

**SECTION 4.0**  
**ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION**

---

---



---

---

## **4.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION**

---

---

This section of the EA describes the potential impacts, beneficial and adverse, of the Proposed Action and No Action alternatives on the human and natural environment. An impact (consequence or effect) is defined as a modification to the human or natural environment that would result from the implementation of an action. The impacts can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action (secondary, indirect, or synergistic effects). The effects can be temporary (short-term), long lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last less than three years after completion of the action. Long-term impacts are defined as those that would last three or more years.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. The significance of the impacts presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge, and best professional opinions of the authors of the EA. The significance of the impacts on each resource would be described as either significant, insignificant (or negligible), or no impact. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1500-1508) and should receive the greatest attention in the decision-making process.

The following discussions describe and, where possible, quantify the potential effects of the two alternatives on the resources within or near the project area. The analysis assumes direct impacts would only occur as a result of the land conveyance from public to private ownership and that indirect impacts would be a result of any modifications to the property after the transfer to private ownership. It is impossible to accurately predict future specific use of the transferred lands. It is assumed that the future use in private ownership would be similar to historic land uses prior to Government ownership. However, because the land is zoned Agricultural, after the parcels are returned to private ownership they can be subdivided into any lot size with approval from the Osage County Planning and Zoning (Osage County Planning and Zoning Department). These discussions are presented in the same sequential order as they appeared in Chapter 3 for each alternative carried forward for analysis.

## **4.1 LAND USE**

### **4.1.1 Proposed Action Alternative**

The Candy Lake project area is generally undeveloped and the conveyance of the land would have no direct impacts on land use. However, indirect impacts to land use are dependent on the decisions of future landowners. Grazing and petroleum extraction are expected to continue at or below current rates resulting in no indirect impacts. Under private ownership, hunting and wildlife viewing would be limited to the discretion of landowners. However, opportunities and lands available for wildlife viewing are abundant in the area (e.g., 20 State Parks are located in the northeastern region of Oklahoma) and the conveyance of Candy Lake lands would have no impact to wildlife viewing on a regional scale. Public access for hunting is substantially more limited locally but more widely available regionally. However, hunting opportunities would still be available on many private lands locally and future uses of the Candy Lake area under private ownership may still include hunting. Therefore, this change in land use constitutes a minor indirect impact.

Candy Lake is in a rural area of Oklahoma and the potential for conveyance to result in future development of housing or industry is minor. Furthermore, the majority of the land is located in a flood zone restricting housing development. Skiatook is the nearest, growing urban area and represents the only potential source of urban growth. Although Skiatook is only 15 miles south, it is a small rural community that serves as a buffer against development of the Candy Lake area by the northward expansion of the city of Tulsa, which is south of Skiatook. Furthermore, the lack of available potable water supply system also limits the development of housing in the project area.

### **4.1.2 No Action Alternative**

Hunting activities would continue at current levels. Wildlife viewing is limited due to current lack of infrastructure and is not expected to improve under the No Action Alternative. Oil and gas drilling would be maintained at current levels and would not be impacted by the No Action Alternative. However, lands in the Candy Lake project area would be protected from development.

## **4.2 SOILS AND PRIME FARMLAND**

### **4.2.1 Proposed Action Alternative**

Under the Proposed Action Alternative no direct impacts to soils would occur. Land conveyance could have a minor beneficial indirect impact to soils through the incentive of private owners to practice sustainable grazing and to limit damages caused by petroleum extraction. However any improvements in grazing practices are completely dependent upon the actions of future landowners. Indirect adverse impacts to soils from the construction of new houses, roads or buildings by future landowners cannot be quantified. However, it is anticipated that future landowners would construct few new buildings or associated infrastructure resulting in no more than a minor impact to soils. It is unlikely that any direct or indirect impacts would occur to prime farmlands because the likely future land use under private ownership would be grazing and agriculture.

### **4.2.2 No Action Alternative**

No changes in current land use would occur with the No Action Alternative; therefore, no impacts to soils or prime farmlands are anticipated.

