

Final Environmental Assessment

Oklahoma County Triple X Road Realignment and Bank Stabilization Project

Oklahoma County, Oklahoma

Project Number: FEMA HMGP-DR-4299-OK

Project #50

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FEMA

**U.S. Department of Homeland Security
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LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
ACOG	Association of Central Oklahoma Governments
APE	Area of Potential Effect
BMP	Best Management Practice
BFE	Base Flood Elevation
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel
DEQ	Department of Environmental Quality
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Environmental Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
ISA	Initial Site Assessment
NAAQS	National Ambient Air Quality Standards
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit

OAS	Oklahoma Archeological Society
OCC	Oklahoma Conservation Commission
ODEQ	Oklahoma Department of Environmental Quality
ODWC	Oklahoma Department of Wildlife Conservation
OEM	Oklahoma Department of Emergency Management
OSHA	Occupational Safety and Health Administration
OWRB	Oklahoma Water Resources Board
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-Way
SHPO	State Historic Preservation Office
SWPPP	Storm Water Pollution Prevention Plan
US	United States
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

1.1 OVERVIEW

In recent years, the North Canadian River, northeast of the city of Choctaw, Oklahoma County, OK, experienced a series of low flow or drought periods followed by high flow events that caused significant avulsion movement in the river channel. In 2007 and 2013, heavy flooding events, accompanied by extreme velocities, caused significant erosion on the river's right bank paralleling Triple X Road. The change in direction resulted in the loss of several barns and a home on the east side of Triple X Road, north of NE 36th Street. By May 2015, continual channel erosion resulted in the closure of Triple X Road from NE 36th Street north approximately 0.5-mile.

Oklahoma County, through the Oklahoma Department of Emergency Management, applied for funding under FEMA's Hazard Mitigation Grant Program (HMGP). The overall goal of the proposed project is to prevent further erosion, destabilization of Triple X road, and loss of property, and to reopen Triple X Road to provide a safe crossing over the river.

This Environmental Assessment was prepared in accordance with Section 102 of the National Environmental Policy Act (NEPA) of 1969, as amended, the President's Council on Environmental Quality regulations to implement NEPA (40 Code of Federal Regulations Parts 1500-1508), and FEMA's regulations implementing NEPA (44 CFR Part 10). In accordance with above referenced regulations and FEMA Directive 108-1 and FEMA Instruction 108-1-1, FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this EA is to analyze the potential environmental impacts of the proposed project and alternatives. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

1.2 ACTION AREA SETTING

The action area is an undeveloped, roughly 48-acre plot of land located along the North Canadian River near Triple X Road and NE 36th Street in the SE¹/₄ of Section 18, Township 12N, Range 1E and SW ¹/₄ of Section 17, Township 12N, Range 1E, near Choctaw, Oklahoma County, Oklahoma. The project site can be found on the Horseshoe Lake, Oklahoma 7.5 Minute USGS Quadrangle map at 35.50975; -97.23003 °. (Refer to Figures 1-3 in Appendix A.)

Much of the property along the west side of Triple X Road is cultivated cropland. The river riparian corridor is sparsely wooded with a shrubby understory and mixed-grass vegetation. A sand bar formed within the river bottom on the left side opposite from the cutbank along Triple X Road.

2.0 PURPOSE & NEED

From 1990 to 2006, there was very little change in the active channel of the North Canadian River within the general area of the proposed action. However, in 2007, the river gauge near Harrah, OK crested at a height of 19.20 feet—the fourth highest recording of all time for that location. This flood event surpassed the river's stability threshold, resulting in rapid lateral movement. Within one year, the river channel tracked west more than 200-feet towards Triple X Road. On June 1, 2013, the river reached its second highest recorded level (21.02-feet), causing serious and widespread flooding to the area. Over the next few years, the bank eroded

several hundred feet and resulted in the loss of two residences, several barns, and portions of Triple X Road. Currently, Triple X Road is unsafe and closed to through traffic. This requires local residents, emergency vehicles, and school buses to travel 3.5 to 4.5 miles to another bridge crossing, which results in 7 to 9-mile detours. In addition, the unstable nature of this stretch of the river puts other homes, farmland, and infrastructure at risk due to future river avulsion.

2.1 PURPOSE OF THE PROPOSED ACTION

Through HMGP, FEMA provides grants to states and local governments to assist them in mitigating damages caused by disasters and reduce future losses by implementing hazard mitigation measures. The purpose of this HMGP project is to reduce the future loss of property and public infrastructure along this stretch of the North Canadian River caused by past catastrophic flood events, and to implement mitigation measures to help recover from these disasters.

2.2 NEED FOR THE PROPOSED ACTION

This HMGP project is needed because the stream bank along Triple X Road is unstable and is migrating laterally, resulting in the loss of homes, personal property, farmland, and transportation infrastructure. The channel avulsion needs to be arrested in order to prevent the loss of additional residences and acres of farmland, and also to reestablish the Triple X Road arterial transportation route and associated North Canadian River bridge crossing for safety and commerce purposes.

3.0 ALTERNATIVES

All reasonable options that are capable of meeting the purpose and need of the project must be considered, as they are fundamental to the development of this EA. As part of this EA, two alternatives were identified for evaluation: a “No Action” alternative (required by regulations of the Council on Environmental Quality), and the “Proposed Action” alternative. Each alternative is presented and discussed in more detail below.

3.1 ALTERNATIVE 1: NO ACTION

Under the No Action Alternative, FEMA will not fund the proposed project, the river bank will not be stabilized, Triple X Road north of NE 36th Street will not be reopened, and lateral bank migration will continue to threaten homes, farmland, and infrastructure.

3.2 ALTERNATIVE 2: PROPOSED ACTION

The Proposed Action is designed to stabilize and protect the right bank of the river and realign the channel. This alternative includes the creation of a series of four spur dikes and a channel cut to shift the river back to the east. (Refer to Figure 4 in Appendix A.) Spur dikes are elongated structures of rip-rap with one end at the bank and the other end projecting at an angle into the current. The dike is an “obstruction” that greatly decreases flow velocities along the toes, thus protecting the bank without the need for embankment excavation or hard-armoring. Each dike will be 20-feet wide across the top with 2:1 side slopes. The top elevation of each dike will be set above the 10-year frequency storm event and below the 50-year frequency storm event. The length and alignment of each spur dike will be developed to return the river bank to the 2013 alignment.

The proposed channel realignment will include the excavation of 17,140 cubic yards of sandy alluvial river material along 1,252 linear feet of the North Canadian River adjacent to Triple X Road. The channel shape will be trapezoidal with 3:1 side slopes and a bottom width of 120 feet to match the existing channel width.

The channelization will result in the redistribution of the dredge material from excavating the new channel. The excavated material will be used for reconstructing the new channel banks. The project will require the use of various track hoes, dump trucks, and bulldozers for construction and excavation. (Refer to Appendix B.)

To mitigate impacts to aquatic resources, the will plant a riparian corridor along the proposed bank stabilization project which will aid in connecting habitats along this reach of the river, as well as provide additional erosion protection in the uplands adjacent to the North Canadian River. The proposed mitigation area is 3 acres with a 50-foot buffer established on each side. This 3 acre tract is characterized by an 870 linear feet by 150 linear feet corridor between the proposed Triple X Road realignment and the proposed realigned river channel.

In addition to the proposed stream work, portions of Triple X Road will be realigned and reconstructed to the west of its current location. As designed, 3,185 feet of road will be affected beginning 300 feet south of the NE 36th Street intersection and extending north to approximately 35.51527; -97.23231 where it reconnects to the existing alignment of Triple X Road. Approximately 3,000 feet of new roadway will be constructed on offset alignment. The realigned two-lane road will be approximately 34 feet wide, with each lane being 12 feet wide with 5-foot shoulders on each side. Maximum grading limits will be approximately 46.5 feet wide for the road, shoulders, and side slopes. The intersection with NE 36th Street will be improved, and 600 feet of roadway will be slightly re-aligned to the north. Approximately 5.5-acres of right-of-way will be required for roadway construction effort. The existing abandoned section of Triple X road will be demolished and the debris will become the property of the contractor and hauled away. (Refer to Appendix C)

3.3 ALTERNATIVES CONSIDERED & DISMISSED

Other alternatives were considered and evaluated, but were dismissed because they were not prudent, feasible, or did not meet the overall purpose and need. An alternative study was conducted to determine what options might work from an engineering-hydraulics perspective. Alternatives seriously considered included: in-situ bank and channel stabilization, various weirs options, and bank armoring (Refer Appendix D). Some options were dismissed outright, but three potentially viable options were then subjected to a selection analysis process to discern the most practicable and effective method. After the review analysis, several options were dropped from further consideration. (Refer to Appendix E for the selection process criteria and outcome.)

