

# ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

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September 4, 2014

Ms. Sandra L. Otto  
Division Administrator  
Federal Highway Administration  
700 West Capitol, Room 3130  
Little Rock, Arkansas 72201-3298

Re: Job Number BB0106  
FAP No. BIM-NHPP-PEN-B40-0(206)  
Shearerville – West (F)  
St. Francis County  
Tier 3 Categorical Exclusion

Dear Ms. Otto:

The Environmental Division has reviewed the referenced project and it falls within the definition of the Tier 3 Categorical Exclusion as defined by the AHTD/FHWA Memorandum of Agreement on the processing of Categorical Exclusions. The project was previously cleared as a Tier 2 Categorical Exclusion under job number B10104 on July 18, 2002, and reassessed as a Tier 2 Categorical Exclusion under job number 110450 on March 4, 2009. The following information is included for your review and, if acceptable, approval as the environmental documentation for this project.

The purpose of this project is to repair deteriorated pavement on Interstate 40 west of Shearerville with 16.5 miles of mill, inlay, and overlay. Additionally, six functionally obsolete bridges (three EB/WB pairs) will be replaced and 18 miles of cable median barrier will be installed to address safety hazards. A project location map is enclosed.

The existing roadway consists of four 12-foot wide paved travel lanes with 4-foot wide inside shoulders and 10-foot wide outside shoulders. Existing right of way width is approximately 250 feet. The roadway cross section will not change as a result of the proposed project, and no additional right of way is required.

Design data for this project is as follows:

Design Year	Average Daily Traffic	Percent Trucks	Design Speed
2014	31,000	56	70 mph
2034	38,000	56	70 mph

Information on the proposed bridge replacements can be found in the following tables.

<b>Fishing Lake Bridges – Bridge Numbers A3882 and B3882</b>				
	Sufficiency Rating	Dimensions	Number of Lanes	Structure Type
Existing	77.4	422.2' x 33.7'	4	6-span composite I-beams
Proposed	N/A	435.2' x 131.2'	4	5-span continuous composite W-beams

<b>Shell Lake Bridges – Bridge Numbers A3900 and B3900</b>				
	Sufficiency Rating	Dimensions	Number of Lanes	Structure Type
Existing	65.2	578.2' x 33.7'	4	12-span composite I-beams
Proposed	N/A	562.5' x 131.2'	4	8-span continuous composite W-beams

<b>Blackfish Lake Bridges – Bridge Numbers A3904 and B3904</b>				
	Sufficiency Rating	Dimensions	Number of Lanes	Structure Type
Existing	65.2/51.9	548.5' x 33.7'	4	9-span composite I-beams
Proposed	N/A	562.5' x 131.2'	4	8-span continuous composite W-beams

There are no relocatees, wetlands, or cultural resources impacts associated with this project. There are no *Executive Order 12898* Environmental Justice issues involved with this project. Field inspections found no evidence of existing underground storage tanks or hazardous waste deposits. State Historic Preservation Officer clearance is enclosed.

Noise predictions were not made for this project. Bridge replacement, cable median barrier installation, and pavement rehabilitation projects on existing location with minimal horizontal or vertical alterations do not meet the Federal guidelines for noise analysis. Any increases in roadway noise levels will not be the result of the proposed project, but instead a result of traffic volume increases during the planning period. Therefore, any noise level increases will occur independently of this proposed project, and no project related noise impacts are anticipated. Any excessive project noise due to construction operations should be of short duration and have a minimum adverse effect on land uses or activities associated with this project area. In compliance with Federal guidelines, local authorities will not require notification.

The bridges at Fishing Lake will require work roads that will place approximately 8,700 cubic yards of temporary fill below the plane of ordinary high water (OHW), the bridges at Shell Lake will require work roads that will place approximately 5,760 cubic yards of temporary fill below the plane of OHW, and the bridges at Blackfish Lake will require work roads that will place approximately 11,840 cubic yards of temporary fill below the plane of OHW. Stream impacts are estimated to be less than 0.1 acre per crossing. These temporary impacts should be covered under the existing Nationwide Permit No. 23, MVM 20101-00168.

U.S. Fish and Wildlife Service (USFWS) informal consultation was initiated in May 2002 (job number B10104). Freshwater mussel surveys conducted in May 2002 found no Fat Pocketbook mussels, which led to the determination that the project would not likely affect the species. In February 2009, AHTD again conducted a freshwater mussel survey and requested a determination that the project was not likely to adversely affect the Fat Pocketbook mussel (job number 110450). The survey again found no Fat Pocketbook mussels and the USFWS concurred with the assessment that the project would not likely affect the species.

Due to the time elapsed since the 2009 surveys and consultation, additional surveys were conducted in August 2014 by AHTD personnel. A single Fat Pocketbook was collected during that survey; subsequently, the FHWA requested formal consultation under the Endangered Species Act for potential adverse effects to the endangered Fat Pocketbook. The USFWS issued a biological opinion (BO) in August 2014. The BO found that the project was not likely to jeopardize the continued existence of the Fat Pocketbook. The

AHTD Job Number BB0106  
Tier 3 Categorical Exclusion  
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BO also found that the following reasonable and prudent measure was necessary, that all Fat Pocketbook mussels found within the reach spanning from 33 meters upstream of the direct project footprint to 100 meters downstream of the project footprint should be translocation to a suitable habitat determined by the USFWS. The USFWS biological opinion and project clearance are enclosed.

If you have any questions, please contact the Environmental Division at (501)569-2281.