## **4.3 VEGETATION**

### **4.3.1 Proposed Action Alternative**

Conveyance to private ownership would result in no direct impacts to vegetation. There are no grazing leases on the Candy Lake lands at present; therefore, much of the vegetation in the area is relatively undisturbed. Private landowners would likely increase grazing on the project area. However, private landowners would have the ability to instill sustainable grazing practices that would result in an insignificant beneficial impact to prairie communities. Private landowners would have the option of clearing upland or riparian communities for development or agriculture. Conversion of these communities would have a moderate impact locally. However, post oak – blackjack forest communities are relatively intact at a regional scale, especially when compared to other forest communities in North America. Bottomland and riparian woodlands are also well represented regionally. Therefore, any future conversion of upland and riparian communities for development or agriculture would have only a minimal regional impact to vegetation.

#### **4.3.2 No Action Alternative**

The lack of adequate fencing suggests that grazing does occur on at least a small part of the Candy Lake project area. Due to the lack of on site management in the area and inadequate infrastructure, it is difficult to monitor or enforce stocking rates in accordance with accepted, sustainable grazing practices. A continued lack of management would contribute to the current trend of prairie habitat degradation resulting in a further loss of native grasses and forbs in portions of the project area. Overall, this impact is insignificant. There would be no impacts to riparian or other upland plant communities from the No Action Alternative.

#### **4.4 WILDLIFE**

##### **4.4.1 Proposed Action Alternative**

Conveyance to private ownership would result in no direct impacts to wildlife. Indirect impacts would depend on the actions of landowners as previously described, but because the wildlife habitats at Candy Lake are locally and regionally common, and are fragmented from other resource lands by agriculture and development, any actions by landowners are expected to have only minor impacts to wildlife populations. Hunting pressure on some wildlife species (e.g., deer) may be reduced as a result of the land transfer.

##### **4.4.2 No Action Alternative**

Most of the management at the project site has been for small game hunting. Future conditions for wildlife would be similar to existing conditions; therefore, there would be no impact to wildlife under the No Action Alternative.

#### **4.5 PROTECTED SPECIES AND CRITICAL HABITATS**

##### **4.5.1 Proposed Action Alternative**

Because the project consists of the transfer of land from public to private ownership, no direct impacts to any protected species would occur as a result of the Proposed Action Alternative. Furthermore, no American burying beetles are known from Osage County and only two individuals have ever been trapped in all of northeastern Oklahoma; therefore, the conversion to private ownership and subsequent changes in land use are unlikely to have any indirect effects to the American burying beetle. Furthermore, activities that are likely to have the greatest impact on protected species are oil and gas extraction and grazing, and these activities currently occur in the project area. No direct or indirect impacts would occur to the bald eagle

as a result of the Proposed Action Alternative since no nesting habitat is present on-site and suitable foraging habitat for bald eagles is widely available in northeastern Oklahoma.

#### **4.5.2 No Action Alternative**

There would be no impacts to any protected species from the No Action Alternative because no changes to land use or to habitat quantity or quality would occur.

### **4.6 AIR QUALITY**

#### **4.6.1 Proposed Action Alternative**

Conveyance to private ownership would have no direct impacts on air quality. Conversion of lands for development or agriculture has the potential to indirectly impact air quality both temporarily and long term. However, increased fugitive dust or emissions would be minimal due to the limited area that would likely be developed. Furthermore, limiting public access to existing dirt and gravel roads could provide a beneficial indirect impact by reducing fugitive dust emissions. Minor or no changes in air quality associated with petroleum extraction are anticipated under the Proposed Action Alternative.

#### **4.6.2 No Action Alternative**

Impacts on air quality resulting from current levels of vehicle traffic or petroleum extraction are insignificant.

### **4.7 WATER RESOURCES**

#### **4.7.1 Proposed Action Alternative**

Conveyance to private ownership would have no direct impacts on water quality. However, any future conversion of lands for development or agriculture has the potential to impact water quality both temporarily and long term. Increases in erosion or agricultural/petroleum pollution would be minimal due to the limited area likely to be developed, and the potential impact is insignificant. Since little development by private landowners is anticipated, no impacts to the region's water supply are anticipated. The transfer of land would have no direct effect on WUS, wetlands or floodplains. Furthermore, any future development by private landowners would be subject to Federal, state and local regulations concerning impacts to WUS and wetlands as well as constructing in a floodplain. These regulations would insure that there are no long-term impacts to water resources from the Proposed Action.

