

U.S. Department of Transportation
Federal Highway Administration
Eastern Federal Lands Highway Division

In cooperation with
United States Forest Service

FINAL SECTION 4(f) EVALUATION

For
Shady Lake Entrance Road
Ouachita National Forest
Polk and Howard Counties

Project Number: AR PFH 159-1(2)



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Date

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- Appendix A: Memorandum of Agreement
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1. INTRODUCTION

In accordance with Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303) and 23 CFR 774, FHWA “may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that: (i) there is no feasible and prudent alternative to the use of land from the property; and (ii) the action includes all possible planning to minimize harm to the property resulting from such use.” The proposed Action Alternative would use land from a significant historic site; therefore, Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966, as amended, applies to the proposed project. This Section 4(f) evaluation includes documentation of the Section 4(f) resources, studies of alternative alignments, and consultations with appropriate agencies. In addition, this evaluation ensures that the proposed action includes all possible planning measures to minimize harm to the affected property.

Description of Section 4(f)

Section 4(f) legislation protects three basic types of resources: publicly owned park and recreation facilities, publicly owned wildlife and waterfowl refuges, and historic sites. Section 4(f) is codified into federal law under 49 USC Section 303 and 23 USC Section 138, and is implemented through the Code of Federal Regulations (CFR) 23 CFR 774.

Section 4(f) requires that the Secretary [of Transportation] may approve a transportation program or project...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- There is no prudent and feasible alternative to using that land; and
- The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

Section 4(f) further requires consultation with the US Department of the Interior and other Federal Agencies and appropriate State and/or local agencies that use or have jurisdiction over the lands protected by Section 4(f).

In determining that there is no prudent or feasible alternative, the Agency must find that supporting information demonstrates that there are unique problems or unusual factors involved in the use of alternatives that would avoid these properties; such as a finding that the cost, social, economic, and environmental impacts, or community disruption resulting from such alternatives reach extraordinary magnitudes.

Use of a 4(f) Resource

Use of a Section 4(f) resource occurs in the following circumstances:

- When land is permanently incorporated into a transportation facility;
- When there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purpose; or

- When there is a constructive use of land, which occurs when the transportation project does not incorporate land, but its proximity impacts substantially impair the activities, features, or attributes that qualify a resource for protection under Section 4(f).

This Section 4(f) evaluation has been prepared because a Section 4(f) resource would be permanently incorporated into a transportation facility.

Evaluation of Avoidance Alternatives

Per 23 CFR 774.17, a feasible and prudent avoidance alternative avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute.

An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. An alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes
 - Severe social, economic, or environmental impacts;
 - Severe disruption to established communities;
 - Severe impacts to environmental resources protected under other Federal statutes;
 - It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
 - It causes other unique problems or unusual factors; or
 - It involves multiple factors in paragraphs (3)(i) through (3)(v) of this definition, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

Measures to Minimize Impacts

If no feasible and prudent avoidance alternative is identified, all possible planning is applied to identify measures to minimize harm or to mitigate for adverse impacts to the Section 4(f) property. With regard to public parks and recreation areas, measures may include but are not limited to design modifications or design goals; replacement of land or facilities of comparable value and function; or monetary compensation to enhance the remaining property or to mitigate the adverse impacts of the project in other ways.

2. PROJECT DESCRIPTION

This section summarizes the Purpose and Need and the Proposed Road Alignment, both of which are described in more detail in the environmental assessment.

Purpose and Need

The purpose of the proposed action is to provide safe vehicular access to the Shady Lake Recreation Area, and minimize the potential for conflicts with residents living nearby. Seasonal high use of the entrance road results in high traffic volume that causes conflicts with the private property owners.

Proposed Action

A new entrance road would be constructed to provide safe access exclusively to the Recreation Area and the Forest. The new entrance road would follow the existing 12-foot wide Rocky Hunting Club gravel service road for approximately 1.2 miles. The entrance road would then follow new alignment for approximately 0.49 miles. Approximately 2.0 miles of the existing entrance road would be upgraded, ending at the gated entrance north of the Recreation Area.

The new entrance road would have two ten-foot lanes and two-foot shoulders, and would be an asphalt paved surface. A paved parking pull-off would be constructed approximately 0.6 miles south of the Recreation area near the existing dam site. The pull-off would accommodate two cars.

The new entrance road would be designed to a 30 mph design speed. The maximum grade of the road would be 12 percent. Cut and fill would be necessary in order to construct the road due to the steep grade of the hillside. Approximately 30,000 cubic yards of excavation and approximately 25,000 cubic yards of fill would be required to construct the road. The excavation material would be stockpiled and used as the fill. Additional material would be disposed of off-site. In order to upgrade the existing portion of the entrance road, the radii of curves in the road would be widened.