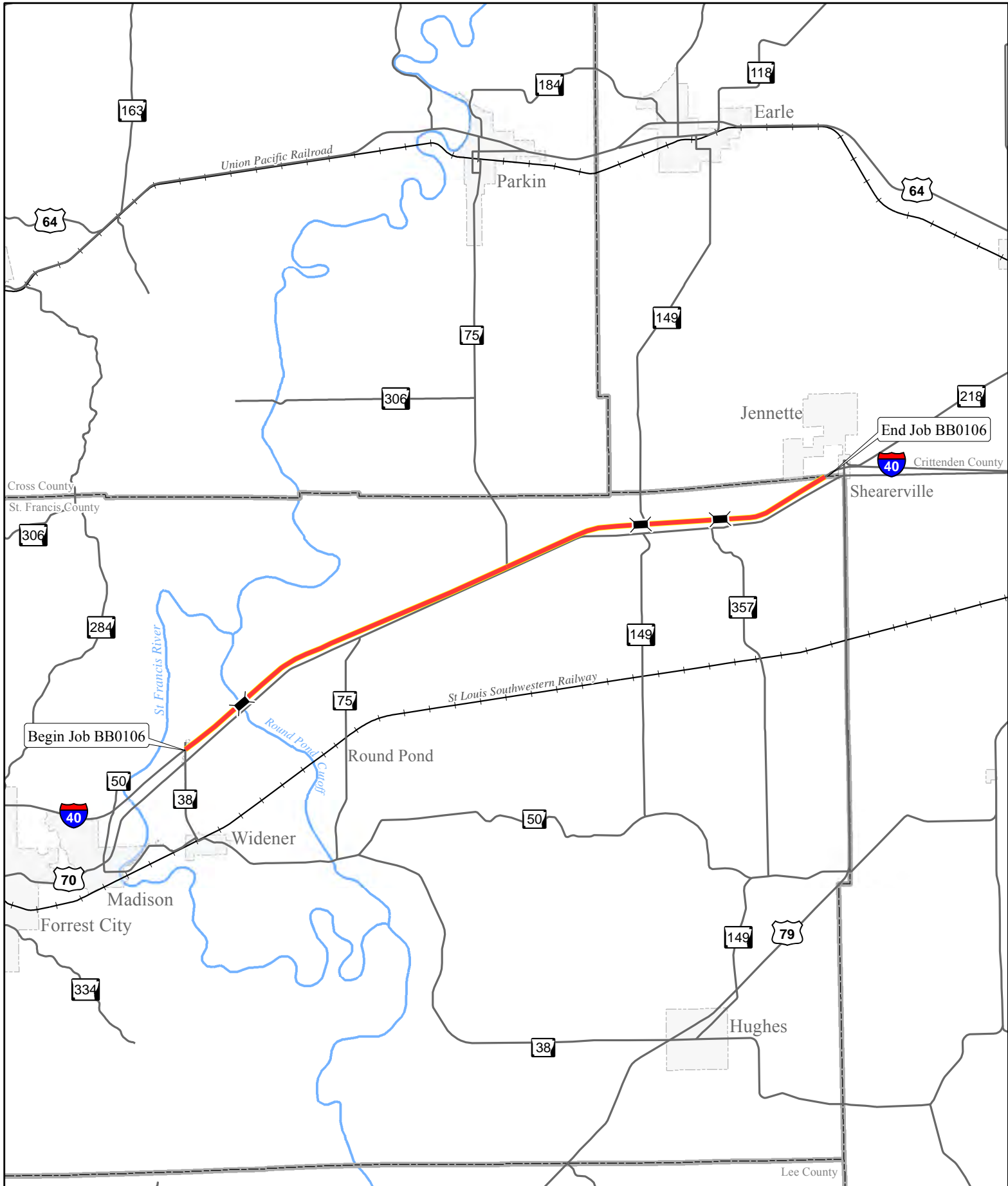
**APPROVED**  
  
Environmental Specialist  
Federal Highway Administration  
Date: 9/4/2014

Sincerely,

  
John Fleming  
Division Head  
Environmental Division

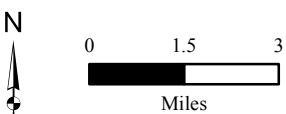
Enclosures  
JF:SS:fc

c: Programs and Contracts  
Right of Way  
Roadway Design  
District 1  
Master File



Begin Job BB0106

End Job BB0106



**Job BB0106**  
**Shearerville-West (I-40)**  
**St. Francis County**

Project Location



The Department of  
**Arkansas  
Heritage**

Mike Beebe  
Governor

Martha Miller  
Director

Arkansas Arts Council

Arkansas Natural Heritage  
Commission

Delta Cultural Center

Historic Arkansas Museum

Mosaic Templars  
Cultural Center

Old State House Museum



Arkansas Historic  
Preservation Program

323 Center Street, Suite 1500  
Little Rock, AR 72201  
(501) 324-9880  
fax: (501) 324-9184  
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[www.arkansaspreservation.org](http://www.arkansaspreservation.org)

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June 10, 2014

Mr. Lynn Malbrough  
Division Head  
Environmental Division  
Arkansas State Highway and Transportation Department  
P.O. Box 2261  
Little Rock, Arkansas 72203-2261

Re: St. Francis County – Shell Lake  
Section 106 Review – FHWA  
Report Titled *Archeological Investigations at Shell Lake Site 3SF274*  
*AHTD Job BB0106 St. Francis County*  
AHTD Job Number BB0106  
AHPP Tracking Number 90330

Dear Mr. Malbrough:

The staff of the Arkansas Historic Preservation Program has reviewed the above-referenced document. Based on the information presented in this document, we concur that the proposed undertaking will not impact archeological site 3SF274, and will have no effect on historic properties.

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Eric Gilliland of my staff at 501-324-9270.

Sincerely,

*Frances McSwain*

Frances McSwain  
Deputy State Historic Preservation Officer

cc: Mr. Everett Bandy, Quapaw Tribe of Oklahoma  
Ms. Rebecca Brave, Osage Nation  
Dr. Ann Early, Arkansas Archeological Survey  
Mr. Randal Looney, FHWA



IN REPLY REFER TO:

## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

110 South Amity Road, Suite 300  
Conway, Arkansas 72032  
Tel.: 501/513-4470 Fax: 501/513-4480

August 20, 2014

Mr. Randal Looney  
Federal Highway Administration  
Arkansas Division  
700 West Capitol Ave.  
Room 3130  
Little Rock, AR 72201-3298

Dear Mr. Looney:

The U.S. Fish and Wildlife Service (Service) has reviewed the biological assessment that evaluates the potential effects of rehabilitation of a 16.5 mile segment of Interstate 40 between Widener and Shearerville in St. Francis County, Arkansas, on the federally endangered Fat Pocketbook mussel (*Potamilus capax*). The Service received and accepted the Federal Highway Administration's (FHWA) biological assessment and request for formal consultation on the proposed project, transmitted in a letter dated August 13, 2014. This document represents the Service's biological opinion, with accompanying incidental take statement, on the effects of the proposed bridge replacement on the Fat Pocketbook in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. 1531 et seq.).

This biological opinion is based on information provided in the biological assessment, the recovery plan for the Fat Pocketbook pearly mussel (Service 1989), and additional sources of information. A complete administrative record of this consultation is on file at the U.S. Fish and Wildlife Service, Arkansas Field Office, 110 South Amity Road, Suite 300, Conway, Arkansas 72032, 501-513-4470.

