

**U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
OKLAHOMA DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ASSESSMENT**

ON

US 60

**FROM US 60/SH 99 INTERSECTION IN PAWHUSKA APPROXIMATELY 23
MILES TO SH 123 IN BARTLESVILLE**

OSAGE COUNTY, OKLAHOMA

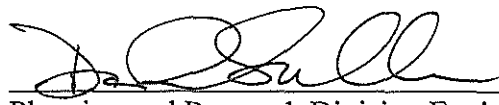
**FEDERAL AID PROJECT NO. NCPDY-018N(039)EC
STATE JOB NO. 21364(04)**

The proposed project is described as improving existing US 60 from the US 60/SH 99 intersection in Pawhuska, proceeding north approximately 5 miles to the SH 99 junction, and continuing east approximately 18 miles to SH 123 in Bartlesville.

This highway project is proposed for funding under Title 23, United States Code. This statement for the improvement has been developed in consultation with the Federal Highway Administration and is submitted pursuant to 42 USC-4332(2) (c).

Submitted:

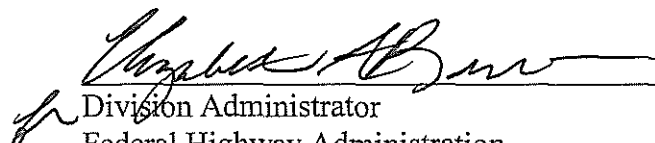
Date: 11/21/2006



Planning and Research Division Engineer
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Approved:

Date: 12/13/2006



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1.0 INTRODUCTION

This Environmental Assessment examines the anticipated social, economic, and environmental effects of the proposed improvement of existing US 60 in Osage County between the communities of Pawhuska and Bartlesville. This document has been prepared to comply with the National Environmental Policy Act of 1969, as amended, and was completed in conformance with the environmental regulations for highway projects developed by the Federal Highway Administration (FHWA), U.S. Department of Transportation, i.e., Code of Federal Regulations Title 23, Part 771. This assessment was developed in consultation with FHWA and has been coordinated with other federal, state and local agencies or organizations.

2.0 LOCATION AND DESCRIPTION OF PROPOSED ACTION

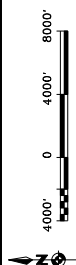
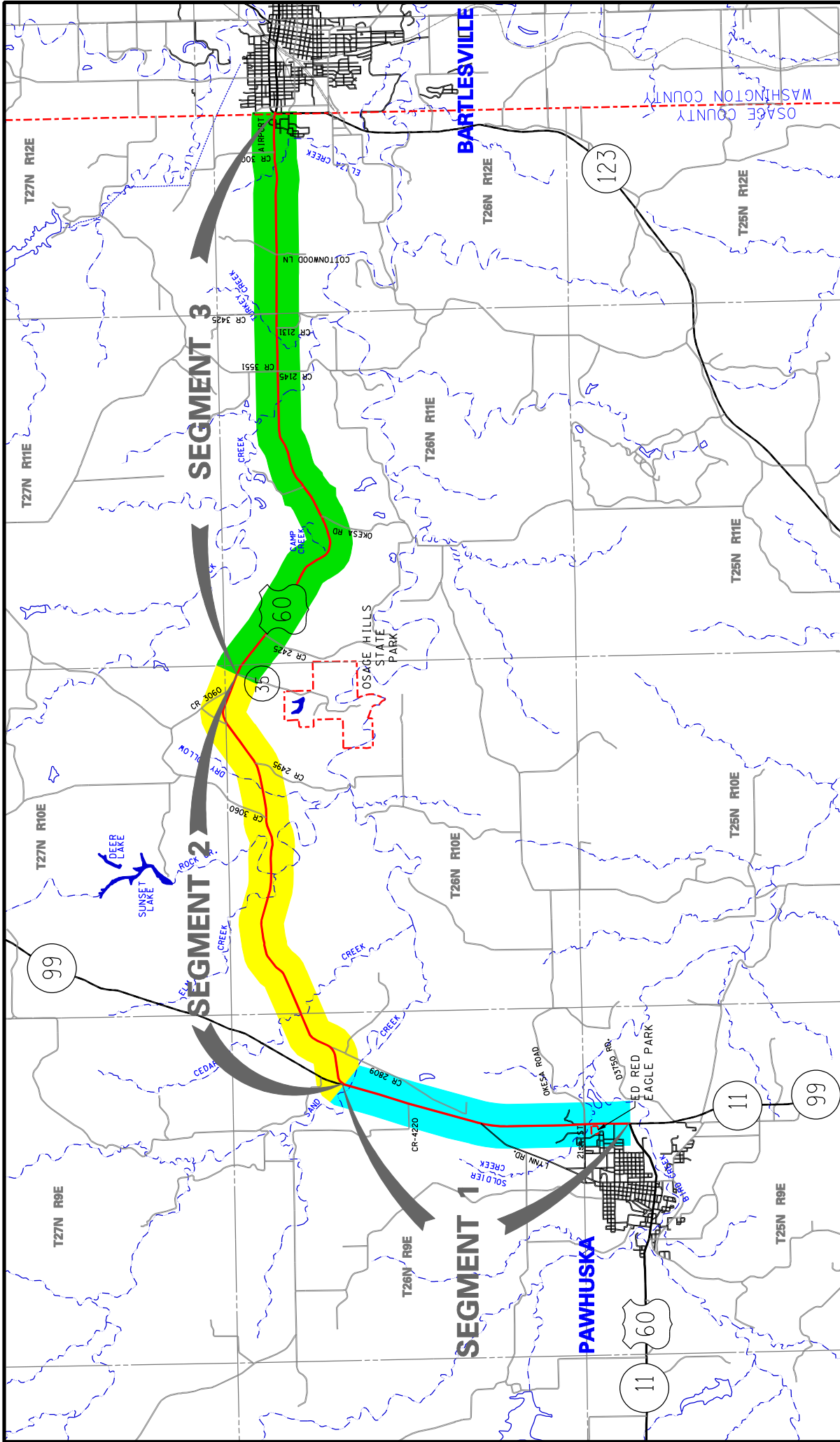
Initially, the proposed project will consist of improving the existing two lanes of US 60 in Osage County between the communities of Pawhuska and Bartlesville. The improvements will extend from the US 60/SH 99 intersection in Pawhuska north approximately 5 miles to the SH 99 north junction, then continue east approximately 18 miles to SH 123 in Bartlesville. The location of the project is depicted in Figure 1. These proposed improvements will bring the existing two-lane facility up to existing design standards, and will include widening, resurfacing, adding shoulders, correcting horizontal and vertical alignments, and replacing substandard bridges.

Although the initial improvements will result in an improved two-lane facility, this Environmental Assessment addresses the environmental impacts associated with widening the facility to four lanes.

Therefore, when future traffic supports widening the facility to four lanes and funding is available, the environmental process will have already been completed, allowing such future projects to proceed in a timely manner.

The project area is within a rural setting and is generally undeveloped. Land use along this roadway is primarily agricultural with widely dispersed residences and commercial/business development.

For ease of discussion, the proposed project area has been broken into three (3) segments depicted in Figure 2. All of the roadway segments are rural two-lane facilities having at-grade intersections with no control of access. Segment 1 begins just north of the junction of US 60 and SH 99 in Pawhuska and extends north approximately 5 miles to the north junction of SH 99. Land use in Segment 1 is agricultural and scattered residential, with some commercial use near Pawhuska. Segment 2 begins at the north junction of SH 99 and extends east approximately 8 miles to the SH 35 junction. Land use in Segment 2 is also agricultural and scattered residential. Segment 3 begins at the SH 35 junction and extends east approximately 10 miles to SH 123 in Bartlesville. Land use in Segment 3 is agricultural, with increasing residential and commercial use near Bartlesville.



**U.S. 60 SEGMENTS 1, 2 AND 3
FIGURE 2**



3.0 PURPOSE AND NEED FOR THE PROJECT

3.1 Introduction

US 60 is an important transportation corridor traversing northern Oklahoma. It enters the state on the west near Higgins, Texas and exits on the east near Seneca, Missouri. This roadway serves as a vital link between Interstate 35 and Interstate 44, and thus is important economically to this area of the state as well as nationally. US 60 is also an important route to members of the Osage Nation.

