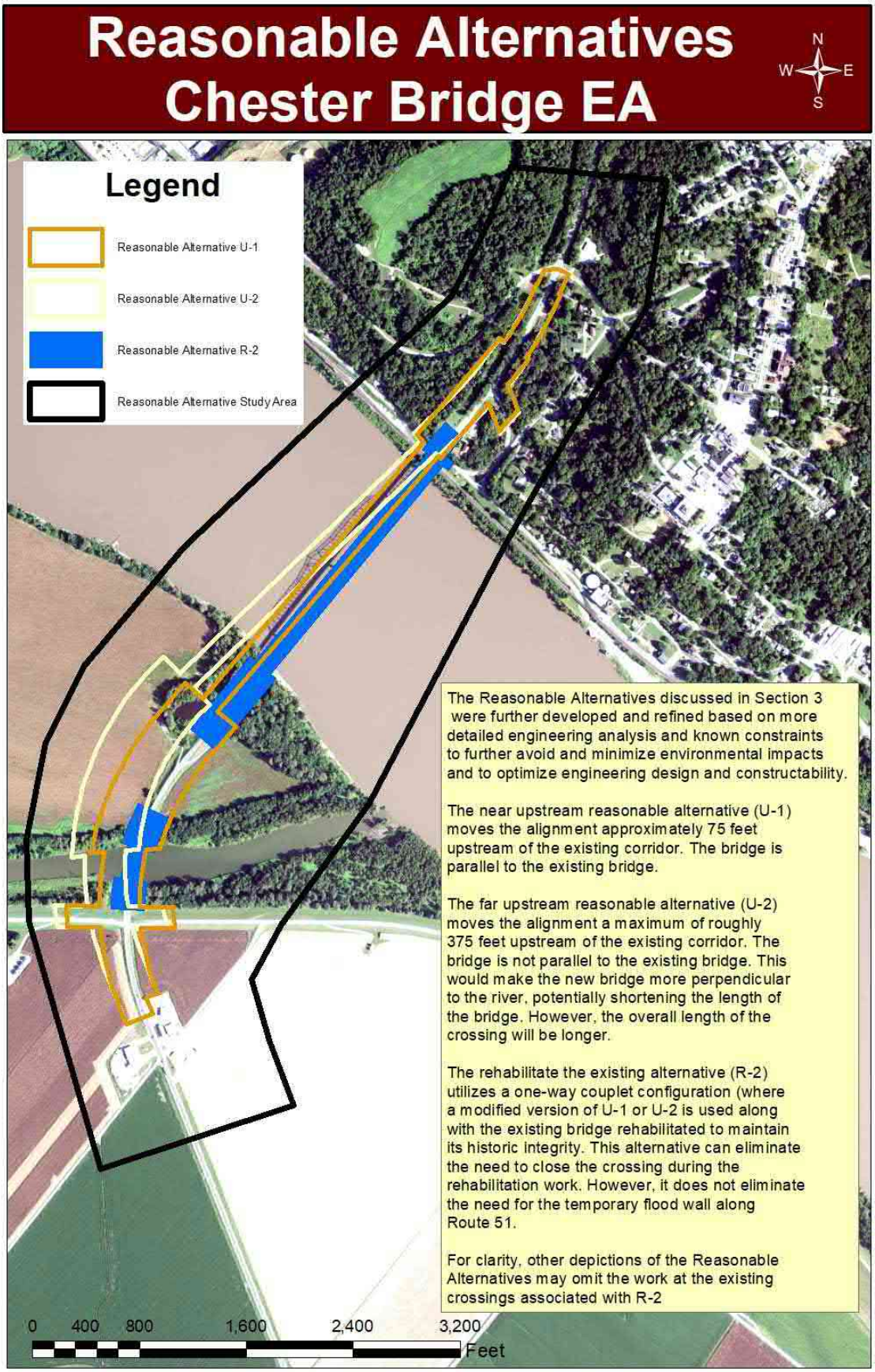
The cost of the one-way couplet (R-2) is roughly equivalent to the other alternatives. Not only does it require the construction of a new bridge, but it will also require the substantial rehabilitation of the existing bridge which is more susceptible to cost overruns. Maintaining the historic integrity of the existing building will require the disassembly of the bridge. Each piece will be inspected, repaired, or replaced. One of the difficulties with the existing bridge is that it is severely rusted. The degree of repair and replacement will be unknown until each piece is inspected. The degree of rust between the joints is vital and un-seeable until disassembly. The nature of the bridge's historic integrity is discussed in **Section 4.4**.

Besides its cost, the rehabilitation of the existing bridge will result in bridge whose service life is substantially lower than a new bridge, meaning that it will require replacement/further rehabilitation before U-1 and U-2.

Table 2 *– Chester Bridge Cost Estimate Summary*

ALTERNATIVE	NEW BRIDGE ELEMENTS	NEW ROADWAY ELEMENTS	EXISTING BRIDGE REHABILITATION	TOTAL
U-1	$180,000,000	$11,000,000	n/a	$191,000,000
U-2	$180,000,000	$15,000,000	n/a	$195,000,000
R-2	$93,000,000	$8,000,000	$72,000,000	$173,000,000

Figure 6 *– Reasonable Alternative Impact Footprints*



4.3.2 Bridge Type Considerations

While this project will not ultimately select a bridge type within the NEPA Preferred Alternative, the design criteria does limit the types of bridges that would be broadly suitable for this situation. The primary design criterion that affects bridge type is minimum horizontal clearance. According to coordination with the US Coast Guard, the minimum Mississippi River span width should be a minimum of 800 feet for the main navigation channel (east side) and a minimum of 500 feet for the axillary navigation channel (west side). The existing main and auxiliary span widths are 650 feet for the two navigation channels. The main span is quite long and a limiting factor for bridge suitability.

Tied arch - A tied-arch bridge is an arch bridge in which the outward-directed horizontal forces of the arch(es) are borne as tension by a chord tying both arch ends, rather than by the ground or the bridge foundations. This strengthened chord may be the deck structure itself or consist of separate, deck-independent tie-rods.

Continuous through truss - A continuous truss bridge is a truss bridge which extends without hinges or joints across three or more supports. A continuous truss bridge may use less material than a series of simple trusses because a continuous truss distributes live loads across all the spans; in a series of simple trusses, each truss must be capable of supporting the entire load. Continuous truss bridges rely on rigid truss connections throughout the structure for stability.

Cable Stay - A cable-stayed bridge has one or more towers from which cables support the bridge deck. A distinctive feature is the cables that run directly from the tower to the deck, normally forming a fan-like pattern or a series of parallel lines.

Extradosed - An extradosed bridge employs a structure which combines the main elements of both a prestressed box girder bridge and a cable-stayed bridge. The name refers to how the "stay cables" are designed. An extradosed bridge uses shorter stay-towers and a shallower deck structure. This results in a look of a fan of low, shallow-angle stay cables, usually with a pronounced "open window" region extending from the sides of each tower.

Segmental - A segmental bridge is a bridge built in short sections (called segments), i.e., one piece at a time, as opposed to traditional methods that build a bridge in very large sections. These bridges are very economical for long spans.

Girder - A girder bridge uses girders as the means of supporting the deck. A girder bridge is very likely the most commonly built and utilized bridge in the world. Its basic design, in the most simplified form, can be compared to a log ranging from one side to the other across a river or creek. In modern girder steel bridges, the two most common shapes are plate girders and box-girders.

Figure 7 depicts the potential bridge types that appear suitable for the project and the existing bridge configuration.

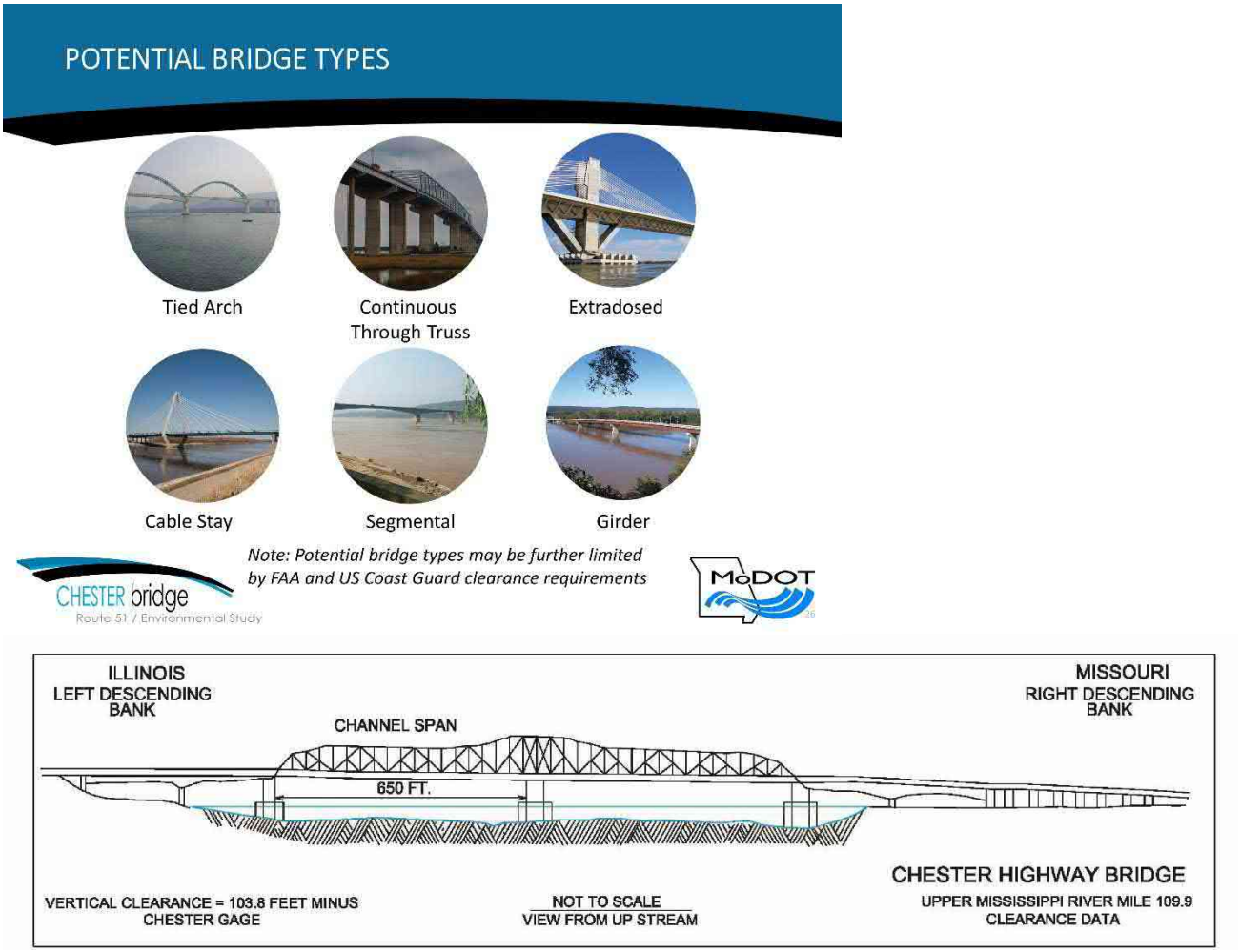


Figure 7 *Potential Bridge Types and Existing Bridge Configuration*

Neither of the reasonable build alternatives (U-1 and U-2) have obvious shortcomings relative to the bridge types seen as potentially suitable to the conditions. The couplet alternative (R-2) would rehabilitate the existing Chester Bridge (while maintaining its historic integrity) and pair it with a modified version of the reasonable alternatives (U-1 and U-2).

4.3.3 Construction and Navigation

Construction of either of the new build alternatives (U-1 and U-2) would be conducted to reasonably minimize interference with free navigation of the waterway or impair the present navigable depths.

- The existing main and auxiliary navigation channel widths are 650 feet.

The contractor's erection scheme would provide adequate horizontal clearance within the navigation channel span to allow safe passage of river traffic during construction of the superstructure. If temporary reduction in navigation channel width is allowed, this reduced navigation clearance during construction would be required only for the minimal amount of time needed to erect the girders. The contractor's falsework would be removed promptly to restore the full width of the navigation channel span. None of the build alternatives would affect the location of the navigation channel.

Because vertical clearances can affect navigation and bridge height can affect aviation, agency coordination with the Coast Guard and the FAA will be necessary to establish an appropriate Environmental Commitment to balance bridge height and vertical clearance considerations associated with the ultimately selected Preferred Alternative.

- According to coordination with the Coast Guard, the existing vertical clearance is adequate. The existing vertical clearance above pool elevation is roughly 104 feet. The provision of vertical clearance is somewhat in tension with the overall height of the structure. As discussed in **Section 4.3.7**, an alternative that maintains existing bridge height elevations is superior in regard to avoiding aviation encroachments. Agency coordination with the Coast Guard and the FAA will be necessary to establish an appropriate Environmental Commitment to balance bridge height and vertical clearance.

The build alternatives (U-1 and U-2) would involve demolition of the existing bridge with potential impacts to river users and Mississippi River commerce associated with blocking navigation through the span for a short period of time. The spans would be dropped into the river and then salvaged. Since demolition of the existing bridge would occur after the new bridge opens, it is possible that demolition could be timed to occur outside the busiest portion of navigation season.

If the existing bridge is demolished during the supported navigation season, commercial use of the river in the vicinity of the bridge would be slowed during demolition. However, use of the navigation channel can only be restricted for a 24-hour period while the span is salvaged. Since the Coast Guard monitors the demolition on site to provide a safe environment during span blasting and salvage, this operation is anticipated to have minimal impact on commercial river traffic.

Recreational use of the river near the bridge may be reduced both during construction and demolition activities. To ensure safety of commercial and recreational river users, MoDOT will coordinate with Coast Guard to halt river traffic during demolition activities.

The couplet alternative (R-2) would rehabilitate the existing Chester Bridge (while maintaining its historic integrity) and pair it with a modified version of the reasonable alternatives (U-1 and U-2). Since these activities will be done consecutively, substantial impacts are not expected. However, the construction-related disruptions will be twice as long.

4.3.4 Navigation During Operation

There are two navigation channels along the Mississippi River under the Chester Bridge. Barge traffic is heavy and maintaining safe access for barges under the Chester Bridge is important on regional, statewide, and national levels.

The Coast Guard has determined that a replacement bridge have a minimum horizontal clearance of 800 feet shall be provided for the main navigation channel (east side) and a minimum of 500 feet shall be provided for the auxiliary navigation channel (west side). The existing vertical clearance is sufficient. Reasonable Alternatives U-1 and U-2 are able to achieve these clearances, and therefore, would satisfy the reasonable needs of navigation.

The couplet alternative (R-2) would rehabilitate the existing Chester Bridge (while maintaining its historic integrity) and pair it with a modified version of the reasonable alternatives (U-1 and U-2). The couplet alternative (R-2) would not be able to provide the Coast Guard's minimum horizontal clearances for a replacement bridge. In addition, based on past vessel allisions[1] occurring at the existing bridge and reported issues with background lighting creating difficulties for navigation the Coast Guard has "reservations" about the present bridge remaining. The presence of two, tightly spaced, bridges would further complicate navigation.

4.3.5 Hydraulic Impacts

This project will require a **Section 9 Bridge Permit** from the Coast Guard as they are responsible for maintaining a navigation channel in the Mississippi River. A Section 9 Bridge Permit is a document approving the location and plans of bridges over a commercially navigable waterway in accordance with all applicable federal laws. MoDOT will obtain a Section 9 Bridge Permit from the Coast Guard prior to construction, approving the location and plans of bridges over a commercially navigable waterway in accordance with all applicable federal laws.

The couplet alternative would retain the existing bridge, along with an additional upstream bridge. Permitting for a scenario with two, tightly spaced, bridges would be more complicated.

The **National Flood Insurance Program (NFIP)** and the Federal Emergency Management Agency (FEMA) are tasked with minimizing construction impacts in the floodway and floodplain, and reducing disturbances to the waters of the United States. A "no-rise" certificate would be required before a Section 9 Bridge permit is issued. Engineering analyses of floodplain impacts would be conducted during the project's design to avoid and reduce impacts wherever possible. No improvements to the levee are expected.

The alternatives U-1 and U-2 would construct a new bridge upstream of the existing bridge. The new bridge and roadway approaches would replace the existing bridge and roadway approaches. It is not anticipated that the project would support any additional incompatible floodplain development. There would be only minimal, if any, additional impact to the base floodplain and regulatory floodway following completion of construction and removal of the existing Chester Bridge and roadway approaches. Because build alternative U-1 would construct a new bridge immediately next to the existing bridge, it would minimize potential changes to the floodplain configuration.

The No-build alternative would not involve any improvements in the floodplain or regulatory floodway. Therefore, there would be no adverse impacts. However, Route 51 would still have to be closed during flood events where water levels exceed the roadway gap in the Bois Brule levee.

The couplet alternative (R-2) would also require an analyses of floodplain impacts. Because it retains much of the existing infrastructure, any necessary mitigation measures will be difficult to incorporate into the construction project. Additionally, R-2 would also retain the roadway gap in the Bois Brule levee.

4.3.6 Traffic Safety and Accessibility Impacts

A major driver of this project is safety and accessibility. The narrow lane widths force closures to allow for wide-loads and farm equipment to traverse the corridor. While accidents are low, a common stakeholder concern is safety. In addition to roadway traffic, the Chester Bridge affects barge traffic along the Mississippi River. Allisions with the existing bridge piers are also a concern.

There are three broad categories of advantages associated with one-way couplets (like R-2): safety, capacity and convenience. In general, intersections of one-way couplets have significantly less vehicular and pedestrian conflict points. One of the prime objectives of one-way couplets is to improve the movement of

[1] In maritime terms there is a difference between a collision and an allision. When two moving objects strike each other, that is a collision. When a moving object strikes a stationary object, that is an allision. -MrReid.org

vehicles along the network, in other words improving capacity. From a convenience perspective, one-way systems usually allow for better pedestrian crossing times and fewer accidents provided enough time is allocated on the signal crossing. Because of the low traffic volumes and minimal pedestrian presence, this benefit for the Chester Bridge is expected to be minimal. Due to the length of the couplet alternative (R-2), this alternative offers few, if any, of the typical safety and benefits listed above. This alternative would result in the one-way roadways converging near the access points (entrances) to the gas stations on the Missouri side of the Mississippi River and Segar Memorial Park, the Welcome Center, and the intersection of Route 150 and Randolph Street on the Illinois side. This has the potential to increase driver confusion and may be a detriment to traffic safety.

The new alignment alternatives (U-1 and U-2) are expected to maintain existing traffic patterns.

4.3.7 Perryville Airport Impacts

In Missouri, one of the largest study area developments is at the Perryville Airport (1856 Highway H). This regional airport was originally built by the U.S. Government as a training facility in the early 1940's. The airport was deeded to the City of Perryville in 1947. The airport has a 7,000-foot x 100-foot concrete runway equipped with medium intensity runway lights which allow for use by numerous kinds of aircraft, including jets. Fixed base operators include Sabreliner Aviation and CertiFLY Aviation Parts, which is engaged in modifications and overhauls to both civilian and military aircraft.

To evaluate how the Chester Bridge project might affect aviation at the Perryville Airport, the project team began coordination with the Federal Aviation Agency (FAA) and the airport itself. The FAA is responsible for the safety and efficiency of navigable airspace. They have been asked to be an Interested Agency (see **Section 6.8**) for further information about agency coordination. The primary mechanism that the FAA uses to assess airspace considerations is Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*. Under this FAR, any plan that proposes construction or alterations that exceeds 200 feet tall or are within 10,000 feet of a runway (with a 50:1 surface from any point on the runway) is required to provide a "Notification" to the FAA. Notification allows the FAA to identify potential aeronautical hazards in advance thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace.

The existing Chester Bridge has a vertical clearance (over the Mississippi River) of roughly 104 feet.

The existing Chester Bridge is roughly 175 tall.

The existing Chester Bridge is between 10,000 and 12,000 feet from the end of the Perryville airport's runway.

The potentially suitable bridge types for this project (see **Section 4.3.2**) may exceed 200 feet in height and the bridge is within 10,000 feet of the airport, prompting coordination with FAA. An initial feasibility study by FAA of the potential locations and elevations of bridge towers for the Reasonable Alternatives and Preferred Alternative indicated that potential impacts to either the visual landing approach surfaces and/or instrument approach landing surfaces may occur.

MoDOT will submit an official FAA 7460 evaluation and complete required mitigation prior to construction. The FAA 7460 evaluation provides a more precise explanation on the landing surfaces affected and offers mitigation strategies. The submittal of the FAA 7460 evaluation and completion of required mitigation must occur within FAA's timeframe(s).

The aviation impacts associated with the couplet alternative (R-2) will depend on the upstream couplet selected as its pair.

4.3.8 Design Life Impacts

The design life for the project is 75 years, per AASHTO 7th Edition LRFD 1.2. The new build alternatives can satisfy this requirement (U-1 and U-2). The couplet alternative (R-2) will not be able to satisfy this requirement.

To maintain the historic integrity of the existing Chester Bridge, a rehabilitation would need to retain the bridge's design, materials, and workmanship. Based on preliminary investigations, it has been concluded that the rehabilitation would be quite expensive and result in a bridge with a shorter operational life. During the evaluations of the rehabilitations 15 and 50-year rehabilitations were studied. The 50-year rehabilitation seems unlikely to result in a bridge that would retain the bridge's historic integrity. While the 15-year rehabilitation is more likely to retain the bridge's historic integrity, it is not considered a reasonable/cost-effective alternative. In either event, a 75-year design life for the existing bridge is not practically obtainable.

4.3.9 Utility Impacts

During the initial planning stages of the project, one of the potentially difficult engineering issues is the relocation of the gas pipeline on the existing bridge. This pipeline is now owned by the Energy Transfer Partners (ETP). It is currently not being used. Movement of gas from Missouri to Illinois is handled via a pipeline downstream of the bridge. Coordination with ETP determined that there are no plans to replace the pipeline on a new bridge; consequently, this issue is deemed to be resolved.

The Union Pacific Railroad line parallels the river below the bluff, and goes under the existing Chester Bridge. The reasonable alternatives are not expected impact the railroad. Requests for participation as an Interested Agency were not answered.

4.3.10 Traffic/Circulation Impacts

Maintenance of traffic across the river, during construction, is essential. The new build alternatives (U-1 and U-2) can be constructed while the existing bridge is still open. Under the couplet alternative (R-2), the rehabilitation of the existing bridge must wait for the completion of the new bridge. At that point, the new bridge can handle both directions of travel while the existing bridge is rehabilitated. This would essentially double the construction period. Road construction always has minor inconveniences to the community, R-2 will double that time of inconvenience. Construction crew access, material deliveries, temporary detours, and delays are all expected.

4.4 Distinguishing Environmental Impacts Associated with the Reasonable Alternatives

1. This section examines environmental impacts associated with the Reasonable Alternatives. The specific environmental topics include:

    1. Agricultural Impacts
    2. Noise Impacts
    3. Visual/Aesthetic Impacts
    4. Land Use/Habitat Type Impacts
    5. Floodplain Encroachments
    6. Waterway Impacts
    7. Wetland Impacts
    8. Endangered Species Impacts
    9. Regulated Material Impact

Exhibit 2 (Appendix A) contains an impact summary for environmental resources.

4.4.1 Agricultural Impacts

Farmlands are present throughout the Missouri portion of the project area. The Horse Island is intermittently cultivated. Flooding and spring rains limit the ability of equipment to access the island. Alternative U-2 will convert 12 acres on Horse Island. Alternative U-1 will convert 13 acres on Horse Island.

The areas outside the Bois Brule levee are regularly cultivated with traditional row crops. This is Prime Farmland. Because of the new build alternatives are tying back into Route 51 at this point, the extent of farmland conversions, outside of the levee, is limited. Both Alternative U-1 and U-2 will convert roughly 2 acres of prime farmland. The agricultural impacts associated with the couplet alternative (R-2) will depend on the upstream couplet selected as its pair.

4.4.2 Noise Impacts

Noise impacts associated with a transportation project come from traffic noise as well as from construction noise. In either case, the analysis focuses on the presence of Noise-Sensitive Land Uses within proximity of the project. Noise Sensitive Land Uses are land uses that would benefit for a lower noise environment. In general, there are very few Noise Sensitive Land Uses in proximity of the Chester Bridge alternatives. In Missouri, there are no Noise Sensitive Land uses within 500 feet of the Reasonable Alternatives. In Illinois, potential Noise Sensitive Land Uses are limited to the patio of the Segar Park and the ten residences along Branch Street. The Reasonable Alternatives (U-1 and U-2) will move the roadway away from these land uses (reducing traffic noise). The couplet alternative (R-2) will bifurcate traffic, this will somewhat reduce the traffic noise at Segar Park, since some traffic will use a new upstream bridge. Construction noise may impact these sites, but impacts will be minimized through the use MoDOT's construction specifications.

4.4.3 Visual/Aesthetic Impacts

Using the methodology governed by FHWA DOT-FH-11-9694 and American Society of Landscape Architects visual assessment guidelines, a visual impact assessment was conducted. The criteria used to determine visual quality are vividness (visual power or memorability), intactness (the visual integrity of landscapes), and unity (the visual coherence and compositional harmony). Visual impact is a function of the viewer's response to the visual environment.

The two primary groups of viewers for highway projects are 1) viewers who use the project facility (views from the road) and 2) people who have a view of the project facility from an adjacent viewpoint (views of the road).

Overall, the analysis examined landscape units (a place commonly known among local viewers). These were determined through the review of Digital Elevation Models, recent aerial photography, and on-site surveys. The landscape units and a summary of the analysis are presented below:

- **Chester River Front** - focused on the portion of Chester where there is a river boat landing, a small riverfront recreation area and a boat club. Currently, the existing Chester Bridge is a dominant element in the landscape. The view of the bridge is unobstructed and the trusses and spans clearly visible. The Horse Chute Bridge is not visible from this vantage point. The Reasonable Alternatives will affect this

Figure 8 *- Typical View from Segar Park*

view, to some degree. U-2 will place the bridge in the more distant background. U-1 will largely swap the existing bridge for a new similarly scaled bridge. The couplet alternative (R-2) will overlay the existing bridge with another bridge. This could be perceived as a confusing landscape or as a unique/interesting overlay.

- **Randolph County Government Center** – located on the top of the river bluff, views of the bridges from this vantage are limited. A viewer needs to navigate to a clear spot to view the bridge. The Horse Chute Bridge is the most easily seen element. The details are indistinct. The Reasonable Alternatives will have limited impacts on this view. Alternatives U-1 and U-2 will have fewer visible vantage points. The couplet alternative (R-2) will maintain existing views.
- **Segar Park** – Located adjacent to the Chester Bridge, in Illinois, the view of the bridge is from a distinct oblique angle (see **Figure 8**). The small Illinois span is most clearly visible. The visible details of the main bridge are limited. The Horse Island Chute Bridge is not visible. Alternatives U-1 and U-2 will move the bridge north, perhaps improving the views of the main bridge. The couplet (R-2) alternative will maintain existing views.
- **Route 51 Approach** – Drivers approaching the river are treated to a clear, but short, view of the Chester Bridge. It's unlikely that the new build alternatives will achieve a similar view.
- **Perryville Airport** – The bridge is largely not visible at ground-level views from the airport. Coordination with the airport and the FAA brought the impact to aviation to the forefront. To clear the existing levee, the new bridge will be somewhat higher and slightly closer to the airport. An analysis is underway to demonstrate that the new bridges will not present a hazard to aviation.

Figure 9 *– Typical View from Chester River front*

- **Island Views** – Views of the bridge from the islands (Kaskaskia Island and Horse Island) are primarily limited to the levees and isolated clear zones. It is unlikely that the new build alternatives will affect these sporadic views.

Overall, the impacts to the visual environment are limited and vary by location. The most common and persistent view of bridge comes from the Segar Park viewing patio and the Chester River Front. For these views, U-2 will place the bridge in the more distant background. U-1 will largely swap the existing bridge for a new similarly scaled bridge. The couplet alternative (R-2) will overlay the existing bridge with another bridge. This could be perceived as a confusing landscape or as a unique/interesting overlay.

In addition to the quality of the views of the existing bridge, is the fact that the bridge itself is an historic property. This issue is discussed further in **Section 4.5.6**.

4.4.4 Land Use/Habitat Type Impacts

Exhibit S-2 (Appendix A) presents the amount of each land use type associated with the Reasonable Alternatives. The study area is lightly populated and evenly split between farmland and forested areas. The total size of the impact footprints is approximately 46 acres for both Reasonable Alternatives. Known important Natural Communities of Conservation Concern include:

- The Mudd's Landing Illinois Natural Area Inventory site (INAI site #1307) occurs within the Mississippi River between river mile 120 and 106. The Chester Bridge is at river mile 110.

Current/standard construction methods and environmental commitments are expected to minimize Impacts.

- The Coles Mill Geological Area is located just outside the study area in Chester.
- The Middle Mississippi River National Wildlife Refuge located outside the study area in Missouri, west of Horse Island.
- Perry County has high prevalence of sinkholes. Farm practice improvements have resulted in increased Grotto Sculpin populations (an endangered species). Coordination with the University of Missouri Extension (Frank Wildman) has been undertaken to discuss this. No evidence of sinkholes (or cover crop barriers) were observed.

4.4.5 Floodplain Encroachments

The entirety of the Missouri portion of the reasonable alternative study area is within the floodplain of the Mississippi River. An important purpose of the Chester Project is to raise the roadway enough to eliminate the gap in the Bois Brule levee. The removal of this gap will eliminate the need to close the road and river crossing during flood stage periods – a condition that has become more frequent. Last occurring in May 2017.

Section 4.3.5 (Hydraulic Impacts) discusses the regulatory processes associated with minimizing construction impacts in the floodway and floodplain, and reducing disturbances to the waters of the United States. It was concluded there that the new bridge and roadway approaches would replace the existing bridge and roadway approaches. It is not anticipated that the project would support any additional incompatible floodplain development. There would be only minimal, if any, additional impact to the base floodplain and regulatory floodway following completion of construction and removal of the existing Chester Bridge and roadway approaches.

The couplet alternative (R-2) would also require an analyses of floodplain impacts. Because it retains much of the existing infrastructure, any necessary mitigation measures will be difficult to incorporate into the construction project. Additionally, the couplet alternative (R-2) would also retain the roadway gap in the Bois Brule levee.

4.4.6 Waterway Impacts

Within proximity of the Reasonable Alternatives, there are three waterways:

- The Mississippi River
- The Horse Island Chute
- The Old Channel of Mississippi River

Horse Island is formed by the boundaries of these three waterways (these are visible on **Figure 14**). The Chester Bridge crosses the Mississippi River. The Horse Island Chute Bridge crosses the Horse Chute. Between the existing bridges, the roadway is built on soil embankment across Horse Island.

The Reasonable Alternatives U-1 and U-2 will continue this configuration and don't appear to have important differences relative to waterways. In all cases, a finding of no practical alternative will be necessary for waterway permitting purposes. This requirement is also important in the evaluation of alternatives regarding satisfying the project's purpose and need.

The couplet alternative (R-2) would create two crossings across these waterways. The degree of stream impacts will depend on the degree to which the existing bridge will be reconstructed.

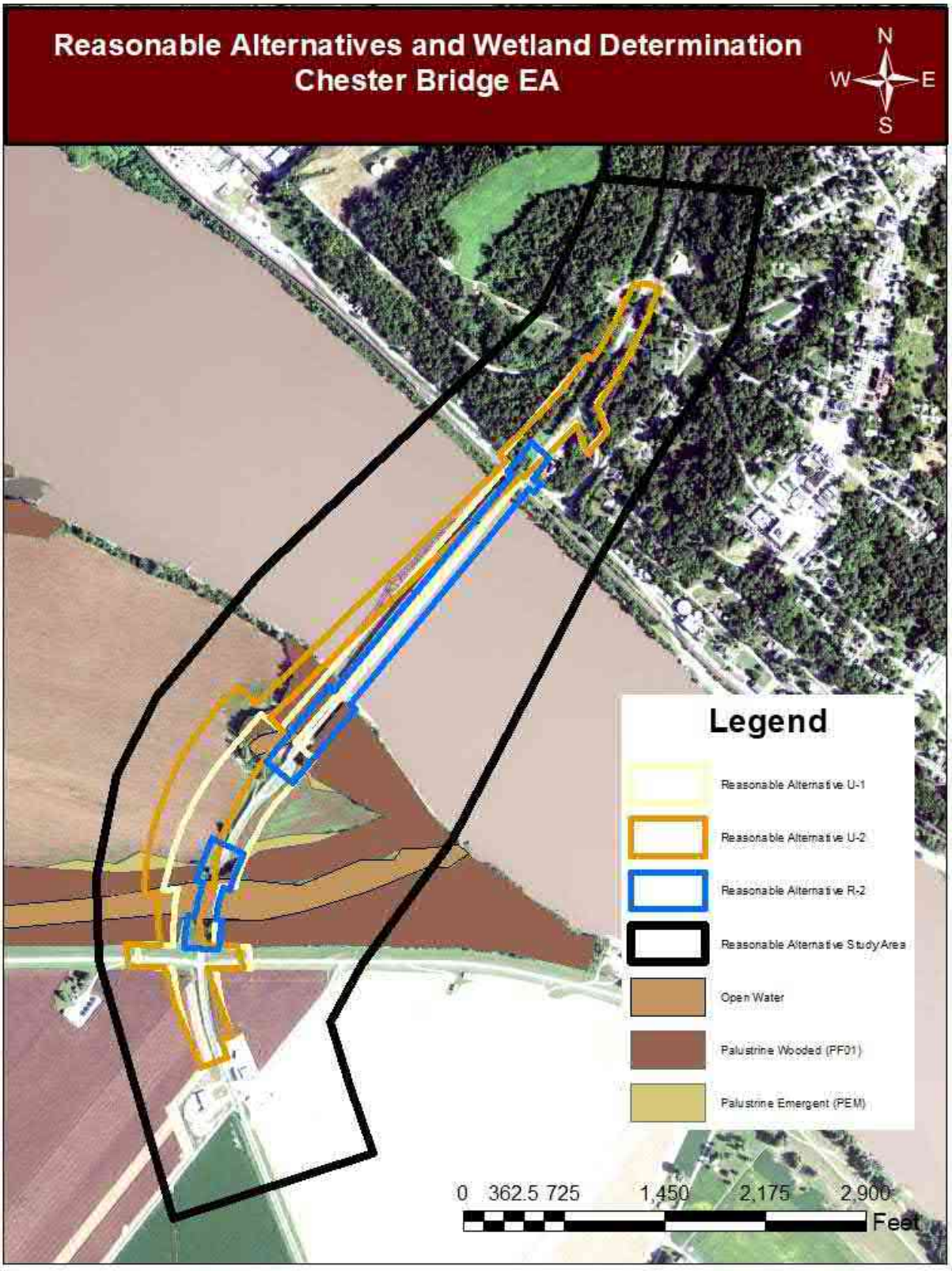
4.4.7 Wetland Impacts

Wetland resources are protected by the Clean Water Act. The extent of wetlands is depicted in **Figure 10**. This depiction is based on an on-site wetland determination. Nearly all of Horse Island south (downstream) of the existing bridge is wetlands. Upstream, the wetlands form a relatively narrow rim along the periphery of the island. Therefore, the use of the upstream alternatives (U-1 and U-2) minimize wetland impacts.