### **CONSULTATION HISTORY**

The Arkansas State Highway and Transportation Department (AHTD) began informal consultation with the Service in May of 2002. At that time the project was identified as B10104 Hwy. 38 – Shearerville (I-40) and is now AHTD Job BB0106. Freshwater mussel surveys conducted May 16, 2002 found no Fat Pocketbook mussels, which led to the determination that the project would not likely affect the species. In February 2009, AHTD again requested a determination that the project (110450 Hwy 38 – Shearerville) was not likely to adversely affect the Fat Pocketbook mussel. Based on the results of a survey conducted on February 5, 2009, the Service concurred with that assessment on February 18, 2009. A previous survey conducted in 1994 for a scour repair project at the St. Francis Diversion bridges yielded similar results with no Fat Pocketbook discovered.

Due to the time elapsed since the 2009 surveys and consultation, additional surveys were conducted August 6, 2014 by AHTD personnel. A single Fat Pocketbook was collected during that survey; subsequently, the FHWA requested formal consultation under the Endangered Species Act for potential adverse effects to the endangered Fat Pocketbook in a letter dated August 13, 2014.

## **BIOLOGICAL OPINION**

### **DESCRIPTION OF PROPOSED ACTION**

The AHTD has plans to rehabilitate a 16.5 mile segment of Interstate 40 between Widener and Shearerville in St. Francis County, Arkansas. This section of I-40 has deteriorating pavement and safety hazards due to the potential of oncoming traffic crossing the open median. The six bridges within the project limits also have deficiencies, including rusting and section loss to beams, spalling of substructure concrete, spalling and cracking of concrete deck, broken anchor bolts, and decks narrower than design standards currently allow. The six bridges include east and west bound bridges over the St. Francis River Diversion (Fishing Lake), Shell Lake, and Blackfish Lake. These deficiencies have resulted in a “functionally obsolete” classification for all six bridges and sufficiency ratings ranging from 51.9 to 77.4. The purpose of the project is to correct these safety hazards and pavement and bridge deterioration by replacing all six bridges, mill and inlay of the pavement, and the installation of cable median barrier. The Fat Pocketbook occurs only at the St. Francis Diversion within the proposed project area and that bridge replacement project is expected to last approximately 2.5 years.

### **STATUS OF THE SPECIES**

#### **Species/critical habitat description**

The Fat Pocketbook was first described by J. Green (1832) as *Unio capax*. The anterior end of the Fat Pocketbook is broad, rounded, and slightly angular near the hinge; the posterior margin is very narrow and rounded. The valves do not close perfectly on each other but gape at the posterior margin. This is more obvious in older individuals. The visceral tissue is smooth, yellowish, and frequently clouded with brown. The nacre is bluish white and often iridescent. The beaks are curved over the tegument. The teeth resemble those of the plain pocketbook (*L. cardium*), but they are much thinner. The type locality is the upper Mississippi River at the Falls of St. Anthony in Minnesota. Critical habitat for this species has not been designated.

#### **Life history**

The Fat Pocketbook occurs primarily in sand and mud substrates, although the species has been found in fine gravel and hard clay occasionally (Parmalee 1967, Bates and Dennis 1983, Clarke 1985, Jenkinson and Ahlstedt 1988). Water depth ranges from a few inches to several feet (Parmalee 1967). The life cycle of the Fat Pocketbook is similar to other freshwater mussels, in which the glochidia (larvae) require a fish host to transform to the juvenile stage. The Fat



Pocketbook is a long term brooder, with females becoming gravid in the fall, retaining glochidia over winter, and releasing the progeny during spring and summer. The primary fish host for this species is the freshwater drum (*Aplodinotus grunniens*; Barnhart 1997).

### **Status and distribution**

The historical range of the species includes the upper Mississippi River above St. Louis; Ohio River; Wabash and White Rivers in Indiana; St. Francis, White, and Black Rivers in Arkansas; Spoon and Illinois Rivers in Illinois; Des Moines and Iowa Rivers in Iowa; and Cumberland River in Kentucky. Since 1970, it has been collected from the St. Francis River and Right Hand Chute Little River and drainage ditches associated with these streams in Arkansas and Missouri, Tyronza River in Arkansas, lower Wabash and White Rivers in Indiana, lower Cumberland River in Kentucky, and the upper and lower Mississippi River (U.S. Fish and Wildlife Service 2012; Wentz 2008). A single specimen of Fat Pocketbook was collected in 2003 from the White River in Arkansas near river mile 11, the first collection in that river since the 1960's (Harris and Christian 2003). The Fat Pocketbook was listed as endangered on June 14, 1976 (41 FR 24062).

### **ENVIRONMENTAL BASELINE**

The environmental baseline is defined as the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and ecosystem within the action area. The environmental baseline provides the basis from which to judge the effects of the action.

### **Status of the species within the action area**

The Fat Pocketbook occurs throughout the St. Francis River system and associated network of ditches. Dennis (1985) summarized much of the known distribution for Fat Pocketbook from the St. Francis River and tributaries in Arkansas, upper Mississippi River (above St. Louis, MO), and Wabash River in Indiana. Subsequent investigations have further expanded the known range, which includes 23 streams and ditches within the St. Francis River basin (Ahlstedt and Jenkinson 1987; Barnhart 1997a; AGFC 2001, 2003; Harris 2001; Ecological Specialists 2005; Davidson 2007; Peck et al. 2007; Wentz 2008; and Corps 2009, 2009a, 2012, 2013, 2014). Recent surveys have revealed information regarding population estimates for Fat Pocketbook in several stream reaches within the St. Francis River basin (Harris 2001; Harris 2002; Ecological Specialists 2005; Harris, unpublished data; Corps 2012; Corps 2014). A 5,600 m reach of Stateline Outlet Ditch is estimated to contain  $6,783 \pm 1,553$  individuals. This stream contains a dense and widespread population, while most inhabited streams contain sparse or locally dense populations. There is no explanation for the large population in Stateline Outlet Ditch, although it could be due to the dependability of sufficient water flows and depths, the widespread availability of preferred substrates (Watters 2000), increased suitability for host fishes, a combination of these factors, or unknown factors. A 6,116 m reach of Rivervale Outlet Ditch is estimated to contain  $1,868 \pm 558$  (Corps 2012). Data from these and other surveys suggests the St. Francis River basin contains the most widespread and abundant populations of the Fat Pocketbook.