The main alternatives considered and dismissed from further review in this EA are discussed below.

3.3.1 In-Situ Bank & Channel Stabilization Structures

This alternative includes stabilizing the bank and channel in-place. It will include creating a 2:1 bank slope in combination with constructing steel H-Piles, wire mesh, and riprap to fortify the bank. A line of Kellner jetty jacks will be used to reduce river velocity, allowing for the deposition of sediment along the eroding bank. This option stabilizes the bank, but leaves the river channel in its current location. The 2:1 bank slope leaves the road precariously close to the bank edge, which will create a safety issue and not solve the problem of reestablishing Triple X Road given its current condition. In addition, since the length of the channel erosion is extensive, rip-rapping the entire bank is not cost effective and will result in the loss of instream habitat. This was determined to be unacceptable from a US Army Corps of Engineer (USACE) permitting perspective.

3.3.2 Bendway Weirs

This alternative includes stabilizing the bank and channel in-place. Bendway weirs are low-profile rock jetties or dikes angled upstream and typically submerged at annual mean flows. They are designed to disrupt secondary currents and redirect flow to the inside of the bend resulting in a shallower and wider channel. These are generally employed in systems where river navigation is an important use because vessels can navigate over the tops of the weirs. This alternative was dismissed due to the significant amount of earthwork required and impractical nature of these in the North Canadian River system. The weirs will not protect the existing

vertical river banks; consequently, the bank will need to be sloped to 3:1 and armored with rip-rap. In addition, bendway weirs are subject to failure during high-velocity flood events, especially during the first or second year after installation. This propensity makes them unsuitable for the North Canadian River system.

3.3.3 Bank Armoring

This alternative proposes stabilizing the bank by armoring it. It will involve cutting the bank along Triple X Road back to a 3:1 slope, and then armoring over 1,500 linear feet with riprap. This option was dismissed because it will not allow Triple X Road to be reestablished, and because of the significant amount of earthwork and the weakening of current slopes that could cause additional bank-slope failures. The amount of riprap required and the loss of instream habitat were considered untenable from a USACE permitting perspective. Also, hard armoring of the bank will not necessarily protect the bank from the extreme velocities anticipated with future flooding events.

4.0 AFFECTED ENVIRONMENT & POTENTIAL IMPACTS

In this section, the environmental setting or affected environment will be presented with regard to each alternative. The purpose is to provide an assessment of the existing environmental quality, and to identify important environmental factors or features. When appropriate and available, quantitative information is used to determine potential beneficial and negative impacts. Mitigation aspects will also be discussed when applicable. This section will include a description of the action area with respect to land, air, water, biological, cultural, and socio-economic resources. The level of impact on a resource is defined using the terms presented in Table 4-1.

Table 4-1: Definitions of Evaluation Criteria Terms

IMPACT SCALE	CRITERIA DEFINITION
No Impact	The resource will not be affected.
Negligible	Impacts to a resource will be non-detectable, or if detected, the effects will be slight and localized. Any impacts will be below regulatory limits.
Minor	Changes to the resource will be measurable, but the impacts will be small and localized. Impacts will be within or below regulatory limits. Mitigation measures may be necessary to reduce potential effects.
Moderate	Changes to the resource will be measurable and have localized and potentially area-scale impacts. Impacts will be within or below regulatory limits, but historical conditions will be altered on a short-term basis. Mitigation measures may be necessary to reduce potential effects.
Major	Changes to the resource will be readily measurable and will have substantial consequences on a local, area, and potentially regional level. Impacts could exceed regulatory limits. Mitigation measures to offset the effects will be required to reduce impacts, although long-term changes to the resource will be possible.

4.1 PHYSICAL RESOURCES

4.1.1 Geology & Soils

This section presents an overview of land resources associated with the action area and surrounding environment. Factors addressed in this section include geology, farmland/soils, and seismicity.

Geology

According to the Hydrologic Atlas, Oklahoma City Quad (USGS 1975) (Scale 1:250,000), the proposed action area is located in Terrace Deposits. Terrace deposits are lenticular beds of sand, silt, clay, and gravel. Thickness can range from a few feet to about 100 feet, and probably averages about 50 feet along major streams.

According to a map of Oklahoma oil and gas fields, the project area is not located within a named oilfield (OGS, 2016). Records and information available on the Oklahoma Corporation Commission’s (OCC) webpage indicated there are seven oil and gas related wells within Sections 17 and 18, T12N R1E (OCC, 2016), but none within the proposed action area.

Alternative 1: No Action

No Impact—No adverse or beneficial impacts are anticipated. No activities associated with this alternative will affect geology.

Alternative 2: Proposed Action

Negligible Impact—Construction activities will involve earth disturbance activities, but will not impact other geology or interfere in oil and gas resources. Any impacts will be limited to the immediate construction area and timeframe.

Soils

The Soil Survey of Oklahoma County indicates seven soil units within the study area. Refer to Table 4-2 (USDA-NRCS, 2020). Much of the land within and adjacent to the study area is cultivated cropland or grazed pastureland. A review of soils on the NRCS Web Soil Survey indicates that no hydric soils are present, and most of the area is considered prime farmland (NRCS, 2020). (Refer to Figure 5 in Appendix A, & Appendix F.)

The Farmland Protection Policy Act (FPPA), Public Law 97-98, 7 U.S.C. 4201, is intended to minimize the extent to which federal programs unnecessarily and irreversibly convert farmland to nonagricultural uses. Implementing procedures included in the associated regulations found in Title 7 of the Code of Federal Regulations, Section 658, established the farmland conversion impact rating system to evaluate the impacts. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use.

In compliance with the FPPA, form AD-1006 was submitted to the US Department of Agricultural (USDA) Natural Resource Conservation Service’s (NRCS) local Service Center. According to the NRCS land evaluation scoring of the AD-1006, no other alternatives need to be considered. Also, a letter from the NRCS Resource Soil Scientist, stated there was a finding of “...no adverse environmental impacts from this project.” (Refer to Appendix F.)

Table 4-2: Soils within Action Area

SOIL TYPE	SLOPE (%)	DRAINAGE CLASS
Amber very fine sandy loam	5 to 15	Well drained
Derby loamy fine sand	8 to 15	Somewhat excessively drained
Gracemont silty clay	0 to 1	Somewhat poorly drained
Gracemont fine sandy loam	0 to 1	Somewhat poorly drained
Keokuk very fine sandy loam	0 to 1	Well drained
Lomill silty clay loam	0 to 1	Somewhat poorly drained
Yahola fine sandy loam	0 to 1	Well drained

Alternative 1: No Action

Minor Negative Impact—Without stabilizing the bank, the river could continue to migrate laterally and erode arable land. The degree of impact cannot be quantified accurately, but the rate of loss appears to be about 1-3 acres per year. If left unchecked, more land will be eroded in a couple of years than will be lost via conversion to non-agricultural use due to project activities.

Alternative 2: Proposed Action

Negligible Impact—According to the NRCS, there will not be any adverse impacts to farmland. Some farm land will be taken out of production and converted to right-of-way or riparian habitat, but the amount of acreage was not considered to be significant. Impacts to soil will be localized and limited to the construction area and timeframe. Earth disturbance, clearing and grubbing, and other construction activities will expose soil to erosive forces. Soil erosion will be minimized by implementation of best management practices (BMPs) as outlined in a site-specific storm water plan as required by Oklahoma’s general permit *OKR10 Storm Water Discharges from Construction Activities* (OKR10). Through the proper use of BMPs, any impacts will be slight and localized.

4.1.2 Air Quality

The Clean Air Act (CAA) of 1970, and subsequent amendments, is a comprehensive law that addresses sources of air pollutants. The action area is located in an EPA-designated attainment area for all criteria pollutants, and exceed National Ambient Air Quality Standards (NAAQS) (EPA, 2019).

Alternative 1: No Action

No Impact—No adverse or beneficial impacts are anticipated. No air emissions will be generated without actual project activity.

Alternative 2: Proposed Action

Negligible Impact—There is not likely to be any significant effects from the proposed action alternative. However, potential impacts to air quality could occur during the construction phase. Construction vehicle emissions, hydrocarbons, and fugitive dust are potential acute and localized pollutants. Dust generation has the greatest nuisance potential, and depends on the type of activity, weather, and soil type and condition. Air related impacts will be avoided and mitigated by ensuring adequate water is applied for dust suppression, or other related BMPs are enforced, including minimizing fuel-burning equipment running times and maintaining engines properly.