US 60 is classified as a principal arterial route, which is defined as a route providing an interconnected network between major urban areas. These routes provide a similar type of service to that of the interstate system by serving major, long distance traffic. All portions of US 60 are listed as part of the National Highway System (NHS). Existing US 60 is a two-lane facility with minimal to no shoulders along the project study area. In several places along the study area, the existing roadway is below the standard width of 12-foot lanes. The existing roadway provides limited passing opportunities due to the horizontal and vertical alignments.

3.2 Safety

3.2.1 Sufficiency Ratings

A procedure has been established for rating highways in order to recommend improvements for planning purposes. These sufficiency ratings objectively indicate the overall adequacy of a roadway depending on its design and condition. The final rating value ranges from 0 to 100 points, with an overriding 0 to 40 points deducted due to capacity restrictions. Roadways and bridges can then be classified according to adequacy as a result of total points as shown in Table 1.

Sufficiency Rating	Classification
80 - 100	Adequate
70 - 79	Tolerable
60 - 69	Inadequate
59 & below	Critically Inadequate

Segment 1 - The Oklahoma Department of Transportation Needs Study and Sufficiency Rating Report for 2003 indicates that the sufficiency rating for Segment 1 is *adequate*.

Segment 2 - The Oklahoma Department of Transportation Needs Study and Sufficiency Rating Report for 2003 indicates that the sufficiency rating for Segment 2 is *critically inadequate*.

Segment 3 - The Oklahoma Department of Transportation Needs Study and Sufficiency Rating Report for 2003 indicates that the sufficiency rating for Segment 3 is *inadequate*.

3.2.2 Substandard Design Elements

3.2.2.1 Segment 1

The existing horizontal alignment south of Sand Creek meets current design criteria. Curves at and immediately east of the existing SH 99 intersection north of Sand Creek do not meet current guidelines. Improvements to the intersection geometry are needed to increase the safety of the turning movements at this intersection and remove the sharp curves east of the existing intersection.

A portion of the vertical alignment just south of Sand Creek does not meet design criteria for stopping sight distance. The remaining portion of this segment, except for two other vertical curves, meets current design criteria.

The lane width is substandard along the northern one-third of this segment. Also, paved shoulders do not exist on the northern one-third of this segment. Increasing the lane width to standard width and adding paved shoulders will improve the safety of this portion of the segment.

The Sand Creek Bridge is functionally deficient. The bridge is also listed as structurally deficient in the ODOT 2003 Needs Study and Sufficiency Rating Report. Replacing this bridge would improve safety in this segment.

3.2.2.2 Segment 2

The horizontal and vertical alignments in this segment do not meet current design criteria at multiple locations. Horizontal curve and vertical curve corrections will be necessary to bring this segment up to current design standards.

The existing roadway does not have paved shoulders. In addition, the western two-thirds of this segment has substandard lane width. Adding paved shoulders and increasing the lane width to standard width are safety measures that would improve this segment.

All of the Segment 2 bridges are functionally deficient. The Cedar Creek Bridge is also structurally deficient. All bridges in Segment 2 should be replaced.

3.2.2.3 Segment 3

Like Segment 2, both the horizontal and vertical alignments in this segment do not meet current design criteria. Corrections to the horizontal and vertical curves will be required to raise this segment to current design standards.

The eastern one third of the segment recently had paved shoulders added to the roadway. Paved shoulders do not exist on the other two thirds of this segment. Adding paved shoulders throughout will improve the safety of this segment.

All bridges in the unimproved portion of Segment 3 are functionally and structurally deficient. To improve the safety in this segment, all of the bridges in the unimproved portion of Segment 3 should be replaced.

3.2.3 Collision History

The State of Oklahoma keeps statistical data that considers collision numbers and severity, as well as the amount of traffic and mileage. This data has been considered for each of the three segments of the project, and compared to statewide averages for highways of similar nature. If the data indicated that the collision rate for a segment was greater than the maximum that would be expected for that type of highway, the segment is rated as a "critical" segment of highway. If the collision rate of the segment was less than the "critical" rate, but exceeded the midpoint value between the critical and average collision rates for the segment, the segment is rated as an "approaching critical" segment of highway.

Segment 1 - The ODOT Highway System Collision Listing data for Segment 1 was compiled for the 3-year period from July 1, 2000 through June 30, 2003. Segment 1 data, when compared to a rural two-lane facility with no control of access, is rated as a “not approaching critical” high crash rated segment.

During the analyzed period, 12 total crashes, including 7 injury-related crashes and no fatalities, were reported. Fixed object crash type was observed to be the primary contributor with over 50% of the crashes occurring during dark conditions due to unsafe driver speed and inattentiveness. Rear-end and angle-type crashes were the second most frequent crash types.

Segment 2 - The ODOT Highway System Collision Listing data for Segment 2 was compiled for the 3-year period from July 1, 2000 through June 30, 2003. Segment 2 data, when compared to a rural two-lane facility with no control of access, is rated as an “approaching critical” high crash rated segment.

During the analyzed period, 14 total crashes, including 8 injury-related crashes and no fatalities, were reported. The majority of the crashes were fixed object type with over 50% of the crashes occurring during dark conditions due to unsafe driver speed.

Segment 3 - The ODOT Highway System Collision Listing data for Segment 3 was compiled for the 3-year period from July 1, 2000 through June 30, 2003. Segment 3 data, when compared to a rural two-lane facility with no control of access, rated as an “approaching critical” segment from 2000 to 2002. In year 2003 the segment rated as a “not approaching critical” high crash segment.

During the analyzed period, 31 total crashes, including 18 injury-related crashes and 1 fatality, were reported. Fixed object crash type was observed to be the primary contributor with angle-turn crash types being second most frequent. The analysis showed unsafe driver speed, inattentiveness and follow too close being the primary cause of the crashes.

3.3 Transportation Demand

Existing and future traffic analyses were developed by ODOT for this study to assist in determining what type of improvements, if any, are needed in the design year. The existing (2005) and future (2030) average daily traffic (ADT) along US 60 were analyzed for each segment as summarized in Table 2. Appendix A contains US 60 traffic data published by ODOT in 2004.

It was determined that 15 percent of all vehicles traveling along this stretch of US 60 are trucks. Of this 15 percent, 10 percent are considered heavy trucks (semi-trucks).

A comparison of the 2030 ADT for the three segments indicates that Segments 1 and 3 will be at or very near the ADT criteria normally associated with the need for a 4-lane facility. Although Segment 2 will be less than the 4-lane criteria, 4 lanes for all three segments will be needed in the future to ensure roadway continuity and to safely handle future truck traffic.

TABLE 2

EXISTING AND PROJECTED AVERAGE DAILY TRAFFIC		
Segment of Project	Existing ADT (2005)	Future ADT (2030)
Segment 1	4,800	7,200
Segment 2	2,800	4,200
Segment 3	7,000	11,200

3.4 Purpose and Need Summary

As indicated by the previous discussion, improvements to US 60 are needed to improve safety and to provide the capacity needed for projected traffic growth on US 60. The improvements are also needed to correct substandard design features, such as shoulders, vertical and horizontal alignments, and bridges. The proposed improvements are discussed by Segment in Section 4.1.2.

4.0 ALTERNATIVES

4.1 US 60 Alternatives

4.1.1 No-Build Alternative

In addition to a Build Alternative, a No-Build Alternative was considered in project development. The No-Build Alternative would continue use of the existing US 60 facility and would not provide the needed improvements to correct the substandard design features, such as widening, resurfacing, adding shoulders, correcting vertical and horizontal alignments, and replacing substandard bridges. The No-Build Alternative does not meet the purpose and need of providing the necessary safety or capacity for this roadway that will be necessary as traffic growth continues.

Based upon the identified purpose and need for the project and a thorough analysis and study of all social, economic, and environmental considerations, the No-Build Alternative is rejected as the preferred solution for US 60.