Freshwater mussel surveys were completed on May 16, 2002, February 5, 2009, and August 6, 2014 to assess potential adverse effects to threatened and endangered species for the proposed bridge replacement project. In the 2002 survey, 252 mussels representing 14 species were collected in 144 minutes of search time. No listed species were collected. In the 2009 survey, 177 mussels representing 14 species were collected in 115 minutes of search time. As with the 2002 survey, no listed species were detected. On August 6, 2014, a total of 360 mussels representing 15 species were collected in 158 minutes of search time. A single Fat Pocketbook was collected within the proposed footprint of the workroad and the foundation protection rip-rap. Mussels within the project area are generally distributed within a 2-3 meter wide strip at the toe of slope along each bank. Substrates within these areas consisted of a firm sand and clay mixture. Mussel densities were variable but generally ranged from 1-5/m<sup>2</sup>. The greatest densities were found within the existing rip rap along the right descending bank where densities approached 15-20/m<sup>2</sup>.

### **Factors affecting species environment within the action area**

Currently, three individuals or entities retain active Section 10(a)(1)(A) permits for Fat Pocketbook in Arkansas. There has been no report of incidental take in the form of injury or death reported by any of the permittees in recent years. A Service Region 4 programmatic biological opinion regarding Section 10(a)(1)(A) permits for several species of mussels, including Fat Pocketbook, allows take of five individuals per hundred and 100 percent take of all artificially propagated individuals.

Since 1999, the Service has prepared 11 biological opinions in the St. Francis River basin for bridge replacements, channel cleanouts, and levee stabilization. These BOs collectively exempted incidental take of 3,751 Fat Pocketbook individuals. This includes the experimental approach at Rivervale Outlet Ditch which accounts for 831 individuals and Straight Slough in Cross County, Arkansas which accounts for 2,857 individuals. The Service also issued incidental take for 1,152 Fat Pocketbook individuals in areas outside the immediate action area (Mississippi, Indiana, Kentucky). There is also a 2013 biological opinion that used abundance of secondary channel habitats in the Mississippi River as a surrogate for individual take of Fat Pocketbook

The greatest impact on the Fat Pocketbook throughout its historical range has been from activities related to navigation and flood control. Channel maintenance dredging has been particularly destructive to the species (Service 1989). Additionally, sedimentation and pollution from agricultural runoff, and low water levels in the summer impact Fat Pocketbook populations in the St. Francis River basin. Siltation has long been associated with reductions in freshwater mussel assemblages (Brim Box and Mossa 1999). Detrimental effects of fine sediment from erosion on freshwater mussels have been documented. Heavy sediment loads in the water column can interfere with feeding activity (Brim Box and Mossa 1999), as mussels in turbid waters remained closed about 50 percent longer than mussels in silt free water, reducing the time available to feed (Ellis 1936). Many aquatic species, including freshwater mussels, have demonstrated lower growth rates, reproduction, and recruitment, in waters with elevated

sedimentation and turbidity (Henley et al. 2000). Fine sediment plumes may also reduce feeding in mussels by diluting the density of food particles in the water column (Widdows et al. 1979). Agricultural runoff is frequently laden with chemicals associated with fertilizers and pesticides. The St. Francis River watershed is farmed for several crops including cotton, soybeans, and rice. Numerous fertilizers and pesticides are sprayed on these crops including defoliant and Malathion (for boll weevil eradication). Disturbance of the substrate may resuspend contaminants stored in the sediment (Watters 2000). Like sedimentation, mussels can tolerate short term exposures to pollutants by valve closure, but most cannot tolerate long term exposure to contaminated water (Neves 1997).

## **EFFECTS OF THE ACTION**

### **Analyses for effects of the action**

The primary purpose of the proposed action is to replace six Interstate 40 Bridges in St. Francis County, Arkansas. The demolition and reconstruction of the bridge crossing the St. Francis Diversion channel is likely to adversely affect the Fat Pocketbook. Relocation of Fat Pocketbook from the project footprint and buffer will also be undertaken.

#### Direct effects:

Direct effects of the proposed action on the Fat Pocketbook include harassment, harm, and potential mortality from the construction of the new bridge, the demolition of the existing structures and placement of rip rap within previously occupied habitats for work pads and scour prevention. These activities could result in mortality or injury of any Fat Pocketbook that are not transferred out of the project footprint during the translocation effort.

Construction related activities have the potential to disrupt the reproductive cycle of the mussel in a variety of ways. In the laboratory setting female mussels have been stimulated to release glochidia (larvae) by tapping the side of holding tanks; therefore, vibrations created from construction equipment could also stimulate females to prematurely release glochidia. The freshwater drum is the only known host for the Fat Pocketbook. Increased sediment due to entrainment of soils within the project area also negatively affect freshwater mussels and host fish. Any disturbances that may reduce the number of fish within the action area have the potential to reduce the likelihood for the mussel/host interaction. It is likely that these effects would be temporary and limited to the construction period, expected to last approximately 2.5 years. Adverse effects will also occur as a result of relocation of mussels prior to project commencement.

Direct effects of mussel translocation include harm, harassment and possible mortality due to the stress of being handled, processed, and relocated. These effects can result in premature release of sperm or aborted glochidia negatively impacting reproductive success. A trained biologist that holds an active Section 10(a)(1)(A) permit from the Service will accomplish the relocation work, which will minimize some of these effects.

Indirect effects:

The number of piers or bents within the wetted width of the channel will be reduced to two. The decrease in the number of obstructions should improve flow through the project area and reduce scour. The placement of rip rap has been shown to provide areas of stability in systems like the St. Francis Diversion which have high sediment loads. These areas often provide habitat for numerous aquatic species including freshwater mussels. However, the piers located in channel often form large scour holes around the piers, making these areas unsuitable for mussels. Piers can also snag debris resulting in morphological changes within the river channel, further exacerbating substrate scouring.

Urban development related projects that can follow roadway improvements also have the potential to adversely affect water quality. Increased urban development is often associated with highway construction projects; however, the current project does not increase capacity and is not constructed on new alignment. The proposed project, therefore, is unlikely to result in an increase in urban development.

The use of offsite areas for borrow and waste pits has the potential to increase sediment loads into the system and would be interrelated to the proposed project. However, those effects would likely be minimal due to the already high sediment loads within the St. Francis Basin and proper oversight of offsite area placement upon the landscape.