The damaged section of the stone CCC bridge would be repaired. Loose stones would be re-mortared into place, and missing stones would be replaced with stones of a similar size and color. New culverts would be installed across tributaries and drainages to maintain hydrologic connectivity. A new crossing over the Saline River south of the Shady Lake Dam would be constructed. The bridge would be concrete with a steel superstructure. The bridge would be 26 feet wide (curb to curb) and 120 feet long. The bridge would span the River; therefore, no piers would be constructed. The bridge would be two feet higher on the west side, so runoff would drain on eastern approach. Riprap would be placed to protect both of the bridge abutments.

The project would most likely be constructed in three stages. In the first stage, grading, aggregate base, drainage work, and bridge construction would be completed from the southern portion of the study area from State Route 246 to the Saline River. In the second stage, grading, aggregate base, drainage work, and other miscellaneous work would be completed from the northern portion of the study area from the Saline River to the north entrance of the Recreation Area. In the third stage, the entire road length would be paved with asphalt.

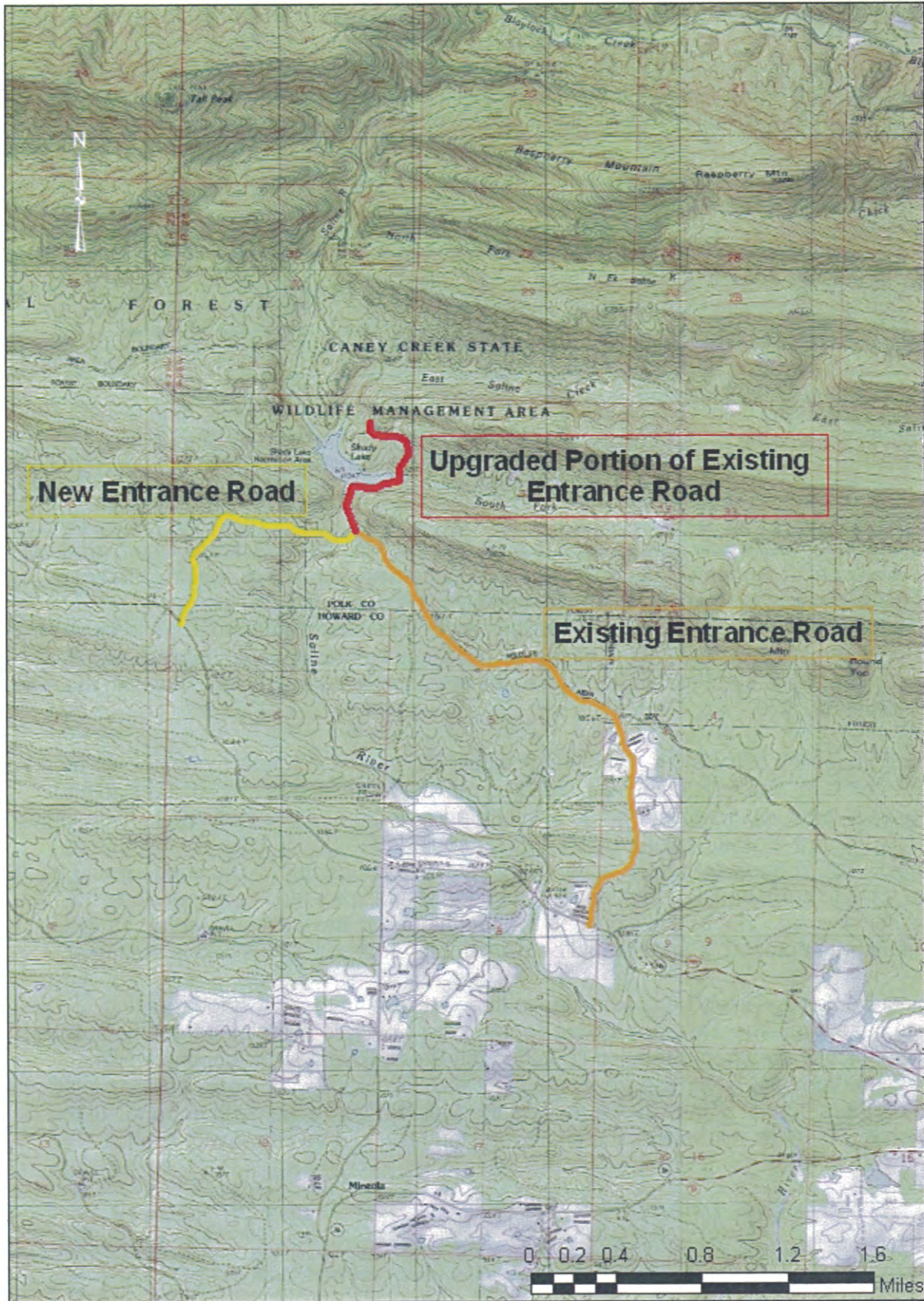


Figure 1. The existing entrance road and proposed entrance road (Action Alternative).