Using the impact footprints for the Reasonable Alternatives, the expected wetland impacts are estimated to be 3.2 acres for U-1 and 4.8 acres for U-2. The couplet alternative (R-2) will have a variable impact (depending on the configuration). The actual impact will depend on the extent of the use of piers vs. fill in the configuration. The impacts will be primarily to forested wetlands (**Exhibit S-2 – Appendix A**). All of the alternatives are expected to require the filling of the small open water pond near the existing bridge.

In all cases, a finding of no practical alternative will be necessary for waterway permitting purposes. This requirement is also important in the evaluation of alternatives regarding satisfying the project's purpose and need. See **Figure 10**.

Figure 10 – Wetland Determination



4.4.8 Endangered Species Impacts

According to coordination with the Missouri Department of Conservation, the Illinois Department of Natural Resources, and the U.S. Fish and Wildlife Service, there are records for species listed under the Federal Endangered Species Act, and possibly also records for state-listed endangered species. The following species have been identified as those that may occur or could potentially be affected by activities is proximity of the Chester Bridge:

- **Least Tern** (*Sterna antillarum*) Least terns are small gulls (9" in length). Terns will dive into the water for small fish. Their current habitat follows a wide swath along the Mississippi River. The conservation status of the species found the species is resilient to existing and potential threats, the amelioration of threats throughout much of its range due to increased population size and range and by the implementation of beneficial management practices, and changes in existing regulatory mechanisms that are more protective of migratory birds.
- **Grotto Sculpin** (*Cottus specus*) - The grotto sculpin is a small (approximately 2.5" long) fish. Typical of many cave-dwelling species, it is nearly blind and pale-colored. The species historical range is limited to Missouri (Perry County). No evidence of caves has been found in the Chester Bridge study area.
- **Pallid Sturgeon** (*Scaphirhynchus albus*) - The Pallid Sturgeon is big river fish that ranges widely in the Mississippi and Missouri River system (including parts of some major tributaries).
- **Small Whorled Pogonia** (*Isotria medeoloides*) - The Small Whorled Pogonia occurs on upland sites in mixed-deciduous or mixed deciduous/coniferous forests that are generally in second- or third-growth successional stages. The specie's historical range includes Randolph County (Illinois). Habitat characteristics are generally sparse to moderate ground cover in the species, a relatively open understory canopy, and proximity to persisting breaks in the forest canopy. Soils are generally acidic and nutrient poor, with moderately high soil moisture values. Light availability could be a limiting factor for this species.
- **Gray Bat** (*Myotis grisescens*), **Indiana Bat** (*Myotis sodalist*) and **Northern Long-eared Bat** (*Myotis septentrionalis*) - These bats hibernate during winter months in caves and mines. During the summer months, the Indiana and Northern Long-eared bats roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. Gray Bats roost in caves during the summer and hibernate in the same caves during the winter. If any trees need to be removed for this project, work would be limited to non-roosting periods (October through April).

There are no established critical habitats in this location. Impacts to these species are not expected.

The Chester Bridge is also within the geographic range of nesting Bald Eagles in Missouri. **Bald Eagles** (Haliaeetus leucocephalus) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Reports and surveys have identified nesting areas in the northern part of Horse Island and the south part of Kaskaskia Island. These nests are more than 660 feet from the Reasonable Alternatives. See **Figure 11**.

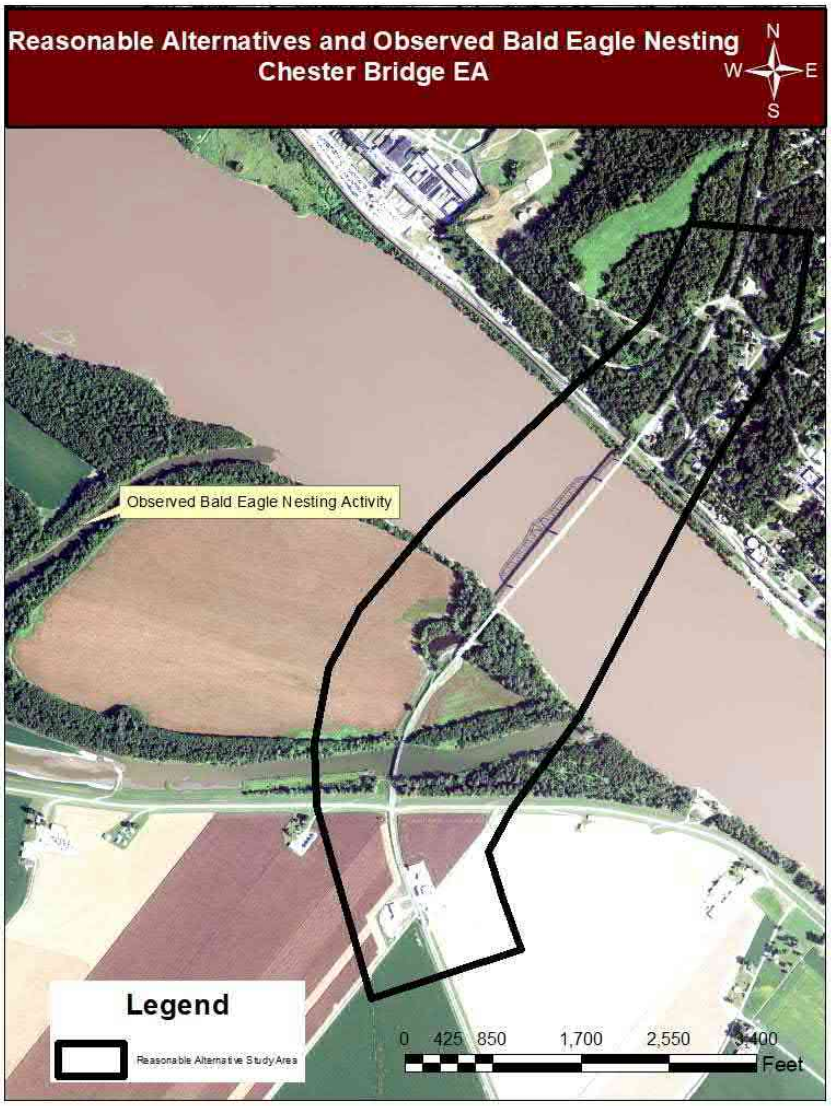
4.4.9 Regulated Material Impacts

A hazardous material assessment was completed for the project. This assessment focused on information regarding properties that pose a potential for environmental concern and possible contamination within, adjacent, or near the project area.

To facilitate the assessment, a database and records search report was obtained from Environmental Data Services (EDR). This report searched 54 federal, 22 state, five tribal, and six EDR proprietary databases. Using the EDR report, sites of potential interest (within 1/8 of a mile of the project area) were identified. A windshield reconnaissance survey was also conducted to document current land use and conditions at the sites of potential interest. Photographs were taken of the sites to document current conditions, these were included in a technical memorandum.

Based on the hazardous material assessment, there are no sites that have a medium to high potential for impacts to soil or groundwater.

Figure 11 *- Observed bald Eagle Nesting*



4.5 Distinguishing Community Impacts Associated with the Reasonable Alternatives

This section examines impacts associated with community-related resources. The specific environmental topics include:

1. Property Acquisition – Structures
2. Property Acquisition – Acres
3. Segar Park Impacts
4. Historic Resource Impacts
5. Menard Correctional Center Impacts
6. Levee and Drainage District Impacts
7. Recreational Impacts
8. Traffic/Circulation/Access Impacts
9. Need to Close Crossing During Construction

Exhibit S-3 (Appendix A) contains an impact summary for community resources.

4.5.1 Property Acquisition – Structures

The Reasonable Alternatives are not expected to require the acquisition/displacement of any structures.

4.5.2 Property Acquisition – Acres

The Reasonable Alternatives are expected to require the acquisition of approximately 30 acres of new right-of-way.

4.5.3 Segar Park Impacts

The Segar Memorial Park/Illinois Welcome center is located on the south side of Il Route 150, immediately after the Chester Bridge. The Park is owned and administered by the City of Chester. It is included in the city's roster of recreational amenities. On-site is a scenic overlook, picnic tables and a tourist center. In addition to its status as a locally important recreational resource, the 3-acre park is also a Section 4(f) resource. See **Figures 12, 13, 14 and 15**.

A Section 4(f) property is any publicly owned land of a public park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (public or private). According to 23 CFR 774.3, a transportation project approved by FHWA may not use a Section 4(f) property unless there is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of land from the property.

Figure 12 *Popeye Statue at Segar Park*

Figure 13 *Segar Park with IL Route 150 in Foreground*

The reasonable alternatives are not expected to require the acquisition/use of property from the park. Neither are they expected to alter the operations of, or access to, at the park.

Figure 14 *Reasonable Alternatives and Important Resources*

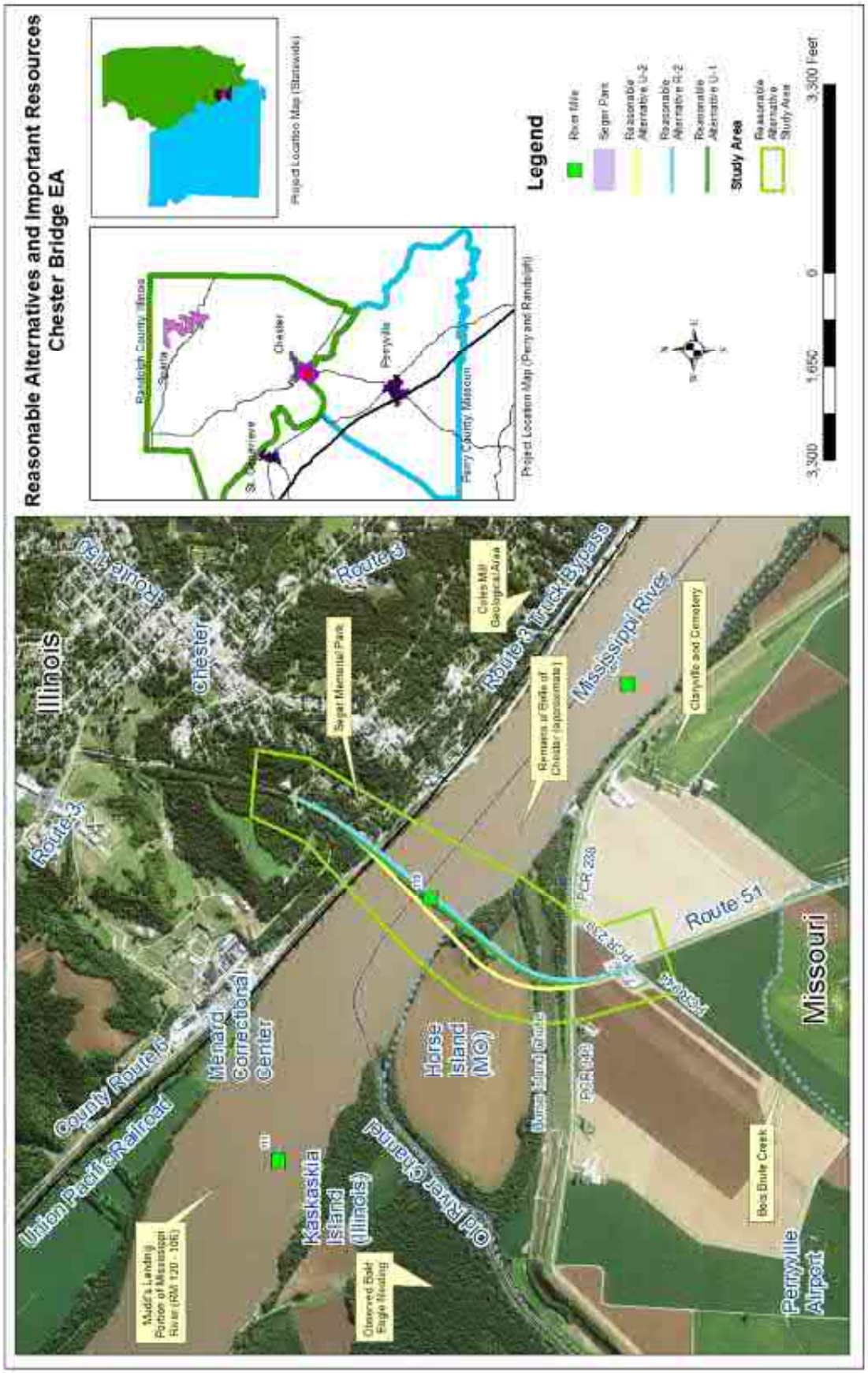
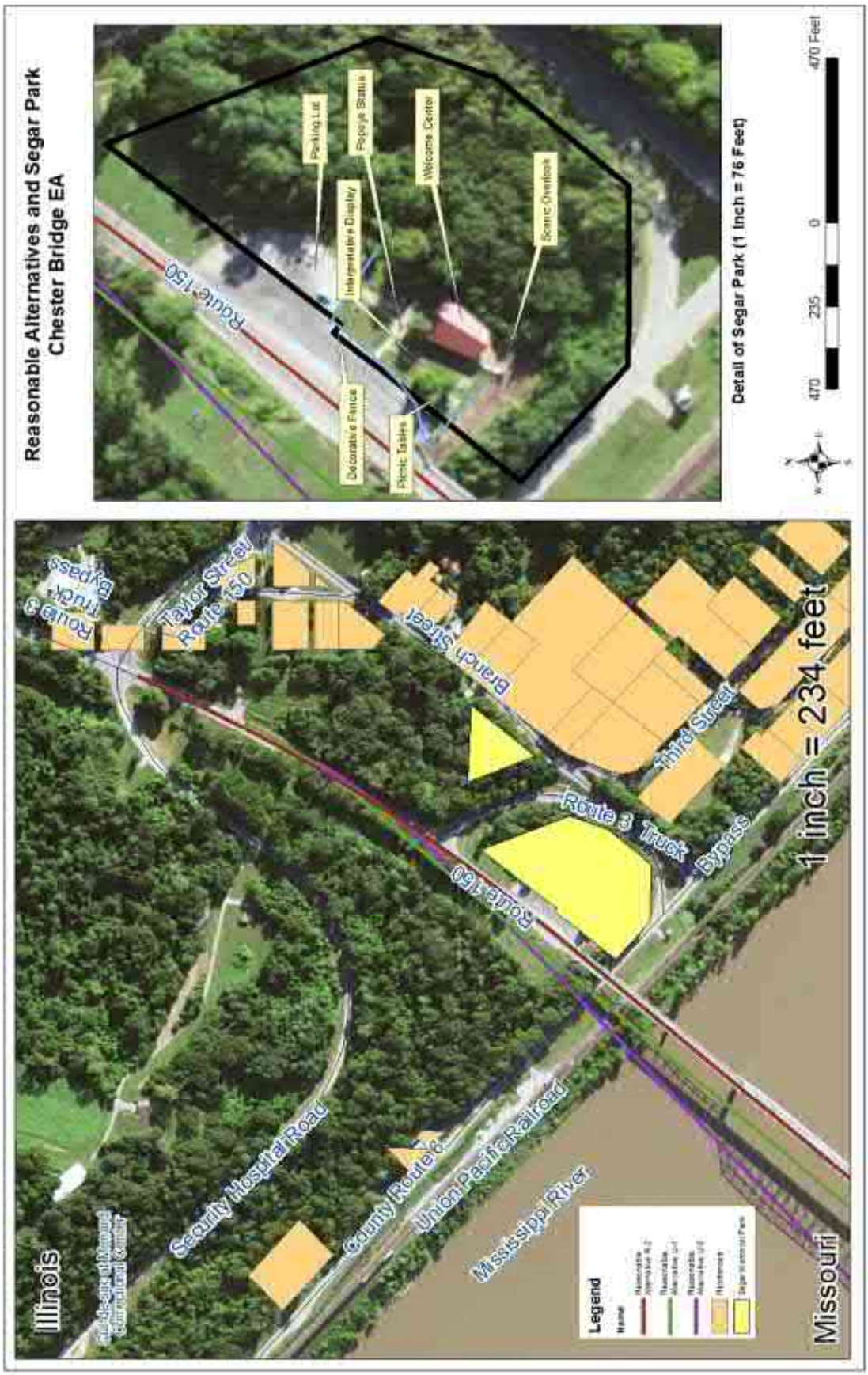


Figure 15 *Reasonable Alternatives and Segar Park*



4.5.4 Bridge and River Navigation Impacts

There are two navigation channels along the Mississippi River under the Chester Bridge. Barge traffic is heavy and maintaining safe access for barges under the Chester Bridge is important on regional, statewide, and national levels.

The Coast Guard has determined that a replacement bridge have a minimum horizontal clearance of 800 feet shall be provided for the main navigation channel (IL side) and 500 feet shall be provided for the auxiliary navigation channel (MO side). The existing vertical clearance is sufficient. Reasonable Alternatives U-1 and U-2 are able to achieve these clearances, and therefore, would satisfy the reasonable needs of navigation.

The couplet alternative (R-2) would retain the existing bridge, along with an additional upstream bridge. Based on past vessel allisions occurring at the existing bridge and reported issues with background lighting creating difficulties for navigation the Coast Guard has "reservations" about the present bridge remaining. The presence of two, tightly spaced, bridges would further complicate navigation.

4.5.5 Historic Resource Impacts

According to available studies and on-site analysis, the following conclusions have been made:

- There is a moderate chance for intact archaeological resources to be present in the vicinity of the Chester Bridge.
- There are no important architectural resources in the vicinity of the Chester Bridge.
- One unique area of concern is the location of the remains of the Belle of Chester, on the Missouri side of the Mississippi River south of the Chester Bridge. The exact location of these remains is unknown. Work planning on the existing bridge should consider this resource.
- Another unique area of concern is the Osage Mississippi River trail. The exact location of the trail is not clear at this time. The Osage Nation has agreed to provide comments on the Reasonable Alternatives.
- The Chester Bridge and Horse Island Chute Bridge are the only architectural resources affected by the Reasonable Alternatives. The Chester Bridge status as eligible for the NRHP was confirmed. Its partner, the Horse Island Chute Bridge, is an example of an extremely common bridge. However, it is eligible for the NRHP under criterion A for significance in commerce, since its construction was necessary for the Chester Bridge to function in its role in improving commerce. Replacement will have an adverse effect on both bridges.

Based on this information, the following conclusions were made

1) Both of the new build Reasonable Alternatives (U-1 and U-2) would result in the removal of the Chester Bridge and Horse Island Chute Bridge. Pursuant to MoDOT policy, bridges subject to removal are offered to the public. To date, no offers have been received.
2) To maintain the historic integrity of the Chester Bridge, a rehabilitation would need to retain the bridge's design, materials, and workmanship. Based on preliminary investigations, it has been concluded that the rehabilitation would be quite expensive, result in a bridge with a shorter operational life (15 and 50-year rehabilitations were studied). The 50-year rehabilitation seems very unlikely to result in a bridge that would retain the bridge's historic integrity. The 15-year

rehabilitation is too short of a design life to be practical. The project's purpose and need specifies a 70-year design life.[2]

4.5.6 Menard Correctional Center Impacts

The Menard Correctional Center is an Illinois state prison. It houses maximum-security and high medium-security adult males. It is the state's largest prison with an average population of 3,410. Menard Correctional Center occupies a total of 2,600 acres. The Menard Correctional Center is located on IL Route 6 less than a mile north (upstream) of the Chester Bridge. In addition to the IL Route 6 main access, Taylor Road also provides access to the Center's property. Property owned/administered by the Center includes several small, unconsolidated, lots along IL Route 6.

Access to the Menard Correctional Center is not expected to be negatively affected by either of the new build Reasonable Alternatives (U-1 and U-2).

4.5.7 Levee and Drainage District Impacts

The Bois Brule Levee and Drainage District covers the portion of Missouri in the vicinity of the Chester Bridge. There is a small gap in the Bois Brule Levee, where the Horse Island Chute Bridge meets Route 51. In order to maintain the integrity of the levee, a temporary flood wall is installed over the road, when necessary. This closes Route 51 and the river crossing. The Bois Brule Levee and gap is shown on **Figure 16**. Minimizing these closures is a transportation problem that this project is intended to rectify.

The Bois Brule Bottom is approximately six miles wide and eighteen miles long. With rich soil, it is very suited to farming. Flooding has been a constant concern within Bois Brule Bottom since settlement began. The US Army Corps of Engineers operates the Bois Brule Levee and Drainage District, and cares for the maintenance of the levees and chutes. The Bois Brule Levee and Drainage District protects approximately 26,000 acres. The district consists of 33.1 miles of levee, 341 relief wells, and 4 pump stations. The district's primary risk is underseepage. This problem affects the entire District. With the existing underseepage issues, sudden failure of the levee can occur along the levee, placing human life, vehicles, building, industrial equipment, livestock, and agricultural production at risk. The levee failed due to underseepage prior to the crest of the 1993 Great Flood, flooding the entire levee district to a depth of 20 feet. Failures due to underseepage can occur very rapidly with little warning. The location of the Bois Brule Levee within the project area is shown in **Figure 3**.

Figure 16 *– Heavy equipment is needed to install/remove the Route 51 temporary flood wall.*

The new build Reasonable Alternatives can be constructed to avoid the existing levee, allow for the filling of the levee gap and maintain the levee-top roadway system. The new bridge can be constructed using techniques that will not exacerbate the potential for underseepage.

The couplet alternative will maintain the existing levee configuration, including the gap.

[2] The rehabilitation alternatives are primarily driven by Section 106 of the National Historic Preservation Act, which requires consideration of the effect that actions have on historic properties. The details of the Section 106 consultation are outlined in **Section 6.9.**

4.5.8 Recreational Impacts

The Chester Bridge provides important access to the Mississippi River, primarily via the Chester waterfront. Not only do paddlewheel tour boats use the area, other recreational users gain access from there. The Chester Boat Club is located at 51 Water Street. The levees on the Missouri side of the river tend to limit that access. However, PCR 238 seems to provide some informal access.

The Reasonable Alternatives are not expected to affect recreation.

4.5.9 Traffic/Circulation/Access Impacts

Relative to community-based circulation/access, the Reasonable Alternatives are expected to have a limited range of affects. Among the impacts include:

- It is expected that U-1 and U-2 will alter or eliminate the intersection with PCR 946 and PCR 238.
- It is expected that R-2 will maintain the existing pathways, including the gap in the floodwall. This will require a new divided highway that transitions between one-bridge operation to two-bridge operation. These preparations will affect local operations. It seems likely that the rehabilitation portion of the couplet alternative (R-2) will retain the existing intersection with PCR 946 and PCR 238.

Maintenance of traffic across the river during construction is essential. The new build alternatives (U-1 and U-2) can be constructed while the existing bridge is still open. Under the couplet alternative (R-2), the rehabilitation of the existing bridge must wait for the completion of the new bridge. At that point, the new bridge would handle both directions of travel while the existing bridge is rehabilitated. This essentially would double the construction period. Road construction always has minor inconveniences to the community, R-2 will double the time of inconveniences. Construction crew access, material deliveries, temporary detours, and delays are all expected.

SECTION 5

Identification of Preferred Alternative

This section presents the analysis of the Reasonable Alternatives that were used to select a Preferred Alternative for the Chester Bridge project.

The Preferred Alternative for the Chester Bridge project is to replace the existing bridge with a new bridge along near upstream alignment (U-1).

5.1 Summary of the Distinguishing Elements Between the Reasonable Alternatives

The Reasonable Alternatives include two completely new build Reasonable Alternatives (U-1 and U-2). The other build alternative (R-2) creates a couplet where a new crossing is paired with the rehabilitation of the existing structures (while maintaining the bridge's historic integrity). The new build portions of the Reasonable Alternatives are quite similar. With the differences between them being so small, the distinguishing features are rather subtle. This section will discuss these differences, in terms of the most beneficial aspects of the Reasonable Alternatives. It may be useful to balance this section with the impact summary tables (**Tables S-1 through S-3 in Appendix A**).

5.1.1 Beneficial Aspects of Reasonable Alternatives U-1 and U-2

- U-1 and U-2 satisfy all (100 percent) of the purpose and need performance measures.
- U-1 and U-2 are equivalent in being the lower cost alternatives
- Both can achieve the Coast Guard minimum horizontal clearance of 800 feet for the main span (IL side) and 500 feet for the auxiliary span (MO side).
- The demolition of the existing bridge would occur after the new bridge opens, it is possible that demolition could be timed to occur outside the busiest portion of navigation season.
- No obvious shortcomings to the bridge types that are potentially suitable for the site.
- The new build alternatives will allow for a modern design that will achieve hydraulic, traffic safety, design life, seismic, and accessibility needs.
- The gap in the Bois Brule levee can be removed.
- U-1 and U-2 are equivalent in having the shortest construction schedule.

5.1.2 Beneficial Aspects of Reasonable Alternatives R-2

- While the rehabilitation of the existing bridge would be quite expensive and result in a bridge with a shorter operational life, it may be able to retain the historic integrity.
- The use of a new one-way crossing can eliminate the complete closure of the river crossing.
- In general, one-way couplets have fewer vehicular and pedestrian conflict points. One-way couplets improve the movement of vehicles along a network. One-way systems usually allow for better pedestrian crossing times and fewer accidents. However, because of the low traffic volumes and minimal pedestrian presence, this benefit is expected to be minimal.

5.1.3 Negative Aspects of Reasonable Alternatives U-1 and U-2

- These alternatives represent a potential for aviation conflicts. Because vertical clearances can affect navigation and bridge height can affect aviation, agency coordination with the Coast Guard and the

FAA will be necessary to establish an appropriate Environmental Commitment to balance bridge height and vertical clearance considerations associated with the ultimately selected Preferred Alternative.

5.1.4 Negative Aspects of Reasonable Alternatives R-2

The rehabilitation alternatives were primarily driven by Section 106 of the National Historic Preservation Act, which requires consideration of the effect that actions have on historic properties. The Rehabilitate the Existing Bridge Alternative (R-1) was found to not satisfy the project's purpose and need. It requires the closure of the crossing and does not eliminate the need for the temporary flood wall along Route 51.

The Rehabilitate the Existing Alternative (R-2) using a one-way couplet configuration was recommended for further consideration. This alternative may be able to minimally satisfy the purpose and need and maintain the historic integrity of the existing bridge. The use of a new one-way crossing can eliminate a closure of the river crossing. However, it does not eliminate the need for the temporary flood wall along Route 51. Other negative aspects of R-2 include:

- The Coast Guard has "reservations" about the existing bridge remaining citing navigation safety due to the 650-foot navigation channels and light from Chester partially obscuring the bridge during the night. The presence of two, tightly spaced, bridges would further complicate navigation.
- A very long construction schedule (two years for the new bridge and potentially two additional years for the rehabilitation of the existing bridge). The couplet alternative will cause interference both during the new build phase and again during the rehabilitation phase.
- Rehabilitation of the existing bridge may require extensive amounts of falsework, adding to navigation complications.
- The couplet alternative would require an analyses of floodplain impacts and would also retain the roadway gap in the Bois Brule levee.
- The second crossing required by R-2 represents another potential for aviation conflict.
- The rehabilitation of the existing bridge would need to retain the bridge's design, materials, and workmanship – to maintain its historic integrity. A 15-year rehabilitation could maintain the bridge's historical integrity; however, it is not a practical alternative. A 50-year rehabilitation is not expected to retain the bridge's historic integrity. In addition, it would be quite expensive and result in a bridge with an operational life below the project design life.

5.1.5 Differential Impacts between Reasonable Alternatives U-1 and U-2

- Because build alternative U-1 would construct a new bridge immediately next to the existing bridge, potential changes to the floodplain configuration are minimized.
- Relative to aviation impacts, it was concluded that the alternatives that stay closer to the existing bridge location, are superior. Consequently, alternative U-1 presents the least potential for aviation conflicts.
- Relative to visual impacts, U-1 will largely swap the existing bridge for similarly scaled new bridge.
- Relative to farmland/habitat/land use impacts, U-1 will utilize a corridor immediately adjacent to the existing bridge, rather than a less altered new corridor. It is further from known bald eagle nesting areas, from the Mid-Mississippi Wildlife Refuge and mostly closely mimics the crossing on the Horse Island. The anticipated wetland impacts under Alternative U-1 are somewhat smaller (3.2 acres vs 4.8 acres).

5.1.6 Impacts of the No-Build Alternative

The No-Build Alternative should be chosen if the available alternatives cannot be shown to minimally satisfy the purpose and need of the project. It has been demonstrated that the Reasonable Alternatives can achieve those goals (see **Section 2**). The selection of the No-Build Alternative would result in the following:

- Maintenance closures will increase to allow the crossing to continue to operate. For example, in the summer of 2018 the bridge deck will be patched and sealed. Once work is underway, traffic will be reduced to one lane with temporary signals in place. Flaggers will be present in the morning and evening to help reduce queues. This type of closure will become more frequent, until the crossing is no longer structurally sound.
- Operational closures will continue. In order to allow farm equipment and wide-load vehicles to cross, police close the crossing while those vehicles are escorted across the bridge.
- The long-term rehabilitation of the existing bridge historic integrity could not occur. Maintenance on the bridge will need to primarily consider keeping the crossing open, rather than using techniques that would maintain historic integrity.
- The gap in the Bois Brule levee would remain, along with the periodic flood-related closures.

5.2 Preferred Alternative Recommendation

Based on the project's Purpose and Need, logical termini, study area and Reasonable Alternatives, a Preferred Alternative emerged. This alternative – the Near Upstream Conceptual Alternative (U-1) best addresses the identified purpose and needs of the project, connects at the logical termini, and once completed is expected to be nearly indistinguishable in alignment from the existing crossing.

The Preferred Alternative recommendation for the Chester Bridge project is the Near Upstream Conceptual Alternative (U-1) which connects at the logical termini and moves the crossing approximately 75 feet upstream of the existing corridor.

The bridge sections are assumed to be 40 to 44 feet wide - with two 12-foot travel lanes and 8 to 10-foot shoulders. A 16.5-foot vertical clearance is assumed to allow for oversized loads and large farm equipment to cross the river without stopping traffic and provide room to maneuver during emergencies or to remove disabled vehicles from the travel lanes. The shoulders would allow bicyclists and pedestrians to cross the bridge without using the vehicular travel lanes. The shoulders would also allow bridge inspections to occur without restricting traffic.

The roadway sections are specified to be a two-way rural minor arterial. The design speed will be 45 mph. Existing intersections and turns will be maintained in their current configuration. Direct access to the roadways for individual driveways will be maintained, to the extent possible.

The Preferred Alternative is depicted on **Figure 17**. Important elements to carry forward with the Preferred Alternative include:

1) The Preferred Alternative satisfies all (100 percent) of the purpose and need performance measures.
2) The Preferred Alternative is the lower cost alternatives and can achieve the Coast Guard's minimum horizontal clearance of 800 feet for the main navigation channel and a minimum of 500 feet for the auxiliary navigation channel. Since the demolition of the existing bridge could occur after the new bridge opens, it is possible that demolition could be timed to occur outside the busiest portion of navigation season.
3) While the NEPA document will not select a bridge type, there is no obvious shortcomings relative to the bridge types seen as potentially suitable for the site. As a new build solution, a modern design

that achieves hydraulic, traffic safety and accessibility needs can be designed. The construction is expected to take 2 years.

4) Because the Preferred Alternative would construct a new bridge immediately next to the existing bridge, it would minimize potential changes to the existing floodplain configuration. Nevertheless, an analyses of floodplain impacts and a “no-rise” certificate will be required. The gap in the Bois Brule levee can be removed.

5) Because vertical clearances can affect navigation and bridge height can affect aviation, agency coordination, with the Coast Guard and the FAA, will be necessary to establish an appropriate Environmental Commitment to balance bridge height and vertical clearance considerations associated with the ultimately selected Preferred Alternative. The Preferred Alternative represents a potential for aviation conflicts. MoDOT will submit an official FAA 7460 evaluation and complete required mitigation prior to construction. The FAA 7460 evaluation provides a more precise explanation on the landing surfaces affected and offers mitigation strategies. The submittal of the FAA 7460 evaluation and completion of required mitigation must occur with FHWA’s timeframe(s).

6) While the environmental impacts between U-1 and U-2 are quite similar the Preferred Alternative is superior. Relative to visual impacts, U-1 will largely swap the existing bridge for similarly scaled new bridge. Relative to farmland/habitat/land use impacts, U-1 will utilize a corridor immediately adjacent to the existing bridge, rather than a less altered new corridor. It is further from known bald eagle nesting areas, from the Mid-Mississippi Wildlife Refuge and mostly closely mimics the crossing on the Horse Island. The anticipated wetland impacts under Alternative U-1 are somewhat smaller (3.2 acres vs 4.8 acres).