## **CUMULATIVE EFFECTS**

Cumulative effects include the effects of future, state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Private actions in the vicinity of the action area are primarily agriculture-related activities. We are reasonably certain these actions will continue and do not expect these activities to change appreciably in the future from current conditions. Ditch maintenance activities facilitate continued farming activities in the area, as drainage of farmland is an important factor in crop success in eastern and northeastern Arkansas. Effects from agricultural activities on Fat Pocketbook could include increased sediment deposition, turbidity, and herbicide/pesticide levels in the St. Francis Diversion and basin. However, these effects, if they are occurring, are indeterminable. Essentially, the Service cannot predict that these specific types of adverse effects will occur. We are not aware of any other state, tribal or local actions to include under cumulative effects.

## **CONCLUSION**

After reviewing the current status of the Fat Pocketbook, the environmental baseline for the project area, the effects of the proposed bridge reconstruction, and the cumulative effects, it is the Service's biological opinion that the proposed project is not likely to jeopardize the continued existence of the Fat Pocketbook. No critical habitat has been designated for this species;

therefore, none will be affected.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited take under the ESA, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the FHWA so that they become binding conditions of any grant, contract, or permit issued to parties conducting activities for the FHWA, as appropriate, for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity covered by this incidental take statement. If the FHWA (1) fails to assume and implement the terms and conditions or (2) fails to require contractors or other parties conducting work on behalf of the FHWA to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, contract, or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the FHWA must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR §402.14(I)(3)].

## **AMOUNT OR EXTENT OF TAKE ANTICIPATED**

Survey area estimates can be difficult to derive from qualitative survey protocols; therefore, relative abundance is typically presented as catch per unit effort. Strayer et al. (1997) and Smith et al. (2000) found that typical search speeds ranged between 3-30m<sup>2</sup>/h. Using the upper limit of this range, approximately 79 m<sup>2</sup> was searched. Using the approximate width (three meters) of the mussel “bed” along each bank and proposed construction limits it is estimated that the mussels are confined to approximately 365 m<sup>2</sup> within the direct foot print of the project. Assuming one Fat Pocketbook can be found per every 79 m<sup>2</sup>; approximately five Fat Pocketbook mussels could be expected within the direct area of impact. Mussel bed widths extending 33 meters upstream of the bridge and 100 meters downstream (798m<sup>2</sup>) on both banks are similar widths resulting in a population estimate of ten Fat Pocketbook. Therefore, a combined total of 15 Fat Pocketbook are believed to inhabit the project area.

The Service expects 15 Fat Pocketbook could be taken as a result of this proposed action. This incidental take is expected to be in the form of harm and harassment but may also be in the form of mortality.

## **EFFECT OF THE TAKE**

In the accompanying biological opinion, the Service determined that this level of expected take is not likely to result in jeopardy to the species or adverse modification of critical habitat.

## **REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS**

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize effects of incidental take of Fat Pocketbook:

1. All Fat Pocketbook found within the reach spanning from 33 meters upstream of the direct project footprint to 100 meters downstream of the project footprint should be translocated to suitable habitat determined by the Service in consultation with the Arkansas Game and Fish Commission (AGFC).

## **TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the ESA, the FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. All translocation activities shall be overseen by a qualified malacologist acceptable to the Service.
2. All mussels collected will be individually marked and measured, and maintained in sufficiently aerated water that is within 2° C of river water. This can be accomplished in insulated containers of river water or mesh bags suspended in the river. Once removed from fresh river water, transportation to and relocation at a suitable site shall occur within four hours.
3. Any specimens killed during the project work will be retained for scientific study. Dead mussels may be frozen or preserved in 70 percent alcohol. Any losses will be reported within 72 hours to Chris Davidson at the U.S. Fish and Wildlife Service Office, 110 South Amity Road, Conway, Arkansas, 72032, (501) 513-4481.
4. All individuals removed from the construction zone shall be translocated to a site upstream of the proposed project within the St. Francis Diversion Channel that is acceptable to the Service.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the effect of incidental take that might otherwise result from the proposed action. The Service believes that no more than 15 Fat Pocketbook will be incidentally taken. If, during the course of the action, this level of incidental take (or mortality of two individuals) is exceeded, such incidental take represents new information requiring re-initiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

## **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help carry out recovery plans, or to develop information.

The FHWA should consider implementing the following conservation recommendations:

- Complete a conservation plan for Fat Pocketbook under Section 7 (a)(1) of the ESA and explore conservation banking options for the species.
- Provide financial assistance to mollusk conservation to support programs that work to restore Fat Pocketbook and other native mussels. Such assistance could take the form of protecting or enhancing similar habitat and/or providing funding to facilities to propagate Fat Pocketbook and other native mussels.
- Complete a programmatic biological assessment for Fat Pocketbook addressing transportation projects in Arkansas.

## **REINITIATION NOTICE**

This concludes formal consultation on the potential impacts of the proposed Interstate 40 Bridge replacement within the St. Francis Diversion Channel on the Fat Pocketbook. As provided in 50 CFR Sec. 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if:

- (1) The amount or extent of incidental take is exceeded;
- (2) New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion;

(3) The agency action is subsequently modified in a manner that causes an effect to the listed species that was not considered in this opinion; or

(4) A new species is listed or critical habitat is designated that may be affected by the action. Should the incidental take level be reached, project work will cease immediately pending reinitiation.

In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Service appreciates this opportunity to work with the FHWA in fulfilling our mutual responsibilities under the ESA. Please contact Mitch Wine of this office at 501-513-4488 or [mitch\\_wine@fws.gov](mailto:mitch_wine@fws.gov), if you have any questions or require additional information.