4.1.2 Build Alternative

The Build Alternative will consist of improvements made upon the existing alignment, as well as some horizontal alignment (i.e., curve) corrections. The Build Alternative also considers the potential need for addition of lanes, when future traffic supports additional lanes. It was initially proposed to consider a North and a South Build Alternative, i.e., adding additional lanes either to the north or to the south of existing US 60. However, upon review of the geometry of the necessary curve corrections, it was determined that the only feasible Build Alternative must be a “hybrid”, with additional lanes added to the north or the south, as necessary to smoothly transition between curve corrections.

Therefore, the Build Alternative consists of combined existing roadway and new horizontal alignments. Where the existing roadway will be incorporated into the proposed US 60 roadway, two additional lanes will be added parallel to the existing horizontal alignment. The existing lanes will be improved by adding an eight foot shoulder to both lanes, and the existing lane horizontal and vertical alignments will be improved as necessary to meet minimum standards. In areas of curve corrections, a new four-lane divided roadway will be constructed in the new location of the proposed US 60

alignment. Phased construction will be utilized to transform the existing US 60 from a two-lane facility into a four-lane divided roadway between Pawhuska and Bartlesville.

4.1.2.1 Segment 1

For Segment 1, the existing facility will be utilized from the US 60/SH 11 Junction north approximately 5 miles to the existing US60/SH99 intersection. Two additional lanes will be constructed east of the existing facility to complete the four-lane divided roadway section. The east side was selected for the new lanes because it avoids impacting the commercial development in the northwest quadrant of the US 60/SH 11 Junction and Ed Red Eagle Park. The east side also provides the most logical bridge construction and transition across Sand Creek on the northern end of the segment.

4.1.2.2 Segment 2

For Segment 2, the US 60/SH 99 intersection will be totally reconfigured and relocated roughly 0.5 miles northeast of the existing intersection. A one mile length of new four-lane US 60 will be located north of the existing roadway in the vicinity of the intersection. SH 99 will remain a two-lane road and be realigned to the east to create a perpendicular intersection with new US 60 lanes in this area.

East of the new US 60/SH 99 intersection, the existing roadway will be utilized and two additional lanes will be built south of the existing US 60 roadway to just east of the Cedar Creek area for approximately 1 mile. Curve corrections to the west and east of the Cedar Creek area influenced the decision to locate the new lanes south of existing US 60.

From this point, four new lanes will be constructed south of the existing roadway for about 1 mile to near Elm Creek. For the approximate one mile length through the Elm Creek and Rock Creek areas, two new lanes will be located north of existing US 60. The proximity of Elm Creek and Rock Creek to the roadway impacted the decision of adding the new lanes to the north side of existing US 60. A 0.25 mile length of four new lanes will be constructed south of the existing US 60 at the intersection with CR 3060 to provide a needed curve correction. As the roadway proceeds east through Dry Hollow Creek, the additional two lanes will be built south of existing US 60 for approximately 1.5 miles. The last one mile portion of Segment 2 will be composed of four new lanes on the north side of the present lanes. Positioning the new lanes to the north of existing US 60 avoids the historic entrance structures to Osage Hills State Park at the US 60/SH 35 intersection.

Segment 2 currently contains numerous locations where the existing horizontal curves need to be corrected to improve safety. These safety considerations were the main reasons for the selection of the proposed new lane locations.

4.1.2.3 Segment 3

For Segment 3, the new lanes will remain north of US 60 east of the US 60/SH 35 intersection for roughly 0.75 miles to avoid the historic entrance structures to Osage Hills State Park at the US 60/SH 35 intersection. From this point, two additional lanes will be transitioned to the south side of existing US 60 and proceed along the south side of the existing roadway for approximately 1.5 miles until the roadway approaches the Camp Creek area. For approximately 1 mile through the Camp Creek area, four new lanes will be constructed to the north of the existing highway to correct a series of substandard horizontal curves. Between Okesa Road and Buck Creek, two additional curves will

be corrected by constructing all four lanes south of the existing roadway, thus avoiding a large excavation into the side of the hill and a cell phone tower located on the north side of US 60. The remaining 4.5 miles from the Buck Creek area to the termini in Bartlesville will be completed by constructing the two new lanes on the south side of the existing roadway. The south side was chosen to avoid engineering constraints presented by the north side, and because a south side alignment would best align with the existing 4 lane divided section on the west side of Bartlesville.

4.2 Selection of Preferred Alternative

As indicated previously, the Build Alternative is a “hybrid” consisting of additional lanes to be added to the north and the south of existing US 60, as well as new four-lane segments on new alignment in areas of needed curve corrections. The recommended addition of the new lanes either to the north or the south of the existing roadway was based upon issues such as curve correction geometries, topographical obstacles, the proximity of historic structures or parks, and the need to smoothly transition into existing improved sections of the roadway. The Build Alternative described previously is considered the Preferred Alternative to meet the purpose and need for this project. This decision is based on a balanced consideration of the need for a safe and efficient transportation facility with the minimal social, economic, and environmental effects generated by the proposed improvements. The Preferred Alternative is presented in Figures 3A, 3B, and 3C.

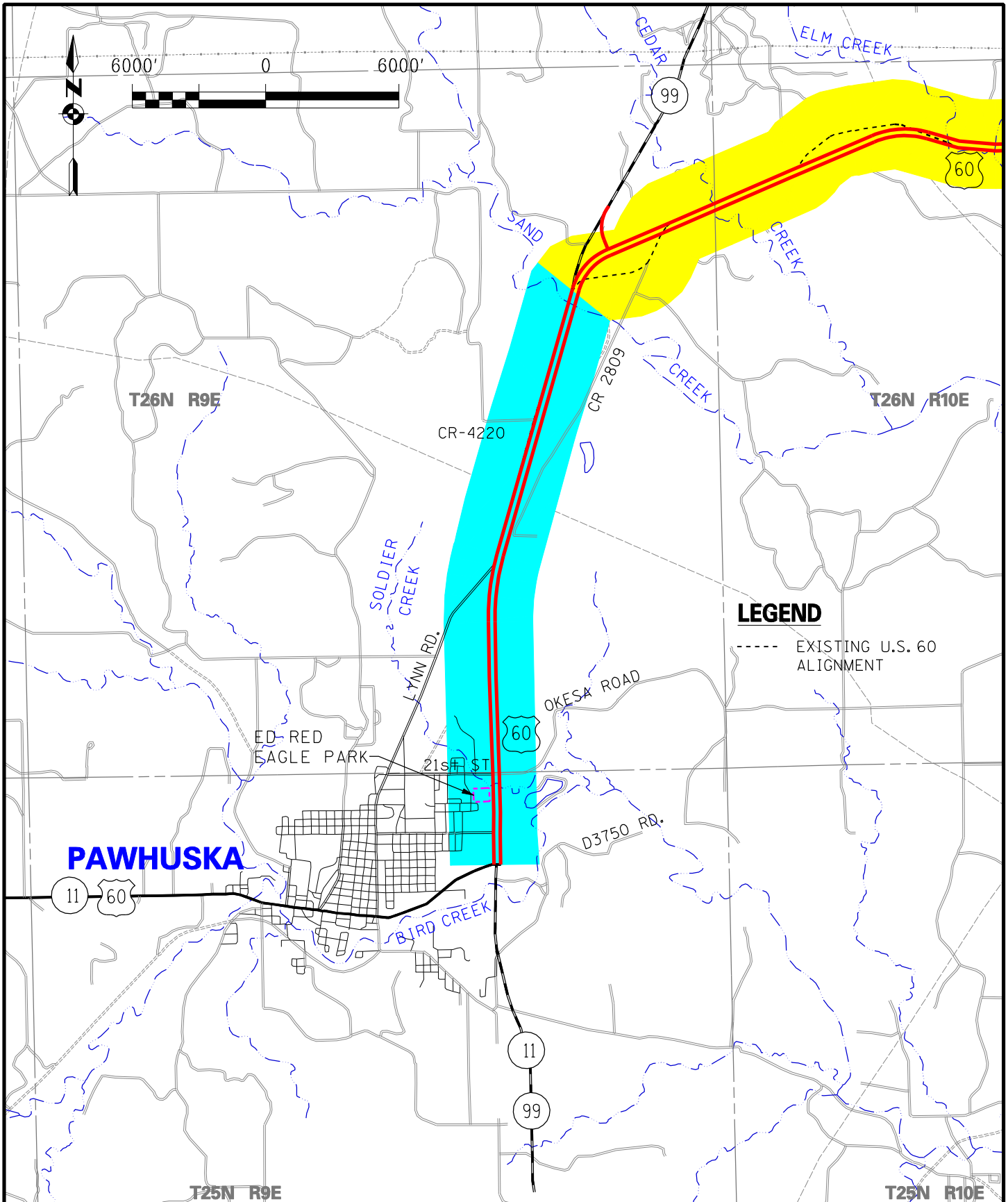
5.0 SOCIAL, ECONOMIC AND ENVIRONMENTAL EFFECTS