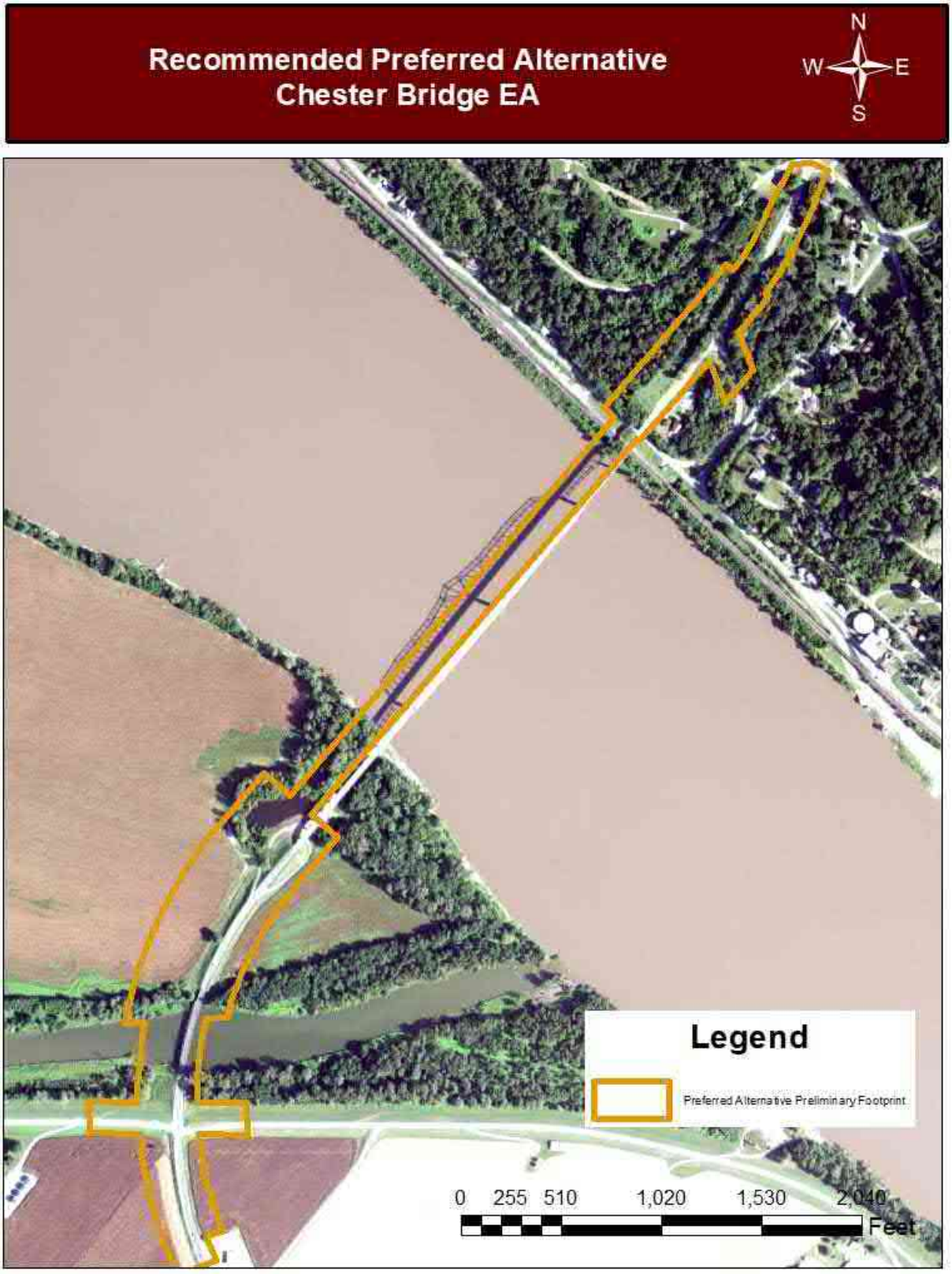


Figure 17- Recommended Preferred Alternative

SECTION 6

Public Involvement Update

Recognizing the value that stakeholders bring to the transportation planning process, the study team employs several tools to ensure a variety of opportunities for public involvement. Stakeholder and public involvement are critical to help build awareness and understanding of the project. It has played an important role in providing input into this interdisciplinary, collaborative process.

This section will outline and update the status of the various techniques and tools being used to exchange information. The updated status, since the second Agency Collaboration Point #2 document – February 2018, is shown in *underline/italics*.

6.1 Stakeholder Interviews/Briefings

The public involvement team scheduled and conducted interviews with key stakeholders at the beginning of the study including community leaders, emergency responders, and elected officials. These stakeholders have been identified in collaboration with MoDOT. A total of 10, one-on-one interviews were conducted.

6.2 Community Advisory Group

A Community Advisory Group (CAG) was established. CAG members represent various study area constituencies including residents, chambers of commerce, emergency responders, and other community stakeholders. The CAG is a means of directly engaging stakeholders to gain valuable community input, identify and address local concerns, and build public interest and involvement in the study's decision-making process. Four CAG meetings are anticipated:

CAG Meeting #1 was conducted on July 19, 2017. The primary issues identified by the CAG members were the narrow travel lanes, poor condition of the Chester Bridge, roadway closures due to flooding, bridge closures due to oversized loads, and safely accommodating bicycle and pedestrian traffic.

CAG Meeting #2 was conducted on October 12, 2017. This meeting focused on a review of how well the Conceptual Alternatives satisfied the project's purpose and need. It presented the results of the Public Involvement Meeting #1. The criteria for selecting the Reasonable Alternatives were discussed and environmental/engineering data were updated.

CAG Meeting #3 was conducted on March 6, 2018. This meeting focused on how the Conceptual Alternatives were screened down to the Reasonable Alternatives.

CAG Meeting #4 was conducted on October 23, 2018. The focus of this meeting was the analysis that led to the selection of Alternative U-1 as the study's Tentative Preferred Alternative.

6.3 Elected Officials Briefings

Early coordination and continuous communication with elected officials will be accomplished through a series of briefings. The purpose of these briefings is to inform and educate officials about the study at key milestones before presenting that data to the public. The first briefing occurred prior to the first Public Involvement Meeting on August 24, 2017 and introduced the study and Purpose and Need. Twenty elected officials, or representatives of elected officials, attended the briefing.

The second briefing discussed the screening of the Conceptual Alternative down to the Reasonable Alternatives prior to the second public involvement meeting. The third briefing will present the Preferred Alternative prior to the Public Hearing (scheduled for early 2020).

6.4 Public Involvement Meetings

Public meetings are an important opportunity for direct engagement with the larger public. At these meetings, study team members will be available to discuss, explain, and help participants understand the information presented.

Two public involvement meetings and one public hearing are planned for the study. The first public meeting was conducted on August 24, 2017. The draft Purpose and Need and the initial Conceptual Alternatives were presented for comment. Thirty-three stakeholders attended the first public meeting citing narrow lanes, flood-related closures, the poor condition of the Chester Bridge, and safely accommodating bicycles and pedestrian as the major issues affecting the bridges. Based on comment forms submitted by attendees, Alternative U-1 (near upstream) received the most positive ratings.

The second public involvement meeting was conducted on March 13, 2018. Approximately 50 people attended the second public involvement meeting. This meeting focused on the screening of the Conceptual Alternatives down to the Reasonable Alternatives.

The public hearing will be conducted after the approved EA is circulated.

Based on comment forms submitted by attendees at the first public involvement meeting, Alternative U-1 (the near upstream configuration) received the most positive ratings. Alternative U-1 has been recommended as the Preferred Alternative.

6.5 Presentations

Presentations to community and civic groups, business groups, and other interested groups or organizations over the course of the study will be used to introduce the study, provide study updates, and obtain public input. Such presentations will be made upon request.

The first such presentation, providing an update on the Chester Bridge EA, was given to the Chester Chamber of Commerce on September 19, 2017. *A second presentation to the Chester Chamber of Commerce was conducted on September 2018. A third presentation to the Chamber was provided on September 17, 2019.*

6.6 Community Events and Festivals

The public involvement consultant will stay informed of local events and festivals where the study team can conduct public outreach throughout the study process. One such event was the Perryville Mayfest May 10-13, 2017. Team members attend these events to distribute study information and to promote public engagement and the study website.

6.7 Outreach and Informational Materials

Informational materials have been developed and updated throughout the project. This outreach is intended to drive the public involvement process. They undergo a continuous series of updates as needed.

- A **fact sheet** has been written and designed for distribution at the CAG meetings, elected officials briefings, presentations, and study meetings. It has been uploaded to the study website.
- A list of **frequently asked questions (FAQ)** has been written, designed, and distributed at meetings and presentations. This handout has been uploaded to the study website and will be updated as needed throughout the study.
- The public involvement team will write, design, and distribute study **newsletters**. Three (3) newsletters will be produced, one before each of the two public meeting and the third before the public hearing. The newsletter will be distributed to stakeholders on the study mailing list via email and regular mail. PDF files of all newsletters will be posted to the study website.

- The **study website** is a tool for both public outreach and engagement. The website is online at www.ChesterBridgeStudy.com and includes general study information, contact information, technical documents, and information on how citizens can be involved. It serves as a centralized information portal for learning about the study, getting updates, and downloading public meeting displays and other study materials.
- The project's **mailing list** includes the identified key stakeholders, CAG members, elected officials, Chester and Perryville Chamber of Commerce members, and coordinating agencies. Anyone who attends a stakeholder meeting or signs up for mailings through the study website will be added to the master mailing list.
- MoDOT's phone number, **1-888-Ask-MoDOT**, is used as the phone number for the study.
- MoDOT's Southeast District office address is used as the mailing address for the project.
- The project's primary **media strategy** is for the team to produce and distribute press advisories to announce the informational public meetings and the public hearing.
- The project's social media content will be posted on MoDOT's Facebook page, tweeted via its Twitter account, and emailed using a mass email service.

6.8 Agency Collaboration Plan

The Collaboration Plan is intended to define the process by which the Project Study Team will communicate information about the Chester Bridge Environmental Assessment project to the interested federal and non-federal governmental agencies.

Because the Federal Highway Administration (FHWA) is expected to provide funding for this project, FHWA (Missouri Division) serves as the Lead Agency for the project. MoDOT, as the direct recipient of federal funds for the project, is a Co-Lead Agency. The Agency Collaboration Plan includes 2 types of agencies:

1. Cooperating agencies are those federal agencies that the lead agency specifically requests to participate in the environmental evaluation process for the project. FHWA's NEPA regulations (23 CFR 771.111(d)) require that federal agencies with jurisdiction by law (such as permitting or land transfer authority) be invited to be cooperating agencies for an EA. The US Army Corps of Engineers (St. Louis District) and US Coast Guard have agreed to be Cooperating Agencies for the Chester Bridge EA.
2. Interested agencies are those federal and non-federal governmental agencies that may have an interest in the project because of their jurisdictional authority, special expertise, local knowledge and/or statewide interest. Based on these criteria, the project team identified 22 agencies. The definition of "governmental" was broadened to include an organization with an official mandate (including Missouri and Illinois agencies not covered by the NEPA-404 merger process). Any organization that cannot satisfy the criteria as an agency, but is interested in the project, will be included in the project as a general stakeholder. Collaboration with these groups will be coordinated through information packages that coincide with the CAG meetings.

In October 2017, the first agency collaboration package was distributed to the cooperating and interested agencies. Among the materials provided to the agencies were the project's Fact Sheet, the Purpose and Need Statement, and an annotated Study Area map. Following the distribution of the package, conversions with several of the agencies were begun. This one-on-one coordination continues.

Following the concurrence of the alternatives to be carried forward, February 15, 2018, the second agency collaboration package was submitted to the cooperating and interested agencies. The materials included in the package were the Alternatives Carried Forward merger package, the public Involvement meeting summary, and the full versions of the Conceptual Alternatives and Reasonable Alternatives.

The third, and final, agency collaboration package will be submitted to the cooperating and interested agencies in early 2020. This package will summarize the study and detail the analysis which led to the identification of the study's Tentative Preferred Alternative.

6.9 Section 106 Consultation

Because the Chester Bridge and Horse Island Chute Bridges are eligible for the National Register of Historic Places (NRHP), Section 106 of the National Historic Preservation Act (Section 106) applies. Under Section 106 MoDOT/FHWA must consider the effect of their actions on historic properties and provide the federal Advisory Council on Historic Preservation (ACHP) the opportunity to comment on proposed actions.

To successfully complete Section 106 review, Federal agencies must explore alternatives to avoid or reduce harm to historic properties; and reach agreement with the State Historic Preservation Office (a program within the Missouri Department of Natural Resources) on measures to deal with any adverse effects or obtain advisory comments from the ACHP.

A key part of this is to provide the agencies, the public and organizations with a demonstrated interest with information about the project and the project planning process. These are known as consulting parties.

Consultation Meeting #1

A Section 106 consultation meeting was held on March 21, 2018. At this meeting, the following elements were addressed:

- *Project introduction*
- *Purpose and Need for the project*
- *Conceptual Alternatives*
- *Alternatives to be Carried Forward*
- *Impacts analysis of the Reasonable Alternatives*
- *Discussion of Reasonable Alternative R-2, conclusions included:*
    - *15-year rehabilitation of the Chester Bridge is not reasonable solution (design standard is to provide a 70-year design life)*
    - *50-year rehabilitation will not retain the historic integrity of the Chester Bridge*
    - *Rehabilitation (construction) will adversely affect navigation (temporary)*
    - *Couplet configuration will also adversely affect navigation (permanent)*
    - *50-year rehabilitation will cost $30 M and up to 3 years to complete*
- *Reasonable Alternative R-2 included as an Alternatives to be Carried Forward primarily because of Section 106. It is not expected to be selected as the project's Preferred Alternative, primarily because of traditional NEPA impact analysis. For example, a rehabilitation would not allow for the gap in the Bois Brule levee to be closed.*

The feedback from this process was primarily positive. The existing Chester Bridge is seen as iconic, but the deficiencies and costs of rehabilitation were acknowledged. Section 106 requires that consulting parties participate in project planning but are not required to concur with project decisions or conclusions.

Consultation Meeting #2

A second Section 106 consultation meeting was conducted on September 19, 2018. This meeting focused on providing the current status of the Chester Bridge Study, review of the Reasonable Alternatives, discussion on

the Preferred Alternative, providing the status of the cultural resource surveys, and discussion on the next steps of the Section 106 process.

Consultation Meeting #3

The final Section 106 consultation meeting was conducted on May 21, 2019. A review of the effects determinations for historic properties in Missouri and Illinois.

- *One archaeological site had a no adverse effect finding in Illinois.*
- *No archaeological sites were found in Missouri.*
- *The Chester Bridge and Horse Island Chute bridges are the only National Register eligible architectural resources. Both will have adverse effects.*

Mitigation efforts for adverse effects was discussed. Potential mitigation efforts included completing state Level I documentation, interpretive panels, drone footage of the bridges, a short film of the bridges with historical images incorporated, funds for the Chester Library Archives on the Chester Bridge, and placing bridge information on MoDOT's historic bridge site.

Memorandum of Agreement

The Section 106 MOA fully executed by all parties on December 17, 2019.

Agency Correspondence

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

July 19, 2017

Operations, Readiness and
Regulatory Division
Regulatory Branch

File Number: MVS-2017-561

Ms. Raegan Bell
Program Development Team Leader
U.S. Department of Transportation
Federal Highway Administration
3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109

Dear Ms. Bell:

The purpose of this letter is to inform you that the U.S. Army Corps of Engineers, St. Louis District (Corps) has agreed to be a Cooperating and Participating Agency with the Federal Highway Administration (FHWA) for the Chester Bridge Crossing Project in Perry County, Missouri, and Randolph County, in Illinois. The project will investigate and identify improvements to allow the crossing to continue to serve its key role within the transportation. In order to merge the National Environmental Policy Act (NEPA) requirements and the Clean Water Act Section 404 program for this project, it is desirable for the Corps to be a Cooperating Agency for this project.

Although the Corps has agreed to be a Cooperating Agency on this project, it should be understood that our only input on this project has been, and will continue to be, to provide comments on the environmental impacts of the project and required regulatory permits. Our Cooperating Agency status does not allow us to provide any funding for the project, nor does it eliminate our ability to deny or condition any required Section 404 regulatory permits. By merging NEPA and 404 together, it is hoped to avoid unnecessary delays to the project by adequately evaluating the least damaging environmental alternative for the Section 404 permitting process.

If you have any questions, please contact Mr. Alan Edmondson, Project Manager, at (314) 331-8811 or me at (314) 331-8574.

Sincerely,

Danny D. McClendon
Chief, Regulatory Branch

U.S. Department of Homeland Security

United States Coast Guard

Commander
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Fax: (314)269-2737
Email: allan.o.monterroza@uscg.mil
www.uscg.mil/d8/westernrivers/bridges

16591.1/109.9 UMR
June 29, 2017

Ms. Raegan Ball
Federal Highway Administration
Missouri Division
3220 W. Edgewood, Suite H
Jefferson City MO 65109

Subj: CHESTER BRIDGE, MILE 109.9, UPPER MISSISSIPPI RIVER

Dear Ms. Ball:

This is in reply to your correspondence dated June 23, 2017, concerning the proposed bridge project at Mile 109.9, Upper Mississippi River.

The General Bridge Act of 1946 requires that the location and plans for bridges over navigable waters of the United States be approved by the Commandant, U.S. Coast Guard prior to commencing construction. The Upper Mississippi River is considered to be a navigable waterway of the United States for bridge administration purposes at the bridge site.

Applications for bridge permits should be addressed to Commander (dwb), Eighth Coast Guard District, 1222 Spruce Street, St. Louis, Missouri 63103-2832, Attn: Bridge Branch. To assist you in submitting a bridge permit application, the Bridge Permit Application Guide can be found at the following link: http://www.uscg.mil/hq/cg5/cg551/BPAG_Page.asp. The application must be supported by sufficient information to permit a thorough assessment of the impact of the bridge and its immediate approaches on the environment. We recommend that the impacts of procedures for constructing cofferdams, sand islands, and falsework bents, etc., that will be employed to build the bridge or modify the existing bridge as well as the removal of the old bridge be discussed. The environmental document should also contain data on the number, size and types of vessels currently using the waterway. This information should be compared with past and projected future trends on the use of the waterway.

It is our understanding the Federal Highway Administration has assumed the role as the lead federal agency. We agree to serve as a Cooperating Agency for the project from a navigation standpoint. We should be given the opportunity to review the environmental document before it is finalized.

We appreciate the opportunity to comment on the project in this early stage. You can contact Mr. Allan Monterroza at the above telephone number if you have questions regarding our comments or requirements.

Sincerely,

ERIC A. WASHBURN
Bridge Administrator, Western Rivers
By direction of the District Commander

Copy: Mr. Richard Moore, MODOT Environmental Compliance Manager

U.S. Department of Homeland Security

United States Coast Guard

Commander
Eighth Coast Guard District

1222 Spruce Street, Room 2.102D
St. Louis, MO 63103-2832
Staff Symbol: dwb
Phone: (314)269--2434
Fax: (314)269-2737
Email: allan.o.monterroza@uscg.mil

16591.1/109.9 UMR
November 7, 2017

Mr. Buddy Desai
CH2M
300 Hunter Avenue, Suite 305
St. Louis, MO 63124

Subj: PROPOSED CHESTER BRIDGE REPLACEMENT, MILE 109.9,
UPPER MISSISSIPPI RIVER

Dear Mr. Desai:

This is in reply to your correspondence dated October 17, 2017, concerning the proposed bridge locations and minimum horizontal requirements for a new bridge at Mile 109.9, Upper Mississippi River.

The Coast Guard has determined for a replacement bridge a minimum horizontal clearance of 800.0 feet shall be provided for the main span and 500.0 feet shall be provided for the auxiliary span. Based on the Conceptual Build Alternatives figure, alternatives U-1, U-2 and D-1 are the most favorable positions. The new right descending pier and left descending pier of the main span shall be bumped out a minimum of 75.0 feet from their present locations. The vertical clearance is sufficient for the present bridge. These clearances would satisfy the reasonable needs of navigation for a replacement bridge at this location. Once an alternative has been selected we will need to approve pier placement.

This is a preliminary approval. A final approval cannot be issued until we have gone through the Public Notice process.

Based on past vessel allisions occurring at this bridge site and reported issues with background lighting creating difficulties the Coast Guard has reservations about the present bridge remaining if that is a consideration. I would like to be included in future discussions with FHWA, MODOT, and SHPO if this is an alternative.

If there are any questions about our requirements, please contact Mr. Allan Monterroza at the above telephone number.

Sincerely,

ERIC A. WASHBURN
Bridge Administrator, Western Rivers
By direction of the District Commander

Subj: PROPOSED CHESTER BRIDGE REPLACEMENT,
MILE 109.9 UPPER MISSISSIPPI RIVER

16591.1/109.9 UMR
November 7, 2017

Copy: MODOT
MSU Paducah
USACE St. Louis District

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

March 21, 2018

Mr. Buddy Desai
Jacobs
501 N. Broadway
St. Louis, MO 63102

Re: **SHPO Project Number 004-PY-17** Agency Collaboration Point #2, Chester Bridge Environmental Assessment, Perry County, Missouri (FHWA)

Dear Mr. Desai:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

We have reviewed the report entitled *Alternatives Being Carried Forward: Chester Bridge Environmental Assessment, Perry County, Missouri and Randolph County, Illinois*. Based on this review it is evident that a thorough consideration of alternatives is underway. We look forward to continuing to consult on this project with you as it moves forward.

If you have any questions, please write the State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 attention Review and Compliance, or call Amanda Burke at 573/522-4641. Please be sure to include the SHPO Log Number (**004-PY-18**) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Toni M. Prawl

Toni M. Prawl, Ph.D.
Director and Deputy State
Historic Preservation Officer

TMP:ab

c. Ms. Raegan Ball, FHWA
Mr. Michael Meinkoth, MoDOT

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Eric R. Greitens, Governor
Carol S. Comer, Director

August 3, 2017

Mr. Buddy Desai
Consultant Project Manager
CH2M
300 Hunter Ave., Suite 305
St. Louis, MO 63124

Dear Mr. Desai:

The Missouri Department of Natural Resources appreciates the opportunity to review the materials for the investigation of the Chester Bridge crossing. The department offers the following comments for consideration.

Project Location
The Environmental Assessment (EA) study area is located northeast of Perryville in Perry County, Missouri, and southwest of Chester in Randolph County, Illinois. Improvements to and/or replacement of the Highway 51 bridge crossing the Mississippi River is the primary focus of this project. The following geographic descriptions apply to the approximate location of the study area.

Geographic Coordinates:
777947 E, 4199489 N

Public Land Survey System:
S20 T37 R11E

8-Digit Hydrologic Unit Code:
Upper Mississippi-Cape Girardeau (07140105)

Ecological Drainage Unit:
Ozark/Apple/Joachim

Solid Waste
The Department's technical bulletin "Managing Construction and Demolition Waste" provides information for any type of construction work. The bulletin and can be found on the department's web site at http://dnr.mo.gov/pubs/pub2045.htm.

The Department's technical bulletin "Managing Solid Waste Encountered during Excavation Activities" has also been developed to assist project planners. It provides general disposal requirements for any solid waste encountered as a result of road construction. The bulletin can be found on the department's web site at http://dnr.mo.gov/pubs/pub2192.htm.

Water Protection

Geospatial Data

Geospatial data published by the Department addressing designated uses, sensitive waters, geology, and other watershed information included in this review, is available on the Missouri Spatial Data Information Service website at http://msdis.missouri.edu/. Additional geospatial resources available from the Department can be found at http://dnr.mo.gov/gis/.

Permitting Obligations

Clean Water Act Sections 401 and 404:

Any project that has the potential to result in the discharge of fill or dredged material into a jurisdictional water of the United States may require Clean Water Act Section 404 Permit Authorization from the U.S. Army Corps of Engineers (USACE), and Section 401 Water Quality Certification from the Department of Natural Resources. The 401 Certification is a certification by the state that the project will not violate water quality standards. More information about the Section 404 Permit Program, including Clean Water Act jurisdiction, is available at https://www.epa.gov/cwa-404/section-404-permit-program. More information about state 401 Water Quality Certification can be found at http://dnr.mo.gov/env/wpp/401/.

If discharge into water has occurred, or will occur, MODOT, the Federal Highway Administration (FHWA), or its contractors should immediately contact the USACE St. Louis District at (314) 331-8575, and the Department's Operating Permits Section at (573) 522-4502 for more information. MODOT, the FHWA, or its contractors may wish to consult with the Department and the USACE prior to project initiation to ensure contingency plans are in place should such a discharge occur.

Mitigation

An alternatives analysis would need to be submitted prior to any impacts to jurisdictional waters as part of the avoidance and minimization measures that precede mitigating unavoidable impacts. Mitigation for wetlands should be in conformance with the *State of Missouri Aquatic Resources Mitigation Guidelines*, https://dnr.mo.gov/env/wpp/401/docs/mitigation_guidelines.pdf, while mitigation for streams should be in conformance with the *Missouri Stream Mitigation Method*, http://www.mvm.usace.army.mil/Portals/51/docs/regulatory/May_2013_Missouri_Stream_Mitigation_Method.pdf.

Any mitigation plans must be in conformance with the *Compensatory Mitigation for Losses of Aquatic Resources*, https://www.epa.gov/cwa-404/compensatory-mitigation. This rule establishes a hierarchy for mitigation, with the purchase of credits from a mitigation bank at the top of that hierarchy. The rule also emphasizes in-kind and in-watershed mitigation; to go

outside the watershed may result in a higher credit purchase calculation. The applicant should receive mitigation plan approval from the Department prior to certification.

Land Disturbance
Acquisition of a Section 401 Certification should not be interpreted to mean that the requirements for other permits are replaced or superseded, including Clean Water Act Section 402 National Pollutant Discharge Elimination System Permits. Work disturbing an area of one acre or more requires issuance of a land disturbance permit prior to any earth work. Disturbance to valuable resource waters, including springs, sinkholes and losing streams, could require additional conditions or a site-specific permit.

Information and application for online land disturbance permits are located at http://www.dnr.mo.gov/env/wpp/epermit/help.htm. Questions regarding permit requirements may be directed to the Department's St. Louis Regional Office at (314) 416-2960.

Best Management Practices (BMPs)
In all cases, BMPs should be utilized during project activities to limit the amount of sediment and other pollutants entering waters of the state, and to protect the water's chemical, physical, and biological characteristics. These practices include, but are not limited to, conducting work during low flow conditions whenever possible, keeping heavy equipment out of the water, and taking all necessary precautions to avoid the release of fuel or other waste products to streams and other waters. In addition, the Department encourages the preservation of existing riparian or buffer areas around each water resource to limit the amount of sediments or other pollutants entering the water. Any stream banks, riparian corridors, lake shores, or wetlands denuded of vegetation should be stabilized and re-vegetated as soon as is practicable.

Designated Uses
Water Bodies with Specific Designated Uses:
Water bodies are assigned specific designated uses according to State of Missouri Water Quality regulations at 10 CSR 20-7.031(2). These waters are protected by numeric water quality criteria outlined in 10 CSR 20-7.031(5) and Table A, as well as general water quality criteria outlined at 10 CSR 20-7.031(4).

The project area passes directly through the watersheds of the Mississippi River (WBID 3701) and the Old River Slough (WBID 1749). These are both Class P waterbodies, which are defined as streams that maintain permanent flow even in drought periods. These streams are assigned the following specific designated uses in the Missouri Use Designation Dataset and at 10 CSR 20-7.031 Table H:

- Protection and propagation of fish, shellfish and wildlife – warm water habitat (WWH)
- Drinking Water Supply (DWS)—Mississippi River only (WBID 3701)
- Human health protection (HHP)
- Industrial (IND)—Mississippi River only (WBID 3701)

- Irrigation (IRR)
- Livestock and wildlife protection (LWP)
- Secondary contact recreation (SCR)
- Whole body contact recreation – Category B (WBC-B)

Water Bodies without Specific Designated Uses:
Water bodies that are not assigned specific designated uses are still protected at all times by general water quality criteria outlined at 10 CSR 20-7.031(4), and are subject to the acute toxicity criteria of Tables A and B, as well as whole effluent toxicity conditions. The project area is located within the vicinity of two unnamed tributaries to the Mississippi River to the northeast on the Illinois side, as well as Horse Island Chute on the southwestern side of the project area, which is located on the Missouri side of the Mississippi River.

According to the National Wetlands Inventory, there is the likelihood of freshwater wetlands and ponds within the riparian corridors of the Mississippi River (WBID 3701), Old River Slough (WBID 1749) and Horse Island Chute near the proposed project area. As such, the potential exists for wetlands, ponds, and the aforementioned tributaries and headwater streams to be impacted, depending on their proximity to land disturbance activities. In all cases, take care to avoid such impacts through alternatives analysis before compensatory mitigation is considered. If wetlands, ponds, headwaters, or tributaries are not directly impacted but are near any land disturbance, take care to protect water quality. While these water bodies are not assigned specific designated uses, they are protected by Missouri's general water quality criteria.

Sensitive Waters
Table J, Losing Streams:
There are no known losing streams within the proposed project area, however, the surrounding area in Perry County, Missouri is a highly karstic landscape—one of the most karst regions in the state of Missouri. A losing stream is defined as a stream that distributes 30 percent or more of its flow during low flow periods through permeable geologic material into a bedrock aquifer. These features are associated with karst topography, which underlies much of the state, and can act as conduits of pollutants to groundwater resources. Please contact the Department's Missouri Geological Survey at 800-361-4827 for more information or to determine if the project will cross or impact any losing streams. If losing streams are located in the project area, additional precautions and BMPs should be put in place to protect sensitive water resources at all times. Losing streams are protected by effluent regulations at 10 CSR 20-7.015(1)(B)3 and (4) and Water Quality Standards at 10 CSR 20-7.031(1)(N), (5)(C) and (13).

Waters with Approved Total Maximum Daily Loads (TMDL):
Within the proposed project area, the Mississippi River (WBID 3701) has an approved TMDL for PCBs. Approximately 233 TMDLs or TMDL alternatives have been approved by the U.S. Environmental Protection Agency for streams, rivers, and lakes throughout the state of Missouri. Care should be taken to ensure that the impairments are not made worse by this project's activities. The Department staff may require extra protections when developing permits or

certifications in order to comply with TMDL load and wasteload allocations. Additional information can be found at http://www.dnr.mo.gov/env/wpp/tmdl/index.html, or by contacting the Department's Water Protection Program at (573) 751-1300.

Watershed Conditions

Karst Topography – Springs, Sinkholes, and Caves:

According to data, there is one known sinkhole southeast of the proposed project area. The Belgique Quadrangle, which is directly south of the proposed project area, boasts an overall cave density of 82 total known caves. Springs, sinkholes, and caves are features on the landscape associated with karst topography that can act as direct conduits of surface water and pollutants to groundwater. As such, extra precaution should be taken to minimize disturbance of land in or around these features, and to avoid the introduction of pollutants to sensitive groundwater resources.

Certified Wells:

There are two known wells southwest of the proposed project area, one of which is a soil boring well, and the other a reconstruction well. Wells can also act as conduits of pollutants to groundwater resources. Abandoned wells should be plugged prior to any land disturbance, and care should be taken to utilize appropriate BMPs to protect any currently operating wells. For more information on locating and plugging wells, please visit the Department's Wellhead Protection Section webpage at https://dnr.mo.gov/geology/geosrv/wellhd/, or contact the Department's Geological Survey Program directly at (800) 361-4827.

Public Drinking Water:

Perry County Public Water Service District Number 2 is located directly south of the proposed project area. All work associated with this project should take into consideration the protection of both surface and groundwater public drinking water supplies, implementing appropriate BMPs as necessary. In the event that public drinking water sources or infrastructure, such as reservoirs, water supply wells, surface water supply intakes, or treatment systems, have the potential to be impacted by suspended solids or other pollutants as a result of this project, the owners or operators of the affected drinking water system should be notified prior to the onset of work. For additional information regarding source water protection, please contact Mr. Ken Tomlin of the Department's Public Drinking Water Branch at (573) 526-0269.

Public Land:

The United States Fish and Wildlife Service Mark Twain National Wildlife Refuge is located directly west of the proposed project area. Care should be taken to avoid or minimize impact from land disturbance activities on this area.

Conservation Opportunity Areas (COAs):

There are no known COAs near the proposed project area. Both terrestrial and aquatic COAs are identified by the Missouri Department of Conservation and its conservation partners as priority areas that support and conserve viable populations of wildlife and the ecological systems on

which they depend. Designated COAs are located statewide and may consist of a combination of public and private resources. Please contact the Missouri Department of Conservation at (573) 751-4115 for more information.

Geological
The southwest side of the project area lies within a zone that has a potential for liquefaction in the case of a significant earthquake. The northeast side of the project area lies within a zone that has a potential for landslides in the case of a significant earthquake.

Hydraulic
A portion of the southern approach to the bridge on Horse Island is carried on an earthen embankment. This embankment represents an impediment to flow and a reduction of conveyance in the Mississippi River floodplain.

We appreciate the opportunity to provide comments for the investigation of the Chester Bridge crossing. If you have any questions or need clarification, please contact me or Ms. Missy Newman at (573) 751-3195. The address for correspondence is Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102. Thank you.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES

Dru Buntin
Deputy Director

DB/man

Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

July 31, 2018

Randolph County, IL
Chester
FAP 861, IL 150/MO 51
Bridge Replacement over Mississippi River
IDOT Sequence #20783A
ISAS Log #18011

IHPA REVIEW
H/A _____
AC CONCUR TESTING 8/11
AR _____
File _____

FEDERAL – SECTION 106 PROJECT

Determination of Eligibility - Architectural & Archaeological Resources

Dr. Rachel Leibowitz
Deputy State Historic Preservation Officer
Illinois Department of Natural Resources
Office of Land Management - Illinois State Historic Preservation Office
1 Natural Resources Way
Springfield, Illinois 62702

Dear Dr. Leibowitz:

The Illinois Department of Transportation (IDOT) is a cooperating agency in the above listed undertaking, for which the which the Federal Highway Administration (FHWA) and the Missouri Department of Transportation (MoDOT) propose to improve the MO Route 51/IL Route 150 Mississippi River Crossing, commonly referred to as Chester Bridge. IDOT is responsible for coordination of the project's environmental studies and agency consultation for the Illinois side of the project.

Chester Bridge (IDOT Structure Number 079-6001) was determined eligible for listing on the National Register of Historic Places (NRHP) by the Keeper of the National Register in 1998. However, the bridge is maintained by MoDOT, and MoDOT is responsible for potential effects to the bridge.

In continuing coordination with your office, please find enclosed the Historic Resources Inventory Report for the Illinois side of the project, completed by Illinois State Archaeological Survey (ISAS) architectural historians. The Area of Potential Effects (APE) utilized for the identification of archaeological and architectural resources follows MoDOT's APE delineation for the undertaking. The APE encompasses the four alternatives that were carried forward for further analysis as part of the National Environmental Policy Act (NEPA) process. Based on the results of the ISAS architectural resources survey, IDOT has determined that no architectural resources in Illinois are eligible for NRHP consideration.

Also enclosed are copies of the archaeological survey report completed by ISAS archaeological personnel concerning resources potentially impacted by the above referenced undertaking. Survey of the 330-acre APE resulted in the identification of six archaeological sites (11R931 to 11R936). Four sites (11R931 to 11R934) warrant NRHP consideration.