Sincerely,



James F. Boggs  
Field Supervisor

cc:

John Fleming, Arkansas State Highway and Transportation Department  
Brenda Price, Arkansas State Highway and Transportation Department  
Josh Seagraves, Arkansas State Highway and Transportation Department  
Johnny Mclean, United States Army Corps of Engineers  
Mark Hathcote, Arkansas Department of Environmental Quality  
Bill Posey, Arkansas Game and Fish Commission  
Jennifer Sheehan, Arkansas Game and Fish Commission  
Ron Redman, Arkansas Natural Resources Commission  
Cindy Osborne, Arkansas Natural Heritage Commission  
Wanda Boyd, United States Environmental Protection Agency  
Jerry Ziewitz, United States Fish and Wildlife Service  
Paul Hartfield, United States Fish and Wildlife Service  
Melvin Tobin, United States Fish and Wildlife Service  
Chris Davidson, United States Fish and Wildlife Service  
Jason Phillips, United States Fish and Wildlife Service

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## LITERATURE CITED

- Ahlstedt, S.A. and J.J. Jenkinson. 1987. Distribution and abundance of *Potamilus capax* and other freshwater mussels in the St. Francis River system, Arkansas and Missouri. Final report for Memphis District, U.S. Army Corps of Engineers. 67 p. + field notes.
- Arkansas Game and Fish Commission. 1978-2003. Mussel database. B. Posey.
- Barnhart, M.C. 1997. Reproduction and fish hosts of unionid species of concern. Missouri Department of Conservation special report. 38pp.
- Barnhart, M.C. 1997a. Mussel survey of Elk Chute South Levee Ditch. Report to U.S. Army Corps of Engineers, Memphis District. 3pp.
- Bates, J.M. and S.D. Dennis. 1983. Mussel (naid) survey--St. Francis, White, and Cache Rivers, Arkansas and Missouri. Final report. Prepared for U.S. Army Corps of Engineers, Memphis District. DACW66-78-C0147. 89pp. Append. A-E, 57pp.
- Brim Box, J. and J. Mossa. 1999. Sediment, land use, and freshwater mussels: prospects and problems. *Journal of the North American Benthological Society* 18:99-117.
- Clarke, A.H. 1985. Mussel (Naiad) study; St. Francis and White Rivers; Cross, St. Francis, and Monroe Counties, Arkansas. Department of the Army, Memphis District, Corps of Engineers, Memphis, Tennessee (Order No. 84M 1666R). 28pp. and appendices.
- Davidson, C. 2007. Unpublished data regarding mussel surveys along Bell Fountain Ditch in Missouri in response to a spill of biodiesel waste product. U.S. Fish and Wildlife Service, Conway, Arkansas.
- Dennis, S.D. 1985. Recovery Plan, Fat Pocketbook Pearly Mussel. Final Report. U.S. Fish and Wildlife Service, Jackson, Mississippi. 57 pp.
- Ecological Specialists. 2005. Ditch 10, Poinsett County, Arkansas, *Potamilus capax* relocation. Final Report to U.S. Army Corps of Engineers, Memphis District.
- Ellis, M.M. 1936. Erosion silt as a factor in aquatic environments. *Ecology* 17:29-42.
- Green, J. 1832. Untitled note. *Cabinet of Natural History and American Rural Sports* 2:290.
- Harris, J.L. 2001. Freshwater mussel survey of State Line Outlet Ditch, St. Francis River Basin, Mississippi County, Arkansas with population estimate for *Potamilus capax*. Final Report. Welch/Harris, Inc. 14 pp.

- Harris, J.L. 2002. Translocation report of *Potamilus capax* (Green 1832) Fat Pocketbook for AHTD Job Number 110288 St. Francis River Structure and Approaches. U.S. Hwy. 64, Cross County, Arkansas. AHTD report to Service.
- Harris, J. L. and A.D. Christian. 2003. Qualitative survey for mussels, White River Navigation Maintenance in Arkansas, Desha, and Prairie Counties of Arkansas. Contract No. DACW 29-0 1-D-00 16. Final report for Memphis District, U.S. Army Corps of Engineers. 10 pp.
- Henley, W.F., M.A. Patterson, R.J. Neves, and A.D. Lemly. 2000. Effects of sedimentation and turbidity on lotic food webs: A concise review for natural resource managers. *Reviews in Fisheries Science* 8(2):125-139.
- Jenkinson, J.J. and S.A. Ahlstedt. 1988. A search for additional populations of *Potamilus capax* in the St. Francis and Cache River watersheds, Arkansas and Missouri, U.S.A. *Walkerana* 7(17/18):71-157.
- Neves, R. J. 1997. Status of aquatic mollusks in southeastern United States: a downward spiral of diversity. Pages 43-86 in G.W. Benz and D.E. Collins, eds. *Aquatic Fauna in Peril: the Southeastern Perspective*. Special Publication 1, Southeast Aquatic Research Institute, Lenz Design and Communications, Decatur, GA. 554 pp.
- Parmalee, P.W. 1967. The freshwater mussels of Illinois. Illinois State Museum, Popular Science Series 8. 108pp.
- U.S. Army Corps of Engineers, Memphis District. 2004. Year 2003 Freshwater Mussel Surveys of the St. Francis River Basin, Arkansas. Environmental Division. 31 pp.
- U.S. Army Corps of Engineers, Memphis District. 2009. Unpublished data summarizing Corps monitoring of *Potamilus Capax* translocation and propagule release sites in the St. Francis Basin.
- U.S. Army Corps of Engineers, Memphis District. 2009a. Unpublished database containing known *Potamilus capax* locations in the St. Francis River basin.
- U.S. Army Corps of Engineers, Memphis District. 2012. Quantitative mussel survey of Rivervale Outlet Ditch, St. Francis Basin, Poinsett County, Arkansas. Unpublished report. 13pp.
- U.S. Army Corps of Engineers, Memphis District. 2013. Unpublished database containing known *Potamilus capax* locations in the St. Francis River basin.
- U.S. Army Corps of Engineers, Memphis District. 2014. Straight Slough Biological Assessment. 12 pp. + Appendices.

- U. S. Fish and Wildlife Service. 1985. Recovery plan for the Fat Pocketbook pearly mussel U. S. Fish and Wildlife Service. Atlanta, Georgia. 57 pp.
- U.S. Fish and Wildlife Service. 1989. Recovery plan for the Fat Pocketbook pearly mussel *Potamilus capax* (Green 1832). U.S. Fish and Wildlife Service. Atlanta, Georgia. 22pp.
- U.S. Fish and Wildlife Service. 2012. Fat pocketbook mussel (*Potamilus capax*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service. Jackson, Mississippi.
- Watters, G.T. 2000. Freshwater mussels and water quality: A review of the effects of hydrologic and instream habitat alterations. Proceedings of the First Freshwater Mollusk Conservation Society Symposium, 1999. pp 261-274.
- Wentz, N.J. 2008. Inventory and analysis of the aquatic biota of the Tyronza River, Arkansas. Arkansas State University. Master's Thesis. 144 pp.
- Widdows, J., P. Fieth, and C.M. Worrall. 1979. Relationships between seston, available food, and feeding activity in the common mussel *Mytilus edulis*. Marine Biology 50:195-207.