4.2 WATER RESOURCES

4.2.1 Water Quality

This section presents an overview of water resources associated with the action area and surrounding area. Factors addressed in this section include surface and ground water resources.

Surface Water

Surface water is regulated under the Clean Water Act (CWA). Water quality regulation falls under the jurisdiction of the Oklahoma Department of Environmental Quality (DEQ), and placement of fill in waters of the US (Section 404 of the CWA) falls under the jurisdiction of the US Army Corps of Engineers (USACE). Under the Oklahoma Pollution Discharge Elimination System (OPDES), the DEQ regulates both point and non-point pollutant sources, including stormwater and stormwater related runoff. Activities that disturb one acre of ground or more require an OKR10 construction stormwater permit.

The action area includes approximately 1,250 linear feet of the North Canadian River (WBID# OK52052000010_10). It is classified as a “*Lower Perennial Riverine*” system with an unconsolidated bottom and permanent water presence (R2UBH). The river’s designated beneficial uses include aesthesis, agriculture, warm water aquatic community, primary body contact, and fish consumption. This segment above Choctaw Creek is not on the 303(d) list of impaired waters and, thus, meets the beneficial use designation.

During site field reconnaissance, the river was flowing swiftly and the water was turbid. The streambed mostly consisted of sand, and a large sand bar had accreted along the river’s left bank within the study area

Approximately 1,250 linear feet (~11.8 acres) fell within the project footprint. The North Canadian River was determined to be a jurisdictional feature by the USACE and was subject to permitting action.

Alternative 1: No Action

Moderate Adverse Impact—No beneficial impacts are anticipated from the No Action Alternative. Without the project, there will be negative impacts that will be measurable and have localized and area-scale effects. The bank will not be stabilized; therefore, sediment, turbidity, and suspended solids will continue to degrade water quality. Water quality will be impacted locally, and sediment loading could affect the stream system for some distance downstream since sediment can have a compounding effect. The North Canadian River segment immediately downstream of the project (below the Choctaw Creek confluence) is already not meeting its designated beneficial uses and is listed as impaired for turbidity—along with other parameters. Bank erosion is a likely source of the non-attainment.

Alternative 2: Proposed Action

Moderate Beneficial and Minor Adverse Impacts—Overall, water quality may be improved locally because the proposed restoration work will prevent bank erosion and promote solids settling. This could have a positive effect farther downstream, as well with reduced sediment loading. These benefits will be longer term when the tons of soil loss and in-stream sedimentation are avoided.

Localized water quality will most likely be affected during construction due to soil erosion and pollutant runoff. These impacts are likely to be minor, localized, and limited in duration. In order to minimize the impacts, a construction storm water permit authorization will be obtained. In compliance with the DEQ OKR10 construction permit, a storm water pollution prevention plan (SWP3), outlining storm water protocols and best management practices (BMPs), will be developed and maintained. Site-specific BMPs will be implemented, which include detaining storm water runoff, erosion and sediment control measures, spill response protocols, employee training, and good housekeeping practices. Oklahoma County applied for and received a Water Quality Certification under Section 401 of the CWA from DEQ. The consultation process, conditions, mitigation, and specific requirements associated with the certification and permit avoids and minimizes impacts to water quality. (Refer to Appendices H & I.)

The project will result in the placement of fill into waters of the US. Construction of the spur dikes will involve the placement of large diameter riprap on ~1.3 acres within the ordinary highwater mark, and roughly 3.5 acres of the river will be dredged as part of the river realignment. Oklahoma County has secured a Section 404 permit (SWT-2015-000315) from the USACE for these activities. As part of the USACE permitting process, a mitigation plan was proposed and approved for this activity. (Refer to Appendix I.) As outlined in the plan, the spur dikes account for roughly 1.3 acres of fill and approximately 860 liner feet of bank impact. Excavation of existing stream channel accounts for roughly 3.5 acres and 1,250 linear feet of bank and sand bar. Using the USACE's approved credit adjustment factor, 3.0 acres of riparian habitat will be created on site. This acreage will serve as mitigation for 1.3 acres of fill and associated impacts. The mitigation area will be constructed along the edge of the river and serve as buffer between the road and the water's edge. Native species commonly found along riparian corridors were selected in order to create suitable habitat.

Oklahoma County must comply with the requirements of the Water Quality Certification under CWA Section 401 and permit SWT-2015-000315 under CWA Section 404.

Ground Water

According to the Hydrologic Atlas, Oklahoma City Quad (USGS 1991) (Scale 1:250,000), the proposed area is located in terrace deposits. Terrace deposits are lenticular beds of sand, silt, clay, and gravel. Thickness can range from a few feet to about 100 feet, and probably averages about 50 feet along major streams. Groundwater is available from the saturated layers of fine to coarse sand and gravel. Groundwater is also available in the bedrock underlying the alluvium and terrace deposits.

Alternative 1: No Action

No Impact—No adverse or beneficial impacts are anticipated because groundwater resources will not be used or effected by this alternative.

Alternative 2: Proposed Action

No Impact—Construction activities and long term uses of the roadway will not impact underlying aquifers. No groundwater will be used and no wells will be installed.

4.2.2 Wetlands

Executive Order 11990 (Protection of Wetlands) requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and consider the preservation and enhancement of wetland benefits associated with certain federal actions. FEMA uses an eight-step decision-making process to evaluate potential effects on, and mitigate impacts to, wetlands in compliance with EO 11990.

Wetland impacts were evaluated, first by determining their presence based on desktop review, and then confirming them in the field. (Refer to Appendix K.) The U.S. Fish and Wildlife Services (USFWS) National Wetlands Inventory (NWI) map for the project area was reviewed for potential wetlands. One lotic feature (i.e., North Canadian River) and two lentic features were identified on the NWI map within the study area.

One lentic feature appeared to be a depression wetland situated between the roadway and the river near the northern boundary of the study area. This feature was classified as a seasonally flooded, emergent palustrine wetland (PEM1C). Although the feature was embedded within a grazed pasture and is likely used for cattle watering, it was not immediately evident that the feature was constructed or naturally occurring. There is no persistent surface water connection between this wetland and the North Canadian River; however, fish were noted during field reconnaissance, and due to the wetlands seasonal hydroperiod, it is likely that it receives periodic inputs from river flooding. Approximately 1.1 acres fell within the project footprint, and given its likely hydrologic connection to the North Canadian River, it was determined to be a jurisdictional feature.

The second lentic feature appeared to be a linear feature that began west of Triple X Road, and crossed the roadway just south of the NE 36th Street intersection. It continued east along the southern boundary of the study area, adjacent to the North Canadian River, before connecting with an oxbow southeast of the study area. This feature was classified as a temporarily flooded, forested palustrine wetland (PFO1A) with a subtle (<2%) slope. Water was present throughout, but was not flowing or emptying into the oxbow. It is likely that the feature's hydrology consists of inputs from rainfall/watershed runoff, as well as backwater inputs from river flooding. During periods of heavy rainfall over the watershed, it is likely that this feature does empty into the adjoining oxbow of the North Canadian River. No definitive bed and bank features were identified; however, hydrophytic vegetation, hydric soils, and wetland hydrology were apparent. Approximately 0.22 acre fell within the project footprint, and given its hydrologic connection to the North Canadian River, it was determined to be a jurisdictional feature.

Alternative 1: No Action

No Impact to Moderate Negative Impact—No direct impacts are anticipated because no activities related to this alternative will impact existing wetlands. There is a chance for a “Moderate” negative impact if no action is taken, however. With continued lateral river migration, the 1.1 acres of emergent wetland could be lost to bank erosion. Also, the lack of stability within this river segment prevents the establishment of wetlands along the edge of the river. Without bank stability, any wetlands that established along the bank of the river will be lost as the river erodes and migrates.

Alternative 2: Proposed Action

No Impact to Minor Negative Impact with the potential for Minor Beneficial Impacts—No adverse impacts to lentic wetlands are anticipated. The field-identified emergent and linear wetlands will not be affected by the

proposed action, because all project activity will be located outside of these wetlands. These features will be preserved and protected during construction with buffered-offset areas, and by erosion and sediment control practices. No wetlands were specifically identified where the spur dikes will be constructed, and the excavation of the river channel will occur primarily on a sand bar, where there was no identified lotic or fringe wetlands.