#### **4.7.2 No Action Alternative**

Impacts to water quality resulting from vehicle traffic or petroleum extraction would not change from existing conditions. No impacts to WUS or wetlands would occur and no development would be placed in the floodplain.

### **4.8 SOCIOECONOMICS**

#### **4.8.1 Proposed Action Alternative**

Under conveyance to private ownership a minor increase in local population may occur as some new owners relocate to newly acquired land. As a result there would also be a minimal increase in housing in the area. Since no major shift in land use is expected to result from this alternative, population and housing increases are expected to be minimal with most of the land being used for grazing. Because the land would be transferred to private ownership there would be a minor increase in tax revenues. In addition, more lands would be open for production, particularly grazing, which would also cause a minimal increase in local revenues. As a result, conveyance to private ownership would have minor beneficial impacts to the overall socioeconomics of the area.

EO 12898 requires each Federal agency to identify and address, as appropriate, disproportionate adverse effects of its proposed actions on minority populations and low-income communities. As indicated earlier in this EA, the racial mix of the study area is predominantly Caucasian and low-income populations are prevalent in the ROI. No adverse impacts to any population, minority or otherwise, are expected from the conveyance of the land to private ownership. Furthermore, minor beneficial impacts to socioeconomics of the region are expected from the land conveyance.

EO 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children;” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” Conveyance of the land to private ownership would not increase any environmental health or safety risks to any population, including children.

#### **4.8.2 No Action Alternative**

No impacts, either adverse or beneficial, are expected from the No Action Alternative.

## **4.9 CULTURAL RESOURCES**

### **4.9.1 Proposed Action Alternative**

The USACE has completed consultation with the Oklahoma State Historic Preservation Office (SHPO), the Oklahoma Archeological Survey (OAS) and the Osage Tribe regarding potential impacts to cultural resources. It has been determined that sites 34OS147, -148, -149, -150, -151, -152, -153, -154, -157, -158, -187, -191, and -192 are ineligible for listing on the NRHP. Site 34OS155 has been previously determined to be eligible for the NRHP, but was mitigated through archeological excavation in 1979. Site 34OS664 is a buried cultural deposit and additional geomorphological and archeological work is required to assess the integrity of the cultural resources on-site and is therefore potentially eligible. Site 34OS699 is an historic site that has been determined to be ineligible for listing on the NRHP while site 34OS700 is also an historic site that requires additional archeological and archival research to determine its NRHP eligibility. Therefore, parcels containing sites 34OS664 and -700 would require additional assessment prior to their transfer. If either site were found to be eligible for the NRHP then mitigation would be conducted as recommended by the SHPO.

There remains a high probability of buried cultural deposits in the Candy Creek valley and adjacent stream terraces. Additional subsurface exploration of the Candy Creek valley would be necessary to determine the potential effect on cultural resources of the proposed land transfer. Trenches would be established at specific locations determined in consultation with the SHPO and OAS prior to the transfer of specific tracts of land within the Candy Creek valley.

The Proposed Action Alternative would have no impacts on historic properties involving parcels that do not contain sites or areas previously proposed as requiring additional archeological work. Furthermore, those parcels that do contain sites would have further evaluation prior to their transfer. As a result, no significant adverse impacts are anticipated from the conveyance of land to private ownership.

### **4.9.2 No Action Alternative**

Under the No Action Alternative the current level of active protection and preservation of cultural resources would continue. As a result, no adverse impacts, either direct or indirect, would be anticipated to cultural resources under the No Action Alternative.

## **4.10 NOISE**

### **4.10.1 Proposed Action Alternative**

It is not anticipated that noise levels would change over the long term with the implementation of the Proposed Action Alternative. The project area would remain primarily rural with similar levels of noise generated from oil and gas activities. Some reduction in noise from small game hunting may occur as public hunting is eliminated. No sensitive noise receptors (e.g., churches, schools) are present in the project area.