In coordination with FHWA, we request concurrence of the Illinois State Historic Preservation Officer (SHPO) in our determination of NRHP eligibility for architectural and archaeological resources within the APE on the Illinois side of the undertaking. Please concur with our determination that (1) the Chester Bridge has been previously determined eligible, (2) no architectural resources in Illinois are

eligible for the NRHP, and (3) four archaeological sites in Illinois (11R931 to 11R934) warrant further investigation to formally determine their NRHP eligibility.

In accordance with 36 CFR Part 800.3(c)(4), IDOT in coordination with FHWA will proceed to the next step in the Section 106 process if we do not receive a written response from your office within 30 days.

Sincerely,

Brad H. Koldehoff
Cultural Resources Unit
Bureau of Design & Environment

CONCUR

By: Robert Appleman
Deputy State Historic Preservation Officer

Date: 9/4/18

From: Desai, Buddy/STL Sent: Wednesday, May 23, 2018 9:43 AM To: Miller, Robert/COL Cc: Marks, Melissa/STL; Ritter, James/STL Subject: Fwd: [EXTERNAL] Chester Bridge Environmental Assessment Rob, please see below from EPA. Can you please send a courtesy response to Joe? Melissa, please log this contact appropriately. Thanks. Thank you, Buddy Desai Sent from my mobile _____ From: Summerlin, Joe <summerlin.joe@epa.gov> Sent: Wednesday, May 23, 2018 7:22 AM Subject: [EXTERNAL] Chester Bridge Environmental Assessment To: Desai, Buddy/STL <buddy.desai@ch2m.com> Cc: Westlake, Kenneth <westlake.kenneth@epa.gov>, Tapp, Joshua <tapp.joshua@epa.gov>

Mr. Desai, Thank you for contacting the U.S. Environmental Protection Agency, Region 7 about the proposed project, Chester Bridge Environmental Assessment. We have participated in past meetings and would like to continue to do so. From my records, Region 7 made telephonic concurrence on the Purpose and Need. Region 7 does not have any objections to the Proposed Alternatives. EPA Region 5 is the lead on this project, due to the NHPA "hook" and will be providing the official comments from EPA. Region 7 still requests invites to all meetings and any documentation you wish to share. We will collaborate with Region 5 to ensure one response from EPA. If you have any questions, please feel free to call me at (913) 551-7029 or email me atsummerlin.joe@epa.gov.

Sincerely,

Joe Summerlin NEPA Reviewer EPA, R7

From: scott.tener@faa.gov
Sent: Monday, July 31, 2017 11:22 AM
To: Desai, Buddy/STL
Cc: amy.ludwig@modot.mo.gov
Subject: Airspace Considerations: Chester Bridge EA; Perry County, Missouri [EXTERNAL]
Attachments: Perry County - Chester Bridge EA Coordination Letter.pdf

Dear Mr. Desai,

We received your letter dated 7/10/17 regarding the subject project. We generally do not provide comments from an environmental perspective.

The project may require formal notice and review for airspace considerations under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. To determine if you need to file with FAA, go to http://oeaaa.faa.gov and click on the “Notice Criteria Tool” found at the left-hand side of the page.

Several items may need to be checked such as any structures, roads, objects, and temporary
construction equipment (e.g. cranes) that exceed the notice criteria.
For transportation projects involving long routes, multiple locations will need to be checked because of the length of the route. We recommend checking the route at 1 mile intervals and at increases in elevation (e.g. natural rise, bridges & overpasses).

If after using the tool, you determine that filing with FAA is required, we recommend a 120-day notification to accommodate the review process and issue our determination letter. Proposals may be filed at http://oeaaa.faa.gov.

More information on this process may be found at: http://www.faa.gov/airports/central/engineering/part77/

Please let me know if you have any questions,
Scott Tener, P.E.
Environmental Specialist

FAA Central Region Airports Division
901 Locust St., Room 364
Kansas City, Missouri 64106-2325
T 816.329.2639 | F 816.329.2611
http://www.faa.gov/airports/central/

From: Deel, Judith <judith.deel@dnr.mo.gov>
Sent: Friday, July 14, 2017 11:01 AM
To: Desai, Buddy/STL
Subject: Chester Bridge Environmental Assessment, Perry County, Missouri and Randolph, Illinois [EXTERNAL]

Dear Mr. Desai,

Thank you for submitting information on the above referenced project for our review.

The Missouri State Historic Preservation Office (Mo-SHPO) accepts the invitation to serve as an Interested Agency for the preparation of the location study and NEPA document. We will also be participating in the consultation pursuant to Section 106 of the National Historic Preservation Act (P.L. 89- 665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

Please include Dr. Toni M. Prawl, Director and Deputy State Historic Preservation Officer (Toni.Prawl@dnr.mo.gov) and myself, Judith Deel, Compliance Coordinator (Judith.Deel@dnr.mo.gov) to
the list for notifications.

Please be aware that due to technical limitation, you will need to submit project information by regular mail. Large documents may be submitted on cd.

Please be sure to include the SHPO Log Number (004-PY-17) on all future correspondence or inquiries relating to this project.

Thank you,

Judith Deel
Compliance Coordinator
State Historic Preservation Office
P.O. Box 176
Jefferson City, Missouri 65102
judith.deel@dnr.mo.gov
573/751-7862 (phone)

Promoting, Protecting and Enjoying our Natural Resources. Learn more at dnr.mo.gov.

From: Ed Barsotti <ed@rideillinois.org>
Sent: Tuesday, July 25, 2017 4:11 PM
To: Desai, Buddy/STL
Subject: Chester Bridge interested agency [EXTERNAL]

Dear Mr. Desai,

In response to your letter inviting us to serve as an Interested Agency on the Chester Bridge project, please include me at ed@rideillinois.org when sending collaboration packages.

We are a statewide bicycle advocacy organization that reviews upcoming road projects and provides suggestions, where appropriate, on bicycle access being included in the design.

Thank you,

Ed Barsotti
Chief Programs Officer
Ride Illinois
2550 Cheshire Dr.
Aurora, IL 60504
630-978-0583
ed@rideillinois.org
www.rideillinois.org

From: Desai, Buddy/STL
Sent: Monday, May 7, 2018 12:30 PM
To: Miller, Robert/COL
Cc: Ritter, James/STL; Marks, Melissa/STL
Subject: FW: Message

Rob, please see the email below. Rob Hunt is our new contact with the DNR. Can you please email him
to see if he has any questions?

Melissa, can you please update the name of the DNR contact on the agency list on the server?

Thank you,
Buddy

Buddy Desai, PE
Jacobs
Senior Project Manager
314.335.5065
buddy.desai@jacobs.com

From: Esser, Christine (St. Louis) [mailto:Christine.Esser@jacobs.com]
Sent: Monday, May 7, 2018 11:13 AM
To: Desai, Buddy/STL <Buddy.Desai@CH2M.com>
Subject: Message

Hi Buddy,

Missy from the DNR called regarding the letter you sent to Larissa Smith on their willingness to
participate in NEPA reviews. Larissa is no longer with DNR, but Rob Hunt would be your contact. They
are interested in participating, so please contact him at rob.hunt@dnr.mo.gov

:)

Christine L. Esser
Jacobs Administrative Assistant
314.335.4688
314.335.5141 fax
christine.esser@jacobs.com
501 North Broadway
St. Louis, MO 63102
USA
www.jacobs.com

error, please notify us immediately by replying to the message and deleting it from your computer.

From: Desai, Buddy/STL Sent: Wednesday, May 23, 2018 9:43 AM To: Miller, Robert/COL Cc: Marks, Melissa/STL; Ritter, James/STL Subject: Fwd: [EXTERNAL] Chester Bridge Environmental Assessment Rob, please see below from EPA. Can you please send a courtesy response to Joe? Melissa, please log this contact appropriately. Thanks. Thank you, Buddy Desai Sent from my mobile _____ From: Summerlin, Joe <summerlin.joe@epa.gov> Sent: Wednesday, May 23, 2018 7:22 AM Subject: [EXTERNAL] Chester Bridge Environmental Assessment To: Desai, Buddy/STL <buddy.desai@ch2m.com> Cc: Westlake, Kenneth <westlake.kenneth@epa.gov>, Tapp, Joshua <tapp.joshua@epa.gov>

Mr. Desai, Thank you for contacting the U.S. Environmental Protection Agency, Region 7 about the proposed project, Chester Bridge Environmental Assessment. We have participated in past meetings and would like to continue to do so. From my records, Region 7 made telephonic concurrence on the Purpose and Need. Region 7 does not have any objections to the Proposed Alternatives. EPA Region 5 is the lead on this project, due to the NHPA "hook" and will be providing the official comments from EPA. Region 7 still requests invites to all meetings and any documentation you wish to share. We will collaborate with Region 5 to ensure one response from EPA. If you have any questions, please feel free to call me at (913) 551-7029 or email me atsummerlin.joe@epa.gov.

Sincerely,

Joe Summerlin NEPA Reviewer EPA, R7

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Sincerely,

Joe Summerlin NEPA Reviewer EPA, R7

From: Desai, Buddy/STL
Sent: Wednesday, May 23, 2018 9:51 AM
To: Miller, Robert/COL
Cc: Marks, Melissa/STL; Ritter, James/STL
Subject: Fwd: [EXTERNAL] Interested agency

Rob, please see below from SEMORPC wanting to be an Interested Agency. Barry Horst is the former Assisstnt DE from Sikeston. Can you please reach out and confirmt that we got his response.

Melissa, can you please send Barry the two sets of files we recently sent to the other agency that responded for the first time recently?

Thank you,
Buddy Desai

Sent from my mobile

From: Barry Horst <bhorst@semorpc.org>
Sent: Monday, May 21, 2018 3:21 PM
Subject: [EXTERNAL] Interested agency
To: Desai, Buddy/STL <buddy.desai@ch2m.com>

Hi Buddy,

Yes, I would like to participate in this effort. You've got my mailing address and now have my e- mail. Just let me know how I can help.

From: Rodriguez Robles, Edward C CIV USARMY CEMVS (US) <Edward.C.RodriguezRobles@usace.army.mil>
Sent: Wednesday, July 26, 2017 6:06 PM
To: Desai, Buddy/STL
Subject: MoDOT Chester Bridge EA [EXTERNAL]

Hi!

We are in receipt of the invitation to cooperate on the preparation of the location study and NEPA document. Can you provide a map of to the extent of potential impacts? From where to where will be the bridge be improved?

Thanks,

Ed Rodriguez
ICW Program Manager
US Army Corps of Engineers
1222 Spruce Street
Saint Louis, Missouri 63103
Office: 314-331-8568
Mobile: 314-379-9065

From: Ronnie White <rwhite@randolphco.org> Sent: Friday, July 14, 2017 9:26 AM To: Desai, Buddy/STL Cc: mkiehna@randolphco.org; Dave@holder-services.com Subject: Randolph County as Interested Agency [EXTERNAL] Dear Buddy, Thank you for your letter dated July 10. Yes, we would like to be included in the process for the Chester Bridge Project. As requested, the best email address would be countyboard@randolphco.org If you need to contact me, my cell phone number is (618)340-0350. We look forward to working with you. Ronnie White Randolph County Board Chairman

#1 Taylor St, Suite 206 Chester, IL 62233

From: Miller, Robert/COL
Sent: Thursday, October 19, 2017 12:00 PM
To: Desai, Buddy/STL
Cc: Ritter, James/STL
Subject: RE: Chester Levee President Contact

Talked to Mark. They don’t check their PO Box. He’d like to be an Interested Agency. I told him we’d send him the intro letter and the Collaboration Point #1. A better address is:

Arbieter Law Firm, 11 North Main Street, Perryville, MO 63775

Can you have someone send that out?

From: Desai, Buddy/STL
Sent: Wednesday, October 18, 2017 4:55 PM
To: Miller, Robert/COL <Robert.Miller@CH2M.com>
Cc: Ritter, James/STL <James.Ritter@CH2M.com>
Subject: Chester Levee President Contact

Rob, here is the name and number of the levee district president:

Mark Gremaud
573.517.2005

Thank you,
Buddy

Buddy Desai
Vice President
Missouri Transportation
CH2M
300 Hunter Avenue, Suite 305
St. Louis, MO 63124
314.335.3011
buddy.desai@ch2m.com

From: Desai, Buddy/STL
Sent: Wednesday, May 16, 2018 3:51 PM
To: Brent Hugh
Cc: Jason M. Williams; Kyle E. Grayson; Miller, Robert/COL; Ritter, James/STL; Marks, Melissa/STL Subject: RE: [EXTERNAL] Chester Bridge Interested Agency

Thank you Brent. We will add you to our Interested Agency list.

Thank you,
Buddy

Buddy Desai, PE
Jacobs
Senior Project Manager
314.335.5065
buddy.desai@jacobs.com

From: Brent Hugh [mailto:director@mobikefed.org]
Sent: Wednesday, May 16, 2018 7:43 AM
To: Desai, Buddy/STL <Buddy.Desai@CH2M.com>
Subject: [EXTERNAL] Chester Bridge Interested Agency

Buddy,

Many thanks for your recent letter reminding us of your invitation to be and Interested Agency in the Chester Bridge project.

We definitely are interested in this project and would like to participate as an Interested Agency.

Please use email address director@mobikefed.org for the correspondence.

Thank you!

--Brent

The Missouri Bicycle and Pedestrian Federation is a statewide coalition of bicyclists, walkers, runners, trail organizations and related businesses which represents over 50,000 Missourians and advocates on behalf of the state's two million ardent bicyclists and six million walkers.

Join MoBikeFed's advocacy alert network:

http://mobikefed.org/email.php#announce

==========
Dr. Brent Hugh, LCI #1335
Executive Director
Missouri Bicycle and Pedestrian Federation
Director@MoBikeFed.org
Work: 816-336-2550
Fax: 210-579-2265
Personal: 816-695-6736

From: Microsoft Outlook on behalf of UNITED STATES G Sent: Friday, July 14, 2017 12:52 PM
To: Desai, Buddy/STL
Subject: Voice Mail (1 minute and 17 seconds) Attachments: 16369222833 (1 minute and 17 seconds) Voice Mail.wav

You received a voice message from UNITED STATES G at 16369222833.

Caller-Id:
16369222833

Appendix J
Tribal Coordination Materials

Invitation Letters

Missouri Division

U.S. Department of Transportation
Federal Highway Administration

3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Ms. Kim Penrod
Director, Cultural Resources/106
Delaware Nation
31064 State Highway 281
PO Box 825
Anadarko, OK 73005

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Kim Penrod:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

Enclosed is a map that shows the project area. Comments and suggestions are invited from all interested parties to ensure that all pertinent concerns are identified and the full range of issues related to this proposed action are addressed.

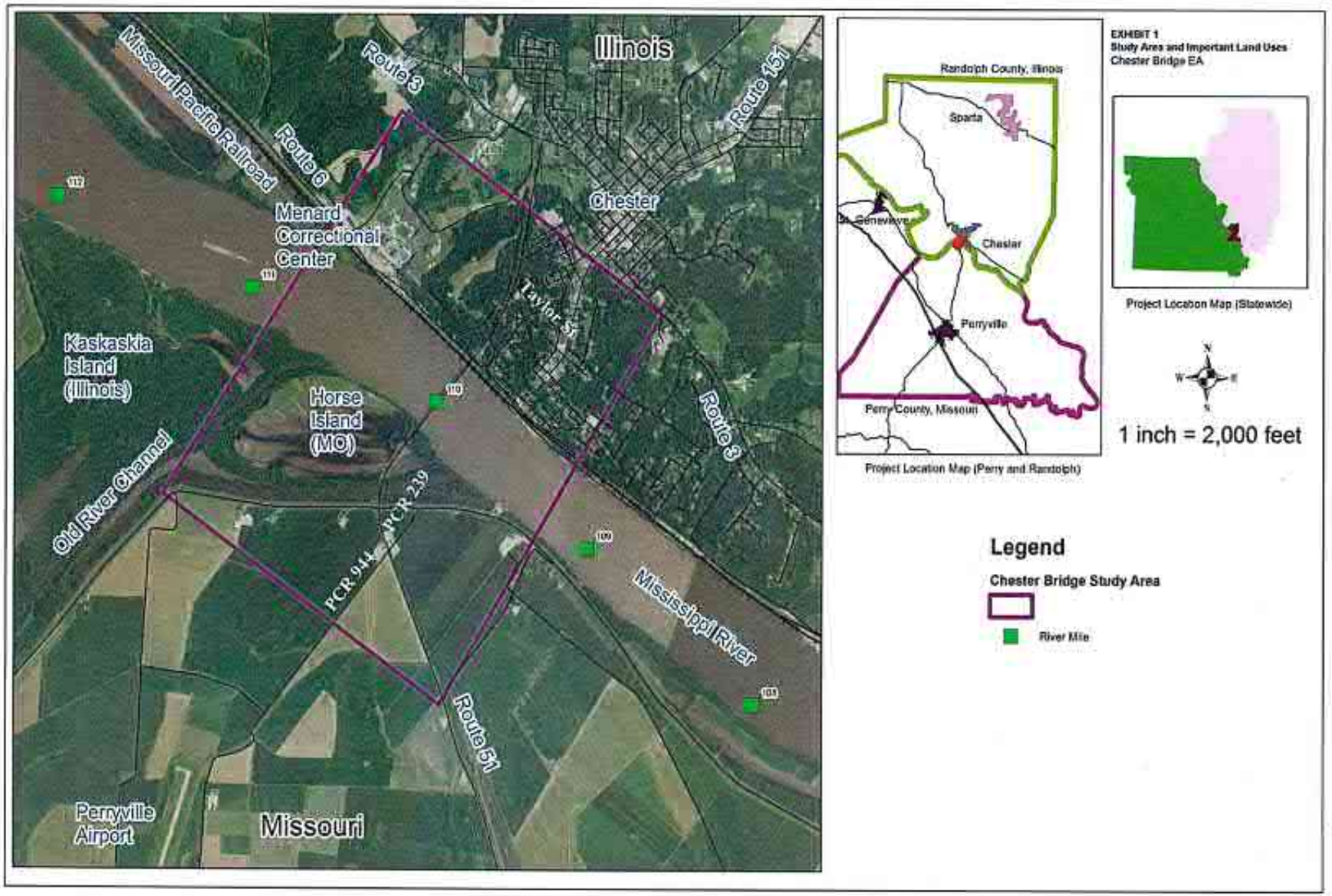
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Chester Bridge EA
Project Location Map (Statewide)
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Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Mr. Kenneth Blanchard
Tribal Historic Preservation Officer
Absentee-Shawnee Tribe of Indians of Oklahoma
2025 South Gordon Cooper Drive
Shawnee, OK 74801

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Mr. Kenneth Blanchard:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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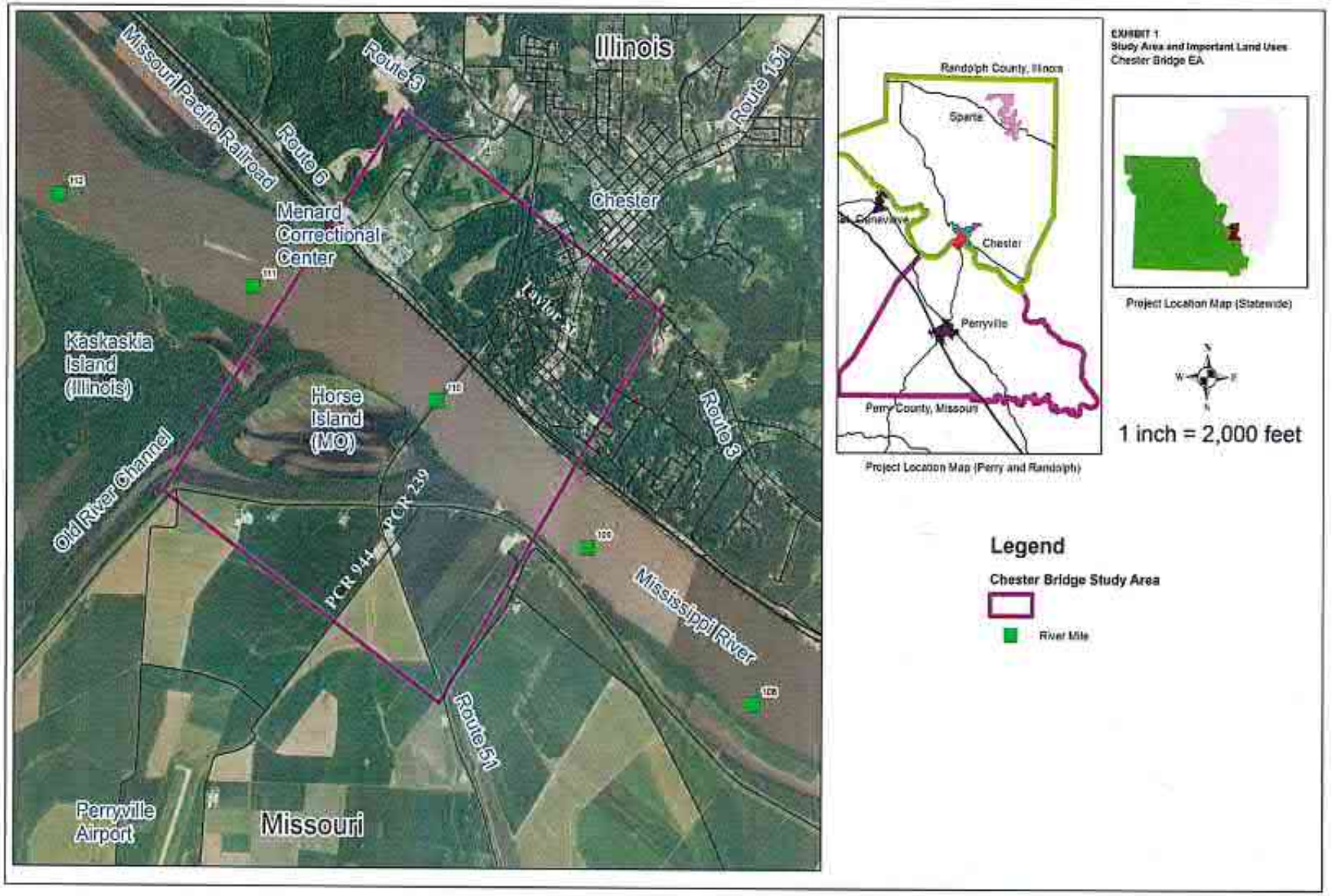
Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Elizabeth Toombs
Special Projects Officer
Cherokee Nation
P.O. Box 948
Tahlequah, OK 74465

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Toombs:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

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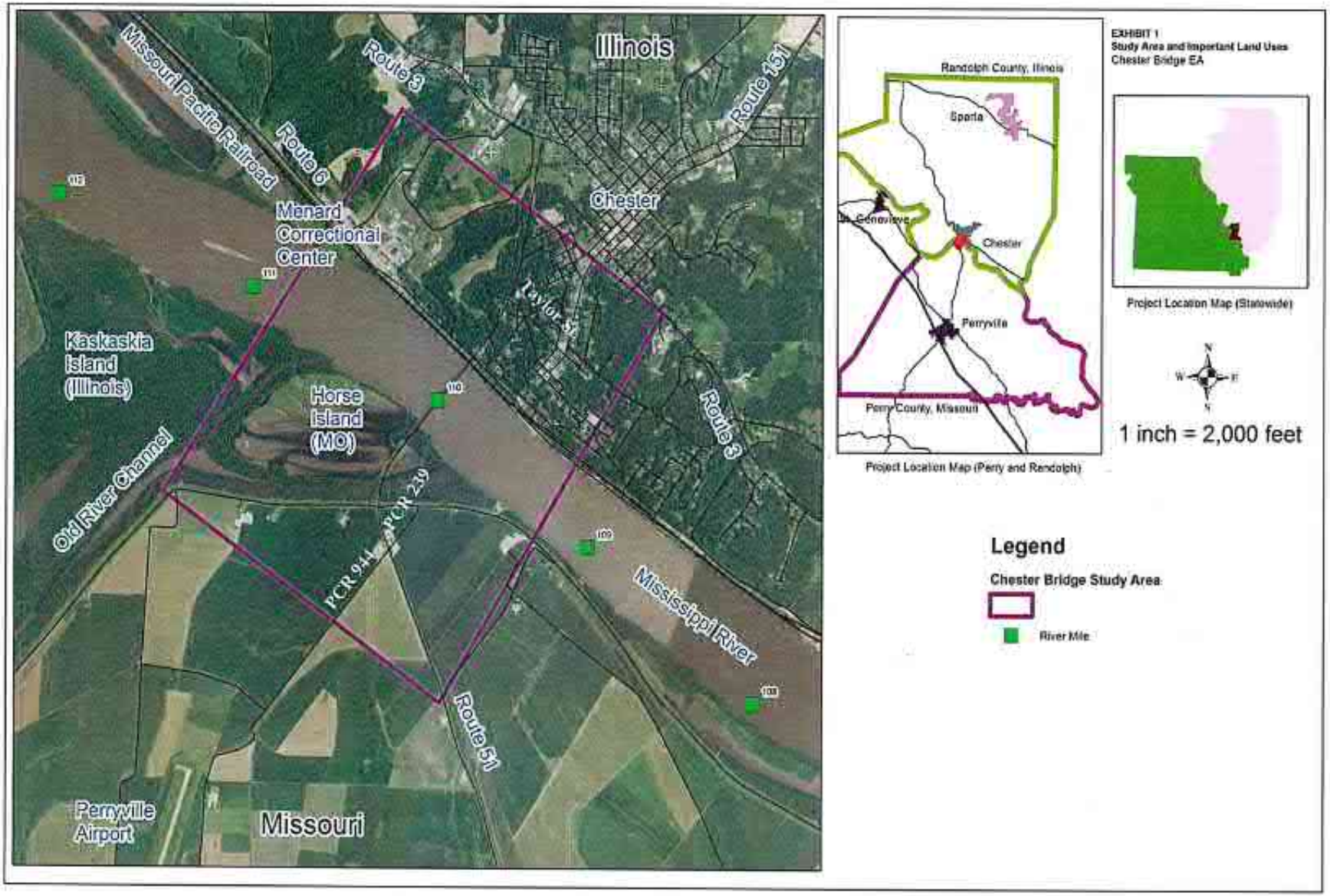
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Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Ms. Dee Gardner
Cultural Preservation Director
Eastern Shawnee Tribe of Oklahoma
127 West Oneida
P.O. Box 350
Seneca, MO 64865

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Gardner:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

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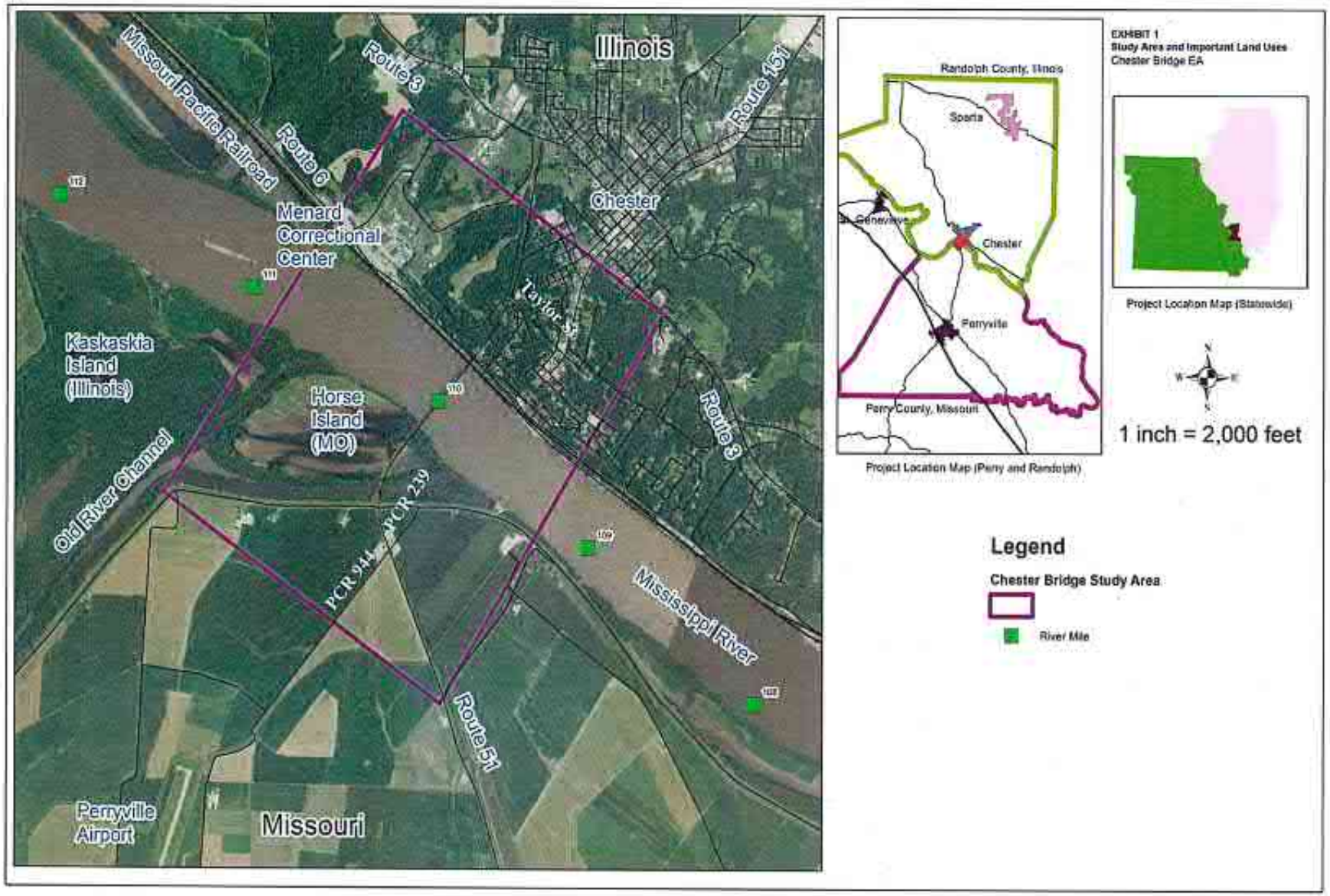
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Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Mr. Lance Foster
Tribal Historic Preservation Officer
Iowa Tribe of Kansas and Nebraska
3345 B Thrasher Road
White Cloud, KS 66094

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Mr. Lance Foster:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

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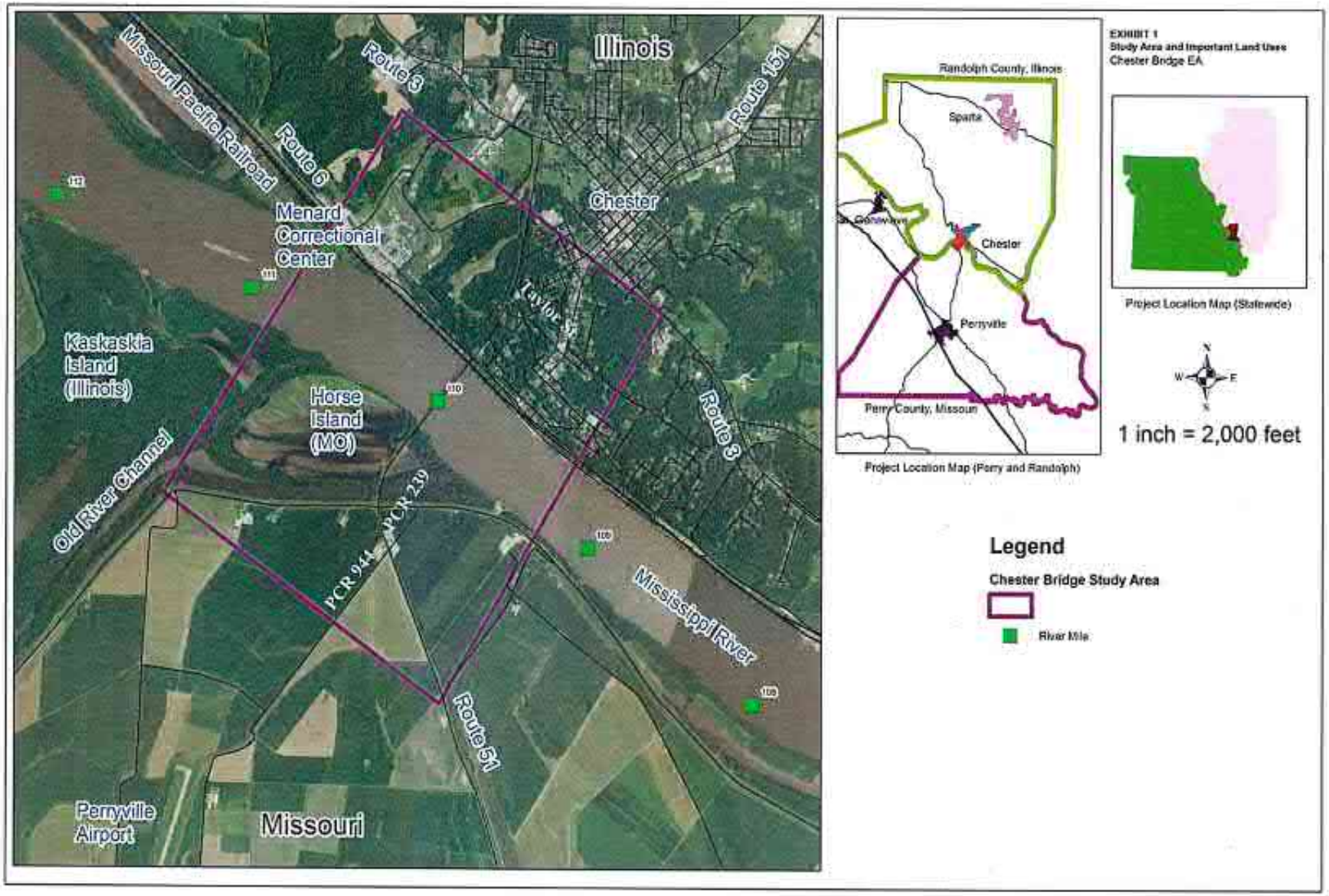
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Jefferson City, Missouri 65109
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Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

In Reply Refer To:
HDA-MO

July 31, 2017

Dr. Bobbie Roush
Historic Preservation
Iowa Tribe of Oklahoma
R.R. 1, Box 721
501 E. Highway 33
Perkins, OK 74059

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Dr. Bobbie Roush:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