## AHTD ENVIRONMENTAL IMPACTS ASSESSMENT FORM

AHTD Job Number BB0106 FAP Number BIM-NHPP-PEN-B40-0(206)  
 Job Title Shearerville – West (F)

Environmental Impacts	None	Minor	Significant	Comments
Air Quality	X			
Construction Impacts		X		Temporary – I-40 traffic maintained
Cultural Resources	X			
Economic	X			
Endangered Species		X		BO issued 8/20/2014
Energy Resources	X			
Environmental Justice/Title VI	X			
Fish and Wildlife	X			
Floodplains	X			
Forest Service Property	X			
Hazardous Materials/Landfills	X			
Land Use Impacts	X			All work within existing ROW
Migratory Birds		X		Migratory Bird SP sent
Navigation/Coast Guard	X			
Noise Levels	X			
Prime Farmland	X			All work within existing ROW
Protected Waters	X			
Public Recreation Lands	X			
Public Water Supply/WHPA	X			Wellhead Protection SP sent
Relocatees	X			
Section 4(f)/6(f)	X			
Social	X			
Underground Storage Tanks	X			
Visual Impacts	X			
Stream Impacts		X		Bridge construction (work roads)
Water Quality		X		Temporary during construction
Wetlands	X			
Wildlife Refuges	X			

Section 401 Water Quality Certification Required? No  
 Short-term Activity Authorization Required? Yes  
 Section 404 Permit Required? Yes Type Nationwide Permit #23

Remarks: \_\_\_\_\_

Signature of Evaluator Susan Staffeld Date September 2, 2014

February 26, 2014

## ROADWAY DESIGN REQUEST

Job Number BB0106 FAP Number BIM-B40-0(206) County St. Francis  
Job Name Shearerville-West (F)  
Design Engineer Jacobs Engineering Group Environmental Staff \_\_\_\_\_  
Brief Project Description: Rehab 18 miles of I-40 log mile 247.05 to 265.16

A. Existing Conditions:

1. Roadway Width: 48' (24' each direction)
2. Shoulder Width: 4' inside, 10' outside
3. Number of Lanes and Width: 4 lanes @ 12' (2 lanes each direction)
4. Existing Right-of-Way: Approx. 250'

B. Proposed Conditions:

1. Roadway Width: 48' (24' each direction)
2. Shoulder Width: 4' paved inside, 10' paved outside
3. Number of Lanes and Width: 4 lanes @ 12' (2 lanes each direction)
4. Average Right-of-Way: Approx. 250'

C. Construction Information:

If detour: Where: N/A

D. Design Data:

**2014** ADT: 31000 **2034** ADT: 38000 Trucks 56%

Design Speed: 70 m.p.h.

E. Approximate total length of project: 18.11 mile(s)

F. Justification for proposed improvements: Maintain adequate pavement structure

G. Total Relocates: 0 Residences: 0 Businesses: 0

H. Have you coordinated with any of the following: (Provide name and date)

City and or County Officials: \_\_\_\_\_

State Agency: AHTD

Federal Agency: \_\_\_\_\_

**BRIDGE INFORMATION - FINAL**

Job Number: BB0106 FAP Number: BIM-B40-0(206) County: St. Francis  
 Job Name: Shearerville - West (F)  
 Design Engineer: Jacobs Eng. Environmental Staff: Bill Bailey

**A. Description of Existing Bridge (Note: Data same for both bridges):**

1. Bridge Number A3882 (WB) & B3882 (EB) over Fishing Lake
2. Location: Rte.: I-40 Section: 51 Log Mile: 248.80
3. Length: 422.19 ft Br. Rdwy. Width: 28.0 ft Deck Width (Out-to-Out): 33.7 ft
4. Type Construction: 6 – 70' Composite I-Beam Spans
5. Deficiencies: Rusting and section loss to beams, spalling of substructure concrete, spalling and cracking of concrete deck, and broken anchor bolts. Deck width too narrow!
6. HBRRP Eligibility: Qualif. Code: 77.4 Sufficiency Rating: FO

**B. Proposed Improvements (Note: Single Bridge to replace both existing bridges above):**

1. Length: 435.2 ft Br. Rdwy. Width: 63.0 ft each direction Deck Width (Out-to-Out): 131.17 ft
2. Travel Lanes: 3 – 12'-0" lanes (2 proposed and 1 future each direction)
3. Shoulder Width: 17'-0" Ins. & 10'-0" Outside shoulders ea. direction, 2'-0" Median Barrier
4. Sidewalks? No Location: \_\_\_\_\_ Width: \_\_\_\_\_ ft

**C. Construction Information:**

1. Location in relation to existing bridge: Same
2. Superstructure Type: 433' Continuous Composite W-Beam Unit
3. Span Lengths: 433' W-Beam Unit (62'-103'-103'-103'-62')
4. Substructure Type: Pile end bents and foundation pile int. bents. Int. bents 3 & 4 will have seal ftgs.
5. Ordinary High Water Elev. (OHW): 178' No. of Bents inside OHW Contours: 3
6. Concrete Vol. below OHW: 2682 yd3 Vol. Bent Excavation: 4089 yd3 Vol. Backfill 1407 yd3
7. Is Channel Excavation Required? No Surface Area: \_\_\_\_\_ ft2 Volume: \_\_\_\_\_ yd3
8. Is Fill below OHW Req'd.? No Surface Area: \_\_\_\_\_ ft2 Volume: \_\_\_\_\_ yd3
9. Is Riprap required? Yes Volume: 1670 yd3

**D. Work Road Information:**

1. Is Work Road(s) required? Yes Location: Parallel to bents 3 and 4 Top Width: 20 ft
2. Is Fill below OHW required? Yes Surface Area: 27450 ft2 Volume 8700 yd3
3. Are Pipes required to meet Backwater Criteria? No Waterway Opening: N/A ft2

**E. Detour Information:**

1. Is a detour bridge required? No Location in relation to Existing Br.: \_\_\_\_\_
2. Length: \_\_\_\_\_ ft Br. Rdwy. Width: \_\_\_\_\_ ft Deck Elevation: \_\_\_\_\_
3. Volume of Fill below OHW: \_\_\_\_\_ yd3 Surface Area: \_\_\_\_\_ ft2

**F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):**

Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date

**BRIDGE INFORMATION - FINAL**

Job Number: BB0106 FAP Number: BIM-B40-0(206) County: St. Francis  
 Job Name: Shearerville - West (F)  
 Design Engineer: Jacobs Eng. Environmental Staff: Bill Bailey