3. SECTION 4(f) PROPERTIES

Properties Listed on or Eligible for Inclusion in the National Register of Historic Places

Historic Sites

Site 3PL576: An archeological investigation of the study area revisited Site 3PL576. Site 3PL576 was recorded by the Forest Service archeologists in August of 1993. The site is described as an extensive lithic scatter measuring 60 by 120 m. It was identified along a long, narrow terrace above and west of the Saline River floodplain. The boundaries of the site largely correlated with the local topography. The original recorder noted the southwestern boundary of the site was adjacent to the Manganese Mill Site (3PL342). Based on shovel testing, the southwest boundary of Site 3PL576 corresponded to a barbed wire fence line crossing the terrace at this location. Artifacts were recovered at Site 3PL576 from both surface and subsurface contexts. The recovered lithic assemblage was primarily manufactured from white or black novaculite. Recovered diagnostics included two arrow points suggesting a Caddoan occupation at the site. An earlier Archaic occupation was also noted at the site although no diagnostics dating to this time period were recovered.

Site 3PL355 – Moore Homestead: An archeological investigation of the study area revisited Site 3PL355 (Moore Homestead). The Moore Homestead (Site 3PL355) was initially recorded by the Forest Service in 1992. The Moore Homestead was patented in 1899 by David Moore and occupied until 1915. The site was intensively surveyed and tested in 1992-1993.

Site 3PL1325 – Shady Lake CCC Bridge #1: Site 3PL1325 consists of a stone bridge over a tributary of the lake along the Shady Lake Recreation Area entrance road. The bridge was built by the CCC during construction of the Recreation Area, is in excellent condition, and remains in use today. It was apparently missed during the Arkansas Historic Preservation Program recordation of the other CCC structures at Shady Lake. This site is now listed on the National Register of Historic Places.

Recreational Properties

Ouachita National Forest: The proposed project is an improvement that is located entirely within the administrative boundary of the Ouachita National Forest. The Ouachita National Forest is the oldest and largest National Forest in the Southern Region, covering nearly 1.8 million acres in central Arkansas and southeastern Oklahoma. The Ouachita National Forest is a mixed resource used for timber harvesting as well as recreation.