In addition to the mitigation area, there could be measurable beneficial impacts to wetlands in the longer term. Spur dikes will affect the near-bank flow velocities along the river's edge and create conditions that may promote fringe wetland formation. Over time, sediment will fill-in between the spur dikes, creating favorable growing condition for hydrophilic vegetation to become established. Although the actual acreage can only be estimated at this time, there could be upwards of 1-acre of wetland naturally restored. In addition, the 3-acre mitigation site, required as part of the USACE Section 404 permit, will create wetlands where none existed before. This riparian forest bottomland will provide habitat and water storage, as well as enhance the adjoining natural wetland area and the existing fragmented riparian corridor.

4.2.3 Floodplains

Executive Order 11988 (Floodplain Management) requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of the floodplain. Also, federal agencies must avoid direct or indirect support of floodplain development whenever there is a practicable alternative. A Flood Insurance Rate Map (FIRM) for the action area in Oklahoma County shows that much of the project area is within the designated floodway of the North Canadian River or within the floodplain Zone AE (FEMA, 2010). (Refer to Figure 6 in Appendix A.) Any construction activities must, therefore, comply with the Oklahoma County floodplain regulations. FEMA uses an eight-step decision-making process to evaluate potential effects on, and mitigate impacts to, floodplains in compliance with EO 11988. After evaluating alternatives, including impacts and mitigation opportunities, Oklahoma County and FEMA have determined that the proposed action is the most practicable alternative. (Refer to Appendix J.)

Alternative 1: No Action

No Impact—No impacts are anticipated because no activities related to this alternative will impact existing floodplains.

Alternative 2: Proposed Action

No Impact—A good portion of the work is within the FEMA designated floodplain and floodway. Per 44 CFR Part 9.11(d)(1), FEMA's regulations that enforce EO 11988, there shall be no new construction or substantial improvement in a floodway except for a functionally dependent use or a structure or facility that which facilitates open space use. A functionally dependent use is one that cannot perform its intended purpose unless it is located or carried out in close proximity to water. FEMA has determined that the proposed stream work in the North Canadian River is new construction, but since it qualifies as a functionally dependent use, it is allowable under 44 CFR Part 9. FEMA has determined that the reconstruction and realignment of this segment of Triple X road is not new construction or a substantial improvement, therefore the restrictions under Part 9.11(d)(1) do not apply to this portion of the proposed project.

Given the location of the project, there is no way to avoid any work within a floodplain by another feasible and prudent alternative. All of Triple X Road and the river are within the designated floodplain. Hydraulic modeling was conducted to determine the impact of proposed action on the floodplain function. Based on the modeling effort, a "no rise" in base flood elevation (BFE) was confirmed, which means that there will not be an increase in flooding or flood related impacts caused by this alternative. Moreover, the proposed design should not adversely affect the flood storage function or the flow of water within the floodplain system. The local floodplain administrator concurred with the findings on the "no rise" study and issued a permit to Oklahoma County for this project. Oklahoma County must comply with any conditions of the required floodplain permit. (Refer to Appendices J & L.)

4.4 BIOLOGICAL RESOURCES

4.4.1 Federally Protected Species

Threatened & Endangered Species

The Endangered Species Act of 1973 (ESA) provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. Current federally listed threatened, and endangered species within the study area were obtained from the US Fish and Wildlife Service’s (USFWS) Information, Planning, and Conservation (IPaC) System. The IPaC report listed the interior least tern, piping plover, red knot, and the whooping crane, but no critical habitat. (This information is summarized in Table 4-3.) Additional Information was gathered from the Oklahoma Department of Wildlife Conservation (ODWC), and the Oklahoma Natural Heritage Inventory (ONHI).

A field review for potential habitat and impacts to species was also performed as part of this study. During the reconnaissance, no habitat was identified for the least tern, piping plover, or red knot. However, open cropland that could be suitable stopover foraging habitat for migrating whooping cranes was noted within and in close proximity to the study area. The study area is also located within the 95% migration corridor. (Refer to Appendix K.)

A biological assessment report was compiled and submitted online to the USFWS for concurrence. After 45 days, concurrence was granted by USFWS on the findings. The conclusions are listed in Table 4-4.

Table 4-3: Summary of Federally Listed Species & Designated Critical Habitat

SPECIES	STATUS	ACTION AREA					
		Watershed Associated with Occupied Water Bodies		Occupied Water Body		Designated Critical Habitat	
		Yes	No	Yes	No	Yes	No
Interior Least Tern (<i>Sterna antillarum</i>)	Endangered		X		X		X
Whooping Crane (<i>Grus americana</i>)	Endangered		X		X		X
Piping Plover (<i>Charadrius melodus</i>)	Threatened		X		X		X
Red Knot (<i>Calidris canutus rufa</i>)	Threatened		X		X		X

Table 4-4: Species Conclusion Table

SPECIES	HABITAT DETERMINATION		NOTES & DOCUMENTATION		ESA DETERMINATION
	Species Habitat Present		Field Assessment (Sept 4, 2019)	Literature Research	
	YES	NO			
Interior Least Tern (<i>Sterna antillarum</i>)		X	No suitable nesting or foraging habitat within the study area	According to the OK Natural Heritage Inventory (Fagin, 2019), no species occurrences were identified within the general project area (Sec. 4 T8S-R24E). The study area was not located within an aquatic dependent species watershed of Oklahoma for the species.	No Effect

Whooping Crane (<i>Grus americana</i>)	X		Some suitable foraging habitat present	According to the OK Natural Heritage Inventory (Fagin, 2019), no species occurrences were identified within the general project area (Sec. 4 T8S-R24E). The study area was not located within an aquatic dependent species watershed of Oklahoma for the species.	May affect, not likely to adversely affect
Piping Plover (<i>Charadrius melodus</i>)		X	No suitable nesting or foraging habitat within the study area	According to the OK Natural Heritage Inventory (Fagin, 2019), no species occurrences were identified within the general project area (Sec. 4 T8S-R24E).	No Effect
Red Knot (<i>Calidris canutus rufa</i>)		X	No suitable habitat within the study area	According to the OK Natural Heritage Inventory (Fagin, 2019), no species occurrences were identified within the general project area (Sec. 4 T8S-R24E).	No Effect

Migratory Birds

The Migratory Bird Treaty Act (MBTA) of 1918 provides for the conservation of migratory birds specifically defined by the act. The lead federal agency for implementing the MBTA is the USFWS. In Oklahoma, there are several bird species that traverse the state, rear young, or use stop-over habitat.

During the biological field reconnaissance, evidence of barn swallows (*Hirundo rustica*) was identified on a structure within the project area. Swallows may occupy structures in future nesting seasons. If swallows are present, there is the potential to *destroy nests and/or disturb nesting birds*, which will be a violation of the MBTA.

Bald & Golden Eagles

The bald eagle is protected by the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (and the Migratory Bird Treaty Act), which prohibits harming eagles, nests, eggs or young. In Oklahoma, the bald eagle is primarily a winter resident commonly observed between December and March. Generally, bald eagles are observed near larger rivers and open-water reservoirs where there is an abundant food supply and limited human activity.

During the biological field reconnaissance, there was no evidence of bald eagles or nest sites; however, some potential nesting/foraging habitat does exist within the action area. Additionally, ONHI recorded one occurrence in the vicinity of the project area (Fagin, 2019).

Alternative 1: No Action

No Impact—No impacts are anticipated because no activities related to this alternative will impact existing species or habitat.

Alternative 2: Proposed Action

Negligible Impacts to listed species—Based on the results of the field study, there was no habitat identified for the least tern, piping plover, or red knot. FEMA has made a no effect determination for these species under Section 7 of the ESA. Open cropland that could be suitable stopover foraging habitat for migrating whooping cranes was noted within and in close proximity to the study area. The study area is also located within the 95% migration corridor. The USFWS concurred with the determination of “may affect, not likely to adversely affect” for the whooping crane. Ground crews must stop work if the crane is spotted in visual range of the site. Any sighting will be reported to the USFWS and work will cease until the whooping crane moves away from the site. (Refer to Appendix K.)

Negligible impacts to migratory birds—Since swallows were observed in the area, precautions will be taken to avoid impacting birds during construction activities. No bridge or box culvert work is anticipated; however, if swallows are noted in the project area and will be impacted during construction, the design engineer will require construction season restrictions or document avoidance of impact immediately prior to construction. Seasonal restrictions or avoidance measures will eliminate any impact to swallows.