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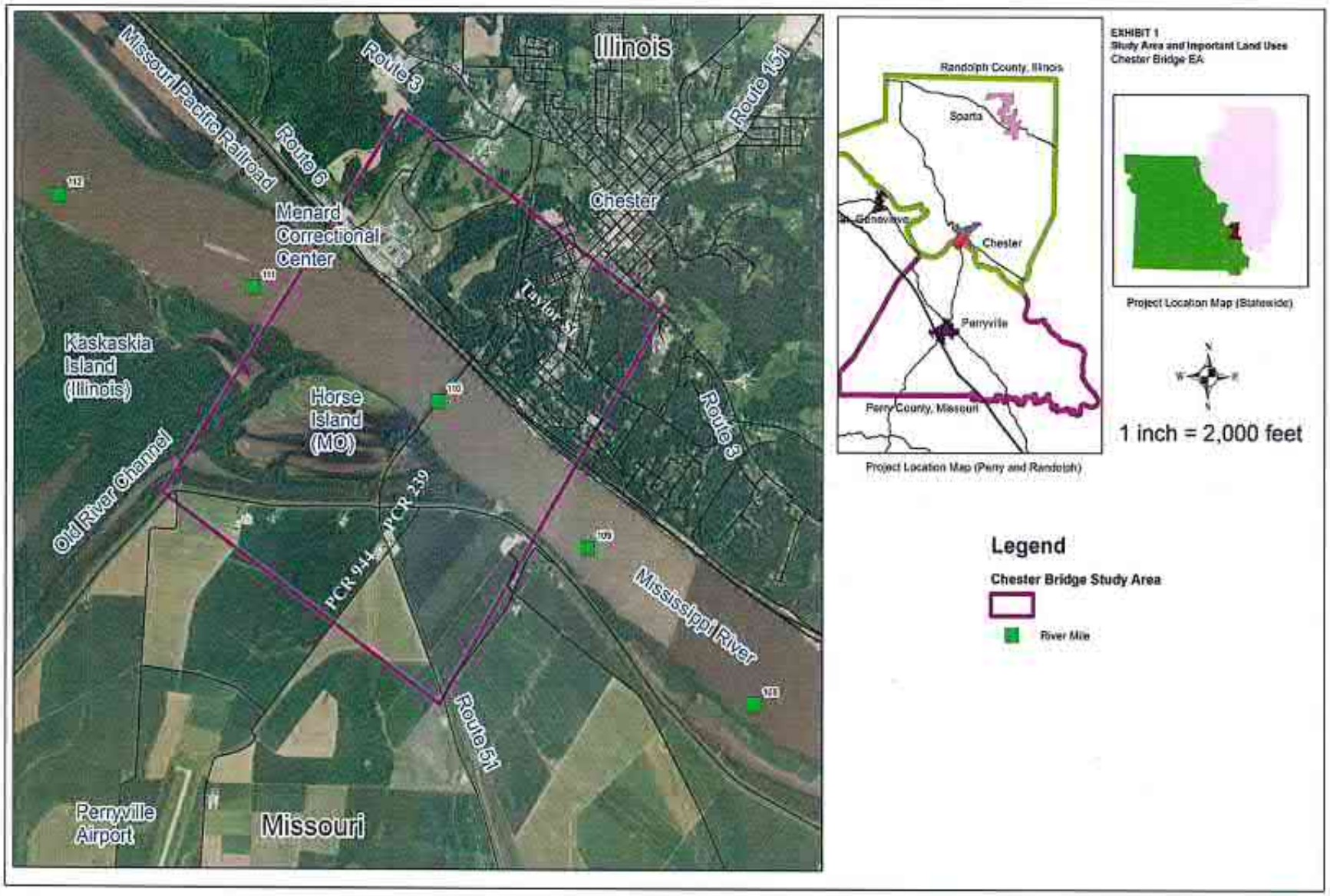
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Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Ms. Diane Hunter
Tribal Historic Preservation Officer
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Diane Hunter:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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FHWA – Missouri Division

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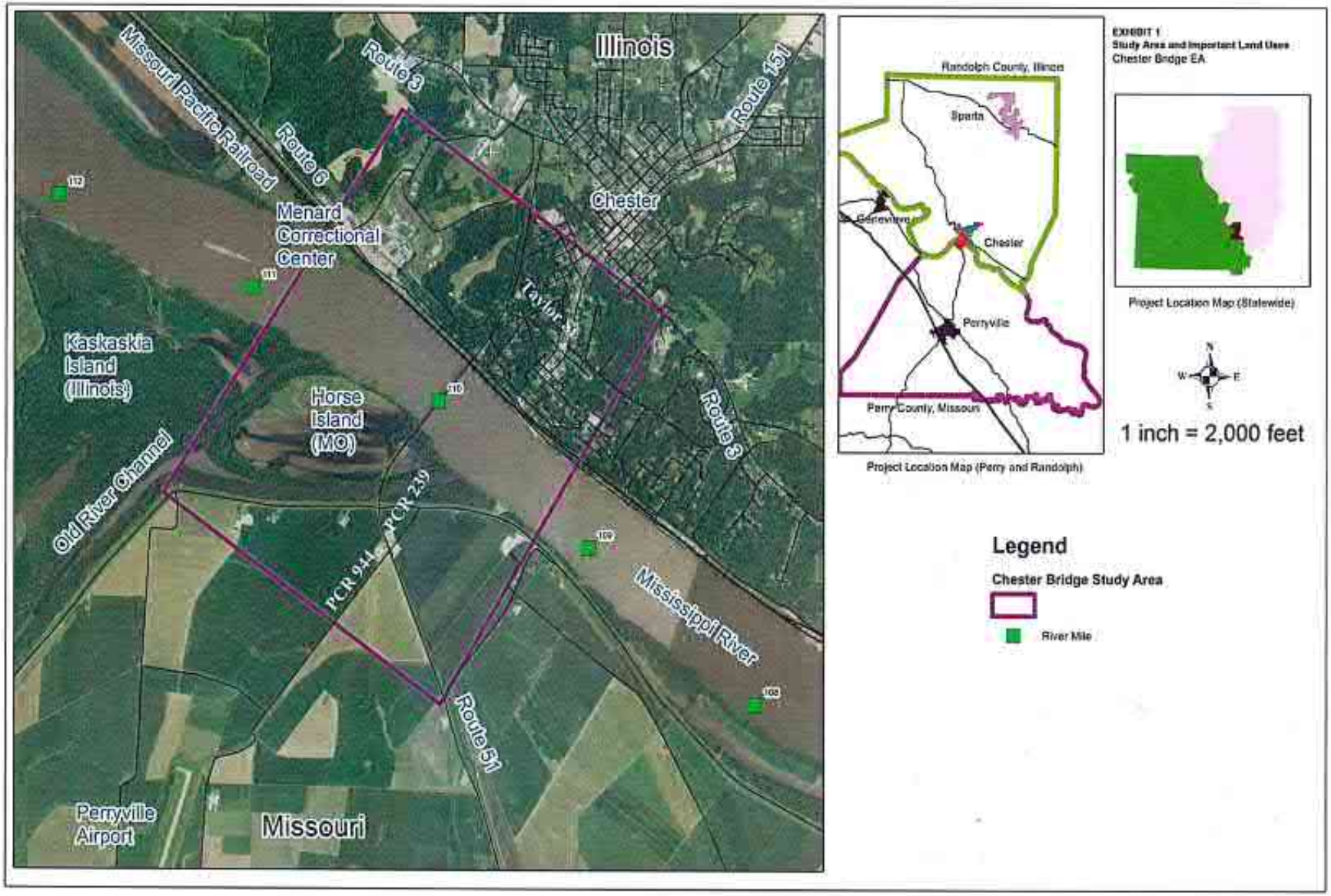
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Administration**

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Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Dr. Andrea A. Hunter
Director/THPO, Historic Preservation Office
Osage Nation
627 Grandview Avenue
Pawhuska, OK 74056

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Dr. Andrea A. Hunter:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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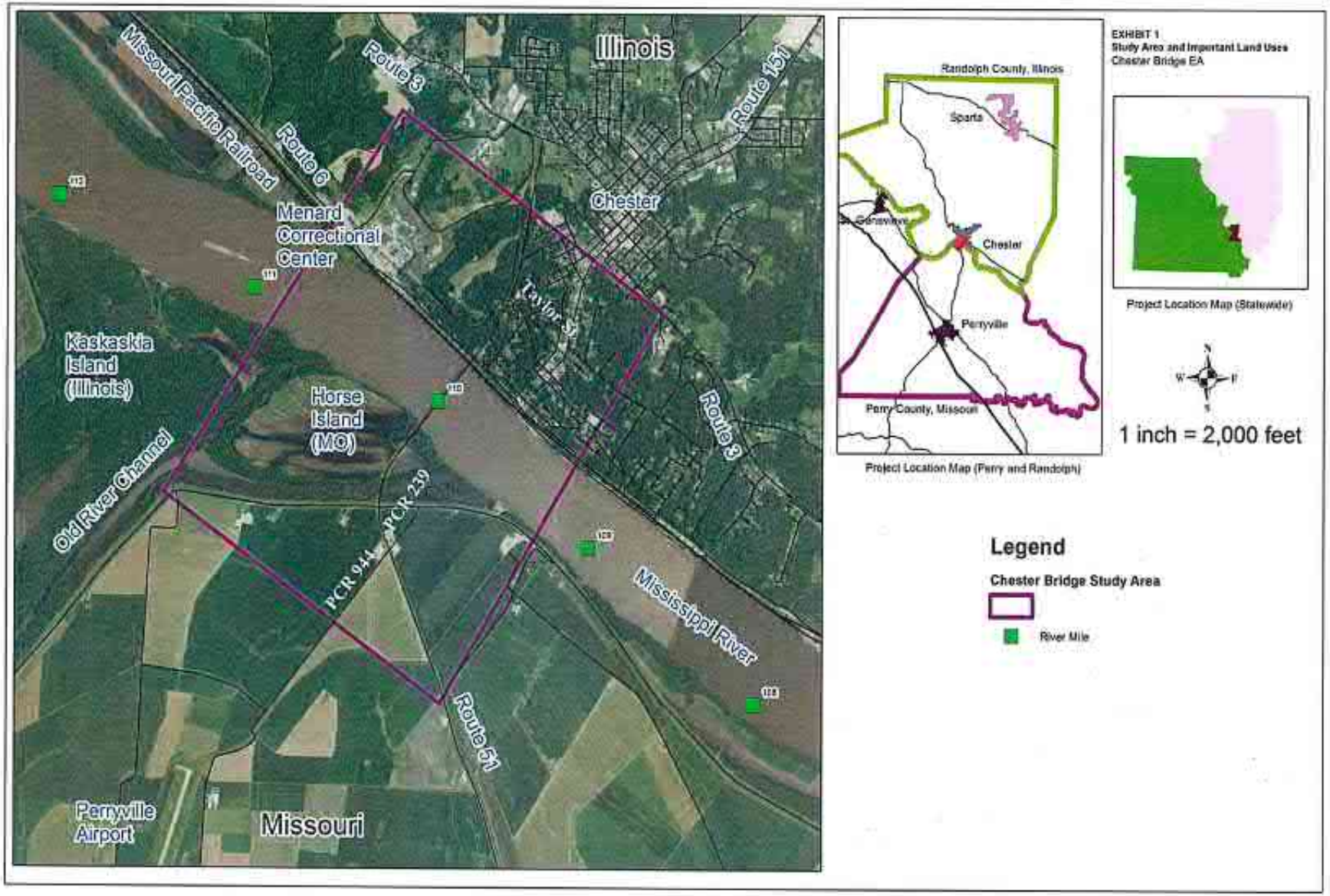
Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Mississippi River
Route 51
Perryville Airport
Missouri
EXHIBIT 1
Study Area and Important Land Uses
Chester Bridge EA
Randolph County, Illinois
Sparta
Chester
Perryville
Perry County, Missouri
Project Location Map (Perry and Randolph)
Project Location Map (Statewide)
1 inch = 2,000 feet
Legend
Chester Bridge Study Area
River Mile

Missouri Division

U.S. Department of Transportation
Federal Highway Administration

3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Ms. Cynthia Stacey
Special Projects Manager/NAGPRA
Peoria Tribe of Indians of Oklahoma
P.O. Box 1527
Miami, Oklahoma 74355-1527

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Cynthia Stacey:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

Enclosed is a map that shows the project area. Comments and suggestions are invited from all interested parties to ensure that all pertinent concerns are identified and the full range of issues related to this proposed action are addressed.

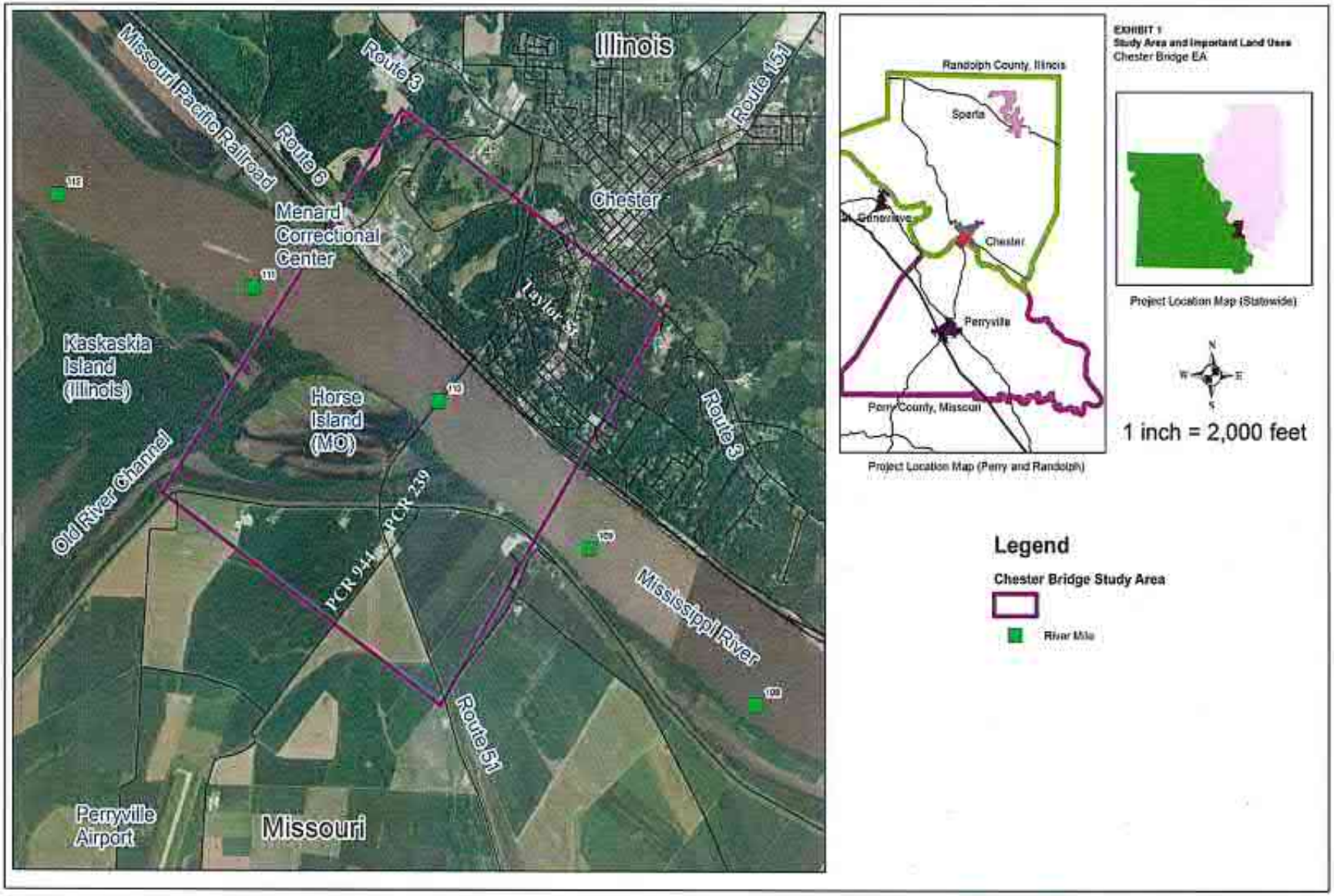
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Mr. Shannon Wright
Tribal Historic Preservation Officer
Ponca Tribe of Nebraska
P.O. Box 288
Niobrara, NE 68760

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Mr. Shannon Wright:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

Enclosed is a map that shows the project area. Comments and suggestions are invited from all interested parties to ensure that all pertinent concerns are identified and the full range of issues related to this proposed action are addressed.

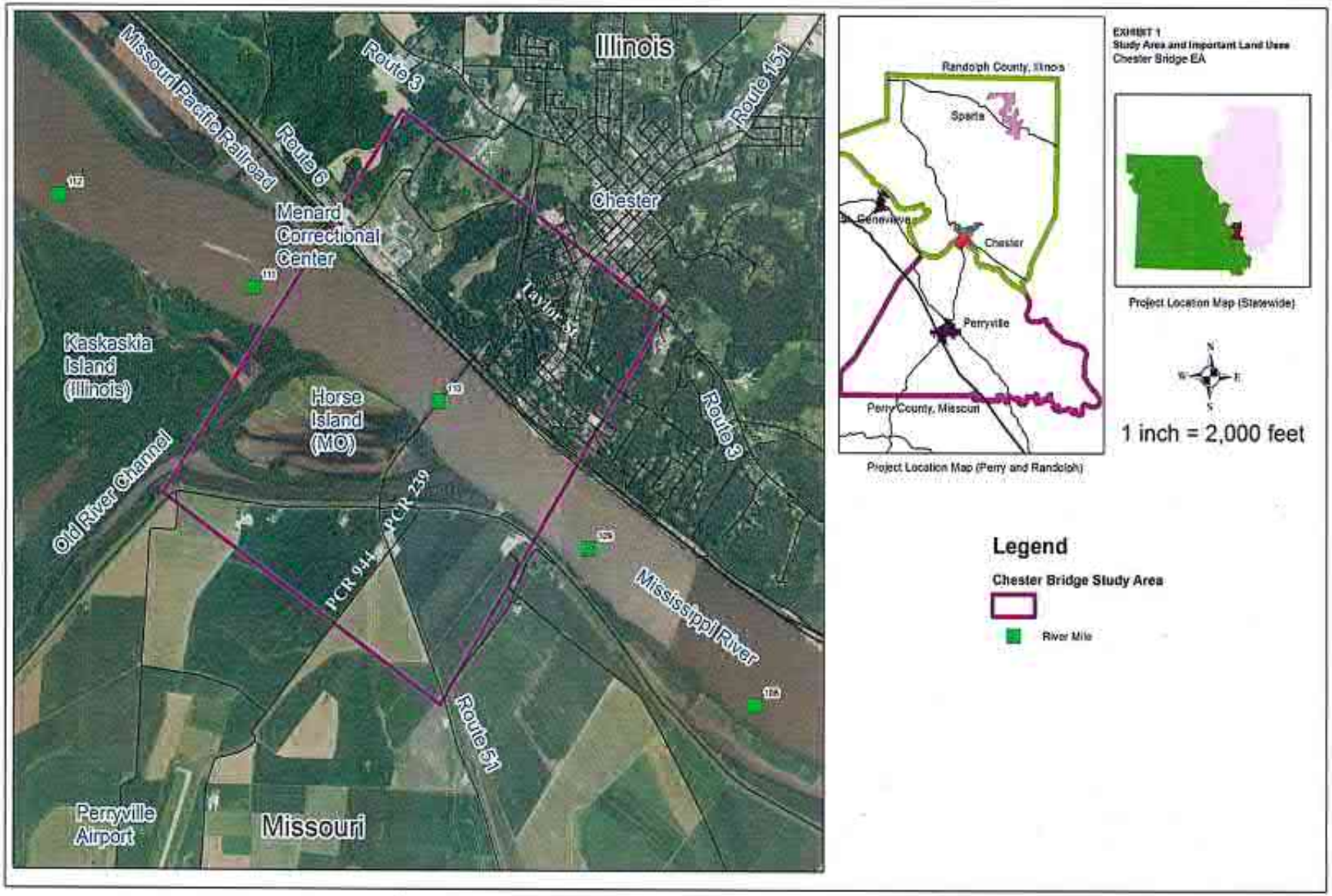
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Federal Highway Administration

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Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Ms. Halona Clawson
Tribal Historic Preservation Officer
Ponca Tribe of Oklahoma
20 White Eagle Drive
Ponca City, OK 74601

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Halona Clawson:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

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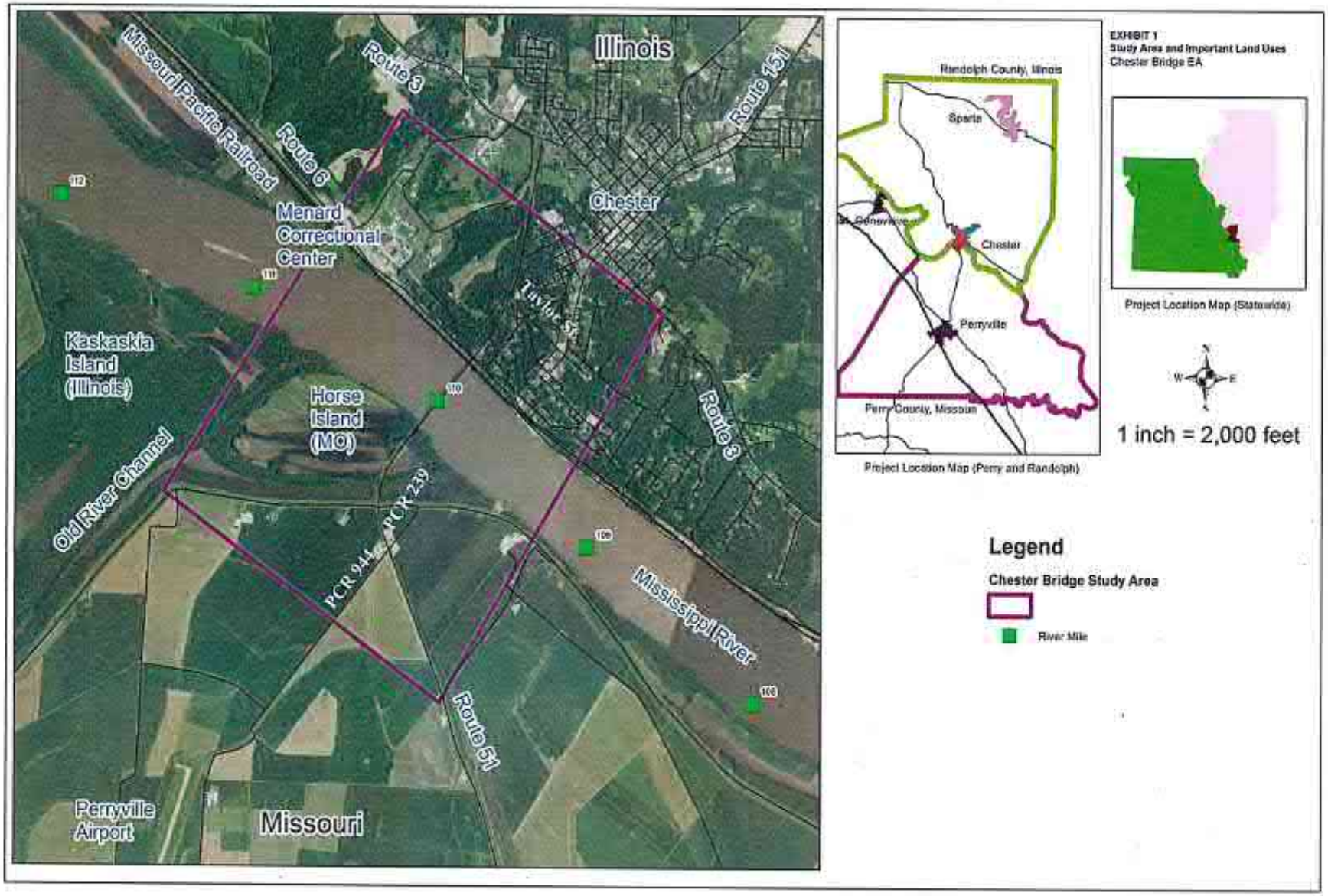
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Missouri Division

U.S.Department
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**Federal Highway
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Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Mr. Everett Bandy
Tribal Historic Preservation Officer
Quapaw Tribe of Oklahoma
5681 S. 630 Rd.
Quapaw, OK 74363-0765

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Mr. Everett Bandy:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

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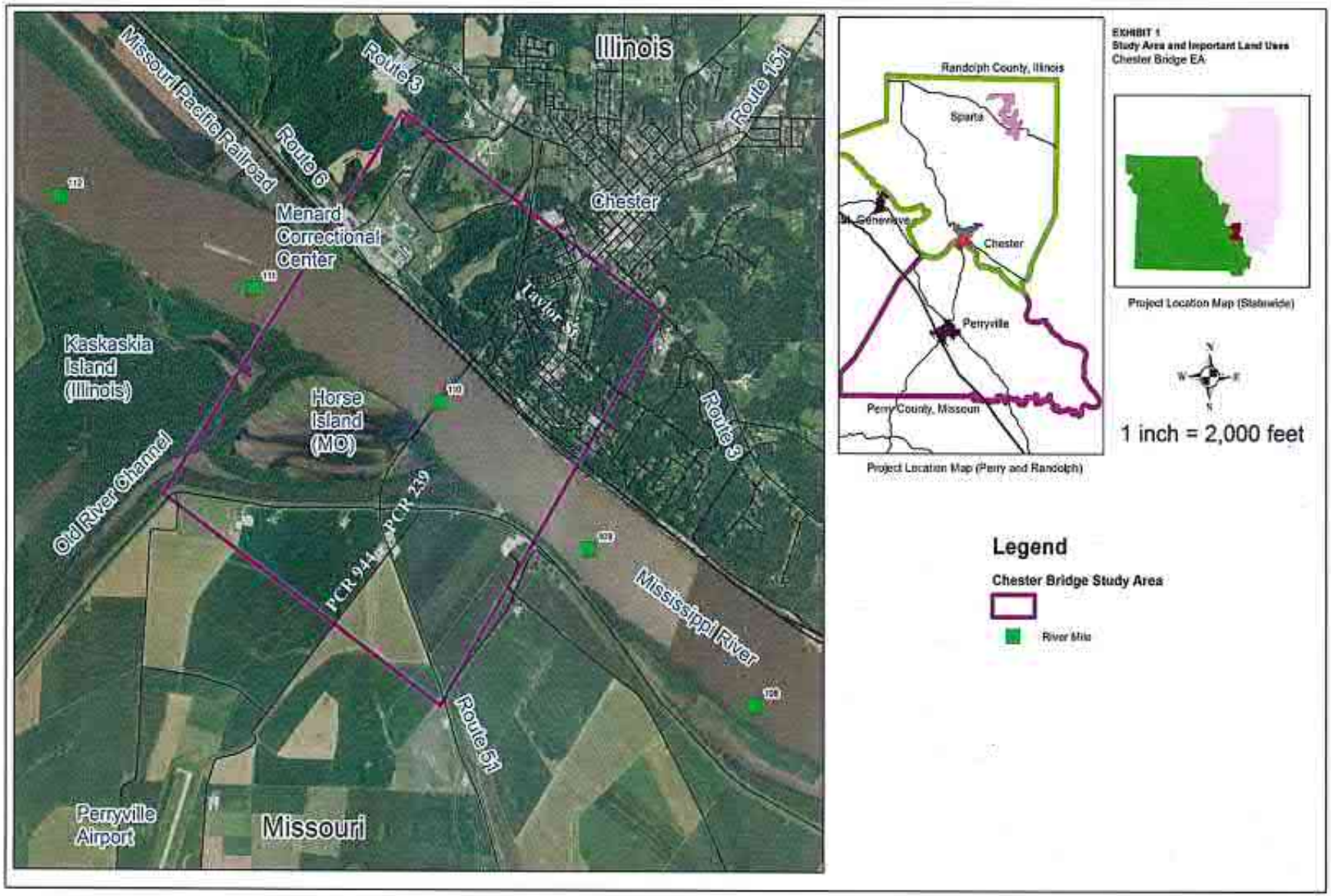
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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**Federal Highway
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3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Ms. Kim Jumper
Tribal Historic Preservation Officer
Shawnee Tribe
29 South 69a Highway
Miami, Oklahoma 74355

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Kim Jumper:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

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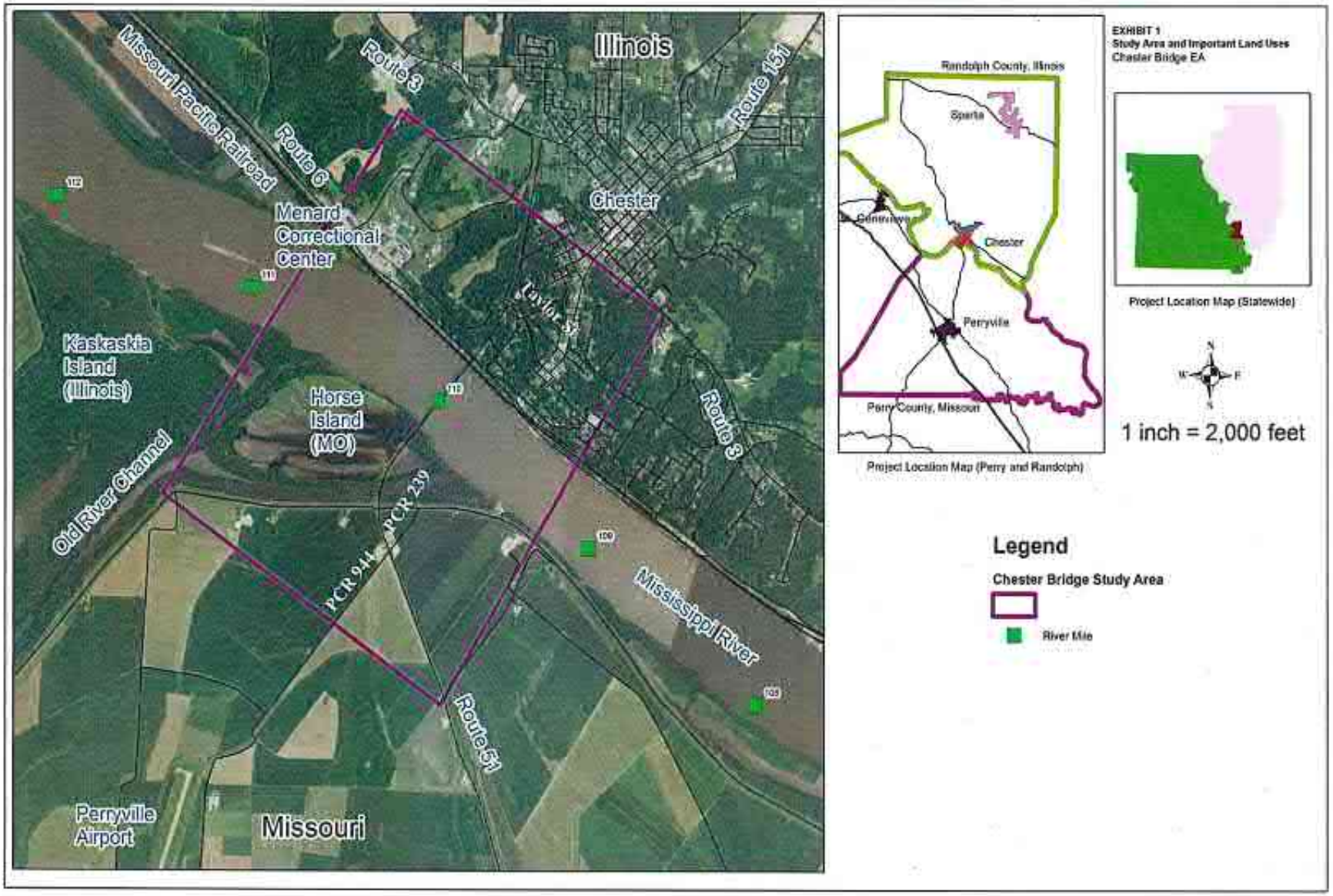
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Chester Bridge Study Area
River Mile

Missouri Division

U.S.Department
of Transportation
Federal Highway Administration

3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109
(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

July 31, 2017

In Reply Refer To:
HDA-MO

Eric Oosahwee-Voss
Tribal Historic Preservation Officer
United Keetoowah Band of Cherokee Indians in Oklahoma
PO Box 1245
Tahlequah, OK 74465

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Mr. Oosahwee-Voss:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

Your Tribe has previously expressed an interest about MoDOT projects in this area. Because of your interest, we invite your Tribe to be a Section 106 consulting party on concerns that uniquely or significantly affect your Tribe related to the potential action described above. Early identification of Tribal concerns will allow the FHWA and MoDOT/IDOT to consider ways to avoid and minimize potential impacts to Tribal resources and/or cultural practices as project planning and alternatives are developed and refined.