### **4.10.2 No Action Alternative**

No change in hunting or oil and gas activities would occur from the No Action Alternative; therefore, no impacts from noise would occur.

## **4.11 AESTHETICS**

### **4.11.1 Proposed Action Alternative**

Some land use changes associated with the Proposed Action Alternative have the potential to indirectly impact the aesthetic resources of the Candy Lake area. The proposed action could lead to land clearing by private landowners or the construction of houses, barns and driveways. However, the area would remain primarily rural and visually appealing; therefore, the proposed action would have only a minor impact on aesthetics.

### **4.11.2 No Action Alternative**

No changes to the visual properties of the project area would occur from the No Action Alternative.

## **4.12 SOLID AND HAZARDOUS WASTE**

### **4.12.1 Proposed Action Alternative**

The sale of the 26 parcels to private ownership would terminate the Federal Government's operation under CERCLA. CERCLA requires that the USACE determine whether the parcels are potentially contaminated prior to the land transfer. If any of the parcels are found to be contaminated with toxic substances subject to CERCLA, the USACE would be required to ensure that the contamination is cleaned-up prior to the land transfer. This would insure that

there would be no adverse impacts from hazardous waste on the site as a result of the land transfer.

#### **4.12.2 No Action Alternative**

There would be no effect on hazardous waste from the implementation of the No Action Alternative. Any identified hazardous waste on the project site would be cleaned-up.

#### **4.13 SUMMARY OF EFFECTS.**

Table 4-1 provides a summary of the potential effects that would occur upon implementation of each alternative.

#### **4.14 CUMULATIVE EFFECTS**

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The following paragraphs present a general discussion regarding cumulative effects that would be expected irrespective of the alternative selected.

The CEQ defines cumulative impacts as the incremental impact of multiple present and future actions with individually minor but collectively significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment.

Only one project was identified in the immediate vicinity of the Candy Lake Project area. Osage County is in the planning stages of realigning County Road E0330 and replacing the Candy Creek Bridge on E0330. This County Road bisects the Candy Lake project area. The realignment would and bridge replacement would only affect approximately 2500 feet of the road. Under the Proposed Action, this project is not anticipated to cause significant cumulative environmental impacts.

**Table 4-1. Summary Matrix of Potential Impacts**

Affected Resource	No Action Alternative	Conveyance to Private Ownership
Land Use	No impacts to land use are expected.	No direct impacts. Minor indirect impacts due to the loss of public access for hunting.
Soils	No impacts to soils are expected.	No direct impacts. Potential indirect impacts from the construction of new buildings and roads by future landowners but impacts impossible to quantify.
Biological Resources	No impacts are expected.	Minor indirect impacts to vegetation from clearing of upland and riparian plant communities by private landowners. No impacts to wildlife or protected species are anticipated from the land conveyance.
Cultural Resources	No effects are anticipated.	Parcels that do not contain sites or areas requiring additional archeological work would be transferred with no impacts. Cultural resources that are determined to be eligible for listing in the NRHP would be mitigated prior to the transfer of those parcels from Federal ownership.
Air Quality	No adverse effects are anticipated.	Only minimal increases in fugitive dust from the conversion of land to agriculture are anticipated.
Water Resources	No adverse impacts are anticipated.	No significant impact to region's water supply or water quality. Although WUS including wetlands occur within the project area, any future development by private landowners would need to comply with Federal, state and local regulations.
Socioeconomics	No effect on the regional or local economy is expected.	No direct impacts. Slight benefits to the region of influence due to an increased tax base are anticipated.
Environmental Justice and Protection of the Children	No impacts are expected to occur.	No impacts are expected to occur.
Noise	No adverse impacts are expected.	No changes in noise levels are expected.
Aesthetics	No impacts are expected to occur.	Some land clearing may occur under private ownership but the area would remain visually appealing resulting in only minor impacts to aesthetics.
Hazardous Materials	No adverse impacts are expected.	Any parcels found to be contaminated would be remediated prior to the conveyance of the land to private ownership.