Appendix B contains a list of the social, economic and environmental factors examined by the Department in the development of this project. Based on this examination, the following areas are the major environmental issues associated with constructing the Preferred Alternative for US 60. A study corridor of 600 feet was established about the existing alignment to evaluate the environmental constraints. The final design of the Preferred Alternative will likely require less than a 600-foot corridor, so the actual impacts of this project may be somewhat less than described in this assessment.

5.1 Potential Relocation/Right-of-Way Impacts

A substantial human impact that can occur with any transportation improvement is the relocation of people, businesses and farms. During project development activities, only general design information is available and exact property impacts are not known. The Department understands this can be a difficult time for property owners, but until final design plans are available, no exact information with regard to needed right-of-way can be provided. Impacts to properties will be minimized as much as possible as long as the final design plan meets all state and federal standards to improve safety.

The number of residential and commercial structures that might be relocated by the Preferred Alternative was estimated for the project based upon a windshield survey of the corridor and the proposed preliminary right-of-way requirements, which are subject to change once final plans are prepared. The 600-foot corridor evaluated for all other studies was not utilized to estimate relocations, due to the exaggerated estimate of relocations that would have resulted. Table 3 lists the residential and commercial structures estimated by ODOT for relocation as of January 2006.

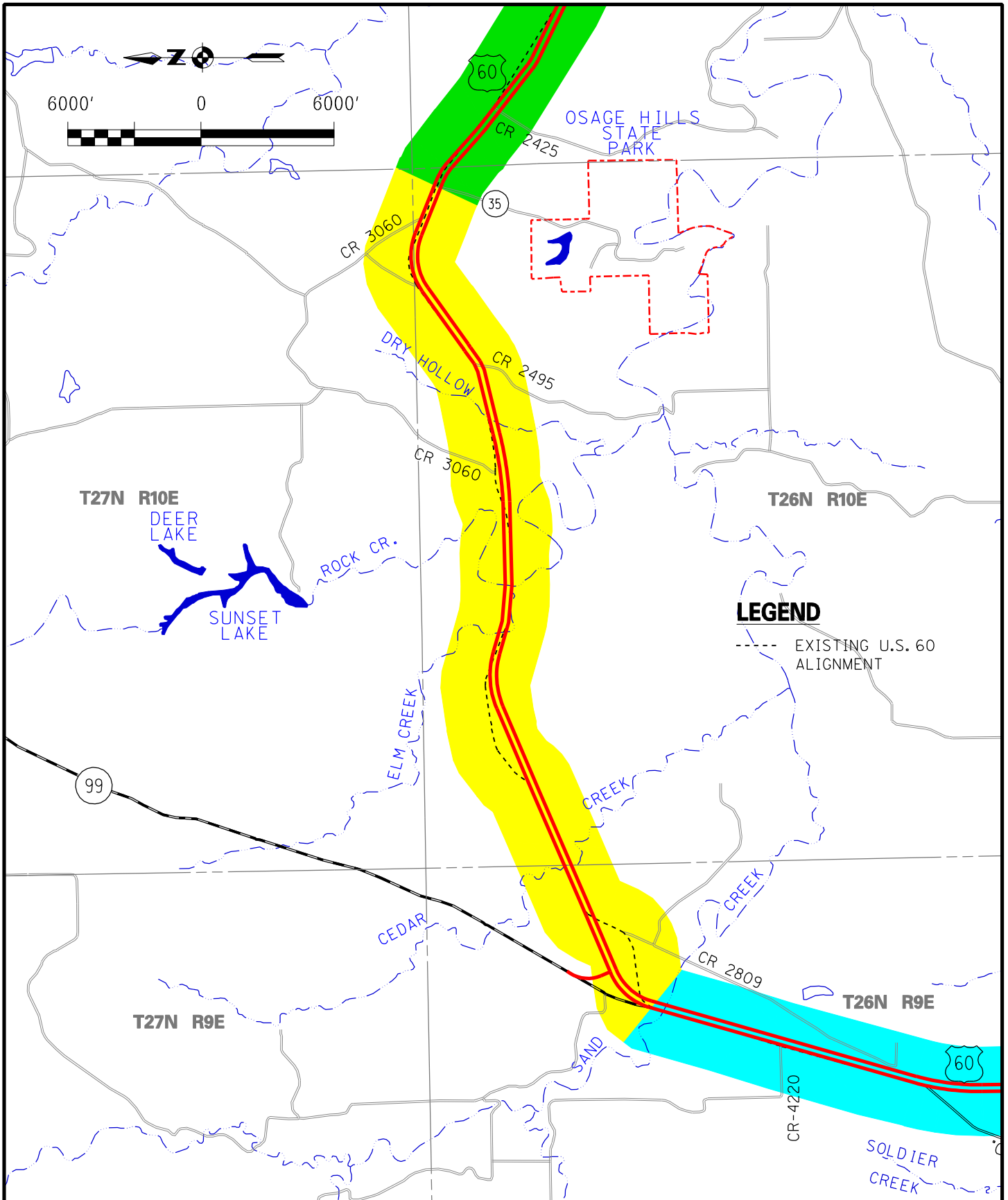


PAWHUSKA

LEGEND
 ----- EXISTING U.S. 60 ALIGNMENT

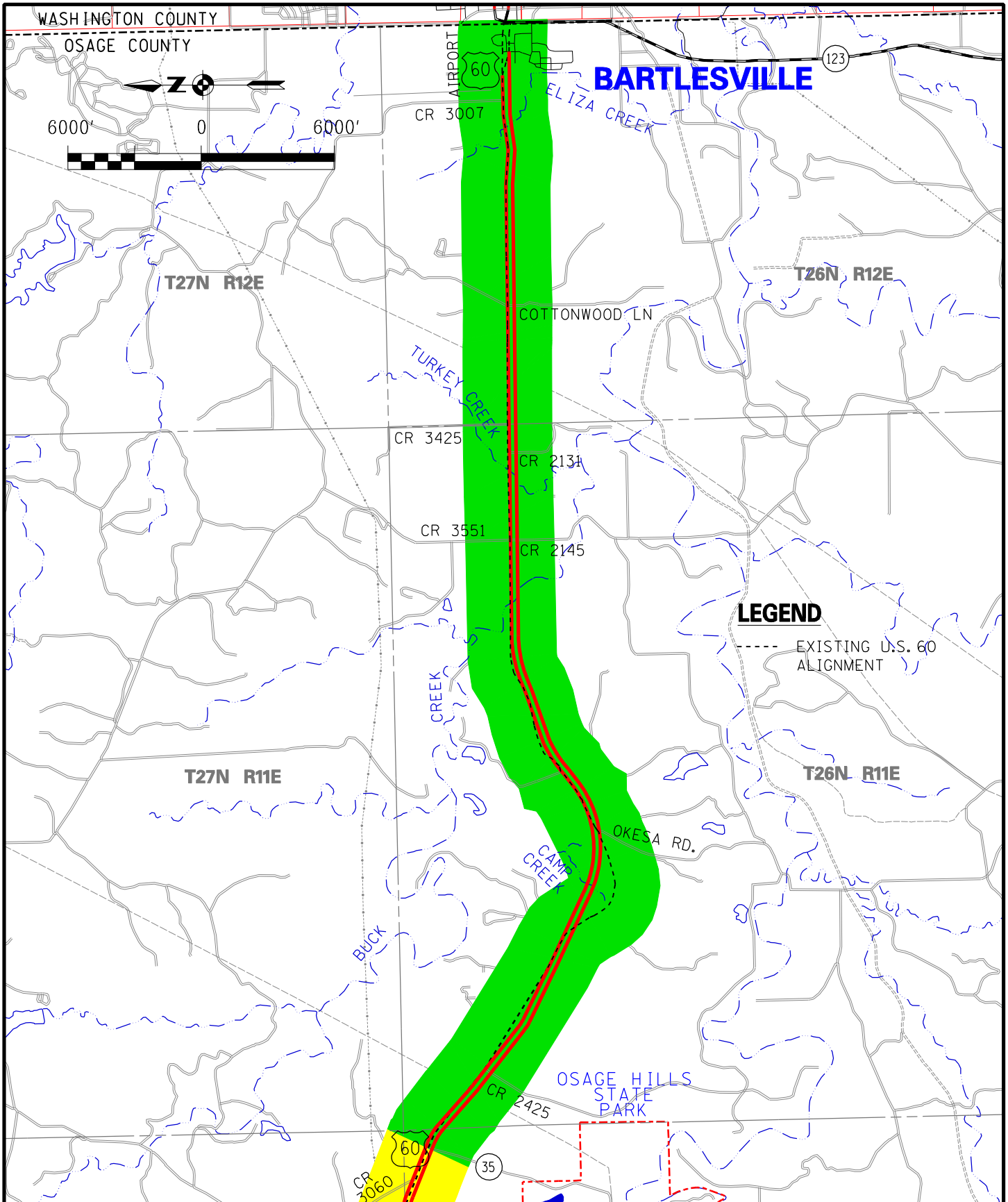
**U.S. 60 PREFERRED ALTERNATIVE
 SEGMENT 1
 FIGURE 3A**





**U.S. 60 PREFERRED ALTERNATIVE
SEGMENT 2
FIGURE 3B**





**U.S. 60 PREFERRED ALTERNATIVE
SEGMENT 3
FIGURE 3C**



Table 3: Estimated Relocations Associated with US 60 Improvements		
Segment	Residential	Commercial
1	1	0
2	0	1
3	24 (3 of which are mobile homes)	1
Total	25	2

As indicated by Table 3, the majority of estimated residential relocations are scattered within Segment 3. The highest density of these residences occurs in the extreme eastern end of Segment 3, with approximately 22 residences located within 4 linear miles. Adequate replacement housing of similar size and price ranges is available in nearby Bartlesville.

One of the estimated commercial relocations is apparently an inactive salvage yard. The other commercial relocation is Midway Outlets, a small convenience store located just south of US 60. Midway Outlets employs one person, and conversations with the facility’s owner indicate that the owner plans to relocate the business on the remaining parcel.

Acquisition and relocation assistance will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, effective February 3, 2005. This assistance will be provided to all displacees without regard to race, color, or national origin. Replacement dwellings shall be decent, safe, and sanitary. Housing of last resort will be provided if sufficient comparable replacement housing is not available within the financial means of displacees.

5.2 Noise Impacts

A noise assessment was completed that complies with the Department’s Policy Directive “Highway Noise Abatement” and Federal Highway Administration Regulation 23 CFR 772. The purpose of the noise assessment is to determine the noise impacts from the proposed highway improvement. Noise impacts were determined by modeling future noise levels for the preferred alignment and comparing these levels with the existing noise levels and the noise abatement criteria established in 23 CFR 772. Table 4 lists the FHWA noise abatement criteria. A noise impact is considered to be: (1) noise levels approaching or exceeding 66 dBA Leq(h) are projected to occur along the project area, or (2) a 15 dBA Leq increase in projected future traffic noise levels over existing noise levels.

Noise assessment of the US 60 project area was conducted for each of the three (3) project segments. No 15 dBA Leq increases in traffic noise levels were predicted for any of the segments. Brief summaries of the noise assessment results are presented in the following sections of text, and a copy of the noise assessment report is in Appendix C.

Table 4: Federal Highway Administration Noise Abatement Criteria (NAC)		
Activity Category	Noise Level (Leq)	Description of Activity Category