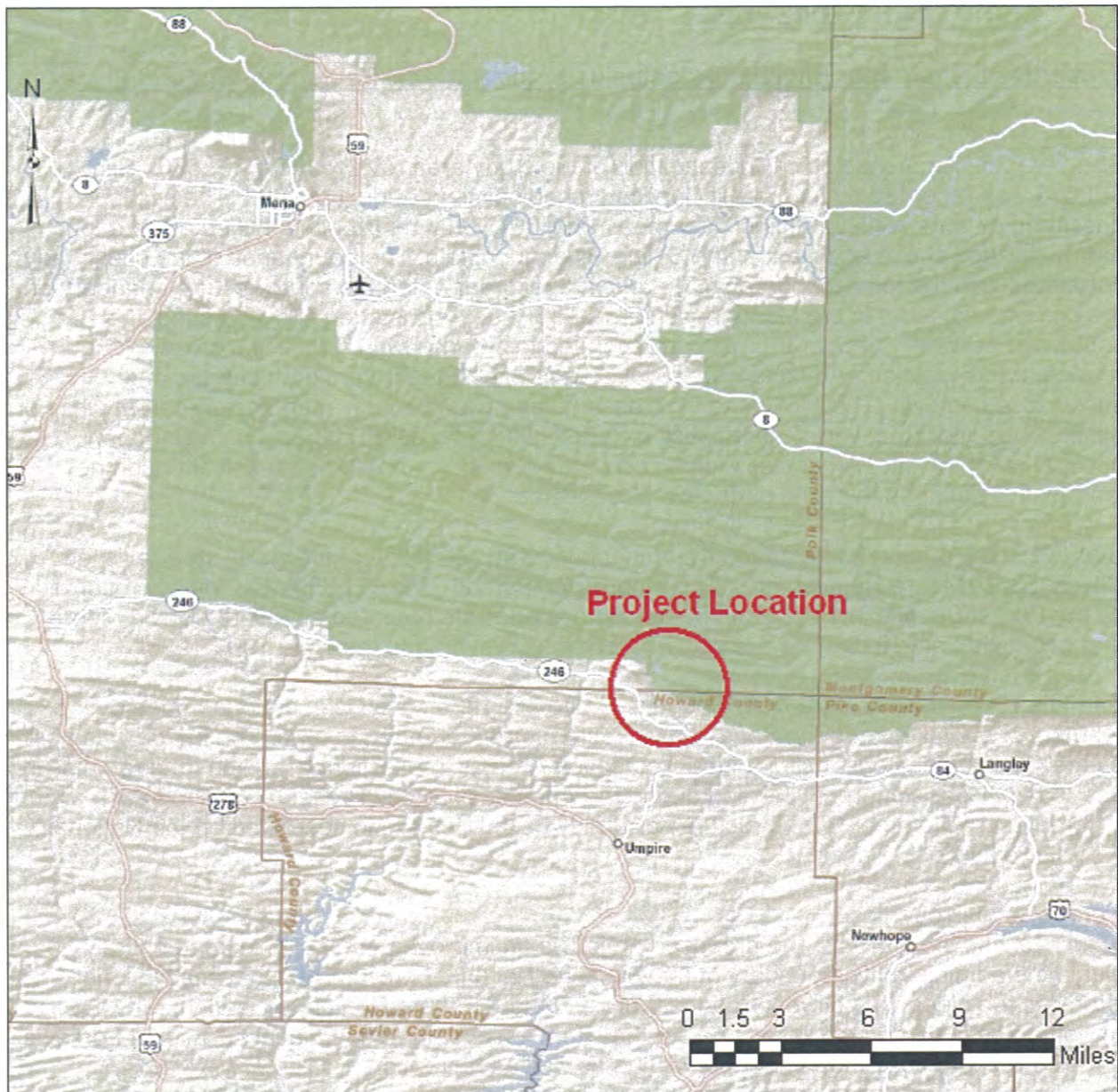


Figure 2. Project Location

Shady Lake Recreation Area: Shady Lake is a popular 25-acre recreational impoundment in the Ouachita National Forest served by an accompanying recreation area. The lake's dam and some facilities within the recreation area were constructed by workers of the CCC in 1938. The recreation area includes more than 60 campsites, a swimming beach, playground, hiking trails, picnic shelter, a grass boat ramp and other recreational facilities. Although multiple individual structures within the Recreation Area are listed on the National Register of Historic Places (Shady Lake Picnic Pavilion, Shady Lake Caretakers House, Shady Lake Bathhouse, Shady Lake Dam), the roadway improvements would not impact any of these listed structures.

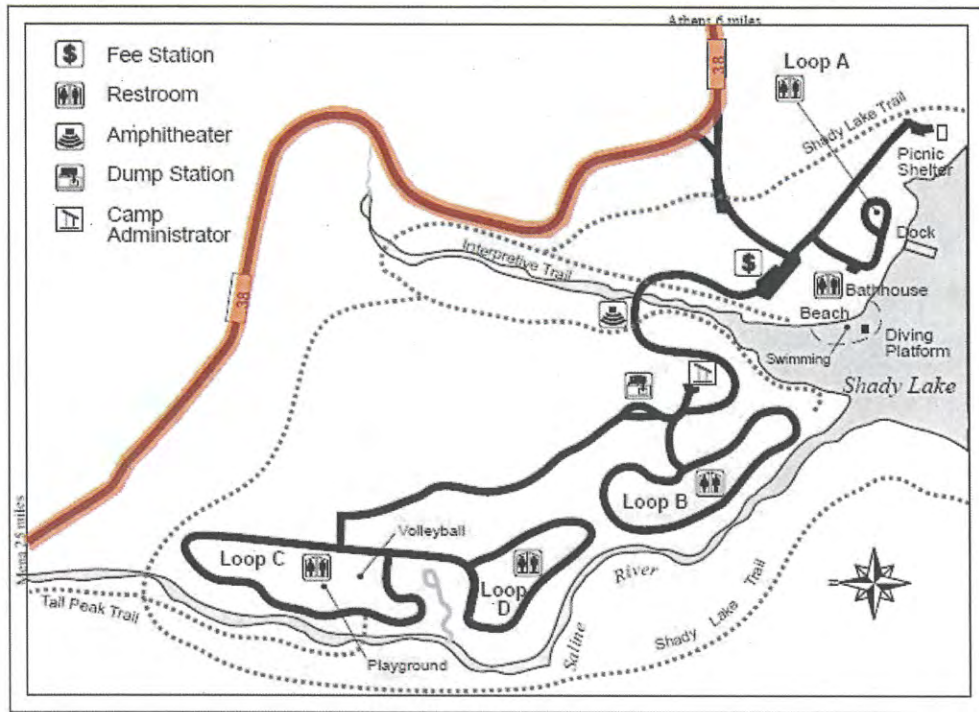


Figure 3. The entrance road is shown in relation to the Shady Lake Trail.