Negligible impacts to bald eagles—No evidence of bald eagles was identified during the field review, but there was some suitable habitat available. In order to avoid impacts, a survey for eagles and their nests should be conducted within 660 feet of the work zone, during the winter prior to the start of construction. If a nest is found, appropriate conservation measures based on the National Bald Eagle Management Guidelines will be implemented.

4.5 CULTURAL RESOURCES

4.5.1 Historic, Archeological, & Tribal Resources

Historic, architectural, archeological, and cultural resources were assessed in accordance with the National Historic Preservation Act (NHPA) of 1966 and the Archaeological and Historic Preservation Act of 1974. Section 106 of the NHPA requires federal agencies to consider the effects of their actions on historic properties. Executive Order 13007 Indian Sacred Sites (1996) is intended to protect and preserve Indian religious practices. Federal agencies are required to avoid adversely affecting the physical integrity of such sites.

A cultural resources survey for the action area was conducted. The survey included the evaluation of structures and pre-historic resources. The survey report indicated that one historic-age bridge was identified in the Area of Potential Effect (APE) which was built in 1950. This structure was found to be a common type concrete structure lacking distinction; thus, exempt from individual Section 106 review. Also, 116 shovel tests were conducted in the APE, and no artifacts or cultural deposits were encountered. The report authors recommended that the project proceed as planned, and if any unanticipated cultural materials or deposits are found at any stage of the proposed action, work should cease and the Oklahoma State Historic Preservation Office (SHPO) and/or the Oklahoma Archeological Survey (OAS) should be notified immediately.

The proposed action, cultural resources survey report, Oklahoma Landmarks Inventory (OLI), were reviewed by the SHPO and OAS. FEMA also consulted on the proposed action with federally recognized tribes that have interest in the project area. Oklahoma County also consulted with tribes.

Alternative 1: No Action

No Impact—No impacts are anticipated because no activities related to this alternative will impact existing resources.

Alternative 2: Proposed Action

No Impact—FEMA has determined that there will be No Historic Properties Affected as a result of the proposed action. SHPO concurrence with this determination was received, dated 2/10/2020 and OAS concurrence with this determination was received, dated 1/31/2020. FEMA consulted with the Kickapoo Tribe of Oklahoma; Kiowa Tribe; Muscogee Creek Nation; Osage Nation; Thlopthlocco Tribal Town; and Wichita and Affiliated Tribes per 36 CFR §800.2(c)(2)(i)(B) on 5/13/2020. The Kickapoo Tribe of Oklahoma; Kiowa Tribe; Muscogee Creek Nation; Osage Nation; Thlopthlocco Tribal Town; and Wichita and Affiliated Tribes did not provide comments within 30 days or declined to comment. Osage Nation submitted a response outside the 30-day comment period, requesting an archeological survey on 6/22/2020. To fulfill FEMA's responsibility to provide a reasonable and good faith effort, an additional review of the project area and records with the Oklahoma Archeological Survey was conducted. After considering the information from the additional checks and in consultation with the project applicant FEMA has determined that a cultural resources survey would not be a prudent and feasible level of effort for the project and instead, FEMA has determined that archeological

monitoring of the project would be an appropriate alternative. The Osage Nation was notified of Letters were also sent to the following tribes by Oklahoma County as part of the USACE permitting process: United Keetoowah Band of Cherokee Indians In Oklahoma, Wichita and Affiliated Tribes, Cheyenne-Arapaho Tribes, Citizen Pottawatomie Nation, Iowa Tribe of Oklahoma, Kickapoo Tribe of Oklahoma, and Osage Nation. Oklahoma County sent agency solicitation letters to the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM) to see if there were any Indian minerals or other interests near or within the project area. FEMA has determined that proposed project will not adversely affect traditional, religious, or culturally significant tribal sites. (Refer to Appendices M & O.)

If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.

The Applicant must meet the following conditions outlined during FEMA's consultation with the Osage Nation on 6/22/20 to address Osage Nation concerns regarding impacts to possible subsurface features related the potential for archeological sites in the project area:

- The Applicant shall ensure that all excavation, access road construction and staging areas are monitored by a Secretary of the Interior Qualified archeologist.
- The Applicant shall ensure archeological monitoring and reporting be performed by an Archeologist that meets the Secretary of the Interior's Professional Qualification Standards for Archaeology.
- The Applicant shall require that the archeological monitor follow the construction monitoring and reporting standards, set forth in Secretary of the Interior's Standards for Archeological Documentation.
- Through the Applicant, the archeological monitor shall provide weekly monitoring reports to the FEMA Region 6 EHP Tribal Liaison.
- Within one month of completion of construction monitoring the archeological monitor, through the Applicant, shall provide the FEMA Region 6 Tribal Liaison a final construction monitoring report based on the requirements found in Secretary of the Interior's Standards for Archeological Documentation.
- In the event of an inadvertent discovery during monitoring the applicant will contact the FEMA Region 6 EHP Tribal Liaison within 24 hours and work will stop in the area of the discovery.

4.6 SOCIOECONOMIC RESOURCES

This section presents an overview of the proposed project's potential effects to socioeconomic resources. Resources include environmental justice, hazardous wastes, traffic, public services, and health & safety.

4.6.1 Environmental Justice

Factors considered in this section include employment and income, demographic trends, and lifestyle and cultural values. Executive Order 12898 (Environmental Justice in Minority Populations) requires federal agencies to consider any potentially disproportionate human health or environmental risks the proposed action may have on minority or low-income populations. Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks) requires federal agencies to identify and assess health and safety risks that may disproportionately affect children.

As of the 2010 census, Oklahoma County had a population of 718,633, making it the most populous county in the state. Numerous communities are located throughout the county, including twelve cities, eight towns, and one unincorporated community, which make a large part of the Oklahoma City Metropolitan Area. The largest

industries in Oklahoma County include Health Care & Social Assistance, Retail, and Accommodation & Food Services.

The estimated median household income for Oklahoma County in 2017 was \$50,762; a bit above the median household income of \$49,767 statewide (US Census, 2017). Unemployment rate estimates for Oklahoma County are approximately 5.2%, which is higher than the national average of 4.3%. Nearly one in five people living in Oklahoma County (17.0%) had incomes below the poverty level in 2017.

The population estimate for Oklahoma County as of July 1, 2018 is 792,582; a 10.3% increase in population over eight years. Caucasian residents comprise 56.8% of the population, followed by Hispanic or Latinos (16.8%), African Americans (14.8%), people of two or more races (5.6%), Asians (3.3%), and American natives (2.5%) (US Census, 2017). The nearest community to the action area is Choctaw, which is located approximately two miles east. No businesses or homes will be directly affected by the proposed action.

Alternative 1: No Action

No Impact—No impacts are anticipated because no activities related to this alternative will impact environmental justice (EJ) populations.

Alternative 2: Proposed Action

No Impact—No impacts are anticipated because EJ populations and children will not experience disproportionately high or adverse impacts as a result of the proposed project. There are no residential or commercial displacements associated with the proposed action. The proposed project is anticipated to enhance access to all users along the roadway, improve the flow of traffic through the corridor, and decrease travel times for motorists. Implementing the proposed improvements to Triple X Road will make it easier and more convenient for people to access other parts of the community, local services and facilities, and participate in local activities via Triple X Road. EJ populations and non-EJ populations within the study area will benefit equally from the proposed improvements. People in the general area are not anticipated to be separated or isolated as a result of the proposed action.

4.6.2 Hazardous Materials

Hazardous materials and wastes are regulated under a variety of federal and state laws, including the Resource Conservation and Recovery Act (RCRA) of 1976, Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Solid Waste Act, Toxic Substances Control Act, and the CAA of 1970. The standards under the Occupational Safety and Health Act (OSHA) are designed to protect worker health and safety. Evaluations of hazardous substances and wastes must consider whether any hazardous material will be generated by the proposed activity and/or already exists at or in the general vicinity of the site. If hazardous materials are discovered, they must be handled by properly permitted entities.

In order to determine if the project area had preexisting hazardous wastes or materials, an initial site assessment (ISA) was conducted, which included background review and field reconnaissance. (Appendix N available upon request from FEMA.) No hazardous wastes, superfund sites, voluntary cleanup programs, oilfield activity, brownfield locations, RCRA corrective actions, Tier II facilities, tanks, industrial activity, or other similar findings related to the project area were identified.

Alternative 1: No Action

No Impact—No impacts are anticipated because no activities related to this alternative will affect hazardous materials.