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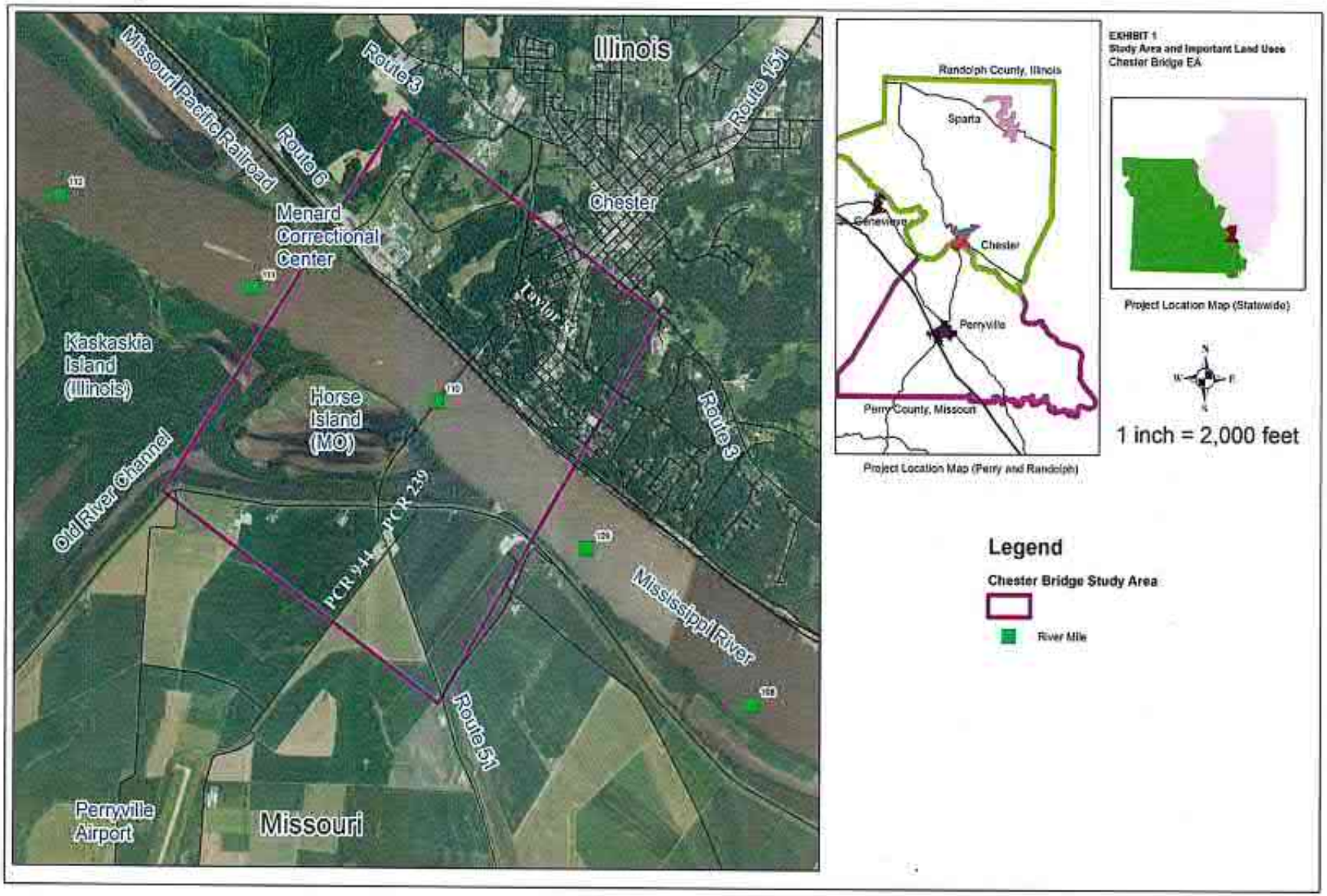
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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Federal Highway Administration

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(573) 636-7104
Fax (573) 636-9283
Missouri.FHWA@fhwa.dot.gov

In Reply Refer To:
HDA-MO

July 31, 2017

Ms. Crystal Douglas
Kaw Nation
698 Grandview Drive
Drawer 50
Kaw City, OK 74641

Subject: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3239

Dear Ms. Crystal Douglas:

The Federal Highway Administration (FHWA), in cooperation with the Missouri Department of Transportation (MoDOT) and Illinois Department of Transportation (IDOT), is initiating an Environmental Assessment (EA) on a proposal to improve/replace the MO Route 51 Mississippi River Bridge at Chester, IL. The bridge connects Route 51 in Missouri to Route 150 in Illinois. The current bridge is in poor structural condition and is functionally obsolete. The alternatives considered may include a build alternative on existing alignment, build alternatives north or south of the existing bridge, as well as no-build/rehabilitation.

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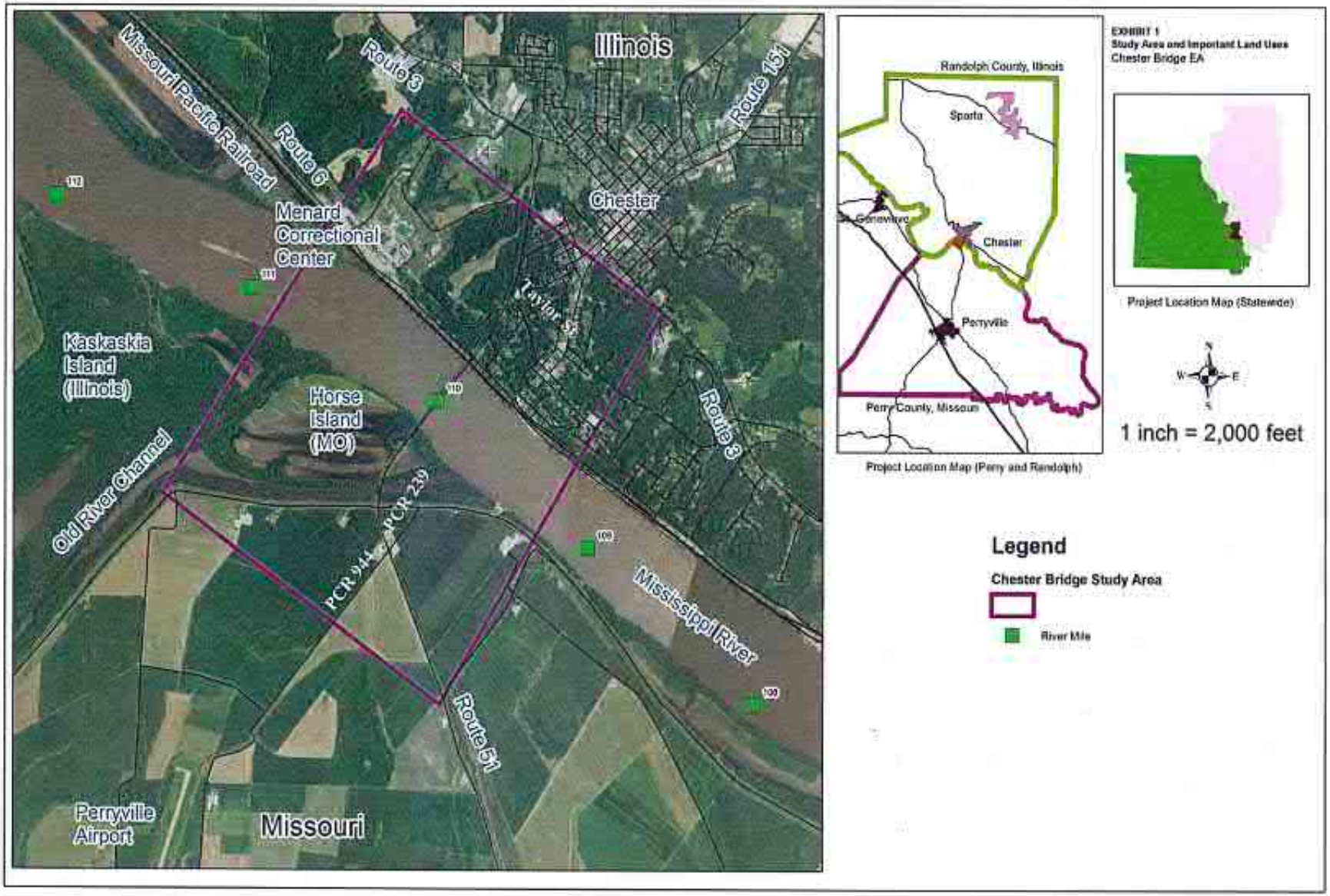
Please inform us within 30 days of receiving this letter if you would like to be a Section 106 consulting party on this project, and if yes, the name and contact for the tribe's principal representative in the consultation.

Thank you for your cooperation and interest in this project.

Sincerely,

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division

Enclosure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River Mile

Tribal Response Letters

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Office of the Chief

Bill John Baker
Principal Chief
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S. Joe Crittenden
Deputy Principal Chief
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August 18, 2017

Raegan Ball
Program Development Team Leader
Federal Highway Administration, Missouri Division
3220 W Edgewood, Suite H
Jefferson City, MO 65109

Re: MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
MoDOT Job No. J9P3239

Ms. Raegan Ball:

The Cherokee Nation (CN) is in receipt of your correspondence about **MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL**, and appreciates the opportunity to provide comment upon this project. The CN maintains databases and records of cultural, historic, and pre-historic resources in this area. Our Historic Preservation Office reviewed this project, cross referenced the project's legal description against our information, and found instances where this project falls within our Area of Interest.

In accordance with the National Historic Preservation Act (NHPA) [16 U.S.C. 470 §§ 470-470w6] 1966, undertakings subject to the review process are referred to in S101(d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires federal agencies to consider the effects of their action on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

Please allow this letter to serve as the CN's interest in acting as a consulting party to this project. The CN recommends that a cultural resource survey be conducted on the project area. The CN requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines.

The CN also requests that the Federal Highway Administration, Missouri Division (MoDOT) halt all activities immediately and re-contact our Offices for further consultation if items of cultural significance are discovered throughout the course of this proposed project.

Additionally, we would request MoDOT conduct appropriate inquiries with other pertinent Tribal and Historic Preservation Offices regarding historic and prehistoric resources not included in the CN databases or records. If you require additional information or have any questions, please contact me at your convenience.

Thank you for your time and attention to this matter.

Wado,

Elizabeth Toombs, Special Projects Officer
Cherokee Nation Tribal Historic Preservation Office
elizabeth-toombs@cherokee.org
918.453.5389

Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

August 17, 2017

Raegan Ball
Program Development Team Leader
FHWA - Missouri Division
3220 W. Edgewood, Suite H
Jefferson City, MO 65109

Re: HDA-MO MoDOT Job No. J9P3239 – MO Route 51 Mississippi River Bridge, Perry County, MO & Randolph County, IL – Comments of the Miami Tribe of Oklahoma

Dear Ms. Ball:

Aya, kikwehsitoole – I show you respect. My name is Diane Hunter, and I am the Tribal Historic Preservation Officer for the Federally Recognized Miami Tribe of Oklahoma. In this capacity, I am the Miami Tribe's point of contact for all Section 106 issues.

The Miami Tribe offers no objection to the above-mentioned project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, as this site is within the aboriginal homelands of the Miami Tribe, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at dhunter@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

Respectfully,

Diane Hunter

Diane Hunter
Tribal Historic Preservation Officer
Miami Tribe of Oklahoma

AUG 2 5 2017

TRIBAL HISTORIC PRESERVATION OFFICE

Date: **August 21, 2017** **File: 1617-3142MO-8**

RE: **MoDOT Job No. J9P3239 MO Route 51 Mississippi River Bridge in Perry County, Missouri and Randolph County, Illinois**

Missouri Department of Transportation
Raegan Ball
3220 W. Edgewood, Suite H
Jefferson City, MO 65109

Dear Ms. Ball,

The Osage Nation Historic Preservation Office has received notification and accompanying information for the proposed project **MoDOT Job No. J9P3239 MO Route 51 Mississippi River Bridge in Perry County, Missouri and Randolph County, Illinois**. The proposed undertaking is located approximately one mile northeast of the Osage Mississippi River Trail. Expedient graves and temporary hunting camps may be located along these trails. I understand that the cultural resources survey is scheduled to be performed in the near future. This office looks forward to reviewing the final report.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d) (6) (A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources, which are protected under the NHPA, NEPA, the Native American Graves Protection and Repatriation Act, and Osage law, and appreciates your consideration of the provided information in the planning process.

Should you have any questions or need any additional information, please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

Sincerely,

James Munkres
Archaeologist

627 Grandview, Pawhuska, OK 74056, (918) 287-5328, Fax (918) 287-5376

SEP 6 - 2017

QUAPAW TRIBE OF OKLAHOMA

P.O. Box 765
Quapaw, OK 74363-0765

(918) 542-1853
FAX (918) 542-4694

August 30, 2017

Raegan Ball, Program Development Team Leader
FHWA – Missouri Division
3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109

Re: MoDOT Job No. J9P3239, MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL

Dear Reagan,

The Quapaw Tribe Historic Preservation Office has received and reviewed the information provided for MoDOT Job No. J9P3239, MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d) (6) (A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Quapaw Tribe has vital interests in protecting its historic and ancestral cultural resources. Therefore, the Quapaw Tribe requests a copy of all SHPO correspondence received for the project listed as MoDOT Job No. J9P3239, MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL.

Should you have any questions or need any additional information, please feel free to contact me at the number listed below. Thank you for consulting with the Quapaw Tribe on this matter.

Sincerely,

Everett Bandy

Everett Bandy
Tribal Historic Preservation Officer
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363
(w) 918-239-3100

Absentee Shawnee Tribe of Oklahoma
Cultural/Tribal Historic Preservation Department
2025 S. Gordon Cooper Dr.
Shawnee, Oklahoma 74801
Phone: (405) 275-4030 ext 6340

August 31, 2017

Re: Government to Government Consultation
MO Route 51 Mississippi River Bridge, Perry County, MO and Randolph County, IL
Section 106 Consulting Party Invitation
MoDOT Job No. J9P3229

To Whom It May Concern:

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), and implementing regulation, 36 CFR 800, "Protection of Historic Properties" the Absentee Shawnee Tribal Historic Preservation Office is responding to your request for identifying properties of significance to our Tribe near the MO Route 51 bridge across the Mississippi River.

The Absentee Shawnee has historic ties within the area referenced in your letter of July 31, 2017. At this time, this office is unaware of properties of significance to inform you of that fall within the APE for this project.

There remains the possibility that unrecorded cultural resources, including archaeological artifacts or human remains, may be encountered during construction, demolition or earthmoving activities of this project. Should this occur, we require you contact this office in order that we may offer appropriate comments under 36 CFR 800.13. Email is the preferred method of communication.

Best Regards,

Erin Thompson
Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Oklahoma
2025 Gordon Cooper Drive
Shawnee, OK 74801
405.275.4030 ext. 6340
ethompson@astribe.com

FEB 2 4 2018

Osage Nation Historic Preservation Office

Date: **January 19, 2018** **File: 1718-920MO-10**

RE: **MoDOT Job No. J9P3239 MO Route 51 Mississippi River Bridge in Perry County, Missouri and Randolph County, Illinois**

Missouri Division, FHWA
Raegan Ball
3220 W. Edgewood, Suite H
Jefferson City, Missouri 65109

Dear Ms. Ball,

The Osage Nation has received notification and accompanying information for the proposed project listed as MoDOT Job No. J9P3239 MO Route 51 Mississippi River Bridge in Perry County, Missouri and Randolph County, Illinois. **The Osage Nation Historic Preservation Office requests a copy of the cultural resource survey report for review and comment.**

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation anticipates reviewing and commenting on the survey report for the proposed MoDOT Job No. J9P3239 MO Route 51 Mississippi River Bridge in Perry County, Missouri and Randolph County, Illinois.**

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

James Munkres
Archaeologist

627 Grandview * Pawhuska, OK 74056 Telephone 918-287-5328 * Fax 918-287-5376

Appendix K
23 CFR 650A Technical Memo

23CFR Section 650 Subpart A Technical Memorandum

23 Code of Federal Regulations (CFR) Section 650.111 (c) Location studies shall include discussion of the following items, commensurate with the significance of the risk or environmental impact, for all alternatives containing encroachments and for those actions which would support base floodplain development.

(1) The risks associated with implementation of the action are as follows:
The Chester Bridge Environmental Assessment (EA) is intended to develop a safe and reliable crossing of the Mississippi River at Chester Bridge and adjacent Horse Island Chute Bridge. These two bridges connect Route 51 in Missouri with Route 150 in Illinois. This improvement will eliminate the need for bridge closures during flooding events.

According to a review of current FEMA flood insurance rate maps, small portions of the study area are within Zone AE 100-year floodplain of the Mississippi River. ***EA Figure 3-8*** *includes the FEMA National Flood Hazard Layer showing the areas of impact to the floodplain.*

This is not considered significant floodplain encroachment and improvements will not support incompatible floodplain development. The project does not result in a significant potential for interruption or termination of this transportation facility, which is needed for emergency vehicles or a community's only evacuation route. It also does not result in a significant risk or potential for loss of life or property or substantial adverse impact on natural and beneficial floodplain values. This highway improvement project will maintain local and regional access to existing rural and agricultural areas, and surrounding communities throughout construction.

(2) The impacts on natural and beneficial floodplain values:
Natural and beneficial floodplain values include, but are not limited to, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, forestry, natural moderation of floods, water quality maintenance, and groundwater.

There are no significant encroachments associated with this project and the proposed work will not impact the natural and beneficial floodplain values. A Finding of No Significant Impact is anticipated.

(3) The support of probable incompatible floodplain development:
As defined by the Federal Highway Administration (FHWA), the support of incompatible base floodplain development will encourage, allow, serve, or otherwise facilitate incompatible base floodplain development, such as commercial development or urban growth.

On the Illinois side of the Mississippi River crossing, the proposed improvements in the floodplain are limited to bridge piers/abutments. On the Missouri side of Mississippi River crossing and the approaches to the Horse Island Chute Bridge, land use is limited to agricultural purposes. Proposed alterations will be solely for the roadway embankment on the bridge approaches and embankment between the two bridges. The characteristics of the area surrounding the roadway and bridge improvements and the roadway access will be unchanged and subject to the same flooding events and inherent challenges for other land uses that would support incompatible base floodplain development.

(4) The measures to minimize floodplain impacts associated with the action:
MoDOT will obtain a floodplain development permit from the Missouri State Emergency Management Agency prior to FHWA authorization for construction.

MoDOT will ensure sediment and erosion control best management practices are implemented during construction and disturbed areas are seeded following construction for restoring and preserving natural and beneficial floodplain values.

(5) The measures to restore and preserve the natural and beneficial floodplain values impacted by the action:
There will be limited impacts to the natural and beneficial floodplain values of the floodplains along this project corridor. Because there will be temporary soil disturbance during construction activities, sediment and erosion control best management practices will be used during construction and disturbed areas will be seeded following construction.

(6) 23 CFR Section 650.111 (d) Location studies shall include evaluation and discussion of the practicability of alternatives to any significant encroachments or any support of incompatible floodplain development.

As defined in 23 CFR 650.105, a significant encroachment involves a significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route, a significant risk meaning potential for loss of life or property, or a significant adverse impact on natural and beneficial floodplain values.

Based on the project's Purpose and Need, logical termini, study area, and Reasonable Alternatives, a Preferred Alternative emerged. This alternative, the Near Upstream Conceptual Alternative (U-1), best addresses the identified Purpose and Need of the project, connects at the logical termini, and once completed is expected to be nearly indistinguishable from the existing crossing in alignment.

For both bridges, the bridge typical section is assumed to be 40 to 44 feet wide, with two 12-foot travel lanes and 8- to 10-foot shoulders. A 16.5-foot vertical clearance is assumed to allow for oversized loads and large farm equipment to cross the river without stopping traffic and provide room to maneuver during emergencies or to remove disabled vehicles from the travel lanes. The shoulders would allow bicyclists and pedestrians to cross the bridge without using the vehicular travel lanes. The shoulders would also allow bridge inspections to occur with minimal traffic disruptions.

The roadway typical sections are specified to be match the bridge sections (40 to 44 feet wide, with two 12-foot travel lanes and 8- to 10-foot shoulders). Recently, the functional classification of Route 51 was changed from minor arterial to principal arterial, from Perryville to the Missouri/Illinois state line. The design speed and posted speed will be 45 miles per hour. Existing intersections and turns will be maintained in their current or similar configurations. Direct access to the roadways for individual driveways will be maintained, to the extent possible, and no additional access is anticipated.

***EA Figure 2-14** in the EA depicts the Preferred Alternative. The following important elements are be carried forward with the Preferred Alternative:*

- *The Preferred Alternative satisfies all (100 percent) of the Purpose and Need performance measures.*
- *Based on the cost estimate conducted on the Conceptual Alternatives, Alternative U-1 (the Preferred Alternative) was the lowest-cost alternative.*
- *The Preferred Alternative can achieve the U.S. Coast Guard's minimum horizontal clearance of 800 feet for the main navigation channel and a minimum of 500 feet for the auxiliary navigation channel.*

- *Since the demolition of the existing bridge could occur after a new bridge opens, it is possible that demolition could be timed to occur outside the busiest portion of navigation season.*
- *While the National Environmental Policy Act document will not select a bridge type, there are no obvious shortcomings relative to the bridge types seen as potentially suitable for the site. As a new build solution, a modern design that achieves hydraulic, seismic, traffic safety, and accessibility needs can be designed. The construction is expected to take 2 years.*
- *The Preferred Alternative would construct a new bridge immediately adjacent to the existing bridge, minimizing potential changes to the existing floodplain configuration. Regardless, an analysis of floodplain impacts and a no-rise certificate will be required. The gap in the Bois Brule Levee where the Horse Island Chute Bridge meets Route 51 can be eliminated.*

This project does not result in significant potential for interruption or termination of this transportation facility, which is needed for emergency vehicles or a community's only evacuation route. It also does not result in a significant risk or potential for loss of life or property. This project does not result in a substantial adverse impact on natural and beneficial floodplain values. This highway improvement project will maintain local and regional access to existing rural and agricultural areas, and will not support any incompatible floodplain development.
There are no significant encroachments as a result of this project, and it does not support incompatible floodplain development.

This project will not cause a greater risk within a floodplain that potentially impacts an adjacent structure.

Appendix L
Wetland Delineation Report

Jacobs

Legal Entity: CH2M Hill, Inc.

Chester Bridge Environmental Assessment
Perry County, Missouri (Route 51) and
Randolph County, Illinois (Route 150)

Aquatic Resources Delineation Report

Delineation Completed June 28, 2017
Report Last Updated August 2021

Missouri Department of Transportation

Project Number: J9P3239

Executive Summary

The Missouri Department of Transportation, in cooperation with the Federal Highway Administration and the Illinois Department of Transportation, is preparing a Location Study and Environmental Assessment for proposed improvements to the two Route 51 bridges at Chester, Illinois. The Chester Bridge is a continuous truss bridge across the Mississippi River. The Horse Island Chute Bridge is a steel stringer bridge over the Horse Island Chute. These two bridges connect Route 51 in Missouri with Route 150 in Illinois and form the only Mississippi River roadway crossing between St. Louis (approximately 57 river miles north) and Cape Girardeau (roughly 56 river miles south).

Three waterways form the foundations of the area's hydrology: the Mississippi River, the Old River channel of the Mississippi River, and the Horse Island Chute. The Mississippi River near Chester, Illinois, is roughly 1,800 feet wide. The total width of the Mississippi River floodplain throughout this reach can be as much as 5 miles and is dissected by various levee districts. Upstream of the Mississippi River is the Old River channel. The Old River channel surrounds Kaskaskia Island. Its floodway is confined between the northwestern edge of the Bois Brule Levee and the southeastern edge of the Kaskaskia Levee. The Horse Island Chute splits from the Old River channel approximately 3,000 feet upstream from the mouth of the Old River channel (approximately 3,000 feet upstream from the Missouri State Highway 51 Bridge over the Mississippi River) and flows into the Mississippi River approximately 1,400 feet downstream from the Chester Bridge.

Approximately 40 acres of wetlands were identified within the Reasonable Alternative study area shown on **Figure 3**. Most of these wetland sites are floodplain wetlands associated with the original Mississippi River channel and the Horse Island Chute. Using the impact footprints for the Reasonable Alternatives, the expected wetland impacts are estimated to be 3.2 acres for U-1 and 4.8 acres for U-2. The couplet alternative (R-2) will have a variable impact depending on the couplet bridge configuration. The Preferred Alternative is estimated to impact 3.2 acres of wetlands.

One open-water feature was identified within the survey area, a pondlike feature that encompasses 0.8 acre. It is likely the remnant of a borrow pit. It is unclear why it was excavated.

This report describes delineated resources, provides an aquatic resource delineation map, and presents representative site photographs. The delineation results and conclusions presented in this report are considered preliminary, pending verification by the U.S. Army Corps of Engineers Regulatory Branch.

Contents

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Acronyms and Abbreviations

EA	Environmental Assessment
NRCS	Natural Resources Conservation Service
OHWM	ordinary high water mark
PCR	Perry County Road
PEM	palustrine emergent persistent
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

1. Introduction

The Missouri Department of Transportation, in cooperation with the Federal Highway Administration and the Illinois Department of Transportation, is preparing a Location Study and Environmental Assessment (EA) for proposed improvements to the two Route 51 bridges at Chester, Illinois. The Chester Bridge is a continuous truss bridge across the Mississippi River. The Horse Island Chute Bridge is a steel stringer bridge over the Horse Island Chute. These two bridges connect Route 51 in Missouri with Route 150 in Illinois and form the only Mississippi River roadway crossing between St. Louis (approximately 57 river miles north) and Cape Girardeau (roughly 56 river miles south). The nearest population centers are Chester in Randolph County, Illinois, and Perryville in Perry County, Missouri. Chester is located on the bluff immediately adjacent to the bridge. Perryville is located roughly 11 miles south of the bridge along Route 51. The approximate latitude and longitude of the existing bridge is 37°54'09" N, 89°50'13" W (degrees, minutes, seconds). The Chester Bridge was opened in 1942 as a toll bridge. Tolls were removed in 1989.

This report identifies and describes aquatic resources within the survey boundary in support of Clean Water Act Sections 401 and 404 permitting. This report facilitates the following efforts:

1) Avoiding or minimizing impacts to aquatic resources during the design process
2) Documenting aquatic resource survey boundary determinations for review by regulatory authorities
3) Providing early indications of known sensitive species

The delineation results and conclusions presented in this report are considered preliminary, pending verification by the U.S. Army Corps of Engineers (USACE) Regulatory Branch.

2. Location

The study area for the Chester Bridge EA includes portions of Missouri and Illinois. The regional location of the study area is shown on **Figure 1**. The major elements of the study area are shown on **Figure 2** and are discussed in this section. **Figure 3** depicts the footprints of the physical area required to construct the Reasonable Alternatives, including anticipated right-of-way and temporary and permanent easements, and accounting for the width of the proposed roadway, embankments, stormwater drainage and conveyance, and roadway connections. It is within this area that the wetland delineation was conducted.

The Chester Bridge is located at river mile 110 of the upper branch of the Mississippi River (110 miles upstream of the confluence with the Ohio River). The Mississippi River is roughly 1,800 feet wide in this area. Over time, the path of the Mississippi River has changed. In 1844, the channel straightened, which created Kaskaskia Island (**Figure 2**). The Old River channel still exists and forms the official boundary between Illinois and Missouri. The Old River channel branches near the bridge to create Horse Island. The Route 51 approach to the Chester Bridge traverses Horse Island with a separate bridge crossing the Horse Island Chute. The road rests on an embankment between the bridges.

In Missouri, the earthen Bois Brule Levee parallels the river in this area. Gravel roads run along the top of the levee. Behind the levee, the land is flat and fertile and is used for agriculture. Within the Chester Bridge Study Area, Route 51 is a two-lane road with minimal shoulders. It is the only paved road in the immediate vicinity of the Chester Bridge; the other roads are narrow gravel farm roads. Two gas stations exist at the intersection of Route 51 and Perry County Roads (PCR) 239 and 944. A few isolated farmsteads are on this side of the river. The largest development is at the Perryville

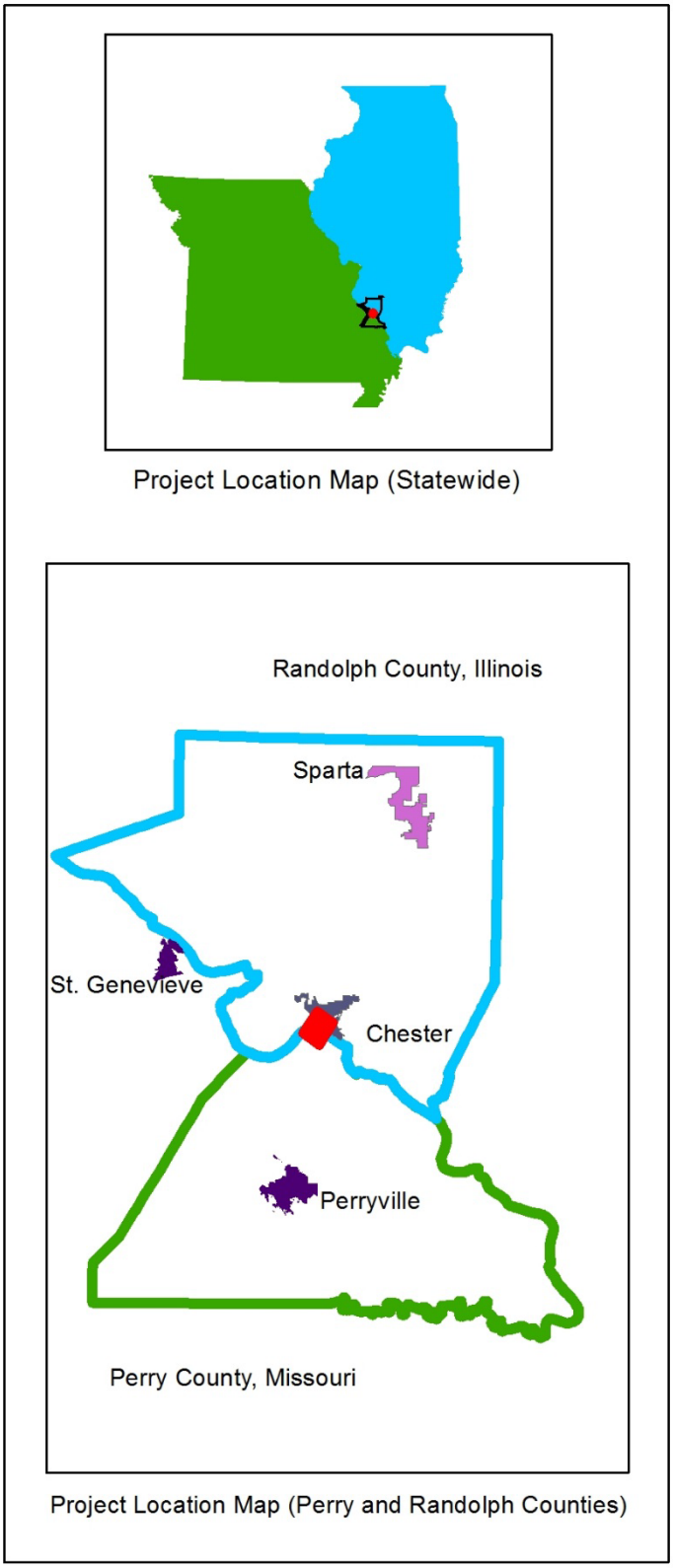


Figure 1. Vicinity Maps

Airport located at 1856 Highway H. This regional airport was originally built by the U.S. government as a training facility in the early 1940s. The airport was deeded to the City of Perryville in 1947. The airport has a 7,000-foot by 100-foot concrete runway equipped with medium-intensity runway lights, which allow for use by numerous kinds of aircraft, including jets. Fixed base operators include Sabreliner Aviation and CertiFLY Aviation Parts, which are engaged in modifications and overhauls to both civilian and military aircraft. The City of Perryville is located approximately 9 miles from the airport. Perryville (population 8,394) is the county seat of Perry County.

In Illinois, a steep bluff rises approximately 100 feet from the river to the City of Chester (population 8,586). Immediately off the bridge is the Chester Welcome Center and Segar Memorial Park on IL Route 150. Chester is known as the home of comic book hero Popeye, and his statue is a highlight of the Welcome Center. A Union Pacific Railroad line parallels the river below the bluff and passes underneath the bridge. IL Route 6 also parallels the river and railroad. Northwest of the bridge on Route 6 is the Menard Correctional Center, a maximum-security state penitentiary. Land uses southeast of the existing bridge include a Chester water treatment facility, a riverboat pier, residences, and recreational facilities. Two main routes traverse Chester: IL Route 3, parallel to the river, and IL Route 150, perpendicular to the river. To remove heavy truck traffic from downtown Chester, a truck bypass was developed. South of the city, the truck bypass follows the riverfront road until arriving at the Chester Bridge. From there, trucks traverse a short spur to IL Route 150, back to IL Route 3, north of the city center.

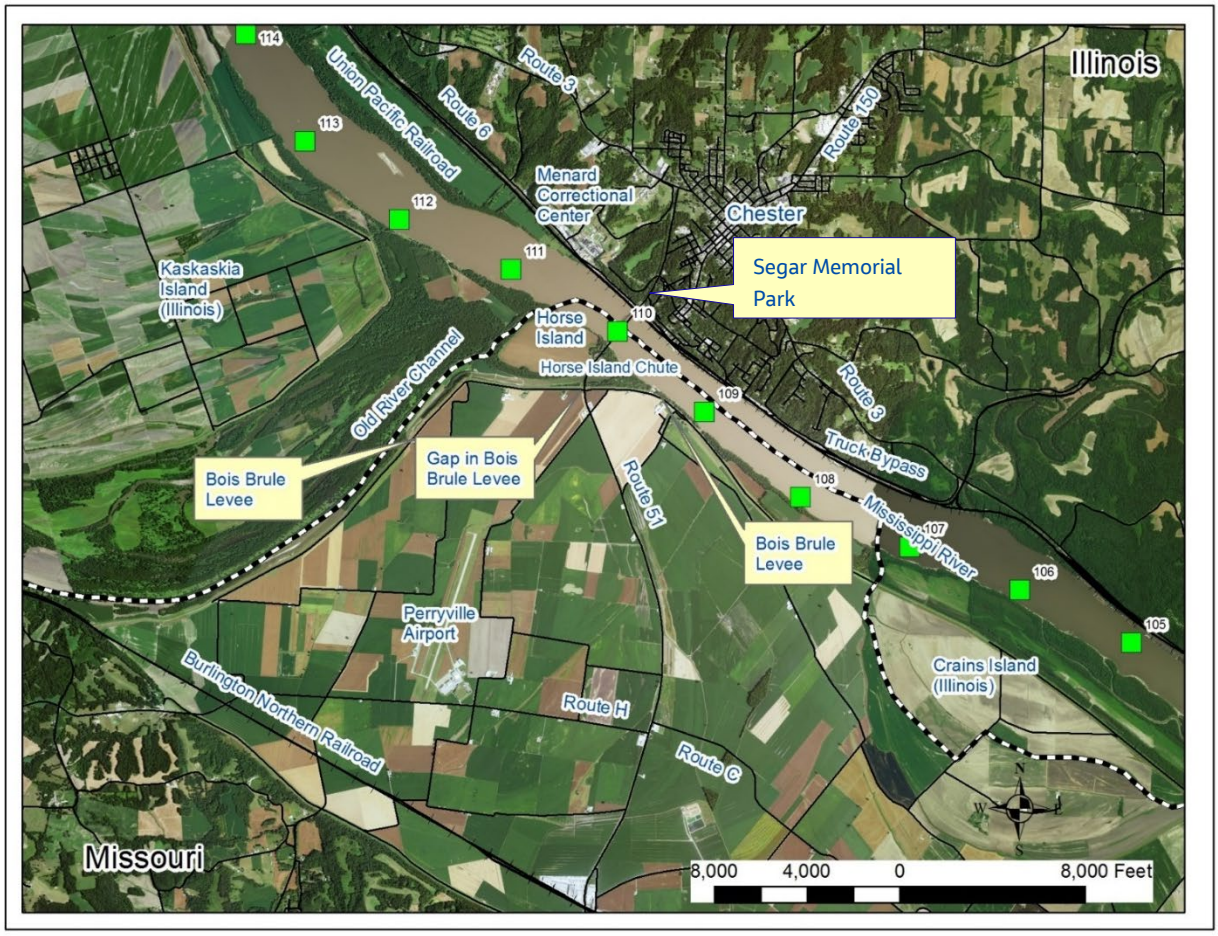


Figure 2. Chester Bridge EA Study Area

2.1 Reasonable Alternatives/Wetland Delineation Study Area

This section presents the Reasonable Alternatives emerging from the conceptual alternative evaluation. This allowed for the establishment of preliminary study footprints and, in turn, for detailed impact assessments, cost estimates, and traffic evaluations.