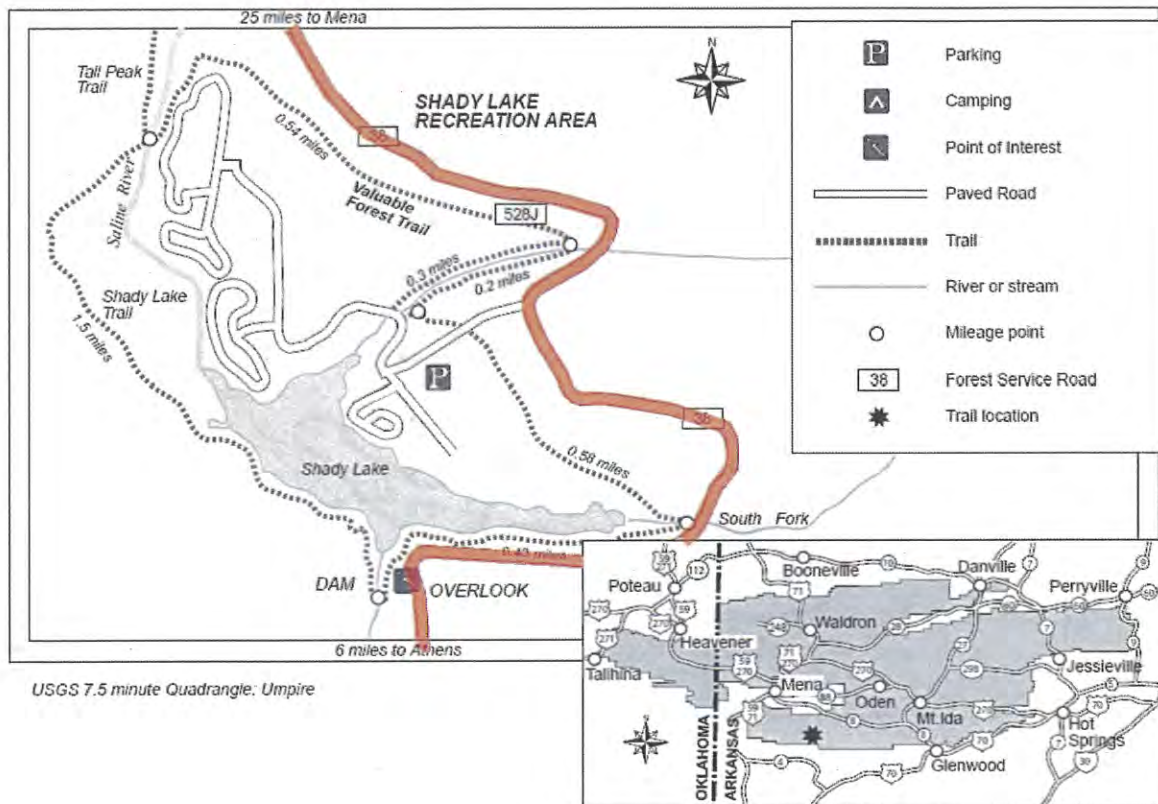


Figure 4. The entrance road is shown passing through the Shady Lake Recreation Area.

4. CONSTRUCTION OF THE ACTION ALTERNATIVE WOULD RESULT IN THE USE OF THE FOLLOWING RESOURCES

Historic Sites

Site 3PL576: A portion of the site would be permanently incorporated into the new road. Mitigation through data recovery would be completed. A maximum of 20 percent of the site impacted by the construction of the new entrance road would be sampled during the data recovery survey. While the site is bound to the south by the Saline River, the northern boundary of the site has not been adequately defined. The data recovery survey would define this boundary; however, the northern portions of the site will lie outside of the Area of Potential Effects, and would not be impacted by the construction of the new entrance road.

Site 3PL355: Most, if not all of the site will be impacted by the proposed construction of the new entrance road. Mitigation through data recovery would be completed. A maximum of 20 percent of the site impacted by the construction of the new entrance road would be sampled during the data recovery survey.

Site 3PL1325: The Shady Lake CCC Bridge #1 would continue to be used as part of the new entrance road. Repairs would be made to the bridge to reset loose stones and replace missing

stones. Measures to minimize the adverse effect to the bridge are outlined in a Memorandum of Agreement. These measures include matching the any new stone type, size and color to the existing stones, and also matching mortar color.