Alternative 2: Proposed Action

No Impact to Negligible Impact—No impacts were identified with the pre-construction project area—that is, no concerns were raised during the ISA review. However, during construction, there will be some hazardous

materials and substances used and potentially stored on site (e.g., fuel, lubricants, etc.). Petroleum product storage is subject to DEQ and Oklahoma Corporation Commission (OCC) oversight and regulations. Spills, drips, and releases will also be addressed as part of the SWP3 associated with the construction storm water permit OKR10. Any contamination will be non-detectable, or if detected, the effects will be slight and localized. Unusable equipment, debris and material shall be disposed of in an approved manner and location. In the event significant items (or evidence thereof) are discovered during implementation of the project, applicant shall handle, manage, and dispose of petroleum products, hazardous materials and toxic waste in accordance to the requirements and to the satisfaction of the governing local, state and federal agencies

4.6.3 Noise

Undesirable sound, or “noise”, can be regulated by the Noise Control Act of 1972 (NCA). EPA guidelines recommend the DNL (Day-Night Average Sound Level) not exceed 55 decibels (dB) for noise-sensitive land uses such as residences, schools, and hospitals. Noise levels in rural areas are generally lower than the recommended level, and originate from ambient sources (e.g., wind, weather, wildlife). There will be some vehicular noise associated with roads and agricultural activity.

Alternative 1: No Action

No Impact—No impacts are anticipated because no activities related to this alternative will occur.

Alternative 2: Proposed Action

Negligible Impact—Triple X Road has been a transportation corridor for decades. The proposed action of reconstructing the road will re-open it to traffic and subsequent traffic noise. Noise levels will be similar to pre-closure levels, and are not expected to increase disproportionately because of the proposed action.

Increased noise could be realized during the construction phase. Excavation equipment, back-up alarms, and increased truck traffic from deliveries could all generate noise, but not excessively and only temporarily. The impact will most likely only affect local residents near the southern boundary of the project area. Noise impacts can be minimized by limiting construction activities to daylight hours and muffling equipment as needed.

4.6.4 Traffic

The action area includes a two-lane arterial transportation route for local residents and for general access for the area. Triple X Road runs south to north through Oklahoma County and connects people and commerce to State Highway 62, which runs east to Harrah, OK or west to Choctaw, OK and Oklahoma City.

Prior to its closure in 2015, Triple X Road was considered an important arterial transportation route (600+ vehicle per day) with access to the bridge crossing the North Canadian River. Since the road was closed, use of the bridge has been virtually non-existent, and reduced to local traffic only. It provides access to a few residences and farmers living and working south of the river and north of the road washout. The next nearest bridge crossing is 3.5 miles to the east with a second crossing approximately 4.5 miles to the north and west, resulting in a 7- to 9-mile detour.

Alternative 1: No Action

Major Adverse Impact—With the No Action Alternative, Triple X Road will remain closed and the accessibility of bridge greatly diminished. There will be substantial impacts on a local, area, and potentially regional level. Currently, there are 7 to 9-mile detours caused by this closure.

Alternative 2: Proposed Action

Major Beneficial Impact—The results of the proposed action will reestablish the transportation corridor and river crossing. Safety, mobility and connectivity will all be improved, which will benefit local and area residents.

4.6.5 Public Services, Health & Safety

The action area consists of agricultural land and a riparian corridor with no standing structures. Approximately 0.5-mile of Triple X Road runs south to north. Currently, no active public utilities run through the site aside from overhead electric, which runs along NE 36th Street and Triple X Road south of the intersection, and a high voltage transmission line that bisects the action area. Police, fire, and emergency medical services are provided by the city of Choctaw and/or Oklahoma County. Since Triple X Road was closed, mail carriers, emergency vehicles, and school buses must travel 3.5 to 4.5 miles to another bridge crossing, which can result in 7- to 9-mile detours.

Alternative 1: No Action

Major Adverse Impact—With the No Action Alternative, Triple X road will remain closed, and the bridge crossing will be unavailable. There will be substantial impacts on a local and potentially area level with respect to emergency access and other services.

Alternative 2: Proposed Action

Major Beneficial Impact—The results of the proposed action will reestablish the transportation corridor and river crossing. Safety, mobility, and connectiveness will all be improved, which will benefit local and area residents with better access to emergency services and other transportation related amenities.

4.7 ALTERNATIVE SUMMARY

Table 4-5: Alternative Comparison & Summary

AFFECTED ENVIRONMENT/ RESOURCE	IMPACTS	AGENCY COORDINATION/ PERMITS	MITIGATION/BMPS
Geology & Soils	<p><u>Alternative 1: No Action</u> No Impact to Minor Negative Impact</p> <p><u>Alternative 2: Proposed Action</u> Negligible Impact</p> <p>Some construction related impacts may occur. These will be localized and limited to the construction area and timeframe.</p>	<p>DEQ's – OKR10 general permit Storm Water Discharges from Construction Activities</p>	<p>Obtain authorization under DEQ's OKR10. Implement required and recommended BMPS. Soil impacts can be minimized by implementation of the SWP3 to reduce erosion.</p>
Air Quality	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> Negligible Impact</p> <p>Some construction related impacts may occur. These will be localized and limited to the construction area and timeframe.</p>	<p>None (Air Quality Attainment Area)</p>	<p>Air related impacts will be avoided and mitigated by ensuring adequate water is applied for dust suppression, or other related BMPS are enforced.</p>
Surface Water	<p><u>Alternative 1: No Action</u> Moderate Adverse Impact The bank will not be stabilized; therefore, sediment, turbidity, and suspended solids will continue to degrade water quality. Effects will be realized locally, and could affect the stream system for some distance downstream.</p> <p><u>Alternative 2: Proposed Action</u> Moderate Beneficial & Minor Adverse Impacts Overall, water quality may be improved locally because the proposed restoration work will prevent bank erosion.</p> <p>Fill in waters of the US will occur: ~1.3 acres within OHWM & ~3.5 acres of excavation/dredge within the channel.</p>	<p>DEQ OKR10 general permit Storm Water Discharges from Construction Activities</p> <p>DEQ CWA Section 401 Certification (issued 3/26/2020)</p> <p>USACE CWA Section 404 Permit SWT-00316 (issued 4/10/2020)</p>	<p>Obtain authorization under DEQ's OKR10. Implement required and recommended BMPS. Soil impacts can be minimized by implementation of the SWP3 to reduce erosion.</p> <p>DEQ CWA Section 401 Certification specific conditions</p> <p>Compensatory mitigation requires the creation of 3.0 acres of onsite riparian habitat. This acreage will serve as mitigation for the 1.3 acres of "fill" and associated impacts. The mitigation area will be constructed along the riverbank and serve as buffer between the road and the water's edge. An approved USACE mitigation plan will be adhered to.</p>
Groundwater	<p><u>Alternative 1: No Action</u> No Impact</p>	<p>None</p>	<p>None</p>

AFFECTED ENVIRONMENT/ RESOURCE	IMPACTS	AGENCY COORDINATION/ PERMITS	MITIGATION/BMPS
	<u>Alternative 2: Proposed Action</u> No Impact		
Wetlands	<p><u>Alternative 1: No Action</u> No Impact to Moderate Negative Impact</p> <p><u>Alternative 2: Proposed Action</u> No Impact with the potential for Minor Beneficial Impacts</p> <p>No adverse impacts to lentic wetlands are anticipated. Although no wetlands were field-identified, the USACE required compensatory mitigation to offset the in-stream construction work (3-acres). In addition, there could be a measurable increase in wetland habitat created over time near the spur dikes.</p>	USACE.	Oklahoma County will avoid field-identified lentic wetlands. All project activity must be located outside of these wetlands and these features must be preserved and protected during construction with buffered-offset areas, and by erosion and sediment control practices.
Floodplains	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> No Impact</p> <p>No adverse impacts to floodplains wetlands are anticipated. There is a confirmed "no-rise" in the base flood elevation and the project is permitted by the local floodplain administrator.</p>	Oklahoma County Floodplain Administrator / Flood Development Permit DP-2020-01 (issued 4/22/2020) & No Rise Certificate	Oklahoma County must comply with any conditions of the required floodplain permit.
Federally Protected Species (Listed Species, Migratory Birds, Bald Eagles)	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> <i>Negligible Impacts to listed species—</i> No habitat identified for the least tern, piping plover, or red knot. FEMA has made a no effect determination for these species. Some suitable stopover foraging habitat for migrating whooping cranes. USFWS concurred "may affect, not likely to adversely affect" for the whooping crane.</p> <p><i>Negligible Impacts to migratory birds—</i> Swallows were observed in the area. Precautions will be taken to avoid impacting birds during construction activities.</p> <p><i>Negligible Impacts to bald eagle—</i> No evidence of bald eagles was identified, but there was some suitable habitat available.</p>	USFWS Concurrence	<p>Plan notes will include a "spot and call" notice to ensure that ground crews stop work if the crane is spotted in visual range of the site. Any sighting will be reported to the USFWS and work will cease until the whooping crane moves away from the site.</p> <p>If swallows are noted in the project area and will be impacted during construction, the design engineer will require construction season restrictions or document avoidance of impact immediately prior to construction. Seasonal restrictions or avoidance measures will eliminate any impact to swallows.</p> <p>In order to avoid impacts to bald eagles, a survey for eagles and their nests should be conducted within 660 feet of the work zone, during the winter prior to, and within one year of, the start of construction. If a nest is found, appropriate conservation measures based on the National Bald Eagle Management Guidelines will be implemented.</p>