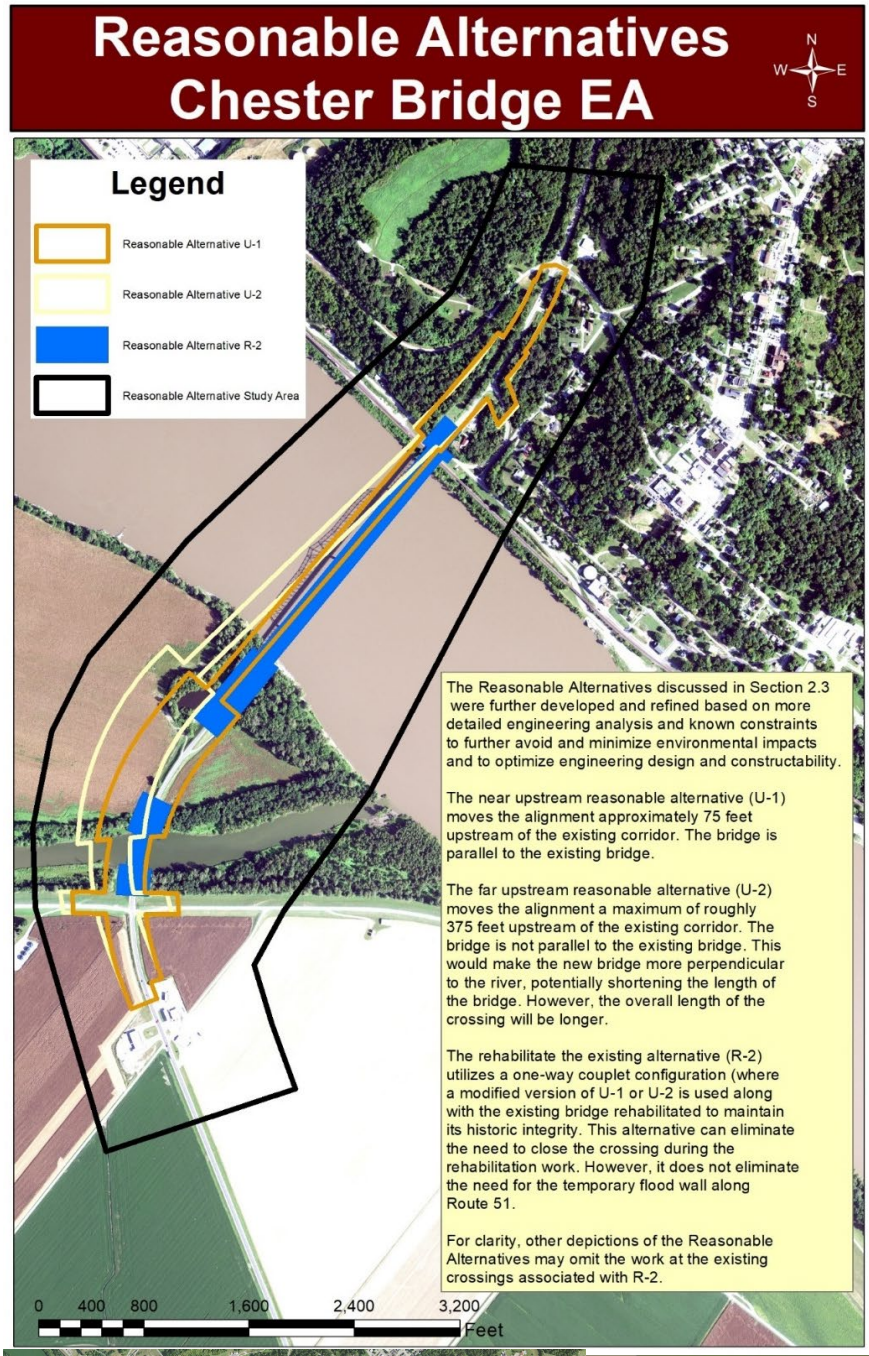
Reasonable Alternative U-1 (Near Upstream Conceptual Alternative) was refined to enhance constructability of the roadway embankment adjacent to the existing roadway approaching the Chester Bridge on the Missouri side of the river. Shifting the alignment approximately 75 feet farther upstream ensures that that the existing roadway could remain operational during construction of the new embankment and roadway while avoiding the need for any temporary shoring. Other minor refinements simplify the proposed roadway curvature as it ties into the existing roadway west of Taylor Street in Illinois and complete connections for intersecting roadways at PCR 946/238 in Missouri and Randolph Street in Illinois.

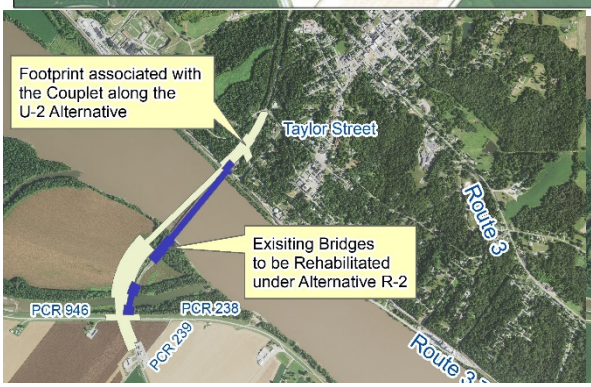
Reasonable Alternative U-2 (Far Upstream Conceptual Alternative) was refined minimally to simplify the curvature of the proposed roadway as it ties into the existing Route 150 west of Taylor Street in Illinois and to complete connections to the proposed roadway at PCR 946/238 in Missouri and Randolph Street in Illinois.

The Rehabilitate the Existing and Upstream Couplet Alternative (R-2) uses a one-way couplet configuration (in which a modified version of U-1 or U-2 is used, along with the existing Mississippi River bridges being rehabilitated while maintaining their historic integrity). This alternative can eliminate the need to close the crossing during the rehabilitation work. However, it does not eliminate the need for the temporary flood wall along Route 51.

Figure 3 depicts the footprints of the modified configurations. The preliminary footprints were developed to determine the physical area required to construct the Reasonable Alternatives, including anticipated right-of-way and temporary and permanent easements, and accounting for the width of the proposed roadway, embankments, stormwater drainage and conveyance, and roadway connections. Using the alignments of the Reasonable Alternatives and a preliminary profile that is anticipated to meet the clearance requirements for likely bridge structure types, the roadway typical section, embankment slopes, and drainage features were used to define approximate construction limits. Based on these limits and a reasonable buffer width to accommodate further engineering refinements, future design, and eventual construction, a preliminary footprint was developed for each segment of the alternatives.

Figure 3 depicts the footprints of the physical area required to construct the Reasonable Alternatives, including anticipated right-of-way and temporary and permanent easements, and accounting for the width of the proposed roadway, embankments, stormwater drainage and conveyance, and roadway connections. It is within this area that the wetland delineation was conducted.





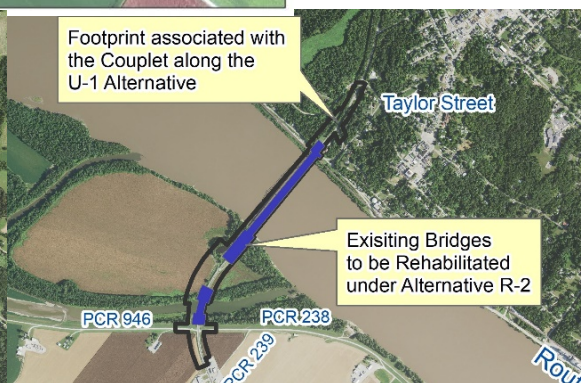


Figure 3. Reasonable Alternative Impact Footprints

3. Methods

A Jacobs scientist conducted an aquatic resources delineation on June 28, 2017. The following subsections describe the field sampling procedures and methods used to determine and map aquatic resources. Project-specific information reviewed during the desktop survey (pre–field investigation) and collected during, or produced from, the field survey is provided in the figures and appendices. The following figures and appendices are provided:

Figures

- Figure 1, Vicinity Maps
- Figure 2, Chester Bridge EA Study Area
- Figure 3, Reasonable Alternative Impact Footprints
- Figure 4, NWI Mapping
- Figure 5, Soils Mapping
- Figure 6, Wetland Delineation Map
- Figure 7, Wetland Delineation Detail

Appendices

- Appendix A, Photo Log
- Appendix B, Wetland Determination Data Forms and Data Point Location Map
- Appendix C, Stream Assessment Data Forms
- Appendix D, Open Water Data Forms

3.1 Desktop Survey

Jacobs conducted a desktop review of publicly available data pertaining to climate, vegetation, soils, hydrology, and existing wetlands before the field survey. Data sources included the following:

- U.S. Geological Survey (USGS) topographic maps (USGS 2021b)
- National Wetlands Inventory (USFWS 2021c) and National Hydrography Dataset maps (USGS 2021a). **Figure 4** contains the NWI mapping.
- Digital Flood Insurance Rate Maps (FEMA 2020)
- Regional and local precipitation records (USDA-NRCS 2021a)
- *Web Soil Survey* (USDA-NRCS 2021b). **Figure 5** contains the USDA soils mapping.

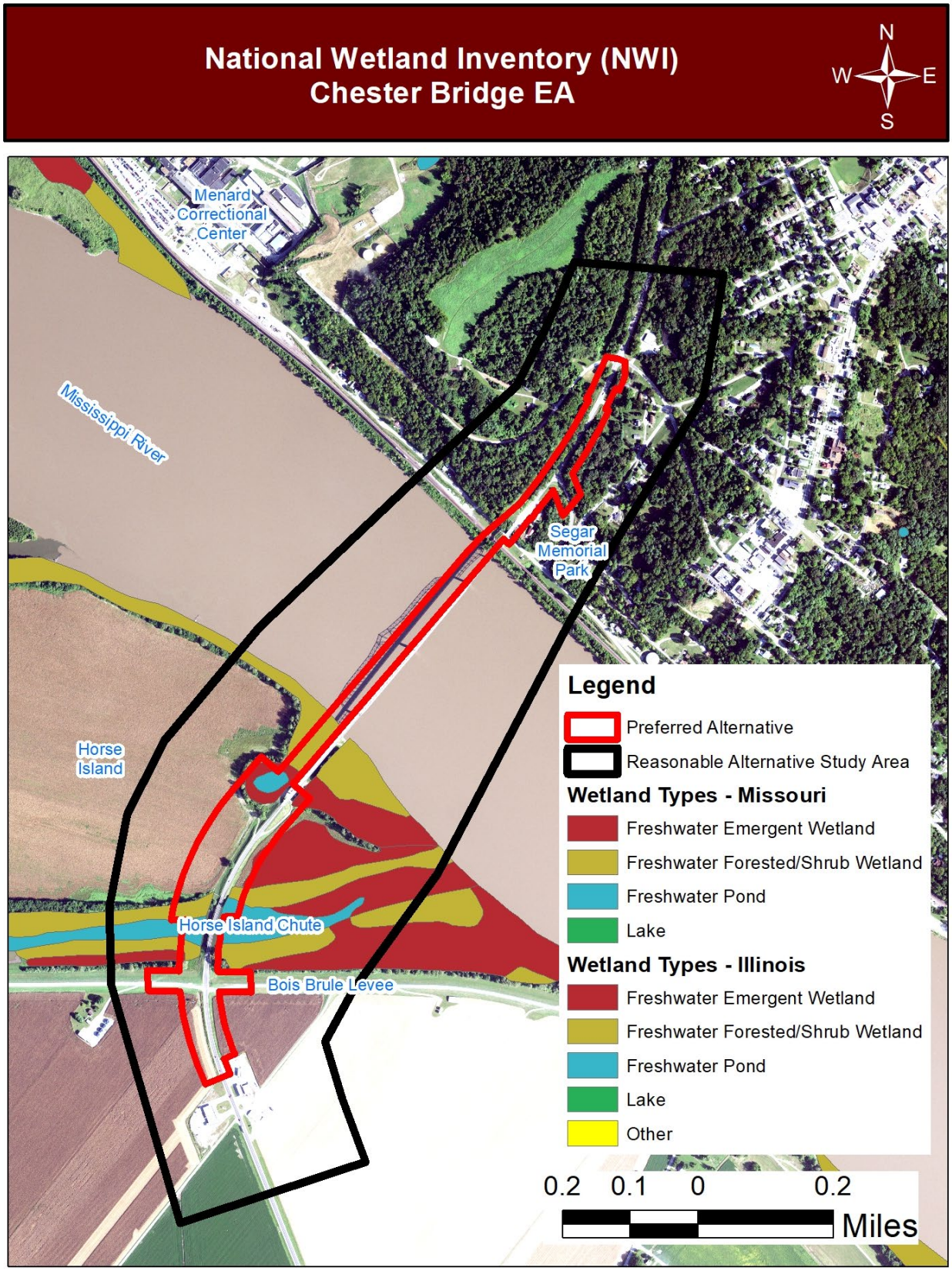


Figure 4. NWI Mapping

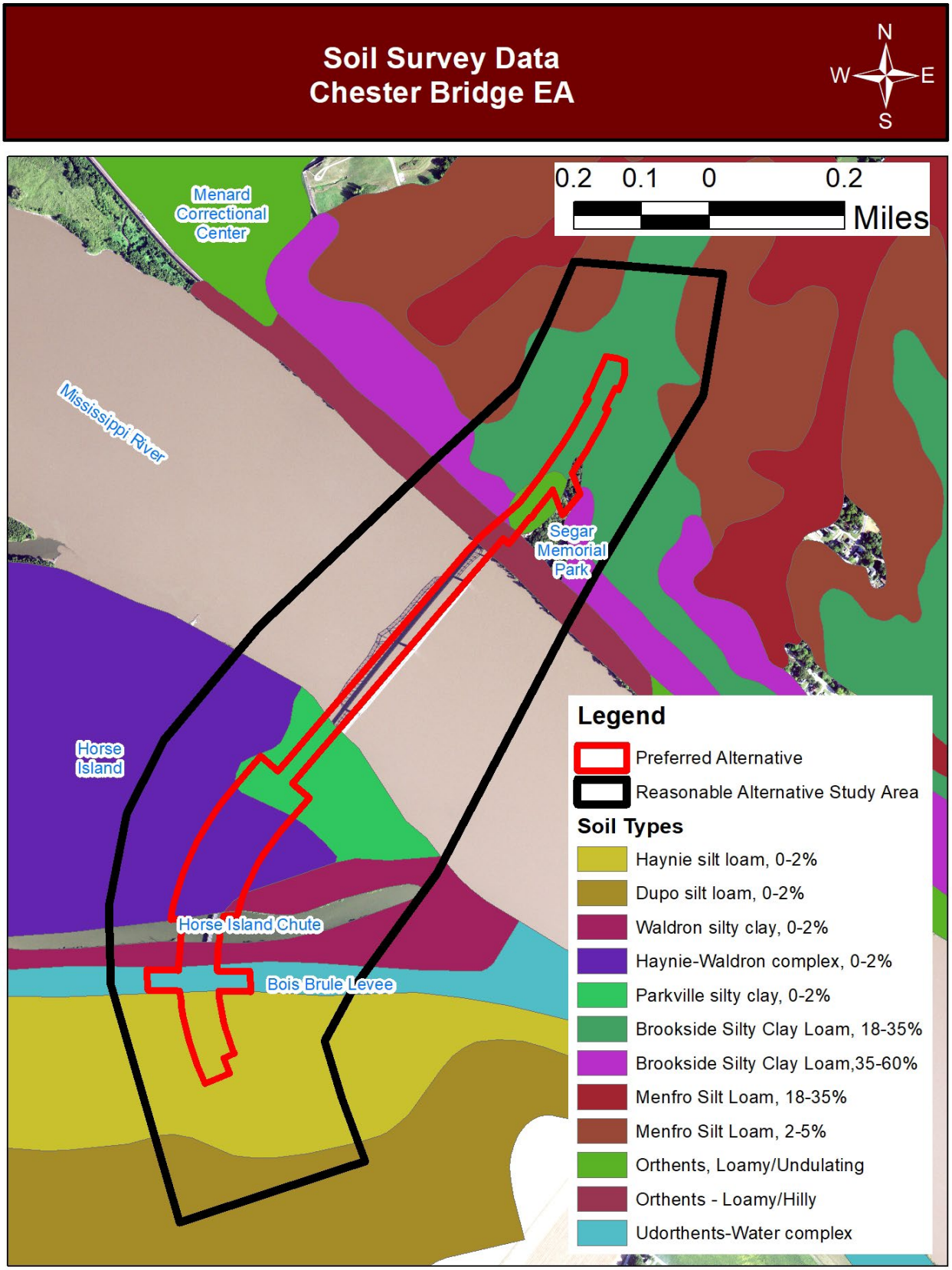


Figure 5. Soil Mapping

3.2 Field Survey

The survey method for identifying wetlands followed the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0 (USACE 2010). These methods use three criteria (vegetation, soils, and hydrology) to determine the presence of wetlands.

Wetland hydrology was determined from direct observation of soil saturation and inundation or other indicators.

At each sample point, plant species were identified, and percent cover was visually estimated and recorded. Dominant plant species included the most abundant species whose cumulative cover accounted for more than 50 percent of the total cover, as well as any one species that accounted for at least 20 percent of the total vegetative cover. Strata that contained less than 5 percent cover were not considered in the dominance test. The wetland indicator status for plant species was determined using the National Wetland Plant List (Lichvar et al. 2018).

Soil characterization was determined from direct observation of soils between 0 and 20 inches below ground surface.

Onsite photographs and wetland determination data forms/data point location map can be seen in **Appendices A** and **B**, respectively.

Within nontidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction is defined by the ordinary high water mark (OHWM). In 33 *Code of Federal Regulations* 328.3, the OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter and debris" (Environmental Laboratory 1987). Generally, the USACE considers the OHWM to be the elevation to which water flows at a 2-year frequency (for example, 50 years out of 100 years). Typically, the OHWM is indicated by the presence of a defined streambed with bank shelving, but may also include flow lines; sediment deposition or scour; and mineral staining, salt deposits, or deep or surficial cracking.

Any delineation of nontidal stream boundaries identified is consistent with OHWM Regulatory Guidance Letter No. 05-05 (USACE 2005).

Within the survey boundary, the OHWM indicators were identified and mapped in the field. The OHWM indicators were recorded, and the average width and depth of the OHWM channels were documented. Measured field data were compared with aerial photographs to refine and adjust the OHWM boundaries. Stream data forms are provided in **Appendix C**. Open water data forms are provided in **Appendix D**.

4. Existing Conditions and Results

4.1 Vegetation and Land Use

The survey area is located in the River Hills of the Interior River Valleys and Hills ecoregion of Missouri (Chapman 2002). The ecoregion is typified by bluffs, valleys, and low hills. Primary land uses include cropland, pastureland, woodlands, livestock areas, and urban areas. Vegetation typically includes white oak–black oak woodlands (*Quercus alba* and *Quercus velutina*), white oak woodlands, and sugar maple–oak forests (*Acer saccharum* and *Quercus spp.*).

The U.S. Federal Geographic Data Committee's Vegetation Subcommittee created the National Vegetation Classification Standard in 1997. The overall purpose of the National Vegetation Classification Standard is to support the development and use of a consistent national vegetation classification in order to produce uniform statistics about vegetation resources across the nation. Using this framework, the following habitats were established:

- Agriculture—Mostly located in Missouri, this is all cultivated fields, including the transitional or fallow fields on Horse Island. The more fallow areas include moist soil grasses (for example, reed canary grass, rice cut-grass) with inclusions of mixed emergents and/or forbs (flowering plants).
- Developed—These areas are predominantly artificial in nature (for example, urban areas, large farmsteads, industrial complexes, and roadways). These areas include common mixed grasses, forbs, and/or shrubs along the roadway and bridge embankments.
- Floodplain Forest—This type of forest consists predominantly of silver maple, ash, cottonwood, black willow, elm, box elder, and river birch. They are located intermittently along the waterways. Composition varies with dominant areas of willows or cottonwoods.
- Levee Grasses—The Bois Brule Levee is covered with common mixed grasses and/or forbs.
- Open Water—This habitat includes nonvegetated river channels, chutes, and ponds.
- Sand Bar—This habitat includes transient assemblages found near the main channel.
- Upland Forest—Located on the steep bluff in Illinois, this assemblage is associated with dry soils and typical upland trees, such as red and white oaks, hickories, and elm.

In Missouri, the largest single land use in the study area is in active agricultural production. Typical row crops, most recently soybean, are dominant. The farm infrastructure is largely outside the study area. No displacements of barns or other farm infrastructure are proposed. Access to these areas is via the existing gravel county routes. A narrow band of mature woodlands extends along the Mississippi River and the Horse Island Chute. This band varies in width and is mostly wetlands consisting of a typical assemblage of hardwoods. There are also small amounts emergent wetland (edge areas that cannot be routinely cultivated). The Missouri portion of the study area is located in the Mississippi River floodplain.

In the Illinois portion of the study area, woodlands are interspersed with residential and commercial developments. A small amount of farmland is also present. The woodlands are located on a steep bluff. These woodlands are mature, unmanaged, and deciduous.

Within the footprints of the Reasonable and Preferred Alternative, the terrestrial habitat types are roughly equivalent. There are no meaningful differences among the Reasonable Alternatives and the Preferred Alternative with regard to National Vegetation Classifications.

4.2 Soils

The geotechnical data available for the Chester Bridge EA is summarized from an assessment conducted by the Illinois State Geological Survey and data from the Missouri Department of Natural Resources and the Natural Resources Conservation Service (NRCS).

In Illinois, the study area is composed primarily of bluffs 200 to 350 feet above the alluvial valley. These bluffs are composed primarily of limestone of Mississippian geologic age with a thin covering of Pleistocene (Ice Age) loess. The total thickness of surficial deposits has been mapped as 25 to 50 feet of windblown silt of the Peoria and Roxana Silt, and loamy and sandy glacial deposits. The NRCS has classified the Darwin silty clay, 0 to 2 percent slopes, and the Fluvaquents, loamy, 0 to 2 percent slopes, as containing 33 to 100 percent hydric components. None of the other soils in the study area have been classified by NRCS as containing more than 33 percent hydric components. The NRCS has classified the following as nonprime farmland: the Menfro silt loam, 10 to 35 percent slopes; the Stookey silt loam, 35 to 70 percent slopes; the Brookside silty clay loam, 18 to 60 percent slopes; the Orthents, loamy and undulating; the Darwin silty clay, 0 to 2 percent slopes; and the Fluvaquents, loamy, 0 to 2 percent slopes.

In Missouri, the study area (including the Mississippi River) is resting on glacial drift, which fills the bedrock valley of the river to a depth of 100 to 130 feet. A typical cross section of the valley fills consists of a surface layer of sand, silts, or silty clay, which are recent river deposits; a thick layer of fine to medium sands of glacial age; a bottom layer of boulders, cobbles, and gravels of glacial age; and Mississippian-age bedrock. The topography of the area of a series of low (5 to 15 feet relative relief) ridges and swales. The ridges, composed of silts and sands, are old natural levees, sandbars, and islands, whereas the swales are old water courses, such as sloughs and chutes that may be filled with water, or are marshes or low areas filled with silts and silty clays.

4.3 Hydrology

In Illinois, surficial drainage is toward the southwest, in the direction of the Mississippi River. However, because parts of the study area are urbanized, and storm drains and sewers are present, most surficial runoff is controlled by the storm sewer system; such systems typically follow natural drainage patterns. Groundwater flow is believed to generally mimic local topography.

In Missouri, surficial drainage is also toward the Mississippi River. Groundwater in the study area is generally near the top of the sands and gravels that underlie the modern fine-grained soils. The groundwater surface may be closely correlated with the levels of the river because of the proximity of the river channel.

The following three waterways form the foundations of the area's hydrology:

- Mississippi River
- Old River channel (of the Mississippi River)
- Horse Island Chute

The Mississippi River near Chester, Illinois, is roughly 1,800 feet wide. The total width of the Mississippi River floodplain throughout this reach can be as much as 5 miles and is dissected by various levee districts. Upstream from the study reach, the Mississippi River is isolated from the Old River channel by Kaskaskia Island. The Old River channel floodway is confined between the northwestern edge of the Bois Brule Levee and the southeastern edge of the Kaskaskia Levee. The drainage area for the Mississippi River upstream of USGS stream gauge station 07020500 is approximately 708,600 square miles.

Upstream of the Mississippi River is the Old River channel. The Old River channel surrounds Kaskaskia Island. Its floodway is confined between the northwestern edge of the Bois Brule Levee and the southeastern edge of the Kaskaskia Levee. The village of Kaskaskia is located on the west side of the Mississippi River, just upriver of Chester. Kaskaskia was a commercial and transportation hub in the 1800s; in fact, it was the first capital of Illinois until 1820. The Mississippi River shifted course to the east side of Kaskaskia in the middle and late 1800s, and as a result, the village is now located on the west side of the Mississippi River. But because the state line follows the historical path of the Mississippi River, Kaskaskia remains a part of the State of Illinois.

The Horse Island Chute splits from the Old River channel approximately 3,000 feet upstream from the mouth of the Old River channel (approximately 3,000 feet upstream from the Missouri State Highway 51 Bridge over the Mississippi River) and flows into the Mississippi River approximately 1,400 feet downstream from the Chester Bridge. Horse Island is bounded by the Mississippi River on the northeast, the Old River channel on the northwest, and the Horse Island Chute on the south. Near the point where the Horse Island Chute separates from the Old River channel, the Bois Brule Levee trends toward the east, parallel to the Horse Island Chute, and approaches the southern bank of the Mississippi River. The Bois Brule Levee then turns toward the southeast and essentially follows the southern bank of the Mississippi River for several miles. The Bois Brule Levee creates a construction on the floodplain of the Mississippi River that narrows to a minimum width of 2,230 feet approximately 3,500 feet downstream of the Chester Bridge. During the Great Flood of 1993, the Bois Brule Levee was not overtopped in the study reach; thus, the study reach was constrained between the Bois Brule Levee on the Missouri side and the railroad embankment along the toe of the bluffs on the Illinois side.

5. Results

Three wetlands, three watercourses, and one open-water feature were identified during the field evaluation conducted June 28, 2017. Each aquatic resource is described in the following subsections and summarized in **Tables 1, 2,** and **3**. An aquatic resource delineation map is included as **Figure 6**. Corresponding photographs are included in **Appendix A**. Wetland determination data forms/data point location map, stream assessment data forms, and open waters data forms are included in **Appendices B, C,** and **D**, respectively.

5.1 Wetlands

Initial wetland investigations began with a review of county soil survey maps and National Wetland Inventory maps to determine the locations of potential wetland sites. The study area was then surveyed to determine the presence of plant species, soil type, and presence of water at or near the surface. Areas that met these conditions are considered wetlands and were mapped on aerial photographs. Methodologies used follow protocols outlined in the Regional Supplement to the *Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010) and the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987).

Approximately 40 acres of wetlands were identified within the Reasonable Alternative study area shown on **Figure 3**. Most of these wetland sites are floodplain wetlands associated with the original Mississippi River channel and the Horse Island Chute.

The use of the Upstream Alternatives (U-1 and U-2) minimizes wetland impacts as nearly all of Horse Island south (downstream) of the existing bridge is wetlands. Upstream of the existing bridge, the wetland/upland boundary is concentrated along the periphery of the island forming a relatively narrow rim of wetlands. The sampling plan memorialized in **Appendix B** is concentrated on low-lying edges of the Horse Island, along the wetland/upland border. The balance of the island is at higher elevations and maintained in row crop production. While mapped as a hydric soil (**Figure 5** - Haynie-Waldron complex) it is more accurately depicted as non-wetlands in the NWI mapping (**Figure 4**). In fact, the balance of the island should be considered “Prior converted cropland" without important wetland values. “

Using the impact footprints for the Reasonable Alternatives, the expected wetland impacts are estimated to be 3.2 acres for U-1 and 4.8 acres for U-2. The couplet alternative (R-2) will have a variable impact depending on the couplet bridge configuration. Because R-2 uses a one-way couplet configuration (in which a modified version of Alternative U-1 or U-2 is used, along with the existing Mississippi River crossing being rehabilitated while maintaining its historic integrity), encroachments will depend on the couplet used (U-1 or U-2) and the equipment and supply staging areas needed outside the existing right-of-way for work items such as equipment and supply staging. It is expected that these latter impacts will be accomplished through temporary construction easements rather than permanent takings.

The impacts will also depend on the extent of the use of piers versus fill material used in the final design and configuration. The impacts will be primarily to floodplain forested wetlands. All of the alternatives are expected to require the filling of the small open-water pond near the existing bridge.

The Preferred Alternative is estimated to impact 3.2 acres of wetlands (**Figure 7**).

Table 1. Delineated Wetlands

Cowardin Classification[a]	Acreage within Reasonable Alternatives	Acreage within Preferred Alternative
Palustrine Emergent (PEM)	0.5	0.4
Palustrine Forested (PFO1)	4.3	2.8
TOTAL	4.8	3.2

[a] Cowardin et al. (1979)

The following are descriptions for each wetland identified within the survey area. Wetland photographs are included in **Appendix A**.

Palustrine emergent persistent (PEM) wetlands occur primarily within the edges between farmlands and woodlands. Dominant vegetation observed within the sample plots included reed canary grass (*Phalaris arundinacea*) and giant goldenrod in the herb stratum and met the dominance test and prevalence index indicators of hydrophytic vegetation. The soil profile with the sample plots consisted of 10YR 4/2 silt loam with 5 percent abundance of 10YR 5/6 concentrations in the matrix from 0 to 18 inches. Gravel layers greater than 8 inches below the ground surface were observed in some sample plots. The soil profiles within the sample plot meet the hydric soil indicator of depleted matrix (F3). Hydrology indicators included geomorphic position (D2) and the FAC-neutral test (D5).

Palustrine forested (PFO1) wetlands occur within the study area's woodlands. The dominant vegetation observed within the sample plot included peppermint (*Mentha x piperita*), giant goldenrod, and foxtail sedge (*Carex vulpinoidea*) in the herbaceous layer; green ash and silver maple in the sapling/shrub stratum; and sandbar willow, eastern cottonwood, and green ash in the tree stratum. The soil profile within the sample plot consisted of 10YR 4/1 silt loam with 10 percent abundance of 10YR 5/6 concentrations in the matrix from 1 to 15 inches, and 10YR 4/1 clay loam with 20 percent abundance of 10YR 5/6 concentrations in the matrix from 15 to 20 inches. The soil profile within the sample plot meets the hydric soil indicator of depleted matrix (F3). Hydrology indicators included geomorphic position (D2) and the FAC-neutral test (D5).

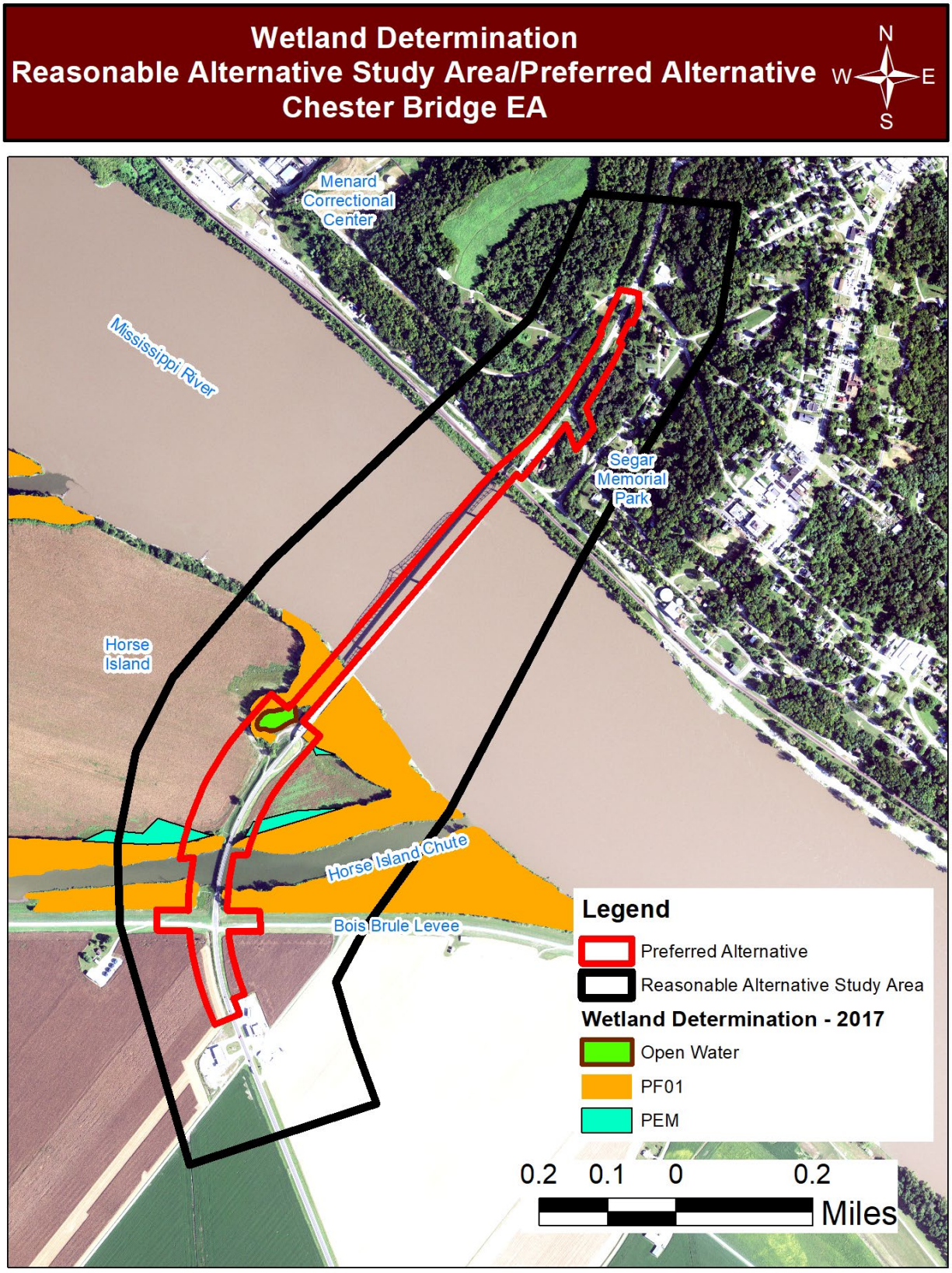


Figure 6. Wetland Delineation Map

Three watercourse features were identified within the survey area. These potentially jurisdictional features are summarized in **Table 2** and described in detail below.