Recreational Properties

Ouachita National Forest: The only area of the Ouachita National Forest used for recreation that would be impacted by the proposed project is located within the Shady Lake Recreation Area.

Shady Lake Recreation Area: The road would be widened through curves and the travel lanes would be standardized; however, the footprint of the road would not significantly change. The project is being designed and constructed in multiple phases due to funding limitations; therefore, detailed information regarding the area of the Recreation that is impacted is unavailable. Land would be used (approximately 6.5 acres), but recreational use of the area would not be changed. The Forest trails, as shown in Figure 4, run between the lake and the entrance road. None of the proposed road improvements would shift the road towards the lake to impact the trails.

5. AVOIDANCE ALTERNATIVES

No Action Alternative

The No Action Alternative would not impact any Section 4(f) resources. However, under the No Action Alternative, no improvements would be made to access to the Shady Lake Recreation Area. Access would continue from State Route 246 along FS 38. The No Action Alternative is not prudent because it compromises the project to a degree that is unreasonable to proceed with the project in light of its stated purpose and need. The No Action Alternative also results in unacceptable safety and operational problems, as stated in Chapter 1, Section 1.3, Need.

There is no avoidance alternative that would avoid all of the Section 4(f) Resources.

Partial Avoidance – New Alignment Alternative (Figure 5 - A)

Any upgrade to the existing entrance road would impact the Shady Lake Recreation Area, because the northern portion of the existing entrance road is surrounded by the Recreation Area. The road would be realigned to cross the Saline River further south to avoid known archeological sites, Site 3PL355 and Site 3PL576; however there is a high likelihood that additional archeological sites would be discovered. This alternative would be approximately 0.20 miles longer. This longer portion of road constructed on a new alignment would require more cut/fill, which would disturb more of the natural environment. This alternative would also require a bridge adjacent to the stone CCC bridge and a longer bridge to cross the Saline River. This would cause additional impacts to wetlands and/or waters of the United States.

Partial Avoidance – New Alignment Adjacent to the CC Bridge (Figure 5 – B)

Under this Alternative, a new bridge and alignment avoiding the stone CCC bridge, Site 3PL1325, would be built. This alternative would cause additional adverse impacts to wetlands, waters of the U.S., water quality, wildlife and wildlife habitat, and vegetation.

Alternative Alignment from State Rounge 246 to the Saline River (Figure 5 – C)

This Alternative is not an Avoidance Alternative because it would also impact the Shady Lake Recreation Area, Site 3PL1325, Site 3PL355, and Site 3PL576.