A	57 (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of these qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheatres, particular parks or portions of parks, open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, and parks which are not included in Category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

In Segment Three, two residences are predicted to experience noise impacts. As part of the roadway design process, noise mitigation measures for these residences will be evaluated for feasibility and reasonableness. The feasibility of providing mitigation deals primarily with engineering considerations (i.e., can a barrier or berm be built given the topography of the location; can a substantial noise reduction be achieved given certain access, drainage, safety or maintenance requirements; are other noise sources present in the area; etc.). Reasonableness is a more subjective criterion than feasibility and relies on common sense and good judgment in arriving at a decision. Reasonableness addresses the amount of noise reduction provided, number of people protected, total cost, cost variation with degree of benefits provided, aesthetic impacts, and the desire for a surrounding view.

5.2.1 Segment One

Only one receiver in Segment One, a narrow strip approximately 7 feet wide of the Ed Red Eagle Park adjacent to US 60, was predicted to experience a traffic noise impact. However, no Park facilities are located within this narrow strip. Because the nearest Park facility is located approximately 60 feet west of the predicted 66 dBA contour, no noise impacts are anticipated to Park activities.

5.2.2 Segment Two

No receivers were predicted to experience traffic noise impacts in Segment Two.

5.2.3 Segment Three

Segment Three predicted twenty-one (21) residences and a portion of the privately-owned Bartlesville Round-Up Club will experience a noise impact. Of the 21 residences, 19 residences lie within the probable limits of construction and would likely be purchased prior to the project undertaking. As part of the roadway design process, potential noise abatement measures for the remaining two (2) residences will be identified and evaluated for feasibility and reasonableness.

Bartlesville Round-Up Club also lies within the 66 dBA contour, this noise level is not expected to affect the Bartlesville Round-Up Club's activities.

5.3 Land Use

Existing land use throughout the US 60 corridor is primarily agricultural with some commercial at the west end in Pawhuska and the east end in Bartlesville. Homes are also scattered within the study area. School districts partially located in the study corridor include Osage Hills, Pawhuska Rural, and Bartlesville Rural. No churches are located within the study area.

Future land use is mainly under the control of the Osage County Planning Commission and the City of Bartlesville Planning Commission with each of these groups having a comprehensive plan. The two main elements to these comprehensive plans are intensity and land use. Due to the existing National Highway System's designations and the importance of these highways to the local, regional and national traffic, future land use is not expected to change substantially due to the roadway being widened. The planned roadway improvements are compatible with each comprehensive plan.

5.4 Biological Evaluation

Section 7 of the Endangered Species Act, 1973 as amended, (ESA) requires each Federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species. The federally listed endangered, threatened, or candidate species that may inhabit or be found within Osage County (U.S. Fish and Wildlife Service letter in Appendix D) include the American Burying Beetle, Interior Least Tern, Whooping Crane, Bald Eagle, Piping Plover, Mountain Plover, and Neosho Mucket. Informal consultation with the U.S. Fish and Wildlife Service (USFWS) determined that suitable habitat does not occur in the project area for any of these species but the American Burying Beetle (ABB). The USFWS concurred that no adverse effects are likely to occur to the ABB with the implementation of the proposed ABB conservation measures of baiting away or trapping and relocating the ABB. Accordingly, ODOT will perform a survey for the ABB under appropriate climatic conditions and prior to project construction. Minimization measures will be implemented as necessary.

The USFWS also noted that the tallgrass prairie ecosystem is near the area of the proposed project and should be avoided during project construction. Based on preliminary design, the Preferred Alternative is not anticipated to impact the tallgrass prairie ecosystem.