AFFECTED ENVIRONMENT/ RESOURCE	IMPACTS	AGENCY COORDINATION/ PERMITS	MITIGATION/BMPS
<p>Cultural Resources</p>	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> No Impact</p> <p>SHPO & OAS concurred “no effect to historic properties.” No concerns raised by Kickapoo Tribe of Oklahoma; Kiowa Tribe; Muscogee Creek Nation; Thlopthlocco Tribal Town; and Wichita and Affiliated Tribes. Concerns raised by the Osage Nation.</p>	<p>SHPO & OAS / Federally Recognized Tribes</p>	<p>If ground disturbing activities occur during construction, applicant will monitor ground disturbance and if any potential archeological resources are discovered, will immediately cease construction in that area and notify the State and FEMA.</p> <p>A plan note will be added to the project plans to stop all work and consult with the SHPO and OAS if significant cultural materials or human remains are encountered during excavation</p> <p>The Applicant must meet the following conditions outlined during FEMA’s consultation with the Osage Nation on 6/22/20 to address Osage Nation concerns regarding impacts to possible subsurface features related the potential for archeological sites in the project area:</p> <ul style="list-style-type: none"> • The Applicant shall ensure that all excavation, access road construction and staging areas are monitored by a Secretary of the Interior Qualified archeologist. • The Applicant shall ensure archeological monitoring and reporting be performed by an Archeologist that meets the Secretary of the Interior’s Professional Qualification Standards for Archaeology. • The Applicant shall require that the archeological monitor follow the construction monitoring and reporting standards, set forth in Secretary of the Interior’s Standards for Archeological Documentation. • Through the Applicant, the archeological monitor shall provide weekly monitoring reports to the FEMA Region 6 EHP Tribal Liaison. • Within one month of completion of construction monitoring the archeological monitor, through the

AFFECTED ENVIRONMENT/ RESOURCE	IMPACTS	AGENCY COORDINATION/ PERMITS	MITIGATION/BMPS
			<p>Applicant, shall provide the FEMA Region 6 Tribal Liaison a final construction monitoring report based on the requirements found in Secretary of the Interior's Standards for Archeological Documentation.</p> <ul style="list-style-type: none"> In the event of an inadvertent discovery during monitoring the applicant will contact the FEMA Region 6 EHP Tribal Liaison within 24 hours and work will stop in the area of the discovery.
<p>Environmental Justice</p>	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> No Impact</p> <p>EJ populations and children will not experience disproportionately high or adverse impacts as a result of the proposed project.</p>	<p>None</p>	<p>None</p>
<p>Hazardous Materials</p>	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> No Impact to Negligible Impacts</p> <p>No impacts were identified within the pre-construction project area.</p> <p>During construction, there could be some hazardous materials and substances used and stored on site (e.g., fuel, lubricants, etc.).</p>	<p>DEQ's – OKR10 general permit Storm Water Discharges from Construction Activities</p>	<p>Obtain authorization under DEQ's OKR10. Implement required and recommended BMPs. Storm water quality impacts can be minimized through implementation of the SWP3.</p> <p>Unusable equipment, debris and material shall be disposed of in an approved manner and location. In the event significant items (or evidence thereof) are discovered during implementation of the project, applicant shall handle, manage, and dispose of petroleum products, hazardous materials and toxic waste in accordance to the requirements and to the satisfaction of the governing local, state and federal agencies.</p>
<p>Noise</p>	<p><u>Alternative 1: No Action</u> No Impact</p> <p><u>Alternative 2: Proposed Action</u> Negligible Impacts</p> <p>Noise levels will be similar to pre-closure levels and are not expected to increase disproportionately because of the proposed activity.</p>	<p>None</p>	<p>Noise impacts will be minimized by limiting construction activities to daylight hours and muffling equipment as needed.</p>

AFFECTED ENVIRONMENT/ RESOURCE	IMPACTS	AGENCY COORDINATION/ PERMITS	MITIGATION/BMPS
	<p>Temporary increased noise could be realized during the construction phase (e.g., excavation equipment, back-up alarms, increased truck traffic, etc.).</p>		
<p>Traffic</p>	<p><u>Alternative 1: No Action</u> Major adverse impact</p> <p>With no action, Triple X Road will remain closed and the bridge crossing will be unavailable. There will be substantial consequences on a local, area, and potentially regional level.</p> <p><u>Alternative 2: Proposed Action</u> Major beneficial impact</p> <p>The results of the proposed action will reestablish the transportation corridor and river crossing. Safety, mobility and connectiveness will all be improved.</p>	<p>None</p>	<p>None</p>
<p>Public Services, Health & Safety</p>	<p><u>Alternative 1: No Action</u> Major adverse impact</p> <p>With the no action alternative, Triple X Road will remain closed and the bridge crossing will be unavailable. There will be substantial consequences on a local and potentially area level with respect to emergency access and other services.</p> <p><u>Alternative 2: Proposed Action</u> Major beneficial impact</p> <p>The proposed action will reestablish the transportation corridor and river crossing. Safety, mobility and connectiveness will all be significantly improved.</p>	<p>None</p>	<p>None</p>

5.0 CUMULATIVE IMPACTS

Cumulative impacts are environmental effects that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor direct and indirect but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider how the direct and indirect environmental effects caused by the proposed action contribute to cumulative effects, and whether that incremental contribution is significant or not.

USACE conducted a cumulative effects analysis as part of the permitting of the project under Section 404 of the CWA. The geographic scope for USACE's analysis was the Lower North Canadian Watershed (HUC 11100302). The cumulative analysis review area is mostly comprised of the North Canadian River and its floodplain and forested areas from approximately Oklahoma City to Lake Eufaula. USACE reviewed its regulatory database for this watershed spanning the past 5 years and estimated the reasonably foreseeable future actions for the next 2 years.

The project site is located in the floodplain of the North Canadian River, and along the right descending bank. Much of the property along the west side of Triple X Road appears to be cultivated cropland. Along the North Canadian River which cuts into the east side of Triple X Road, mixed grasses and wooded riparian corridor are apparent. A sandy point bar is present within the project site on the opposite side of the North Canadian River from the cut bank along Triple X Road.

The project will result in the placement of dredged and fill material within the North Canadian River. The direct effects of this project include the re-location of the channel and installation of the spur dikes at this location. In addition, the project includes the realignment of approximately 3,185 feet of Triple X Road through cropland to the west of its current location. The proposed stream work will result in short-term changes to the aquatic habitat that may be used prior to the proposed impacts. However, the riprap structures are anticipated to result in long-term beneficial effects associated with stabilizing aquatic and terrestrial habitat at this location. The proposed project is not expected to result in indirect impacts due to the placement of dredged and fill material within waters of the U.S.

Reasonably foreseeable future actions within this watershed include construction and maintenance of roads, bridges, bank stabilization, and utility line activities. The area is mostly rural along the floodplain of the North Canadian River surrounding the project site. The scope and scale of this proposal is similar to other bank stabilization projects. USACE's review in their regulatory database revealed that the associated HUC has had 100 nationwide permits and 1 standard permit within the last 5 years. These actions consist of road and bridge maintenance, utility lines, bank stabilization, and other similar actions. The report identified permanent losses totaling 4.23 acres (3,850 linear feet) of impacts to waters of the U.S. including wetlands.

When considering the overall impacts that will result from the proposed activity, in relation to the overall impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed activity to cumulative impacts are not considered to be significant.