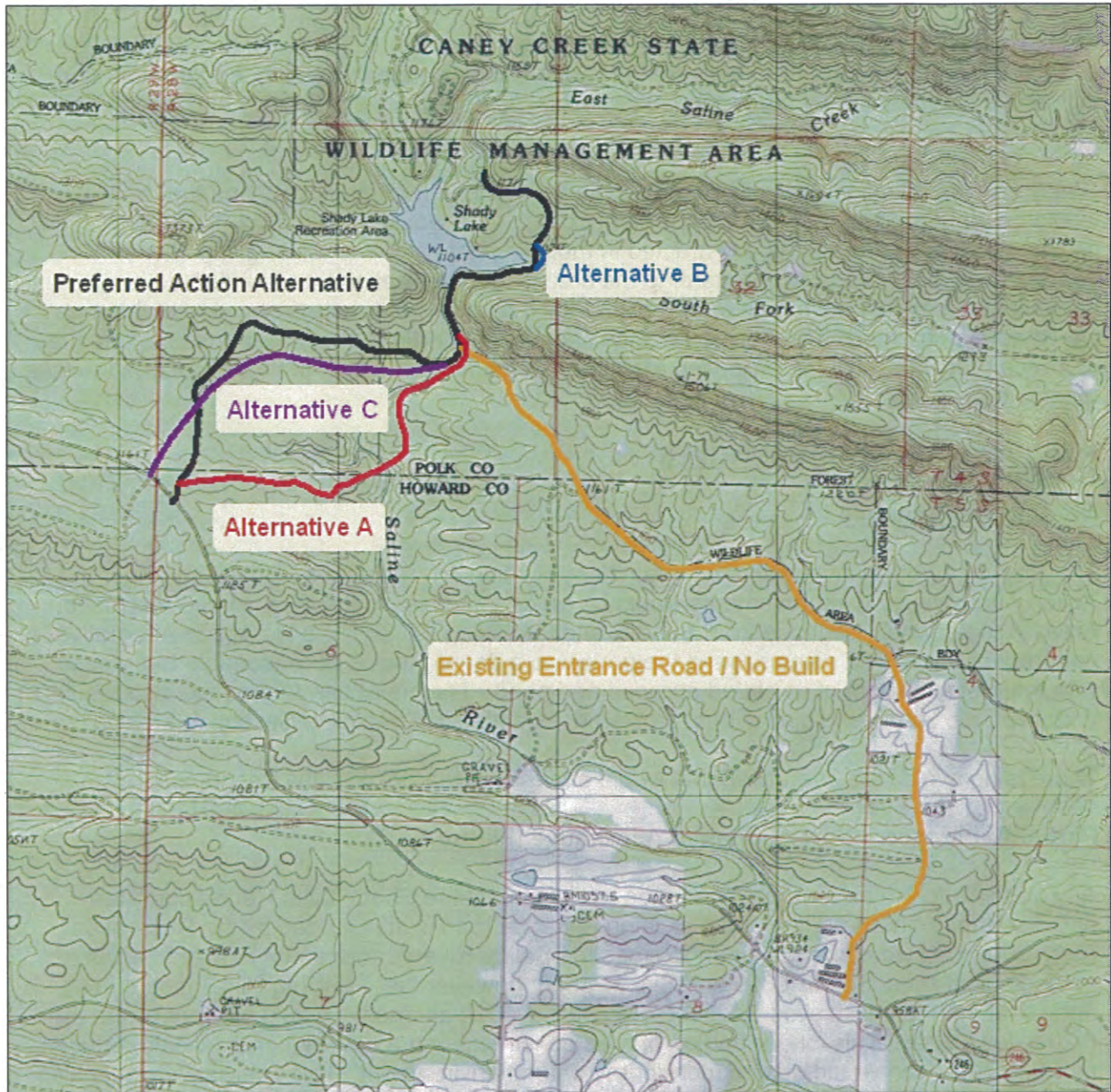


Figure 5. Section 4(f) Partial Avoidance Alternatives.

6. LEAST OVERALL HARM

Pursuant to 23 CFR 774.3(c), if the avoidance analysis determines that there is no feasible and prudent avoidance alternative, then only the alternative that causes the least overall harm to Section 4(f) property may be approved. Since the previous discussion demonstrates that there is no feasible and prudent avoidance alternative, all of the other alternatives were evaluated to determine which alternatives would cause the least overall harm to the Section 4(f) property.

This section evaluates those alternatives, including alternatives that would eliminate or reduce the use of individual Section 4(f) properties.

There are seven factors to be considered in identifying the alternative that would cause the least overall harm (see 23 CFR 774.3(c)(1)).

- i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)

Action Alternative: Ability to mitigate impacts

Alternative A: Ability to mitigate impacts

Alternative B: Ability to mitigate impacts

Alternative C: Ability to mitigate impacts

- ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection

- Action Alternative: Harm to Sites 3PL576, 3PL355, 3PL1325, and Shady Lake Recreation Area. Mitigation measures specified in the MOA would reduce the severity of the impacts to the historic sites. The severity of the use of the Shady Lake Recreation Area would be equal to Alternatives A and C.
- Alternative A: Harm to Site 1325, and Shady Lake Entrance Road. No harm to Site 3PL576, or 3PL355. Mitigation measures specified in the MOA would reduce the severity of the impacts to the historic sites. The severity of the use of the Shady Lake Recreation Area would be equal to the Action Alternative and Alternative C.
- Alternative B: Harm to Sites 3PL576, 3PL355, and Shady Lake Entrance Road. No harm to Site 3PL1325. Mitigation measures specified in the MOA would reduce the severity of the impacts to the historic sites. More harm would be done to the Shady Lake Recreation Area under Alternative B, because a new stream crossing structure and the roadway approaches to this new structures would impact additional area within the Recreation Area.
- Alternative C: Harm to Sites 3PL576, 3PL355, 3PL1325, and Shady Lake Recreation Area. Mitigation measures specified in the MOA would reduce the severity of the impacts to the historic sites. The severity of the use of the Shady Lake Recreation Area would be equal to the Action Alternative and Alternative A.

- iii. The relative significance of each Section 4(f) property

Each Section 4(f) property is considered to be of equal value.

- iv. The views of the official(s) with jurisdiction over each Section 4(f) property

An MOA was signed by the officials with jurisdiction over each Section 4(f) property that mitigates the effects to the historic properties from the Action Alternative. The FS, the official with jurisdiction over the recreational properties, is supportive of the proposed action.

- v. The degree to which each alternative meets the purpose and need for the project

The Action Alternative and Alternatives A, B, and C meet the project purpose and need.