Finally, the USFWS noted that migratory birds follow the path of the project and could possibly be threatened by the planned alignment. To protect key migratory bird species subject to provisions of the Migratory Bird Treaty Act (MBTA), ODOT will consider and implement reasonable measures to avoid destroying the occupied nests of such species in the project area. These avoidance activities could include initiating clearing/grubbing and bridge structure removals only in the normal non-nesting season of these species, placing nets or other similar barriers under bridges and culverts before demolition to prohibit nesting by protected species, or other measures as agreed upon between ODOT and USFWS.

The Oklahoma Department of Wildlife Conservation (ODWC) noted that two special species of concern, the Prairie Mole Cricket and Texas Horned Lizard, have been known to occur near US 60. The ODWC requested that a form be completed and submitted to their office if the Texas Horned

Lizard is sighted during any phase of the project. Measures were recommended to reduce the impact of highway construction on local wildlife populations through the alteration or loss of habitat. Accordingly, ODOT will add a note to the project construction plans requesting that the ODWS form be completed and submitted if a Texas Horned Lizard is sighted during construction.

5.5 Wetland Impacts

The Clean Water Act of 1972 gives the U.S. Army Corps of Engineers (USACE) authority over activities involving "Waters of the United States," which includes jurisdictional wetland and other special aquatic sites. The important features in the definition of a wetland are the consideration of three environmental parameters: presence of wetland hydrology, evidence of hydric soil, and dominance of hydrophytic plant species. Two sources of data were utilized to initially evaluate the corridor: the U.S. Fish and Wildlife National Wetlands Inventory (NWI) Maps and the Soil Surveys for Osage County.

A field survey was conducted to identify potentially jurisdictional wetlands and waterways, per the protocols outlined in the *US Army Corps of Engineers (USACE) Wetlands Delineation Manual*. A copy of the wetlands finding report is contained in Appendix E. A total of 35 wetlands and 21 ponds were identified as potential jurisdictional sites. The size of the potential wetlands and ponds ranged from 0.03 to 4.0 acres. While the U.S. Army Corps of Engineers (USACE) will make the final determination of which sites are jurisdictional wetlands, it is currently estimated that a total of approximately 14 acres of jurisdictional wetlands may be impacted by the Preferred Alternative.

5.6 Section 404 Permits

Section 404 of the Clean Water Act (CWA) of 1972 regulates the discharge of dredged or fill material into "Waters of the United States." The United States Army Corps of Engineers (USACE) has reviewed the project in regard to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of 1899. They have determined that the existing highway crosses several jurisdictional waterways. Authorization by the USACE pursuant to both sections of the law will be required.

The field survey discussed previously identified a total of 30 potential jurisdictional waterways. The Department will continue to coordinate with the USACE in obtaining the appropriate permit(s) when preliminary and/or final plans are available.

5.7 Cultural Resources

A cultural resources study was completed for this project in compliance with Section 106 of regulations implementing the National Historic Preservation Act. Significant historic properties are also protected by Section 4(f) of the Department of Transportation Act, which allows use of historic properties by a transportation facility only if there are no feasible and prudent alternatives. Cultural resources review involved coordination and consultation with the Oklahoma State Historic Preservation Office (SHPO), the Oklahoma State Archaeologist, the Osage Nation, and public involvement through the NEPA process. A detailed cultural resources survey report was prepared and submitted to SHPO, the State Archaeologist, and the Osage Nation. A copy of the report is included in Appendix F. The report included the results of a pedestrian archaeological survey, and documentation of 26 standing structures in the area of potential effect. Based upon this study, only two (2) structures in the vicinity of the project corridor are eligible for inclusion in the National Register of Historic Places. These structures include Structure 14, considered an excellent local example of a stone veneer National Folk I-house and located north of US 60 near Turkey Creek, and

Structure 27, the entry structures for Osage Hills State Park, which are considered to be contributing resources to the eligible Osage Hills State Park Historic District. As clarified in ODOT correspondence dated August 21, 2006, neither of these structures will be adversely affected by the Preferred Alternative. In final correspondence dated November 21, 2006, SHPO concurred with this assessment, presuming ODOT compliance with the following two conditions with respect to Structure 27:

1. The proposed work shall meet the Secretary of the Interior's Standards for Rehabilitation; specific attention should be given to the effect of the work on the site and setting of the eligible resource.

2. Submit to the SHPO construction documents related to the vicinity of the Osage Hills State Park Entry at the 50% and 100% levels of completion. Because of the relatively close distance of the project boundary to the park entrance (approximately 10 feet at the closest point), construction documents shall adequately describe protection of Structure #27 during construction operations.

ODOT has accepted these conditions, and will take all necessary actions to retain, preserve, protect, and maintain the site and setting associated with Structure 27. Design of the Preferred Alternative will minimize alterations to the park entry, road bed, and alignment associated with Structure 27. SHPO's review of the 50% and 100% construction design drawings will ensure that the drawings include appropriate construction notes to protect Structure 27 and the associated site and setting during construction activities.

5.8 Hazardous Waste/Leaking Underground Storage Tank Issues

A hazardous waste site inventory was prepared to evaluate the potential detrimental environmental conditions that may impact the proposed project. The Initial Site Assessment (ISA) was conducted within the project area to identify these environmental conditions. The assessment consisted of a database search for known environmental issues as reported by Federal, State and/or Local regulatory agencies, and a field review along the Preferred Alternative. Appendix G contains the *US 60 ISA Report*.

The database search and field survey conducted indicated that no known significant hazardous waste sites are currently located within the project corridor. However, based upon the field survey and interviews with the public, it is likely that one site within the project corridor historically stored fuel in an underground storage tank (UST). All UST sites should be considered as areas with the potential of hydrocarbon impacts to the soil and/or groundwater, and notes will be placed on the construction plans for health and safety aspects and identification of the responsible party for the potential UST at this location. The other concern noted from the field survey is the presence of several operating or idle oil and gas production facilities within the corridor study area.

If the proposed US 60 improvements require the purchase of land on which these facilities are located, the Department will need to negotiate the appropriate course of action with the Osage Nation, who owns all mineral resources in Osage County.

5.9 Floodplain Issues

Elevations which have a 1% chance of flooding in any given year are called 100-year floodplains. Protection of floodplains and floodways is mandated by Executive Order 11988 "Floodplain

Management” and is implemented under 23 CFR 650, Subpart A. The intent of these regulations is to avoid or minimize highway encroachments within the 100-year floodplain, where practicable, and to avoid supporting land use development that is incompatible with floodplain values.

Most of the US 60 alignment lies outside of the limits of any recognized floodplain. However, parts of eight 100-year floodplains are shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for Osage County within the project corridor. The general areas of these known floodplains are associated with the following creeks: Sand Creek, Soldier Creek, Cedar Creek, Rock Creek, Dry Hollow Creek, Buck Creek, Turkey Creek and Eliza Creek.

Measures which minimize floodplain impacts include: 1) avoiding longitudinal encroachments, 2) sufficient bridging to avoid or minimize adverse effects from backwater, 3) sufficient bridging to avoid or minimize increases in water velocity, 4) minimizing or avoiding channel alterations, 5) installing adequate and timely erosion control to minimize erosion and sedimentation, and 6) utilizing standard specifications for controlling work in and around streams to minimize adverse water quality impacts.

The proposed crossings of these surface waterways will be designed to convey the 100-year flood event, and the new roadway surface will be designed above the 100-year floodplain. Roadway construction will not raise the backwater more than one foot and will not cause flooding on adjacent properties. Any improvements to existing US 60 will be designed to minimize impacts to the floodplain.

5.10 Prime Farmland Impacts

The Farmland Protection Policy Act (FPPA) authorized the U.S. Department of Agriculture (USDA) to establish criteria for identifying the impacts of Federally funded programs upon the conversion of farmland to uses other than agricultural and authorized the agency to protect “FPPA land.” A Form AD-1006, Farmland conversion impact rating, was completed and submitted to the Natural Resource Conservation Service (NRCS) to evaluate potential impacts to prime farmland, and resulted in a rating of less than 160. Based on this rating, the impacts to prime farmlands are not expected to be significant. A copy of Form AD-1006 for this project is included in Appendix H.