Table 2. Delineated Watercourses

	Length within Survey Area (linear feet)	Length within Preferred Alternative (linear feet)	Jurisdictional Status
Mississippi River	1,700–2,200	175	TNW
Old River channel (of the Mississippi River)	0	0	TNW
Horse Island Chute	2,400	525	TNW

TNW = traditional navigable water

Descriptions of these watercourses are presented in **Section 4.3**. Watercourse photographs are included in **Appendix A**.

5.2 Open Waters

One open-water feature was identified within the survey area, a pondlike feature that encompasses 0.8 acres. It is likely the remnant of a borrow pit. It is unclear why it was excavated. It is summarized in **Table 3** and described in below.

Table 3. Delineated Open Waters

ID	Acreage within Survey Area	Acreage within Reasonable Alternatives	Acreage within Preferred Alternative
Borrow Pit 1	0.8	0.8	0.8

OW01 is an approximately 0.88-acre open-water feature. The average water depth and the substrate were not observed. Water was slightly turbid and blue to green in color at the time of the survey.

5.3 Uplands

Upland areas within the survey area include the existing maintained gravel access roads, historical overgrown access roads, historical river access areas, and historical farm levees. The upland communities are dominated by species including curly dock, giant goldenrod, common ragweed, thymeleaf sandwort (*Arenaria serpyllifolia*), and Canadian goldenrod. Soils in upland areas ranged from loam to clay loam and often included imported material such as gravel. Uplands observed lacked at least one of the three parameters necessary to indicate an area is a wetland.

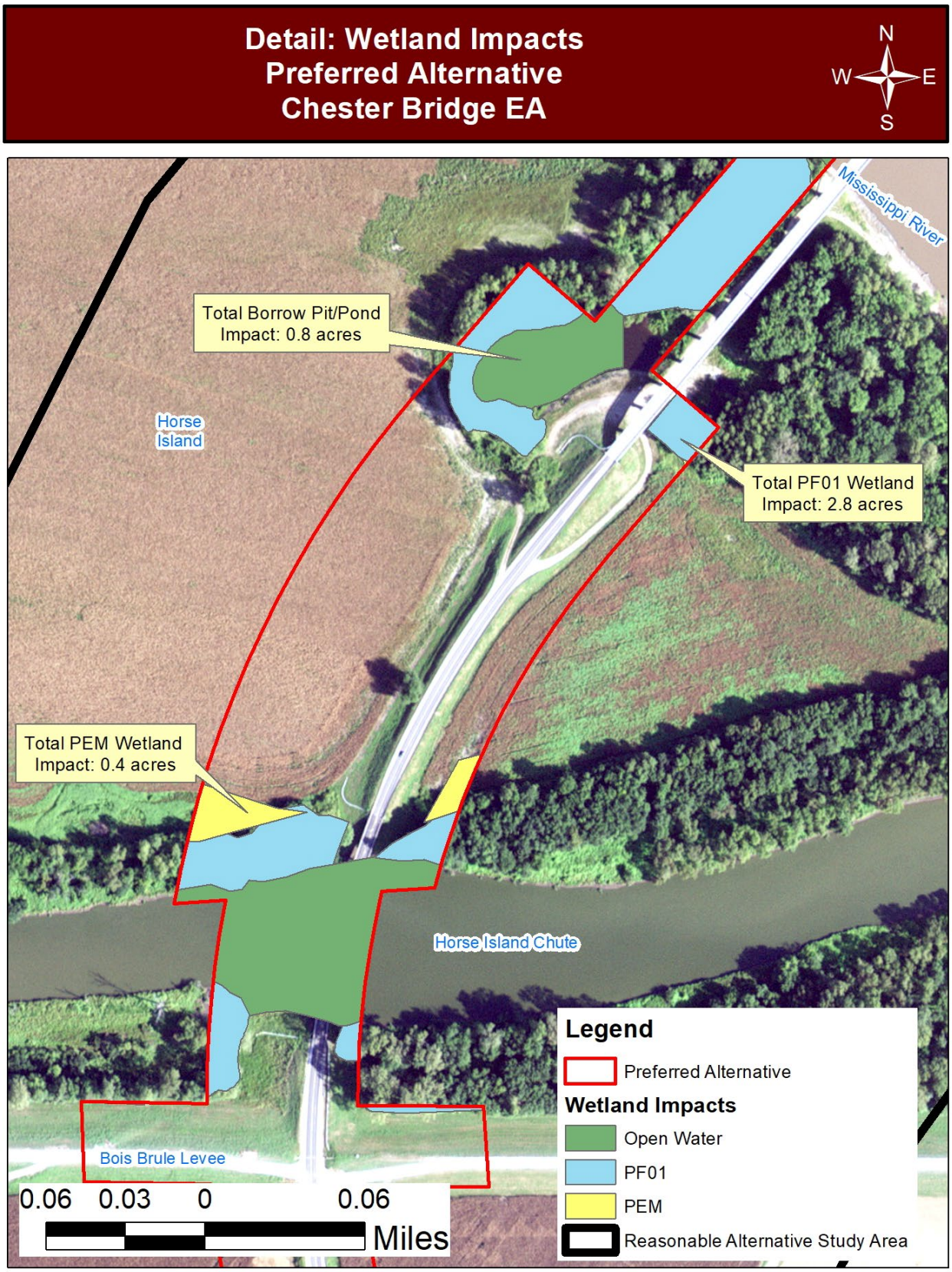


Figure 7. Wetland Delineation Detail

6. References

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Appendix A
Photo Log

Appendix A. Photo Log

Representative photograph of frequently flooded PF01, along Mississippi River.

Representative photograph of PFO1 boundary, along Mississippi River

Representative photograph of PEM, on Horse Chute Island.

Representative photograph of upland/PEM border, on Horse Chute Island.

Representative photograph of open water/borrow pond. Note the Chester Bridge pier in the foreground.

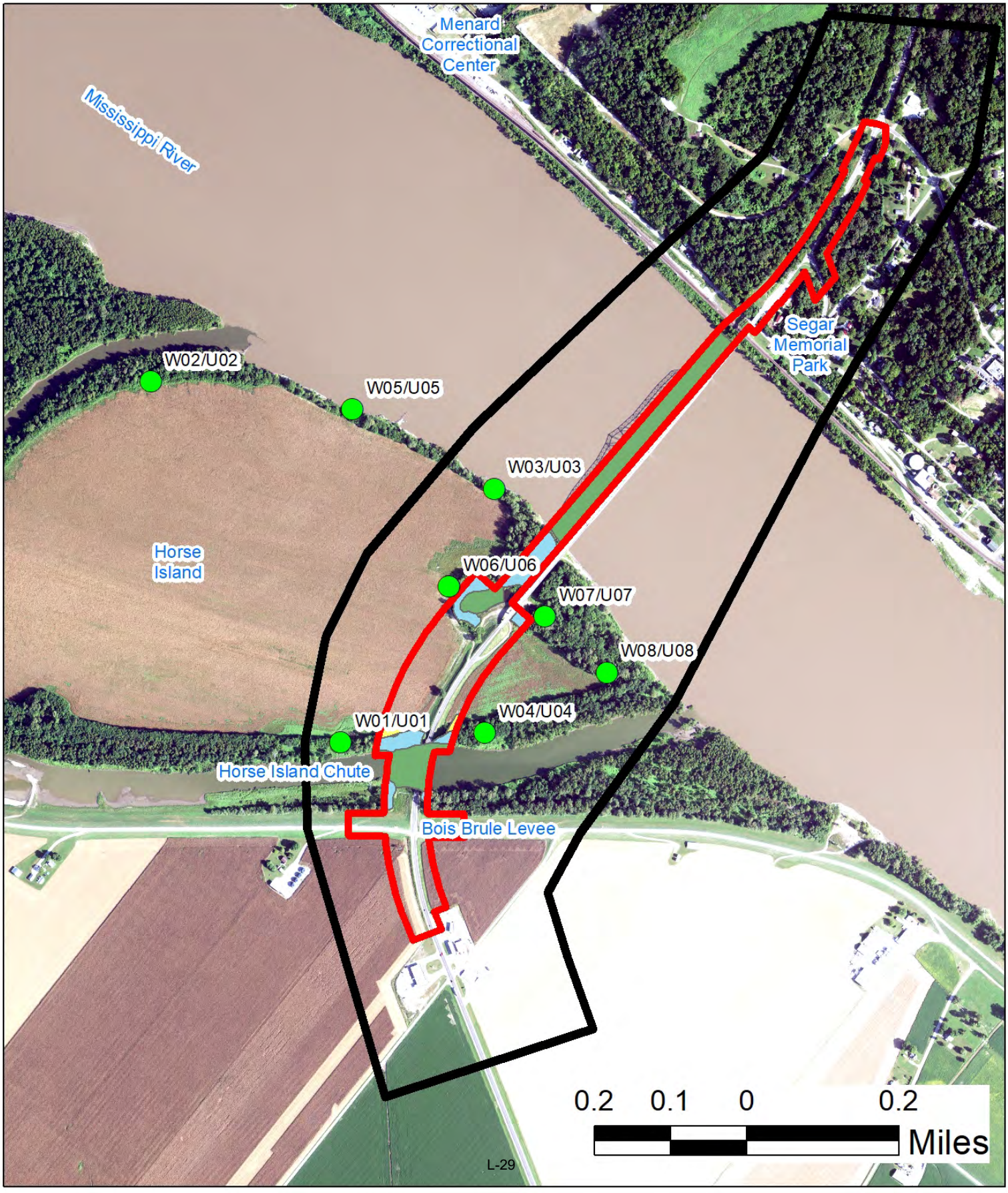
Representative photograph of Mississippi River, downstream of existing bridge.

Representative photograph of Horse Island Chute and existing bridge.

Representative photograph of Old River channel (of Mississippi River).

Appendix B
Wetland Determination Data Forms

Data Point Locations (Wetland/Upland)
Chester Bridge EA



WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: U01

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Backslope | Local relief (concave, convex, none): Convex

Slope (%): 2 | Lat: 37.90 | Long: -89.84 | Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sample plot lacks hydric soil and wetland hydrology field indicators. Therefore this area is upland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Solidago gigantea*	15	Yes	FACW
2. *Ambrosia artemisiifolia*	8	Yes	FACU
3. *Rumex crispus*	8	Yes	FAC
4. *Melilotus officinalis*	5	No	FACU
5. *Populus deltoides*	2	No	FAC
6. *Acer saccharinum*	2	No	FACW
7.			
8.			
9.			
10.			
	40	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	____	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	17	x 2 =	34
FAC species	10	x 3 =	30
FACU species	13	x 4 =	52
UPL species	0	x 5 =	0
Column Totals:	40 (A)		116 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: U01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 23	10YR 4/2	100					Clay Loam	Layer includes 50% gravel. Multiple obstructions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Soil profile does not meet any field indicators of hydric soil. Soil profile includes common/multiple gravel obstructions

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Evidence of wetland hydrology was not observed at the sample plot.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: U02

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Backslope | Local relief (concave, convex, none): Convex

Slope (%): 5 | Lat: 37.90 | Long: -89.84 | Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sample plot lacks hydric soil and wetland hydrology field indicators. Therefore this area is upland. Layer 2"+ deep includes 10YR 4/2 with 90% gravel. WETS analysis indicates climatic conditions are normal for time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Arenaria serpyllifolia*	10	Yes	FAC
2. *Taraxacum officinale*	5	Yes	FACU
3. *Plantago major*	5	Yes	FAC
4. *Acer saccharinum*	5	Yes	FACW
5. *Melilotus officinalis*	5	Yes	FACU
6.			
7.			
8.			
9.			
10.			
	30 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	30 (A)		95 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test indicator of hydrophytic vegetation.

SOIL

Sampling Point: U02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Layer 2"+ deep includes 10YR 4/2 with 90% gravel. Soil profile does not meet any field indicators of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ x Surface Soil Cracks (B6)
- ___ x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology was observed at the sample plot.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: U03

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): abandoned farmlands | Local relief (concave, convex, none): Convex

Slope (%): 1 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded | NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sample plot lacks hydrophytic vegetation and wetland hydrology field indicators. Therefore this area is upland. Soil layer 5"+ includes 10YR 4/2 clay loam with 10% 10YR 5/6 CM.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Solidago canadensis*	10	Yes	FACU
2. *Viola papilionacea*	5	Yes	FAC
3. *Senecio jacobaea*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	15 (A)		60 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: U03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 25	10YR 4/2	90	10YR 5/6	10	C	M	Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the F3 hydric soil indicator. Soil layer 5"+ includes 10YR 4/2 clay loam with 10% 10YR 5/6 concentrations in the matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology was not observed at the sample plot.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA City/County: Perry County Sampling Date: 4/27/2019

Applicant/Owner: MoDOT State: MO Sampling Point: U04

Investigator(s): Jacobs - Rob Miller Lead Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave

Slope (%): 1 Lat: 37.90 Long: - 89.84 Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sample plot lacks hydric soil and wetland hydrology field indicators. Therefore this area is upland. Soil profile at 3"+ includes 10YR 6/3. WETS analysis indicates climatic conditions are normal for time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Cirsium vulgare*	2	Yes	FACU
2. *Solidago gigantea*	2	Yes	FACW
3. *Populus deltoides*	2	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	6 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	2	x 3 =	6
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	6 (A)		18 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: U04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 23	10YR 6/3	100					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Soil profile at 3"+ includes 10YR 6/3 sand with 90% gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology at the sample plot included the D2 field indicator.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA City/County: Perry County Sampling Date: 4/27/2019

Applicant/Owner: MoDOT State: MO Sampling Point: U05

Investigator(s): Jacobs - Rob Miller Lead Section, Township, Range: N/A

Landform (hillside, terrace, etc.): transition to abandoned Ag land Local relief (concave, convex, none): Convex

Slope (%): 1 Lat: 37.90 Long: - 89.84 Datum: WGS84

Soil Map Unit Name: Parkville silty loam, 0 to 2 percent slopes, frequently flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Sample plot lacks hydrophytic vegetation and sufficient wetland hydrology field indicators. Therefore this area is upland. WETS analysis indicates climatic conditions are normal for time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: No vegetation was observed within the sample plot.

SOIL

Sampling Point: U05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 4/2	80	10YR 5/6	20	C	M	Sandy Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the S5 field indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

One secondary indicator of wetland hydrology was observed at the sample plot (D2). Sample plot lacks sufficient evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: U06

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain, backslope | Local relief (concave, convex, none): Concave

Slope (%): 3 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville silty loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No x**
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks: Hydric soils and wetland hydrology not present at the sample plot. Therefore this area is not a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	30	Yes	FACW
2. *Populus deltoides*	10	Yes	FAC
3.			
4.			
5.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer saccharinum*	35	Yes	FACW
2.			
3.			
4.			
5.			
	35	=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Mentha X piperita*	20	Yes	OBL
2. *Carex vulpinoidea*	5	No	FACW
3. *Viola papilionacea*	5	No	FAC
4. *Solidago gigantea*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	75	x 2 =	150
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		200 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: U06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 4/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No X**

Remarks:
Soil profile at the sample plot does not meets the field indicators of a hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of wetland hydrology observed at the sample plot.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: U07

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville silty loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No X**
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
All three wetland parameters are not present at the sample plot. Therefore this area is not a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Solidago gigantea*	25	Yes	FACW
2. *Acer saccharinum*	5	No	FACW
3. *Populus deltoides*	5	No	FAC
4. *Plantago major*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	37 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	37 (A)		81 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: U07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 4/2	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No x**

Remarks:

Soil profile at the sample plot does not meet the field indicators of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No x**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of wetland hydrology observed at the sample plot.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Cheter Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: U08

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain, backslope | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No x**
Hydric Soil Present?	Yes ____	No x	
Wetland Hydrology Present?	Yes ____	No x	

Remarks:
All three wetland parameters are not present at the sample plot. Therefore this area is not a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Phalaris arundinacea*	20	Yes	FACW
2. *Solidago gigantea*	15	Yes	FACW
3. *Populus deltoides*	5	No	FAC
4. *Rumex crispus*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	42 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	42 (A)		91 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: U08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 4/2	100					Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

Soil profile at the sample plot does not meet the field indicators of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA City/County: Perry County Sampling Date: 4/27/2019

Applicant/Owner: MoDOT State: MO Sampling Point: W01

Investigator(s): Jacobs - Rob Miller Lead Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave

Slope (%): 2 Lat: 37.90 Long: -89.84 Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sample plot meets indicators of all three parameters. Therefore this area is a wetland. WETS analysis indicates climatic conditions are normal for time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	50	Yes	FACW
2.			
3.			
4.			
5.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer saccharinum*	20	Yes	FACW
2. *Morus alba*	10	Yes	FAC
3. *Fraxinus pennsylvanica*	10	Yes	FACW
4. *Salix interior*	10	Yes	FACW
5. *Populus deltoides*	5	No	FAC
	55	=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Solidago gigantea*	60	Yes	FACW
2. *Fraxinus pennsylvanica*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	155	x 2 =	310
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		355 (B)

Prevalence Index = B/A = 2.09

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Vegetation at the sample plot meets the dominance test and prevalence index indidators. Hydrophytic vegetationa is present at the sample plot.

SOIL

Sampling Point: W01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 4/1	75	10YR 5/6	25	C	M	Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Soil profile at the sample plot meets the F3 field indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Presence of two secondary indicators (D2, D5) provide sufficient evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W02

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: -89.84 | Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded | NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Sample plot meets indicators of all three parameters. Therefore this area is a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Fraxinus pennsylvanica*	12	Yes	FACW
2. *Acer saccharinum*	12	Yes	FACW
3. *Salix interior*	5	No	FACW
4.			
5.			
	29 =Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Solidago gigantea*	30	Yes	FACW
2. *Populus deltoides*	10	Yes	FAC
3. *Acer saccharinum*	10	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	69	x 2 =	138
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	79 (A)		168 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 5/1	50	10YR 5/6	50	C	M	Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the F3 field indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Sample plot meets the D2 and D5 field indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W03

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: -89.84 | Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded | NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
All three wetland parameters are present at the sample plot. Therefore this area is a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	60	Yes	FAC
2. *Salix interior*	30	Yes	FACW
3. *Fraxinus pennsylvanica*	10	No	FACW
4.			
5.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Carex vulpinoidea*	25	Yes	FACW
2. *Carex lacustris*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	65	x 2 =	130
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		320 (B)

Prevalence Index = B/A = 2.37

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 15	10YR 4/1	90	10YR 5/6	10	C	M	Clay Loam	Prominent redox concentrations
15 - 20	10YR 4/1	80	10YR 5/6	20	C	M	Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the F3 field indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Presence of two secondary indicators (D2, D5) provides sufficient evidence of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W04

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: -89.84 | Datum: WGS84

Soil Map Unit Name: Haynie-Waldron complex, 0 to 2 percent slopes, frequently flooded | NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
All three wetland parameters are present at the sample plot. Therefore this area is a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Salix interior*	70	Yes	FACW
2. *Solidago gigantea*	15	No	FACW
3. *Acer saccharinum*	10	No	FACW
4. *Arenaria serpyllifolia*	5	No	FAC
5. *Carex vulpinoidea*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		215 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the domance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 4/2	85	10YR 5/6	15	C	M	Clay Loam	Prominent redox concentrations, gravel obstructions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at 8"+ includes 10YR 4/2 silt loam with 90% gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology at the sample plot included the D2 and D5 indicators.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W05

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville Silty Loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
All three wetland parameters are present at the sample plot. Therefore this area is a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Salix interior*	70	Yes	FACW
2.			
3.			
4.			
5.			
	70 =Total Cover		
Herb Stratum (Plot size: 5' r)			
1. *Solidago gigantea*	15	Yes	FACW
2. *Populus deltoides*	5	Yes	FAC
3. *Equisetum arvense*	5	Yes	FAC
4. *Toxicodendron radicans*	5	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	30 =Total Cover		
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	85	x 2 =	170
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		215 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 4/2	85	10YR 5/6	15	C	M	Clay Loam	Prominent redox concentrations, gravel obstructions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ___

Remarks:

Soil profile at 8"+ inches includes 10YR 4/2 silt loam with 90% gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology at the sample plot included the D2 and D5 indicators.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W06

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain, backslope | Local relief (concave, convex, none): Concave

Slope (%): 3 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville silty loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
All three wetland parameters are present at the sample plot. Therefore this area is a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	30	Yes	FACW
2. *Populus deltoides*	10	Yes	FAC
3.			
4.			
5.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer saccharinum*	35	Yes	FACW
2.			
3.			
4.			
5.			
	35	=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Mentha X piperita*	20	Yes	OBL
2. *Carex vulpinoidea*	5	No	FACW
3. *Viola papilionacea*	5	No	FAC
4. *Solidago gigantea*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	35	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	75	x 2 =	150
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		200 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 4/2	95	10YR 5/6	5	C	M	Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the F3 field indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology observed at the sample plot included the D2 and D5 indicators.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W07

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville silty loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PF01C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
All three wetland parameters are present at the sample plot. Therefore this area is a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Solidago gigantea*	25	Yes	FACW
2. *Acer saccharinum*	5	No	FACW
3. *Populus deltoides*	5	No	FAC
4. *Plantago major*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	37	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	____	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	37 (A)		81 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 4/2	95	10YR 5/6	5	C	M	Clay Loam	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the F3 field indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology observed at the sample plot included the D2 and D5 indicators.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Chester Bridge EA | City/County: Perry County | Sampling Date: 4/27/2019

Applicant/Owner: MoDOT | State: MO | Sampling Point: W08

Investigator(s): Jacobs - Rob Miller Lead | Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain, backslope | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 37.90 | Long: - 89.84 | Datum: WGS84

Soil Map Unit Name: Parkville loam, 0 to 2 percent slopes, frequently flooded | NWI classification: PFO1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
All three wetland parameters are present at the sample plot. Therefore this area is a wetland. WETS analysis indicates that climatic conditions are normal for this time of year.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1.			
2.			
3.			
4.			
5.			
	____	=Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Phalaris arundinacea*	20	Yes	FACW
2. *Solidago gigantea*	15	Yes	FACW
3. *Populus deltoides*	5	No	FAC
4. *Rumex crispus*	2	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	42	=Total Cover	
Woody Vine Stratum (Plot size: 30' r)			
1.			
2.			
	____	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	7	x 3 =	21
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	42 (A)		91 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks:
Vegetation at the sample plot meets the dominance test and prevalence index indicators of hydrophytic vegetation.

SOIL

Sampling Point: W08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 4/2	80	10YR 5/6	20	C	M	Sandy Clay Loam	Prominent redox concentrations, gravel obstructions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soil profile at the sample plot meets the S5 field indicator of hydric soil. Soil profile at 8"+ inches includes 90% gravel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of wetland hydrology at the sample plot includes geomorphic position and the FAC-neutral test.

Appendix C
Stream Assessment Data Forms

Stream Data Form

Stream Name: **Mississippi River**	Stream No: S-1	
Associated Wetlands - PFO1 and PEM adjacent to open water	Date: **June 28, 2017**	County/State: **Perry County, Missouri**

Investigator: **Jacobs**	Team No.: **N/A**	**Location: Chester Bridge**

STREAM PLANS -SURFACE VIEW AND CROSS SECTION
Show estimated dimensions (slope angles, crossing length), surrounding area, and direction arrow

Stream Flow	Fast: ✓		Moderate:		Slow:		Very Slow:	None:	
	Perennial: ✓		Intermittent:		Ephemeral:				
Stream Depth (in.)	0-3:	3-6:	6-12:	12-18:	18-24:	24-36:	36-48:	48-60:	60+: ✓
Stream Width (ft.)	Top of Banks: 4,200 Feet				Water Surface: 2,000 Feet				
Stream Substrate %	Bedrock:		Gravel: 30		Sand: 20		Silt/Clay: 40	Organic: 10	
Bank Height (ft.)	Left	0-2:	2-4:		4-6:		6-8:	8+: ✓	
	Right	0-2:	2-4:		4-6:		6-8:	8+:✓	
Bank Slope (º)	Left	0-20:	20-40:		40-60:X:		60-80:	80+:	
	Right	0-20:	20-40:		40-60:X		60-80:	80+:	
Water Clarity	Clear:		Slightly Turbid:		Turbid: ✓		Very Turbid:	Color: Green/blue	
Aquatic Habitat	Sand Bar:		Gravel Bar:		Mud Bar:		Gravel Riffles:	Deep Pools: ✓	
	Overhanging trees/shrubs: ✓		In-stream emergent plants:		In-stream submergent plants:		Bank root systems:	Fringing Wetlands: ✓	
Aquatic Organisms	Waterfowl: ✓		Fish (adult): ✓		Fish (juvenile): ✓		Frogs: ✓	Turtles: ✓	
	Snakes: ✓		Invertebrates: ✓		Other:				

T/E SPECIES / SUITABLE HABITAT The pallid sturgeon is big river fish that ranges widely in the Mississippi River system. Their preferred habitat has a diversity of depths and velocities formed by braided channels, sand bars, sand flats and gravel bars.

RIPARIAN VEGETATION DESCRIPTION
Populus deltoides, Acer saccharinum, Acer negundo.

COMMENTS (construction constraints, erosion potential, existing disturbances, and meanders)
Natural with some modifications at the survey location and in the vicinity of the survey location including a farmland, bridges, and levees.

Stream Data Form

Stream Name: **Horse Island Chute**	Stream No: **S-2**	
Associated Wetlands: PFO1 and PEM	Date: **June 28, 2017**	County/State: **Perry County, Missouri**

Investigator: **Jacobs**	Team No.: **N/A**	**Location: Horse Chute Island Bridge**

STREAM PLANS -SURFACE VIEW AND CROSS SECTION
Show estimated dimensions (slope angles, crossing length), surrounding area, and direction arrow

Stream Flow	Fast: ✓		Moderate:		Slow:		Very Slow:	None:
	Perennial: ✓		Intermittent:		Ephemeral:			

Stream Depth (in.)	0-3:	3-6:	6-12:	12-18:	18-24:	24-36:	36-48:	48-60:	60+: ✓

Stream Width (ft.)	Top of Banks: 200 Feet	Water Surface: 200 Feet

Stream Substrate %	Bedrock:	Gravel: 30	Sand: 20	Silt/Clay: 40	Organic: 10

Bank Height (ft.)	Left	0-2:	2-4:	4-6:	6-8:	8+: ✓
	Right	0-2:	2-4:	4-6:	6-8:	8+:✓

Bank Slope (º)	Left	0-20:	20-40:	40-60:X:	60-80	80+:
	Right	0-20:	20-40:	40-60:X	60-80:	80+:

Water Clarity	Clear:	Slightly Turbid:	Turbid: ✓	Very Turbid:	Color: Green/blue

Aquatic Habitat	Sand Bar:	Gravel Bar:	Mud Bar:	Gravel Riffles:	Deep Pools: ✓
	Overhanging trees/shrubs: ✓	In-stream emergent plants:	In-stream submergent plants:	Bank root systems:	Fringing Wetlands: ✓

Aquatic Organisms	Waterfowl: ✓	Fish (adult): ✓	Fish (juvenile): ✓	Frogs: ✓	Turtles: ✓
	Snakes: ✓	Invertebrates: ✓	Other:		

T/E SPECIES / SUITABLE HABITAT N/A

RIPARIAN VEGETATION DESCRIPTION
Populus deltoides, Acer saccharinum, Acer negundo.

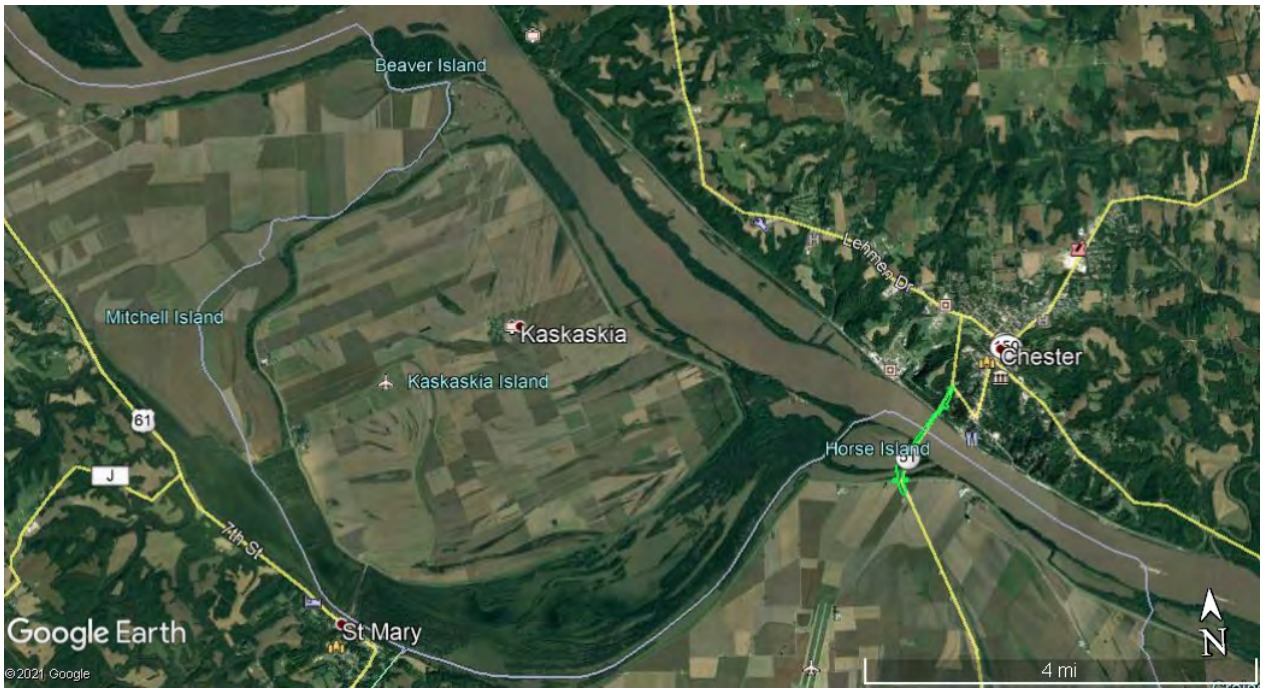
COMMENTS (construction constraints, erosion potential, existing disturbances, and meanders)
Natural with some modifications at the survey location and in the vicinity of the survey location including farmlands, bridges, and levees.

Stream Data Form

Stream Name: **Old Mississippi River Channel**	Stream No: **S-3**	
Associated Wetlands: PFO1 and PEM	Date: **June 28, 2017**	County/State: **Perry County, Missouri**

Investigator: **Jacobs**	Team No.: **N/A**	**Location: Horse Chute and Kaskaskia islands**

STREAM PLANS -SURFACE VIEW AND CROSS SECTION
Show estimated dimensions (slope angles, crossing length), surrounding area, and direction arrow



Stream Flow	Fast: ✓		Moderate:		Slow:		Very Slow:	None:	
	Perennial: ✓		Intermittent:		Ephemeral:				
Stream Depth (in.)	0-3:	3-6:	6-12:	12-18:	18-24:	24-36:	36-48:	48-60:	60+: ✓
Stream Width (ft.)	Top of Banks: 100 Feet				Water Surface: 100 Feet				
Stream Substrate %	Bedrock:		Gravel: 30		Sand: 20		Silt/Clay: 40	Organic: 10	
Bank Height (ft.)	Left	0-2:	2-4:		4-6:		6-8:	8+: ✓	
	Right	0-2:	2-4:		4-6:		6-8:	8+:✓	
Bank Slope (º)	Left	0-20:	20-40:		40-60:X:		60-80	80+:	
	Right	0-20:	20-40:		40-60:X		60-80:	80+:	
Water Clarity	Clear:		Slightly Turbid:		Turbid: ✓		Very Turbid:	Color: Green/blue	
Aquatic Habitat	Sand Bar:		Gravel Bar:		Mud Bar:		Gravel Riffles:	Deep Pools: ✓	
	Overhanging trees/shrubs: ✓		In-stream emergent plants:		In-stream submergent plants:		Bank root systems:	Fringing Wetlands: ✓	
Aquatic Organisms	Waterfowl: ✓		Fish (adult): ✓		Fish (juvenile): ✓		Frogs: ✓	Turtles: ✓	
	Snakes: ✓		Invertebrates: ✓		Other:				

T/E SPECIES / SUITABLE HABITAT N/A

RIPARIAN VEGETATION DESCRIPTION
Populus deltoides, Acer saccharinum, Acer negundo.

COMMENTS (construction constraints, erosion potential, existing disturbances, and meanders)
Natural with some modifications at the survey location and in the vicinity of the survey location including farmlands, bridges, and levees.

Appendix D
Open Water Data Forms

Pond/Open Water Data Form

Feature ID: OW-1	**Associated Features:** Apparent borrow pond under Chester Bridge approach ramp
Date: 6/28/2017	**County/State:** Perry County, Missouri
Investigators: Jacobs	**Is this a mapped NWI feature?** Yes, this Freshwater Pond habitat is classified as a PUBF.

Waterbody Characteristics	
Waterbody Type:	Open water
Average Depth:	Unknown
Average Width (Water Surface):	Approximately 50 by 250 feet.
Approximate Size:	Approximately 0.75 acres.
Qualitative Attributes	
Average Water Appearance:	Turbid, green in color.
Primary Substrate (If observed):	Not observed.
Potential Habitat:	Limited - fish, amphibians, reptiles, birds.
Surrounding Land Use:	Chester Bridge and Bois Brule levee
Wetland Fringe (If present):	PEM, PSS, and PFO fringe along parts of the bank.

Comments

This pond appears to be a abandoned borrow pond. It is close to the Chester Bridge and Mississippi River.