- vi. After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)

Alternatives A and C would have appreciably more impacts to vegetation, wildlife and wetlands and waters. Alternatives A and C would construct a longer portion of the entrance road on a new alignment in previously undisturbed area, which would require clearing and grading in order to construct the road. These alternatives would also potentially have additional adverse impacts to archeological resources because there is a high probability of encountering archeological resources in this area based on known sites and previous studies. Alternative B would have more adverse impacts to waters because an additional stream crossing would be constructed.

- vii. Substantial differences in costs among the alternatives

Alternative B would cost slightly more, as a new stream crossing would be constructed. Alternative C would also cost more because more of the new entrance road would be constructed on a new alignment. This would require additional clearing and grading in order to construct the road. Alternative A would also cost more because more of the entrance road would be constructed on a new alignment.

7. ALL POSSIBLE PLANNING TO MINIMIZE HARM

“All possible planning” as defined in 23 CFR 774.17, includes all reasonable measures identified in the Section 4(f) Evaluation to minimize harm and mitigate for adverse impacts and effects. Planning to minimize harm has specifically involved a review of alignment shifts, roadway location in the landscape, retaining walls and other design elements, and mitigation.

The preliminary design of the Action Alternative has been reviewed by the FS, including their archeologists, in order to avoid and minimize impacts. The original design of the Action Alternative impacted a historic Manganese Mill site, Site 3PL342. The alignment of the road was shifted in order to avoid this historic resource.

A qualified archeologist would be contracted during construction in order to monitor all ground disturbing activities. The archeologist monitor would help identify any site components that may not have been uncovered previously. The archeologist monitor would also help expedite any consultation and assessments related to inadvertent discoveries.

The repairs made to the CCC bridge would be completed in a manner that will not adversely impact the historic integrity of the structure. Loose stones would be removed and replaced in the same location. Missing stones would be replaced with stones of a similar size and color. The mortar used to cement the stones in place would match the appearance of the existing mortar in color and consistency. The mortar would be repointed in the same style.

The new entrance road, as proposed under the Action Alternative, was designed to follow ground contours and the existing entrance road to the extent possible. The travel lanes were designed at a width of 10-feet with minimal shoulders, which reduces the footprint of the roadway prism. Minimizing the footprint of the road also minimized the portion of Site 3PL576

that would be impacted. Disturbance of the remainder of the site not potentially disturbed by the road construction would be avoided.

Minimization of the footprint of the road also minimized the portion of the Shady Lake Recreation Area that would be used by the construction of the new entrance road on a new alignment and the upgrading of the existing entrance road. As design of the project is finalized, additional minimization of impacts to the Recreation Area would be incorporated into the project.

8. COORDINATION

Agencies with jurisdiction over Section 4(f) resources were contacted to identify resources and areas of concern. Agencies contacted include the FS, Arkansas Historic Preservation Office, Quapaw Tribe, Choctaw Nation of Oklahoma, Chickasaw Nation of Oklahoma, Caddo Nation of Oklahoma, and Osage Nation. The EA and Draft Section 4(f) Evaluation will be sent to the Department of Interior, Arkansas Historic Preservation Office, Caddo Nation of Oklahoma, Chickasaw Nation of Oklahoma, Choctaw Nation of Oklahoma, Quapaw Tribe, and Osage Nation for review and comment concurrently with the release of the EA to the public for a minimum of 45 days in accordance with 23 CFR 774.5.

The public had an opportunity to review and comment on the July 2011 EA and Draft Section 4(f) Evaluation as well as the August 2011 Amendment to the EA. No comments from the public related to the Draft Section 4(f) Evaluation were received.

9. CONCLUSION

Modifying the route to avoid all Section 4(f) resources altogether would not be feasible and/or prudent because the existing road accessing the Shady Lake Recreation Area is within the Recreation Area. Modifying the route to avoid the historic sites would not be feasible and/or prudent for the following reasons:

- The project objectives would not be met.
- There would be major adverse impacts to the natural environment from an avoidance alternative.
- The monetary costs associated with avoidance would be high.

Based upon the analysis presented in this report, the Action Alternative would cause the least harm to the Section 4(f) resources. This alignment includes all possible planning to minimize harm to the Section 4(f) resources resulting from such use, and would:

1. have the lowest level of effects to the natural environment;
2. provide safer access to Shady Lake Recreation Area;
3. and, minimize conflicts between private landowners and visitors to the Recreation Area.

The recreational facilities and opportunities would be more accessible as a result of the construction of the connector road.

Based upon the above considerations, there is no feasible and prudent alternative to the use of the Shady Lake Recreation Area, Site 3PL1325, Site 3PL355, and Site 3PL576. However, the