5.11 Social Impacts

There will be no change in roadway access or change in travel patterns associated with the US 60 improvement project. Safety will be greatly enhanced, with a positive effect on businesses, police, fire protection and overall public safety. This segment of US 60 is traveled by school buses from Barnsdall, Bartlesville, Dewey, Osage Hills, and Pawhuska Schools. The Osage Nation has expressed strong support for the improvement of this segment of US 60, as a great number of tribe members travel it daily. The US 60 Coalition, a group of business and civic leaders from Bartlesville, Pawhuska, Ponca City, and adjacent communities, very strongly supports improving this segment of US 60.

5.12 Air Quality Impacts

An air quality historical assessment was conducted for the proposed improvement by reviewing air quality modeling completed in the past three years for US 75 and SH 20, facilities with similar physical and traffic characteristics to US 60. The air quality assessments were both conducted in

sections of Tulsa County which have the same climates and the assessments used the same monitoring inventory networks. In the SH 20 and US 75 air quality assessments, projecting the worst case of Carbon Monoxide concentrations in the future design year, no exceedances of the national 1-hour and 8-hour standards occurred. These studies concluded the following:

“Future CO levels are projected to increase over existing whether a proposed project will take place or not. Without transportation improvements during peak hour, the traffic would be above capacity levels. With a proposed project however, the air quality is projected to improve since it would relieve traffic congestion, and hence, the air emissions. The amount of emission improved cannot be quantified. The project, however, would have a positive benefit on the regional air quality. No exceedence of the NAAQS for Carbon Monoxide is anticipated. No mitigation measures for local and regional emissions are recommended.”

Section 176(c) of the Clean Air Act Amendments requires that no Federal agencies engage in, or support in any way, activities that do not conform to pre-established goals for maintaining air quality or mitigate existing air quality problems. The entire state of Oklahoma is currently in attainment status with respect to all criteria pollutants, which include carbon monoxide (CO) and particulates. Therefore, based upon the historical assessment and the state’s current attainment status, no significant air quality impacts are anticipated from the construction or utilization of the proposed project.

5.13 Airports

One airport, Bartlesville Municipal, is located along the proposed improvement corridor. The airport is located within Segment 3, on the north side of US 60 and approximately ½ mile west of the US 60/SH 123 intersection. That portion of US 60 serving the airport entrance has already been improved to a four-lane facility, and no additional improvements in this portion are planned. Therefore, this project will not impact the airport.

5.14 Pedestrians and Bicyclists

The potential for this improvement project to impact pedestrians and bicyclists along US 60 has been considered. Currently, there are no bicycle or walk paths along this highway. ODOT has assessed the State highway system for suitability for bicycle facility development, including this portion of US 60. The southern end of Segment 1, nearest Pawhuska, is considered to have “good” suitability for a bicycle facility. The remainder of Segment 1, as well as Segments 2 and 3 have been classified as having either “moderate” or “poor” suitability. Interviews with key staff of the Osage County Planning Commission and the City of Bartlesville indicate that neither Pawhuska or Bartlesville have any current plans to incorporate walking or bike paths along US 60. Therefore, the proposed improvements to US 60 will have no negative impacts to pedestrian or bicyclist traffic.

5.15 Environmental Justice

US 60 is located in Osage County in north-central Oklahoma. Data from the 2000 Census was compiled and evaluated at the Census Block level to evaluate the impacts of the Build Alignment on low income and minority populations. A map of the Build Alignment was utilized to identify those Census Blocks in the vicinity. If the Alignment coincided with a Census Block boundary, then information from both of the abutting Census Blocks was included in the evaluation. If the alternate was located within a Census Block, then only the data from that Census Block was used. Results of

the evaluation indicated that minorities comprised 19% of the population in Census Blocks adjacent to the Build Alignment.

For comparative purposes, the same minority information was compiled for Osage County and the State of Oklahoma. Minorities comprised 33% of the population of Osage County and 24% of the State population (see Table 5).

The lowest level of Census income information is the Census Block Group level. Because the project area lies within Census Block Tracts 106 and 107, income information from all Census Block Groups within these Census Tracts was evaluated. Household poverty information indicated that 14% of the households in Census Tracts 106 and 107 had income below the poverty level. This compares to 14% for all of Osage County and 15% for the entire state. These poverty statistics are made in reference to the Census Bureau poverty threshold, which for a family of 4 in the Year 2000 is higher than the comparable Health and Human Services' poverty guideline, thereby resulting in a more conservative estimate of poverty in the project area (see Table 6).

TABLE 5: RACE AND ETHNICITY EVALUATION										
RACE AND ETHNICITY FOR BUILD ALIGNMENT										
Alternate	Total Population	White	Black	Native American	Asian	Other*	Two or More Races	Total Minority	Hispanic Origin	% Minority
Build	684	552	0	82	12	2	36	132	8	19%
RACE AND ETHNICITY FOR OSAGE COUNTY										
County	Total Population	White	Black	Native American	Asian	Other*	Two or More Races	Total Minority	Hispanic Origin	% Minority
Osage	44,437	29,779	4,817	6,410	103	293	3,035	14,658	940	33%
RACE AND ETHNICITY FOR STATE OF OKLAHOMA										
State	Total Population	White	Black	Native American	Asian	Other*	Two or More Races	Total Minority	Hispanic Origin	% Minority
Oklahoma	3,450,654	2,628,434	260,968	273,230	46,767	85,270	155,985	822,220	179,304	24%
1. *: While "Native Hawaiian" numbers were presented separately in the 2000 Census, they are combined with the "Other" category in this table. 2. Due to the nature of the census wording, "Hispanic-origin" numbers are included in one of the other race column totals.										

Source: 2000 U.S. Census

TABLE 6: INCOME EVALUATION			
Census Tract and Block Group #	Total Households	Households Below Poverty Level	Percentage Below Poverty Level
106; 1000	486	92	19%

106; 2000	428	59	14%
106; 3000	429	84	20%
107; 2000	317	32	10%
107; 3000	434	33	8%
5 Block Group Total	2,094	300	14%
Osage County	16,656	2,272	14%
State of Oklahoma	1,343,506	196,684	15%

Source: 2000 U. S. Census

A December 1998 Federal Highway Administration policy states that the actions to address environmental justice in minority and low-income populations will prevent “disproportionately high and adverse effects.” As a result of census data analysis and review of the census maps showing block and census tract boundaries, the anticipated right of way and the displacements necessitated by the proposed improvements, the Build Alignment will not result in disproportionately high or adverse effects for minority and/or low income populations in the area of the proposed improvements.

5.16 Section 4(f) Impacts

Section 4(f) of the Department of Transportation Act of 1966 requires special consideration if land from any publicly owned park, wildlife or waterfowl refuge, recreation area or significant historic site is to be used in federally-funded transportation projects. The SHPO noted two structures (Structures 14 and 27) located in the project area which are eligible for the National Register of Historic Places (NRHP). Neither of the eligible NRHP structures will be affected by the proposed project. Osage Hills State Park, located south and outside of the proposed improvement corridor, will not be impacted by the US 60 improvements. Ed Red Eagle Park, a roadside park located on the west edge of existing US 60 in Segment 1 north of Pawhuska, will not be impacted by the proposed improvements and associated construction. Therefore, no Section 4(f) properties will be affected by the proposed improvements to US 60. No properties purchased, acquired, or enhanced using Land and Water Conservation Funds were identified within or immediately adjacent to the study area.

5.17 Cumulative Impacts

The proposed improvements to US 60 will result in increased efficiency and safety along this facility. It is anticipated that a possible cumulative impact of the proposed improvements to US 60 will be the stimulation of development along the improved segments.

6.0 COMMENTS AND COORDINATION

A public involvement program has been an integral part of the project development for completing this Environmental Assessment. The Department also conducted public meetings and has initiated coordination with tribal, local, state and federal agencies. Interagency meetings with the City of Pawhuska, City of Bartlesville and the Osage Tribe have been instrumental in identifying problems, project approach and a preferred solution.