6.0 AGENCY COORDINATION, PUBLIC INVOLVEMENT & PERMITS

6.1 AGENCY COORDINATION & CONSULTATION

Refer to Appendix O for a listing of agencies and stakeholders contacted by Oklahoma County, and copies of the applicable correspondence received in addition to agency consultations found in Appendices F, G, H, K, L, and M. Refer to the bibliography, appendices, and correspondence sections for letters and documents related to their contributions. Coordination with responsible agencies was performed for statutes and executive orders applicable to the action area.

Executive Order 12699: Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction

The Oklahoma Seismic Hazard Map was evaluated for peak ground acceleration (USGS, 1981).

Clean Air Act

US EPA designated attainment areas were consulted (EPA, 2019).

Clean Water Act

The proposed action area will be permitted under a Department of Environmental Quality OKR10 Construction Stormwater Permit Authorization (DEQ, 2019). Oklahoma County applied for and received a Water Quality Certification under Section 401 of the CWA from DEQ. Oklahoma County has secured a Section 404 permit (SWT-2015-000315) from the USACE.

Executive Order 11990: Protection of Wetlands

USFWS NWI maps (Figure 7 in Appendix A) were reviewed and field assessment/wetland determination (Appendix K) was conducted for potential impacts to wetlands and submitted to the USACE. Concurrence determination was complete and permitted under USACE Section 404 permit SWT-2015-000315 (Appendix H).

Executive Order 11988: Floodplain Management

A FEMA Flood Insurance Rate Map was reviewed to determine if the action area is within a floodplain. (Refer to Figure 6 in Appendix A.) A solicitation letter was sent to USACE Floodplain Management Services and FEMA (8/20/2020). Hydraulic modeling was performed on the Proposed Action Alternative, which determined there to be a “no-rise” in the base flood elevation. Also, a floodplain permit (DP-2020-01) was approved by the local floodplain administrator. (Appendix L.)

Endangered Species Act

Biological Assessment was prepared to ensure compliance with the Endangered Species Act. (Appendix K.) The USFWS was contacted for Section 7 consultation purpose (10/21/2019).

National Historic Preservation Act/Executive Order 13007 Sacred Sites

Oklahoma County coordinated with the Oklahoma Historical Society (2/10/2020 response letter) and the Oklahoma Archeological Survey (1/31/2020 response letter). FEMA consulted with the Kickapoo Tribe of Oklahoma; Kiowa Tribe; Muscogee Creek Nation; Osage Nation (6/22/2020 response letter); Thlopthlocco Tribal Town; and Wichita and Affiliated Tribes per 36 CFR §800.2(c)(2)(i)(B) on 5/12/2020. In addition, Oklahoma County sent tribal inquiry letters on 8/10/2019 to the following tribes as part of the USACE permitting process: United Keetoowah Band of Cherokee Indians In Oklahoma; Wichita and Affiliated Tribes; Cheyenne-Arapaho Tribes; Citizen Pottawatomini Nation; Iowa Tribe of Oklahoma; Kickapoo Tribe of Oklahoma, and Osage Nation. (Appendix M.)

Executive Order 12898: Environmental Justice in Minority Populations

U.S. Census Bureau data was reviewed to evaluate environmental justice in minority populations (USCB, 2019).

Executive Order 13045: Protection of Children from Environmental Health Risks & Safety Risks

Land use patterns were evaluated for child sensitive populations to evaluate environmental health risks and safety risks in children along with census data and other factors (USCB, 2019).

Comprehensive Environmental Response, Compensation and Liability Act

A site review and database search of CERCLA sites were conducted and are included in ISA report. (Appendix N available upon request from FEMA.)

Resource Conservation and Recovery Act

A site review and database search of RCRA sites was conducted and are included in ISA report. (Appendix N available upon request from FEMA.)

6.2 PUBLIC INVOLVEMENT

As part of their permitting under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers conducted a public comment period from 12/23/2019 to 1/21/2020 on the stream related portion of the proposed project. Oklahoma County addressed any concerns to USACE's satisfaction.

Oklahoma County notified the public of the availability of FEMA's EA through the publication of a public notice in the local newspaper of record, *The Oklahoman*. The EA was made available for public review on FEMA's website (<https://www.fema.gov/media-library>). FEMA conducted a 15-day public comment period commencing on 06/18/2020, the initial date of publication of the public notice. No public comments were received. Therefore, the draft EA has been made final and a FONSI will be issued for the project.

7.0 REFERENCES

DEQ, 2019. OKR10 Construction Stormwater Permit. Oklahoma Department of Environmental Quality, <https://www.deq.ok.gov/water-quality-division/construction-permitting/>

EPA, 2019. *Current Nonattainment Counties for All Criteria Pollutants*. United States Environmental Protection Agency, <https://www3.epa.gov/airquality/greenbook/ancl.html>

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USGS, 1991. *Hydrologic Atlas 4, Reconnaissance of the Water Resources of the Oklahoma City Quadrangles, Central Oklahoma*, 1:250,000, U.S. Geological Survey, Washington, D.C.

USGS, 1981. *Oklahoma Seismic Hazard Map*, U.S. Geological Survey, Washington, D.C. <https://pubs.er.usgs.gov/publication/mf1352> February 2020.

8.0 LIST OF PREPARERS

The individuals who were primarily responsible for the preparation of this EA are listed below, together with their qualification. The list includes persons affiliated with CC Environmental, LLC and EST, Inc.

EST, Inc.

Amanda Newberry, P.E. – B.S. Civil Engineering, 15 years of experience. Overall project manager, responsible for project execution and coordination, project oversight, and roadway plan preparation.

Don Russell, P.E. – B.S. Civil Engineering, 45 years of experience. Senior Project Engineer – Responsible for project oversight, report review, and plan review.

Joseph Voss, P.E. CFM – B.S. Chemical engineering, M.S. Environmental Engineering. 19 years of experience. Project Engineer – Responsible for bank stabilization and mitigation report and plan preparation and coordination with USACE.

Andy Armstrong – B.S. Geology, 17 years of experience. Responsible for hazardous waste reports.

CC Environmental, LLC

Geoffrey Canty – B.S. Biology, M.S. Environmental Science, Ph. D. Environmental Science, 25 years of experience. Responsible for project oversight, preparation, overall document review, and public coordination.

Dale Daniel – B.S. Biology, M.S. Aquatic/Terrestrial Toxicology, Ph.D. Integrative Biology/Wetland Biogeochemistry, 7 years of experience. Project scientist - responsible for biological reports and wetland assessments.

FEMA Reviewers

Kevin Jaynes, Regional Environmental Officer, FEMA Region 6
Sarah Carrino, Unified Federal Review Coordinator, FEMA Region 6
Dorothy Cook, Senior Environmental Specialist, FEMA Region 6

9.0 APPENDICES

APPENDIX A:

FIGURES

- Figure 1 – General Location Map
 - Figure 2 – USGS Topographic Site Map
 - Figure 3 – Aerial Location Map
 - Figure 4 – Site Design Map
 - Figure 5 – NRCS Soils Map
 - Figure 6 – FEMA Flood Map
 - Figure 7 – Wetlands Map
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APPENDIX B:

DESIGN PLANS: STREAMBED STABILIZATION

APPENDIX C:
DESIGN PLANS: COUNTY ROAD

APPENDIX D:

ALTERNATIVE STUDY REPORT: NORTH CANADIAN RIVER ALTERNATIVE STUDY

APPENDIX E:

ALTERNATIVE ANALYSIS REPORT: TRIPLE X ROAD ALTERNATIVE ANALYSIS

APPENDIX F:
NRCS CONSULTATION AND USDA SOILS REPORT

APPENDIX G:
USACE PUBLIC NOTICE

APPENDIX H:
USACE SECTION 404 PERMIT

APPENDIX I:
USACE SECTION 404 MITIGATION PLAN

APPENDIX J:

8-STEP PLANNING PROCESS FOR FLOODPLAINSS/WETLANDS

APPENDIX K:

WETLANDS EVALUATION, BIOLOGICAL REVIEW, AND USFWS CONSULTATION

APPENDIX L:
FLOODPLAIN DEVELOPMENT PERMIT & NO RISE LETTER

APPENDIX M:
CULTURAL RESOURCES CONSULTATION LETTERS

APPENDIX N:
HAZARDOUS MATERIALS ISA REPORT

Due to the file size, this report is not being uploaded for web viewing. If you would like to request an electronic or hard copy, please contact Sarah Carrino, FEMA Environmental Specialist at sarah.carrino@fema.dhs.gov.

APPENDIX O:
ADDITIONAL AGENCY SOLICITATION & CORRESPONDENCE