**B. Description of Existing Bridge (Note: Data same for both bridges):**

1. Bridge Number A3900 (WB) & B3900 (EB) over Shell Lake
2. Location: Rte.: I-40 Section: 51 Log Mile: 259.75
3. Length: 578.17 ft Br. Rdwy. Width: 28.0 ft Deck Width (Out-to-Out): 33.7 ft
4. Type Construction: 12 - 48' Composite I-Beam Spans
5. Deficiencies: Rust and section loss to beams, spalling of substructure concrete, spalling and cracking of concrete deck with numerous full depth repairs and broken anchor bolts. Deck width too narrow!
6. HBRRP Eligibility: Qualif. Code: 65.2 Sufficiency Rating: FO

**B. Proposed Improvements (Note: Single Bridge to replace both existing bridges above):**

1. Length: 562.5 ft Br. Rdwy. Width: 63.0 ft each direction Deck Width (Out-to-Out): 131.17 ft
2. Travel Lanes: 3 - 12'-0" lanes (2 proposed and 1 future each direction)
3. Shoulder Width: 17'-0" Ins. & 10'-0" Outside shoulders ea. direction, 2'-0" Median Barrier
4. Sidewalks? No Location: \_\_\_\_\_ Width: \_\_\_\_\_ ft

**C. Construction Information:**

1. Location in relation to existing bridge: Same
2. Superstructure Type: 560' Continuous Composite W-Beam Unit
3. Span Lengths: 560' W-Beam Unit (64' - 6 @ 72' - 64')
4. Substructure Type: Pile end bents and foundation pile int. bents. Int. bents will have seal footings.
5. Ordinary High Water Elev. (OHW): 192 No. of Bents inside OHW Contours: 7
6. Concrete Vol. below OHW: 4565 yd3 Vol. Bent Excavation: 7863 yd3 Vol. Backfill 3298 yd3
7. Is Channel Excavation Required? No Surface Area: \_\_\_\_\_ ft2 Volume: \_\_\_\_\_ yd3
8. Is Fill below OHW Req'd.? No Surface Area: \_\_\_\_\_ ft2 Volume: \_\_\_\_\_ yd3
9. Is Riprap required? No Volume: \_\_\_\_\_ yd3

**D. Work Road Information:**

1. Is Work Road(s) required? Yes Location: Parallel to bents 2 and 8 Top Width: 20 ft
2. Is Fill below OHW required? Yes Surface Area: 2667 ft2 Volume 5760 yd3
3. Are Pipes required to meet Backwater Criteria? No Waterway Opening: \_\_\_\_\_ ft2

**E. Detour Information:**

1. Is a detour bridge required? No Location in relation to Existing Br.: \_\_\_\_\_
2. Length: \_\_\_\_\_ ft Br. Rdwy. Width: \_\_\_\_\_ ft Deck Elevation: \_\_\_\_\_
3. Volume of Fill below OHW: \_\_\_\_\_ yd3 Surface Area: \_\_\_\_\_ ft2

**F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):**

Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date

**BRIDGE INFORMATION - FINAL**

Job Number: BB0106 FAP Number: BIM-B40-0(206) County: St. Francis  
 Job Name: Shearerville - West (F)  
 Design Engineer: Jacobs Eng. Environmental Staff: Bill Bailey

**C. Description of Existing Bridge (Note: Data same for both bridges):**

1. Bridge Number A3904 (WB) & B3904 (EB) over Blackfish Lake
2. Location: Rte.: I-40 Section: 51 Log Mile: 261.72
3. Length: 548.50 ft Br. Rdwy. Width: 28.0 ft Deck Width (Out-to-Out): 33.7 ft
4. Type Construction: 7 - 68' and 2 - 35' Composite I-Beam Spans
5. Deficiencies: Rusting and section loss to beams, spalling of substr. concrete, spalling and cracking of concrete deck with some full depth repairs, and broken anchor bolts. Deck width too narrow!
6. HBRRP Eligibility: Qualif. Code: 65.2 & 51.9 Sufficiency Rating: FO

**B. Proposed Improvements (Note: Single Bridge to replace both existing bridges above):**

1. Length: 562.5 ft Br. Rdwy. Width: 63.0 ft each direction Deck Width (Out-to-Out): 131.17 ft
2. Travel Lanes: 3 - 12'-0" lanes (2 proposed and 1 future each direction)
3. Shoulder Width: 17'-0" Ins. & 10'-0" Outside shoulders ea. direction, 2'-0" Median Barrier
4. Sidewalks? No Location: \_\_\_\_\_ Width: \_\_\_\_\_ ft

**C. Construction Information:**

1. Location in relation to existing bridge: Same
2. Superstructure Type: 560' Continuous Composite W-Beam Unit
3. Span Lengths: 560' W-Beam Unit (64' - 6 @ 72' - 64')
4. Substructure Type: Pile end bents and foundation pile int. bents. Int. bents will have seal footings.
5. Ordinary High Water Elev. (OHW): 192 No. of Bents inside OHW Contours: 7
6. Concrete Vol. below OHW: 5736 yd3 Vol. Bent Excavation: 8356 yd3 Vol. Backfill 2620 yd3
7. Is Channel Excavation Required? No Surface Area: \_\_\_\_\_ ft2 Volume: \_\_\_\_\_ yd3
8. Is Fill below OHW Req'd.? No Surface Area: \_\_\_\_\_ ft2 Volume: \_\_\_\_\_ yd3
9. Is Riprap required? Yes Volume: 940 yd3

**D. Work Road Information:**

1. Is Work Road(s) required? Yes Location: Parallel to bents 2 and 8 Top Width: 20 ft
2. Is Fill below OHW required? Yes Surface Area: 36970 ft2 Volume 11840 yd3
3. Are Pipes required to meet Backwater Criteria? No Waterway Opening: \_\_\_\_\_ ft2

**E. Detour Information:**

1. Is a detour bridge required? No Location in relation to Existing Br.: \_\_\_\_\_
2. Length: \_\_\_\_\_ ft Br. Rdwy. Width: \_\_\_\_\_ ft Deck Elevation: \_\_\_\_\_
3. Volume of Fill below OHW: \_\_\_\_\_ yd3 Surface Area: \_\_\_\_\_ ft2

**F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG):**

Has Bridge Division coordinated with any outside agencies? No

Agency	Person Contacted	Date