6.1 Tribal Coordination

Early and up-front information and comments were requested June 14, 2004 from the Osage Nation. A presentation of the proposed US 60 improvements was made to the Osage Tribal Council Committee on September 15, 2005. Upon Federal Highway Administration approval of the Draft Environmental Assessment, a final presentation will be made to the Osage Nation regarding the status of the US 60 environmental clearance process and the Preferred Alternative. Copies of associated correspondence and meeting minutes are included in Appendix I.

6.2 Solicitations

As part of the Environmental Assessment process, letters soliciting comments related to anticipated social, economic and environmental effects of the proposed US 60 improvement were mailed June 14, 2004 to 39 tribal, local, city, state and federal agencies. Copies of the replies received are included in Appendix J. Comments and responses are summarized as follow:

- The U.S. Department of Interior, National Park Service, Intermountain Region stated that there are no National Park Service Units in the project vicinity.

Response: This comment is noted and consistent with the project findings.

- The Oklahoma Tourism and Recreation Department submitted a list of projects that have utilized federal funds under the Land and Water Conservation Fund program along US 60. Osage Hills State Park is also along the proposed corridor. If there will be no permanent impact on the State Park or federal project locations, then there will be no negative impact.

Response: None of the projects which utilized Land and Water Conservation Funds are located within the proposed US 60 improvement corridor. Also, the proposed project will not impact Osage Hills State Park.

- The Oklahoma Scenic Rivers Commission stated the proposed project will have no adverse impact on any of Oklahoma's "Scenic River Areas."

Response: This comment is noted and consistent with the project findings.

- The City of Bartlesville stated that the proposed project was important for several reasons including safety, convenience and facilitation of traffic.

Response: This comment is noted and consistent with the project findings.

- The Oklahoma Historical Society asked for a completed Historic Preservation Resources Identification Form and appropriate photographs for each structure to be affected by the project.

Response: A Cultural Resources Survey for this project has been performed and accepted by the Oklahoma State Archaeologist in consultation with the SHPO. See Appendix F for documentation regarding cultural resources. The SHPO noted two structures (Structures 14

and 27) within the project area that are eligible for the National Register of Historic Places. The project, as proposed, will have no impact to these or any other historic cultural resource.

- The Oklahoma Archeological Survey stated that they have reviewed the project and have cross checked it with the state site files containing approximately 18,000 archaeological sites which are currently recorded for the state of Oklahoma. Sites are listed in the project area, and based on the topographic and hydrologic setting of the project, archeological materials are likely to be encountered. An archaeological field inspection is considered necessary prior to project construction in order to identify significant archaeological resources that may exist in the project area.

Response: A Cultural Resources Survey for this project has been performed by the Department and accepted by the Oklahoma State Archaeologist in consultation with the SHPO. See Appendix F for documentation regarding cultural resources. The project, as proposed, will have no impact to prehistoric cultural resources.

- The Natural Resources Conservation Service commented that much of the project area has soils that are very rocky, shallow and have high shrink-swell potential. These soils are not well suited for road fill material, so they recommend modifying the plans to accommodate the soil conditions. They also recommended that the Osage Tribal Council be contacted. As a local agency, they concur that improvements are needed relative to the width, curves and bridges. They agree that improvements are needed and support carrying on with the project.

Response: This comment regarding the area soils is noted. Coordination with the Osage Nation is on-going.

- The USACE, Tulsa District stated they have reviewed the project in regard to Section 404 of the CWA. Numerous jurisdictional waterways and wetlands are present throughout the alignment. Any placement of dredged or fill material within the jurisdictional limits of any aquatic feature would require prior authorization pursuant to Section 404 of the CWA. Most of the current US 60 alignment lies outside of the limits of any recognized floodplain. The project appears to have four major stream crossings (Soldier Creek, Sand Creek, Buck Creek and Eliza Creek). Of these, only Eliza Creek has been studied and has a 100-year flood elevation. The project must be designed and constructed so as not to increase these flood hazards.

Response: Any permit necessary with the USACE will be obtained. Coordination will continue with the proposed project in this corridor. Please see the Wetland Impacts and Section 404 Permits Sections in this EA for further information. In addition to the major stream crossings listed by USACE, the flood elevations for Cedar Creek, Rock Creek, Dry Hollow Creek and Turkey Creek have been noted and taken into consideration during project design. It is the Department's policy to design proposed crossings of surface waterways to convey the 100-year flood event and to design new roadway surfaces to be above the 100-year floodplain. Roadway construction will not raise the backwater more than one foot and will not cause flooding on adjacent properties.

- The USFWS submitted comments in accordance with Section 7 of the Endangered Species Act and the Migratory Bird Treaty Act. A list was provided of endangered, threatened and candidate species that occur in Osage County. The proximity of the tallgrass prairie reserve was also noted, as well as the possibility of migratory birds.

Response: A survey for the American Burying Beetle will be conducted prior to construction. The project is not anticipated to impact the tallgrass prairie. To protect key migratory bird species subject to provisions of the Migratory Bird Treaty Act (MBTA), ODOT will consider and implement reasonable measures to avoid destroying the occupied nests of such species in the project area. These avoidance activities could include initiating clearing/grubbing and bridge structure removals only in the normal non-nesting season of these species, placing nets or other similar barriers under bridges and culverts before demolition to prohibit nesting by protected species, or other measures as agreed upon between ODOT and USFWS.

- The Oklahoma Department of Wildlife Conservation stated that no Wildlife Management Areas exist along the proposed route. Two species of special concern (Prairie Mole Cricket and Texas Horned Lizard) are known to occur near US 60. If the Texas Horned Lizard (*Phrynosoma cornutum*) is sighted during any phase of the project, please submit a form to their office. Measures were recommended to reduce the impact of highway construction on local wildlife populations through the alteration or loss of habitat.

Response: A note will be added to the project construction plans requesting that the ODWS form be completed and submitted if a Texas Horned Lizard is sighted during construction.

- The Oklahoma Water Resources Board recommended that the Osage County floodplain administrator be contacted. Any development in the floodplain in this county requires a floodplain development permit from the floodplain administrator and/or floodplain board. Also, if this project falls on state owned or operated property, such as crossing a state highway, within the regulatory floodplain, a floodplain development permit is required from the Oklahoma Water Resources Board.

Response: Any required permits will be obtained.

6.3 Public Meeting

Two public meetings were held to inform the public about the proposed project to improve US 60. The first meeting was held in Pawhuska on August 23, 2005 in the Pawhuska City Library located at 1801 Lynn Avenue. The second meeting was held in Bartlesville on August 25, 2005 in the Bartlesville Community Center located at 300 SE Adams Boulevard. A total of seventy-two people attended the Pawhuska meeting and eighty-three people attended the Bartlesville meeting. A summary of the public meetings are included in Appendix K. General project information was given and input solicited from the people attending. Sixteen written comments were received and are included in Appendix K. As a result of the public meetings and comments received, several meetings have been held between property owners and Department officials.

6.4 Public Hearing

A public hearing will be scheduled following approval of this Environmental Assessment by the Federal Highway Administration. Comments and concerns generated from the hearing will be taken into consideration before a final decision is made on the Preferred Alternative. The comments and responses will be included in the Environmental Assessment.

APPENDIX A
US 60 TRAFFIC DATA, ODOT, 11/16/04

APPENDIX B
ITEMS CONSIDERED DURING PROJECT DEVELOPMENT

**APPENDIX C
NOISE STUDY**

APPENDIX D
BIOLOGICAL REVIEW

APPENDIX E
WETLANDS AND WATERWAYS DELINEATION SURVEY

APPENDIX F
CULTURAL RESOURCES SURVEY DOCUMENTATION

APPENDIX G
INITIAL SITE ASSESSMENT

**APPENDIX H
FARMLAND CONVERSION IMPACT RATING,
FORM AD-1006**

APPENDIX I
TRIBAL COORDINATION

APPENDIX J
SOLICITATION LETTERS

**APPENDIX K
PUBLIC MEETING MINUTES**